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Local Policies for Efficient Transportation

Backgrounder

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City Hall

City Hall Insights

This series provides practical, evidence-based guidance for improving cities.

Local Policies for Affordability and Opportunity (www.vtpi.org/LP1.pdf)

Local Policies to Reduce Homelessness (www.vtpi.org/LP2.pdf)

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Local Policies to Support Local Economic Development (www.vtpi.org/LP5.pdf)

Optimal Municipal Parking Pricing (www.vtpi.org/LP6.pdf)

Summary

To be efficient and equitable, an urban transportation system must be diverse in order to serve diverse demands, including the mobility needs of travellers who cannot, should not or prefer not to drive. It should also favor resource-efficient modes, such as walking, bicycling and public transit, in order reduce local traffic problems. This backgrounder summarizes current research concerning local policies for creating more inclusive, affordable and efficient urban transportation systems.

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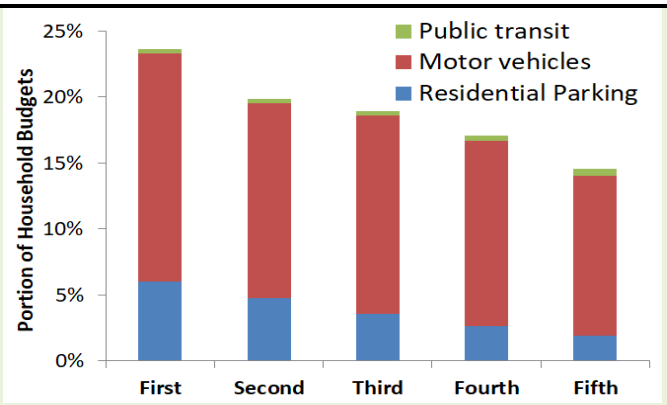
Introduction

Our transportation system affects people and communities in many ways, as summarized below. Local transportation policies must balance various objectives, such as between motorists' desire for faster travel and convenient parking, with residents' preference for minimal neighborhood risk and noise.

Transportation impacts on people and communities

- 60-90 minutes of our day is spent travelling.
- 15-25% of household budgets are spent on transportation, with higher rates for lower-income families (see graph).
- Affects people's economic opportunities.
- Affects local economic development.
- Affects housing affordability (residential parking requirements add 5-15% to housing costs).
- Development patterns (compact or sprawled).
- Public health and safety.
- Public realm and community livability.
- External costs (congestion, crash risk and pollution)
- Public expenses (municipal infrastructure costs).

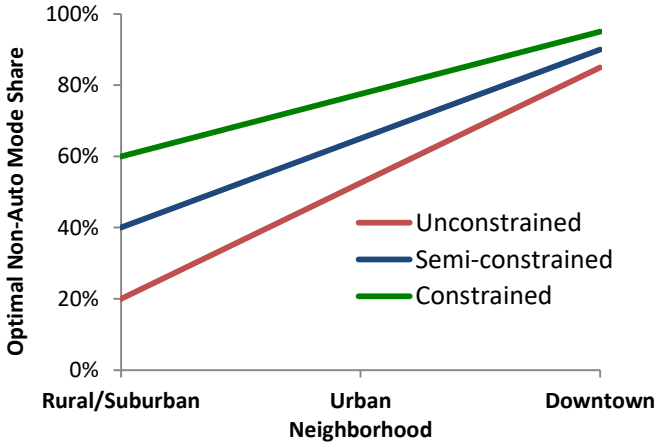


Vehicle-owning households typically spend 15-25% of their budgets on transportation, with higher portions for lower- and moderate-income households.

To be efficient and equitable, a transportation system must be diverse in order to serve diverse demands, including the needs of travellers who cannot, should not, or prefer not to drive, and it should favor resource-efficient modes in order to minimize traffic problems including congestion, crash risk, noise and pollution. Optimal automobile mode shares decline with urban density as summarized below.

Figure 1 **Optimal Urban Mode Shares**

The optimal portion of non-auto trips increases with density. In unconstrained suburban and rural areas, most trips can be made by automobile, but in geographically constrained urban areas that cannot easily expand, most trips should be made by walking, bicycling and public transit, since these modes require less space for travel and parking, and impose lower external costs such as traffic and parking congestion, crash risk, noise and pollution.



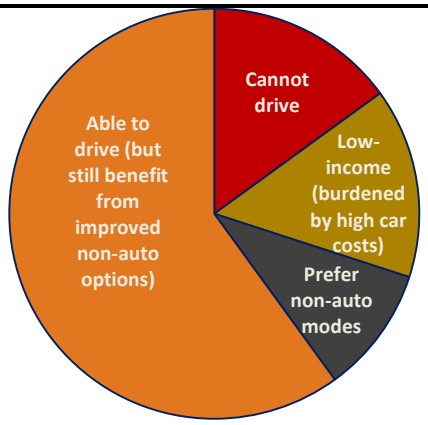
Many current transportation policies favor automobile travel over slower but more affordable, inclusive and resource-efficient alternatives. For example, urban roads are designed to maximize traffic speeds, and most jurisdictions impose parking minimums that subsidize parking facilities. Many communities are reforming these policies to increase efficiency and equity. This is particularly appropriate in urban neighborhoods and commercial centers where traffic impacts are particularly significant.

Multimodal Planning

A diverse transportation system serves all users; in a typical community, 20-40% of travellers cannot, should not, or prefer not to drive and will use non-auto modes if they are convenient and affordable (AARP and CNU 2021). This allows travellers to choose the most efficient mode for each trip: walking and bicycling for local errands, efficient public transit when travelling on busy corridors, and automobiles when they are really most efficient overall, considering all impacts.

Non-auto Travel Demands (Litman 2023)

- Seniors and people with disabilities who do not or should not drive.
- Adults who lack driver's licenses.
- Youths who lack driver's licenses or vehicles (12-22 years).
- Zero-vehicle household members (20% of Victoria households).
- Drivers who lack or share vehicles.
- Low-income motorists.
- Tourists and visitors who lack vehicles.
- Travellers impaired or distracted by alcohol, drugs or devices.
- People who want to walk and bike for health and enjoyment.
- Owners of pets that need walks.
- Motorists who benefit from better travel options for others.



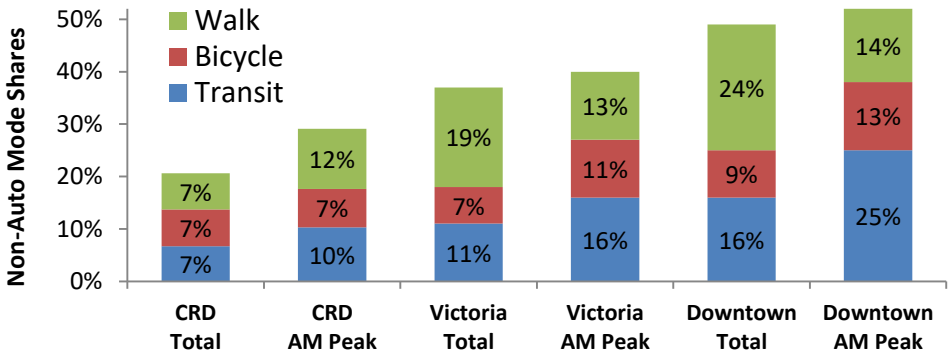
To support multimodal planning, many jurisdictions have targets to reduce vehicle travel and increase non-auto travel (below). These targets help guide individual planning decisions to support strategic goals.

Non-Auto Mode Share Targets

- Victoria: Increase active mode shares to 55% and transit mode shares to 25% by 2041.
- Saanich: Increase active mode shares from 11% to 22% by 2036, and 30% by 2050.
- CRD: Increase walking and bicycling modes share to 30% region-wide and 50% in denser areas by 2038.
- British Columbia: Double active mode shares by 2030. The CleanBC Roadmap has targets to reduce light duty vehicle travel by 25% and increase walking, bicycling and transit mode shares to 30% by 2030 and 50% by 2050.

Many people overestimate automobile mode shares, and undercount and undervalue non-auto travel. According to the 2017 CRD travel survey, more than 20% of total regional trips, 37% of total Victoria trips, and about half of downtown trips are by non-auto modes, as illustrated below.

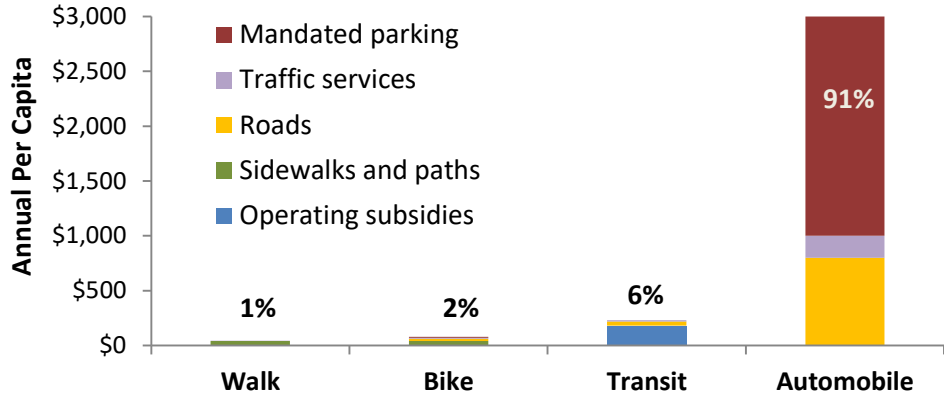
Figure 2 **Mode Shares** (2017 CRD Origin-Destination Study)



The 2017 CRD travel survey found that 21% of total trips in the CRD, 37% of Victoria trips, and 49% of downtown trips are by non-auto modes, with higher rates during peak periods. These rates have probably increased during the last six years.

Currently, the majority of transportation infrastructure funds are devoted to automobile transportation. Considering total expenditures on roads and traffic services by all levels of government, plus government-mandated parking facilities, automobiles receive about 90% of total transportation infrastructure investments, as illustrated below. In addition, automobile traffic impose congestion delay and risk on other road users, particularly pedestrians and bicyclists, plus noise and air pollution.

Figure 3 **Total Transportation Infrastructure Spending** (Litman 2023)

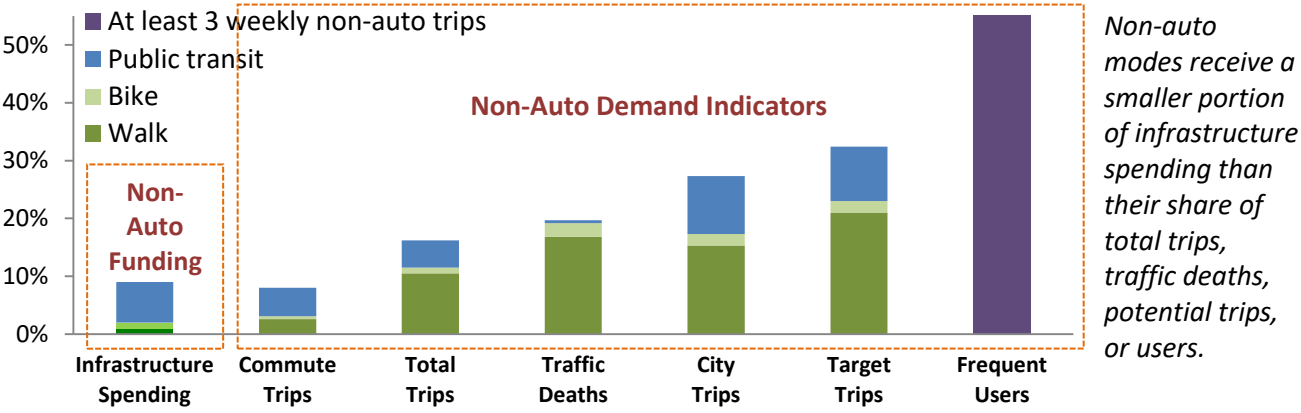


More than 90% of infrastructure spending is devoted to automobile travel, including roads, traffic services and government-mandated parking facilities.

Note: this is generic data, not specific to local municipalities.

The portion of transportation funding devoted to non-auto modes is smaller than most indicators of their demands including their portion of total trips, traffic deaths, target trips, and residents who frequently use those modes, as illustrated below. This suggests that it is fair and efficient to invest more in non-auto modes, particularly in urban areas.

Figure 4 **Non-auto Infrastructure Spending Versus Demand Indicators** (Litman 2021)



Non-auto modes receive a smaller portion of infrastructure spending than their share of total trips, traffic deaths, potential trips, or users.

When walking, bicycling and public transit services improve, use of these modes increases, reflecting latent demands. Serving these demands directly benefits users, and because they are resource-efficient (they require less space for travel and parking, and impose less congestion, risk and pollution), everybody benefits, including motorists who experience less congestion, risk and chauffeuring burdens.

A first step in multimodal planning is to improve active modes: walking, bicycling, e-bikes and their variants. These are the most basic and efficient travel modes, and improving them helps support other efficient options. For example, most public transit trips include walking and bicycling links, so improving walking and bicycling is one of the most effective ways of increasing public transit travel, and walking improvements expand the parking facilities that serve a destination, increasing efficiency.

Most jurisdictions require additional investments to complete their sidewalk and bikeway networks. A reasonable target is to invest in these modes at least as much as their mode share targets; since local, regional and provincial governments have targets to achieve at least 30% active mode shares in urban areas, municipal governments can justify spending at least this portion of transportation funds and road space on active mode facilities, or even more to make up for decades of underinvestment.

There are several specific policies for improving active travel conditions. *Universal design* means that transportation facilities and services accommodate all types of users, including people with disabilities, and travellers pushing strollers or hand carts; it justifies wider sidewalks, curb cuts, ramps and longer crosswalk timing cycles. *Complete streets* means that roads accommodate diverse users and uses, including various travel modes, plus recreational and adjacent commercial activities. This usually results in wider sidewalks, more crosswalks, slower design speeds, bike- and bus-lanes where there is sufficient demand, and more consideration to aesthetics.

Many cities are developing curb management plans to better prioritize competing needs including sidewalks, driveways, goods and passenger loading, vehicle parking, plus bike- and buslanes (ITE 2019). For example, the city of Seattle (2023) has established a *Flex Zone/Curb Use Priorities* program that will establish and implement curb management throughout the city.

One of the most important ways to improve active travel conditions, safety for all travellers, and neighborhood livability is to reduce traffic speeds. This involves reducing speed limits and redesigning streets for lower speeds, called *streetscaping* or *traffic calming* (NACTO 2020; Toole 2021; Strong Towns 2020). Neighborhood streets should generally be designed for 30 kph (20 mph) maximum and urban arterials for 50 kph (30 mph) maximum (Brenneis 2021). During the three years after Toronto reduced speed limits from 40 kph to 30 kph on some streets in 2015, pedestrian-vehicle crashes declined 28%, and major and fatal injuries decreased 67% (Fridman, et al. 2020).

Several cities are dedicating new funding to repair and complete their sidewalk networks. A class-action lawsuit by disability rights advocates requires the city of Los Angeles to spend about $30 annually per capita to upgrade all sidewalks to meet design standards (Shoup 2022). Approximately 40% of Denver, Colorado's sidewalks are missing or substandard. A citizen's referendum establishes special taxes averaging approximately $50 annually per capita to upgrade and complete the city's sidewalk network (Denver 2019). Using detailed field data, Corning-Padilla and Rowangould (2019) estimated that improving all Albuquerque, NM sidewalks to optimum standards would cost approximately $60 per capita or about $3 annual per capita assuming a 20-year operating life.

Experience in many cities, including Victoria, indicate that providing high quality walking and bicycling facilities can significantly increase use of those modes and reduce automobile travel (ALR 2016). Bicycling improvements are particularly appropriate now to accommodate growing e-bike traffic. These can approximately double the portion of trips that can be made by light two-wheelers, particularly in suburban and rural areas, providing large savings and benefits. This can only occur, however, if communities provide adequate facilities.

People with disabilities (PwD) require more than universal design requirements; they need adequately funded multimodal planning. For example, if a jurisdiction mandates universal design without increasing non-auto funding, it will build fewer sidewalk-kilometers and provide less total transit services, due to the additional costs of meeting those requirements. Many PwD cannot drive, and about half live in low income households, so most need non-auto modes plus appropriate housing in high-access urban villages where most commonly-needed services are accessible within a 15-minute walk or roll.

It is also important to improve public transit services. The *Victoria Transit Future Plan* is an ambitious program to improve transit service and create transit-oriented communities. However, this is a 25-year program. To achieve our mode shift targets and maximize benefits, local governments and the CRD should work with BC Transit to greatly accelerate its implementation.

Victoria's Transit Future Plan identifies ways to improve non-auto travel in our region. It is a good plan, but at current implementation rates it will not be completed for two decades. The region should accelerate its implementation to achieve mode shift targets and maximize benefits.

In addition, we need interregional transit improvements, particularly frequent and affordable bus service between Victoria and communities north of the Malahat, plus more convenient services between Victoria and Vancouver. This would be a fast and cost effective way to reduce traffic problems and improve affordability on those corridors.

There are many ways that local communities can improve and encourage public transit: improve walking and bicycling access to transit stops, create full-service transportation hubs and transportation management associations in major activity centers (downtowns, campuses, medical and shopping centers), support transit-oriented development, reduce parking minimums along transit corridors, implement TDM plans and require large employers to implement commute trip reduction programs.

There is a need to improve inter-city connections, particularly between Vancouver Island communities (Litman 2021). Currently, there is frequent and affordable transit service between Victoria and Sooke with 32 daily buses and $2.50 per trip fares. These carry 22% of peak-period travellers on that corridor, demonstrating that many travellers will use convenient and affordable public transit. However, between Victoria and Duncan there are only four weekday buses with $10 per trip fares, so it is unsurprising that public transit carries an insignificant portion of trips on that corridor. Similarly, Victoria to Vancouver transit connections are inconvenient and uncomfortable; they could be improved with better user information, integrated fares, better facilities, plus more frequent and faster services.

Transportation Demand Management Programs

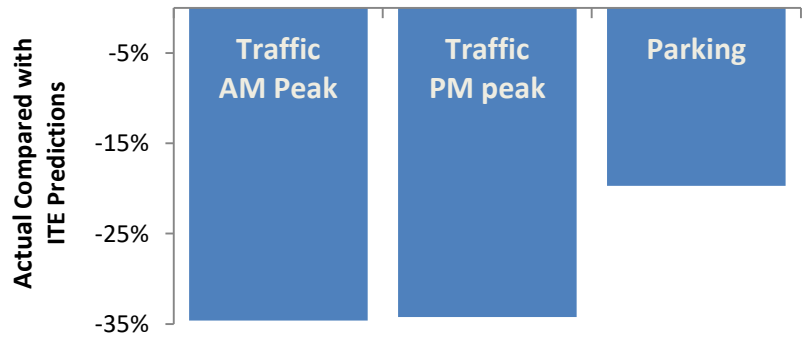
Transportation Demand Management (TDM) programs encourage travellers to use the most efficient option for each trip (ABC 2014; Nelson\Nygaard 2022; ODOT 2019). These include school and campus transport management, commute trip reduction, special event transportation management, and transportation management associations in major activity centers such as downtowns and malls. They can also include incentives or requirements for developers and building managers to reduce vehicle trip generation. The *Green Trip Program* (http://transformca.org/GreenTRIP) is a third-party certification program that rates and rewards developers for their parking and trip reduction policies. They can be very cost effective, considering savings to households and businesses, and reduced traffic impacts.

School trips are particularly appropriate for mode shifting. *Safe Routes to School* (SRTS) is an international movement to make walking and bicycling to school safe. The *Case Studies and Success Stories* website identifies more than a dozen successful SRTS programs. These programs typically increase non-auto mode shares by 50% to 100% and since automobile chauffeuring trips often involve empty backhauls, they provide relatively large reductions in automobile travel and costs.

To reduce traffic problems, the city of Boston limits parking supply in some locations and requires large developments to have a TDM plan (Boston 2022). The city produced a list of potential TDM strategies and a tool evaluating and selecting them for particular locations. Developers sign legal contracts, called *Transportation Access Plan Agreements*, which specify their responsibilities. The City of Seattle has a Commute Trip Reduction Plan that implements various travel reduction programs (Seattle 2019).

A recent study found that Minneapolis-St. Paul area office buildings that implemented TDM plans generate, on average, 35% less traffic and need 17% to 24% fewer on-site parking spaces than Institute of Transportation Engineers' predicted rates, as illustrated below.

Figure 5 **TDM Program Impacts** (Spack and Finkelstein 2014)



Office buildings with TDM programs generate 35% fewer trips and require 20% fewer parking spaces than comparable buildings without such programs. This indicates that TDM programs can significantly reduce parking facility costs and traffic problems such as congestion, crash risk and pollution emissions.

Fairfax County has ambitious vehicle trip reduction goals. The study, *Don't Underestimate Your Property: Forecasting Trips and Managing Density over the Long Term* (Galdes and Schor 2022), found that 13 residential and commercial developments with TDM programs actually generate 63% fewer trips than trip generation models predict, exceeding the goals. As one traffic engineer explained,

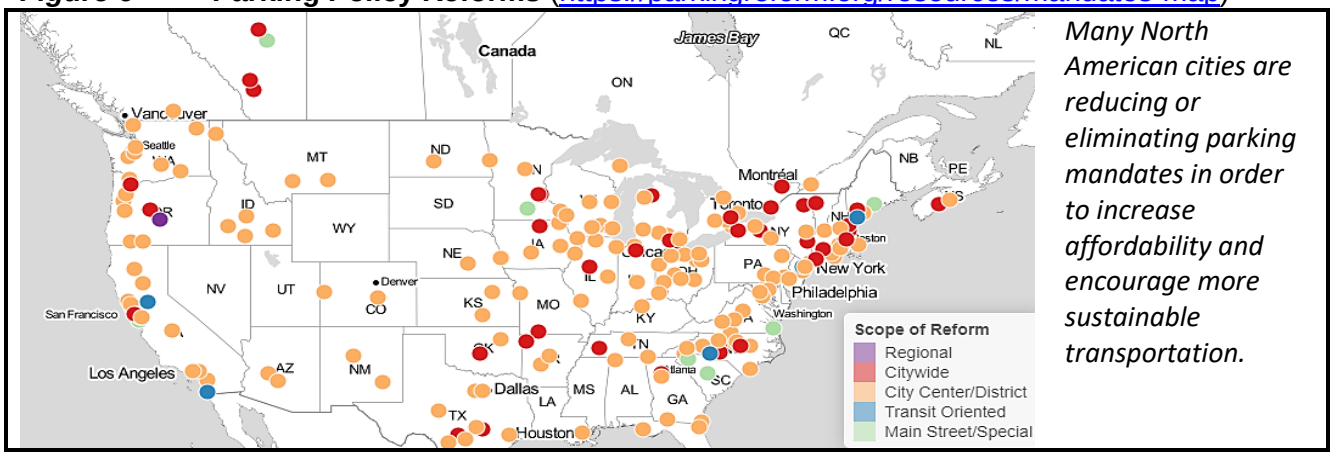
> "Overestimating trip generation can have deleterious effects on a neighborhood because trip generation is so closely linked to the amount of square footage that a property is allowed. More than any other feature of a development, vehicle trip generation estimates determine density limits and impacts." (Mike Workosky, traffic engineer and President of Wells + Associates)

Efficient Parking Management

A major portion of city streets is devoted to unpriced parking, and governments mandate off-street parking at most destinations. These practices are costly, inefficient and unfair (Spivak 2022). Considering land, construction and operating expenses, a typical urban parking space costs more than $1,500 per year and government mandates result in three to eight parking spaces per vehicle in a typical community. Unpriced parking is never really free. Everybody pays indirectly through higher taxes, rents and retail prices. Parking subsidies add a few dollars to weekly shopping costs and restaurant bills. This is unfair to people who drive less than average, and since vehicle travel increases with income, it tends to be regressive. Subsidized parking also increases traffic problems. As Professor Donald Shoup famously commented, "Free parking is a fertility drug for cars."

Many jurisdictions are reducing or eliminating parking mandates in order to increase affordability, equity and sustainability (Bula 2021; Roskowski 2021), as illustrated below.

Figure 6 **Parking Policy Reforms** (https://parkingreform.org/resources/mandates-map)



Many North American cities are reducing or eliminating parking mandates in order to increase affordability and encourage more sustainable transportation.

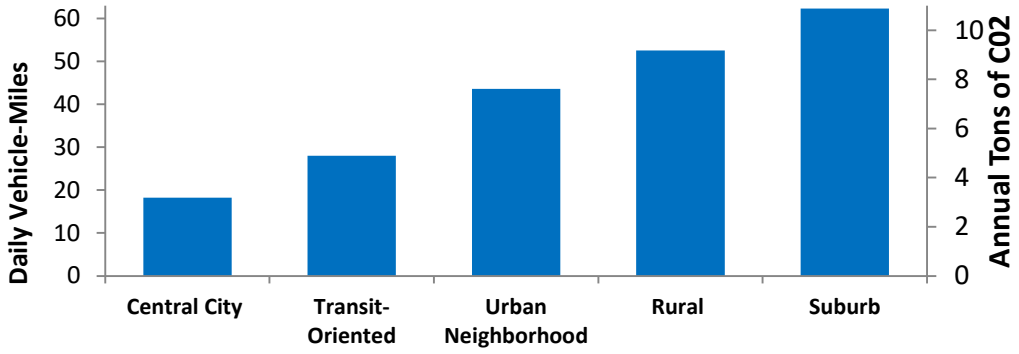
Eliminating parking minimums does not eliminate parking; it simply allows property owners to decide how much parking to provide based on user demands. As a result, car-free households are no longer forced to pay for costly parking facilities they don't need, and businesses have incentives to encourage employees to shift from driving to more sustainable modes, because they can save on parking costs.

Surveys indicate that lower-income households in multifamily housing require far fewer, often less than half, of the parking spaces that zoning codes require (Translink 2018), particularly if parking is *unbundled* (rented separately from housing units), so car-free households are no longer required to pay for costly parking facilities they don't use. This can be required, as in Seattle (Schmitt 2018). Washington DC requires large employers to cash out free parking, which means that commuters who use non-auto modes receive the cash equivalent of any parking subsidies provided to commuters who drive (AF 2022).

Increase Housing in Walkable Urban Neighborhoods

One of the most effective ways of increasing affordability, reducing traffic problems and reducing environmental damage is to support infill development in walkable urban neighborhoods where it is easy to get around without driving. Residents of such communities typically generate half as much vehicle-kilometers and emissions, and spend half as much on transportation as those households would if they were located in automobile-dependent areas, as illustrated below.

Figure 7 **Household Vehicle Travel by Location** (Salon 2014)



Motor vehicle travel and emissions are much lower (20-60%) in compact, transit-oriented regions than in sprawled, auto-dependent areas.

Conclusions and Recommendations

Motor vehicle traffic imposes many costs on users and communities, particularly in urban neighborhoods. As a result, there are many good reasons for local policies to favor affordable and resource-efficient modes. This does not eliminate driving, but it does encourage travellers to use the most efficient modes for each trip. The following local policies can help achieve these goals (Eltis 2021; Pollution Probe and Delphi Group 2020; WRI 2019):

- Require that individual, short-term planning decisions support mode shift targets (20% reduction in car trips and doubling walking, bicycling and public transit mode share).
- Recognize changing non-auto travel demands, such as growing e-bike travel and telework.
- Invest in non-auto modes to the degree justified by demands and community goals. Since local, regional and provincial governments have targets increase non-auto mode shares to exceed 30%, at least that portion of their transportation budgets should be devoted to those modes, and more if needed to correct for past underinvestments.
- Identify and correct gaps in sidewalk and bikeway networks. Set targets for completing sidewalk networks that meet universal design standards, and provide dedicated funding.
- Accelerate implementation of the *Victoria Transit Futures Plan*. Establish targets and funding to complete the plan by 2030.
- Improve intercity transit with frequent and affordable bus services between Victoria and Duncan, and other destinations on Vancouver Island, plus more convenient, comfortable and integrated transit services between Victoria and Vancouver.
- Significantly reduce or eliminate parking mandates and price parking efficiently. Manage parking so fewer spaces are needed to serve motorists demands and to support strategic transportation and land use development goals. Expand when and where on-street parking is priced in order to reduce parking congestion and recover roadway and parking facility costs from non-resident motorists.
- Establish and fund transportation demand management programs including safe routes to school programs, commute trip reduction requirements for large employers, and transportation management associations in large activity centers.
- Educate, encourage and reward developers and property managers for implementing parking management and trip reduction programs.
- Develop compact, multimodal urban villages where most commonly-used service are within convenient walking and rolling distance, with housing for people with disabilities and low incomes.

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