

New Thinking Needed on Land Transport

Sustainable Energy Forum

Transport Working Group

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Presentation Overview

Land Transport Recommendations from the Sustainable Energy Forum

- Situation Assessment
- Suggested Solutions
- Closing Remarks

New Zealand Situation

- "it's time to recognise that we cannot pave our way out of traffic"
 - Secretary for Transport - Robin Dunlop

High Cost, High Risk

- Vehicle-km Rising
 - Faster than population & economy
 - Feedback from traffic to urban design keeps driving up vehicle-km & costs
- Motor Vehicles
 - are a major contributor to New Zealand's GHG emissions
 - are very vulnerable to oil scarcity
- It is possible that permanent oil scarcity will develop before Auckland's roading development is complete

The Real Issues

- The primary issue isn't getting value for money in roading. It's whether spending money on roading should be the priority.
- To make ourselves resilient to constraints on carbon (oil depletion and climate change), we need to
 - Use less private transport
 - Use transport energy more efficiently
 - Use other forms of energy for transport

Urban Design - Auckland

- Auckland has;
 - 15% population of Paris
 - 40% of the land area,
 - 150% of the maximum distance across urban area
 - 300% of the per-capita transport costs

Car Use - Downsides (1 of 2)

- Promised flexibility of car use:
 - Encourages attractive low-density suburbs
 - Low-density suburbs create long travel distances
 - limit walking and cycling
 - make it difficult to service the suburb with public transport
- Local streets are unsafe for children because they are designed for car use
- Heavy reliance on car use = congestion, pollution and noise
- Congestion leads to dispersal of commercial & industrial destinations & decay in the CBD

Car Use - Downsides (2 of 2)

- Dispersed trip origins & destinations defy servicing by public transport
- Congestion relief projects induce new traffic:
 - This rapidly consumes supposed benefits
 - A key source of induced traffic is further sprawl, often anticipating new capacity
- Congestion relief projects often further inhibit walking, cycling & public transport
- Making most trips by car creates multiple health problems

Health Effects of Car Use

- Crashes kill 350/year & many injuries
- 30% of urban fatalities are pedestrians
- Traffic pollution kills 400/year & chronic disease
- Danger, pollution & delay discourage walking & cycling, inhibiting exercise as part of everyday routine
 - Inhibited walking and cycling inhibits public transport
- Children *need* to be taken everywhere by car
 - They see car use & minimal exercise as normal

Commercial Traffic Options

- Consolidate trips
- Divert to rail
 - Remove institutional obstacles presently blocking the expansion of rail freight
 - Investigate increased electrification of the rail system, where load factors warrant
- Optimise truck size
- Make deliveries at night
- Reduce reliance on JIT deliveries
- Commercial traffic is rarely $> 15\%$ of traffic stream & easily accommodated on existing roads

Proposed Solutions: Introduction

- Concerns over climate change, rising oil prices and oil depletion make now the right time to take a fresh look at our transport priorities
- Transport planning and urban design need to be linked in a joint approach to reducing the growth in private transport use
- Current options to control urban sprawl aren't working
 - Auckland's current road-building programme will be ineffective because of induced traffic & failure to control land use
 - There need to be much stricter criteria for approving new roads, taking full account of externalities

Sustainable Development

- Rate of urban redevelopment 1-2% a year,
 - Population growth of say 1.5%,
 - Total development rate of 3-4%/yr is reasonable.
- If 50% growth were 'transit-friendly development'
 - (medium density housing well placed for public transport access, CBD revitalisation etc),
 - 20-25% of the urban fabric could be well suited to sustainable transport by 2020
- This figure could increase
 - Due to oil prices, & simple measures supporting public transport
 - Provision for cycling to public transport increases catchment area per stop tenfold

Transport Suggestions (1 of 4)

- An effective policy incorporates:
 - Congestion charging
 - Central area parking controls
 - A focus on the speed of trips by public transport
 - including access, waiting, transit & transfer times. Need simple, quick transfers & excellent timekeeping.
 - Refocus roading alterations on maximising public transport speed and priority & improving conditions for walking and cycling
 - (Don't assume that faster traffic means faster buses)
 - Space taken from motor vehicle use for any of these modes will usually increase system capacity

Transport Suggestions (2 of 4)

- Build on Urban Transport Protocol
 - Develop links between transport & urban planning
 - Focussing 50% of redevelopment on transit-friendly projects will be little use if the other half continues low density urban fringe development with no public transport
- Revise Government support for capital costs:
 - Options include bulk funding or
 - 100% for public transport,
 - 60% for roads & nothing for urban fringe roads

Transport Suggestions (3 of 4)

- Encourage 'slow zones' (30 km/h)
 - residential areas
 - short lengths of main highway,
 - past schools, shops and public transport stops
- Consider Light Rail or Metro where the traffic is adequate
 - >3000 passengers/hr at peak,
 - one way for light rail,
 - 15 000 passengers/hr for metro
- Encourage the setting of urban boundaries

Transport Suggestions (4 of 4)

- The composition of the vehicle fleet needs to be changed. This will take time, but must be started now. Measures include:
 - Integrate vehicle charging and registration regimes to reward low emissions & low fuel use and penalise high emissions & high fuel use
 - Speed up the introduction of biofuels, and make it easier for those who can use higher than 5% biofuels to obtain them
 - Continue and expand investigations into the introduction of plug-in hybrids and EVs

Closing Remarks

- Estimates of the Cost of Congestion are meaningless because they rely on false assumptions:
 - That traffic is a function of population & economic growth, independent of other effects
 - That the congestion-free conditions used as a basis for comparison are achievable
- Cost estimates for congestion support the policy being promoted but not other policies