Transportation Planning for Equity and Healthy Communities

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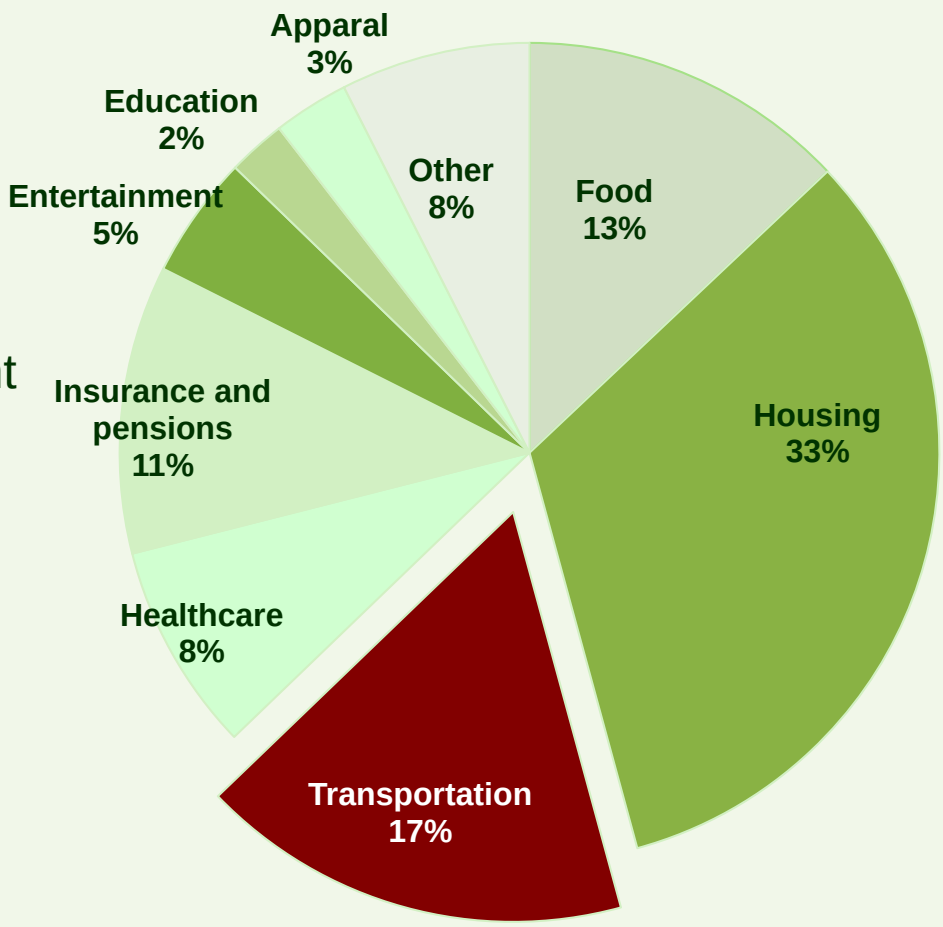
Transportation Impacts

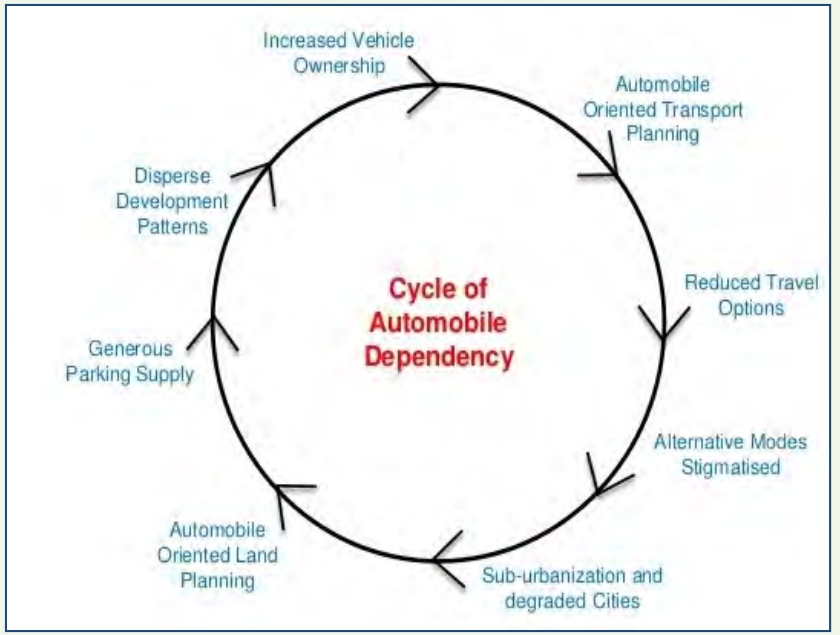
Transportation affects people in many ways

- 60-90 minutes of our day (10-30% of uncommitted time)
- 15-25% of household budgets.
- Affects economic opportunities
- Housing affordability and development patterns (compact or sprawled)
- Affects health and safety
- Public realm and community livability.
- Affects local economic development.
- Public expenses
- External costs (public infrastructure, congestion, crash risk and pollution)



Policies

- Transportation infrastructure planning (walking, bicycling, cars and public transit).
- Parking minimums in zoning codes.
- Roadway design (higher or lower speeds, bike- and bus lanes).
- Allowable densities and housing types (single- or multifamily).
- Location of housing, businesses and parks.



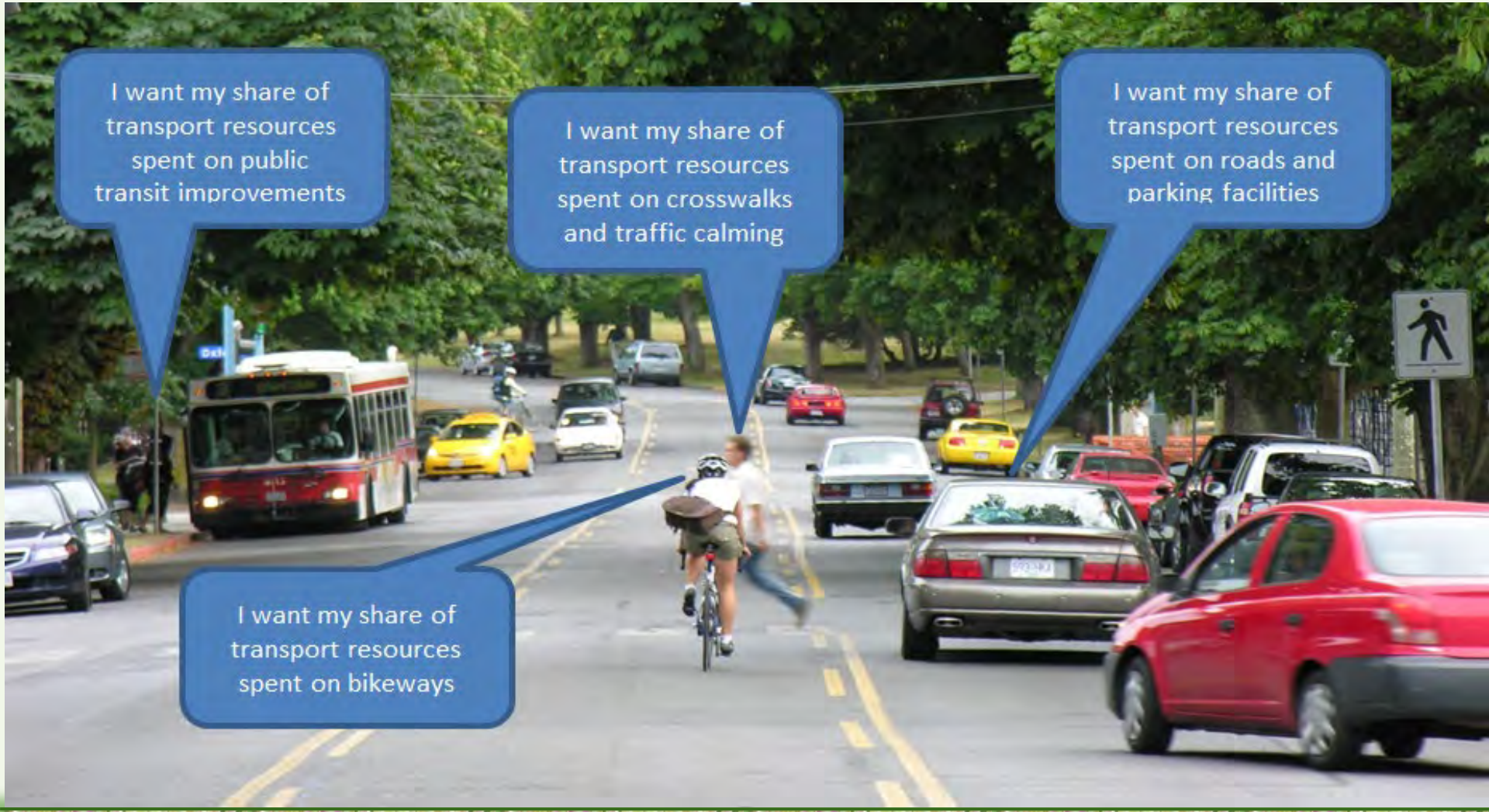
Types of Equity

Horizontal Equity ***Similar people should be treated similarly***	**Vertical Equity** ***Policies should favor disadvantaged people***
A fair share of resources (also called fairness or equality). People with similar abilities and needs should receive equal shares of public resources. This is sometimes interpreted to imply that people should "get what they pay for and pay for what they get," unless subsidies are specifically justified. **External costs**. Costs that travel activities impose on other people, such as the delay, risk and pollution, are unfair. Fairness requires minimizing or compensating for such impacts.	**Inclusivity - vertical equity with regard to need and ability**. This considers how transportation systems serve people with disabilities and other special mobility needs. This supports multimodal planning and universal design requirements. **Affordability - vertical equity with regard to income**. This considers how transportation systems affect lower-income people. This supports policies that improve affordable modes and subsidize low-income travellers. **Social justice.** This considers how transportation systems serve disadvantaged and underserved groups, and address structural injustices such as racism and sexism.

Transportation Equity Objectives

Horizontal Equity		Vertical Equity		
Fair Share	**External Costs**	**Inclusivity**	**Affordability**	**Social Justice**
• Everybody contributes to and receives comparable shares of public resources. • Serve non-drivers as well as drivers. • Affected people are involved in planning.	• Minimize external costs. • Favor resource-efficient modes that cause less congestion, risk and pollution. • Compensate for external costs.	• Accommodate people with disabilities and other special needs. • Basic access (ensure that everybody can reach essential services and activities).	• Favor affordable modes. • Provide discounts for lower-income users. • Provide affordable housing in high-accessibility neighborhoods.	• Protect and support disadvantaged groups (women, youths, minorities, low-income, etc.). • Affirmative action programs. • Correct for past injustices.

A Fair Share of Public Resources



Non-auto Travel Demands

In a typical community 20-40% of residents cannot, should not or prefer not to drive for most trips.

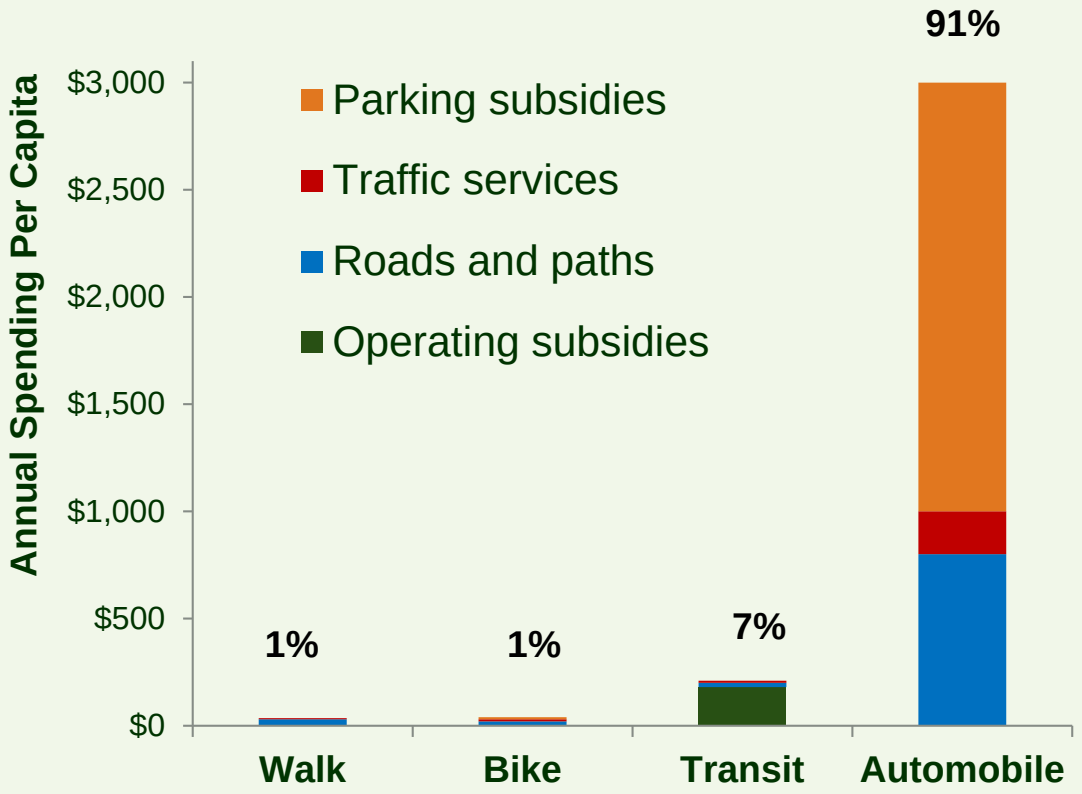
Without suitable travel options non-drivers lack independent mobility, bear excessive costs, require chauffeuring, or move to another community that offers better mobility option.

- People with disabilities (3-5% of residents)
- Seniors who do not or should not drive (5-15% of residents and increasing)
- Adolescents (5-15% of residents)
- Stay-at-home parents in single-vehicle household (Varies)
- Low-income households (20-40% of households)
- Drivers who temporarily lack a vehicle (1-3%)
- Tourists and visitors (varies)
- Law-abiding drinkers (1-2%)
- People who want to walk and bike for health and enjoyment (20-60% of residents, plus dogs)

Our Fair Share

Currently, the majority of transportation investments are devoted to automobile transportation.

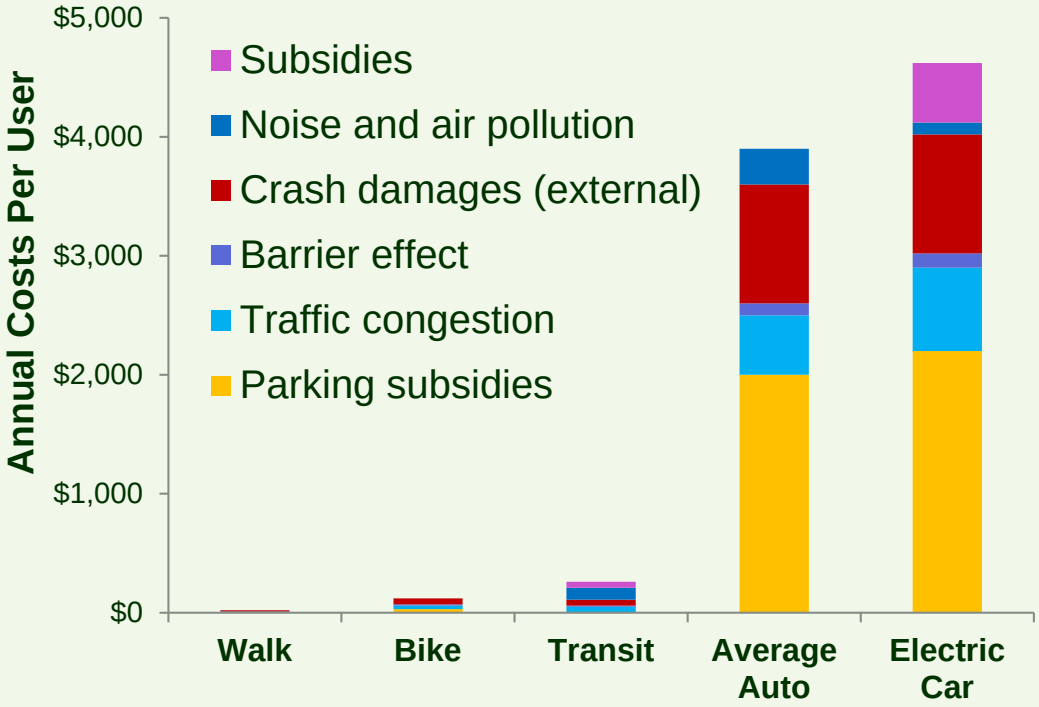
As a result, people who cannot, should not or prefer not to drive receive far less public investment than motorists.



External Costs

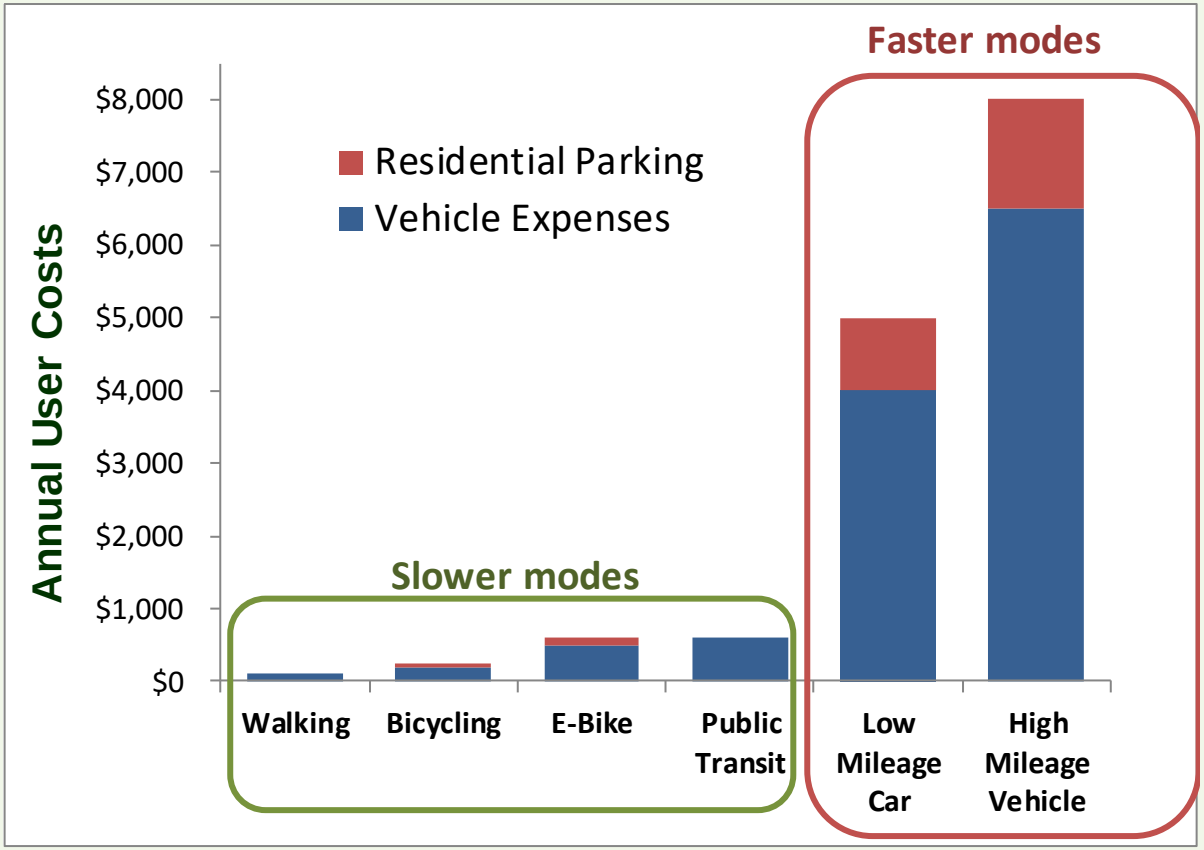
Because they are large, fast and resource intensive, automobiles require more expensive facilities and impose more congestion, risk and pollution per passenger-mile than other modes.

As a result, people who drive more than average impose net external costs on people who drive less than average. Since vehicle travel tends to increase with income, the external costs that automobiles impose on non-drivers tend to be regressive.



Affordability

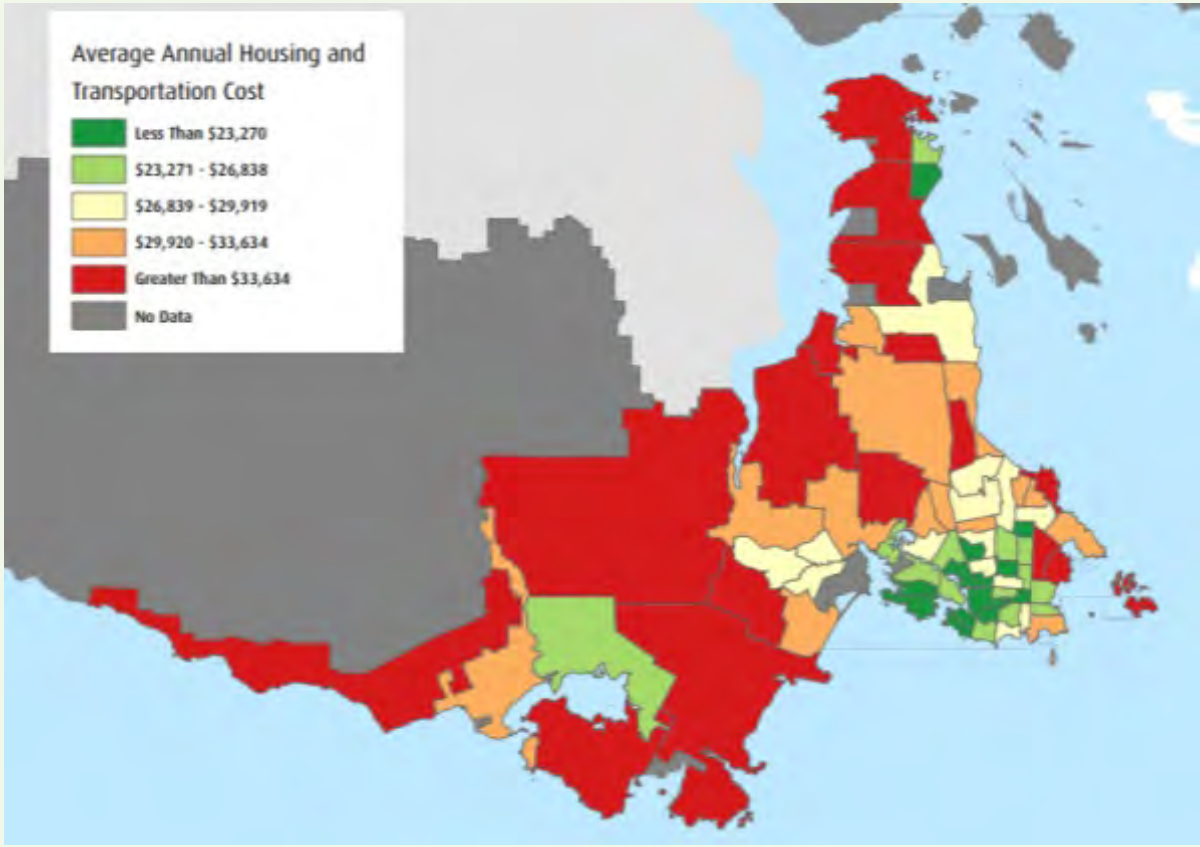
Walking, bicycling, micromodes and public transit are far more affordable than automobile travel.



Housing and Transportation Cost Burdens

Total housing and transportation costs are much lower in compact, multimodal neighborhoods where residents can minimize their vehicle expenses.

(CRD *Housing and Transportation Cost Estimate Study*, 2020)

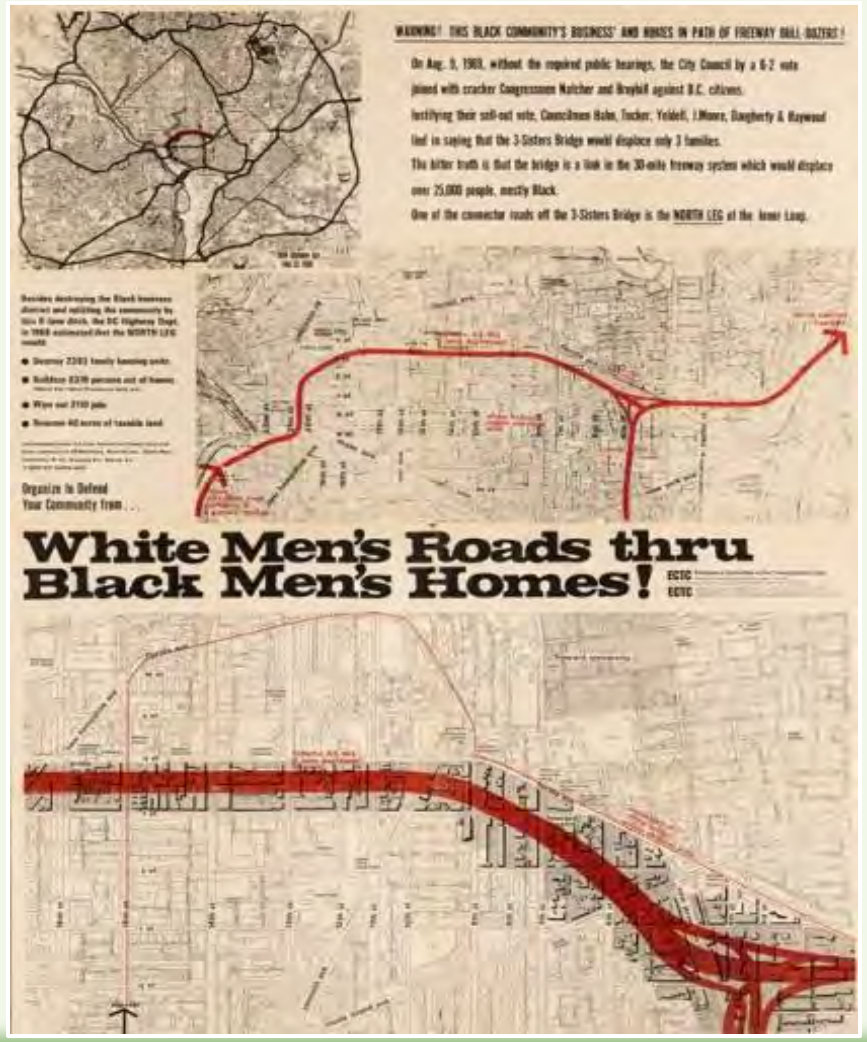


Vertical Equity – Social Justice

Social justice considers structural inequities such as racism, sexism, and classism.

It can be evaluated by measuring disparities in benefits and costs between advantaged and disadvantaged groups.

During the Twentieth Century highways displaced many low-income, largely minority urban neighborhoods. This is an example of how incomplete and biased planning can lead to unfair and harmful outcomes.



Transport Equity Analysis Summary

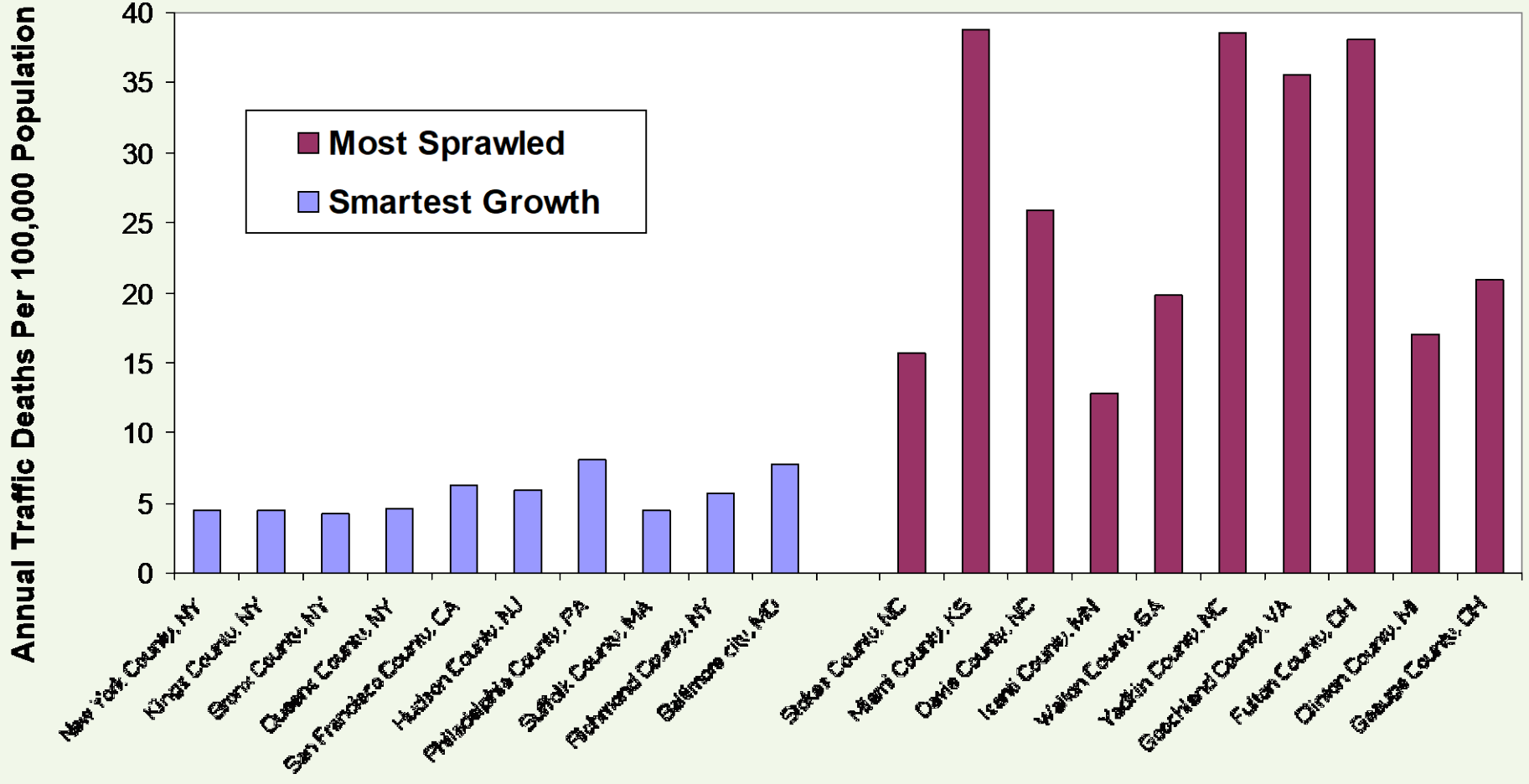
Type	Description	Metrics	Optimization Strategies
Horizontal – Fair Share	Each person receives a fair share of public resources.	Per capita share of public resources (money, road space, etc.).	Multimodal transport planning. Least-cost funding. Efficient pricing.
Horizontal – External costs	Travellers minimize and compensate for external costs.	Infrastructure costs, congestion, crash risk and pollution that travellers impose on other people.	Minimize and compensate for external costs. Favor resource-efficient modes.
Vertical – Inclusivity	Transportation systems provide basic mobility to disadvantaged groups.	Quality of travel for people with disabilities and other special needs. Disparities between groups.	Favor inclusive modes and accessible community development.
Vertical – Affordability	Lower-income households can afford basic mobility.	Transportation costs relative to incomes. Quality of affordable modes.	Favor affordable modes and housing in high-access areas.
Social Justice	Policies address structural inequities.	Whether organizations address inequities such as racism and classism.	Identify and correct structural inequities. Affirmative action.

This table summarizes transportation equity impacts and optimization strategies.

Transportation Health Impacts

Impact	Healthy Community Strategy
Traffic crash risk. Auto-dependent, sprawled areas have high per capita traffic death rates.	Reduce total vehicle travel and traffic speeds. Create compact communities.
Physical activity. Inadequate physical activity increases physical and mental health problems.	Create more walkable, bikeable, compact and mixed neighborhoods.
Pollution exposure. Residents who live near major highways have high exposure to noise and air pollution.	Reduce total vehicle travel. Favor low-polluting vehicles. Local housing and jobs away from busy roadways.
Affordability. High transportation and housing costs costs leave low-income families with inadequate money to pay for healthy food, healthcare and other health-related goods.	Favor affordable travel modes (walking, bicycling and public transit) and increase affordable housing in walkable urban neighborhoods.
Access to healthcare. Inadequate travel options limit non-drivers ability to access healthcare services.	Improve non-auto modes and neighborhood healthcare services.

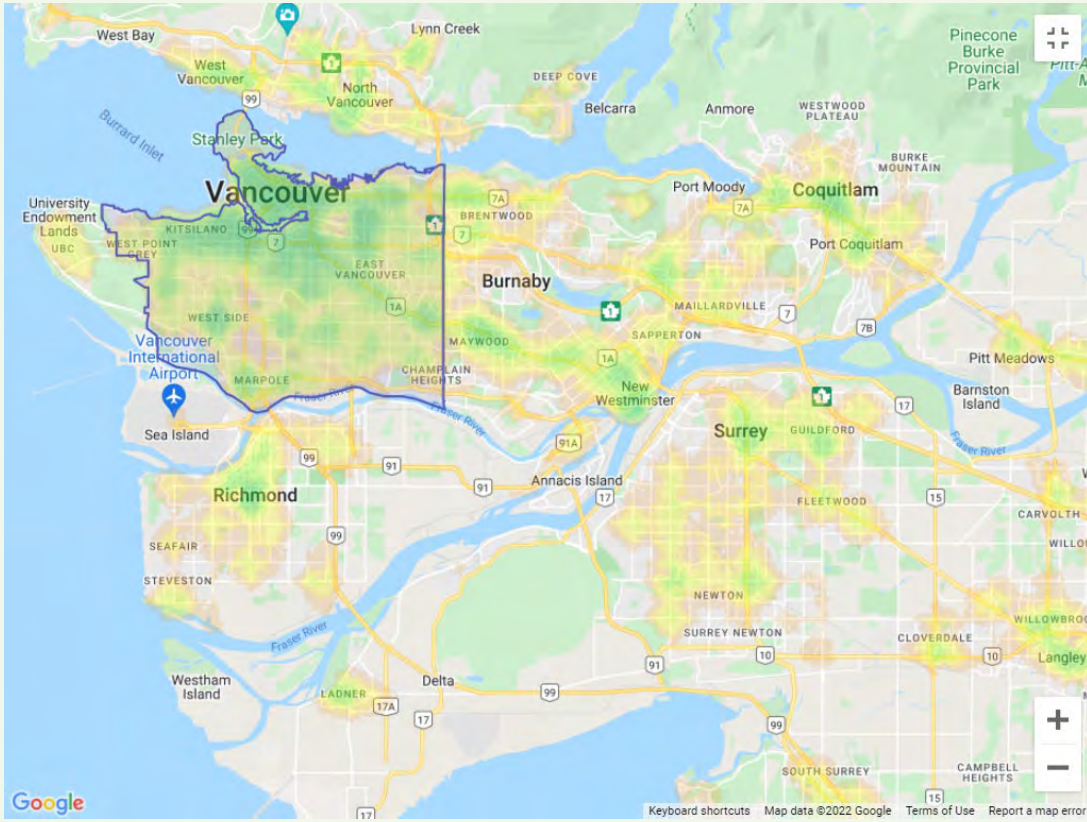
Smart Growth Safety Impacts



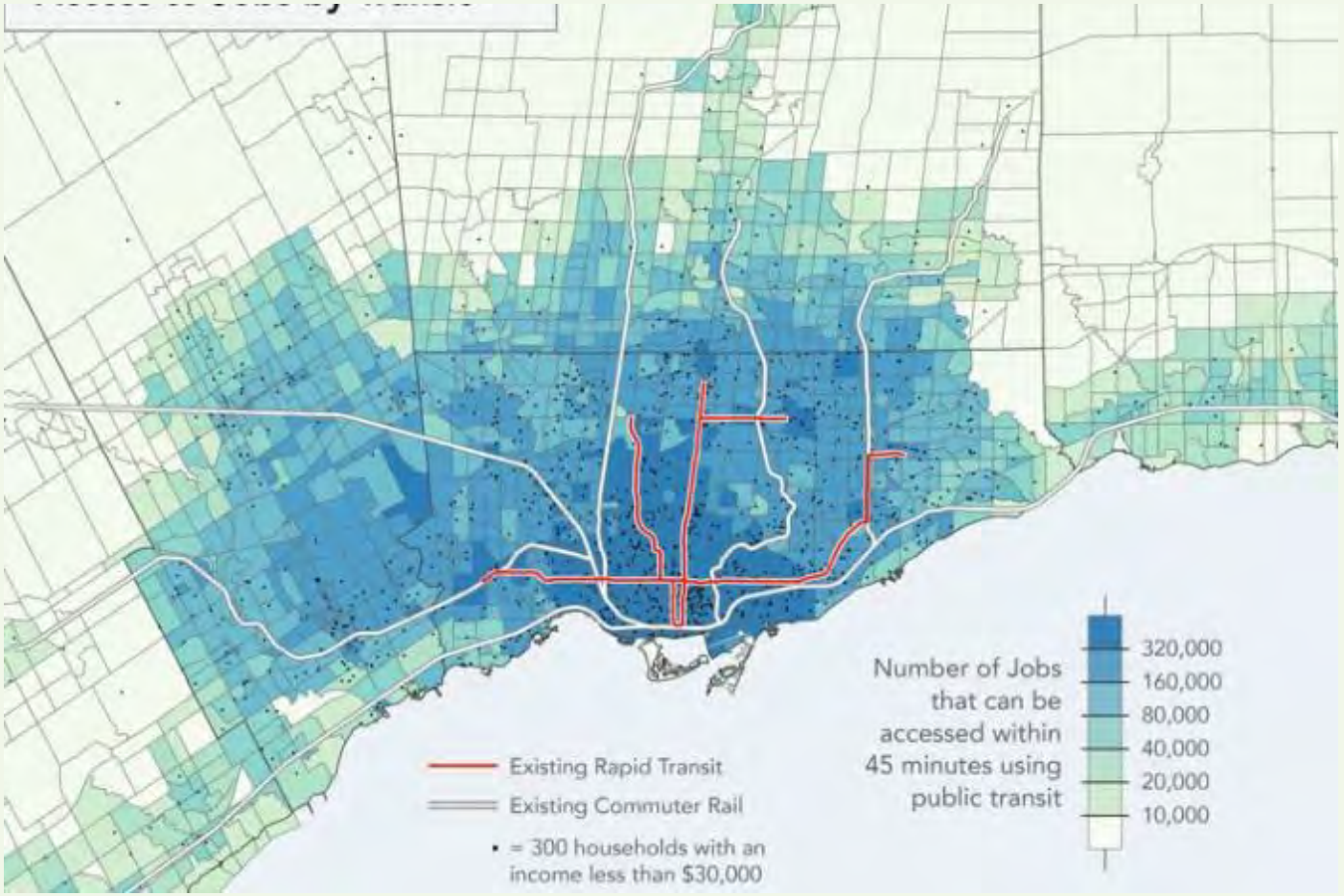
Walk Score

Living in a walkable urban neighborhood provides direct and indirect benefits:

- Transportation cost savings.
- More independent mobility for non-drivers and reduced chauffeuring burdens for drivers.
- Public safety and health.
- Increased economic resilience and opportunity.
- Reduced traffic problems.



Access to Jobs by Transit

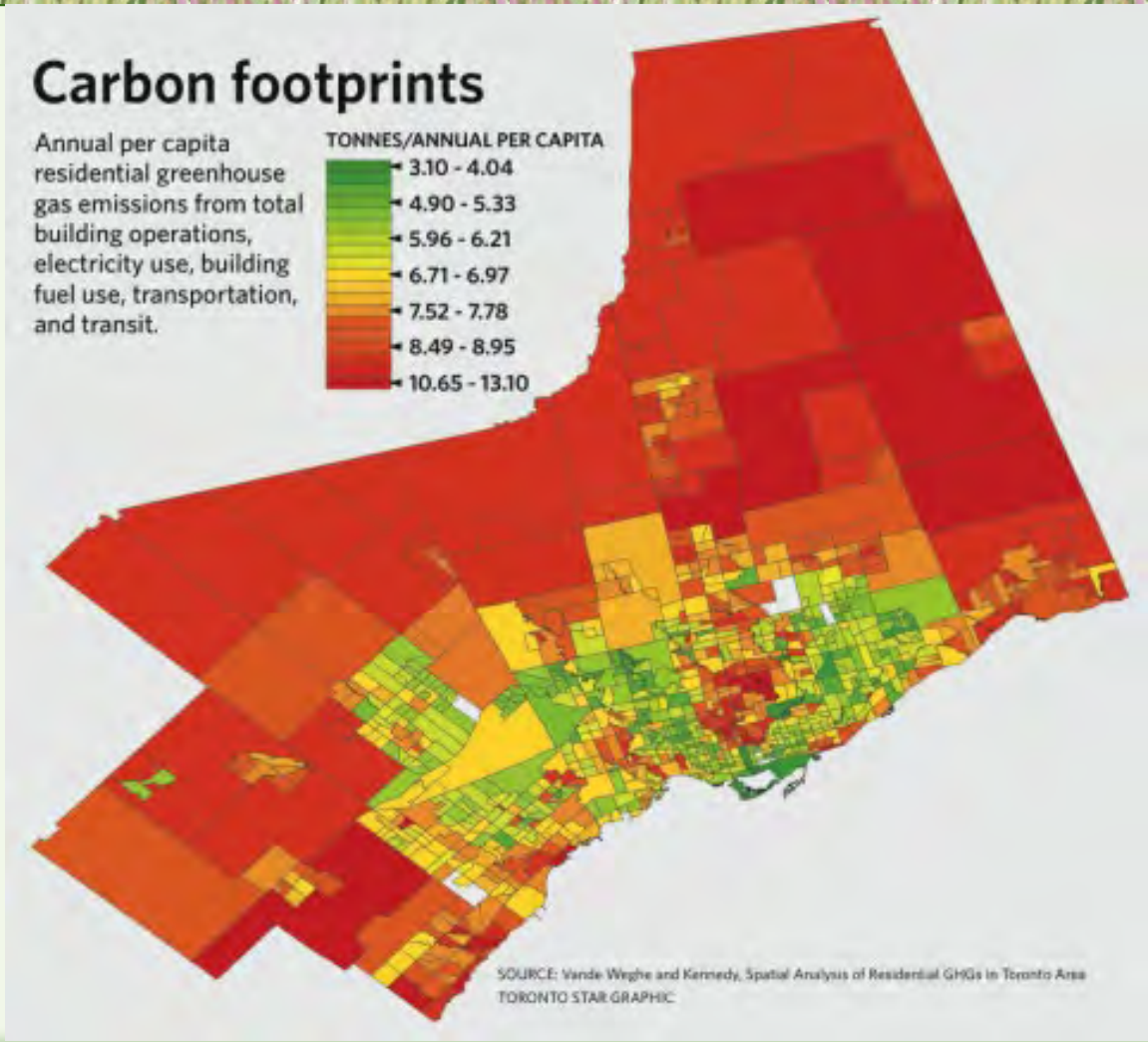


www.utoronto.ca/news/mapping-city-how-transit-can-fix-access-jobs-toronto

Pollution Emissions

Per capita emissions are much lower in compact, multimodal neighborhoods than automobile-dependent, sprawled areas.

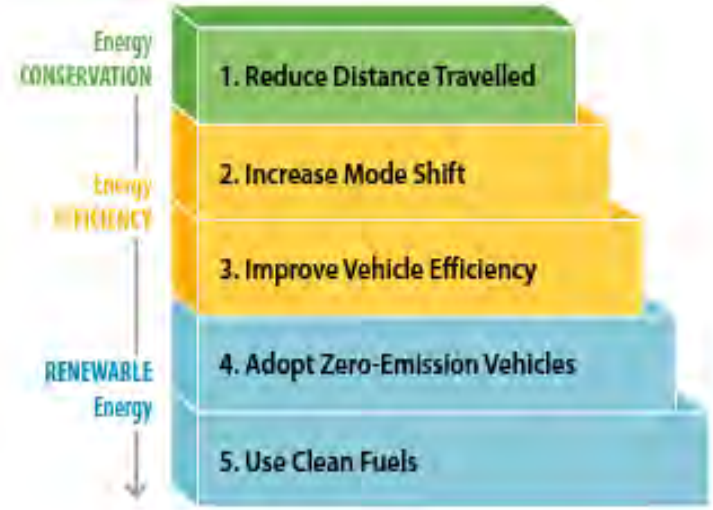
http://www.cbc.ca/news/canada/saskatchewan/story/2012/08/09/sk-greenhouse-gas-1207.html



CleanBC Targets

Clean BC has targets to reduce automobile travel by 25% and approximately double walking, bicycling and public transit.

These changes can provide many economic, social and environmental benefits.

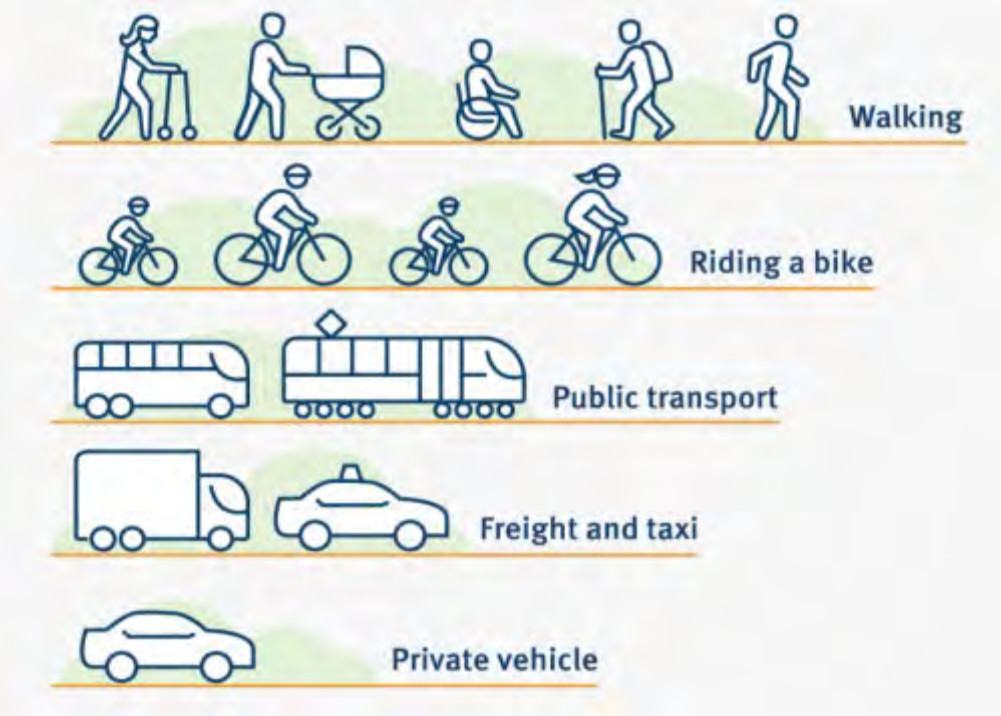


Reducing distance travelled

As part of this Roadmap, we will work to reduce the distances travelled in light-duty vehicles by 25% by 2030, compared to 2020. This can be achieved in part by supporting more compact urban planning in partnership with municipalities to increase active transportation and public transit. We will also provide continued support for digital access and remote work where feasible, building on the lessons learned during the COVID-19 pandemic. In addition, we will work with ICBC to monitor vehicle kilometres travelled and develop additional ways to bring them down, helping to reduce emissions, transportation costs, collision risk, and wear and tear on our roads.

Vertical Equity – Sustainable Modes

A sustainable transportation hierarchy favors affordable, resource-efficient modes such as walking, bicycling, micromodes (e-bikes) and public transportation over expensive, exclusive and resource-intensive modes in planning and funding decisions.

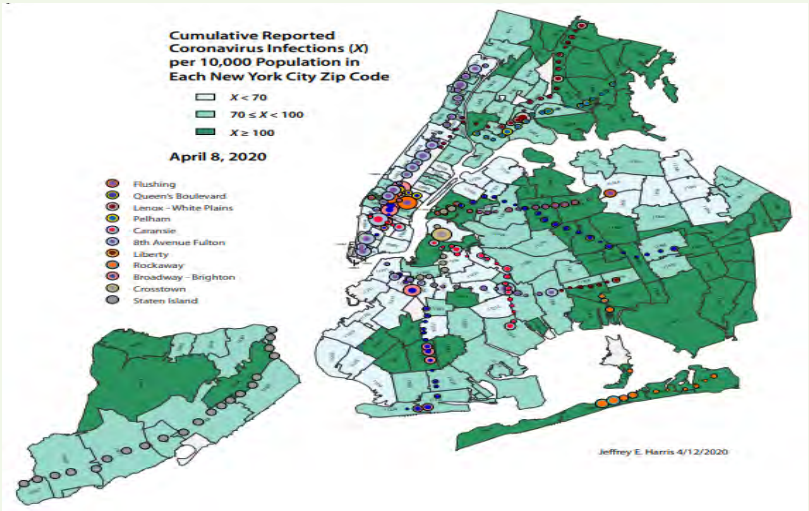


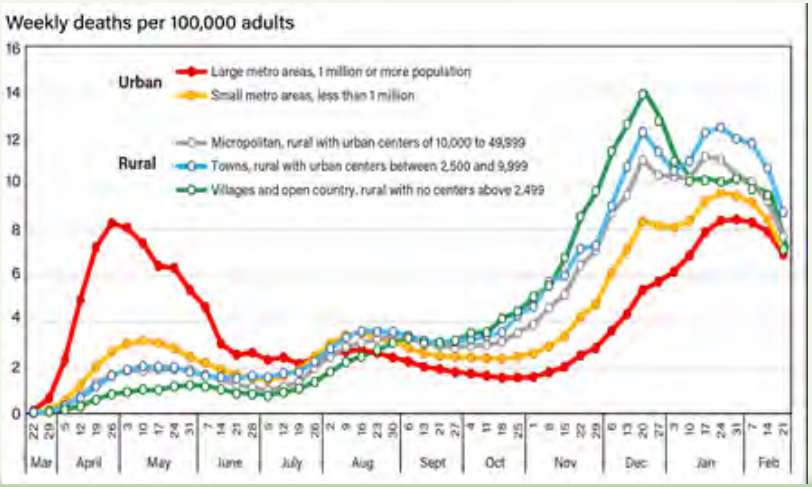
Electric buses are a sustainable mode. They should be favored over automobile travel and over diesel buses. They also help normalize electric bus use.

Lessons from the Pandemic

Contagion Risks

- Covid infection rates were much lower in central walkable and transit-oriented neighborhoods than in automobile-oriented suburbs.
- Although infection rates were initially highest in dense gateway cities (cities with large globally-connected airports), once the disease spread more widely, infection and death rates became much higher in lower-density suburbs and rural areas.

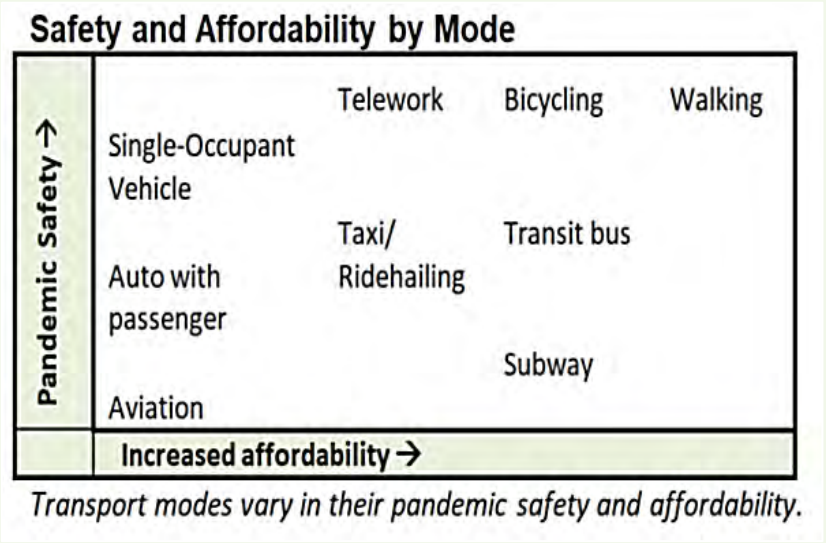




Lessons from the Pandemic

Pandemic-resilient planning:

- Minimize contagion risks. Unenclosed modes – walking, bicycling and motorcycles – are generally the lowest risk. Ensure appropriate distancing, sanitizing and hygiene practices in public spaces, including buses, trains and stations.
- Provide basic access and delivery services during periods of restricted mobility.
- Support physical and mental health, and reduce social isolation during lockdowns.
- Provide efficient and affordable mobility for households with reduced incomes.

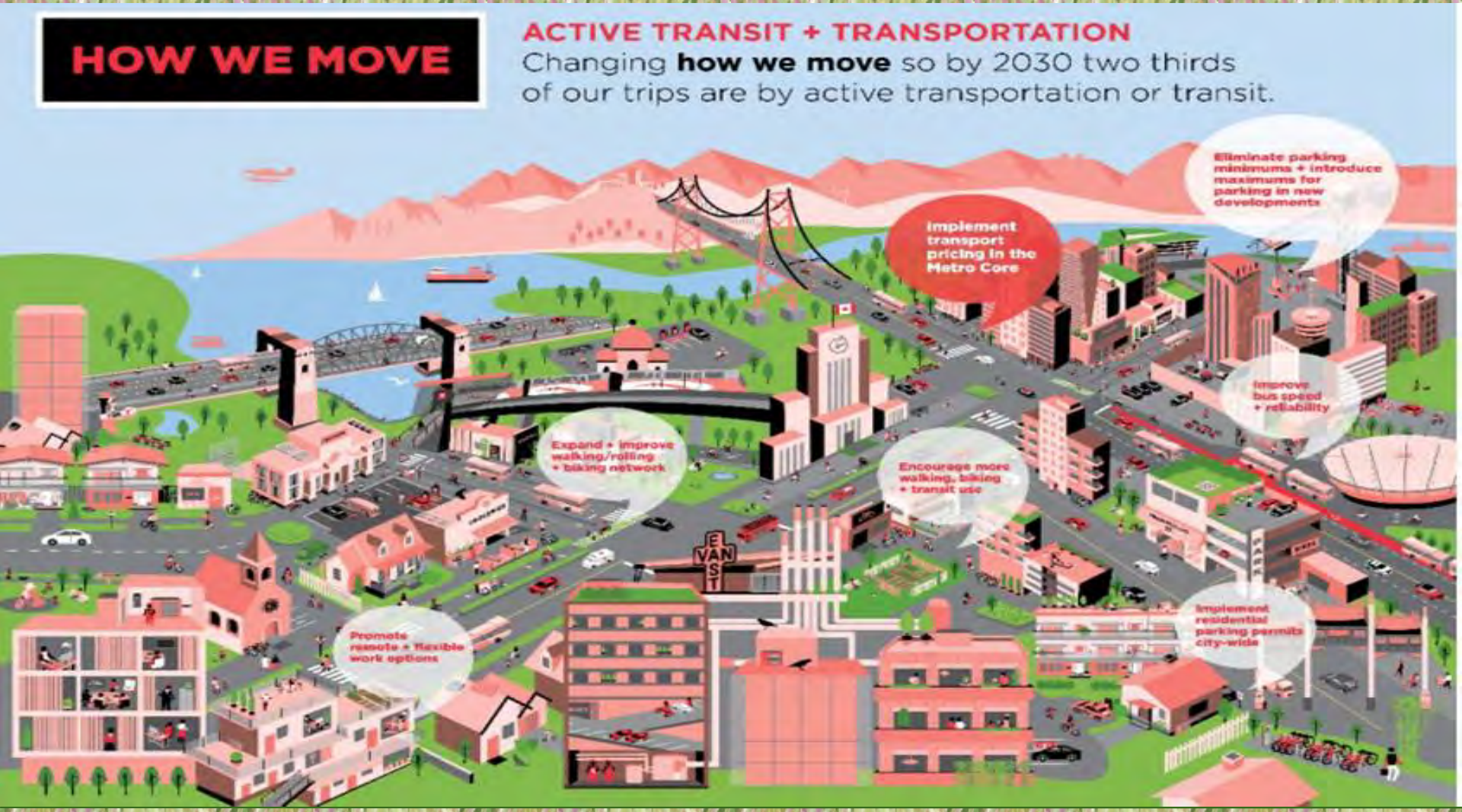


Transport modes vary in their pandemic safety and affordability.

Expanded Solutions

Traditional Targetted Solutions	New Structural Solutions
• Cleaner vehicles (e.g., hybrid and electric) • Targetted safety programs (redesign high crash rate locations and reduce high-risk driving) • Transit subsidies and senior discounts. • Physical fitness and sports encouragement programs	• Multimodal transportation planning that responds to non-auto travel demands. • Planning that favors affordable, healthy and resource-efficient modes (walking, bicycling and public transit) over expensive modes. • Improve the comfort, safety and attractiveness of healthy modes (walking, bicycling and public transit). • Smart Growth development policies to create more compact, multimodal neighborhoods and urban villages. • Sufficient affordable housing in walkable urban neighborhoods.

Success Stories



Conclusions

1. Transportation equity and health not single issues, they are an interrelated set of issues that overlap and sometimes conflict.
2. Transportation affects people in many ways, including indirect and long-term impacts. Decision-makers should consider equity and health impacts in all analysis.
3. Transportation equity and health analysis is challenging because there are many types, impacts, metrics and groups of people to consider. The best approach is to develop a set of measurable equity objectives that can be used to guide individual planning decisions.
4. Current planning practices overlook important equity and health impacts including affordability, physical activity, unmet mobility demands for non-drivers, and impacts on vulnerable groups.
5. This is an emerging issue. Most stakeholders sincerely want to improve equity and health.

“Not So Fast: Better Speed Valuation for Transport Planning”

“If Health Matter: Integrating Public Health Objecting into Transportation Planning”

“Evaluating Equity for Transportation Planning”

“A New Transportation Planning Paradigm”

“Pandemic Resilient Community Planning”

“Evaluating Transportation Diversity”

“Transportation Affordability ”

“Online TDM Encyclopedia”

and more...

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