Win-Win
Transportation
Solutions in
Buenos Aires

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Capacity Building for Young Professionals
Buenos Aires, Argentina
Cities Connect

- People with people.
- People with jobs.
- People with services.
- Businesses with customers.
- Businesses with businesses.
- People with social activities.
- Neighbors with neighbors (community cohesion)
Streets for People

Lloyd Wright
"Ciclovía" in Bogotá

Lloyd Wright
Street Cafes
Urban Greenspace and Trails
Public Recreation

Lloyd Wright
Streetscaping

Before

After
Creating Paradise

Paradise is not a distant destination, it is something we create in our own communities.
Sustainability emphasizes the integrated nature of human activities and therefore the need to coordinate planning among different sectors, jurisdictions and groups.
Life Satisfaction

SUCCESSFUL MAN

UNSUCCESSFUL MAN

SINGER
Preventing Problems

Sustainability planning is to development what preventive medicine is to health: it anticipates and manages problems rather than waiting for crises to develop.
Paradigm Shifts

- **Growth** - expanding, doing more.
- **Mobility** - physical movement.
- **Accessibility** - obtaining desired goods, services and activities.
- **Development** - improving, doing better.
Would we have a sustainable transportation system if all automobiles were solar powered?
Past Visions of Future Transport

1949 ConvAIRCAR Flying Car

1958 Firebird

Segways

Supersonic Concord
Trends Supporting Multi-Modalism

- 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
OECD Travel Trends

The graph shows the annual passenger kilometers per capita for different countries from 1970 to 2007. The y-axis represents Annual Passenger Kms Per Capita, while the x-axis represents Year.

Key countries and their respective lines on the graph include:
- U.S.
- Belgium
- Denmark
- Finland
- France
- Germany
- Greece
- Ireland
- Italy
- Netherlands
- Norway
- Portugal
- Spain
- Sweden
- Switzerland
- U.K.
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 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 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

<table>
<thead>
<tr>
<th>Planning Objectives</th>
<th>Expand Roadways</th>
<th>Efficient and Alt. Fuel Vehicles</th>
<th>Shifts from Auto Alternative Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vehicle Travel Impacts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce traffic congestion</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Roadway cost savings</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Parking cost savings</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Consumer cost savings</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Improve mobility options</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Improve traffic safety</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Energy conservation</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Pollution reduction</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Land use objectives</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Public fitness &amp; health</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
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)

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

"Large Rail"

"Small Rail"

Bus
Rail

New York
Boston
San Francisco
Chicago
Philadelphia
Baltimore
Pittsburgh
Seattle
Atlanta
Buffalo, NY
New Orleans
Cleveland
Portland
Los Angeles
St. Louis
Miami
Denver
Dallas-Fort Worth
Sacramento
San Diego
San Jose
Salt Lake City
Transit Ridership

<table>
<thead>
<tr>
<th>Cities</th>
<th>Large Rail</th>
<th>Small Rail</th>
<th>Bus Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Rail</td>
<td>500%</td>
<td>300%</td>
<td>100%</td>
</tr>
<tr>
<td>Small Rail</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus Only</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Per Capita Ridership

Commute Mode Split
Automobile Travel

<table>
<thead>
<tr>
<th></th>
<th>Per Capita Annual Vehicle-Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Rail</td>
<td>8,000</td>
</tr>
<tr>
<td>Small Rail</td>
<td>9,000</td>
</tr>
<tr>
<td>Bus Only</td>
<td>10,000</td>
</tr>
</tbody>
</table>
Congestion Costs

<table>
<thead>
<tr>
<th>City</th>
<th>Large Rail</th>
<th>Small Rail</th>
<th>Bus Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>$1,200</td>
<td>$800</td>
<td>$1,000</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>$800</td>
<td>$1,200</td>
<td>$1,000</td>
</tr>
<tr>
<td>Dallas</td>
<td>$600</td>
<td>$800</td>
<td>$200</td>
</tr>
<tr>
<td>Chicago</td>
<td>$400</td>
<td>$200</td>
<td>$0</td>
</tr>
<tr>
<td>Miami</td>
<td>$200</td>
<td>$400</td>
<td>$0</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>$0</td>
<td>$200</td>
<td>$0</td>
</tr>
<tr>
<td>New York</td>
<td>$0</td>
<td>$400</td>
<td>$0</td>
</tr>
</tbody>
</table>

Graph showing annual dollars per capita versus city population (in thousands). The graph includes data points for San Francisco, Los Angeles, Dallas, Chicago, Miami, Philadelphia, and New York, each represented by different symbols for Large Rail, Small Rail, and Bus Only.
• Urban road congestion maintains equilibrium. It gets bad enough to discourage further vehicle trips.

• The quality of travel options affects this point of equilibrium: If alternatives are inferior, few motorists will shift mode and congestion will be severe. If alternatives are attractive, motorists are more likely to shift modes, reducing congestion equilibrium.

• The faster the transit service, the faster the traffic speeds on parallel highways. Several studies find that door-to-door travel times for motorists tend to converge with those of grade-separated transit.
Public Transit Allows Growth

![Graph showing the increase in trips with size of city, comparing Public Transit and Automobiles. Larger cities have a higher percentage of trips made by public transit compared to automobiles.]
Economic Development Benefits

- Reducing vehicle expenditures and expanding transit service increases regional employment and business activity.
- Reducing transportation costs (congestion, parking, property taxes) to businesses increases productivity and competitiveness.
- Agglomeration efficiencies.
- Stimulates development and increases local property values.
- Increases affordability, allowing businesses to attract employees in areas with high living costs.
Traffic Fatalities

![Traffic Fatalities Graph](image)

**Traffic Fatalities Per 100,000 Population**

- **Large Rail**
- **Small Rail**
- **Bus Only**

**Annual Per Capita Transit Passenger-Miles**

- 0
- 200
- 400
- 600
- 800
- 1,000
- 1,200

**Deaths Per 100,000 Population**

- **Large Rail**
- **Small Rail**
- **Bus Only**

![Bar Chart](image)
International Traffic Death Rates

Traffic Fatalities Per 100,000 Population

Annual Per Capita Transit Passenger-Miles

- Northern Europe
- Southern Europe
- US
- Canada
- Australia
Household Transport Costs

Graph showing the per-capita annual transit passenger-miles against the transport portion of household expenditures for different cities. The cities include San Diego, Baltimore, and New York. The graph includes different types of transportation such as Large Rail, Small Rail, and Bus Only, represented by different symbols.

- San Diego: Data points are shown for Large Rail, Small Rail, and Bus Only.
- Baltimore: Data points are shown for Small Rail and Bus Only.
- New York: Data points are shown for Large Rail and Small Rail.

The x-axis represents per-capita annual transit passenger-miles, while the y-axis represents the transport portion of household expenditures.
Per Capita Transportation Expenses

- Large Rail: $2,500
- Small Rail: $3,000
- Bus Only: $3,500
Equity

Improving walking, cycling and public transport service 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.
Obesity Rates Versus Mode Split

The chart shows the obesity rates versus the mode split for various countries. The countries included are Latvia, Switzerland, Netherlands, Spain, Sweden, Germany, Finland, Denmark, Norway, UK, France, Ireland, Canada, Australia, and USA.

The mode split is categorized into three sections: Walk, Bike, and Transit. The obesity rates range from 0% to 80%.

The chart indicates that countries with higher obesity rates tend to have a lower mode split for walking, while countries with lower obesity rates have a higher mode split for walking.
Cities with high quality transit have:

- Four times the per capita transit ridership.
- A fifth lower per capita vehicle mileage.
- 30-50% lower per capita congestion costs.
- A third lower per-capita traffic fatality rates.
- 20% smaller portion of household budgets devoted to transport, savings about $500 annually per capita.
- A third lower transit operating costs.
- 58% higher transit service cost recovery.
- More money circulating in the local economy.
- More per capita walking.
- More efficient land use and higher property values.
- Improved environmental performance.
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
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.
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.
Rea Vaya – South Africa

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
Bike-Transit Integration
Value Capture

1. Development tax

2. Land benefit levy

3. Development of municipal-owned land

4. Selling of development rights
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.
Employers encourage employees to walk, bicycle, carpool, ride transit and telework rather than drive to work.
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.
• More traffic calming and streetscaping.
• Programs to encourage safe walking and cycling.
Walking and cycling network has greater connectivity than the automobile roadway network.
Through a contract with the outdoor advertising firm of JC Decaux, 10 000 public bicycles have been made available in Paris along with 750 hire points.
Programs that encourage parents and students to use alternative modes to travel to schools, colleges and universities.
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.
Automobile rental services intended to substitute for private vehicle ownership.
Without efficient pricing policies it is virtually impossible to reduce problems such as road and parking congestion. Described differently, travelers either pay with money or with frustration.
“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 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

\[ \downarrow \]

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

\[ \downarrow \]

Economic Savings
## Cost-Based Pricing

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

Average Annual Vehicle Kilometers

Gasoline Price (US$/Liter)
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.
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 currently receive free parking are able to choose a cash benefit or transit subsidy instead.)
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%.
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%.
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.
Marketers ask: what do consumers really want?

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

![Graph showing daily vehicle travel per capita for Portland-Vancouver, OR-WA and Portland, OR Only compared to the U.S. National Average from 1990 to 2006.](image_url)
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...

www.vtpi.org
“Promoting Public Health Through Smart Growth: Building Healthier Communities Through Transportation And Land Use Policies ”

“The Future Isn’t What It Used to Be”

“Planning Principles and Practices”

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