

What is "The" Transportation Problem?

- Traffic congestion?
- Road construction costs?
- Parking congestion or costs?
- Excessive costs to consumers?
- Traffic crashes?
- Lack of mobility for non-drivers?
- Poor freight services?
- Environmental impacts?
- Inadequate physical activity?
- Others?



Current Transport Planning

Current planning tends to be reductionist: each problem is assigned to a single agency with narrowly defined responsibilities. For example:

- Transport agencies deal with congestion.
- Environmental agencies deal with pollution.
- Welfare agencies deal with the needs of disadvantaged people.
- Public health agencies are concerned with community fitness.
- Etc.

Reductionist Decision-Making

Reductionist planning can result in public agencies implementing solutions to one problem that exacerbate other problems facing society, and tends to undervalue strategies that provide multiple but modest benefits.



Win-Win Solutions

Put another way, more comprehensive planning helps identify “Win-Win” strategies: solutions to one problem that also help solve other problems facing society.

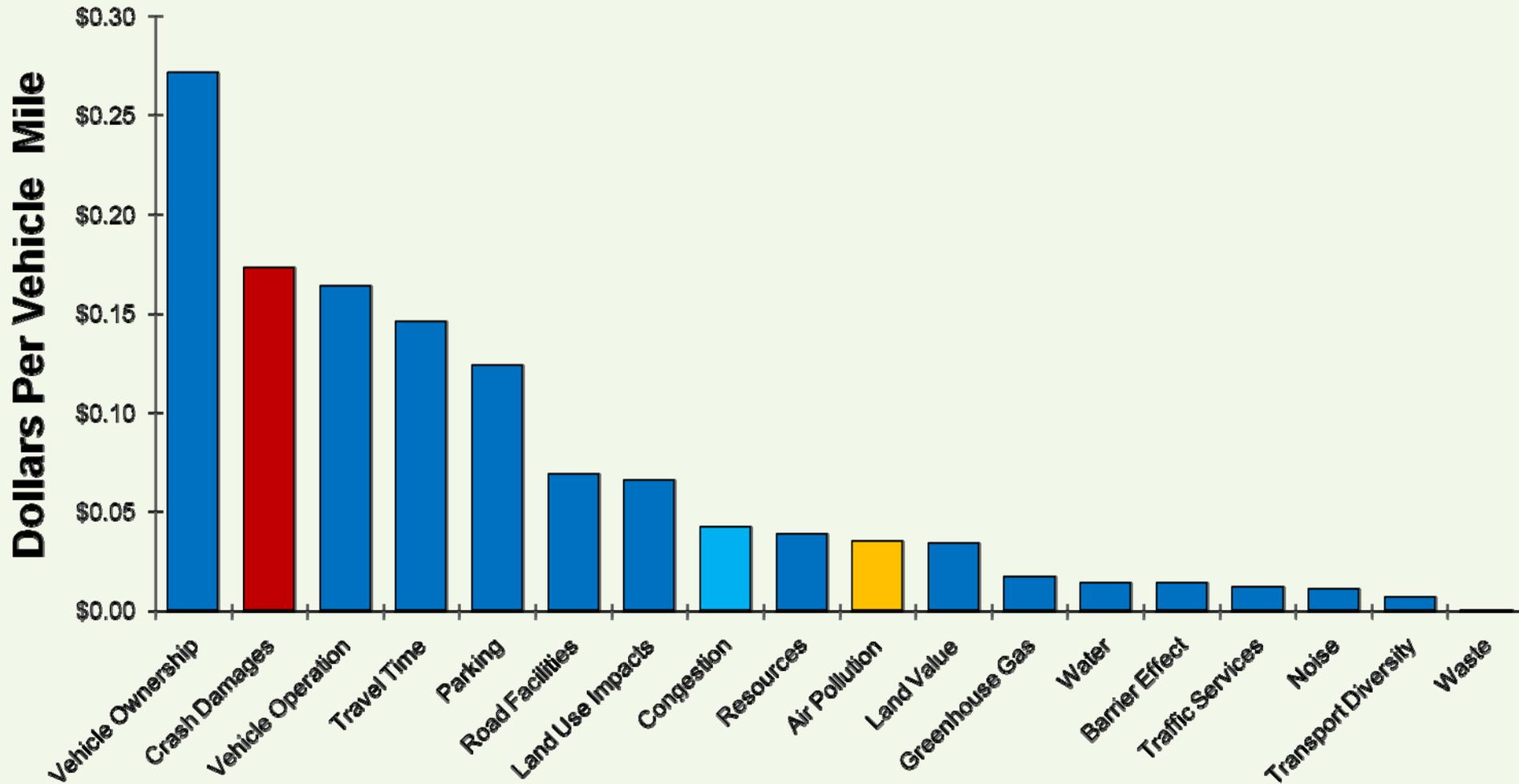
Ask:

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

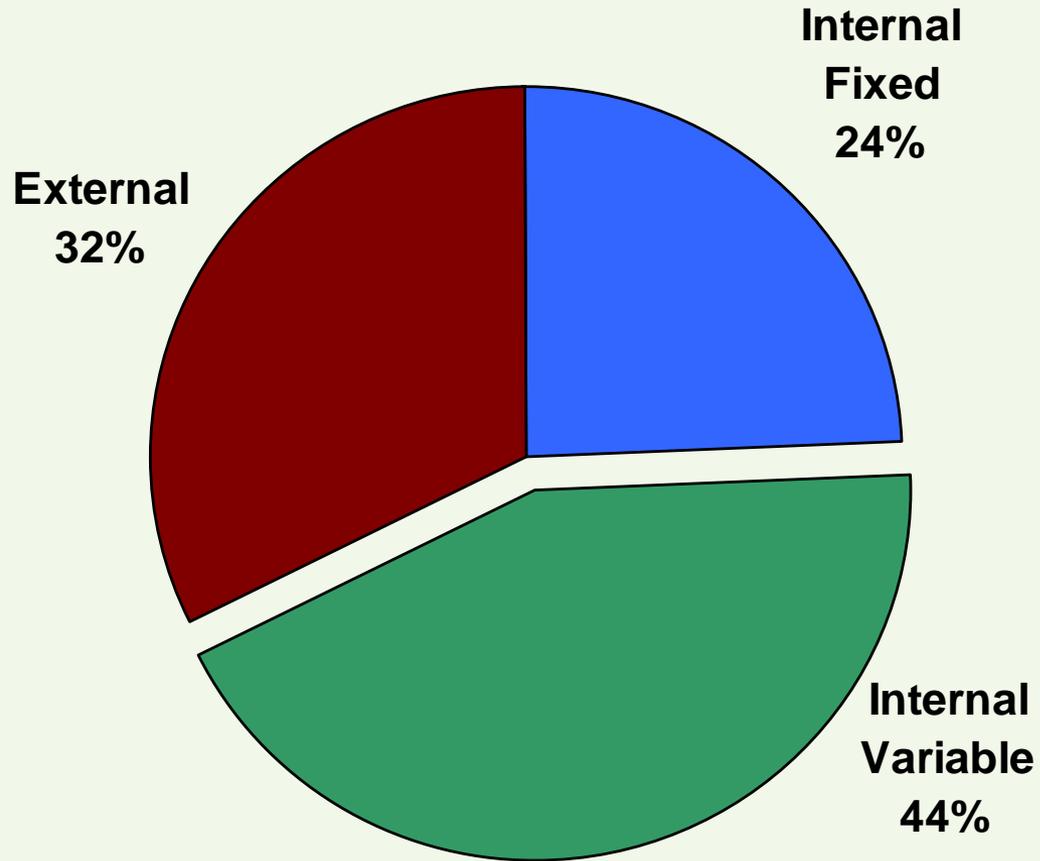
Comparing Benefits

| Planning Objectives | Expand Roadways | Efficient and Alt. Fuel Vehicles | Shifts from Auto Alternative Modes |
|-------------------------------|------------------------|---|---|
| <i>Vehicle Travel Impacts</i> | <i>Increased VMT</i> | <i>Increased VMT</i> | <i>Reduced VMT</i> |
| 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 | | | ✓ |

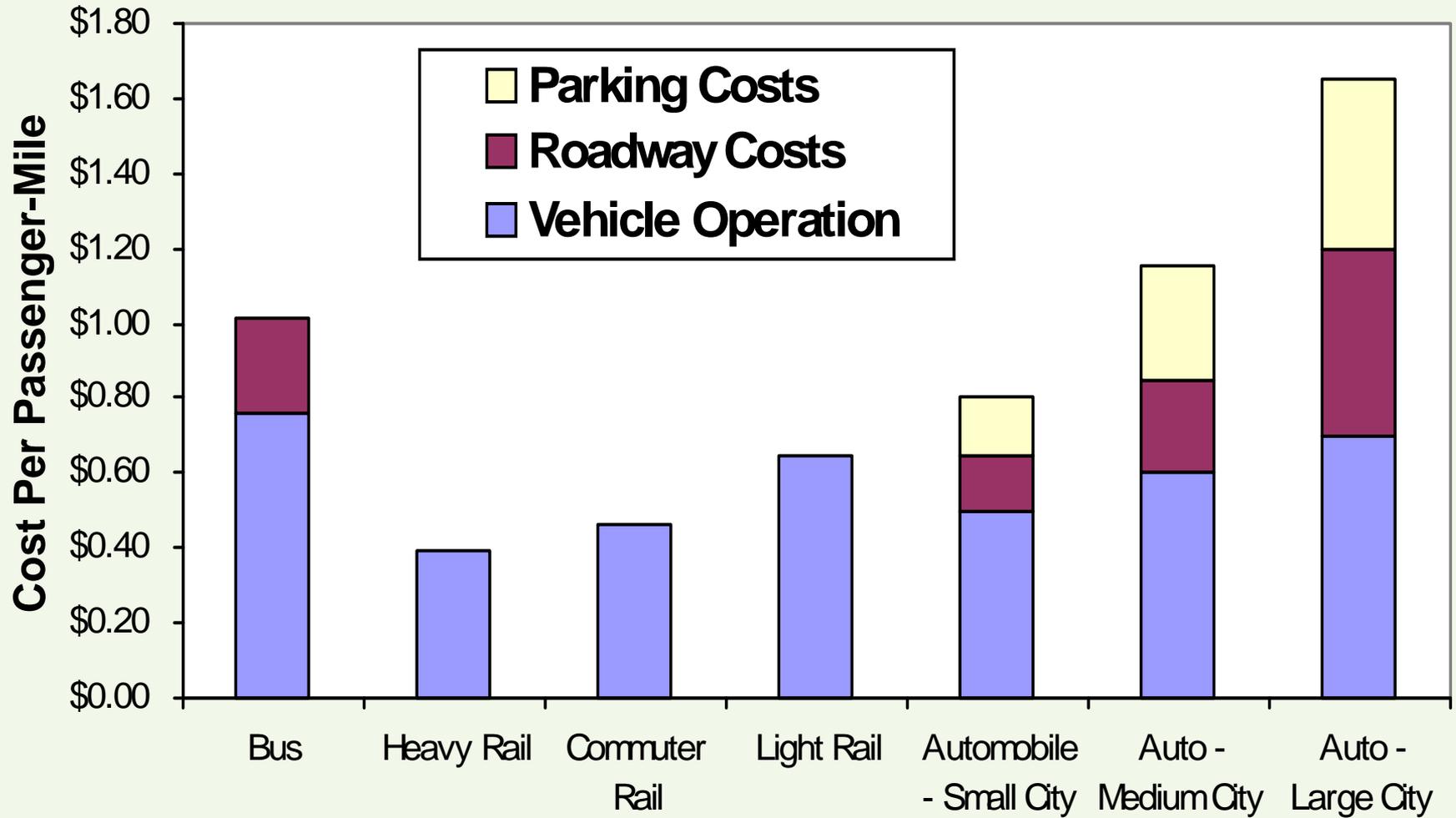
Comparing Costs



Automobile Costs



Vehicle & Facility Costs



Economic Traps

Situations in which people, businesses and groups compete in ways that waste resources:

- Arms races and wars
- Uncompensated external costs
- Congestion
- Positional value (vehicle ownership and travel as status goods)
- Sprawl



Market Distortions - Examples

- Roadway costs not borne directly by motorists.
- Free/underpriced parking.
- Fixed vehicle insurance and registration fees.
- Lack of congestion pricing (unpriced road “space”).
- Uncompensated environmental damages.
- Tax policies favoring car use (e.g., company cars).
- Land use policies that favor low-density, automobile-oriented development.
- Underinvestment in alternative modes.
- Others...



Conventional Evaluation

Generally Considered

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

Often Overlooked

- Downstream congestion.
- Parking costs.
- Vehicle ownership costs.
- 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.

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)

| Mode | Level of Service Factors |
|-------------------|--|
| 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. |

Traffic, Mobility and Accessibility

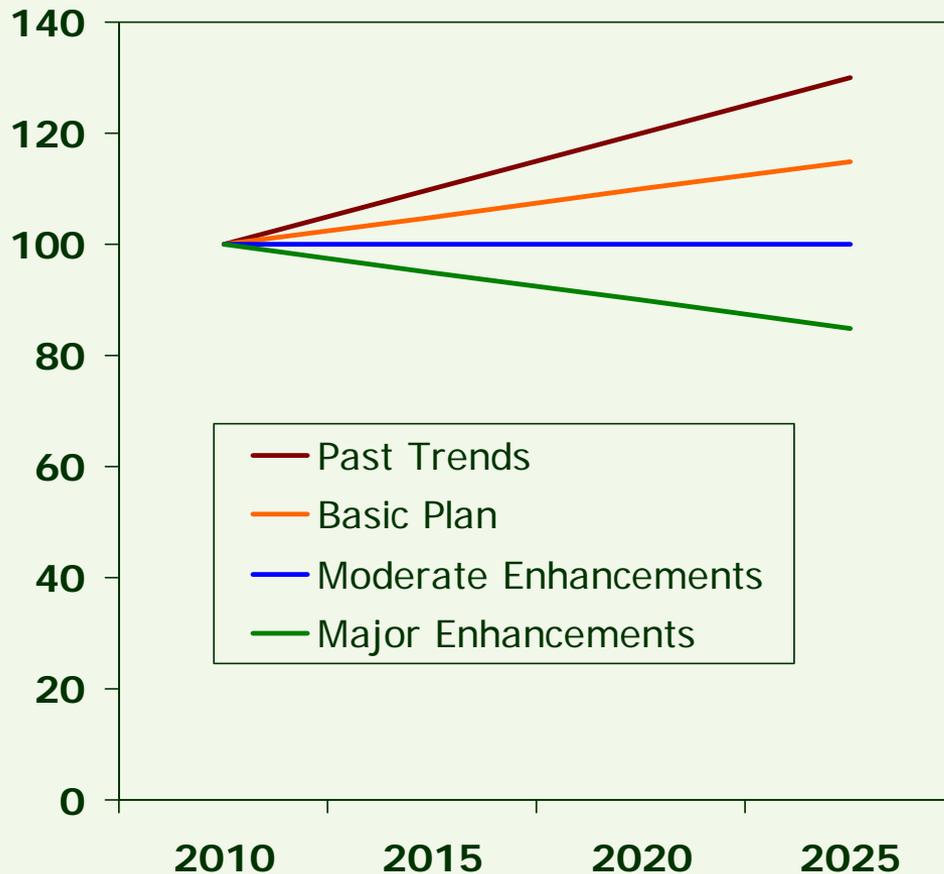
| | Vehicle Travel | Mobility | Accessibility |
|--|---|---|---|
| Definition of <i>Transportation</i> | Vehicle travel | Person and goods movement | Ability to obtain goods, services and activities |
| Measurement units | Vehicle miles | Person-miles and ton-miles | Trips, generalized costs |
| Modes considered | Automobile and truck | Automobile, truck and transit | Automobile, truck, transit, cycling and walking |
| Common indicators | Vehicle traffic volumes and speeds, roadway Level of Service, costs per vehicle-mile, parking convenience | Travel distance and speeds, road and transit Level of Service, cost per person-mile, travel convenience | Quality of available transportation choices. Distribution of destinations. Cost per trip |
| Consumer benefits considered | Maximum motor vehicle travel and speed | Maximum personal travel and goods movement | Maximum transport choice and cost efficiency |
| Consideration of land use | Treats land use as an input, unaffected by transport. | Recognizes that land use can affect travel choice | Recognizes that land use has major impacts on transport |
| Favored transport improvement strategies | Roadway and parking facility improvements to increase capacity, speed and safety | Transportation system improvements that increase capacity, speeds and safety | Management strategies and improvements that increase transport system efficiency and safety |

Perspectives

- Transport planners generally focus on mobility, particularly vehicle travel.
- Land use planners generally focus on geographic accessibility (distances between activities).
- Communications experts focus on telecommunication quality (such as the portion of households with access to telephone, cable and Internet services).
- Social service planners focus on accessibility options for specific groups to specific services (such as disabled people's ability to reach medical clinics and recreation centers).



Choosing Transportation Futures



- Walking/cycling programs
- Transit service
- Transit-oriented development
- Parking management & pricing
- Commute trip reduction
- School transport management
- Smart growth policies
- PAYD insurance
- Road pricing

Sustainable Transport Hierarchy

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



Equity



A more diverse transportation systems helps achieve equity objectives:

- A fair share of public resources for non-drivers.
- Financial savings to lower-income people.
- Increased opportunity to people who are physically, socially or economically disadvantaged.

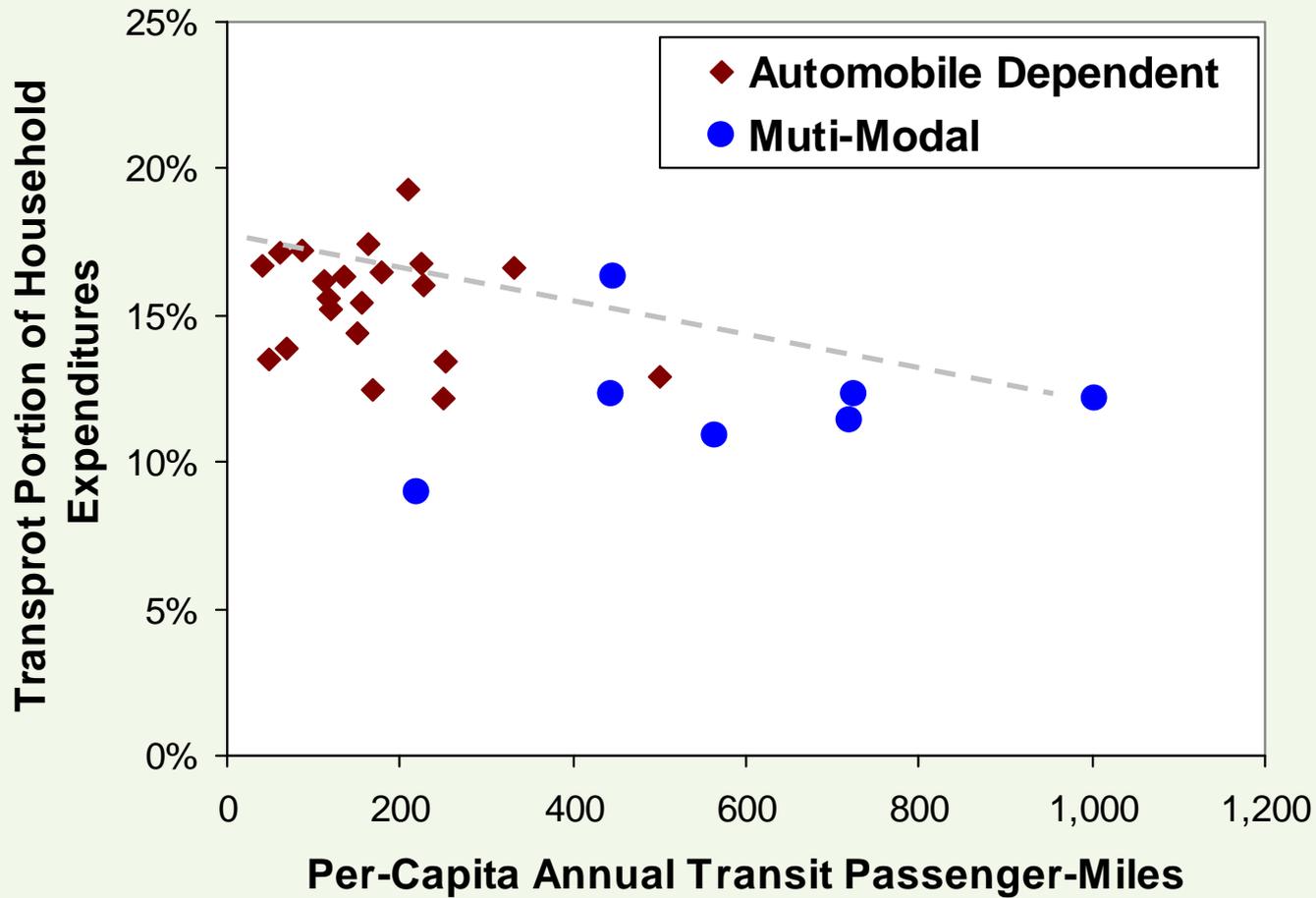
Basic Mobility



Certain goods and services are considered “essential” or “basic”:

- Emergency services (police, fire, ambulances, etc.).
- Public services and utilities (garbage collection, utility maintenance, etc.).
- Health care.
- Basic food and clothing.
- Education and employment (commuting).
- Some social and recreational activities.
- Mail and freight delivery.

Transportation Affordability



Win-Win Transportation Solutions

Market reforms justified on economic principles that help provide various economic, social and environmental benefits.

- Improved travel options.
- Incentives to use travel alternatives.
- Accessible land use.
- Policy and market reforms.



Mode Shifts



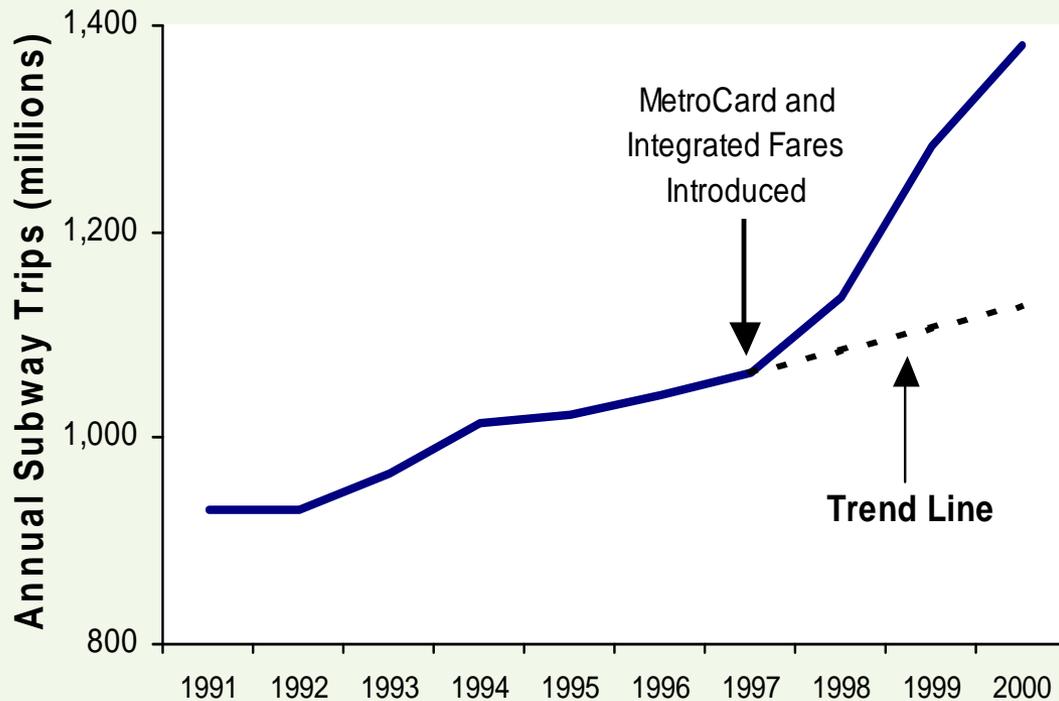
How do we convince people who drive luxury cars to shift mode?

Attracting Discretionary Riders

- Quality service (convenient, fast, comfortable).
- Low fares.
- Support (walkable communities, park & ride facilities, commute trip reduction programs).
- Convenient information.
- Parking pricing or “cash out”.
- Integrated with special events.
- Positive Image.



Transit Fare Innovations



Impacts increase over time.

- Transfers.
- Electronic fares.
- Bulk discounts to groups (college students, employees, etc.)
- Off-peak discounts.
- Debit cards.

Transit Station Level-Of-Service

- Clean
- Comfort (seating, temperature, quiet)
- Convenience (real-time user information, easy fare payment)
- Accessible (walkability, bike parking, nearby housing, employment, nearby shops)
- Services (refreshments, periodicals, etc.)
- Security



Ridesharing

Market studies suggest that a third of suburban automobile commuters would consider vanpooling, if it had:

- Flexibility.
- High Occupant Vehicle priority lanes and parking.
- Financial incentives.
- Integration with public transit.
- Employer support.



Employee Trip Reduction Programs



Employers encourage employees to walk, bicycle, carpool, ride transit and telework rather than drive to work.

Transport Management Association

Ride-On in San Luis Obispo County:
*develop and implement creative solutions to
transportation and mobility issues.*

It provides:

- Shuttle bus services.
- School transportation.
- Special event transportation.
- Employee lunchtime shuttle.
- Employee Transportation Coordinator (ETC) contract services.
- Transport information and referral.
- Commuter baseline survey.
- Guaranteed/Emergency Ride Home.



Walking and Cycling Improvements

- More investment in sidewalks, crosswalks, paths and bike lanes.
- Improved roadway shoulders.
- More traffic calming.
- Bicycle parking and changing facilities.
- Encouragement, education and enforcement programs.



School & Campus Transport Management



Programs that encourage parents and students to use alternative modes to travel to schools, colleges and universities.

Distance-Based Pricing



Motorists pay by the vehicle-kilometre, so a \$600 annual premium becomes 3¢/km and a \$2,000 annual premium becomes 10¢/km. This gives motorists a significant financial incentive to drive less, but is not a new fee at all, simply a different way to pay existing fees.

Location-Efficient Development



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

Carsharing

Automobile rental services intended to substitute for private vehicle ownership.



"Raise My Prices, Please!"

Of course, motorists do not like to pay more for roads and parking, but unpriced facilities are not really free, consumers ultimately pay through higher taxes and retail prices. The choice is actually between paying directly or indirectly.



Paying Directly Returns Savings To Motorists

Paying directly is more equitable and efficient, since users pay in proportion to the costs they impose. “Free” facilities force everybody to pay, including non-drivers and motorists who reduce their vehicle use. Paying directly gives individual consumers the savings that result when they drive less, providing a new opportunity to save money.

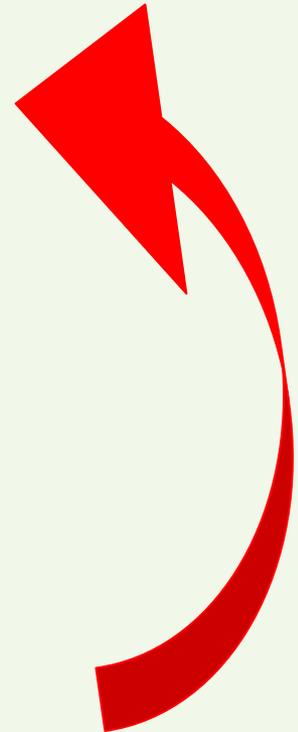
**Motorist Reduces
Mileage**



**Reduced
Congestion,
Road & Parking
Facility Costs,
Reduced
Crashes, etc.**



Economic Savings

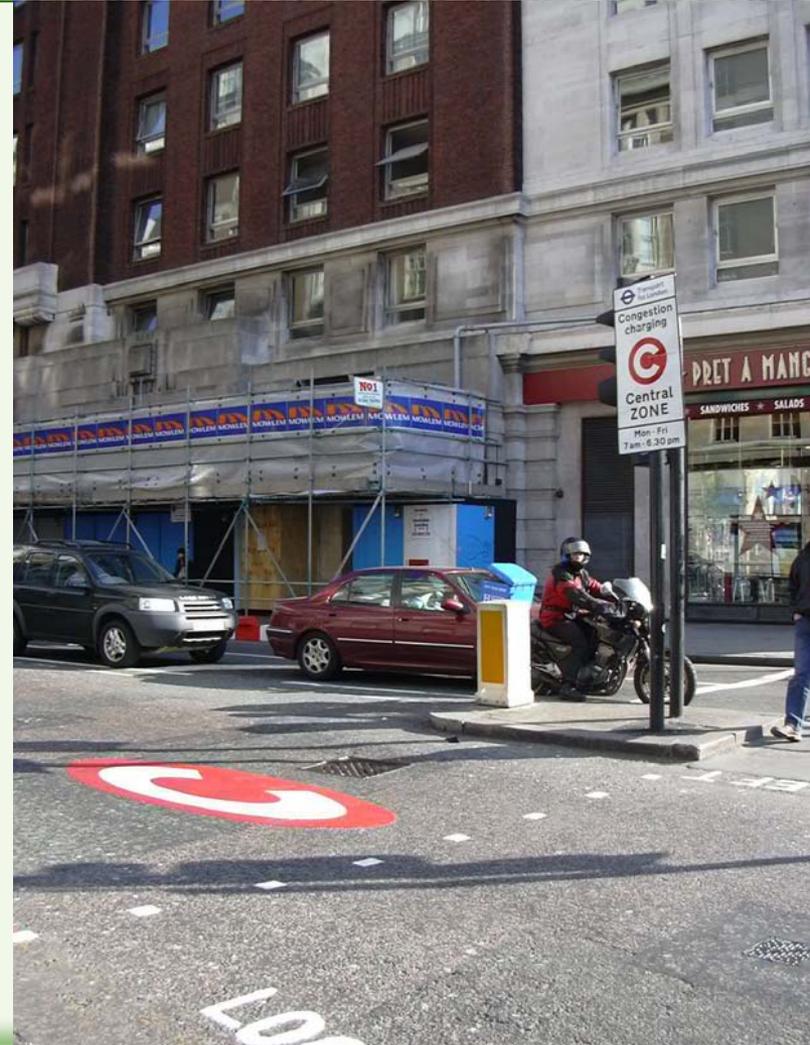


Cost-Based Pricing

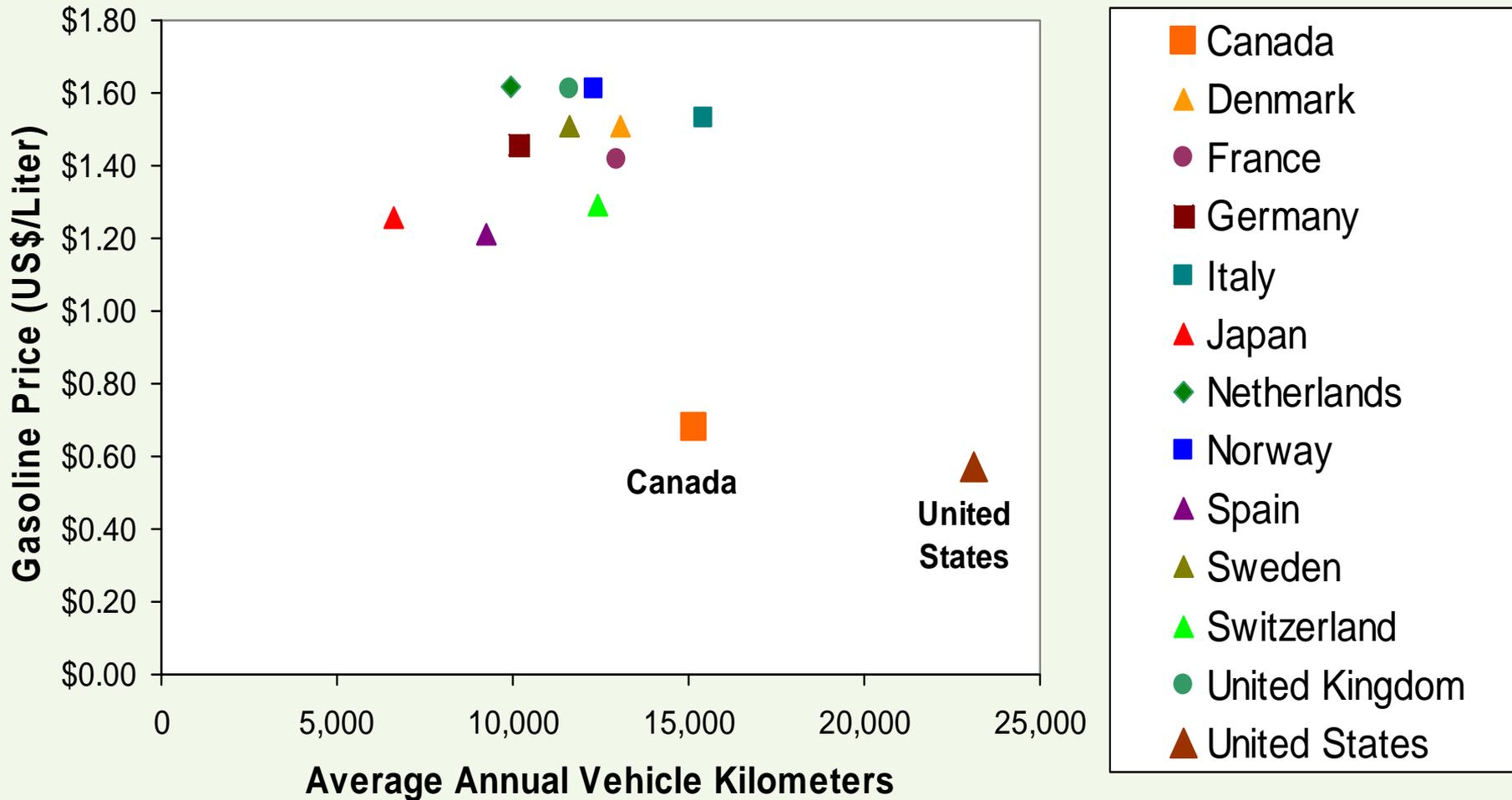
| Rank | Category | Examples |
|-------------|--|---|
| Best | Time- and location-specific road and parking pricing | Variable road pricing, location-specific parking management, location-specific emission charges. |
| Second Best | Mileage-pricing | Weight-distance charges, mileage-based vehicle insurance, prorated MVET, mileage based emission charges. |
| Third Best | Fuel charges | Increase fuel tax, apply general sales tax to fuel, pay-at-the-pump insurance, carbon tax, increase Hazardous Sub. Tax. |
| Bad | Fixed vehicle charges | Current MVET, vehicle purchase and ownership fees. |
| Worst | External costs (not charged to motorists) | General taxes paying for roads and traffic services, parking subsidies, uncompensated external costs. |

Road Pricing

- Charge motorists directly for using specific roads, based on use.
- Charge tolls, with higher rates during congested periods and lower rates during off-peak.
- Use electronic pricing systems that eliminate the need for tollbooths.



Fuel Taxes



Parking Management



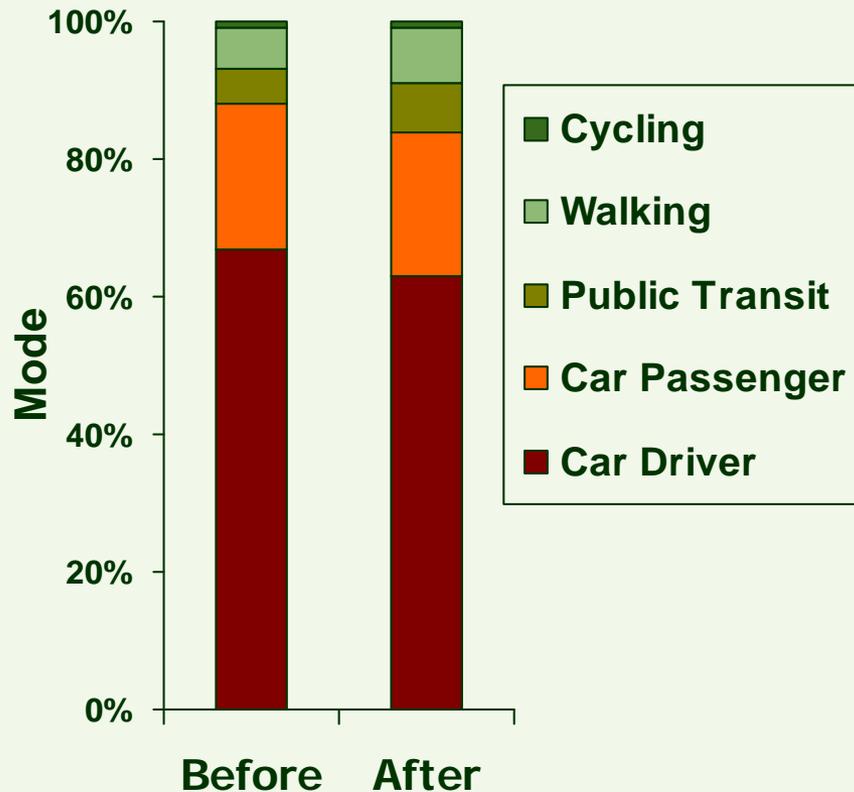
- More flexible parking requirements.
- Share parking spaces rather than having assigned spaces.
- Charge users directly for parking, rather than indirectly through taxes and rents.
- Parking Cash Out
(Employees who current receive free parking are able to choose a cash benefit or transit subsidy instead.)

Parking Pricing and Cash Out

Parking is never really free, consumers either pay directly or indirectly. Paying directly tends to be more fair and efficient, and typically reduces parking demand about 20%.



Mobility Management Marketing



Targeted marketing to inform residents about their travel options and encourage alternatives to driving.

The TravelSmart program offers personalized transit, rideshare and cycling information, and trial transit and vanpooling services. **It typically reduces automobile trips 5-15%.**

Marketing



Marketing is not simply persuasion, it is a dialogue between providers and consumers.

Change Is Possible



In many situations, consumers are happy to change their habits, given suitable support. Many travelers want to drive more safely or use alternative mode. But they need information, resources and encouragement.

What Do Consumers Want?



Marketers ask: what do consumers really want?

Example: how do you sell transit service to people who drive luxury cars?

Potential For Change



Some people would prefer to drive less and use alternatives more. *Focus on them.*

What would help these people change their travel behavior?

Puget Sound Vanpool Market Plan

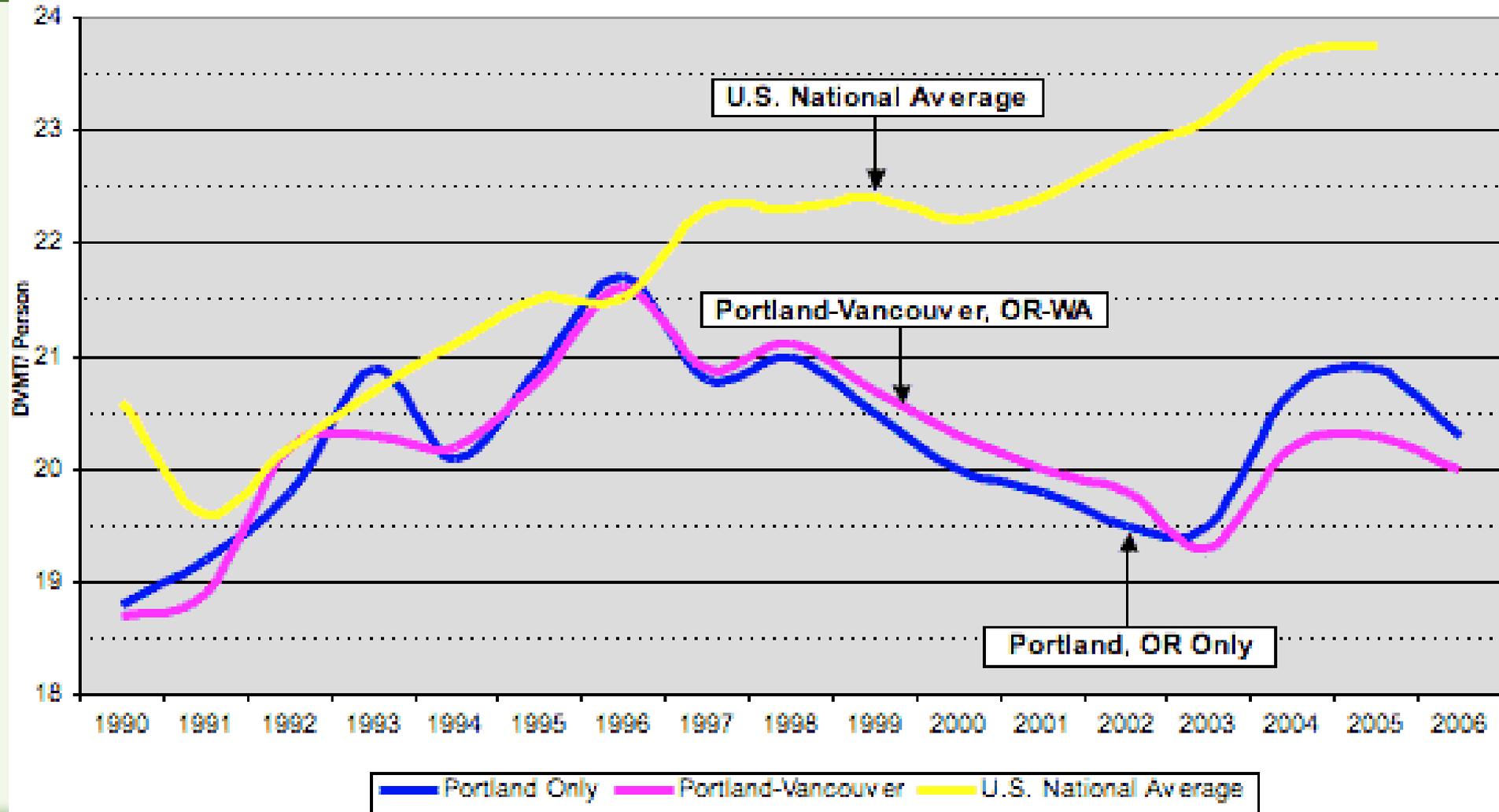


Telephone survey of commuters and employers in target areas.

- Current commute distance & mode.
- Level of interest in vanpooling (have you considered vanpooling in the last year?).
- Effects of pricing and affinity products.
- Barriers to mode shifting.

Results identify cost-effective interventions and predict their impacts. Potential for doubling or tripling vanpool ridership. Being developed into a plan with specific goals, objectives and programs.

Daily Vehicle Travel Per Capita

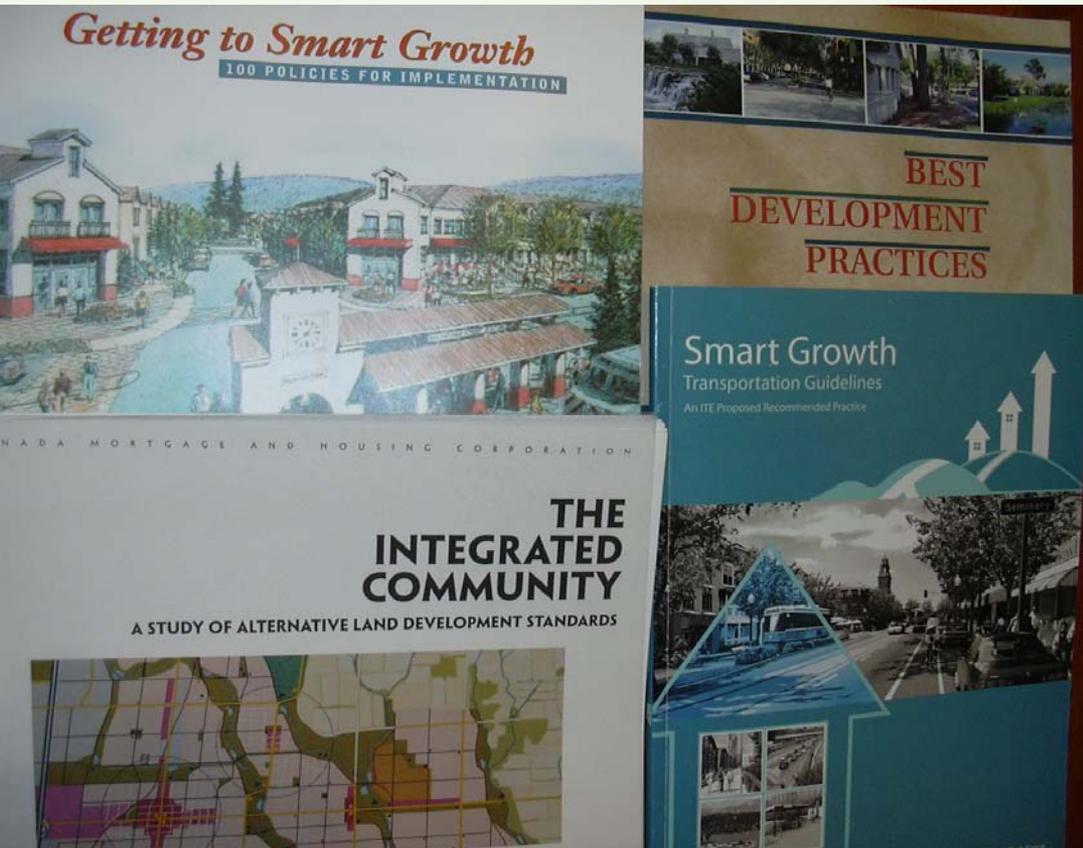


Example - Soma Apartments

Mixed-use San Francisco building with 74 affordable family apartments, 88 small studios, a child care center and a market. Totals 246 bedrooms and 24,000 square feet of commercial space. Contains a 66-space parking garage, 0.38 spaces per unit, with parking rented separately from housing units, which significantly reduced apartment rents.



Supported by Professional Organizations

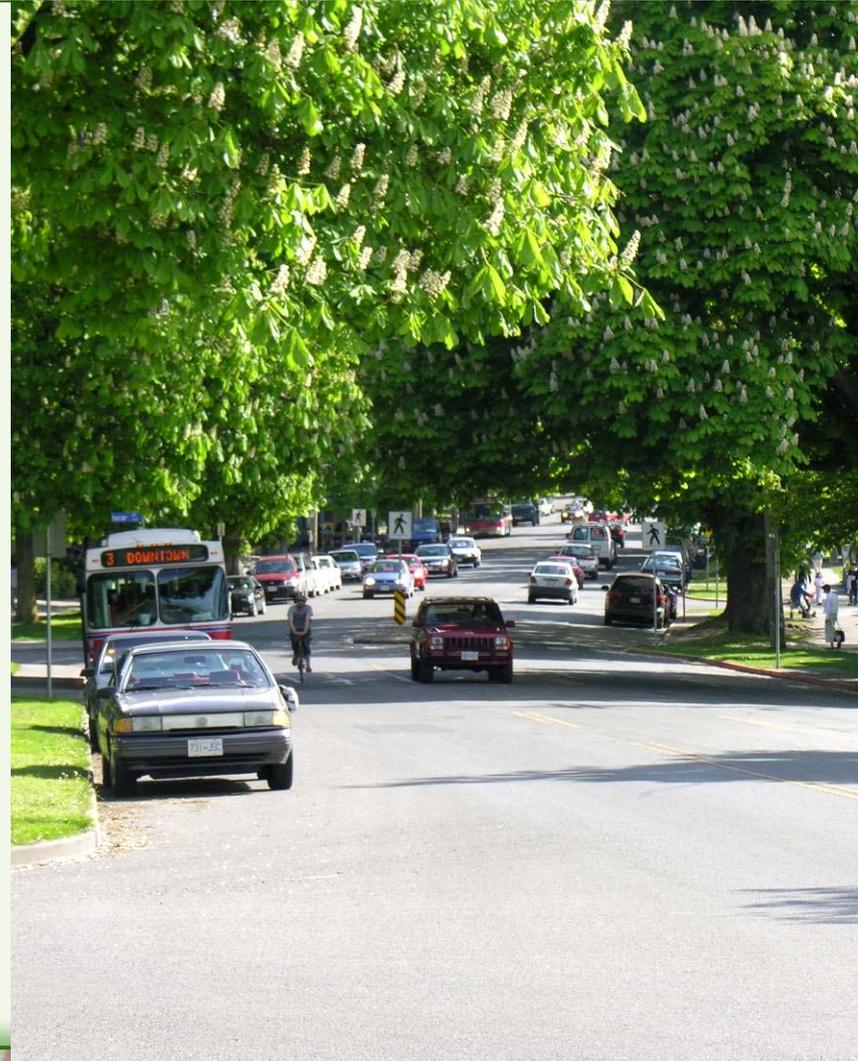


- Institute of Transportation Engineers.
- American Planning Association.
- American Farmland Trust.
- Federal, state, regional and local planning and transportation agencies.
- International City/County Management Association
- National Governor's Association
- Health organizations.
- And much more...

Motorists Benefit Too

More balanced transport policy is no more “anti-car” than a healthy diet is anti-food. Motorists have every reason to support these reforms:

- Reduced traffic and parking congestion.
- Improved safety.
- Improved travel options.
- Reduced chauffeuring burden.
- Often the quickest and most cost effective way to improve driving conditions.





“Evaluating Public Transit Benefits and Costs”

“Smart Transportation Economic Stimulation”

“Transportation Cost and Benefit Analysis”

“Smart Transport Emission Reduction”

“Parking Management Best Practices”

“The Future Isn’t What It Used To Be”

“Online TDM Encyclopedia”

and more...

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