

Helping Communities Thrive Through Active Travel Policy

August 2020

Anything you do to make a city more friendly to cars makes it less friendly to people.

-Enrique Peñalosa, former Mayor of Bogotá

Highlights

- Active Travel (AT) is movement under human power, such as walking and wheeling
- Shifting away from motor vehicles to AT can reduce chronic disease and result in community benefits
- Improving equity in travel and mobility in Alberta means addressing social and economic causes of unmet needs for healthy, efficient travel
- Public policies that support compact, mixed-use development and AT infrastructure are key to expanding AT
- Support for public policies that enable AT is strong among policy influencers and the general public
- The APCCP works with partners to inform and advocate for public policy that supports expansion of AT across the province and reduces inequities in healthy mobility

Issue

Mobility is central to our daily lives, yet our highly motorized transportation system is implicated in a wide range of harms to our health, and has consequences for pressing economic, environmental and equity concerns. Active Travel (AT), by contrast, refers to any human-powered mobility, inclusive of public transit when this involves a walking, cycling or wheeling component. This brief explores the health impacts of our current transportation system, summarizes key features of the wider transportation context in Alberta and discusses the range of benefits to health, local and household economies, the environment and equity. The primary goal of this brief is to inform action on AT in Alberta.

Inactive travel, especially by private motor vehicle, is a contributor to chronic disease, traumatic injury and other critical health issues in Alberta. Physical inactivity associated with an emphasis on motorized travel is closely linked with a wide range of chronic diseases, such as cardiovascular disease, diabetes and some cancers (1). In North America, a large proportion of adults do not get enough physical activity to realize health benefits. In Alberta, that proportion is about 43% (2). For children, the situation may be even more concerning. According to the latest ParticipACTION report card on physical activity for children and youth, only 39% of Canadian children are meeting overall physical activity recommendations, and only 21% of 5-19 year olds typically use active modes of transportation (3).

Research shows that each extra hour of driving per week is associated with a 1.6% reduction in the odds of being sufficiently physically active (4), and recent longitudinal research suggests that commuting more than an hour per day increases the odds of physical inactivity and sleep problems among those working more than 40 hours per week (5). Injury from incidents involving motor vehicles also takes a heavy toll. In Canada, there were 1922 deaths involving motor vehicles in 2018, nearly 10,000 serious injuries, and more than 150,000 total injuries (6). In Alberta, there were 299 deaths from traffic incidents in 2016, and the highest casualty rate (i.e., death and injury combined) was among those aged 15-24 (7). Inactive, motorized transportation is also associated with negative self-reported mental health and wellness, especially as inactive commute time increases (8). In one study, a dose-response relationship was demonstrated between daily driving time and odds for smoking, insufficient physical activity, poor sleep, obesity and generally worse physical and mental health—with the strongest and most consistent associations observed for drivers accumulating more than 120 minutes per day (9).

Moving by gas-powered vehicles also contributes to local air pollution, with tailpipe emissions including small particulate matter (PM_{2.5}) threatening respiratory, cardiovascular and kidney health, and also influencing risk of dementia for those living close to major roadways (10-13). In 2007, Toronto Public Health estimated that air pollution from all types of on-road vehicles, such as personal vehicles and freight trucks, contributed to 440 excess deaths and 1700 excess cardiovascular and respiratory hospitalizations in the city annually (14). Another study looking at hundreds of global cities, including Calgary, concluded that more than 200 excess deaths in that city may result from PM_{2.5} (15).

The intersection of local air quality and AT is also a topic of concern, as clean air supports the physical activity and mental health benefits of AT and makes outdoor physical activity in urban environments less risky. University of Calgary researchers explored seasonal air quality variation in the city and its relationship with neighbourhood walkability near schools, and identified several layers of concern. First, air quality shifted seasonally, with south of downtown areas worse in the winter (when school is in session) and the northeast worse in the summer (when all community residents may be at risk). Second, they found that schools located in historically walking, cycling and transit friendly neighbourhoods in and around the downtown core had poorer air quality in both seasons examined—attributed mostly to growth in motorized commuting from the suburbs to downtown since the 1950s. Finally, more car-dependent areas—such as the northeast—were associated with greater air pollution, especially in summer (16).

Alberta's Transportation Context

Health and other impacts of transportation in Alberta are realized within a complex network of infrastructure, policies and practices, many prioritizing motor vehicles. With only about 12% of Canada's total population, Alberta has one-quarter of the country's roadway (17,18). Nearly 20 different municipalities in the province have some kind of public transit service, and Calgary and Edmonton's systems include light-rail components (19). Albertans living rurally or remotely, and those living in suburbs designed for cars, travel predominantly by motor vehicle to reach daily destinations (20). Municipal transportation budgets include substantial allocations for maintenance of local roads and provision of local public transit services—in Calgary and Edmonton, these priorities account for about 25% of yearly expenditures (21,22). The provincial government builds and maintains provincial highways, and in the past decade, through public-private partnerships, has completed ring road projects in Calgary and Edmonton and highway twinning projects elsewhere (23). This expansion of capacity for motorized travel improves efficiency of access to outlying areas by car, and thus supports residential development at the edges of municipalities (i.e., sprawl) (24). Additional highway and ring road capacity likely induces demand, where car traffic will increase on new roadways until congestion results again (25).

Supports for AT in Alberta include dedicated bike lanes and bikeways, sidewalks, public transit vehicles and end-of-public-transit-destination supports for AT, such as bicycle garages. The extent of such features vary by locale. The built form and design of communities themselves are also part of the transportation context; compactly developed communities with good street connectivity, streets and sidewalks designed to be safe and accessible by everyone, and mixed land-uses set the stage for AT.

In terms of how Albertans are currently getting around, Long-form Census data from 2016 show that only between 11% and 15% of Edmonton and Calgary residents indicate public transit as their main mode of commuting to work. That percentage drops further for smaller municipalities, to under 1% in places, such as Lloydminster and Sylvan Lake. Currently, AT and more sustainable transportation generally plays a minor role in how Albertans move, and Alberta's big cities may be even more car-dependent than others in Canada. For example, Statistics Canada reported that only 27% of Edmonton residents used sustainable transportation (defined as AT plus public transit use and carpooling) in 2016—a smaller proportion than any other large Census Metropolitan Area in the country (26).

Provincial legislation and regulations in Alberta related to transportation provide broad governance for transportation-related activities in the province. None require or support AT explicitly or mandate movement of the transportation system away from reliance on carbon-based fuels towards lower emission, more physically active modes of travel. Some

funds are available to support AT and public transit projects, though recent budget cuts have stalled some of these projects across the province or forced municipalities to find new sources of funding (27).

Municipalities have a major role to play in developing, maintaining and re-directing transportation infrastructure and behaviours. Cities and towns build and manage urban public transit systems and AT infrastructure, and establish visions, goals and plans for local transportation as part of municipal planning work:

- Edmonton's The Way We Move (2009) aims to increase walkability and facilitate other active modes of travel: "A walkable, cycle-friendly city supports the creation of a healthy, barrier-free, age-friendly and safe city where active modes are a preferred transportation choice" (28). Edmonton has also completed a comprehensive Bike Plan to "support the City's vision of a connected, accessible city" (29).
- Calgary's Transportation Plan (2009) contains sustainability principles and directions for land use and mobility, emphasizing walkable environments, linking land use decisions to transit and increasing mobility choices (30). More recent work in Calgary relevant to AT includes development of the Guidebook for Great Communities and the City's Transit Oriented Development Implementation Strategy, which aims to provide Calgarians with more choices of places to live that are less reliant on motor vehicle transportation (31, 32).
- Medicine Hat has a development strategy that stresses a "transportation hierarchy" prioritizing mobility and safety of pedestrians and cyclists first, followed by transit and then single-occupant vehicles, as part of an emphasis on complete streets and the planning and design of development across the city generally (33).

In much of rural Alberta, long distances between population centres and limited daily destinations in town present AT challenges. In some small towns, old town centres or main streets have been refreshed and made more AT friendly. However, many smaller municipalities in Alberta, such as Olds and Lloydminster, have also clustered retail destinations in auto-focused parks or strips along the main highways through town, which cater primarily to automobile traffic. Nevertheless, there are examples of building AT in ways fitted to the context of smaller communities. High River recently worked with Sustainable Calgary on design solutions that would contribute to the community's vision of walkability and downtown charm. This included exploring ways of improving AT infrastructure and introducing greater land-use diversity and flexibility locally (34).

Importantly, corporations and private sector organizations with financial interests in transportation and land development have a powerful influence on the shape of transportation infrastructure and the range of travel options in Alberta communities. For example, developers often seek zoning (land-use) changes that will increase commercial value. This frequently occurs with parcels of land at the edges of urban areas where prices are lower and parcel sizes are larger, and is part of how sprawl and the reproduction of automobile-dependent design happens.

Finally, the transportation context in Alberta includes local, provincial, national, and Indigenous research, advocacy and civic groups that play a pivotal role in developing momentum for public policy changes that can shift the transportation landscape.

Exploring Benefits and Policy Options

Public policies that support AT can contribute to several important qualities of community life including health, economic, environmental and equity dimensions.

Health

Shifting travel mode share even slightly from motor vehicles to AT could bring substantial reductions in the burden of chronic disease. For example, one study of several global cities modelled an alternative, more compact land use scenario and a transportation policy initiative supporting a 10% shift from motor vehicle trips to cycling or walking trips. This predicted marked gains in Disability-Adjusted Life Years (DALYs) associated with cardiovascular disease, diabetes and respiratory disease—mainly from increased physical activity and reduced air pollution (35). There are also benefits to health through improved air quality, to which greater AT contributes. Seven years after Toronto Public Health's 2007

estimate of excess deaths and hospitalizations from cardiovascular and respiratory disease owing to transportation-related pollution, the number of estimated deaths and hospitalizations dropped by nearly half. The city attributed this to increases in AT, mitigation of pollution along major transit corridors and improved efficiency of freight service.

Using AT to commute has been linked to more positive mental health (36), and the physical activity inherent in AT may contribute to reduced risk for future depression (37). Also, active commuting through natural environments in particular has been linked to improved mental well-being, suggesting the importance of protecting and developing these qualities in communities (38).

Overall, the health benefits of AT to individuals can vastly outweigh the risks—one study estimated the benefits of cycling to be nine times greater than the risks of that activity relative to car driving for individuals shifting their mode of travel (39). To reduce injury risks to those using bikes, walking and otherwise engaging in AT, public policies that incentivize development of compact communities and AT infrastructure must also ensure safety. Edmonton's Vision Zero strategy indicates some of the policies and practices that can help with this goal, including 40 km/hour (from 50 km/h) default speed limits on residential roads and other high pedestrian areas (40). Active Neighbourhoods Canada emphasizes additional enhancements and qualities that support safe AT, including good exterior lighting on pathways, safe and universally accessible pedestrian crossings, and street design measures that calm traffic (41).

Economy

Compact neighbourhoods with mixed land-uses and safe, attractive AT infrastructure can benefit local economies. The Centre for Active Living recently synthesized research showing that cyclists and pedestrians stop more often than drivers and are more likely to spend money at local destinations, and that improved sidewalks and other AT infrastructure can benefit retailers economically and are well supported by local merchants (42).

Land use patterns that have favored automobile travel over several decades have brought chronic fiscal challenges. Municipalities face widening gaps between their revenues and the costs of building, expanding and maintaining roads and public transit service and providing municipal services to all areas. For example, if urban sprawl in Calgary continues, the City will need almost \$9 billion (in 2009 dollars) in additional revenue over the next 60 years to pay for roads beyond what a more compact city would need (43).

There are many public policy options available to municipalities to increase AT, reduce private motor vehicle use, promote more compact development and balance the costs of maintaining transportation infrastructure with municipal revenues. At the municipal level, these include well-structured road user fees, parking fees and limits, property tax regimes and development charges indexed to the true long term costs of infrastructure maintenance (44). Others urge bolder measures, given the gravity of the situation: moratoriums on construction and reconstruction of urban expressways, and significant limitations on additional, auto-dependent suburban sprawl developments (45). Policy instruments are available to the provincial government as well. The Province can support municipal initiatives to create conditions for AT by funding partnerships for infrastructure construction, and setting standards and regulations for transportation (e.g., in terms of emissions, and ensuring AT options). Financially incentivizing compact development is another strategy, for example by working with municipalities to use development charges as a means to meet AT policy objectives (46).

At the household level, those who use AT spend less money on car fuel, maintenance and insurance. Further, AT in a well-designed community with shorter distances between daily destinations such as work can mean that efficient, healthy transportation becomes affordable for those with lower incomes. In our current system, many low-income Albertans are unable to afford and maintain a reliable motor vehicle, pricing them out of what has become the most efficient transportation in the province. US research has shown that about 80% of those who live without a car do so because of economic or physical constraints, not out of choice (47). According to the Canadian Automobile Association's car cost calculator, operating a car in Alberta costs between about \$8,500 and \$13,000 per year inclusive of depreciation

(48). Finally, AT may support increased worker productivity, and lower rates of absenteeism and lost productivity from traffic congestion—something of potential interest to employers (49-51).

Environment

Significantly reducing emissions of climate-altering greenhouse gases (GHGs) is a critical goal of AT and of the community design practices and public policies that support AT. Shifting travel to non-motorized modes can provide relatively large pollution and GHG reduction benefits because it is the more polluting short, urban trips that are displaced. For each 1% of automobile travel displaced by walking and cycling, motor vehicle air pollution emissions have been estimated to drop 2-4% (52). Even policy initiatives such as extra taxation on personal (not work) vehicle size could help; pickup trucks emit about five times the GHGs of compact cars, and in Alberta nearly 90% of spending on new vehicles in the first half of 2019 went to trucks, vans and SUVs, compared to 80% nationwide (53, 43). Examples of municipal and provincial policies that can bring about lower emissions include those that enabled Vancouver to achieve a per capita carbon footprint of about 50% less than Toronto, Montreal and even Portland: green building policies, no-idling policies, a transportation plan focused on increasing low-emissions public transit and AT options, community design policies that promote mixed-use and density and support for electric vehicles and local utilities that draw on renewable energy (54).

Equity

As with many major health outcomes, chronic diseases and injuries associated with motorized transportation follow an income or social gradient: those who live in poorer neighbourhoods and have lower incomes suffer more harm from our current transportation system (55). There is also evidence that refugee and immigrant youth experience injury from motor vehicle incidents at a higher rate than non-newcomer youth in Canada (56). The Active Neighbourhoods Canada team in Calgary explored the relationship between income and collisions involving pedestrians and initial results suggest disproportionate harm in lower-income neighbourhoods in Calgary (57). At a minimum, dropping residential speed limits from 50 km/h to 30 km/h could reduce serious injury and fatalities. Airdrie has had 30 km/h speed limits in most neighbourhoods for nearly 40 years, and Edmonton and Calgary are in the process of reducing default and residential speed limits.

Achieving equity in travel and mobility also means dealing with socially and economically produced inequalities in access to safe, efficient and healthy ways of getting around. “Drive till you qualify” is an expression in the real estate industry referring to the progressive drop in home prices as one gets farther from a town or city centre. This effect of real estate pricing means those without means to afford housing in a compact, more central neighbourhood with good AT supports can be saddled with the significant transportation costs of owning one or two vehicles. Private automobiles are expensive to own and operate, as noted above, and long commutes sap time and energy for home life and other activities.

Developing public transit and associated AT through greater investment in transit-oriented development, with housing, businesses and other amenities and services located close to train and bus hubs, can increase local property values and help shift travel mode share to AT; but gentrification may drive out lower-income residents (58, 59). Proactive local government and supportive public policy provincially can prevent this from happening, while creating a supportive context for AT. When planning and regulating transit-oriented development, a range of policy options can help ensure development *without* displacement of lower income residents. These include rent controls, just cause eviction ordinances, and regulation of short-term rentals (60). Finally, key to employing better AT infrastructure and related community design elements as a means of increasing travel equity is to give priority to lower-income or underserved neighbourhoods (41).

Considerations

There are overlapping challenges and opportunities in Alberta for policy changes that support equitable development of compact communities with mixed land-uses, development and maintenance of AT infrastructure, prevention of induced

demand for automobile travel and ultimately achievement of a carbon-neutral mix of travel patterns. Several considerations relevant to expanding AT through public policy interventions in Alberta include:

Public and Policy Influencer Support

Survey data suggest that demand and support for AT policies is high among both the general public and policy influencers in Alberta, especially for interventions that facilitate AT by children to school. Rural support is comparable to that of urban residents, and appears durable over time. Current support among policy influencers is strong, according to these data, but may be less universal for mandating AT improvements as part of upgrades to other transportation infrastructure (61). Even so, survey data reported by the Canadian Fitness & Lifestyle Research Institute suggest that one-quarter of municipalities in western provinces with at least 10,000 residents have policies requiring development of safe AT infrastructure when existing communities are retrofitted (62). Continuing to build support for AT as an intervention that can help save money in the short, medium and long term will be important, as will shedding light on the full costs, and the payers of the costs, incurred from initiatives that induce demand for motorized travel and perpetuate low-density development patterns.

New Developments

In February of 2020, the federal government announced its intention to develop a national Active Transportation Strategy, the first of its kind in Canada. Many organizations concerned with AT issues have urged this initiative. To the extent that federal support, visibility, funding and coordination can assist local and provincial work related to public policy, engagement with the strategy's development and implementation could be valuable. National, provincial and local organizations such as Active Neighbourhoods Canada, The Centre for Active Living, The Alberta Recreation and Parks Association, EverActive Schools and Sustainable Calgary continue to produce resources, develop relationships with communities, launch projects and propose and advocate for policies needed to expand and normalize AT.

Pandemic Realities

COVID-19 planning and resource reallocations have affected some municipal initiatives to expand AT. For example, presentation of Edmonton's new Bike Plan to the Urban Planning Committee was postponed, and changes were made to the frequency and operation days and times of public transit. At the same time, several cities across Canada, including Calgary and Edmonton, have created temporary bicycle and/or pedestrian lanes to provide an alternative to public transit (where physical distancing can be challenging) and to accommodate increased capacity in outdoor spaces. The pandemic has also revealed more sharply the social, ecological and economic vulnerabilities—especially for those already struggling—of our reliance on the fossil fuel industry. Communities built around diverse, localized economies, where AT options are the norm, present a compelling alternative.

Additional Equity Concerns

Several equity issues were noted above: social gradients in harm from our motorized transportation system; unequal access to supportive environments for AT because of land and housing price dynamics; and the potentially negative impacts of transit-oriented development for those unable to afford housing in newly up-valued neighbourhoods. These are only some of the issues, however. In policy advocacy efforts, attention is needed to the mobility needs of those who may be excluded from even well-intentioned AT initiatives. This might include those with specific physical mobility challenges, where universal design principles are especially relevant; immigrant and refugee youth and seniors; and those in Indigenous communities where fiscal and other systemic racism by settler governments has compromised living conditions and mobility options.

Policy initiatives that support AT may be helped by partnerships with communities that can *demonstrate* what is possible, thereby increasing interest in and demand for greater investments in AT. A development path is urgently needed that supplants private motorized vehicle travel as the norm, and that builds on the close connection between growth in AT, chronic disease reduction, economic vitality, action on climate change and environmental health and equity.

APCCP Priorities for Action

- Collaborate with stakeholders in Alberta to build support and awareness for AT policy and infrastructure
- Work with Alberta communities to build local capacity for AT
- Advocate for a comprehensive, provincial Active Transportation Strategy for Alberta
- Support national efforts to develop and implement a National Active Transportation Strategy

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