

IPENZ Transportation Group Conference 2007

**CAN PUBLIC TRANSPORTISATION
(AND/OR DENSIFICATION)
ACHIEVE URBAN TRANSPORT
EFFICIENCIES?**

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OVERVIEW / INTRODUCTION

- Meaning of “Transport Efficiencies”
- Comparative modal energy consumptions
- Comparative modal environmental detriments (incl GW)
- Effect of urban design on transport energy consumption

“LIFE” IS ...

- **All Life exists in conjunction with (lives off) its envt, extracting the essentials for life / growth / betterment, returning wastes (which become nutrients for other life)**
- The environment is inherently dynamic;
life forms must adapt to ongoing change to remain viable
- “Devil take hindmost”, “Jungle Law”, “**Progress or perish**”
- Life forms **compete** within / between species for resources to survive **as individuals**; this enables **species** to survive.
- Most forms **also cooperate** in Common Interest Groups for mutual empowerment against competing groups.

“HUMAN BETTERMENT” IS ...

- **Human life** at the **personal** level is also driven by this natural “**life force**” to survive & seek **betterment** – in health, strength, power, wealth, longevity.
(ie in evolution / enablement / progress / civilisation)
- To this end, humans **cooperate** in Common Interest Groups for collective safety & prosperity and to produce G & S.
- Humans also **compete** within & between CIGs to obtain the power to acquire the more highly-preferred G & S for their own personal betterment (and that of family).
- A CIG (*family, tribe, village, city, nation etc*) is a “**market**” within which an array of desirable Goods and Services are **produced** by such competition and cooperation, and their optimal **distribution** achieved.

CREATION OF BETTERMENT

- Betterment = benefit = increment of wealth = life driver
- Creation of personal betterment **does not occur** through the mere manufacture of goods and services (for an unsaleable G or S is a liability and not an asset, worth nothing unless sold, and even then only worth the excess of selling price over cost of production).
- Rather, betterments are acquired through mutually voluntary (*ie personally preferred not govtally dictated*) execution of :
 - Transactions** of goods and services
 - Interactions** (social/cultural/comm'l) between people,
 - Experiences** by people of urban activities and env't (That is, by execution of **TIEs**)

“CITIES” ARE ...

- **A City exists as a market** for matching human wants/needs with the goods and services able to satisfy them. Some citizens specialise in producing the goods and services; others specialise in marketing and distributing them.
- This cities are “**machines for (human) living**” (not eco-zoos)
- **The bigger the city**, the more **scope** for specialisation & economies of scale in mass production & distribution, ie for personal **betterment** and collective **prosperity**
- **That is, PROVIDED** the city operates as one big market, rather than as a group of standalone villages, as did London before the advent of mechanised transport
- **Plans** which promote the latter (ie live at work villagisation) are **anti-market, anti-natural, anti-prosperity.**

“TRANSPORT” IS ...

- TIEs mostly require **translocation** of people/goods/services.
- **Transport is ..** technology leveraging translocations for TIEs
- Transport effects leverage by increasing travel speeds, thus enabling access to a **wider range** of destinations within time-frames constrained by the 24 hour life-cycle.
- **The higher the average travel speed :**
the more **effective** the transport technology is
in enabling efficient inter-access,
the bigger the city that can function as a **single market**,
the greater the degree of specialisation and economies
of scale possible in production & distribution ____
and thus the greater the enablement of wealth creation.
- Costs other than travel time are of little consequence for
travel mode decision-making in western new world cities

“TRANSPORT EFFICIENCY” IS ...

- ... measured by “ease of inter-access” of all urban locations
- More **efficient** transport increases **range** within affordable time-frame, thus access to more options for betterment
- Door-to-door, **automobiles** are and always will be at least **twice as fast** as any form of public transport for all but a very small percentage of (mostly commuter) trips.
- For most trips **automobility halves** door-to-door **travel time**, enabling **20-fold improv't** in (eg) 1/2hr interaccessibility
- Urban road network development in congested situations enables TIEs **providing massive returns on capital** (LTNZ's PEM inadequate/deficient for urban situations)
- Thus transit should command no more than proportionate attention/funding if economic debilitation is to be avoided

AUTOMOBILITY ADVANTAGES

- Faster ; enables MUCH greater choice of housing/access/jobs
- Dramatically improves productive efficiency of people/society
- Auto-(self-)mobility almost always “best” door-to-door option :
 - most flexible for timing trips to suit other responsibilities
 - most flexible in accommodating passengers, loads
 - most flexible in terms of trip purpose, dest’s, route,
 - most comfortable (weather-proof, temp control, etc)
 - most convenient (personal preference - audio, clothing)
 - best for pers.security (eg children/infirm/fems at night)
 - fastest (typically half public transp.door-to-door time)
 - lowest infrastr.life-cycle cost / pers.km. delivered
 - cheapest running costs incl. infrastr. maintenance
 - least energy consumption per pers-km del.,day-long
 - more predictable travel time precludes provisional time
- Multipurpose (**trip chaining**) capability compounds efficiency
- Thus, whether driver or passenger, whenever it is an option,
automobility almost always chosen over Public
Transp.

CAN TRAVEL BE REDUCED?

- Worldwide, adults have about 14hrs/day “available time” during which they invest about 1.5hrs/day “translocating” to optimise the benefits from selection from opportunities for transactions, interactions & experiences (TIEs).
- In western economies, travel home to/from organised work averages about 2/3 of daily Total T.T., ie 1/2hr each way reflecting optimisation of “work : accessibility tradeoff”.
- But 3/4 of trips are “other than work”, often chained together into 1 or 2 multi-destinational circuit trips during the day, and/or recreational trips or chained trips at nights/wkends
- Depending on trip purpose and/or destination(s), trip mode is chosen for utility, affordability, comfort, safety, conv’nce.
- For most WNW person-trips, automobility is best option by far

MODAL COSTS

- Meyer Kain & Wohl “The Urban Transportation Problem”
- NZIER - “Urban Transportation and Land Use”
- “The Vanishing Automobile and Other Urban Myths”
- “Great American (financial) Rail Disasters”
 - In USA, transit’s (bus + rail) share of the commuter market consistently fell from 8.9% in 1970 to 4.7% in 2000, despite federal subsidy alone of \$130 billion contributing part of capital costs of new busways and rail transit lines over that time
- Many transit authorities are in severe financial difficulty owing to massive costs overwhelming chargeable fares witness Akl’s rate increases despite massive diversion of road-user-taxes to public transport (especially rail)
- It NEVER “all comes right in the end”

MODAL ENERGY CONSUMPTION

- Voorhees “Energy Efficiencies of Urban Mass Transport”
- “Transportation Energy Data Book” (USDoE by OakRidge)
- In general, for low-density fully automobilised, dispersed, smaller Western New World cities like Auckland, Average day-long bus & train occupancies are so low that cars use (ave 1.5 occup) is comparably energy-efficient to bus use, and several times more efficient than heavy rail (Somewhat obscure on light rail)
- Murdoch University’s Data Book is interesting & useful, but its data can be variously interpreted. Certainly the popular interpretation suggesting we should all live like Asians in Asian-style cities is deeply flawed, - see eg Brindle “Lies Damned Lies & Automobile Dependence

MODAL SOCIAL EFFECTS

MODAL ENVIRONMENTAL EFFECTS

CAN DENSIFICATION REDUCE TRAVEL?

- People travel **1.5hrs/day** regardless
- Cars driven **15,000kms** per year regardless
- If densification reduces range (after centuries of growth?), it also increases congestion, **slows average travel speeds**
- Eg travel on congested arterial at 12kph (cf exp'way 60kph)
 - consumes 4 times the energy per veh-km travelled
 - emits about 6 times the toxicity of emissions
- **ANSWER : NO, but it increases energy & emissions**
- **BUT SURELY DENSIFICATION IS SMART GROWTH?**
- Sure it is - twice the material resources & costs per m² and five times the energy consumption per m² as wood constr., and all for negligible or negative environmental “goods”
ie its no less dumb than the rest of DUMB GROWTH

CAN MODAL CHOICE BE COERCIVELY MODIFIED ???

- High fuel costs eventually improve fuel consumption/emissions but actual car use unresponsive to fuel/road/area pricing. (Area-pricing merely diverts traffic to other times/dest's)
- In times of war, people will self-sacrifice "for the greater good", so a war eg on climate change, or on cars as anti-social would be helpful as long as public believes in the war
- But all of the people can only be fooled some of the time... Sooner or later the penny drops, the wheel turns, the tipping point is reached - unless of course beneficiaries have built an impregnable power base with overlapping legislation to irretrievably exclude oppos (econs & engrs)
- Such is "The March of Folly" and "The Road to Serfdom" after which the "power elite" can coerce to hearts content

ALTERNATIVES TO ROADS/CARS

- Electronic communications increases urban productivity, ie increases need for physical translocations of goods/services
- Electronic commuting can reduce travel needs by up to 10% BUT vacated roadspaceso will be filled up by travelers otherwise frustrated or by moving from shoulder to peak UNLESS AND UNTIL adequate arterial roadspace provided to meet tax/ratepaying citizen wants/needs/desires (in democ)
- Public transportisation, if continued long enough, will do for Auckland's regional economy what major energy projects did for national economy in 1984 - drive it bankrupt.
- Auckland already least productive/capita NZ city bar Nelson.
- In other words, **TINATR** - There Is No Alternative To Roothing unless we wish to destroy our socio-economy, - for what???

TRANSPORT INEFFICIENCY IS

...

- The result when **all the above is ignored**. That is :
 - “Manage” traffic within existing roadspace resources,
ie don’t seek funds for new arterial road-space,
Imply road maintce & bus-lane \$\$ is for “new roading”
& switch dedicated roaduser tax to fund transit
 - Be “creative” with ensuing congestion;
 - artificially pump up CBD parking prices
to further penalise car use, force transit use,
ie **tax/toll/charge cars/commerce off the road**
 - _____ Hide surprise when CBD patrons drive elsewhere,
CBD withers, congestion compounds,
“vibrancy” fades, economy nosedives
 - Act “smart” : apply “spin” that “congestion is good”
while maintaining fiction that env’tal consids rule

PURPOSE OF THE CITY

- **To enable people to better themselves & their families**
 - by living close enough together to Transact, Interact and Experience with as many others day-by-day as is possible
 - within constraints of (i) 24hr TravelTime-Budget feasibility (ii) general affordability of other real-to-people travel costs [both direct (OOPexp) & indirect (rate/tax transit subsidies)]
 - as determined by dominant transp mode (auto-mobility) and availability of adequate road-space and infrastructure
 - to enable maximum specialisation and economies of scale production and distribution using whole city as market
- **Betterment means** more better (suburban) housing (not more high cost low quality downtown apartments) and more better mobility & inter-accessibility, more freedom of choice and action, and thus more prosperity, by means of which a champagne-standard environment improvements can be afforded without attendant socio-economic beer/destruction

SMART GROWTH PLANNING

(SO-CALLED) “SMART GROWTH” IS :

- American arch.planner-inspired town planning construct focussed on aesthetic design, ignores costs/commerce
- Substitute for Le Corbusier’s 1930s (failed) “Future City”
- Based on (planner) visions/ideals/values/self-empower’t, NOT facts/realities, costs/bens, ie ignores engrs/econs
- Opportunistic : promotes/adopts popular misconceptions

ACTUAL OUTCOMES

- Increased congestion, reduced inter-access, overloaded services, reduced housing affordability OR living standards, disrupted neighbourhoods/communities, major expenditure on public transportisation fails to increase efficiency or use
- Fast-rising rates/taxes to pay for environmental “make-work” upsizing piped services, cost of transit & operatnl. subsidies
- Conversion “natural” urban environment to artificial (concr.)
- Preservation of visual amenity residing in peri-urban farms

TRANSPORT MODE EVOLUTION

- Modern cities built integrally with and by motorised transport have enabled personal betterment beyond belief 150yrs ago.
- Horses, canals, railroads and collective motorised transport (buses) played historical part on radial routes to major centres,
- but flexibility and ubiquity of door-to-door **automobility** enabled greater market efficiency through **decentralisation** which is ongoing and (despite retro-planning) **irretrievable**
- **Distrib'nl logistics, trip chaining, road net development** can each reduce travel needs, but all involve automobility
- **Public transportisation** restricts market/choice/tripchaining/ decentralisation, also wastes personal (d2d) “bettering” time capital and resources in every way = **anti-envt/prosperity**
- Energy drives modern civilisation, not just urban transp (12%)
- Evolve = Progress. Sustain/STW = Perish: **Choice is ours**

SO WHY GROW DUMBLY?

- So some of us** can enjoy playing at “designer cities”, believing beyond doubt that we are “doing God’s work” regardless of detrimental social economic & envtl effects by ignoring / disparaging requirements of RMA S.32 “to consider alternatives, assess benefits and costs etc before adopting any objective, policy, rule or other method in relation to ... Standards, Policy Statements, and Plans”
- With enough visions, ideals, promises, buzzwords, adjectives (solve congestion, quality city, liveable communities, sustain peri-urban farms, save world from starvation/de-speciesCO2) and monopoly empowerment to ignore facts/realities/costs, we can capture media/pols & fool all people all of the time until smarter ones migrate to Oz & Stagnation is sustained.
- ** ie the Post-Modernists, and those who tag along for power

AND ON A POSITIVE NOTE

- **There is a place** for town planning and environmentalism, also for urban design of civic areas (including roads) and private developments (by own advisers, not govt)
- citizens want it and are prepared to pay for some of it
- **But it must not be a position of monopoly power** which inevitably leads to a monocultural power-elite preserving “the faith/vision” in the face of facts/costs while ignoring/suppressing alternative viewpoints.
Such is the antithesis of freedom & democracy
- Rather, their place is as enablers of progress/development in competition with other professions and SIGs where value-judge'ts and trade-offs are made by pols not built into “take-it-or-unsust/HFB””integrated” plans

BIBLIOGRAPHY

- In due course - paper will be on Tansp Group website
- Refer also CUTS.org.nz (pending - from early in 2008) for all CUTS papers, submissions, bibliograph, reference websites, “integrated philosophy”, and methodology for “Really Smart Growth”
- In the meantime see <thecaseforroads.ac.nz> <tory.gattis.org> <reason.org> <ti.org> <americandreamcoalition.org>, <demographia.org> etc etc - the www is a wonderful thing!!!!