

# *New Integrated Approach to Evaluation of Transport Projects*

Todd Litman

*Victoria Transport Policy Institute*

Presented

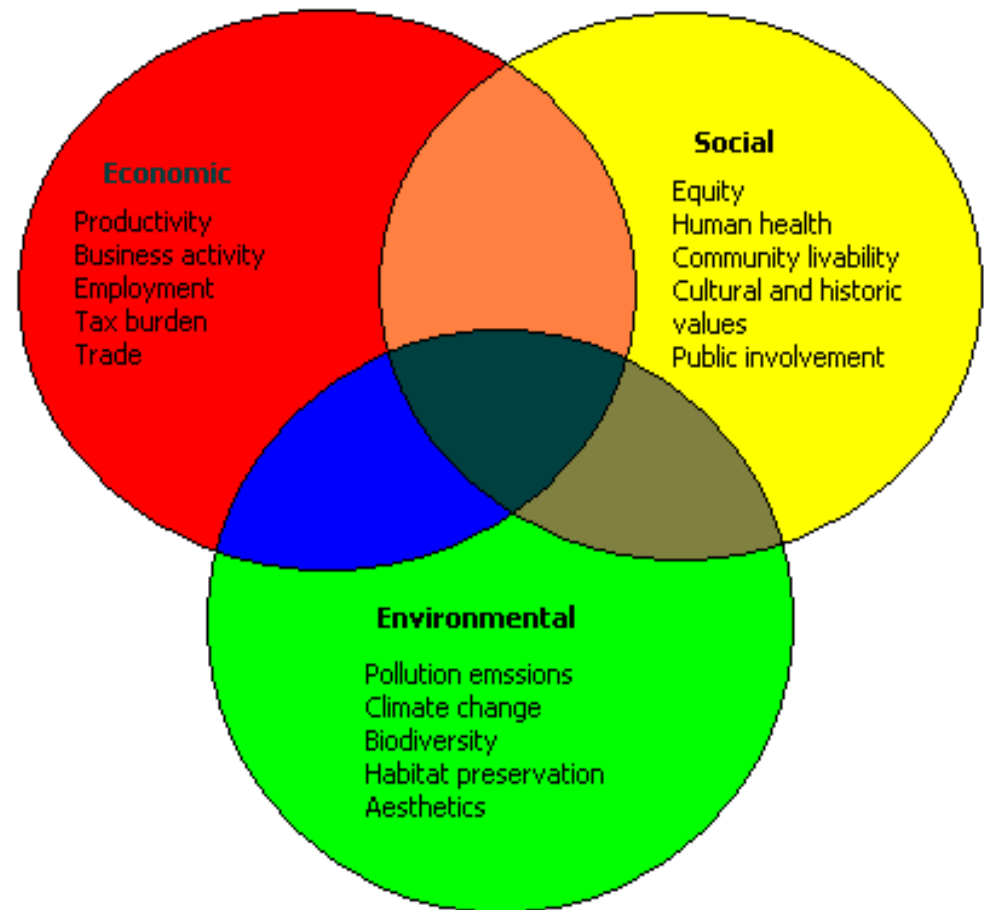
*Changing Course: Pathways To Sustainable Transport*

*2010 ADBTransport Forum*

*27 May 2010*

# *Sustainable Planning*

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



# *Sustainability Issues*

<b>Economic</b>	<b>Social</b>	<b>Environmental</b>
Mobility/Accessibility	Equity objectives	Air pollution
Congestion reduction	Affordability	Noise pollution
Road and parking facility costs	Human health	Water pollution
Consumer costs	Community cohesion	Climate protection
Employment and business activity	Cultural preservation	Habitat preservation
Tax burden	Community livability	Avoidance of irreversibility
	Public Participation	Aesthetics




# *Conventional Evaluation*

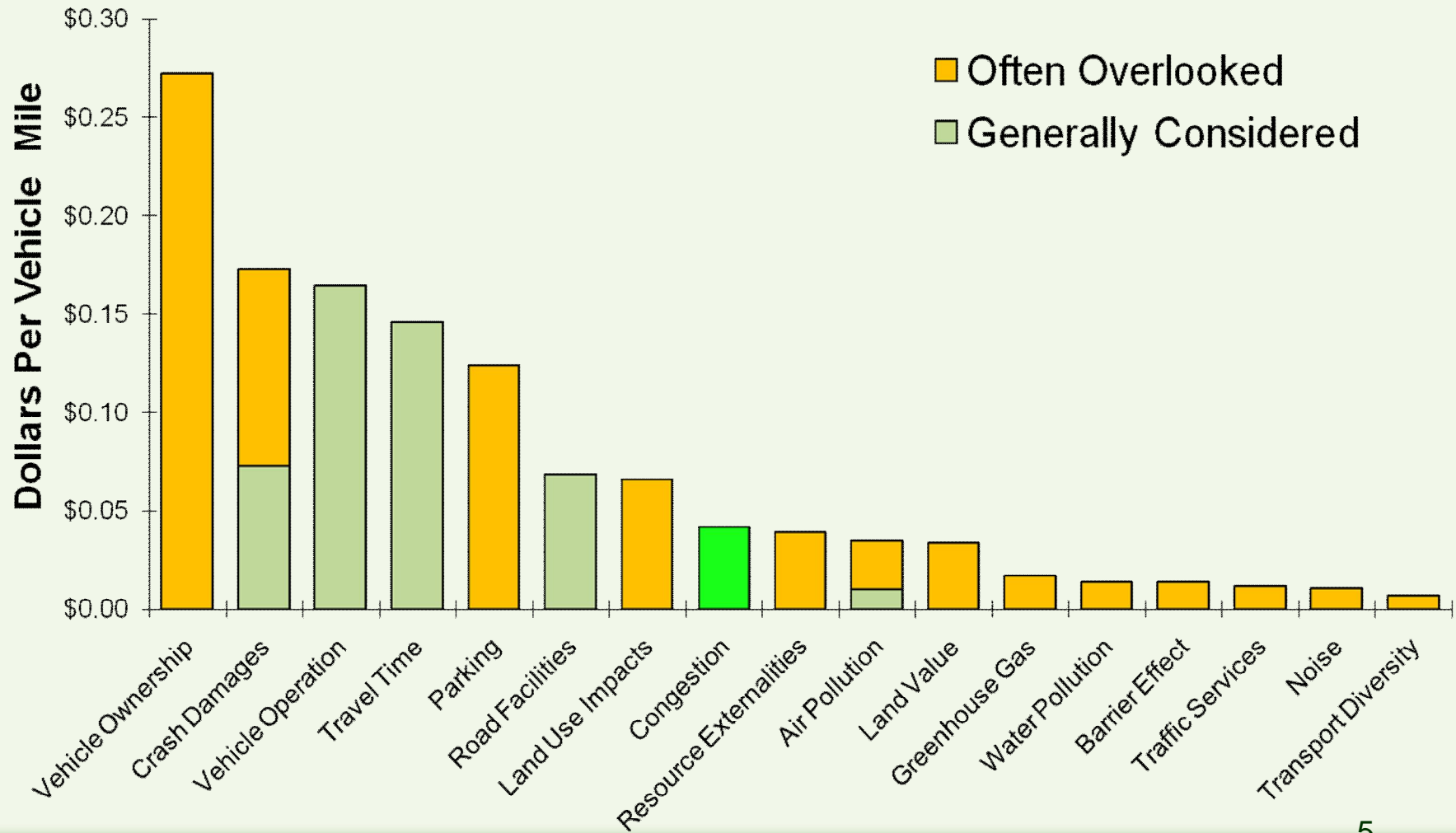
## **Generally Considered**

- Financial costs to governments
- Travel time / congestion delays
- Vehicle operating costs
- Per-mile crash impacts
- Project environmental impacts

## **Often Overlooked**

- Downstream congestion
  - Parking facility costs costs
  - Vehicle ownership costs
  - Crash, energy & pollution impacts of changes in mileage
  - Land use impacts (sprawl)
  - Impacts on mobility for non-drivers/equity impacts
  - Public fitness and health
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# Comparing Costs



# *Conventional Transport Indicators*

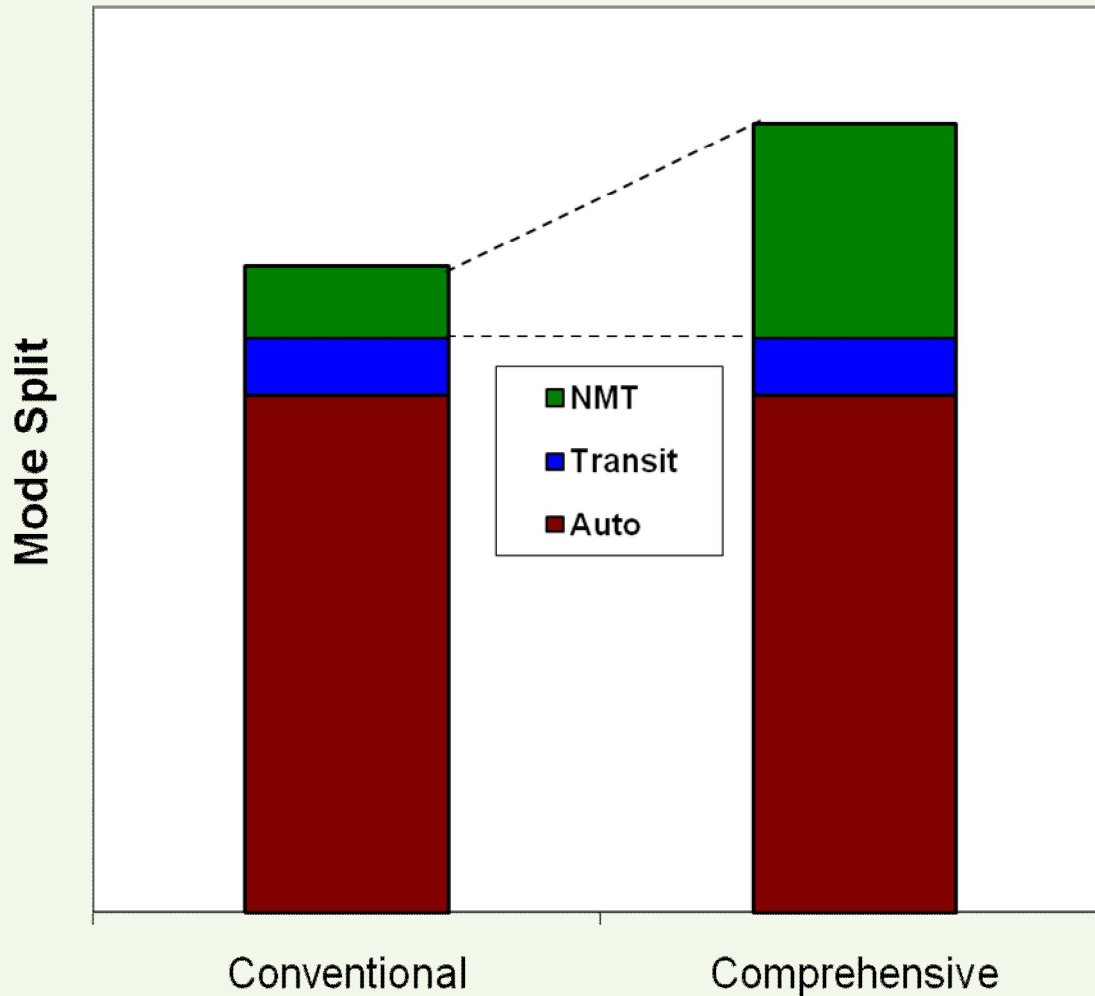
- Roadway Level-of-Service (LOS)
- Average traffic speeds
- Per capita congestion delay
- Parking occupancy rates
- Traffic fatalities per billion vehicle-kilometers



# *Multi-Modal Level-Of-Service (LOS)*

<b>Mode</b>	<b>Level of Service Factors</b>
Walking	Sidewalk/path quality, street crossing conditions, land use conditions, security, prestige.
Cycling	Path quality, street riding conditions, parking conditions, security.
Ridesharing	Ridematching services, chances of finding matches, HOV priority.
Public transit	Service coverage, frequency, speed (relative to driving), vehicle and waiting area comfort, user information, price, security, prestige.
Automobile	Speed, congestion delay, roadway conditions, parking convenience, safety.
Telework	Employer acceptance/support of telecommuting, Internet access.
Delivery services	Coverage, speed, convenience, affordability.

# Counting All Walking & Cycling



Conventional travel surveys only count 10-30% of non-motorized trips because they tend to ignore short trips, travel by children, and walking/cycling links of automobile and public transport trips.

# *Benefits of Alternative Modes*

<b>Mobility Benefits</b>	<b>Efficiency Benefits</b>	<b>Land Use Benefits</b>
Benefits from improved mobility options	Benefits from reduced automobile travel	Benefits from more compact development
<ul style="list-style-type: none"><li>• User benefits</li><li>• Equity benefits (helps disadvantaged people)</li><li>• Productivity benefits (non-drivers able to access education and employment)</li><li>• Option value (provides a service that people value having available, even if they do not currently use it)</li></ul>	<ul style="list-style-type: none"><li>• Congestion reduction</li><li>• Reduced barrier effect</li><li>• Roadway cost savings</li><li>• Parking cost savings</li><li>• Vehicle cost savings</li><li>• Traffic safety</li><li>• Energy conservation</li><li>• Emission reductions</li><li>• Public fitness &amp; health</li></ul>	<ul style="list-style-type: none"><li>• Greenspace preservation.</li><li>• Reduced impervious surface (reduced heat-island effects, stormwater management costs)</li><li>• Increased accessibility (less travel is needed to reach destinations).</li><li>• Agglomeration economies.</li></ul>

# *Travel Time Valuation*

- Walking, cycling and public transport travel time unit costs increase with discomfort (crowding, dirt, odors, insecurity), and are particularly high for uncomfortable and uncertain waiting conditions.
- Conventional travel time evaluation places a value on increased travel speeds, but ignores the value of increased travel convenience and comfort.
- More comprehensive analysis would justify shifting some resources currently devoted to expanding roadways to improving walking and cycling conditions, and public transit service quality.



# *Evaluation Bias*

Considered	Ignored
Improved driving conditions	Improved walking and cycling conditions
Faster vehicle traffic speeds	Improved public transit convenience and comfort
Reduced vehicle operating costs	Improved travel options for non-drivers reducing the need for households to own motor vehicles.
Improved access to suburban destinations	More accessible land use development (more businesses and affordable housing in urban neighborhoods)
Reduced crash rates per vehicle-kilometer	Reduced crash rates per capita due to reductions in vehicle travel
Roadway costs	Parking costs
Mobility	Community livability



# *More Comprehensive Evaluation*

- Travel speeds and congestion impacts
  - Barrier effects (delays vehicle traffic imposes on pedestrians and cyclists)
  - Road and parking facility costs
  - Consumer costs and affordability
  - Quality not just quantity of time
  - All accident risks (to users and others; from changes in total mobility)
  - Energy costs (including economic costs of oil imports)
  - Air, noise and water pollution
  - Quality of mobility for non-drivers (equity impacts)
  - Support for strategic land use objectives (such as habitat preservation and economies of agglomeration)
  - Public fitness and health
  - Impacts of induced travel (from expanded roads and sprawl).
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**“Comprehensive Transportation Evaluation Framework”**

**“Introduction to Multi-Modal Transportation Planning”**

**“Evaluating Public Transit Benefits and Costs”**

**“Transportation Cost and Benefit Analysis”**

**“The Future Isn’t What It Used To Be”**

**“Online TDM Encyclopedia”**

**and more...**

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