



# Incorporating Livability Indicators into Transportation Policy and Project Evaluation

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# *Economic Analysis*

*Economics* is not about money, it is concerned with human values – what people care about.

Money is simply one way to measure values.






# *Criticism*

## **Surface Transportation Innovations Issue No. 79, May 2010**

### *The US DOT's Disappointing Strategic Plan*

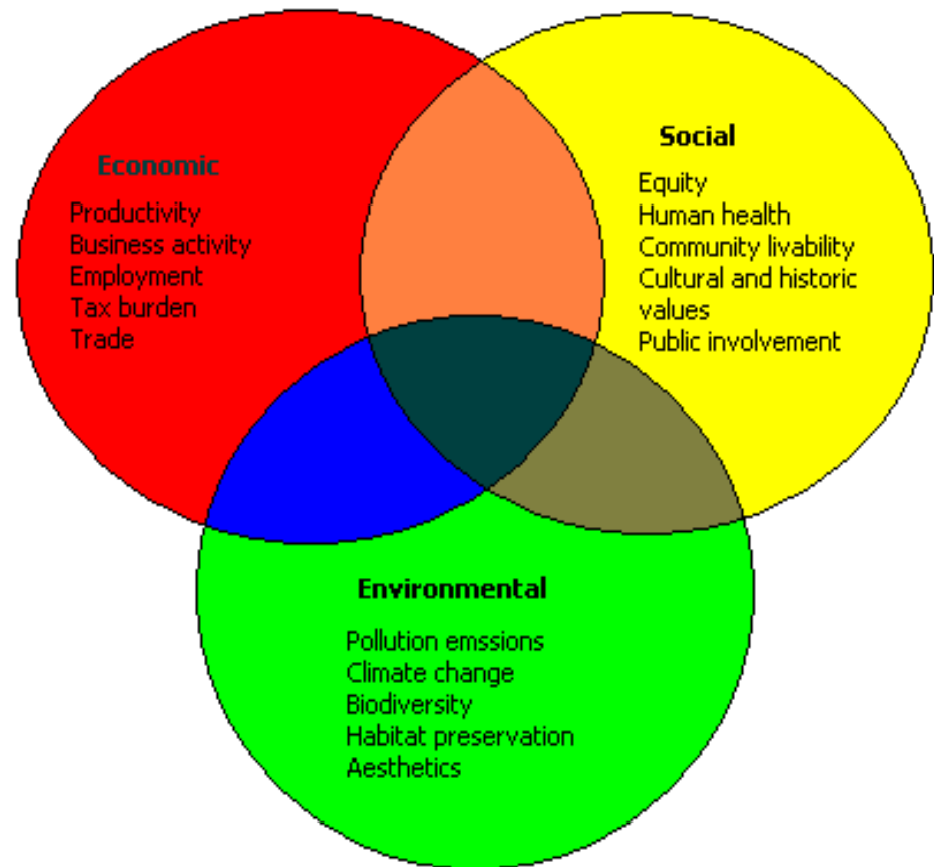
Entire chapters are devoted to the Secretary's two favorite topics: *Livability and Environmental Sustainability*. Both are notable for broad assertions presented without acknowledging considerable data and analysis calling them into question. For example: "A comprehensive strategy that promotes livability and reduced the demand for auto travel will significantly lower the long-run cost of transportation (and other infrastructure) for both household budgets and taxpayers." (p. 30)

Nowhere in the entire document is there any mention of using a cost/ton standard (such as no more than \$50/ton) to sort out cost-effective greenhouse gas reduction measures from highly wasteful ones.

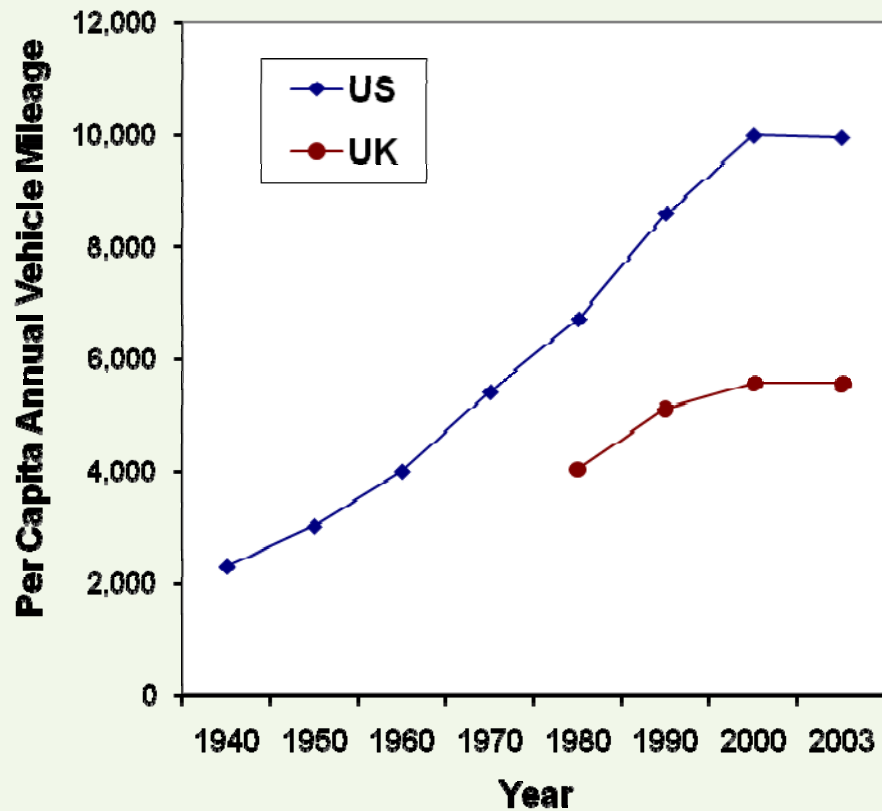


# *Sustainability Planning*

- Sustainability planning balances economic, social and environmental objectives.
- Conventional planning tends to focus on established, easy-to-measure impacts at the expense of newer and more difficult-to-measure impacts.
- Sustainability planning can be defined as “Planning that considers all impacts regardless of how easy they are to quantify.”
- Economic impacts have long been considered in transport project evaluation, and environmental impacts have been added recently. Incorporating social objectives is a new challenge.



# *Trends Supporting Change*



- Motor vehicle saturation.
- Aging population.
- Rising fuel prices.
- Increased urbanization.
- Increased traffic and parking congestion.
- Rising roadway construction costs and declining economic return from increased roadway capacity.
- Environmental concerns.
- Health Concerns

# *Social (Livability) Objectives*



- **Social equity** – overall fairness with which impacts are distributed.
- **Basic mobility and accessibility** – degree to which the transport system provides access to essential services and activities, even to people with special needs.
- **Affordability** – Cost savings and benefits for lower-income households.
- **Community cohesion** – quality of interactions among neighbors.
- **Local environmental quality** – (air quality, quiet, aesthetics) experienced by residents and visitors.
- **Cultural and heritage values** – preservation of resources such as traditional communities, unique neighborhoods, historic and cultural sites, etc.
- **Public fitness and health** – amount of active transport (walking and cycling).

# *Conventional Evaluation*

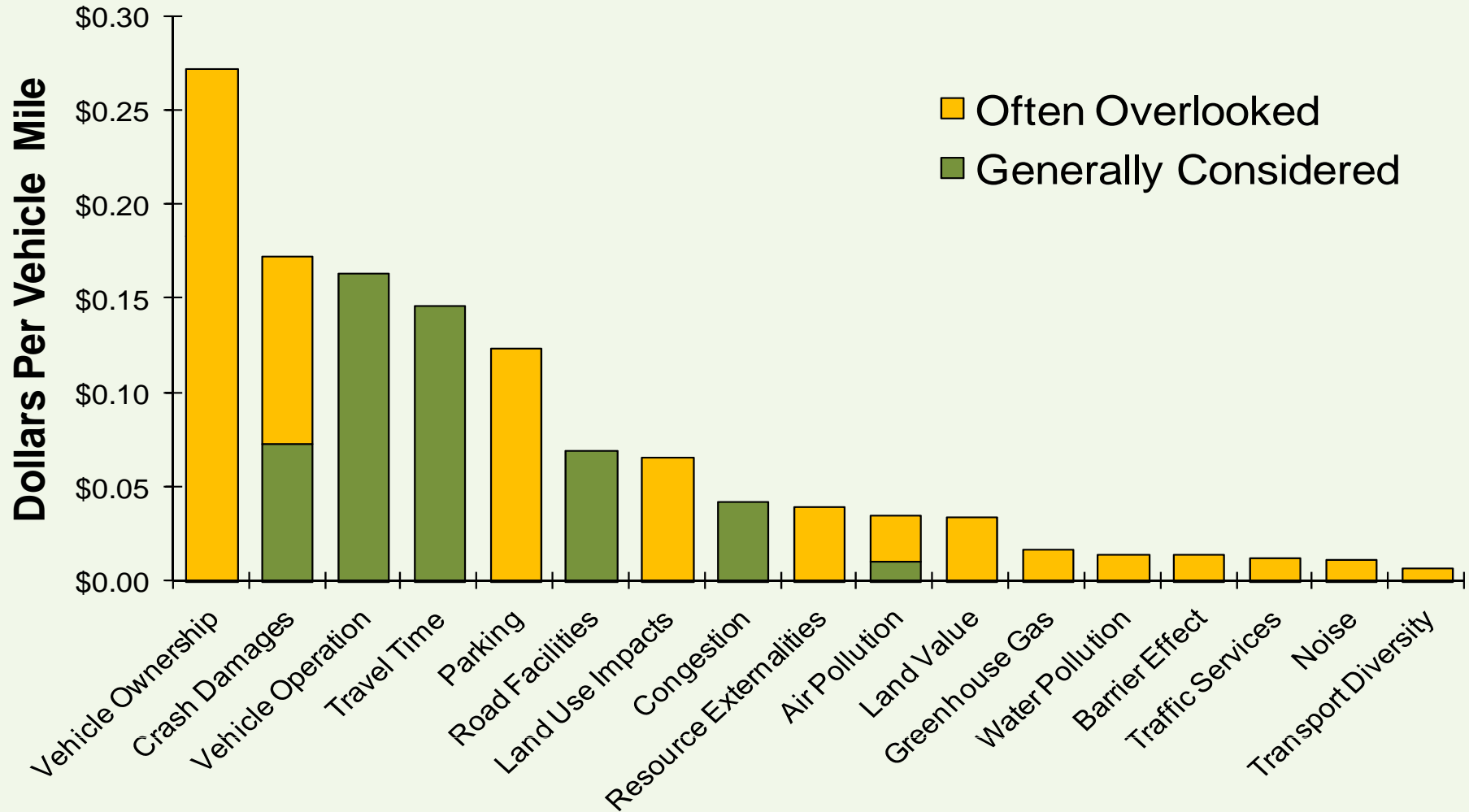
## **Generally Considered**

- Congestion impacts
- Vehicle operating costs
- Per-mile crash impacts
- Per-mile pollution emissions.

## **Often Overlooked**

- Parking costs
- Total consumer costs
- Downstream congestion
- Crash, energy & pollution impacts of changes in mileage
- Land use impacts
- Impacts on mobility options for non-drivers/equity impacts
- Changes in active transport and related health impacts

# Comparing Costs



# *Undervaluing Social Impacts*

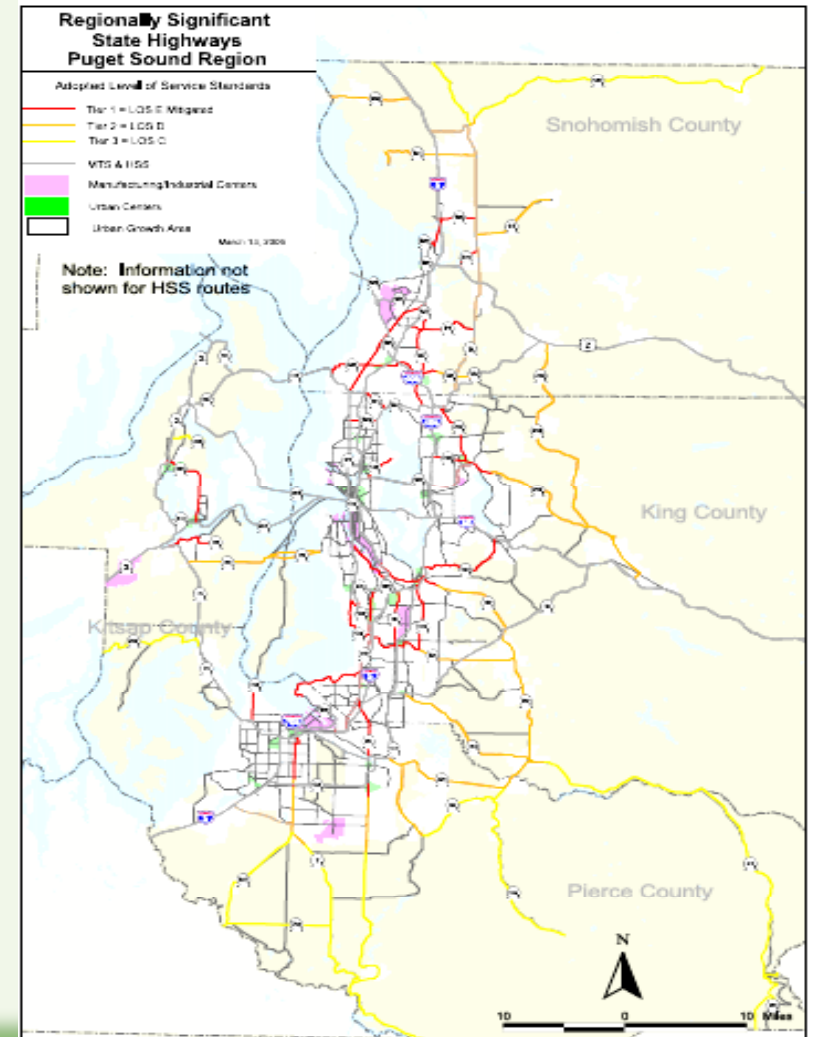
## **Overlooking social impacts tends to undervalue planning decisions that:**

- Reduce local traffic impacts such as traffic noise and air pollution.
- Improve mobility for non-drivers.
- Improve transportation and housing affordability.
- In other ways help achieve equity objectives.
- Improve public fitness and health.



# *Conventional Transport Indicators*

- Roadway Level-of-Service (LOS)
- Average traffic speeds.
- Per capita congestion delay.
- Parking occupancy rates.
- Traffic fatalities per billion vehicle-miles.
- Traffic fatalities per 100,000 population.



# *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.

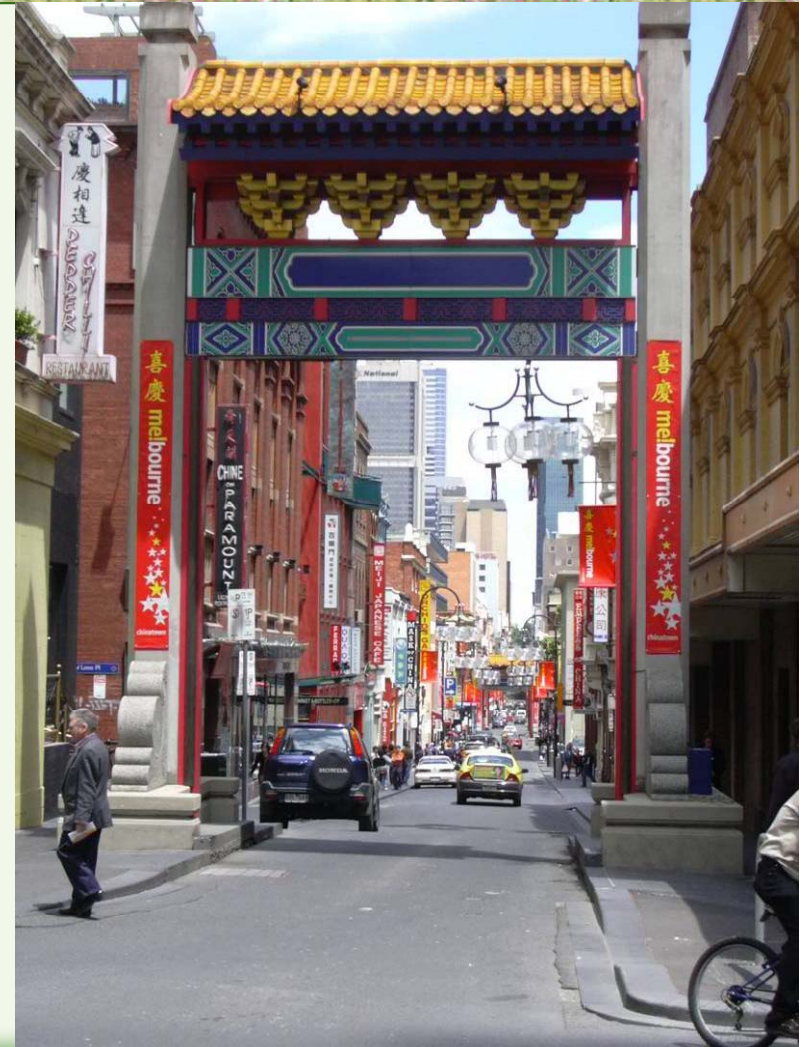
# *Methodologies*

- **Hedonic pricing** – observing impacts on market goods, such as nearby property values or wages.
- **Damage costs** – the value of damages from an activity, such as medical and disability costs of health damages.
- **Stated preference** – asking people how they would respond to various options.
- **Compensation costs** – the amount that individuals or courts indicate people must be compensated for damages.
- **Lifecycle analysis** – considers the cumulative effects of all impacts over the life of a project or activity.
- **Combinations of the above.**



# *Travel Time Valuation*

- Personal travel is usually valued at 25-50% of prevailing wage rates.
- Drivers' travel time unit costs increase with congestion and unexpected delays.
- Passengers' travel time unit costs increase with discomfort (crowding, dirt, odors, insecurity), and are particularly high for uncomfortable and uncertain waiting conditions.
- Personal preferences vary. Some people prefer driving while others prefer transit or walking. Travel time unit costs are reduced if individuals can choose the mode they prefer.

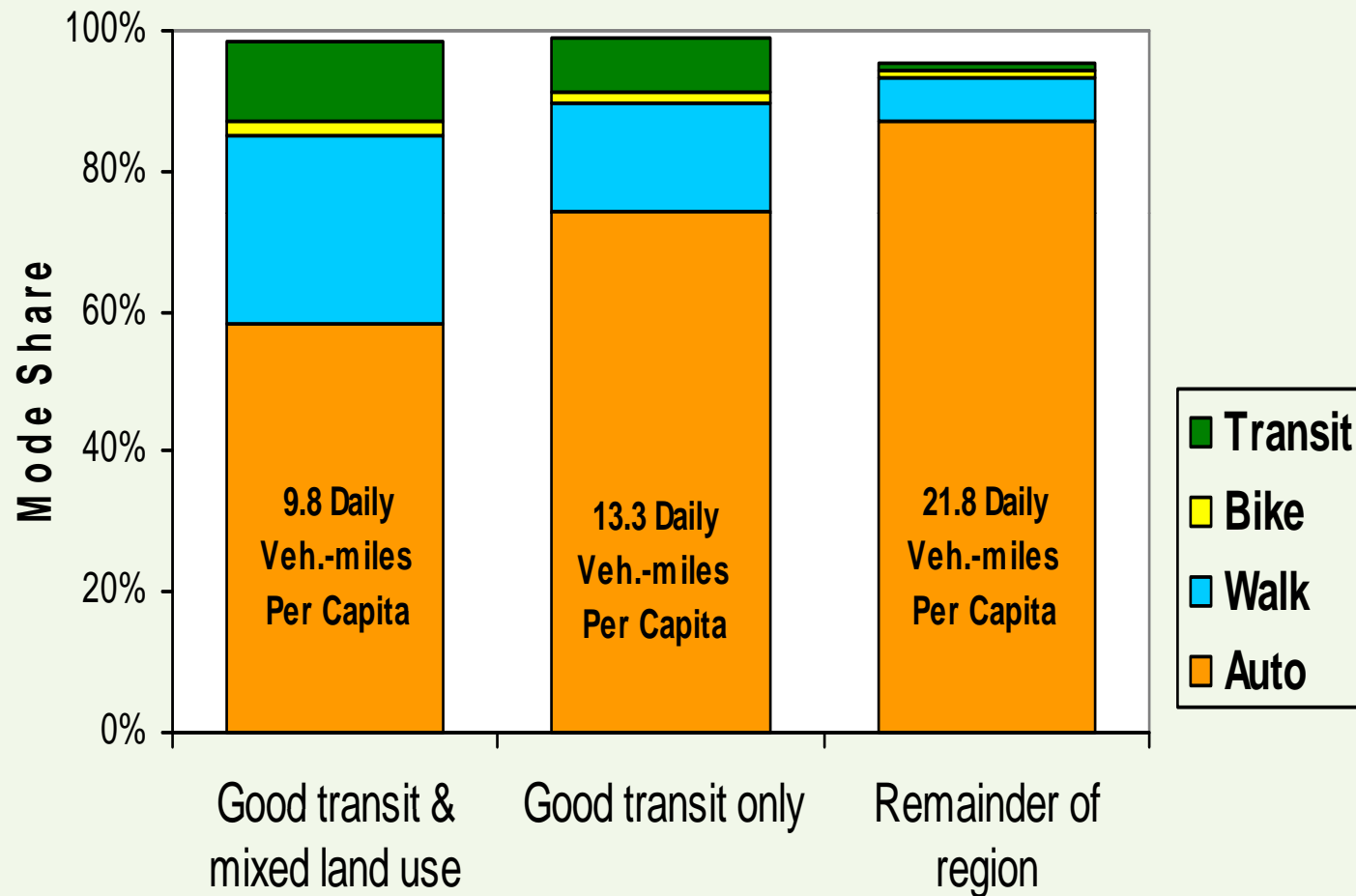


# *Strategic Land Use Development Objectives*

- Reduced sprawl and preserved openspace.
- Community redevelopment.
- Increased land use accessibility and transport diversity.
- Improved walkability and neighborhood environmental quality.



# *Impacts on Transport Activity*



# *Community Livability Impacts*



- Traffic noise and local air pollution exposure.
- Preservation of community, cultural and historic resources.
- Neighborhood safety and security.
- Walkability
- Community cohesion.

**Tend to be reflected in local property values and business activity.**

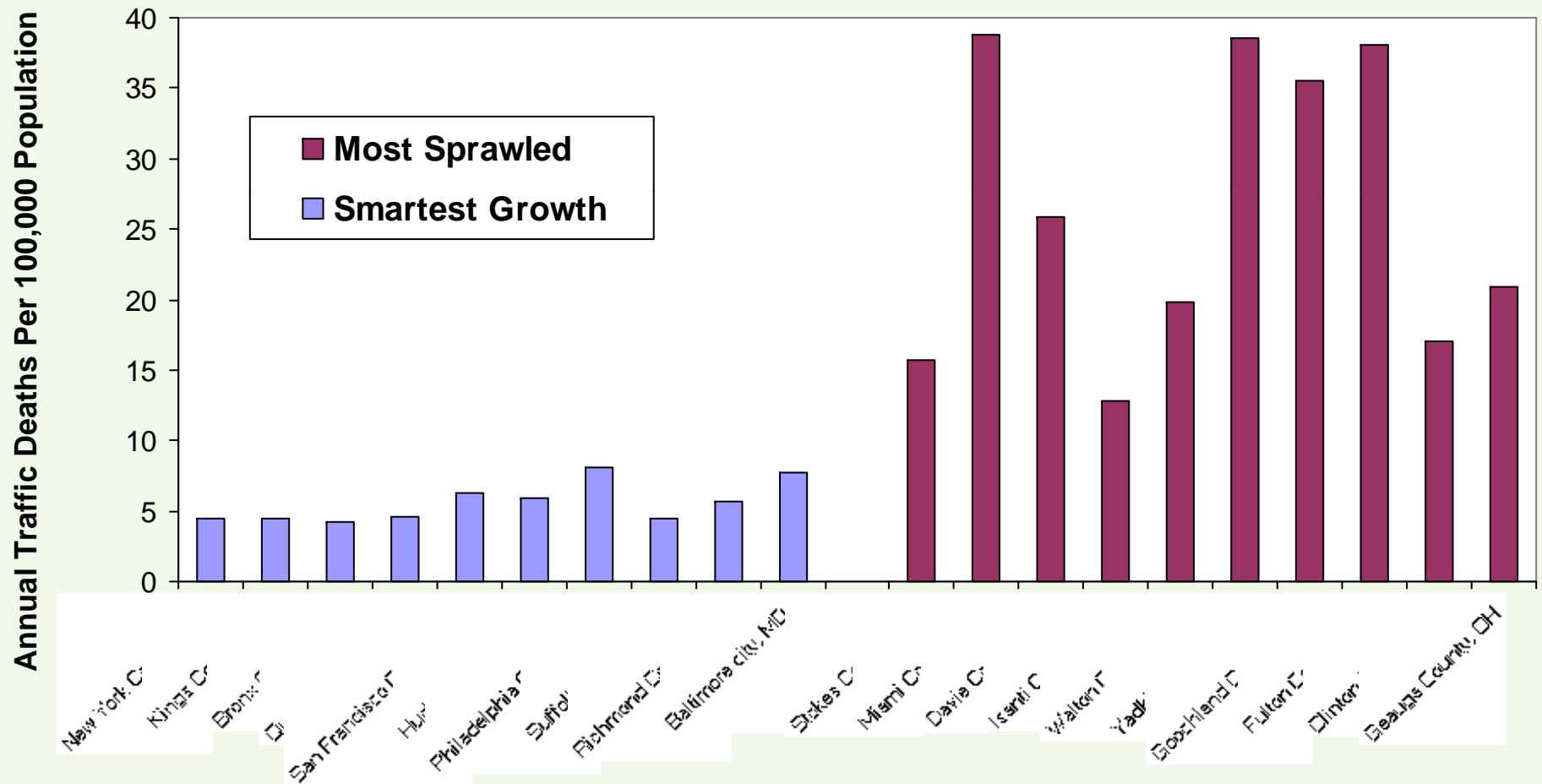
# *Social Equity*

## Equity objectives:

- An equal share of public resources for people with equal needs.
- Savings and benefits to lower-income people.
- Increased opportunity to people who are physically, socially or economically disadvantaged.
- Basic mobility.



# Smart Growth Safety Impacts

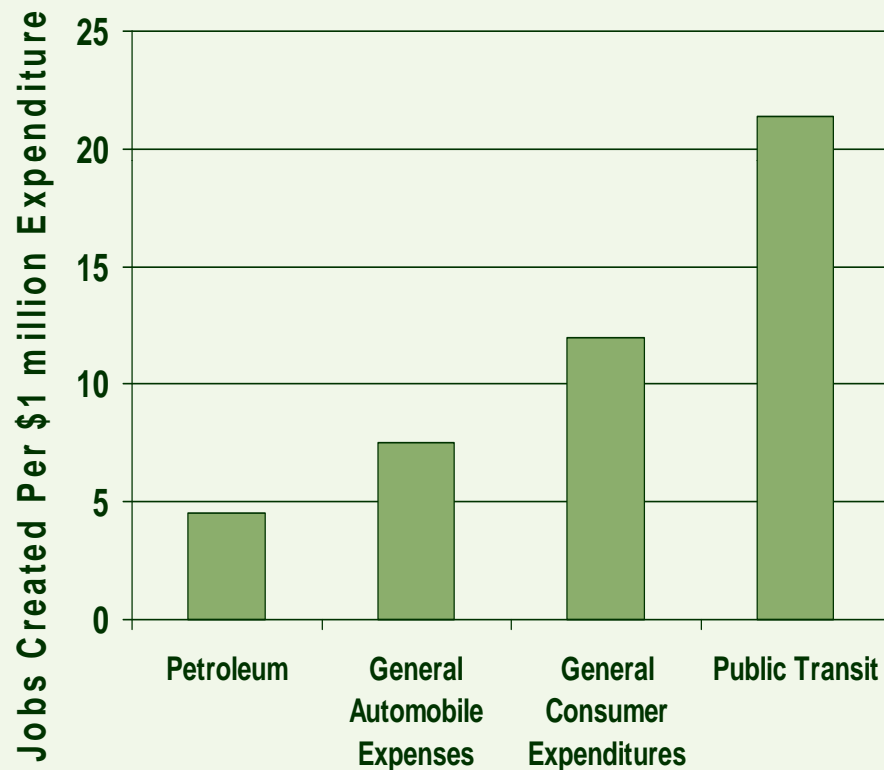


# *Public Fitness and Health Benefits*



	2005 \$ NZ/km	2007 USD/k m	2007 USD/mi le
Cycling	\$0.16	\$0.12	\$0.19
Walking	\$0.40	\$0.30	\$0.48

# Community Economic Impacts



- Project employment impacts.
- Reducing business transport costs (congestion, parking, taxes) increases productivity and competitiveness.
- Reducing vehicle expenditures and expanding transit service increases regional employment and business activity.
- Agglomeration efficiencies.
- Supports strategic land use development objectives.
- Increases affordability, allowing businesses to attract employees in areas with high living costs.
- Changes in household expenditures on vehicles and fuel.



**“If Health Matters: Incorporating Public Health Objectives Into Transportation Planning”**

**“Transportation Affordability: Evaluation and Improvement Strategies”**

**“Transportation Cost and Benefit Analysis Guidebook”**

**“Evaluating Transportation Equity”**

**“Online TDM Encyclopedia”**

**and more...**

**[www.vtppi.org](http://www.vtppi.org)**