Sustainability – chasing our tail

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A Problem . . .

'Sustainability' is widely used, but hard to measure practically. We know it means meeting our needs without compromising future generations' ability to meet their own needs (Brundtland Commission), but how do we measure this?

We formulate goals, targets and performance measures, but these may commend an improved outcome, rather than get to the root of the problem. For example, more fuel efficient engines or better stormwater pollutant interception may leave our transport system just as reliant on mass-volume, long-distance movement by private vehicle, which consumes resources in an unsustainable way.

More substantial achievement on 'sustainability' may be at once easier and more difficult than we suppose. Easier, because actions may be relatively simple, but more difficult, because this may involve changing ways of thinking of which we are barely aware. There's good news, however – the necessary changes may find more public support than we imagine.

Transport planning, as we know it today, can be traced back to the 1930s German invention of motorways (along with, less well known, the first segregated cycleways) and at the same time pioneering of data-driven traffic forecasting and cost-benefit analysis in the USA. The German developments arose from strong belief in 'progress' and a 'hierarchy' between advanced 'fast transport' (motorised) and the to-be-superseded 'slow transport' (non-motorised). Although still a 'minority mode', transport planning from now on was to be based around providing for the private car, as 'tomorrow's transport'.

The classic 'Chicago school' traffic modelling was laughably clunky compared with today's 'big data', but its basic philosophy hasn't changed. Classic 'four-stage modelling' included a 'modal split' stage, to assess public transport's proportion of travel, but this was seen as mitigating the road building need, or a social service for those too poor to own a car – in neither case valuing public transport as any positive basis for future planning. Cycling was ignored (presumably on the assumption that cyclists would in time buy motor cycles or cars), and walking was regarded as an 'amenity'.

The 1960s reprised these pre-war origins and, being a period of economic prosperity, sought to provide liberally for everyone – generously proportioned arterial road networks alongside comprehensive off-road path networks in the 'new towns' response to post-war housing pressures. In this part of the world, the new northern suburbs of Canberra perhaps illustrate this best.

A little later, in the wake very large 1970s short-term price rises by oil-exporting countries, came planning for cycling as a positive activity, focused on 'cycle route networks'. Netherlands and Denmark also saw a shift away from the centrality of planning for the car,

with traffic being significantly restricted through radical changes in road network planning. In Britain, North America and Australasia, however, the latter was unchanged, and off-road or 'back-street' cycle route networks aimed to get cyclists away from arterial roads, which actually freed the latter up for marginally more and freer-flowing car use. By the mid-1990s, different outcomes had become obvious. The Netherlands and Denmark were famously legendary for phenomenally high cycling levels, whereas in the other countries the car remained dominant. There was even some evidence of 'back street' routes and off-road paths being more dangerous than cycling on arterial roads.

Researchers concluded that reducing and slowing motor traffic did more to help cycling than any amount of 'cycleway' infrastructure (the *Five Point Hierarchy of Measures* of the seminal UK 1996 *Cycling Friendly Infrastructure Guidelines for Planning and Design*). At about the same time, after 10 years or so of vigorous debate, came the final debunking of 1960s thinking that enough arterial roads will satisfy demand for car movement; new arterials were found to have their own traffic generating effect (*Trunk Roads and the Generation of Traffic*, UK Standing Advisory Committee on Trunk Road Assessment (SACTRA), 1994)

Planning for walking moved from 'joke' territory (think John Cleese) in the 1990s, as it was realised that on-foot people circulation brings economic prosperity to cities. Rodney Tolley and Jan Gehl became household names, bringing prescriptions on how cities could reclaim road space for walking, stressing streets' value as 'places' not just movement corridors. The NZS4404:2010 subdivision guide, and the NZ Transport Agency's *One Network Road Classification* project both purport to reconcile streets' 'link' and 'place' functions together. They are both very complicated to apply, and time will tell whether they do any more than 'fudge' the issue.

. . . . and a Response?

Since the mid-1990s, and especially in the last five or ten years, we have seen a subtle but seismic change in how transport is seen.

Vehicle kilometres travelled have been roughly static over recent years throughout many 'Western' countries (including New Zealand) – contrasting with assumed steady annual growth forecasts.

The public image of the car has changed out of all recognition. In the 1930s and 1960s it was seen to represent 'progress', status and the passport to a better lifestyle, whereas nowadays many people wish they could get by without it. Reduced numbers of adolescents taking driving tests is particularly telling. Over this period we've also seen substantial advances in urban rail, 'transit oriented development', and urban space transferred from motor traffic to foot-based interaction. In some parts of the world 1960s motorways have actually been demolished to make way for pedestrians space.

With the induced traffic effects of new road building having been known for 20 years, one would expect this to be routinely factored into regional modelling and road project assessments. Even where identified, induced traffic tends to be seen as something to

accommodate, rather than an inherent problem. It should not surprise us, therefore, that new motorways sometimes clog up so soon after being built.

We could routinely assess whether forecast costs and benefits of new roads actually match what is delivered. Professor Bent Flyvbjerg of Oxford University has done excellent work on this, revealing very significant discrepancies. We might, as a result, find fewer of these roads to be 'justified'.

For any particular proposed road design, we usually have exhaustive data on traffic flow, yet little on walking or cycling. From this we forecast 'level of service' for motor traffic, but not, I would suggest, anything comparable for walkers and cyclists. Sometimes we hear of a 'road user hierarchy', giving official first priority to people of foot and on bikes, but rarely is this reflected in transport project assessment.

With attention to overall traffic volumes and speeds having been long known to make the main difference in attracting new people to cycling and bringing the cyclist crash rate down, much of the NZ Transport Agency's action on cycling is largely based around a discrete 'Urban Cycleways Programme'. Many cycleways so funded play a positive role, but arguably a bigger difference would be made, for example, by a fuller assessment of cycling implications in the recent joint Government and Auckland Council transport 'alignment' project. Cycling and walking could contribute significantly to this project's aims of reducing congestion (transferring short trips from car) and increasing public transport use (making rail stations and their environs safe and inviting for these modes).

State highway traffic is planned for on a nationwide network basis, funded 100% from the National Land Transport Fund (NLTF), despite many urban state highway trips being short-distance and localised. Long-distance rail freight and passenger rail is assessed on a completely different basis, and we lack comparison between the two at a regional level (for example, of road and rail projects complementing each other in Hamilton-Auckland, Palmerston North-Wellington, or comparable corridors serving other major centres). The NLTF funds passenger rail by region, restricted to Auckland and Greater Wellington, and requires a roughly 50% 'local share' contribution, despite many inter-urban possibilities (not to mention the Auckland CBD Rail Link) having a wider-than-local significance which might suggest 100% NLTF funding.

The government's positive enthusiasm about cycling does not seem matched by corresponding attention to walking, which is far more plentiful (and at least as sustainable). Fighting to keep footpaths inviting and safe for people on foot (sometimes against a push to move cycling from the roads and onto 'shared paths'), may fall to a small number of under-resourced local advocates, who lack anything corresponding to the support for cycling represented by the NZ Transport Agency's National Cycling Team.

Until we make these sorts of changes, I suspect we will continue to chase our tail on progress towards sustainability.

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