PEDALING TOWARDS EQUITY:

ANALYZING TRANSPORTATION ACCESS IN METRO VANCOUVER'S CYCLING NETWORK

ONE-THIRD OF PEOPLE IN METRO VANCOUVER SPEND 70% OF INCOME ON HOUSING AND TRANSPORTATION

bikehub.ca

Pedaling Towards Equity: Analyzing Transportation Access in Metro Vancouver's Cycling Network examines the transportation landscape through an equity lens, focusing on the accessibility and inclusivity of cycling infrastructure for all communities.

How Equitable is Access to High-Quality Bike Routes in Metro Vancouver?

This project conducted a analysis of Metro Vancouver's cycling network to evaluate its equity implications. By utilizing data from the State of Cycling report and the Cycle Highways in Metro Vancouver report, the study identified disparities in access to safe and comfortable biking facilities across the region. The findings underscore the need for transportation planners and regional agencies to prioritize equity considerations when developing active transportation routes and networks, including the Major Bikeway Network. The project provides specific insights and recommendations to address these disparities and foster a more equitable and inclusive cycling infrastructure in Metro Vancouver.

High housing and transportation costs creates a situation where people have to leave urban centers due to expensive housing and are left with fewer transportation options, leading to increased reliance on cars. This, in turn, worsens existing transportation inequalities.

Cycling is an affordable mode of transportation with a relatively low cost compared to other modes of transport, especially when compared to private vehicles.

Cycling has gained recognition as an effective means of improving health outcomes, reducing greenhouse gas emissions, and providing economic benefits to individuals and society, including improved affordability and access to mobility.

However, transportation inequities persist in Metro Vancouver, posing challenges for the region's residents. The high cost of living and low-income rates make living in Metro Vancouver increasingly unaffordable for many households, leaving them with limited transportation options and an increasing reliance on personal vehicles. This exacerbates existing transportation inequalities.

COMPARING THE AVERAGE ANNUAL COST OF DRIVING, TRANSIT AND CYCLING:

The average cost of owning and maintaining a car in Canada is $9,500 per year, while the average cost of owning and maintaining a bicycle is $300 per year.[1] Public transportation passes are an average of $940 per year but come with limitations for those that live in areas without nearby or frequent transit options.

ONLY 46% OF THE METRO VANCOUVER CYCLING NETWORK IS COMFORTABLE FOR MOST

	Total Lane km's of Bikeways	Network (% of Network Comfortable for Most)	Population Close to Comfortable Network (% within 400m)	Cycling Rates (% of commuters who cycle)	Share of Trips by Females (% of bicycle commuters that are female)	Safety (Collisions per million bike trips*)	Supportive Policies and Practices**
Metro Vancouver Region	4,595	46%	65%	2.3%	35%	23	Low

[1] Vehicle ownership costs don't include the purchase price, but include things like depreciation, financing, insurance and maintenance. Bike ownership also doesn't include the price of the bike purchase, but the depreciation cost of a bike assumed to cost $1,000 initially and last 10 years.

Key Takeaways

TRANSPORTATION FOR EVERYONE

Cycling has the potential to address transportation inequality by providing a sustainable and affordable mode of transportation for all individuals, regardless of their socioeconomic background or geographical location.

BARRIERS AND DISPARITIES IN ACCESS

Certain communities face barriers in accessing cycling infrastructure, such as limited connectivity, inadequate bike paths, and lack of access to bike-sharing programs. These disparities disproportionately affect marginalized groups, including racialized communities, low-income individuals, women, and Indigenous populations.

MEANINGFUL ENGAGEMENT

Engaging and empowering vulnerable populations is crucial for understanding their specific transportation needs. Meaningful engagement and power-sharing allow for their voices to be heard in decision-making processes, leading to more equitable and inclusive cycling infrastructure.

CONNECTING COMMUNITIES

Developing a safe and comfortable regional cycling network is essential. Transportation planners need to collaborate with organizations like TransLink to plan, develop, and build high-quality cycling networks that provide fair access to underserved areas. This will enhance connectivity, reduce isolation, and create opportunities for transit-reliant populations.

INFRASTRUCTURE AND TRANSIT INTEGRATION

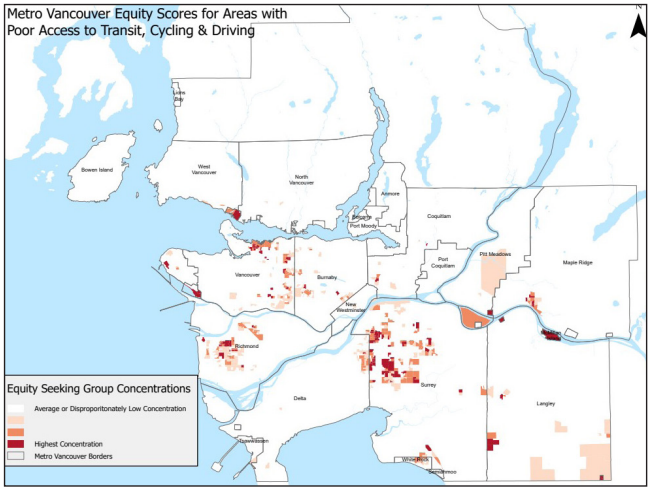
Improving access to transit for underserved areas complements the development of cycling infrastructure. Transit routes should be designed to effectively serve these communities, ensuring affordability, reliability, and access to employment opportunities. Integrating cycling and transit options can create a seamless multimodal transportation system.

Key Takeaways

HUB Cycling analyzed access to cycling infrastructure, considering both social and spatial equity.

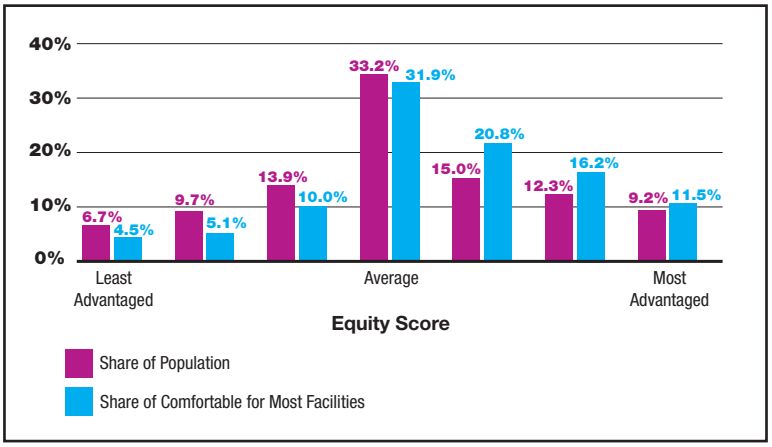
- **Social equity** considers household economics, transit-dependent populations, racial/ethnic minority and Indigenous populations, populations with lower education levels and people with disabilities.
- **Spatial equity** was assessed in this research by analyzing vehicle access, transit access, and cycling infrastructure/route access.

The analysis revealed notable disparities in transportation equity across Metro Vancouver. Certain areas showed a disproportionately high concentration of equity-seeking groups with poor transportation access, indicating a need for targeted interventions to improve transportation access and options for these communities.



Areas with the highest concentration of equity-seeking groups that also had limited access to comfortable cycling facilities or transit or vehicle access, denoted in shades of red, across Metro Vancouver

SHARE OF THE POPULATION COMPARED TO SHARE OF "COMFORTABLE FOR MOST" FACILITIES ACROSS SOCIAL EQUITY MEASURES



The percentage share of the total Metro Vancouver population (pink) and the percentage of total coverage of the Comfortable for Most cycle infrastructure in the region, compared within each of the seven relative equity categories

The best quality cycling facilities (Comfortable for Most) were also not evenly distributed across the region. The least advantaged areas in Metro Vancouver have less access to Comfortable for Most facilities compared to the most advantaged areas. Comfortable cycling facilities are more concentrated in the more advantaged areas across Metro Vancouver.

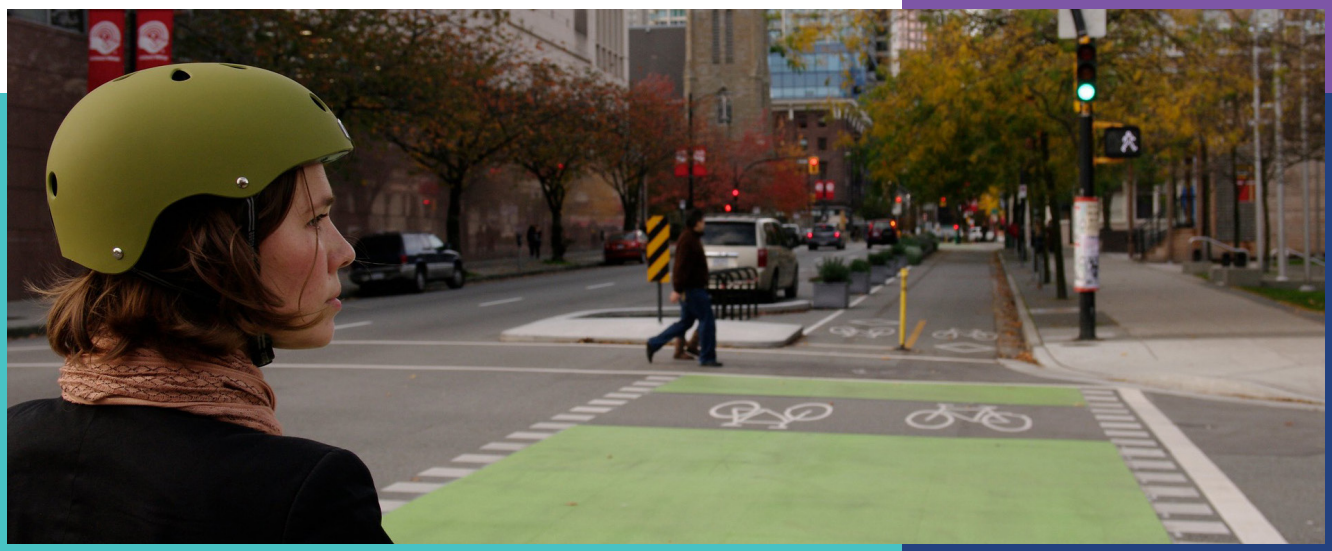
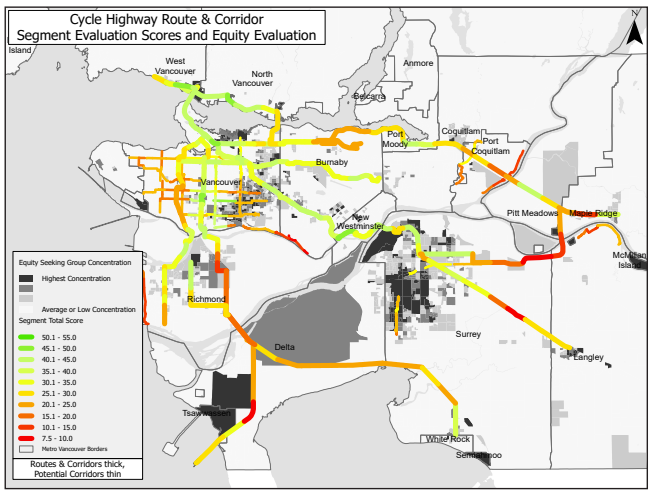


Photo credit: Paul Krueger

Key Takeaways

The combination of social and spatial equity considerations helped identify areas with higher transportation inequity, highlighting the places in the region to prioritize high-quality cycling facilities, such as cycle highways, to improve transportation equity.



The relative scores of segments of proposed cycle highways, overlaid on the concentration of equity-seeking groups across Metro Vancouver

Recommendations

1. **Adopt an Equity-Informed Design Approach** with the design and implementation of cycling infrastructure which is high quality, safe, comfortable for various users, and distributed equitably across the region.

2. **Define Equity Scores and Prioritize Underserved Areas**. Develop equity scores considering various demographic factors and prioritize underserved areas to address inequities in bike infrastructure.

3. **Develop and build a safe, comfortable, and equitable regional cycling network while improving access to transit for underserved areas**. This entails designing transit routes that effectively serve underserved areas, secure bike parking and other connections for multi-modal users, ensuring affordability and reliability of transit options, and considering access to employment opportunities through transit.

4. **Engage and Empower Vulnerable Populations** including racialized communities, low-income individuals, and women, to understand their specific transportation needs and address the barriers they face.

5. **Incorporate UNDRIP (The United Nations Declaration on the Rights of Indigenous Peoples) in Active Transportation Planning.**

6. **Monitor and Evaluate Equity Outcomes**: Establish mechanisms for monitoring and regularly evaluating the impact of infrastructure improvements on vulnerable populations to ensure that the intended goals of increased accessibility and equity are being achieved.