

Scaling up active transportation across North America:  
A comparative content analysis of policies through a social equity  
framework

**Aryana Soliz**

School of Urban Planning

McGill University

Email: [aryana.soliz@mcgill.ca](mailto:aryana.soliz@mcgill.ca)

orcid: 0000-0001-5172-4947

Twitter: [@AryanaSoliz](https://twitter.com/AryanaSoliz)

**Thiago Carvalho dos Reis Silveira**

School of Urban Planning

McGill University

Email: [thiago.carvalhodosreissilveira@mail.mcgill.ca](mailto:thiago.carvalhodosreissilveira@mail.mcgill.ca)

orcid: 0000-0001-5289-1747

Twitter: [@thiagocrs22](https://twitter.com/thiagocrs22)

**Claudio Sarmiento-Casas**

Department of Geography and Planning

University of Toronto

Email: [c.sarmiento.casas@mail.utoronto.ca](mailto:c.sarmiento.casas@mail.utoronto.ca)

Twitter: [@sarmiento\\_casas](https://twitter.com/sarmiento_casas)

**Jorge Sánchez-Rodríguez**

Universidad Abierta y a Distancia de México

Email: [ciclistasdeaguascalientes@gmail.com](mailto:ciclistasdeaguascalientes@gmail.com)

**Ahmed El-Geneidy**

McGill University

Email: [ahmed.elgeneidy@mcgill.ca](mailto:ahmed.elgeneidy@mcgill.ca)

orcid: 0000-0002-0942-4016

Twitter: [@ahmedelgeneidy](https://twitter.com/ahmedelgeneidy)

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## Abstract

Federal governments across North America are increasingly working to scale up active-transport investments to harmonize policy efforts aimed at addressing intersecting urban, environmental, and public-health problems. While such policies promise to provide increased support for cycling, walking, and other active mobilities, the extent to which central-government interventions can foster wide-reaching and equitable infrastructure transitions remains an open question. This paper offers a comparison of recent federal policy initiatives aimed at supporting the development of active-transport facilities across Canada, the United States, and Mexico. Using a comparative content-analysis approach, we analyse federal active-transport strategies in terms of policy development, goals, instruments, as well as social-equity and road-safety considerations. Findings indicate that policy instruments, development resources, and social-equity mechanisms vary considerably between the three countries. While Canada's recent policies offer targeted project funding for active transport, its national road-safety vision lacks attention to social equity concerns. The United States' policies emphasize large-scale infrastructure transitions, but risk deprioritizing active-transport projects within wider investments. Mexico's new mobility and road safety law lacks infrastructure funding but leads in its human-rights approach. While these variances can be attributed to specific differences between national contexts, we posit that they also provide insights into shared challenges and opportunities in federal efforts aimed at providing comprehensive support for active-transport systems. Through a systematic content analysis of recent policies, this paper aims to provide an exploratory assessment of how federal governments are mobilizing diverse approaches to active-transport policymaking and to contribute to multi-scalar theorizing on transport equity and mobility justice.

*Keywords:* Active travel; policy analysis; transport planning; equity; Canada; United States; Mexico

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### Highlights:

- Federal active-transport planning is a nascent policy field meriting comparison
- Canada offers active-transport funding but lacks equity focus in road-safety vision
- The U.S. offers broad-based funding, but risks deprioritizing active transport
- Mexico lacks infrastructure funding but leads in human-rights approach
- Federal governments continue to prioritize funding for motor-vehicle infrastructure.

## 1. Introduction

Policymakers across the globe are experimenting with myriad strategies to facilitate societal transitions towards sustainable transport options, especially active modes (i.e., walking, cycling, and other active mobilities) (1; 2). While the need for comprehensive action is increasingly recognized when it comes to active-transport planning, the majority of policy initiatives in this field have been developed at the municipal level across North American contexts, which can be related to the local and small-scale nature of most active-travel interventions (3-6). Active transport is increasingly becoming the focus of multilevel policy efforts, partly because of the negative externalities of car-oriented infrastructure, and also stemming from a recognition that fundamental travel-behaviour changes encouraging alternative modes will be essential to addressing environmental and public-health issues of national and international concern (7; 8). Indeed, North American federal governments have recently started proposing intensive strategies to encourage active travel as a part of wider public health and climate-mitigation policies. While such policy

initiatives promise to provide increased support for active-transport, the extent to which central-government interventions can foster wide-reaching infrastructure transitions remains an open question. Whilst some researchers have provided comparative analyses of federal active-transport strategies across European contexts (9; 10), discussions of federal approaches to active-travel promotion remain scarce in the North American context (Canada, the United States, and Mexico). Scholars continue to show that multilevel governance arrangements—including the various initiatives aimed at restructuring federal-municipal relations and influencing urban development—remains a neglected research area despite the growing interest of federal governments in local infrastructure investments (11; 12).

In this paper, we argue that federal active-transport planning is a nascent policy field meriting greater comparative analysis. The relatively recent scaling up of strategies by North American policymakers provides an opportunity to better understand how federal governments are leveraging various policy approaches to expand and mainstream active-transport planning. Considering that researchers have revealed widespread inequities in active-transport infrastructure (4; 6; 13), these federal efforts require attention to diverse social-equity concerns, including those relating to income, race and racialization, Indigeneity, gender, sexual orientation, age, and (dis)ability, as well as the need for more inclusive and just decision-making processes.

We recognize the difficulties of comparing Canada, the U.S., and Mexico considering that these countries possess significantly different road-safety challenges, levels of income inequality, and modal shares. However, these governments share similar challenges in working to address the embeddedness of automobility in urban transport and land-use planning across North American cities (14-16). While the continent is often defined in terms of an economic trade bloc, the North American Free Trade Agreement (NAFTA, 1994-2020) and the United States-Mexico-Canada Agreement (USMCA, 2020-present) include environmental and transportation-infrastructure provisions (17), providing an important basis for cross-national comparison. The governments of Canada, the United States, and Mexico further share recent initiatives aimed at fostering sustainable-transport transitions, making an intercontinental focus particularly timely. These initiatives include a federal active-transport strategy and fund (2021) in Canada, an infrastructure bill (2021) and transport strategic plan (2022) in the United States, as well as a constitutional amendment (2020) and mobility law (2022) in Mexico.<sup>1</sup> Rather than providing a comprehensive analysis of every aspect of these policies, this paper provides an initial comparison of their active-transport components. Specifically, this research asks: What can we learn from comparing federal active-transport policies across North America in terms of policy development, goals, instruments, social-equity objectives, and road-safety considerations? Through a systematic content analysis of recent policies, this paper aims to provide an exploratory assessment of how federal governments are mobilizing particular approaches to active-transport policymaking, to understand the extent to which these policies engage with different aspects of social equity, and to contribute to multi-scalar theorizing on mobility justice.

## 2. Literature Review

Investing in active transport is increasingly recognized by policymakers as an essential strategy for supporting a variety of environmental and public health outcomes (2). Studies demonstrate that rapid-motorization processes over the past decades have contributed significantly to anthropogenic climate change (38; 39), whereas increases in active-travel shares have been found to significantly

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<sup>1</sup> The cited policy names and selected policy content from Mexico have been translated by the authors. The full names of cited Mexican laws are provided in their original form in Table 2 and in the reference list. We use acronyms in Spanish when referring to laws from Mexico in the text based on the language in which these laws were published (with translations for each policy provided in English in the text and in Table 2). All other Mexican policies (such as soft/knowledge policies) have been translated by the authors in English (with the full names provided in Spanish in the reference list).

decrease mobility-related lifecycle CO<sup>2</sup> emissions (7). Active travel has shown to improve several vital public-health objectives, such as reducing levels of cardiac disease, diabetes, cancer, and respiratory illness (18). These benefits have been reemphasized through the COVID-19 pandemic, considering that active travel offers an effective means transport while allowing travelers to maintain physical distance (2; 7; 19). The convergence of the climate emergency with various public-health challenges—including the COVID-19 pandemic—has called into question the impetus to build car-centric transport systems, while underscoring the need for active transport alternatives (2; 40).

Notwithstanding general policy interest in supporting alternative modes, researchers have called for nuanced approaches to active-transport planning. For example while active-transport interventions have often been limited to facilities designed primarily for bicycling and walking, community groups and scholars are increasingly advocating for more inclusive infrastructure for active modes such as wheel-chairing, skateboarding, tricycling, work-cycling, roller-blading, push-biking, pram-strolling, and mobility-scootering (1; 20). Considering the ways that automobility has become entrenched in North American contexts, active-transport policies have at times become controversial, particularly when road space is reallocated away from cars (14). At the same time, growing evidence related to disparities in travel patterns, access to appropriate infrastructure, and exposure to environmental burdens suggests that certain social groups experience significantly higher levels of mobility injustice (21; 22). These concerns make active transport planning a ‘wicked problem’ (23), requiring careful policy thinking across multiple scales. Thus, this literature review provides an initial discussion of opportunities and challenges in federal active-transport planning while outlining a framework for analyzing federal interventions in line with social-equity and road-safety considerations.

### *2.1. The emergence of federal policies supporting active travel*

While active-transport policies can be operationalized across multiple scales, much of the decision making has traditionally happened at the municipal level in North American contexts (3-6). The local provision of active-transport infrastructure can be related to public-finance principles, which generally direct funding for public services through the level of government that best encompasses the distribution of expected benefits from the service in question (i.e., beneficiary pays) (24). Transport scholars, however, are calling for greater attention to issues of multi-level governance—how policymaking happens across various jurisdictional scales—including the coordination (or lack thereof) between local, regional, federal, or supranational governments (12). This research highlights the increased prioritization of public-transport services from higher levels of government based on the recognition that urban transport issues—including the negative environmental and public-health externalities of mass car use—present problems of national and international concern (12). The recent scaling up of active transport policies also raises questions relating to issues of multi-level governance, particularly across North American contexts. Although federal policy makers have widely espoused the benefits of cycling and walking, they have been critiqued for lacking comprehensive guidelines and funding mechanisms to support meaningful infrastructure transitions, leaving active travellers to contend with patchwork municipal and regional standards (4; 6).

Research on international best practices has shown that coordinated, multi-jurisdictional actions are an important component to making active travel safe and accessible for a broad spectrum of the population. Studies from the Netherlands, Germany, and Denmark show how central-government involvement in cycling promotion emerged in the 1970s and 1980s, helping municipal and regional policymakers harmonize design guidelines, while providing support in terms of project research, funding, and evaluation (9). Along with support from the European

Union for transnational and cross-border projects, these countries have managed to substantially increase the reach and connectivity of active-travel facilities which, in addition to wider traffic calming and demand-management strategies, has helped to make cycling a mainstream mode of transport amongst Dutch, German, and Danish citizens (9). Notwithstanding these advancements, critical researchers have discussed the need for careful attention to ongoing inequities in active-transport infrastructure, including in the Netherlands (25), despite this country's reputation as a world leader cycling policy.

Research from other international contexts further demonstrate that the mere presence of federal policies supporting active travel is not an automatic panacea to transport problems. A study from Australia found that while the country's 2011-2016 National Cycling Strategy aimed to double cycling shares, cycling participation actually decreased in this period, a trend that some have attributed to safety concerns and a lack of adequate infrastructure for active travel (26). A recent study on the UK's active-travel strategy found that the central government's top-down supervisory approach, rapid-implementation expectations, and inconsistent guidelines increased tensions with local authorities in the development of low-traffic neighborhoods (27). These issues raise the stakes for understanding challenges in federal active-transport planning, especially across North America, where private-car travel remains entrenched as the dominant transport regime and where social inequities are a major concern (3-6).

## *2.2. Towards more equitable and just active-transport systems*

Equity in transport generally refers to the fair distribution of benefits and harms from transport systems across society. While planning for transport equity can involve many considerations; distributive approaches provide a crucial starting point, including consideration of how different benefits (e.g., access to appropriate infrastructure) or harms (e.g., exposure to pollution) are distributed, the social groups that are affected by such distributions, and the extent to which the distribution of harms and benefits can be considered fair (28).

Notwithstanding the increased policy momentum in support of active travel, evidence across a variety of North American cities has revealed widespread infrastructural inequities, with many underserved groups lacking access to safe, well-connected, and convenient infrastructure for active travel (4; 6; 13). For example, researchers have documented numerous disparities in active transport within low-income neighbourhoods, including issues of unsupportive infrastructure (29), substandard air quality (30), and safety conditions (21). Besides safety concerns common to all pedestrian and cyclists, people of colour and recent immigrants face the additional challenges of systemic racism and xenophobia (31). Especially in the US, the number of citations for pedestrians and cyclists are disproportionately higher among people of colour, which scholars have analysed in relation to racial profiling practices (21). Researchers have further documented higher injury and fatality rates for people of colour (32), particularly black women (30), due to reduced access to safe infrastructure. Given that immigrant and communities of colour often overlap with low-income communities, researchers have called for planning practices to be aware of how residents of underserved neighbourhoods have been excluded from decision-making processes (21). Indigenous scholars have further highlighted how these discussions require recognition of the ways that settler colonialism has, and continues to, structure systemic mobility injustices and how Indigenous collective practices—including both walking and staying in place—are vital exercises of Indigenous mobility sovereignty (33; 34). Thus, promoting equity in active transport cannot be

possible without supporting “the ability of Indigenous peoples to choose when, where, how, and for what purposes to engage in movement (or not)” (34). Environmental justice scholars have also documented long histories of civil-rights movements working to dismantle transportation racism (35).

Scholars have also shown how transport disparities intersect with questions of gender and sexual orientation. For example, because of gender-based income inequalities and family care responsibilities, women’s mobilities often encompass multiple trips and transport modes (36), while relying more heavily on walking as a means of transport (37). At the same time, scholars have pointed to a variety of deterrents to cycling for women and girls, including issues of unsafe roads and aggressive drivers, the increased risk of harassment or assault, especially when alone, and increased fear of injury due to responsibilities for others (38). Members of the LGBTQ+ community—including those identifying as lesbian, gay, bisexual, transgender, queer, pansexual, intersex, asexual, two-spirited, and gender non-conforming—have also been found to experience frequent discrimination and street harassment (39). Despite public perceptions that society has become more welcoming to people identifying as LGBTQ+, studies show that victimization disparities may actually be widening, especially for youth (40). While embedded in broader socio-cultural systems that normalize discrimination and harassment, inequities in access to safe and supportive transport options for sexual and gender minorities are particularly severe (41), including inequities in active transport (42). These insights show the need to move beyond tokenistic incorporation of gender and LGBTQ+ concerns in transport policy, towards more careful and intersectional understandings (43; 44).

Barriers in the urban environment can also be a strong deterrent for the engagement of older adults and children in active travel. In North America, researchers have found that older adults are more likely to become dependent on car travel as mobility levels (45) and social norms surrounding the aging process influence perceived mobility (46), leading to social isolation with great impacts on health and wellbeing (47). Given that road collisions are the leading cause of death for children and young adults globally (48), road safety has become a crucial topic in discussions of children’s rights (49). In this vein, researchers have shown that supportive environments for walking and cycling have a positive impact on several social, health, and quality-of-life outcomes for both older adults and children (50).

Researchers have further found that car-centric transport systems marked by low street connectivity and longer walking distances create numerous obstacles for people with disabilities, reducing opportunities for engaging in activities outside of their homes (51) and increasing the risk of road-traffic injuries (52). Moreover, active-transport policies often disregard the needs of people with disabilities while mistaking disability for inability (53; 54). Social scientists have worked to bring greater attention to the social model of disability, which moves beyond bio-medical understandings of disability to identify how systemic barriers, social exclusion, and discriminatory attitudes create widespread *disabling environments* (53). Critical disability scholars have shown that universal accessibility policies have led to some positive changes; however, more comprehensive anti-ableist policies are needed to address continued issues of inaccessibility in the built environment (54) and to work towards disability-inclusive sustainable-development plans (55). Given these factors, researchers have called for an awareness of how active-transport infrastructure can impact social groups differently and to work towards a more equitable

distribution of transport benefits (56; 57). Although it is pertinent to examine social inequities separately, it is also crucial to acknowledge how power asymmetries often overlap, requiring attention to intersectional inequalities (57).

In addition to considerations of transport equity, scholars have underscored the importance of environmental-justice objectives that work to transform the structures that lead to the inequitable distribution of transport harms and benefits and that broaden access to decision-making power (21; 22). Through the lens of mobility justice, the politics of transport development requires a broad focus to encompass the roles of governance regimes in producing uneven mobilities as well as the need to move beyond superficial forms of community consultation towards the meaningful inclusion of diverse stakeholders in decision-making processes (or *procedural justice*) and forms of knowledge (also conceptualized as *epistemic justice*) (57). This approach opens an array of questions ranging from who is included and excluded from exercising mobility rights, to how political-economic arrangements produce uneven (im)mobilities across multiple scales (57). These considerations provide an important basis for examining how federal governments are scaling up active-transport policies, and the extent which they are incorporating transport equity and justice concerns in this process.

### 2.3 *Road safety & inclusive design*

As reflected in the previous section, considerations of road safety and inclusive design are crucial to diverse understandings of transport equity and justice. From a health-equity perspective, the implementation of comprehensive traffic safety measures to protect active travellers from road injuries and death should not be seen as supplementary, but should rather be understood as fundamental to urban and transport planning (28). While some progress in road safety has been made over the past decades, greater attention is needed to ongoing transport inequities and the silent pandemic of active-transport fatalities (58). Although vision zero is increasingly being embraced by policymakers across various levels of government, scholars are advocating for moving beyond indefinite end goals and towards more substantive aspects of vision zero—especially shifting the responsibility for safety from underserved road users to those who build and govern transport systems (58; 59).

Considerations of physical safety in active-transport planning refer primarily to the presence and quality of infrastructure provisions, including the need for well-connected and appropriately designed networks for pedestrians, cyclists, and other active modes (3; 6). In response to these concerns, approaches such as Planning for All Ages and Abilities and Complete Streets (centred on various land-use and design strategies to provide active-transport options for people of all ages and abilities) have gained momentum (3; 60). Specifically, interventions such as traffic calming and low-traffic neighbourhoods (61; 62), improved crossings (58; 63), sidewalk widening (60; 64), and road-diets (65) have been proposed to improve road-safety outcomes. Discussions on federal statutory speeds limits (66) and highway removal projects (67; 68) are also being reinvigorated to attend to road safety disparities.

In addition to the modal inequities experienced by all active travellers in car-dominated cities, safety and personal-security disparities are refracted through inequities relating to social class, racialization, gender, sexual orientation, age, (dis)ability, among other intersectional power

relations. Along with physical road-safety issues, personal security concerns such as the threat of attack, harassment, theft, and assault intensify transport inequities and are cited as a significant deterrents to active-transport engagement for women, children, and older adults (3). Some transport scholars have proposed additional policing to address these issues (69); however, other have raised concerns about the potential relationship between increased police enforcement, racial profiling, and a variety of transport injustices (31; 57). The provision of improved amenities such as increased lighting, mixed-use zoning, intermodal options (to support walk-bike-bus interactions), additional bus stops, and more frequent transit services (especially at night) have been proposed as options to address some personal-security and safety issues (70), however partial. Thus, community groups and mobility justice scholars have advocated for inclusive approaches to transport-planning and decision-making to allow for the development of locally relevant, community-based solutions to improving transport safety and security (31; 44; 57).

### 3. National Contexts

Undoubtedly, North America transport systems are far from homogeneous, with substantial variations between different national, regional, and local contexts. While considering that significant differences often exist between specific towns and cities within given state territories, the comparison of national trends can still provide an important reference point for analysing federal policy contexts. Table 1 provides relevant population (71), modal-share (72-74), road-safety (75-77), income (78-82), and governance (83) data across the three countries, which can help to contextualize each of the federal government’s respective transport visions, social-equity challenges, and political constraints. Notable differences between the three national contexts include the substantially higher levels of car use in the United States and Canada, compared to the overall higher public-transport, walking, and cycling shares in Mexico. While walking and cycling rates are low and on a downward trend in the United States (73), it is worth noting that a lack of supportive infrastructure—and road-safety concerns are often discussed as deterrents to active-transport adoption across all three countries (3; 5; 84). Moreover, low active travel mode shares and high road fatalities, as displayed in Table 1, often serve as justification for the development of new policy targets.

Lastly, both similarities and differences can be observed regarding governance systems and treaties, which could have variable impacts on federal policymaking processes. For example, all countries in North America adopted constitutional federative systems, where both federal and regional governments share power; therefore, states (or provinces) also have jurisdiction over transportation and can influence related policies. Further, issues of participation in international human-rights treaties (or lack thereof) could potentially have impacts on the timeframe and extent to which decision makers have developed active-transport policies at the federal level, particularly as relating to issues of transport equity.

**Table 1:**  
**Context Table**

	CANADA	UNITED STATES	MEXICO
<b>Population (2022)</b>	38,929,902	333,164,808	130,262,220



<b>Modal Shares (work trips)</b>	<i>(2016)</i>	<i>(2019)</i>	<i>(2020)</i>
Car	79.5%	84.8%	33.1%
Cycling	1.4%	0.5%	4.9%
Walking	5.5%	2.6%	27.4%
Public Transit	12.4%	5.0%	43.3%
Worked from home	-	5.7%	-
Other	1.2%	1.4%	1.9%
<b>Road Safety Data (per 100,000)</b>	<i>(2019)</i>	<i>(2019)</i>	<i>(2020)</i>
Total road fatalities	4.5	10.9	11.3
Pedestrian fatalities	0.8	1.9	2.4
Cyclist fatalities	0.1	0.3	0.1
Motorcyclist fatalities	0.5	1.5	1.5
Car fatalities	3.0	8.7	1.8
Other	0.2	0.1	0.0
Unknown/unspecified	-	-	5.5
<b>Income Data</b>	<i>(2020)</i>	<i>(2020)</i>	<i>(2020)</i>
Median income	USD 38,487	USD 46,625	USD 6,325
Population below poverty line	6.4%	11.4%	41.9%
Gini coefficient	33.3	41.5	45.4
<b>Governance</b>			
System of Governance	Constitutional Monarchy	Presidential	Presidential
System of Internal Structure	Federation	Federation	Federation
<b>International Human Rights Treaties*</b>			
CEDAW	Ratified	Signed	Ratified
CERD	Ratified	Ratified	Ratified
CESCR	Ratified	Signed	Ratified
CRC	Ratified	Signed	Ratified
CRPD	Ratified	Signed	Ratified

\* CEDAW - Convention on the Elimination of All Forms of Discrimination against Women; CERD - International Convention on the Elimination of All Forms of Racial Discrimination; CESCR - International Covenant on Economic, Social and Cultural Rights; CRC - Convention on the Rights of the Child; CRPD - Convention on the Rights of Persons with Disabilities

## 4. Methodology

Comparative policy analysis refers to the systematic study of policymaking across different jurisdictions to examine that processes that underlie similarities and differences in policy decisions (86). Comparative policy analyses focus on at least one aspect of policymaking across distinct contexts, including *policy processes* (e.g., comparisons of how decision makers come to identify problems and formulate policy solutions), *policy content* (e.g., variations in policy instruments and courses of action chosen by governments) (87), *policy change* (e.g., comparisons that trace the evolution of policies over a given range of time) (88), and *policy outcomes* (e.g., differences in impacts and/or unintended consequences of policy implementation) (89). As federal active-transport planning is largely in its infancy in the North American context, it is arguably too early to evaluate national policy outcomes, considering that these results will be determined as the policies are operationalized across a broader timeframe. Thus, this study focuses primarily on federal *policy processes* and *content*, particularly as relating to social equity considerations, as a means of examining policy developments and providing a baseline for future research examining

the evolution of central-government involvement in active transport.

While statistical analyses and forecasting techniques still largely dominate in transport research, scholars are increasingly recognizing the need for more qualitative assessments of barriers and opportunities to sustainable transitions (8; 90), including the importance of providing more comprehensive comparisons of policy content (3; 6). This study builds on these understandings, recognizing that a systematic comparison of policy responses can be used to draw inferences about how different governments understand and work to address specific policy problems, which can serve a foundation for contributing to theory building (87) and can help transport practice. Comparative content analyses provide researchers with practice-ready insights for helping policymakers faced with complex problems to draw lessons from other jurisdictions and their respective policy approaches (86).

#### 4.1. Policy processes

Researchers often trace policy processes through a number of conceptual phases, including *framing the problem, agenda-setting, policy formulation, decision-making, implementation, and evaluation* (87). This process allows for an assessment of how policy problems are framed and mobilized within governance arenas as well as the extent to which diverse stakeholders are involved or excluded at different policymaking stages. For the purpose of this study, we focus mainly on *policy formulation*, while integrating information on *stakeholder involvement* whenever possible. We traced the evolution of federal policymaking through reviews of the secondary literature as well as analysis of all relevant policy documents across the three national case sites.

#### 4.2. Policy content

Drawing from the fundamental elements addressed in policy-content methodology, this study compares federal active-transport strategies primarily in terms of *goals, instruments, and social-equity components* (87; 91). *Policy goals* refer to both overarching normative assertions about desired outcomes as well as more precise objectives pertaining to a specific problem. *Instruments* refer to specific tools used to achieve policy objectives, including laws, programmes, and funding mechanisms. Sustainable transport policies can be described in terms of *physical instruments* (e.g., land-use policies and infrastructure), *soft instruments* (e.g., information and educational campaigns), and *knowledge instruments* (e.g., research and development) (92). Given that social equity considerations are critical aspects of policy content (87), we included an analysis of the *equity components* outlined in the literature review as essential elements of comparative analysis for transport planning.

#### 4.3 Selection of policy initiatives for comparative content analysis

Based on our framework for analysing policy processes and content (outlined above), we compared federal sustainable transport policies and related strategies from Canada, the United States, and Mexico. We included all federal-government policy initiatives which were available (to the best of our knowledge) as of October 2022 that directly pertain to active transport. Policy documents were selected using the following criteria:

- Mention of active transport (cycling, walking, and/or other forms of active travel).
- Formulation of the policy initiative at the federal-government level.

This process resulted in the identification of 37 policy documents across Canada (n=11), the U.S. (n=12), and Mexico (n=14). For the content analysis, the selected policies were then subject

to a screening process to establish whether equity was at all discussed. Policies that were deemed to have engaged with social equity were subject to further review, whereas policies that did not address these concerns were excluded from further content analysis. Building on Doran et al.'s (3) analysis of cycling equity, our screening criteria included the following:

- Consideration of equity, inclusion, justice, or fairness in projects, objectives, or priorities.

To focus the analysis on current and ongoing policy strategies, a set of exclusion criteria was applied:

- Policies regarding short-term or temporary projects.
- Policies that are no longer in effect.
- Policies that only marginally include active travel within their scope.

Of the 37 of policies preliminarily selected for review, 23 were excluded from further evaluation, leaving four from Canada, four from the United States, and six from Mexico. The 14 remaining policies across the three federal contexts were then subject to a more in-depth content analysis to examine how different aspects of social equity were being discussed. Table 2 includes a list of policies that were preliminarily selected for review and whether they were selected for further content analysis.

**Table 2**  
Federal active transport initiatives preliminarily selected for review.

Initiative	Type of policy instrument	Included in content analysis?
<b>Canada</b>		
National Active Transportation Strategy & Fund (2021)	Soft/Physical	Yes
Natural Infrastructure Fund (2022)	Physical	Yes
Investing in Canada Infrastructure Plan and Program (2015)	Physical	Yes
Road Safety Vision (2001, 2010), Road Safety Strategy 2025 (2016)	Soft/Knowledge	Yes
Canada Healthy Communities Initiative (2020)	Physical	No
Canada Community Building Fund (formally the gas-tax fund) (2021)	Physical	No
Disaster Mitigation & Adaptation Fund (2018)	Physical	No
The Canadian Bikeway Comfort & Safety Classification System (2020)	Soft/Knowledge	No
Health Reports: Cycling in Canada (2017)	Knowledge	No
Safety Measures for Cyclists & Pedestrians Around Heavy Vehicles (2018)	Soft/Knowledge	No
Road Safety in Canada (2011)	Knowledge	No
<b>United States</b>		
Infrastructure Investment and Jobs Act (2021)	Physical	Yes
U.S. DOT Strategic Plan (2022)	Soft/Knowledge	Yes
U.S. DOT Equity Action Plan (2021)	Soft/Knowledge	Yes
National Roadway Safety Strategy (2022)	Soft/Knowledge	Yes
Complete Streets Act (2021)	Physical	No
Strategic Agenda for pedestrian and bicycle transportation (2016)	Soft/Knowledge	No
Pursuing Equity in Pedestrian and Bicycle Planning (2016)	Soft/Knowledge	No
Guidebook for Developing Pedestrian & Bicycle Performance Measures (2016)	Soft/Knowledge	No
Action Plan to Increase Walking and Biking (2014)	Soft/Knowledge	No
Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (2011)	Soft/Knowledge	No
U.S. DOT Policy Statement on Bicycle & Pedestrian Accommodation Regulations & Recommendations (2010)	Soft/Knowledge	No
A Resident's Guide for Creating Safe & Walkable Communities (2008)	Knowledge	No
<b>Mexico</b>		
<i>Gobierno de México. DECRETO por el que se declara reformadas diversas disposiciones de la Constitución Política de los Estados Unidos Mexicanos, en materia de Movilidad y Seguridad Vial (Constitutional Amendment) (2020) ; Ley General de Movilidad y Seguridad Vial (LGMSV) (Mobility &amp; road-safety law) (2022)</i>	Cross-cutting/ Codification of rights	Yes
Cities for mobility: Best practices in Mexico (2019)	Soft/Knowledge	Yes
An integrated strategy for transforming Mexico's streets (2022)	Soft/Knowledge	Yes
4s for mobility in Mexico: Health, safety, sustainability & solidarity (2020)	Soft/Knowledge	Yes
RE ACTIVA MX (2021)/Guide for active mobility projects (2022)	Soft/Physical	Yes
Street Manual: Road design for Mexican cities (2019)	Soft/Knowledge	Yes
Vision zero & road safety: Implementation options for Mexico (2016)	Soft/Knowledge	No
National Road Safety Strategy 2011-2020 (2011)	Soft/Knowledge	No
Street Manual: Road design for Mexican cities (2019)	Soft/Knowledge	No
Basic guide on mobility studies in public-space projects (2022)	Soft/Knowledge	No
Proposal to improve crossing safety for vulnerable road users (2019)	Soft/Knowledge	No
Analysis of collisions involving vulnerable road users on federal highways (2015)	Knowledge	No
Model for the national registry of cycling infrastructure through a mobile-device app (2019)	Knowledge	No
Active mobility for a healthy environment (2021)	Knowledge	No

## 5. Analysis

A description of each of the three countries’ active-transport strategies is provided below, with particular attention to policy development, goals, and instruments. For the content analysis, we developed the following categories to assess the extent to which policies engaged with the different aspects of social equity discussed in the literature review:

- When we were not able to find any mention of a specific equity goal, we labelled this category as *not specified*.
- When policies briefly included an equity component or noted that it is currently under discussion, but lacked further recommendations, they were deemed to have *mentioned* a given concept.
- When policies provided additional promotion of a specific equity goal but lacked a targeted plan and/or institutional assignment for addressing this objective, they were deemed to have *encouraged* it.
- When policies provided tangible practices and/or targeted requirements for addressing these ideas, they were considered as having *mandated* a given subject area.

While past evaluations of active-transport plans have used the term “operationalized” (e.g., 3) in the place of “mandated,” it is arguably too early to examine the operationalization of federal active-transport policies in North America. Thus, we use the term “*mandated*” to identify the most tangible strategies that have *recently been developed* to address equity goals in federal active-transport planning. We suggest that the operationalization of these strategies be assessed in future studies on the wider implementation and outcomes of these federal policies. To summarize our comparison, a synthesis of results is presented in Table 3: Summary of Content Analysis.

**Table 3**  
Summary of Content Analysis

	CANADA	UNITED STATES	MEXICO
<b>Equity Considerations</b>			
Inclusion of low-income groups	Encouraged	Encouraged	Mentioned
Racial equity	Encouraged	Encouraged	Mentioned
Inclusion of Indigenous population	Mandated	Encouraged	Mentioned
Gender-based analysis	Encouraged	Mentioned	Encouraged
LGBTQ+ Inclusive	Encouraged	Mentioned	Mentioned
Inclusion of older adults	Encouraged	Mentioned	Mentioned
Child-friendly	Encouraged	Mentioned	Encouraged
Inclusion of people with disabilities	Encouraged	Mandated	Mentioned
Human Rights	Not specified	Encouraged	Mandated
<b>Safety &amp; Inclusive Design</b>			
Universal Design (AAA)/Complete Streets	Encouraged	Encouraged	Encouraged
Improved intersections/crossings	Encouraged	Encouraged	Encouraged
Sidewalk widening	Mentioned	Not specified	Encouraged

Road diets/narrowing	Encouraged	Encouraged	Mentioned
Highway removal	Not specified	Mentioned	Not specified
Traffic calming	Encouraged	Encouraged	Encouraged
Federal statutory speed limits	Not specified	Mentioned	Mandated
Inter-modality	Mentioned	Mentioned	Encouraged
Inclusive decision making & design	Mentioned	Encouraged	Encouraged
Inclusive implementation	Not specified	Not specified	Encouraged
Inclusive outreach & promotion	Not specified	Mentioned	Encouraged
Tactical urbanism	Not specified	Not specified	Encouraged
<b>Funding Mechanisms</b>			
Federal funding or assistance available?	Funding	Funding & loans	Technical assistance
Consideration of equity in projects & priorities	Encouraged	Encouraged	Not specified

### 5.1. Canada

While active transport has largely been considered a matter of municipal (and at time provincial) policymaking until quite recently, some federal interventions were initiated in Canada in the early 2000s following decades of civil-society advocacy (7). After a number of setbacks in the regulatory incorporation of safety technologies from the 1980s-1990s (attributed at least in part to lobbying from the automotive industry), policymakers worked to renew their national safety mission, including stricter seatbelt and impaired-driving rules as well as the development of the Canada Motor Vehicle Safety Standards (59). The Canadian Council of Motor Vehicle Administrators takes pride in Canada’s reputation as “one of the first countries in the world to adopt a national road safety strategy,” namely the road safety visions of 2001 and 2010, and measures the success of these strategies in line with a “10% decrease in fatalities and 16% decline in serious injuries” (98). Indeed, Canada’s Road Safety Strategy (RSS) 2025 (updated in 2016) maintains the long-term goal of “making Canada’s roads the safest in the world but combines this with the vision of Towards Zero”(98). This strategy conceptualises Vision Zero “not [as] a target to be achieved by a certain date,” but rather as “aspirational” (98). While active travel is not explicitly targeted in the main RSS 2025 document, cyclists and pedestrians are mentioned as “vulnerable road users,” and the strategy recommends a range of actions for promoting “safer road users, safer infrastructure and safer vehicles” (98) across multiple jurisdictions. These recommendations include a wide inventory of interventions (131) relating to universal design (e.g., accessible pedestrian signals), complete streets (e.g., grade-separated cycling paths and separated lanes), reduced motor-vehicle speeds (e.g., community safety zones and arterial traffic calming), improved intersections (e.g., crosswalk treatments and bicycle boxes), and road diets, among other safety interventions. That said, these strategies are, for the most part, *encouraged* rather than being mandated at the federal level. To the best of our knowledge, sidewalk widening is only briefly mentioned in relation to streetscaping, whereas highway removal is not specified in any of the reviewed policies. Notwithstanding an ongoing federal commitment to vision zero, motorization and traffic-fatality levels remain high across the country (as shown in table 1). Further, although RSS 2025 draws from the OECD’s Towards-Zero goals, including “socially inclusive promotion and advocacy” (p.103), we were not able to find any direct mentions of social equity in this strategy.

The federal government’s implementation of physical-policy instruments in support of active

travel dates back at least as far as 2015, with 312 dedicated active-transport projects being funded through the Investing in Canada Plan. The Investing in Canada Plan (which includes some funding for active transport under public-transit and green-infrastructure streams) aims to “create long-term economic growth to build a stronger middle class; support the resilience of communities and transition to a clean growth economy; and build social inclusion and socio-economic outcomes for all Canadians” (95). Other programs that have included some funding for active and multi-modal transport options include the Natural Infrastructure Fund, among others listed in table 2. Considering that the federal government has implemented several policy instruments pertaining to equity, diversity, inclusion (including a gender-based-analysis-plus (GBA+) policy tool in 2011), social-equity considerations appear to be integrated to different extents in these instruments.

Following consultation sessions with key stakeholders (including at least 50 active transport experts and 250 community advocates), the federal government announced the new Active Transportation Strategy (ATS) and Fund in March 2021, the first of their kind in Canada. The ATS is understood as “Canada’s first strategy to promote the construction and use of pathways, trails and cycling lanes,” with the guiding vision “for Canadians of all ages, ethnicities, abilities, genders, and backgrounds to be able to safely and conveniently access active transportation in their communities, and to significantly increase the ‘modal share’ of active transportation: the proportion of Canadians who regularly make the choice to use active transportation” (93). As a part of this guiding (A-C-T-I-V-E) strategy focused on awareness, coordination, targets, investment, value, and experience, the federal government created the Active Transportation Fund (ATF), a \$400-million investment (295 million USD), which is the first dedicated fund supporting active-transport infrastructure in Canada with the goal of “improving access to active transportation for smarter, healthier, and cleaner communities.” The ATF is a cost-sharing fund designed to support projects such as multi-use pathways, cycling lanes, lighting, wayfinding as well as soft costs for planning and programs. All applicants (municipalities, Indigenous communities, provinces, territories, or other eligible partners) are responsible for navigating a 55-page application guide and compiling all required materials before applying.

Similar to other funding mechanisms in Canada, applications submitted through the ATF are asked to detail project benefits, including *economic benefits* (i.e., jobs creation, tourism, active traffic to businesses), *environmental benefits* (e.g., expected emission reductions), and *social-inclusion benefits*. Notably, ten percent of this funding has been set aside for projects in Indigenous communities. Additional social-equity considerations are solicited through a series of yes/no questions regarding whether projects “provide increased access to active transportation to vulnerable, underserved, higher needs, and/or other populations,” including checkboxes regarding anticipated benefits for racialized people, Indigenous peoples, youth, people with disabilities, older adults, linguistic minorities, newcomers to Canada, women, persons experiencing poverty, persons experiencing homelessness, and people identifying as LGBTQ+. While the ATF application solicits additional information regarding how projects will “benefit the above-mentioned populations within the community, including removal of barriers and/or improved access,” it is unclear if and how each of these equity considerations are prioritized in funding decisions and/or weighted against economic and environmental assessment criteria. Thus, while funding for Indigenous communities is specified as *mandated* in federal active-transportation policies, other key social-equity considerations appear to be *encouraged*. Further, the extent to which smaller municipalities and communities have the capacity to research, design, apply for, implement,

manage, and partially finance projects remains uncertain.

## 5.2. *The United States*

Transport systems in the United States have long been understood as car-centric, with the government's extensive focus on highway extensions leaving little to no funding available for active transport (14). However, many advocacy groups were founded in the 1990s and early 2000s (e.g., the League of American Bicyclists and America Walks), prompting campaigns for federal active-transport policies (7). The community coalition Surface Transportation Policy Project was a key player in convincing senate to approve a set-aside for transportation enhancement projects in the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 (132). Its approval marked a shift in federal transport policies towards selective funding for active transport. Even though funding grew overtime, active-transport initiatives were still contentious and have suffered several cutbacks overtime, such as in the approval of MAP-21 in 2012 (14).

Permeating advocacy and policy, road safety has been raised as a concern since the 1960s with the creation of the Highway Safety Act. Since then, efforts have focused on the regulation of “standards for motor vehicles and highways,” “traffic safety laws,” “high-risk populations,” and “occupant-protection systems” (133). Within this context, the Transportation Equity Act for the 21st Century (1998), the SAFETEA-LU (2005), and the Moving Ahead for Progress in the 21st Century Act (2012) are cited as landmark legislation and funding strategies targeting road infrastructure, which started including equity considerations in programs (e.g., Equity Bonus Program). However, the operationalization of equity is vague in these documents. Overall, target-performance measures “to help reduce highway deaths and injuries” for walking and cycling were included “for the first time” only in 2016 (111).

In 2021, the new Infrastructure Investment and Jobs Act (IIJA), also known as Bipartisan Infrastructure Bill, was passed (106) targeting mostly highway infrastructure renewal and repair. Within this bill, few programs focus only on walking and cycling infrastructure. Active transport efforts are framed within larger multi-modal programs aimed at “increasing safe and accessible transportation options” (106). Moreover, funding is diluted across a vast array of formula programs (apportioned funding to States, n = 19), grants (discretionary, n = 17), and credit lines (n = 2) (134).

In the Federal Department of Transportation's (U.S. DOT) Strategic Plan, active transport is discussed in the context of far-reaching goals, such as reaching net-zero emissions by 2050 and addressing “climate and environmental justice” (107). While a federal policy exclusive to active travel is not available to the best of our knowledge, the department aims to “increase the percentage of person trips by transit and active transportation modes from 4% in 2020 to 6%” in 2026 (107) by increasing the availability of infrastructure and encouraging projects that “reduce trips or shift trips to climate-friendly vehicles and modes, including promoting active transportation” (107). Nonetheless, there is little discussion on how these targets will be achieved, especially considering that public transport and active travel receive far less attention than road infrastructure in the bill and considering the high levels of traffic fatalities across the country (as shown in Table 1). Moreover, even though the U.S. DOT aims to “reduce the health effects of harmful emissions especially on vulnerable and overburdened communities”, active travel is not explicitly connected to health goals in the document.



The current U.S. DOT administration is beginning to acknowledge that traffic crashes “disproportionately impact people who are Black, American Indian, and live in rural communities” (109). The National Road Safety Strategy (NRSS) is defined as “the first step in working toward an ambitious long-term goal of reaching zero roadway fatalities” (109). The document recognizes that “State, Tribal, regional, and local governments manage many elements of the (road) system, with significant levels of autonomy and flexibility,” thus leading “to disparate outcomes across localities” (109). In response, one of their latest efforts is the revised Highway Safety Improvement Program (HSIP), requiring all States to regularly update safety plans which must be approved by the federal administration. Plans must include a *vulnerable road user safety assessment* considering the location and demographics of fatalities and serious injuries, such as race, income, and age (135). According to this policy, if traffic-fatality rates for vulnerable-road users are over 15%, States are obligated to allocate at least the same rate of HSIP funding to safety improvements targeting non-motorized road users (135). Besides HSIP, new discretionary grants for safety improvement projects were created under IIJA (e.g., Safe Streets and Roads for All).

When it comes to support for design and safety, traffic calming, improved intersections/crossings, and road narrowing are eligible within different funding streams in IIJA and are encouraged in the National Road Safety Strategy (NRSS). Sidewalk widening is not mentioned directly in any document, however investments in sidewalk infrastructure are possible. Projects incorporating complete streets are also supported by the U.S. DOT (136) as they are considered to “ensure the safe and adequate accommodation of all users of the transportation system” (106). A Complete Streets Act has been recently introduced to Senate to regulate the prioritization of such projects and to establish specific means of funding (110). Currently, highway removal is the object of one pilot initiative called Reconnecting Communities Pilot Program (RCP) aimed at reducing mobility and economic barriers (106). Reducing speeds is also mentioned as a “multimodal” effort, and specific regulations may be announced in 2024 (109). Finally, even though inter-modal transport only appears in terms of “the movement of goods” in the Strategic Plan and IIJA (106; 107), intermodal projects connecting active travel to public transport were funded under IIJA’S RAISE grant in some cities (137). However, even though these infrastructure elements are supported by several funding strategies, applicants or States are not required to incorporate them into their proposals.

At a larger scale, the Federal administration is intending to support “racial equity” and improved infrastructure for underserved communities through Executive Order 13985 (138). The U.S. DOT has begun to recognize that “past federal transportation investments have too often failed to address inequities, or even made them worse” (108) and has defined “equity and accessibility” as “one of the Department of Transportation’s highest priorities.” (108; 139). The department describes its equity efforts into 4 focus areas: “wealth creation, power of community, interventions, and expanding access” to remove barriers to opportunities for which walking, cycling, and transit infrastructure are seen as key (108). The U.S. DOT has established equity-oriented funding mechanisms, such as the Areas of Persistent Poverty program (AoPP) (140). The department is also a part of the Justice40 initiative defined by the Executive Order 14008 (141). The initiative has the goal of directing at least 40% of selected federal programs to disadvantaged communities, which was implemented by the U.S. DOT in August 2022 (142). Recently, the department started to offer technical support for select underserved communities to apply for infrastructure grants under the Thriving Communities Program (106).

The U.S. DOT further aims to increase the number of State DOTs and Metropolitan Planning Organizations “adopting a quantitative Equity Screening component” to their transportation improvement programs within the next four years. In the analysis of prospective projects, universal accessibility is defined as a requirement in response to the Americans with Disabilities Act (ADA) that “prohibits discrimination against individuals with disabilities in all areas of public life, including ... transportation” (108). Mentions of racial and income equity, gender, LGBTQ+, and age inclusiveness can be found in the U.S. DOT Equity Action Plan. However, their level of operationalization differs in notices of funding for programs. Most grants under IIJA have specific evaluation criteria targeting racial and income equity (e.g., “each applicant selected for RAISE grant funding must demonstrate effort to improve racial equity and reduce barriers to opportunity”). Those around gender, LGBTQ+ supportiveness, and age are usually less clearly defined and, when mentioned, framed around compliance to the Civil Rights Act requirements of non-discrimination. Customarily, the United States appears to focus on formal mechanisms of equality of individuals (e.g., non-discrimination); however, equal treatment which may not guarantee equitable outcomes as it can fail to address the source of the issues (143). Best practices in how to assess equity and standards for the disaggregation of datasets are still being defined by a federal working group and could influence future equity efforts (138).

The U.S. DOT further aims to “increase the number of meaningful and representative public participation engagements ... in rural and urban communities” as part of their focus action area “power of community” (108). As a result, federal grants require applicants to describe how the community will be “meaningfully” engaged in the decision-making process. Even though States and metropolitan regions are encouraged to do the same, they are not required to do so for formula funding. A guide on how to meet the requirements, best practices, and training is expected to be released in 2023<sup>2</sup> (108). Finally, Tribal transportation receives some funding mostly from the Tribal Transportation Program. While the Federal government aims to support projects “addressing the transportation needs of the 574 federally recognized Tribes” (p.4) and Tribal communities are also eligible for most discretionary grants, the extent to which these mechanisms are able support the unique needs and interests of Indigenous communities remains uncertain.

### 5.3. Mexico

Despite Mexico’s overall higher active-travel shares (as summarized in Table 1) and long histories of mobility-rights activism (5; 64; 145), the establishment of policies to ensure the availability of appropriate infrastructure for active travel has been an ongoing challenge. While some local governments have implemented distinct strategies for the promotion of active transport in the last two decades (5; 120), Mexico has only recently put explicit federal active-transportation policies into action. In 2010, Mexico established its *Estrategia Nacional de Seguridad Vial 2011-2020* (National Road Safety Strategy of 2011-2020) through its ministries of Health, Communications and Transport, with the aim of “reducing road fatalities by 50%” and designating institutions with specific tasks aimed at monitoring and reducing lethal road crashes. But despite the institutions and programs created during the previous decade, the main obstacle that these

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<sup>2</sup>A guide on Promising Practices for Meaningful Public Involvement in Transportation Decision-Making (144) exists, however it does not implicate in a standard of practices, and it does not meaningfully mention active travel.

efforts faced was the lack of a normative framework to compel all levels of government in Mexico to coordinate local compliance of the road safety and active transportation goals set at the federal level.

Civil-society groups from across the country have been at the forefront of organizing at the national level through networks such as the BICIREM (Mexico's national cycling network) and *Liga Peatonal* (Pedestrian League) to advocate for greater attention these issues and coordinated actions. These networks have brought attention to the silent epidemic of pedestrian and cycling deaths, with active travelers accounting for over 20 percent of reported traffic fatalities (147). And while automobiles are involved in 62.61 percent of crashes, Mexicans use this mode of transport for barely a third of all trips (see Table 1). Moreover, it is important to note that close to half of traffic fatalities do not register the mode of transport users involved (as shown in Table 1), which is part of the challenge of accurately characterizing the road safety problem across the country (148). Although the Mexican government has inconsistent road safety data due to institutional fragmentation (15), insurance companies have compiled enough claimant information to estimate that the social cost of road fatalities is equal to 1.7% of the nation's GDP, and that 50 percent of the victims incur in debts equal or greater than their monthly income (149). These concerns have been continuously echoed by civil-society organizations involved in active-transport advocacy.

As a result of these efforts, the federal government has been increasingly working to recognize the necessity of improving and increasing the required infrastructure for safe active travel. In 2020, the federal government decreed a constitutional reform to Articles 4, 73, 115, and 122 of the Mexican Constitution with the establishment of a *right to mobility* in “conditions of road safety, accessibility, efficiency, sustainability, quality, inclusion and equality” (118). The federal government has discussed this change as the base framework from which active transportation efforts can develop and respond to the nation's particular challenges through a human-rights approach. Mexico's recognition of the Right to Mobility and the recently approved (2022) *Ley General de Movilidad y Seguridad Vial* (Mobility and Road Safety Law, LGMSV by its Spanish acronym) is the result of decades-long efforts from citizen researchers and experts, in collaboration with public officials and policymakers (150). Including the involvement of at least 114 members of civil-society groups from across the country (151), the LGMSV strongly emphasizes the need to prioritize the development of appropriate infrastructure for active travel, including articles specific to building “walkable and bikeable cities...as alternative for foment public health, proximity, and emission reductions.” While *disabilities* are mentioned in the law, they appear to be principally framed around participation and the idea of raising “awareness among road and public-transport users about the needs of people with disabilities, people with limited mobility and those who accompany them, to use the roads in certain circumstances in a preferential way in order to guarantee their safety.” While the inclusion of Indigenous people and Black citizens is briefly mentioned in relation to civil-society participation, pluriculturalism, and multilingualism, to the best of our knowledge LGBTQ+ rights are only mentioned once in the LGMSV in relation to “vulnerable groups.” That said, other social considerations are strongly encouraged in the LGMSV principles relating specifically to *equity* (“recognize the differential conditions and aspirations for achieving the exercise of equal rights and opportunities”), *inclusion and equality* (“attend in an inclusive, egalitarian and non-discriminatory manner to the needs of all people in their movements in public space”), *inter-modality* (“offer multiple modes and services of transport for all users, which must be articulated and integrated with each other and with the urban structure”)

*participation* (“establish mechanisms for society to be actively involved in each stage of the public policy cycle, in a scheme based on the implementation of co-creation methodologies focused on solving the needs of people”), and *gender* (develop a “scientific, analytical and political vision that seeks to eliminate the causes gender-based inequality and injustice...”).

Importantly, the constitutional amendment and LGMSV command the creation of the *Sistema Nacional de Movilidad y Seguridad Vial* (National System for Mobility and Road Safety) tasked with the coordination of actions, plans, policy, norms, and best-practice criteria that aim to guarantee safe travel for all road users. Plans are in place for this Council to be composed of federal and local public officials, as well as civil-society representatives.<sup>3</sup> Leading up to the constitutional amendment, Mexico’s federal government published several road-design guides and recommendations for the improvement of active-transport facilities (shown in table 2). Recently, the federal government has created the RE-ACTIVA program through which selected municipalities are provided with technical assistance in the development of active-transport infrastructure with the help of international and philanthropic funding and capacity-building resources (152). Although the RE-ACTIVA program is competitive, and to date only ten municipalities have been selected each year for technical accompaniment, many materials have been widely disseminated, including the *Guide for active mobility projects* (123) and the *Integrated strategy for transforming Mexico’s streets* (121). In addition to providing recommendations for integrating gender-responsive approaches to urban planning, these strategies provide detailed guidelines for fostering civil-society participation across different phases of research, design, implementation, and public outreach processes, including successful examples of community-based tactical urbanism and creative placemaking practices from different municipalities.

Paramount to these developments is the understanding of the importance of active travel as a safe, healthy, sustainable, and equitable means of transport (122). Derived from this, Mexico's new urban mobility policies have adopted the concept of a “mobility hierarchy” (153) in which pedestrians, cyclists, and transit users are prioritized in the design and use of roads. Still, Mexico’s inroads into road safety – and, consequently, the promotion of safe active transport – faces three unyielding challenges. First, the LGMSV’s success hinges on its translation into the institutional, regulatory, and normative frameworks of the nation’s 32 federal states. Not only is the coordination of all three levels of government necessary for enforcement and data gathering criteria, but local administrations are asked to establish effective collaboration strategies with several government agencies that are separately in charge of regional planning, public financing, highway administration, health services, public safety, among others. Secondly, local governments are expected to procure their own resources<sup>4</sup> to aid in this endeavor which, in most cases, entails creating new programs or institutions to study, monitor, implement, and evaluate transport policies. The federal government has provided little to no support in this arena, only recommending the creation of financing instruments derived from public, private, federal or international funds that are not guaranteed (154). Lastly, these efforts have all been curtailed by

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<sup>3</sup> Just before the final submission of this article, the federal government published the (2023) *Estrategia Nacional de Movilidad y Seguridad Vial* (National Mobility and Road Safety Strategy, ENAMOV by its Spanish acronym). The document proposes the policy objectives, goals, terms, and indicators to be followed by local governments to comply with the LGMSV (2022). It devotes one of its five strategic axes to active transportation and presents 23 actions aimed at creating active-transport infrastructure. Given that this policy was not available as of October 2022 (when our analysis was conducted), it was not included in the analysis based on the inclusion criteria outlined in the methodology section.

<sup>4</sup> While the (2011) *Fondo Metropolitano* (Metropolitan Fund) allowed for federal resources to be invested in active-transport projects involving more than two cities, it was only used for feasibility studies and was discontinued in 2018.

competing economic interests, both public and private. On the one hand, Mexico's current federal administration has been reticent to steer away from its support of fossil fuel-based industries (155), which could compromise its commitment to active-transport policies. On the other hand, the transnational automotive manufacturing industry continues to promote car-oriented solutions, which could impact policies aimed at improving safety for active travelers (156).

## 6. Discussion

This paper has drawn from comparative content-analysis methodology to trace the emergence of federal active-transport policies across North America. Our findings indicate that the federal governments of Canada, the United States, and Mexico have all been directing substantially greater attention and resources towards active transport in recent years. However, variations in terms of policy goals, instruments, development resources, and social-equity mechanism merit comparative analysis.

In terms of *policy-development processes*, our analysis shows that active-transport considerations emerged in federal policymaking at different times across the three countries, and in different policy arenas. Active travel figured as a part of early federal road-safety strategies in Canada (in 2001) and Mexico (2011); however, these strategies continue to be guided by somewhat distinct visions. While the United States provided some of the earliest forms of federal funding for active-transport infrastructure in North America in the 1990s, this funding was highly contentious and suffered a number of cutbacks (14). Moreover, while pedestrian and cycling fatality rates were expressed as a concern prior to the United States' first funding mechanisms for active transport (133), federal safety performance measures regarding active travelers have only surfaced more recently (2016) as part of the Highway Safety Improvement Program.

In terms of *policy goals*, 'towards zero' figures as an important objective across the three countries' current road-safety strategies, albeit with varying targets and policy instruments. While the Canadian government takes pride in being one of the first countries to implement a road-safety strategy, vision zero is largely discussed as "aspirational" (rather than being framed in terms of precise targets), and equity considerations are mostly absent in the strategy, which could possibly relate to the fact that the policy is under the jurisdiction of the Canadian Council of Motor Vehicle Administrators. Similarly, while the United States is working to provide a variety of funding mechanisms and infrastructure improvements targeting road safety, it defines vision zero largely as an "ambitious long-term goal." Mexico's approach to vision zero has evolved from a generalized strategy aimed at halving road fatalities, towards a wider set of instruments including a constitutional amendment (which codifies road safety as a fundamental human right), a mobility and road safety law (which emphasizes the development of walkable and cycle-able cities), and a National Council of Road Safety (which mandates the creation of concrete road-safety actions and the inclusion of a broad range of policymakers and civil-society groups). While Mexico's development of wide-reaching approaches to road safety can be attributed at least in part to the higher percentage of traffic fatalities in the country (especially active-travel fatalities, as shown in Table 1), the federal government's multi-instrumental approach, rooted in a constitutional human-rights framework, could provide valuable insights for other contexts. If vision zero means that *no traffic deaths are acceptable*, then comprehensive strategies are required everywhere (157; 158), not just in territories where traffic injuries and fatalities are proportionately higher.

*Physical policy instruments* aimed at supporting active transport also vary significantly between the three federal contexts. Although the United States appears to offer the widest array of funding and loan options, mainly under the Infrastructure Investment and Jobs Act, to the best of our knowledge there are no mechanisms dedicated exclusively to active transport, which could potentially run the risk of deprioritizing active travel within broader sustainable-infrastructure investments. While the federal government of Mexico has developed a range of soft policy instruments aimed at supporting the development of active-transport infrastructure, physical instruments were limited at the time of this research to a competitive technical-assistance program restricted to ten cities each year and which is not enforceable. The development of a dedicated federal active-transport strategy and fund in Canada marks an important step in North American transport planning, which promises to provide targeted attention and support for improved active-transport infrastructure. However, questions remain across all North American contexts about the extent to which smaller municipalities and communities will be able to access these competitive federal programs, particularly where cost-sharing or complete cost coverage are required. All three federal governments have related these physical instruments to the goal of reducing transport emissions; however, Canada and the United States place a stronger emphasis on job creation, economic growth, and fostering a modal shift away from cars, whereas Mexico's policies appear to stress the importance of civil-society participation and public health to a stronger degree.

*Social equity* considerations have emerged as a strong concern across numerous federal policies focused on active transport. The Canadian government has taken a multi-faceted approach, which aims to provide increased access to underserved groups including racialized people, Indigenous peoples, youth, people with disabilities, older adults, newcomers to Canada, women, low-income groups, and people identifying as LGBTQ+. While consideration of equity criteria is a required component of federally funded active transport projects in Canada, it is still unclear if and how these considerations are prioritized in funding decisions, especially since previous studies have raised concerns about the extent to which federal-government staff are able to navigate equity concepts and programming in light of various training and institutional constraints (159). Considering that central-government supervision of local equity plans could become controversial, we recommend that federal governments across national contexts consider strategies such as providing hands-on research, design, and development support as well as allotting a dedicated portion of active-transport funds for projects in low-income areas and smaller municipalities, in addition to dedicated funding for Indigenous communities. Federal transport policies in the United States have begun to acknowledge questions racial and income equity, with limited discussion of other social-equity considerations. While the United States is still developing ways to assess equity more globally, the lack of a comprehensive focus on women, gender, and LGBTQ+ rights in transport policies is concerning given historical and ongoing struggles for women's rights (143) and LGBTQ+ rights (160) across the country, and considering that the government has yet to ratify the Convention on the Elimination of All Forms of Discrimination against Women. Mexico's policies have placed particular attention on gender equity and universal human rights, yet discussions of LGBTQ+ rights, racial equity, and the rights of Indigenous people have thus far been limited. In addition to concerns regarding ongoing forms of discrimination against people identifying as LGBTQ+ (161), this oversight requires attention to what some scholars have described as a "post-race ideology" in Mexico, through which nationalistic denials of racism have become normalized, with ongoing effects on the lived experiences of Indigenous and racialized people (162). The governments of Canada and the United States are certainly not immune to these

issues, where denials of racism, colonialism, and ongoing environmental injustices are well documented (21; 163; 164). These concerns point to the need for increased attention to the impacts of multi-scalar social-equity issues on shifting policy processes and active-transport dynamics.

Other *road design* considerations provide important areas for comparative analysis. While all three federal governments have been encouraging universal accessibility and complete streets, the United States appears to have stronger, mandated requirements relating to the Americans with Disabilities Act (165), although all countries clearly have a long way to go in developing comprehensive disability-inclusive policies (55; 166). Federal support for anti-ableist planning interventions could be improved to include guidelines on adaptative cycle-sharing systems, winter accessibility requirements, more accessible connections to public-transit facilities, removing barriers for mobility-aid users from cycling lanes and sidewalks (54), developing more inclusive signage for active-transport facilities, among other interventions that merit greater elaboration with people with disabilities. Road diets, sidewalk widening, and other traffic-calming approaches are being discussed to varying degrees across the three federal governments, whereas highway removal discussions have appeared only marginally in the United States and remain contentious (67). These dynamics merit greater policy discussion considering that studies continue to demonstrate that freeways not only fail to solve traffic-congestion problems (167) but also frequently perpetuate social injustices (35; 168; 169). National statutory speed limits have recently been mandated across Mexico as a part of the Mobility and Road Safety Law and could prove important across North American contexts considering the success of these strategies in countries such as the Netherlands (170).

Our study also underscores key differences related to *transport justice* concerns and the provision of access to decision-making power. While discussions on civil-society inclusion were found in policy documents across the three contexts, they appeared more frequently in Mexico's policies, where strategies for enhancing civil-society participation are provided in terms of policy and project design, implementation, as well as outreach and promotion. These strategies, combined with a focus on tactical urbanism and creative placemaking, could prove valuable across other contexts as governments work to tackle the embeddedness of automobility to foster socially inclusive transitions. Considering that underserved groups are often overburden with a variety of time constraints and economic barriers, we recommend providing financial compensation to community participants involved in different aspects of active transport planning and policymaking (54).

From a *mobility justice* perspective, these conversations require increased attention to the continued dominance of the automobile in most transport planning efforts as well as the role of federal and international policymaking and other vested interests in this process (57). For instance, in the United States, out of the USD 284 billion devoted to transport infrastructure within IJA for the next 5 years, around 40% are reserved for the renewal of road and bridge infrastructure, with very little marked for active transport. Out of the 29 funding strategies identified for which active travel projects are eligible in the United States, only the Surface Transportation Block Grant has set aside funding focused on active transport infrastructure, with the remaining 60% of IJA funding being allocated to support other modes, such as passenger and freight rail, public transit, and airport infrastructure. Similarly in Canada, the Trade and Transport funding investment stream has an average budget of CAD 10.1 billion (7.5 billion USD) per year (171), while only CAD 400

million was dedicated exclusively to support the development of infrastructure for active travel starting in 2021. Mexico's federal government invested a combined 18.1 billion pesos (1.1 billion USD) in 2021 in road infrastructure and repaving projects (172), with no dedicated funding allocated to infrastructure for active transport despite having the highest active-travel shares out of the three countries (Table 1). While policy targets and projects vary greatly at the local level across North American contexts, the main dissonances can be found at federal level, where official mobility policies clearly promote active travel, but the distribution of federal funds for projects reflects an overwhelming preference for motor-vehicle infrastructure. These differences underscore a disconnect between federal policy targets and funding strategies. Considering the strong influence of the automotive industry on public policy (173), these issues could present additional barriers in the movement for meaningful public participation within transport planning and the wider goals of procedural and epistemic justice.

These findings further call for an analysis of *relations between federal governments*. While research on the success of federal active-transport policies within the European Union has shown the importance of cross-national collaboration across the policy development and implementation processes (9), we were not able to find any evidence of intercontinental communication or collaboration on federal active-transport strategies in the North American context. Indeed, the possibility of replicating the European Union's collaborative strategies, such as cross-border cycling projects, remains untenable in the North American context in lieu of a heavily militarized U.S.-Mexico border. These issues underscore the need for continued critical analysis of the power asymmetries that are perpetuated through North American trade agreements and the implications of these relations on people's livelihoods, working conditions, territories, and mobilities (13; 174). Although the USMCA integrates key changes from NAFTA in support of increased environmental regulations, it maintains a strong emphasis on motor-vehicle infrastructure and incentives for automobile production (17), calling into question the potential for intercontinental cooperation on active-transport policies within the current geo-political and regulatory landscape.

It is worth noting that these discrepancies have not gone unchallenged and have been at the heart of *civil society demands* for mobility justice. These challenges have been most apparent in the Mexican context, where civil-society coalitions mobilized against setbacks in the ratification of the LGMSV due to lobbying from the transnational automotive industry (156). Civil society groups were also at the forefront of demands to include the right to mobility in conditions of safety, accessibility, inclusion, and equality as a fundamental human right within the Mexican constitution. While the outcomes of this constitutional change have yet to be measured, the implications of this codification of rights could prove decisive, not only in reconfiguring the law across different scales of policymaking, but also in mobilizing what Hannah Arendt referred to as *the right to have rights* (175) to facilitate meaningful change on the ground. If we take seriously Arendt's claim that freedom of movement is "the substance and meaning of all things political" (176; 177), then it follows that the right to safely and freely walk, cycle, and engage in other forms of active travel—both within and beyond national borders—will continue to move to the forefront of public debates across contexts of rising transport, health, and environmental injustice.

While this study has provided comparative insights into the scaling up of active-transport policymaking across North America, it is not without limitations. Given that most of these policies have only recently been developed, it is arguably too early to begin evaluating policy outcomes.



Thus, we hope that this study can serve as a baseline for future research working to track the evolution of these federal policies and monitor the integration and outcomes of different social-equity, public health, and road-safety considerations. Future research integrating interviews with policymakers, planners, and members of civil society could help to explore the relationship between stakeholders across different scales of policymaking and to identify possible barriers in policy implementation, particularly in smaller and mid-sized municipalities. Comparative policy analyses could provide further insights into funding differentials, political obstacles, and competing interests in the implementation of federal active transport and demand management strategies, particularly in light of the dependency of national economies on oil and car industries (173). Both quantitative methods and qualitative case studies will be important to measure and account for differential equity and accessibility outcomes of active-transport projects supported by federal governments. Given the increased momentum from urban policymakers for 15-minute cities (16), complete communities (178) and transit-oriented development (179), future research could help to assess opportunities and challenges for federal governments to support the development of more dense, diverse, and thoughtfully designed urban environments. Studies on collaborative, tactical, and arts-based approaches to mobilities research (180) can help to bring creative forms of placemaking and children's rights to the streets to the forefront of discussions on sustainable-transport systems. As policymaking on active transport is increasingly scaled up to higher levels of government, we hope that situated and equity-focused research can continue to support the goal of keeping active-transport interventions in tune with the diverse needs and interests of local communities.

## **7. Conclusion**

Active transport has emerged at the centre of several knots of socio-political interest, including the convergence of the climate crisis with pressing public-health, road-safety, and social-equity challenges. Once considered a relatively minor matter of local decision making, active-transport planning is being transformed into a major topic of federal policymaking, rescaling the politics of mobility. While active transport has been shown to have a vital role to play in the movement toward more sustainable societies (181), research has also demonstrated that greater attention is needed to the governance arrangements required to support socially equitable and politically inclusive transitions (182). Building on comparative content-analysis methodology, this paper has attended to this call by examining the development of federal active-transport policies across North America, with particular attention to policy development, goals, instruments as well as social-equity and mobility justice considerations.

Our paper finds that the federal governments of Canada, the United States, and Mexico have all been directing substantially greater resources towards active transport in recent years; however, our analysis highlights key differences and areas for further research. While the United States is working to offer a vast set of funding options for active transport, the lack of dedicated support for active transport could run the risk of deprioritizing active travel within broader investments. Mexico has developed a range of soft policy instruments related to active transport at the federal level, yet physical instruments have yet to be fully elaborated. Canada's policies show promise for improving active-transport infrastructure while raising questions regarding equity in road safety and the ability of smaller municipalities to access competitive programs. In terms of social-equity considerations, the Canadian government has taken a multi-faceted approach, the United States is focusing mainly on universal accessibility, and Mexico has placed

greater emphasis on gender equity and codifying access to safe mobility as a fundamental human right. Notwithstanding these differences, ongoing disparities related to income, race and racialization, gender, sexual orientation, age, and (dis)ability raise concerns across all North American contexts regarding the ability of federal interventions to foster socially equitable active-transport systems, meriting further research and policy analysis. We recommend greater research on opportunities for federal support for anti-ableist and anti-racist active-transport interventions, statutory speed limits, highway removal projects, low-traffic neighbourhoods, as well as the development of participatory, tactical, and community-based solutions to ongoing transport inequities. Considering the disproportionate levels of federal funding that continue to be targeted for motor-vehicle infrastructure, we also propose developing concrete strategies to restrict the influence of the car and oil industries on North American policies and transnational agreements in the movement for transport and mobility justice. Developing comprehensive national and international support systems for active transport promises to be a long-term political project, requiring careful attention to diverse local needs, interests, and social-equity goals.

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