



Win-Win Solutions to Climate Risks

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Presented

The Conversation

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Our Home



Good planets
are difficult to
find.

Let's take good
care of the one
we have!

Sustainable Planning

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



Sustainable 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



Examples of Win-Win Strategies

Improve Efficient Transport Options	Incentives to Use Efficient Options	Support Compact Development	Implementation Programs
<ul style="list-style-type: none">• Walking & cycling improvements• Public transit improvements• Carsharing• High occupancy vehicle (HOV) priority• Rideshare programs• Taxi & Ridehailing improvements	<ul style="list-style-type: none">• Distance-based insurance• Commuter financial incentives (parking cash out, transit subsidies, etc.)• Parking pricing• Road tolls/congestion pricing• Fuel tax increases	<ul style="list-style-type: none">• Smart Growth/New Urban policies• Transit oriented development• Complete streets• Affordable infill housing.• Parking management• Streetscaping• Traffic calming	<ul style="list-style-type: none">• Healthy community rating• Commute trip reduction programs• Mobility management marketing• School and campus transport management• Transport planning reforms

Win-Win Transport Solutions

Planning Objectives	Efficient and Alternative Fuel Vehicles	Compact Development & Improve Efficient Modes
Reduce traffic congestion		✓
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		✓

Evaluating Health Impacts

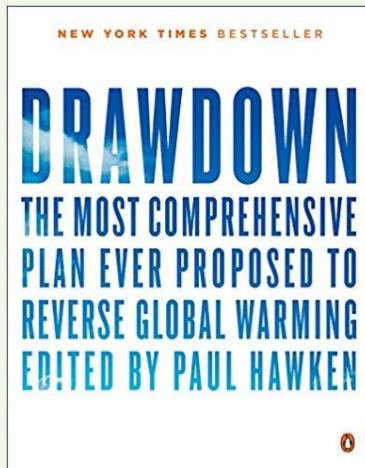
**GLOBAL
CLIMATE
AND HEALTH
FORUM**



Planning Decisions	Travel Impacts	Health Impacts
<ul style="list-style-type: none">• Transportation investments• Roadway design• Road, parking and transit user fees• Parking regulations• Community design (compact versus sprawl)• Location of public services (e.g. schools)	<ul style="list-style-type: none">• How people travel• Amount of active transport• How much people travel• Traffic speeds.• Transportation expenses• Mobility for disadvantaged people	<p>Physical activity and fitness</p> <p>Traffic safety</p> <p>Air and noise pollution exposure</p> <p>Affordability and inclusivity</p> <p>Climate change risks</p>

Drawdown Transport Solutions

Current emission reduction planning tends to overlook co-benefits and so favors technical solutions that change vehicle design rather than behavioural changes and planning reforms that reduce total vehicle travel.



Top Eleven Transportation Solutions

Included in the Project Drawdown list are 11 of the most impactful solutions for reducing emissions in the transport sector. The list excludes some solutions that are impactful, but future work of Project Drawdown will include as many other solutions as possible.

AIRPLANES – increased use of technologies to reduce aircraft fuel burn

CARS – increased use of hybrid cars

ELECTRIC BIKES – increased use of electric bikes instead of cars for urban travel

ELECTRIC VEHICLES – increased use of battery and plug-in hybrid vehicles

HIGH-SPEED RAIL – track construction for increased use of high-speed rail for intercity travel

MASS TRANSIT – increased usage of mass transit or public transport to get around cities

RIDESHARING – increased ride-sharing when commuting in North America

SHIPS – the use of technologies to make maritime shipping less fuel-intensive

TELEPRESENCE – replacing flying for business meetings with telepresence technologies

TRAINS – increased electrification of freight railways

TRUCKS – increased use of fuel reduction technologies and approaches for trucking

Win-Win Transport Solutions

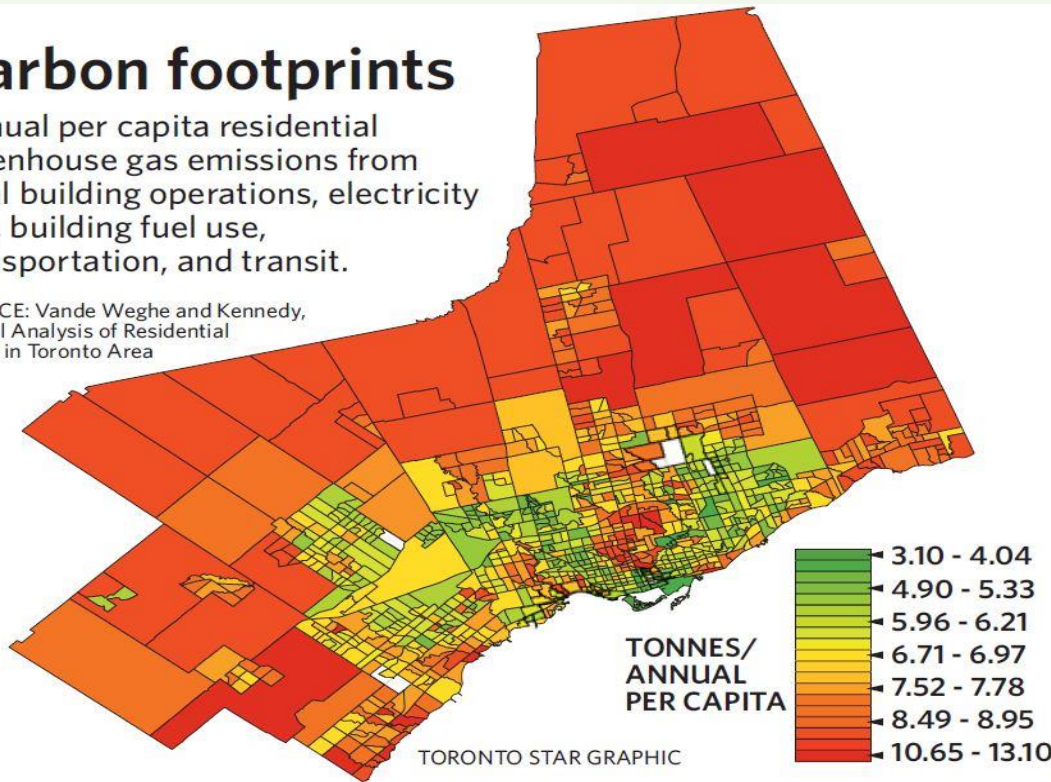
Strategies	GHG Reductions	Pollution Exposure	Physical Activity	Traffic Safety	Affordability
Airplanes	✓				
Hybrid cars	✓	✓			
Electric bikes	✓	✓			✓
Electric cars	✓	✓			
High-speed rail	✓	✓			
Mass transit	✓	✓	✓	✓	✓
Ridesharing	✓	✓			✓
Efficient ships	✓	✓			
Business telepresence	✓	✓			
Electric freight trains	✓	✓			
More efficient trucks	✓	✓			

Density Impacts on Emissions

Carbon footprints

Annual per capita residential greenhouse gas emissions from total building operations, electricity use, building fuel use, transportation, and transit.

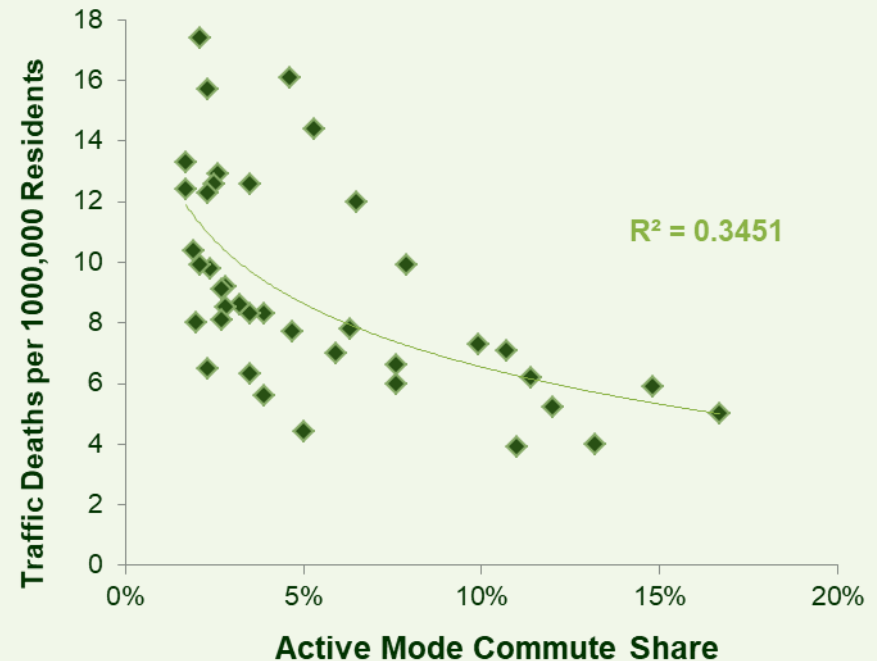
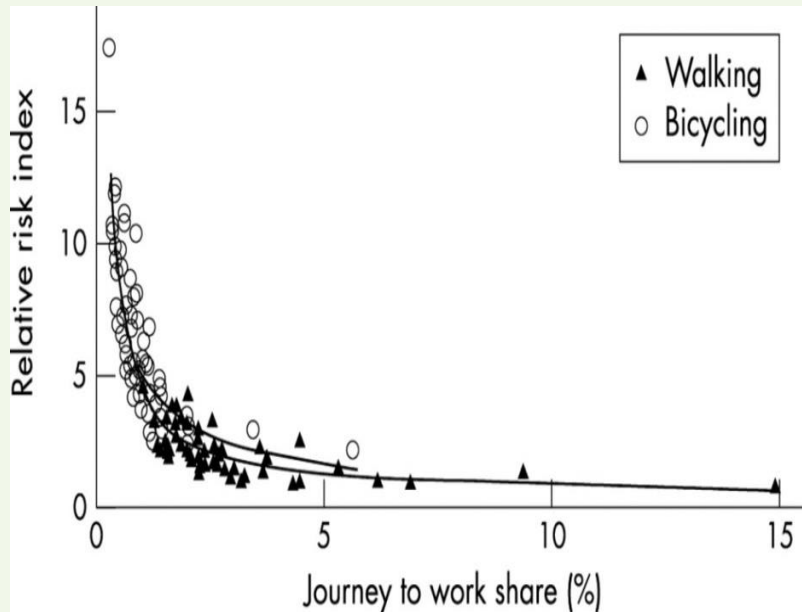
SOURCE: Vande Weghe and Kennedy, Spatial Analysis of Residential GHGs in Toronto Area



Toronto, Canada regional data show that total per capita household greenhouse gas emissions are two or three times higher in sprawled, suburban locations than in more compact, multimodal neighborhoods.

“A Spatial Analysis of Residential Greenhouse Gas Emissions in the Toronto Census Metropolitan Area” (VandeWeghe and Kennedy 2008)

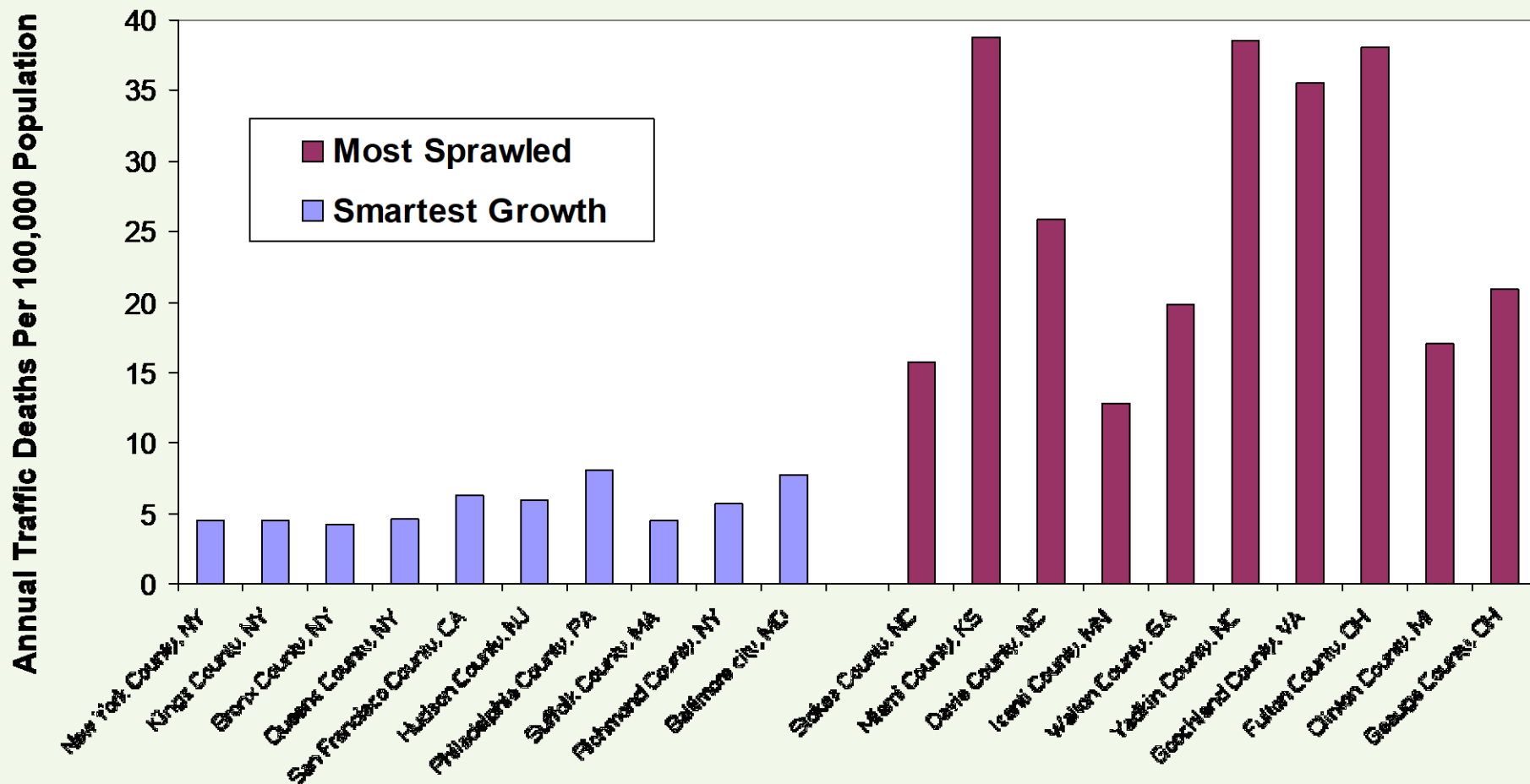
Safety In Numbers



Per capita traffic death rates tend to decline as active (walking and cycling) commute mode shares increase in U.S. urban regions.

This and other research indicate that more active travel tends to increase overall traffic safety.

Smart Growth Safety Impacts



What Gets People Moving?

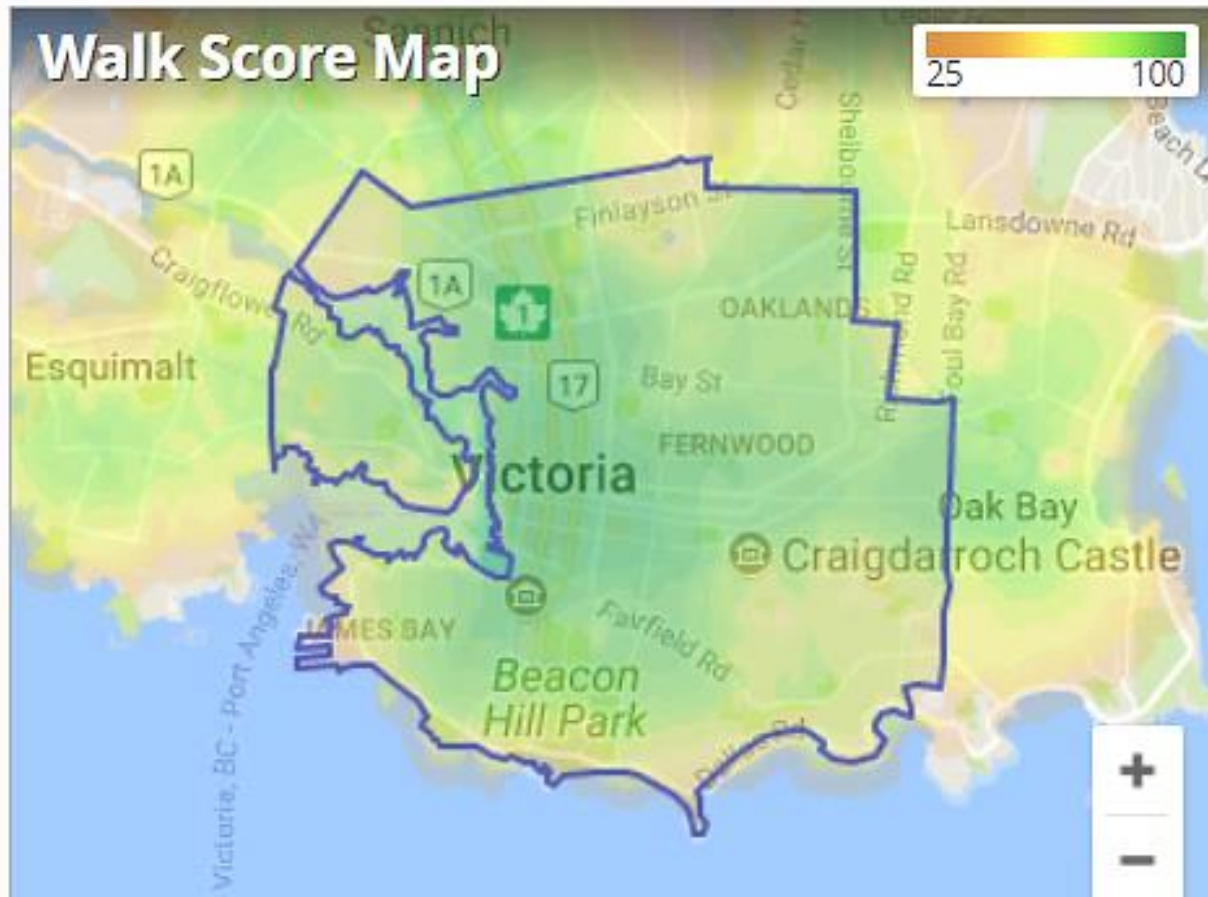
Walking is a natural and essential activity. If you ask sedentary people what physical activity they will most likely to stick with, walking usually ranks first.



Walk Score

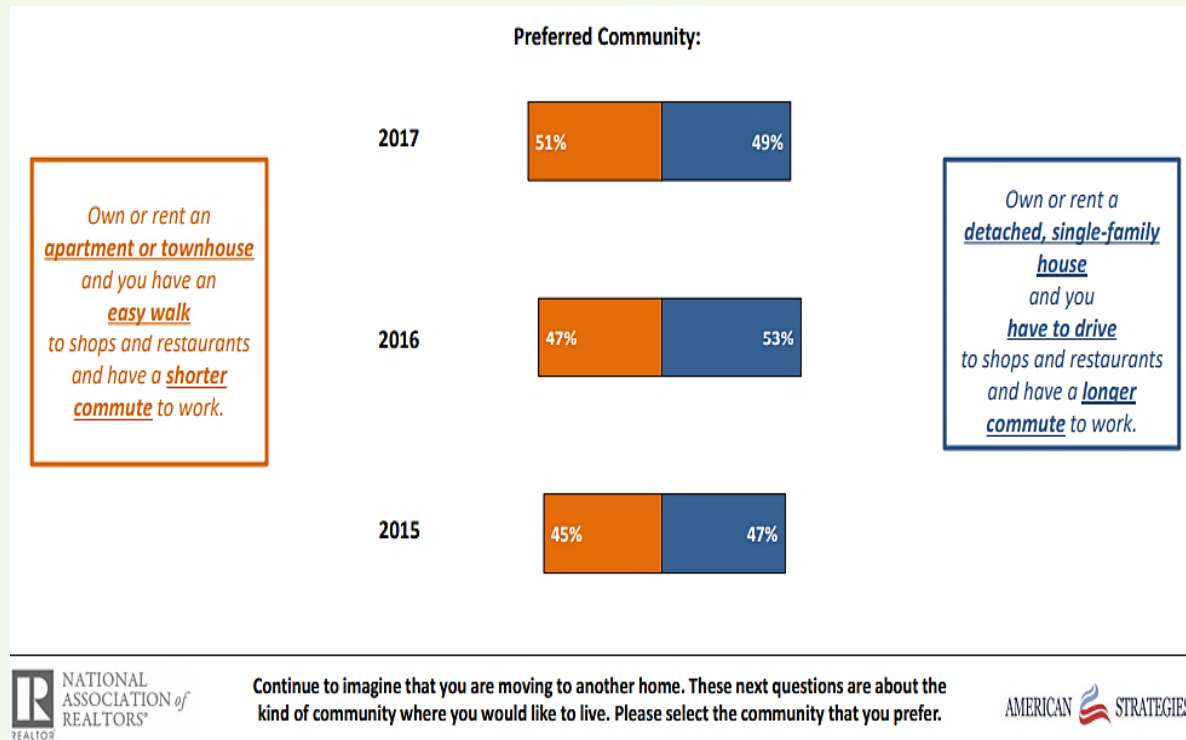
Victoria is very walkable.
Most errands can be accomplished on foot.

Walk Score 78

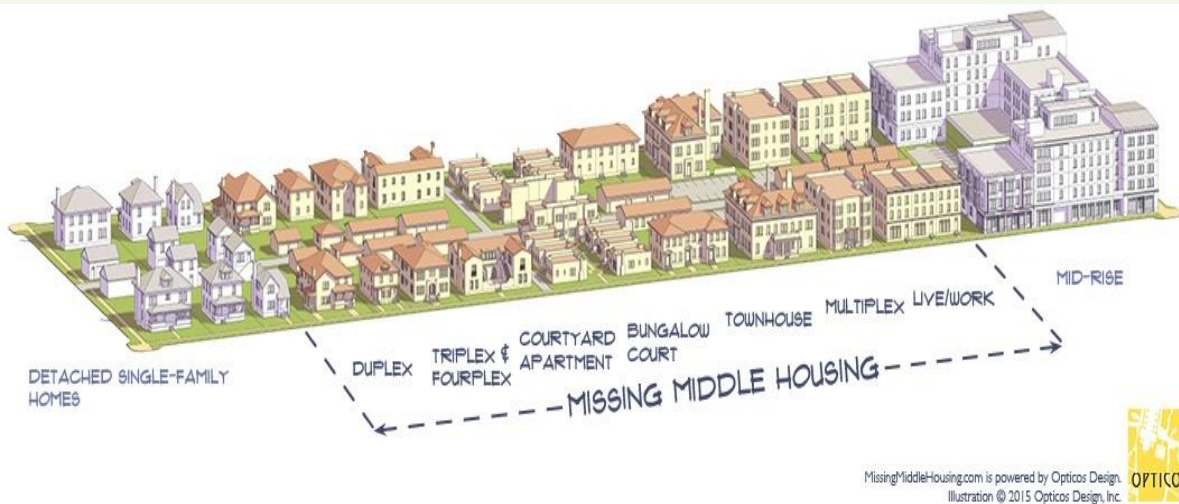


Consumer Demands

The National Association of Realtors *National Community and Transportation Preference Survey* indicates a growing preference for living in walkable urban neighborhoods even if that requires attached housing (apartment or townhouse). The IHAS ignores this research, claiming that most households still prefer automobile-dependent sprawl.



Missing Middle Housing (Parolek 2014)



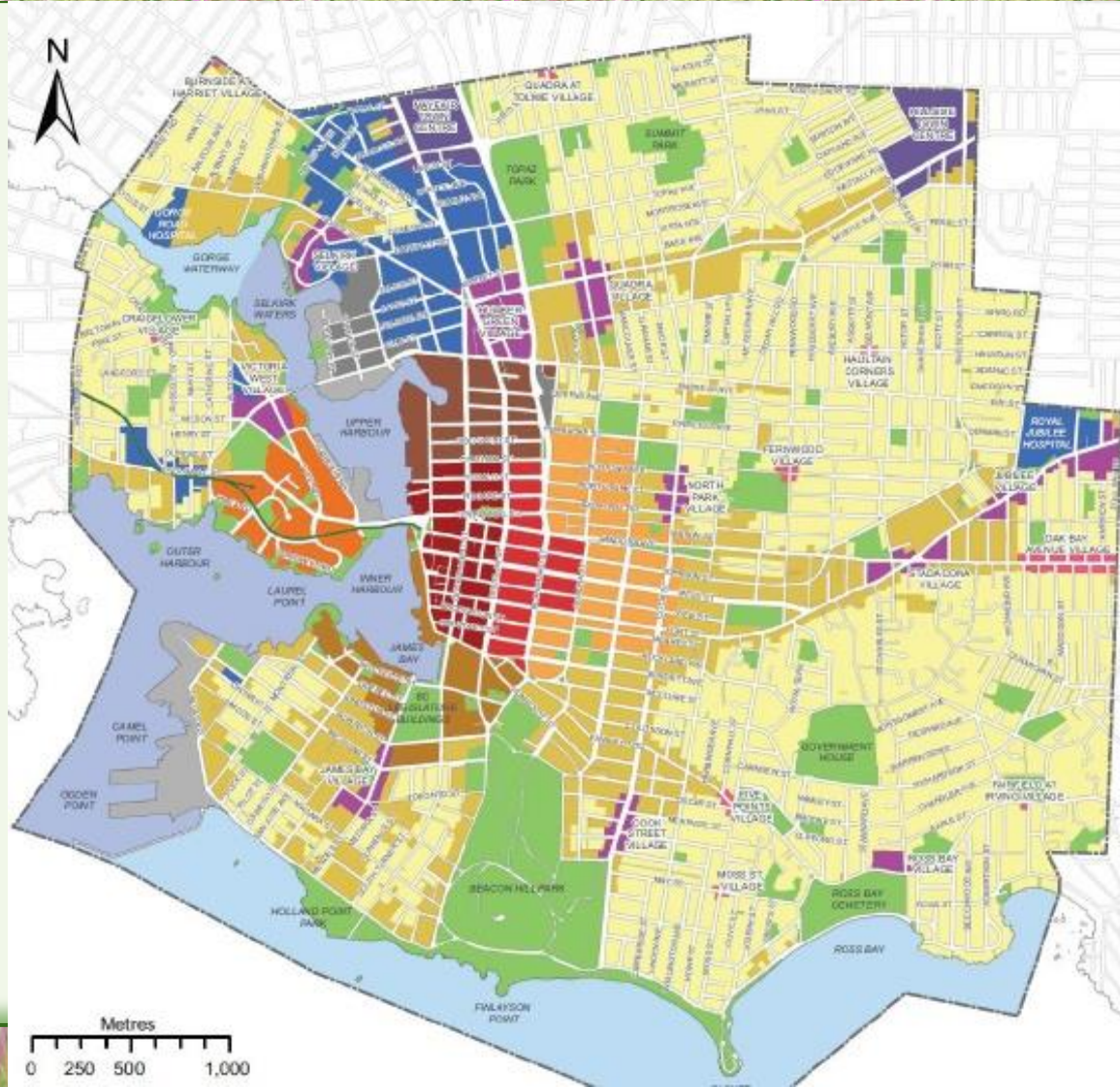
The lowest-priced housing types include townhouses, multiplexes (two to eight units) and low-rise apartments, called *missing middle* housing since they are denser than single-family housing but less dense than high-rise, and so are suitable for urban neighborhoods.

Welcome to Our Neighborhood?

New Units Needed

- 10,000 to 20,000 new units over a decade
- 1,000 to 2,000 units per year
- About half downtown and half in neighborhoods
- 100 per neighborhood
- What portion of these units should be Single Family, attached (townhouses) or multifamily?

Most Victoria neighborhoods prohibit affordable multi-family housing (yellow).

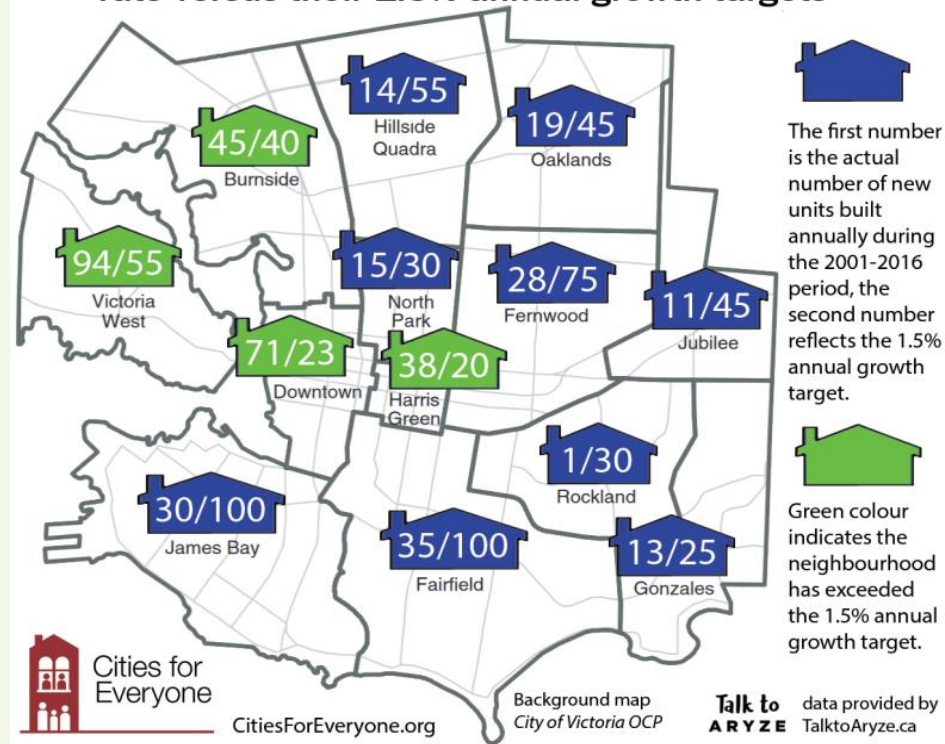


The 1.5% Solution

Victoria's population currently grows approximately 1.5% annually. To drive down prices, housing supply must grow faster. Currently, most new units are small (about half are studios or one-bedroom) in downtown-area highrises, which are relatively expensive and unsuitable for many families, particularly those with children.

Affordability requires at least 1.5% housing growth consisting primarily of moderate-priced (\$300,000 to \$600,000) homes in residential neighbourhoods.

Neighbourhoods' actual annual housing growth rate versus their 1.5% annual growth targets



Current Pricing

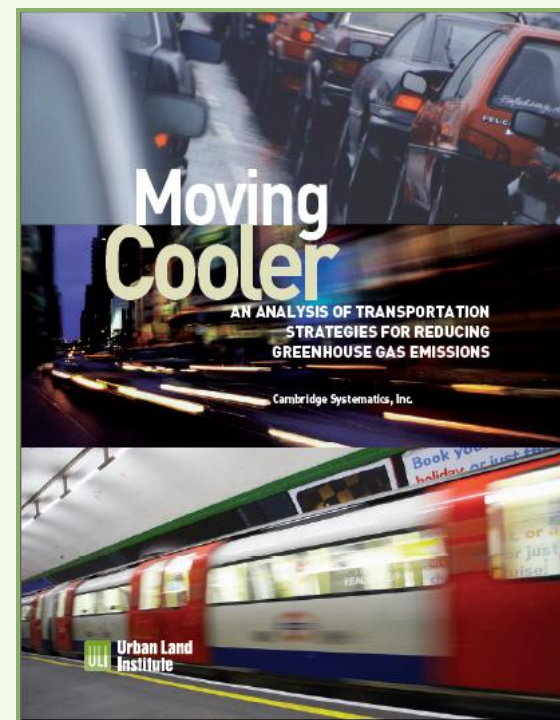
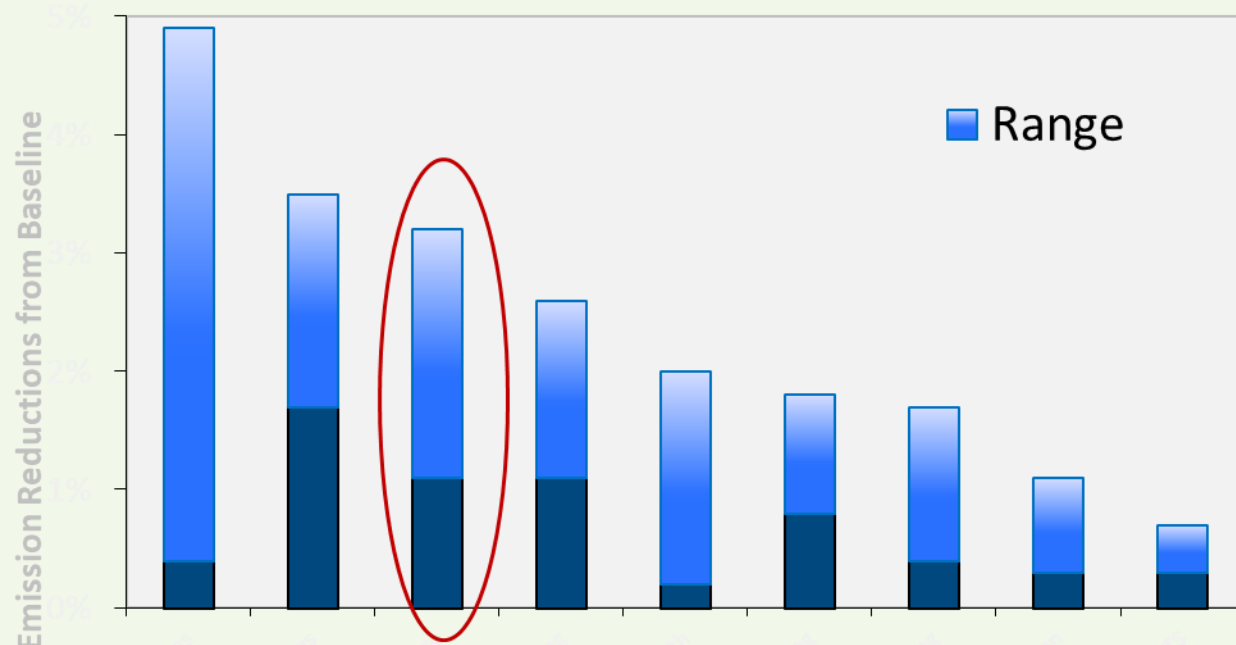
Vehicle insurance is a fixed vehicle cost.

Pay-As-You-Drive (PAYD) pricing converts insurance to a variable cost, so premiums are directly related to annual vehicle kilometers.



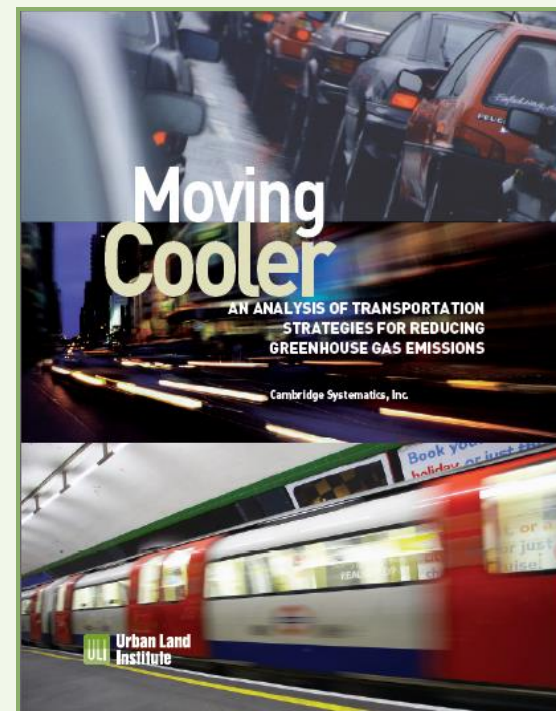
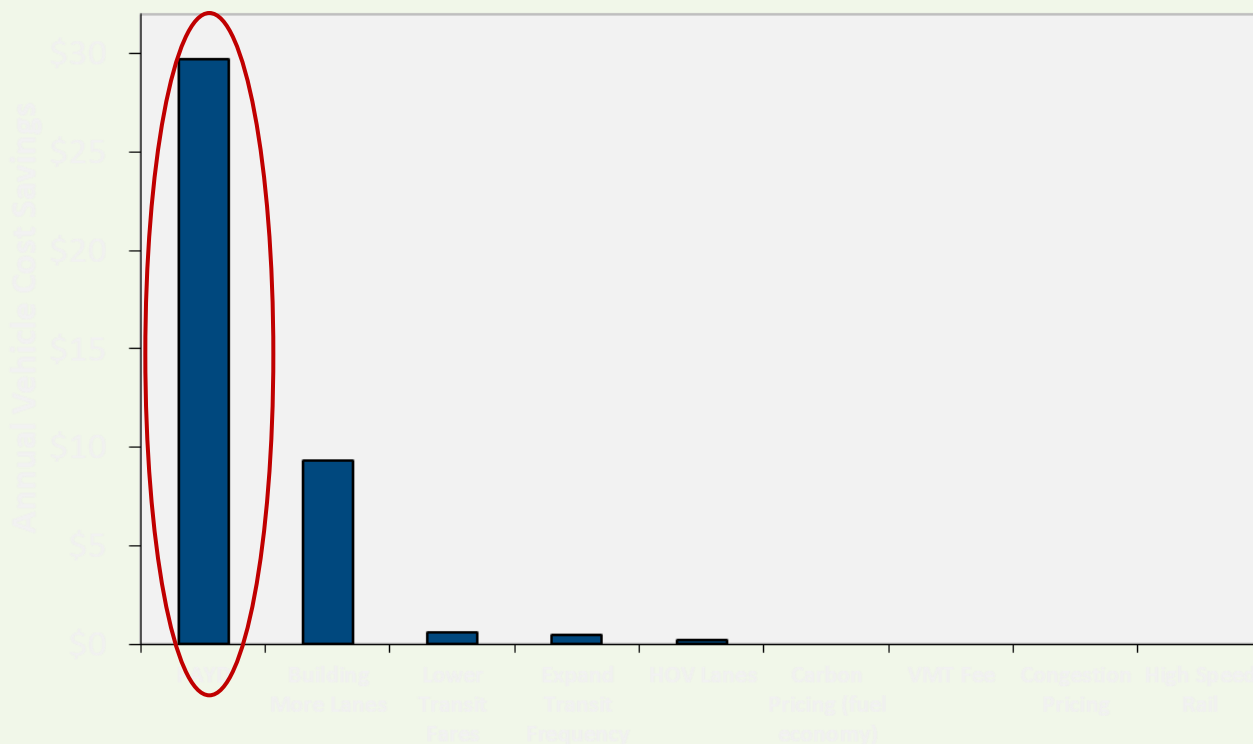
Moving Cooler (2009)

Of **nearly 50** transportation strategies analyzed, PAYD ranked 3rd most effective in reducing transportation GHG emissions, and...



Moving Cooler Benefits

provides by far the greatest vehicle cost savings of all strategies: **nearly \$30 billion annually***



* **Only** fuel and operating savings. Does not include collision cost savings.

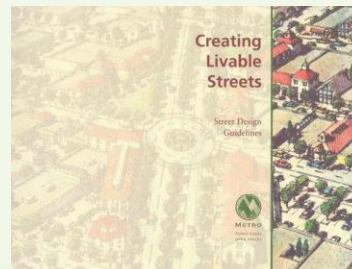
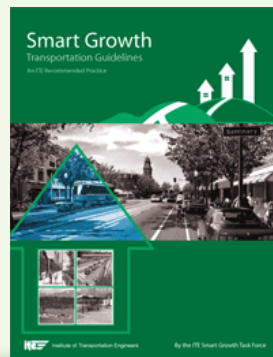
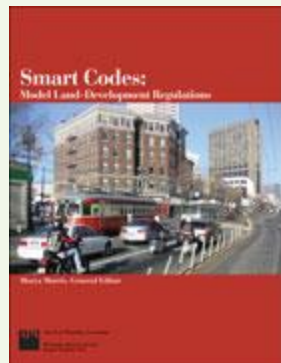
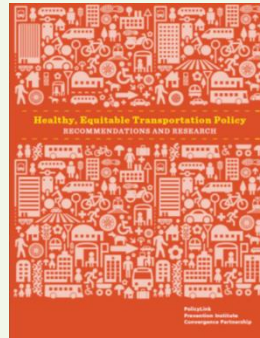
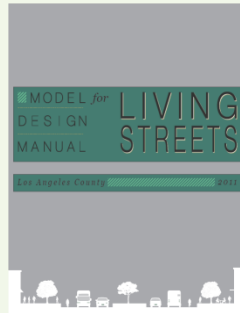
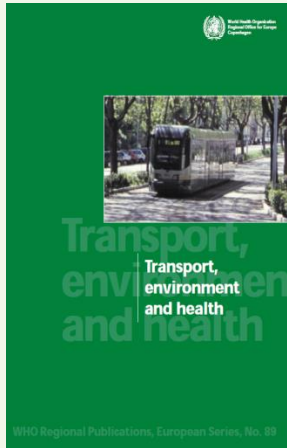
Memo From Future Self

Hope for the best but prepare for the worst:

- *Physical disability* – diverse and integrated transport with universal design (accommodates people with disabilities and other special needs).
- *Poverty and inflation* – affordable housing in accessible, multi-modal locations.
- *Higher energy prices* – improve efficient modes (walking, cycling and public transport).
- *Isolation and loneliness* – community cohesion (opportunities for neighbors to interact in positive ways).



Supported by Professional Organizations



International City/County Management Association

Institute of Transportation Engineers

American Planning Association

- American Public Health Assoc.
- Center for Disease Control
- Federal, state, regional and local planning agencies
- World Health Organization
- National Governor's Association
- And much more...

Positive Messages

More compact, multi-modal planning is a great product! We now have plenty of evidence concerning the resulting economic, social and environmental benefits.

More diverse and efficient transport

- Safe and healthy
- Affordable and inclusive
- Resource efficient
- Green/Environmental
- Supports economic development

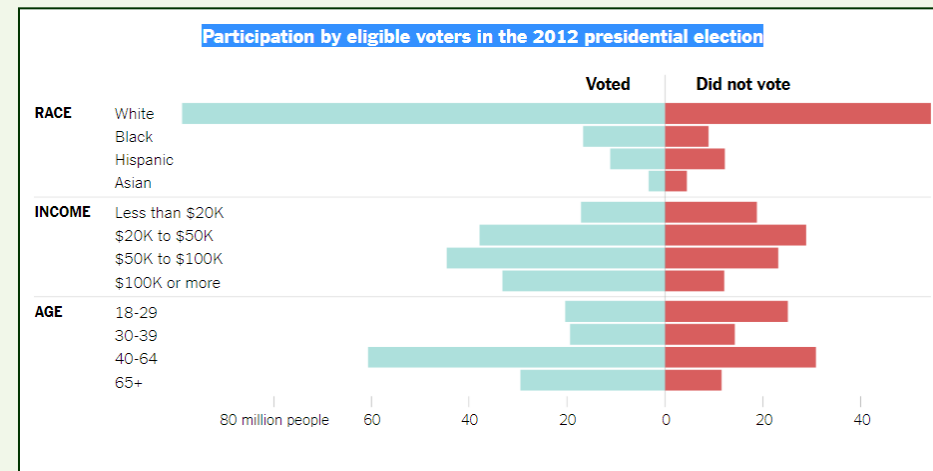
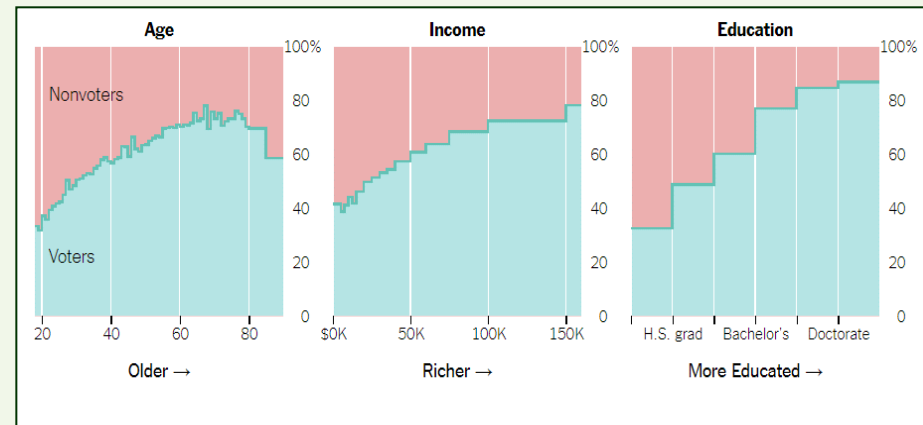
However, many benefits are often overlooked or undervalued. We can better communicate these many direct and indirect benefits

We must answer the question,
“What’s in it for me?”



Vote For Affordability!

- Many low-income and young households spend far more on housing and transportation than is considered affordable (45% of total household budgets).
- Young and low-income citizens also vote at far lower rates than older and more affluent citizens.
- This helps explain why public policies favor more costly housing and transport over more affordable options.
- Affordability can be an issue to motivate low-income and young citizens to vote more.



Potential Advocacy Partners

Benefit	Potential Partners
Traffic congestion reduction	Transportation agencies, motorists
Parking congestion reductions	Local transport agencies, motorists, developers, businesses and economic development associations
Improved public safety and health	Transportation agencies, public health agencies and advocacy organizations
Basic mobility for non-drivers and increased affordability	Social service organizations, advocacy groups for seniors, low-income and people with disabilities
Local economic development and increased real estate values	Business and economic development organizations, developers and real estate industries
Energy conservation and emission reductions	Environmental and economic development organizations
Improved service	Current and potential transit users



“Evaluating Active Transportation Benefits and Costs”

“Evaluating Public Transportation Health Benefits”

“Affordable-Accessible Housing in a Dynamic City”

“Understanding Smart Growth Savings”

“Selling Smart Growth”

“True Affordability”

“If Health Matters”

“Urban Sanity”

and more...

www.vtpi.org