Work Smarter Not Harder to Improve Transportation

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Making Connections
Improving Mobility and Design in the Treasure Valley
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Paradise is not a distant place, it is something we can create in our own communities.
Past Visions of Future Transport

1949 ConvAIRCAR Flying Car

1958 Firebird

Segways
2001 A Space Odyssey
Wheeled Luggage
Sustainability emphasizes the integrated nature of human activities and therefore the need for coordinated planning among different sectors, jurisdictions and groups.

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

Increased Happiness ==> Improved Efficiency

Efficient

Learned Efficiency

Inefficient

Increased Material Wealth ==> Poverty Comfort Luxury Extravagance
Paradigm Shifts

- **Growth** - expanding, doing more.
- **Development** - improving, doing better.
- **Mobility** - physical movement.
- **Accessibility** - obtaining desired goods, services, and activities.
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
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.
Put another way, more comprehensive planning helps identify “Win-Win” strategies: solutions to one problem that also help solve other problems facing society.

Ask:

“What congestion-reduction strategy also reduces parking costs, saves consumers money, and improves mobility options for non-drivers.”
<table>
<thead>
<tr>
<th>Planning Objectives</th>
<th>Expand Roadways</th>
<th>Efficient and Alt. Fuel Vehicles</th>
<th>Mode Shifts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce traffic congestion</td>
<td>✓</td>
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<tr>
<td>Roadway cost savings</td>
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<td>✓</td>
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<tr>
<td>Parking cost savings</td>
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<tr>
<td>Consumer cost savings</td>
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<td></td>
<td>✓</td>
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<tr>
<td>Improve mobility options</td>
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<td>✓</td>
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<tr>
<td>Improve traffic safety</td>
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<tr>
<td>Pollution reduction</td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>Land use objectives</td>
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<td></td>
<td>✓</td>
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<tr>
<td>Public fitness &amp; health</td>
<td></td>
<td></td>
<td>✓</td>
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</tbody>
</table>
Congestion Costs

The graph shows the relationship between city population and annual congestion costs per capita for different cities. The x-axis represents city population (in thousands), and the y-axis represents annual dollars per capita. The graph compares two types of transportation systems: automobile dependent and multi-modal.

- **San Francisco**: Approximately $600 per capita.
- **Philadelphia**: Approximately $800 per capita.
- **Chicago**: Approximately $400 per capita.
- **New York**: Approximately $0 per capita.
- **Los Angeles**: Approximately $1,200 per capita.

The data indicates that larger cities tend to have higher congestion costs per capita, especially for automobile dependent systems.


Traffic Fatalities

![Graph showing the relationship between annual per capita transit passenger-miles and traffic fatalities per 100,000 residents. The graph compares automobile dependent and multi-modal transportation systems.](image)

- **Axes:**
  - Y-axis: Traffic Fatalities per 100,000 Residents
  - X-axis: Annual Per Capita Transit Passenger-Miles

- **Data Points:**
  - Automobile Dependent: Red diamonds
  - Multi-Modal: Blue circles

- **Trend:**
  - There is a negative correlation between the number of annual per capita transit passenger-miles and traffic fatalities per 100,000 residents.
U.S. Crash Rates

The graph shows the relationship between the number of traffic fatalities per 100,000 population and per capita annual vehicle mileage. The data is categorized into rural and urban areas, with rural areas represented by filled diamonds and urban areas by open diamonds. The relationship appears to be linear, with fatalities increasing as mileage increases.
Smart Growth Safety Impacts

**Annual Traffic Deaths Per 100,000 Population**

![Bar Chart]

- **Most Sprawled**
- **Smartest Growth**
Household Transport Expenditures

- 25%
- 20%
- 15%
- 10%
- 5%
- 0%

Transpot Portion of Household Expenditures

Per-Capita Annual Transit Passenger-Miles

- Automobile Dependent
- Muti-Modal
<table>
<thead>
<tr>
<th>Automobile</th>
<th>Public Transport</th>
<th>Non-motorized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads $500</td>
<td>Fares $500</td>
<td>Bikes: $150</td>
</tr>
<tr>
<td>Parking $1,000</td>
<td>Subsidies $100</td>
<td>Sidewalks/Paths: $100</td>
</tr>
<tr>
<td>Fuel $1,500</td>
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<td>Shoes: $50</td>
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<tr>
<td>Vehicle $3,000</td>
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<td>$300</td>
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<tr>
<td>$6,000</td>
<td>$600</td>
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</tbody>
</table>
"A Heavy Load" Report

Share of Income Spent on Housing and Transportation

Households $20,000 – $35,000

- In Central City: 54% Transportation, 32% Housing
- Near Other Employment Center: 66% Transportation, 35% Housing
- Away from Employment Center: 70% Transportation, 33% Housing

Households $35,000 – $50,000

- In Central City: 39% Transportation, 23% Housing
- Near Other Employment Center: 49% Transportation, 26% Housing
- Away from Employment Center: 51% Transportation, 25% Housing

Location of Neighborhood Where Working Families Live

Center City | Near Other Employment Center | Away from Employment Center
1,000,000 households in the region saving $1,000 annually on vehicle expenses shifted to general consumer goods creates 6,000 additional regional jobs.
When major highway systems were being developed in the 1950s and 60s they provided high returns on investment. Now that the system is more mature, economic returns have declined.
Walking represents a small portion of travel distance but a large portion of travel time, particularly in urban areas.
If, instead of asking, “What portion of trips are only by active transport? We ask, “What portion of trips involve some active transport?” the portion of active transport typically increases 2-6 times.
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.
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.
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.
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.
- Improved roadway shoulders.
- More traffic calming.
- Bicycle parking and changing facilities.
- Encouragement, education and enforcement programs.
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.
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%.
Parking meters installed to increase turnover and make spaces available to customers. A Parking Meter Zone (PMZ) was established. Revenues are invested in:

- Street furniture
- Trees
- Police patrols
- Better street lighting,
- More street and sidewalk cleaning
- Pedestrian facility improvements
- Downtown marketing
Reform Planning Practices

- **Least-cost planning**: equal funding for mobility management solutions.
- **Multi-modal planning**: create a diverse and integrated transportation system.
Kamloops TravelSmart Program

Reduces planned road expenditures by 75%, reduces pollution and improves travel options. Consists of the following:

- City's official plan favors compact development.
- Improved public transit-increased frequency of service to outlying communities.
- Additional cycle routes and cycling initiatives.
- Promotional programs-workshops and seminars in schools.
Smart Growth (Density, Design, Diversity)

- More **compact**, infill development.
- **Mixed** land use.
- Increased **connectivity**.
- Improved **walkability**.
- **Urban villages**.
- Increased transportation **diversity**.
- Better parking **management**.
- Improved **public realm**.
- More **traffic calming** and speed control.
Comparing Distances

1.3 miles vs. 0.5 miles

Images are same scale, approximately 1 sq mi.
Land Use Impacts On Travel

The chart illustrates the daily minutes of travel for different urban index ratings:

- **Least Urban**
  - Automobile: Highest, indicating the longest travel time.
  - Transit: Minimal.
  - Walk: Minimal.

- **Mixed**
  - Automobile: Moderate, indicating more travel time than least urban but less than most urban.
  - Transit: Minimal.
  - Walk: Minimal.

- **Most Urban**
  - Automobile: Moderate to High, indicating moderate travel time.
  - Transit: Moderate, indicating more travel time than walk.
  - Walk: Highest, indicating the longest travel time.

Legend:
- **Automobile**
- **Transit**
- **Walk**
Sprawl Is Costly

- Increased infrastructure and public service costs.
- Reduces housing options (particularly multi-family)
- Reduced travel options.
- Increased transportation and delivery costs.
- Environmental costs.
Development fees calculated by civil engineering firm based on actual costs. Fees for a typical house located near the city edge are $5,500, but increase to $10,800 if located a mile away. Shifted development to smarter growth locations.
• 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...
Several options are being considered for addressing congestion problems on the Malahat highway north of Victoria, BC. Current proposals would cost half- to one-billion dollars, with annualized costs of $30 to $60 million.
## Malahat Improvement Options

<table>
<thead>
<tr>
<th></th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
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<tbody>
<tr>
<td>Widen Highway</td>
<td>$40</td>
<td>$50</td>
<td>$12</td>
<td>$1</td>
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<tr>
<td>Saanich Inlet Bridge</td>
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<tr>
<td>Rail Service</td>
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</tr>
<tr>
<td>Bus/vanpool and TDM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized capital costs (millions)</td>
<td>$40</td>
<td>$50</td>
<td>$12</td>
<td>$1</td>
</tr>
<tr>
<td>Incremental annualized operating costs (millions)</td>
<td>$2</td>
<td>$4</td>
<td>$3</td>
<td>$1</td>
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<tr>
<td>Total annualized cost (millions)</td>
<td>$42</td>
<td>$54</td>
<td>$15</td>
<td>$2</td>
</tr>
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</table>
Bus/Vanpool and TDM

- Bus service: 20-minute headways.
- Bus fares: $3-8 each way, depending on distance.
- Vanpool subsidy: 20% subsidy ($80 per month)
- Commute trip reduction programs covering a third of commuters.
- HOV priority saves 3-5 minutes per trip.
- Targeted marketing along corridor.
- Encourage parking cash out and Pay-As-You-Drive insurance.
- Improve user information services.

Results: 10-20% shift
### Comparing Benefits

<table>
<thead>
<tr>
<th>Planning Objectives</th>
<th>Widen Highway or Bridge</th>
<th>Quality Public Transit &amp; TDM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce congestion (direct/downstream)</td>
<td>✓/✗</td>
<td>✓</td>
</tr>
<tr>
<td>Parking cost savings</td>
<td>×</td>
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</tr>
<tr>
<td>Consumer cost savings</td>
<td>×</td>
<td>✓</td>
</tr>
<tr>
<td>Better mobility options</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Traffic safety</td>
<td>✓/✗</td>
<td>✓</td>
</tr>
<tr>
<td>Reduce pollution</td>
<td>×</td>
<td>✓</td>
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<tr>
<td>Energy conservation</td>
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<td>✓</td>
</tr>
<tr>
<td>Land use objectives</td>
<td>×</td>
<td>✓</td>
</tr>
<tr>
<td>Improved fitness &amp; health</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

✓ = supports objective    ✓/✗ = contradicts objective
Aggressive Program

- Bus service: 10-minute headways, with express service.
- Bus fares: $2 to Duncan, $3 to Nanaimo
- Vanpool subsidy: 50% subsidy
- Enhanced vanpool services: part-time options, synchronized to meet transit, luxury vans, etc.
- Commute trip reduction covering 60% commuters.
- HOV priority saves 10+ minutes per trip.
- General and personal marketing.
- Priced parking, parking cash out, and PAYD insurance.
- $2 per peak-period trip road user fee.
- Aggressive tourist transport management.
- Real-time user information.

**Results:** 15-30% shift without road pricing, 20-40% with.
Benefits

**Economic**
- Reduces congestion, improves mobility.
- Reduced road & parking facility costs.
- Consumer cost savings.
- Supports regional economic development.

**Social**
- Improved travel options for non-drivers.
- Improved safety and fitness.

**Environmental**
- Energy conservation and pollution reduction.
- Reduced land consumption.
Motorists Benefit Too

Mobility Management strives for balance. It is no more “anti-car” than a healthy diet is anti-food. Motorists have every reason to support it:

- Reduced traffic and parking congestion.
- Improved safety.
- Improved travel options.
- Reduced chauffeuring burden.
- Positive incentives.
- Often the quickest and most cost effective way to improve driving conditions.
“Understanding Smart Growth Savings”
“The Future Isn’t What It Used To Be”
“If Health Matters”
“Online TDM Encyclopedia”
and more...

www.vtpi.org