Use of Public Space for Shared Mobility

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Creating Cities For People or Cars?

Automobiles make wonderful servants but terrible masters.

Design your community for **people**, and then accommodate motor vehicles. Don't design communities for **vehicles** and then try to accommodate people.

Cities Require Density

- Cities are places where many people and activities locate close together. This increases efficiency by reducing the distances that people and goods must travel to reach destinations.
- Urban space is always scarce and valuable. To be efficient and equitable, urban roads must be managed to favor higher value trips and space efficient modes over lower value trips and space intensive modes.

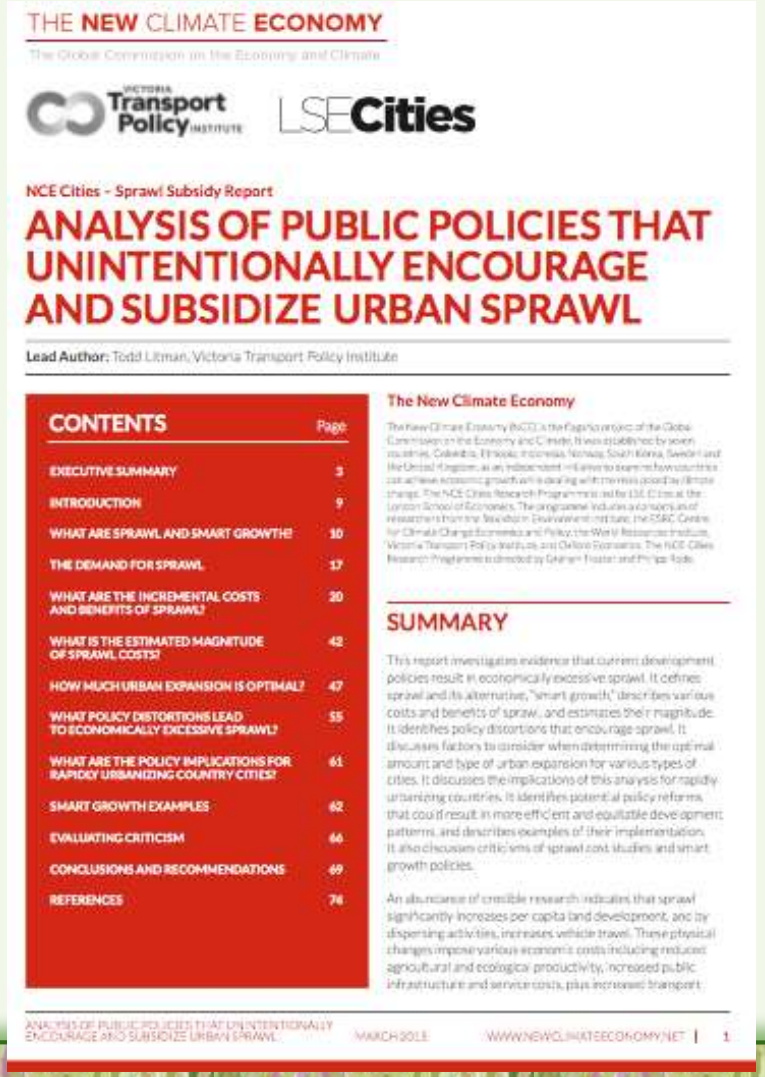
Compact Development Benefits

Urban efficiencies can provide various economic, social and environmental benefits:

- Transport cost savings for households and businesses.
- Reduced costs of providing public infrastructure and services.
- Improved economic opportunity to disadvantaged people.
- Lower traffic risk and improved public health.
- Reduced per capita land consumption, which preserves farmland and wildlife habitat.
- Increased economic productivity.
- Energy conservation and emission reductions.

Sprawl Costs – Smart Growth Benefits

The report, *Analysis of Public Policies that Unintentionally Encourage and Subsidize Sprawl*, for the New Climate Economy, describes and quantifies the costs of sprawl and benefits of smart growth policies, and identifies specific policy reforms for more efficient development.



THE NEW CLIMATE ECONOMY

The Global Commission on the Economy and Climate

Victoria Transport Policy Institute | LSE Cities

NCE Cities - Sprawl Subsidy Report

ANALYSIS OF PUBLIC POLICIES THAT UNINTENTIONALLY ENCOURAGE AND SUBSIDIZE URBAN SPRAWL

Lead Author: Todd Litman, Victoria Transport Policy Institute

CONTENTS Page

The New Climate Economy

The New Climate Economy (NCE) is the flagship project of the Global Commission on the Economy and Climate. It was established by seven countries: Colombia, Ethiopia, Indonesia, Norway, South Korea, Sweden and the United Kingdom, as an independent initiative to examine how countries can achieve economic growth while dealing with the risks posed by climate change. The NCE Cities Research Programme is led by LSE Cities at the London School of Economics. The programme includes participants and research from the Brookings Institution, the ESRC Centre for Climate Change Economics and Policy, the World Resources Institute, Victoria Transport Policy Institute, and Oxford Economics. The NCE Cities Research Programme is directed by Graham Tipple and Philip Rode.

SUMMARY

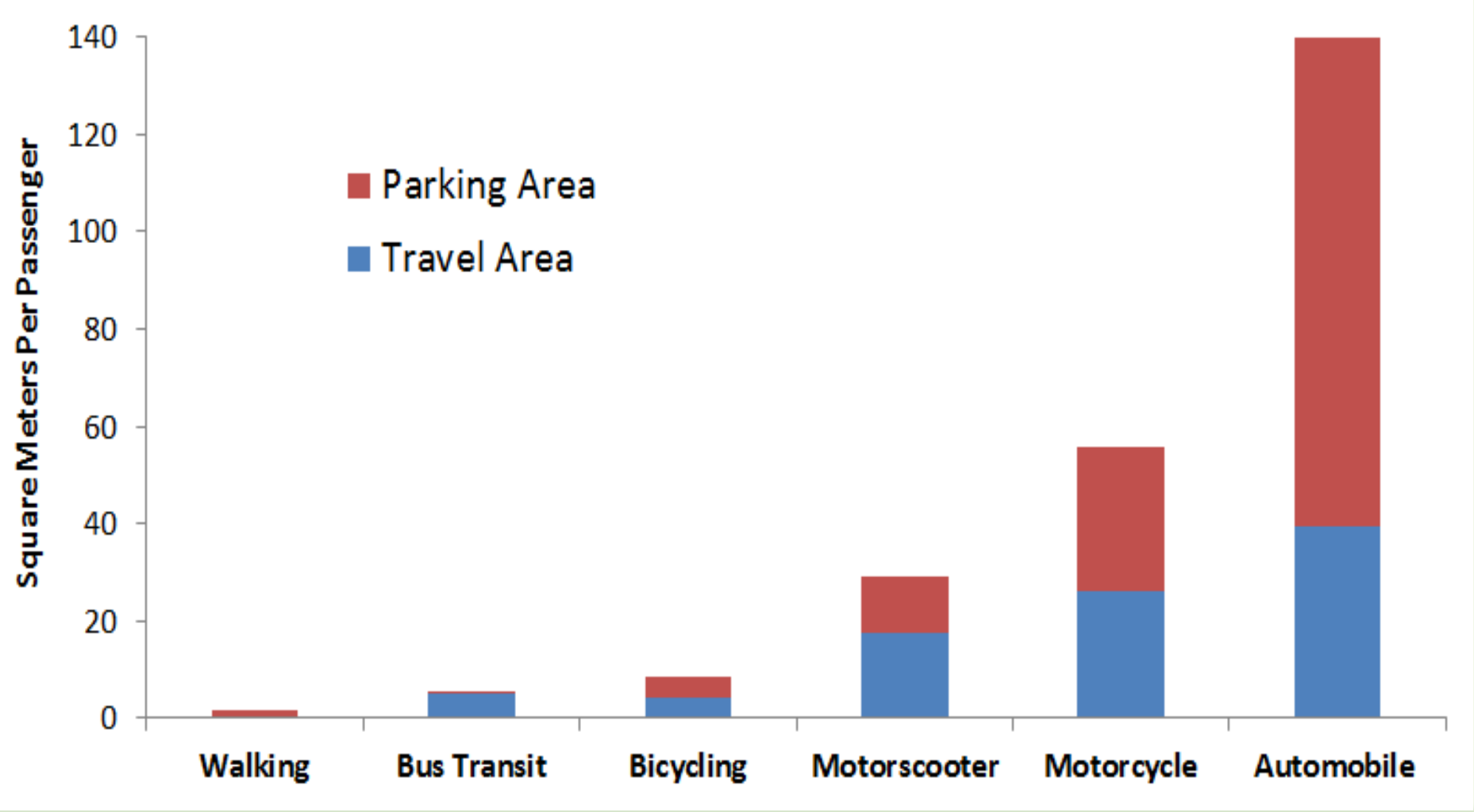
This report investigates evidence that current development policies result in economically excessive sprawl. It defines sprawl and its alternative, "smart growth," describes various costs and benefits of sprawl, and estimates their magnitude. It identifies policy distortions that encourage sprawl. It discusses factors to consider when determining the optimal amount and type of urban expansion for various types of cities. It discusses the implications of this analysis for rapidly urbanizing countries. It identifies potential policy reforms that could result in more efficient and equitable development patterns, and describes examples of their implementation. It also discusses criticisms of sprawl cost studies and smart growth policies.

An abundance of credible research indicates that sprawl significantly increases per capita land development, and by dispersing activities, increases vehicle travel. These physical changes impose various economic costs including reduced agricultural and ecological productivity, increased public infrastructure and service costs, plus increased transport

Recipe for Successful Cities

Factor	Un-Constrained	Semi-Constrained	Constrained
Growth pattern	Expand as needed	Expand less than population growth	Minimal expansion
Optimal regional density (residents / hectare)	20-40	40-100	80 +
Optimal vehicle ownership (motor vehicles per 1,000 residents)	300-400	200-300	< 200
Housing types	A majority can be small-lot single-family and adjacent	Approximately equal portions of small-lot single-family, adjacent, and multi-family.	Mostly multi-family
Private auto mode share	20-50%	10-20%	Less than 10%
Portion of land devoted to roads and parking	10-15%	15-20%	20-25%

Road and Parking Space Requirements



Streets Are Valuable Public Assets

Streets are most cities most valuable assets.

The should be shared by all residents.

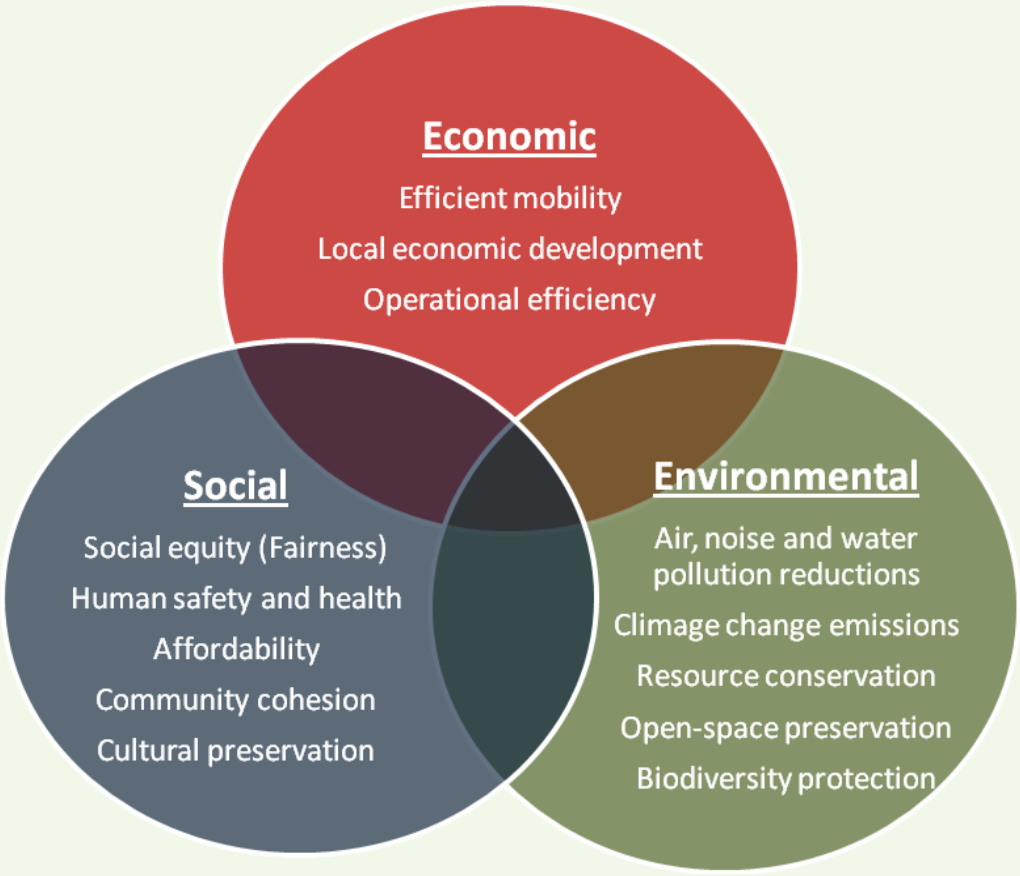
Roads For Everybody

Many people cannot or should not drive:

- Youths 8-18 (about 20% of total population).
- Seniors over 70 who do not or should not drive (about 10% of total population and increasing).
- Adults who cannot drive due to disability (3-5%).
- Households with low incomes that want to minimize automobile expenses.
- People impaired by alcohol or drugs.
- People who walk or bike for enjoyment and health.
- Pets who walk or bike for enjoyment and health.
- Motorists who want to avoid chauffeuring non-drivers.

Sustainable Planning

Sustainability emphasizes the integrated nature of human activities and therefore the need to coordinate planning among different sectors, jurisdictions and groups.



Sustainabile Transportation?

Is a transport system sustainable if all vehicles are electric powered?

Electric Power Does Not:

- Reduce traffic congestion
- Reduce accidents
- Reduce roadway costs
- Reduce parking facility costs
- Reduce vehicle purchase costs
- Improve mobility for non-drivers
- Improve social equity
- Improve public fitness and health
- Reduce sprawl
- Protect threatened habitat

Win-Win Solutions

More comprehensive planning helps identify "Win-Win" strategies: solutions to one problem that also help solve other problems facing society.

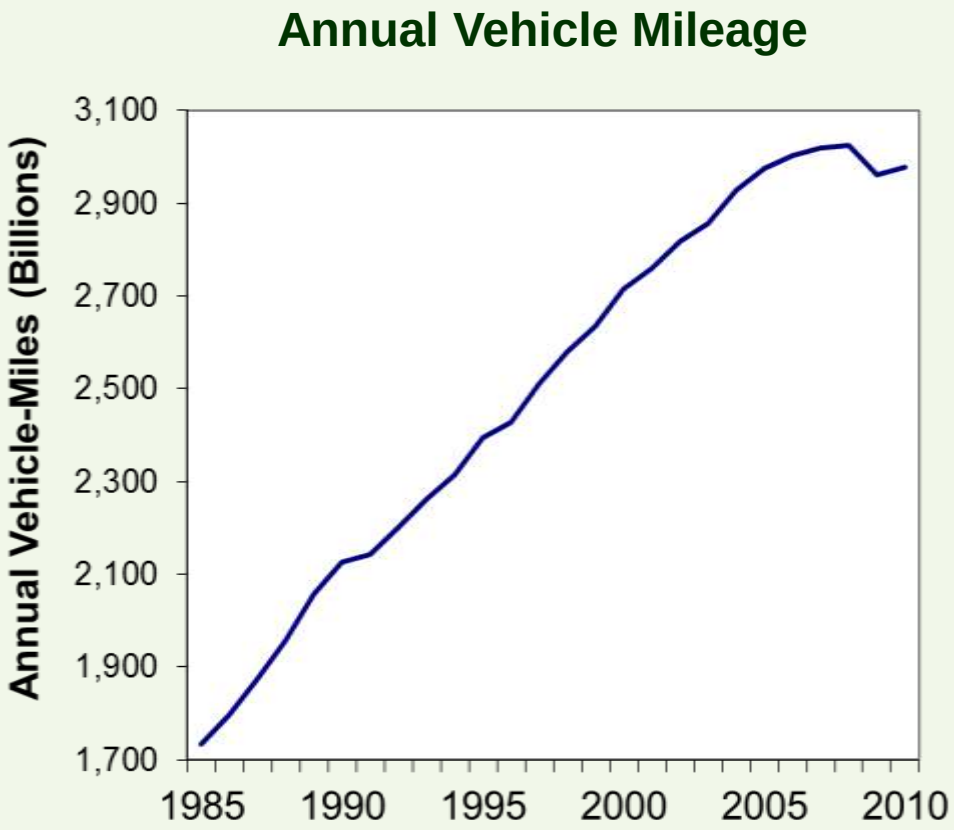
Ask:

"Which congestion-reduction strategy also reduces parking costs, saves consumers money, and improves mobility options for non-drivers."

Comparing Benefits

Planning Objectives	Expand Roadways	Efficient and Alt. Fuel Vehicles	Improve Efficient Modes and Pricing
Reduce traffic congestion	✓		✓
Improved travel experience	✓		✓
Roadway cost savings			✓
Parking cost savings			✓
Consumer cost savings			✓
Improve mobility options			✓
Improve traffic safety			✓
Energy conservation		✓	✓
Pollution reduction		✓	✓
Land use objectives			✓
Public fitness & health			✓

Motor Vehicle Travel is Peaking



Vehicle travel grew steadily during the Twentieth Century but stopped about 2003.

- Motor vehicle saturation.
- Aging population.
- Rising fuel prices.
- Increased urbanization.
- Increased traffic and parking congestion
- Improved transport options
- Changing preferences
- Health Concerns
- Environmental concerns

"The Economist" 22 Sept. 2012

"Governments may find that changes in driving habits force them to rethink infrastructure. Most forecasting models that governments employ assume that driving will continue to increase indefinitely. Urban planning, in particular, has for half a century focused on cars.

If policymakers are confident that car use is waning they can focus on improving lives and infrastructure in areas already blighted by traffic rather than catering for future growth.

By improving alternatives to driving, city authorities can try to lock in the benefits of declining car use.


The Economist

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The future of driving

Seeing the back of the car

In the rich world, people seem to be driving less than they used to

Sep 22nd 2012 | from the print edition

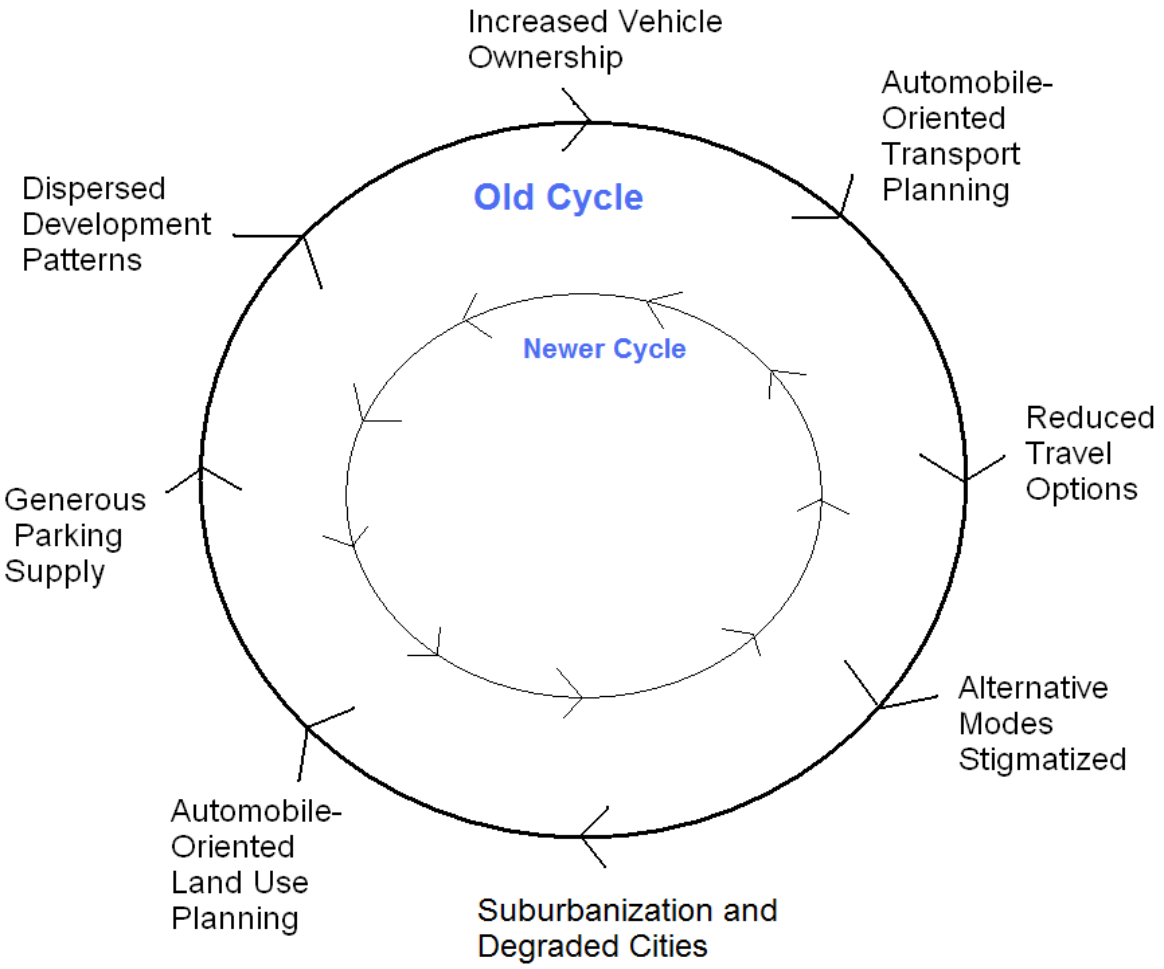
Like 1.7k Tweet 371

"I'LL love and protect this car until death do us part," says Toad, a 17-year-old loser whose life is briefly transformed by a "super fine" 1958 Chevy Impala in "American Graffiti". The film follows him, his friends and their vehicles through a late summer night in early 1960s California: cruising the main drag, racing on the back streets and necking in back seats of machines which embody not just speed, prosperity and freedom but also adulthood, status and sex.

Paradigm Shift

	Old Paradigm	New Paradigm
Definition of *Transportation*	*Mobility* (physical travel)	*Accessibility* (people's overall ability to reach services and activities)
Transport planning goals	Maximize travel speeds and minimize user costs	Optimize transport system efficiency and equity
Modes considered	Mainly automobile	Multi-modal: Walking, cycling, public transport, and automobile
Performance indicators	Vehicle traffic speeds, roadway Level-of-Service (LOS), distance-based crash and emission rates	Quality of transport options. Multi-modal LOS. Land use accessibility. Quality of accessibility for disadvantaged groups. Various costs to users and society.
Favored transport improvement strategies	Road and parking facility expansion.	Improve transport options. TDM. More accessible land development.
Health impacts considered	Per-kilometer traffic crash and pollution emission rates	Per capita crash, emission and physical activity rates, and basic access

Automobile Dependency and Sprawl

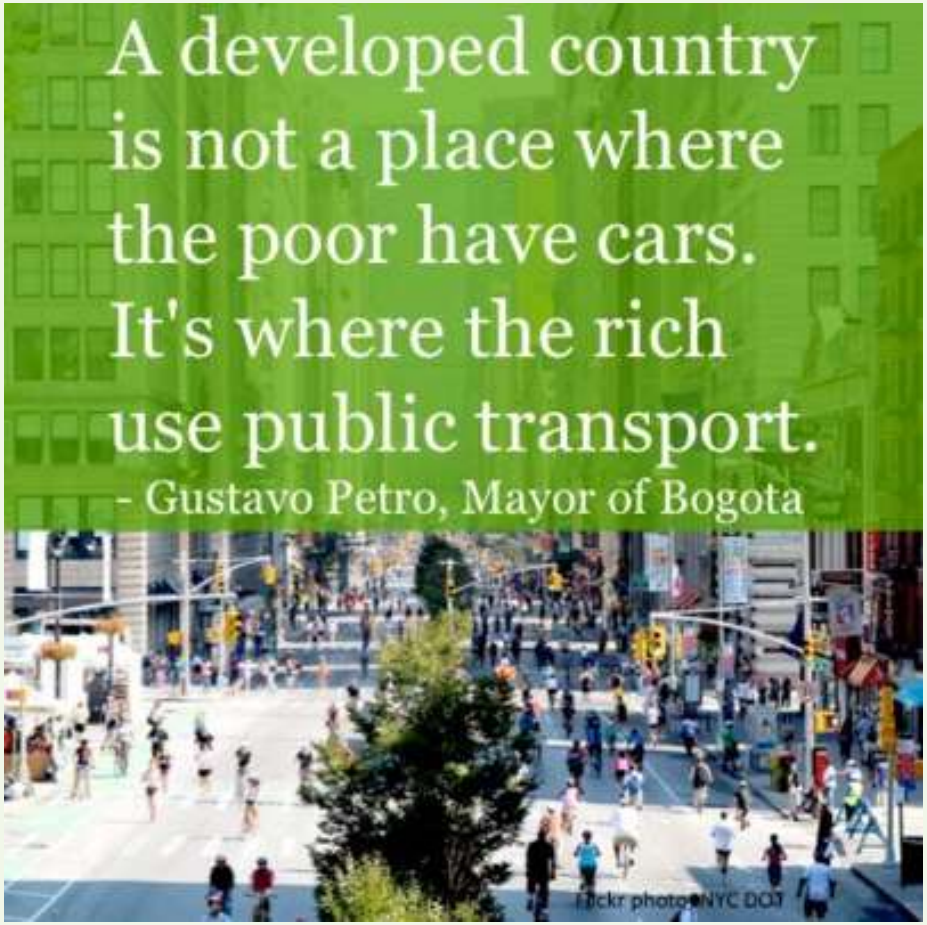


During the last century many transport and land use development practices tended to favor automobile dependency and sprawl. Many of these trends are now reversing, resulting in a new cycle of growing demand for multi-modal transportation systems and more compact communities.

Valuing Multi-Modalism

An efficient and equitable transportation system is diverse and has suitable incentives for users to choose the best mode for each trip, considering all impacts (benefits and costs).

Current planning does a poor job of valuing this diversity.



Efficient Transport System

An efficient urban transport system encourages people to use the most efficient mode for each trip:

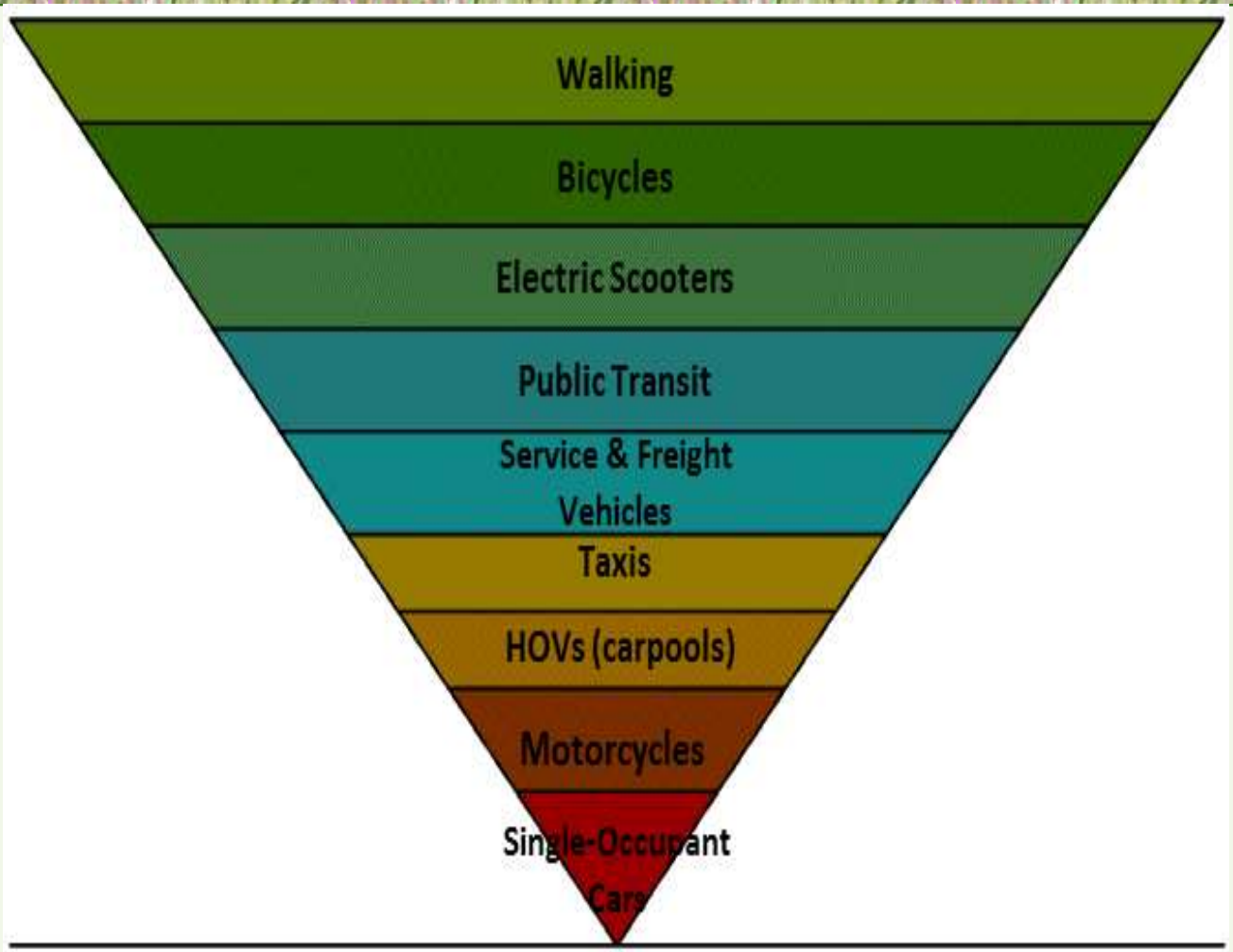
- Walking and cycling for local travel.
- Public transit for travel on busy corridors.
- Driving only when necessary.

Menu for Reducing Vehicle Ownership

- Good walking and cycling conditions.
- Efficient public transit.
- Compact, mixed land use, (neighborhood services).
- Carsharing (vehicle rentals that substitute for private vehicle ownership)
- Efficient parking pricing (charging motorists for using parking facilities)

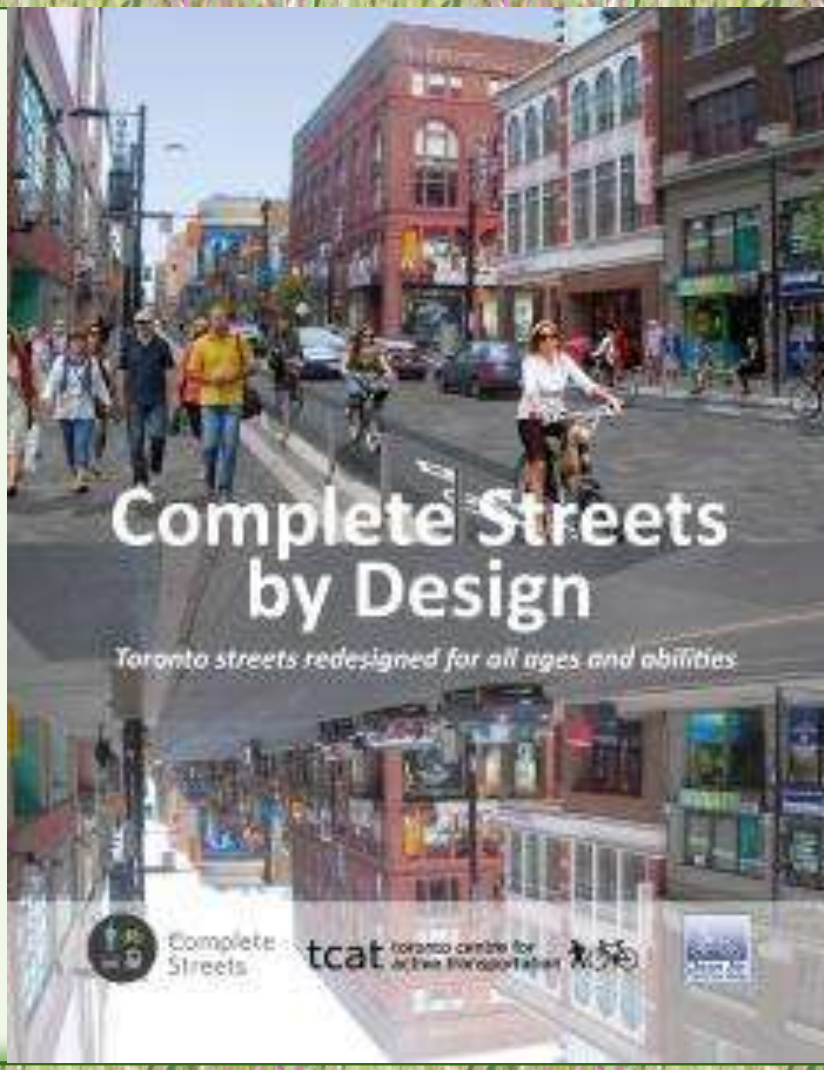
Sustainable Transport Hierarchy

1. Walking
2. Cycling
3. Public Transit
4. Service & Freight
5. Taxi
6. HOV
7. Private Automobile



Complete Streets

A Complete Street is designed for all activities, abilities, and travel modes. Complete Streets provide safe and comfortable access for pedestrians, cyclists, transit users and motorists, and a livable environment for visitors, customers, employees and residents in the area.



Roadway Uses and Users

Mobility

- Motorists
- Bus passengers
- Freight and service vehicles
- Pedestrians (passing through)
- Cyclists

More than 30 km/hr traffic speeds

Destination (Livability)

- People standing, sitting, walking
- Customers
- Businesses and their employees
- Property owners
- Residents

Less than 30 km/hr traffic speeds

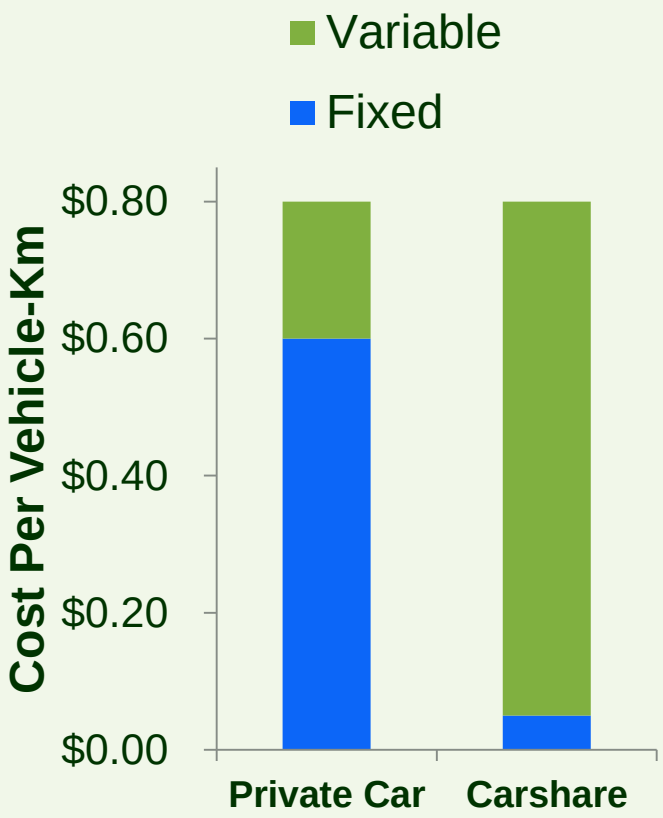
Carsharing

Automobile rental services intended to substitute for private vehicle ownership:

- Located in neighborhoods, and sometimes in buildings.
- Priced by hour and day.
- Convenient to rent.

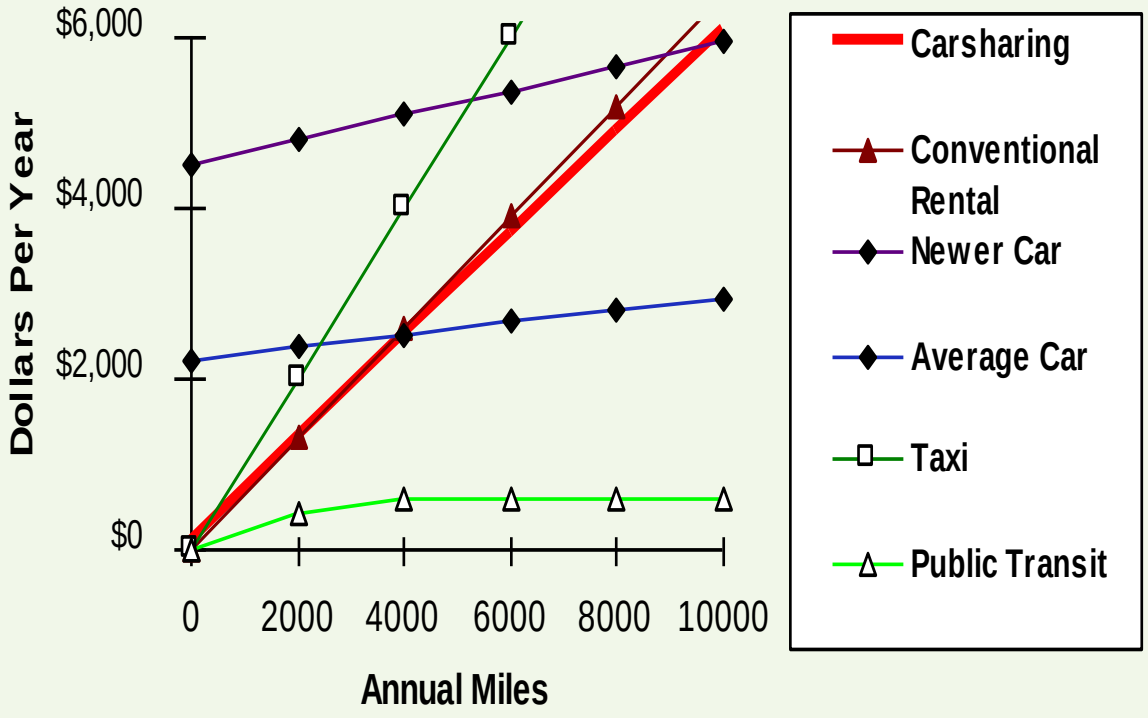
Carsharing Roles

- Provides affordable mobility for motorists who cannot afford to own a car but want to use them occasionally.
- Substitutes for vehicle ownership. A typical shared vehicle replaces 5-15 private cars.
- When households own a car, they have an incentive to use it, in order to get their money's worth from the high fixed costs. Carsharing has minimal fixed costs, and variable costs 4-10 times higher than private automobiles. Shifting from owning to renting vehicles typically reduce drivers' annual vehicle travel 40-60%.



Cost Profile for Various Modes

- Private auto ownership has high fixed costs, low variable costs. This results in economically-excessive motor vehicle travel.
- Carsharing and taxis have minimal fixed costs, high variable costs.
- Public transit has no fixed costs, and moderate variable costs which plateau if a user purchases a monthly or annual pass

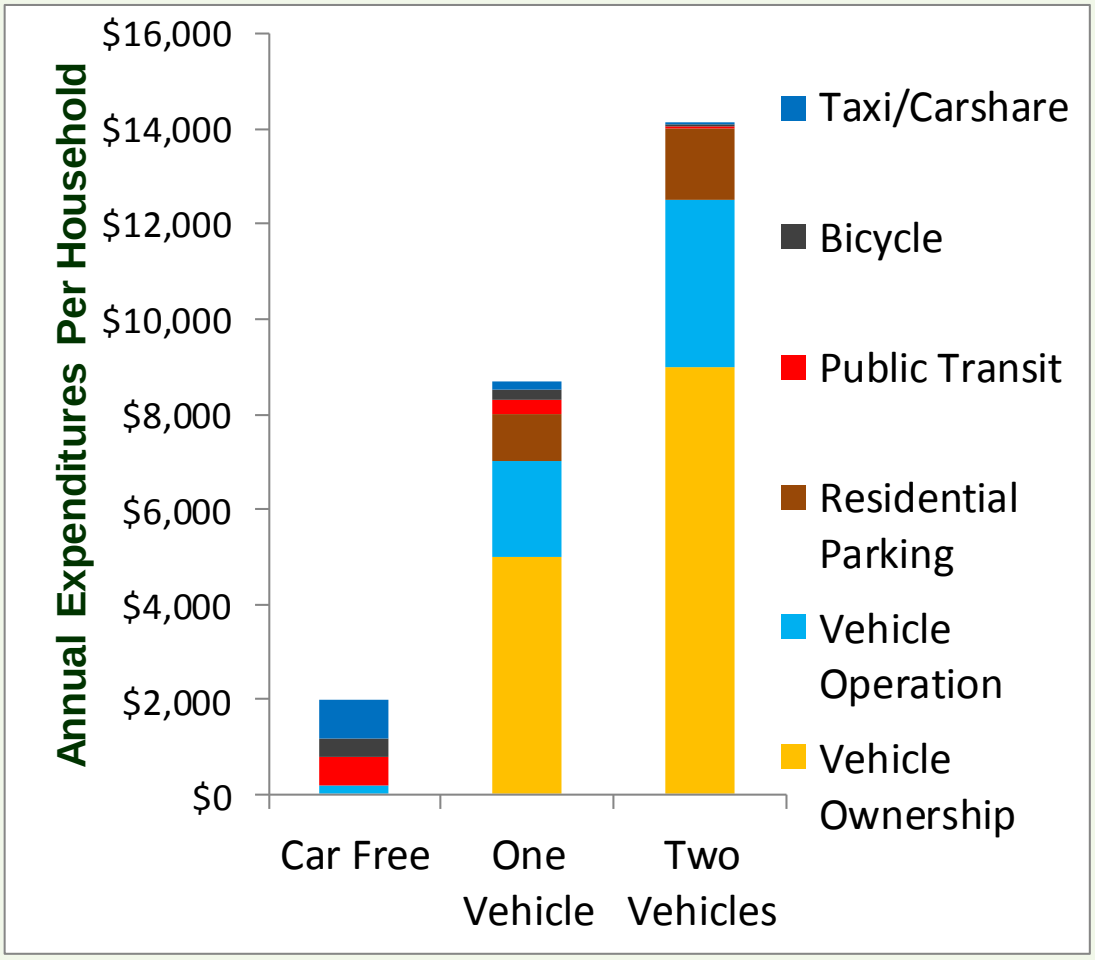


Transportation Affordability

Households can save thousands of dollars annually by reducing their vehicle ownership.

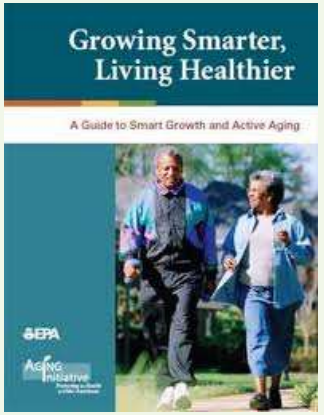
This requires:

- Good walking and cycling conditions and convenient public transit and taxi services.
- Compact, mixed neighborhoods with services and activities near homes.
- Convenient vehicle rental services (such as carsharing).



Smart Growth

- Compact (higher density)
- Mixed use
- Diverse housing types
- Connected roads
- Multi-modal
- Good walking and cycling conditions
- Good public transit services
- Efficient parking management
- Emphasis on the public realm (public places where people interact)

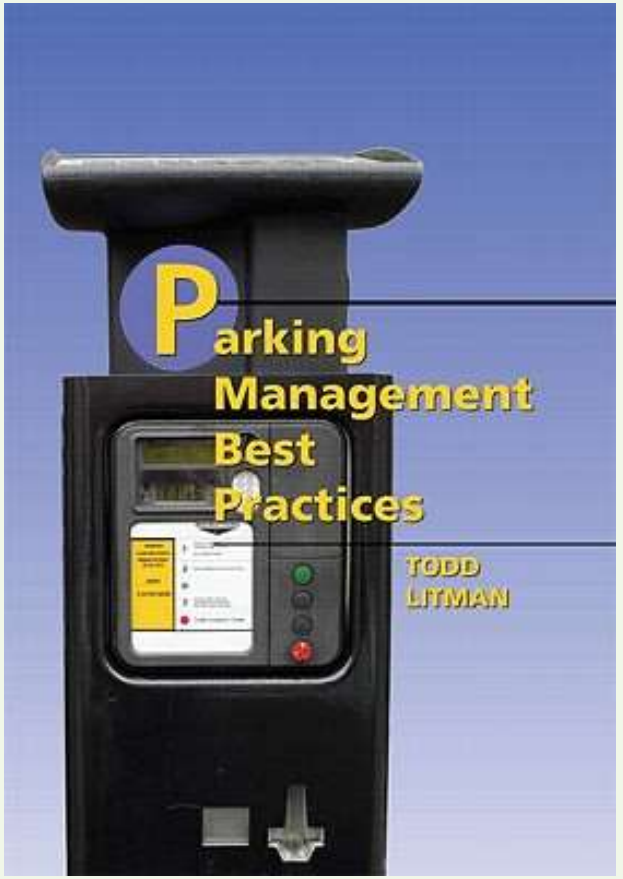


Parking Management

Various strategies that result in more efficient use of parking supply

Parking Management Strategies

- Share spaces, within a parking lot and between destinations
- Use of off-site parking, particularly for occasional overflow
- Reduced and more flexible requirements
- Regulate and price to prioritize use of the most convenient spaces
- Encouraging use of alternative modes, particularly during peak periods
- Improved walking conditions, to allow more convenient use of off-site parking facilities
- Improved user information, so travelers can determine their travel and parking options.
- Improved design of existing parking facilities



Affordable-Accessible Housing

- Locate affordable housing in accessible areas (near services and jobs, walkable, public transit).
- Diverse, affordable housing options (secondary suites, rooms over shops, loft apartments).
- Reduce parking requirements and unbundle parking.
- Reduce property taxes and utility fees for compact infill housing.

Carsharing Benefits

Category	Improved Mobility Option	Reduced Vehicle Ownership	Reduced Vehicle Travel	Support for More Compact Development
Indicators	*Carsharing Availability and Use*	*Per Capita Vehicle Ownership*	*Automobile Travel Reductions*	*Portion of Development in TODs*
Benefits	Affordable mobility option – increased mobility by people who cannot afford an automobile Option value (value of having options that may sometime be useful) Equity benefits (since existing users tend to be disadvantaged)	Consumer cost savings Residential parking cost savings	Reduced traffic and parking congestion, and resulting facility cost savings Increased traffic safety Energy conservation Reduced air and noise pollution Increased demand for walking, cycling and public transit	Improved accessibility, particularly for non-drivers Additional vehicle travel reductions (“leverage effects”), such as a shift to walking Reduced infrastructure costs from more compact development Openspace preservation
Costs	Any public costs to support carsharing, including financial and parking subsidies.	Reduced convenience.	Reduced automobile business activity	Various problems associated with denser development

Discussion Questions

- What are Carsharing's most important roles and benefits? Is there consensus on this?
- What are the best ways to support Carsharing (financial subsidies, free or discounted public parking, reduced parking requirements for developments that include them)?
- To what degree should developments, private companies and local governments be willing to support and subsidize carsharing? How much would be excessive?
- How can we best communicate the benefits of Carsharing to various stakeholder groups (potential users, developers, transportation practitioners, public officials, the general public)?

“Analysis of Public Policies That Unintentionally Encourage and Subsidize Urban Sprawl”

“Affordable-Accessible Housing in a Dynamic City”

“Transportation Cost and Benefit Analysis”

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