

Submission to the Senate Rural and Regional Affairs and
Transport Committee Inquiry on

The investment of Commonwealth and State funds
in public passenger transport infrastructure and
services

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Main arguments

1. National policy for sustainable urban transport

National governance for urban policy including sustainable mobility

The Senate Committee's terms of reference centre upon investment in public transport. This is a critical element, particularly where it is considered jointly with walking and cycling, of a wider system of urban governance/management. Greater investment in public transport and a greater role for Australian national governance are necessary for urban livability, sustainability and productivity - the directions recommended in two recent parliamentary reports, Sustainable Cities and the Oil Report.

Investment in public transport to reduce reliance on car travel

National governance of planning, investment and delivery of public transport infrastructure is essential but not sufficient to achieve more livable, sustainable cities. Significant preconditions for livable, sustainable cities are the economic framework (pricing, internalisation of externalities, and tax subsidies) and the urban form achieved through urban planning and retrofitting for livability. The Henry Review has the capacity to consider some aspects, such as the perfidious Fringe Benefit Tax concession for cars; a new Federal Charter on landuse transport integration has recently been announced by the ATC although with no reference to an evaluation of the 1993 charter.

It is not sufficient to achieve an increase in public transport trips or even an increase share of the total trips by public transport¹. For sustainability objectives, the objective needs to be substitution, that is reduced car trips both in absolute terms and as a proportion of all trips. The transport system operates within a finite geographic place²; the least efficient use of urban space for travel is the privately owned car. Nonetheless, the traditional response to traffic congestion is to increase road capacity.

Walking and cycling are both efficient in their use of space and resources and can be the modes to access public transport - a relationship explicitly identified in one of the terms of reference. Walking and cycling are also at the health-promoting rather than health-damaging end of the spectrum³.

For people getting about their neighbourhood, to a local or regional centre, or the CBD, mobility is the key rather than mode category - hence the shift in language toward mobility and where and how mobility occurs, desirably 'urban sustainable mobility'. This expresses a different concept to traditional mode, or even mode-

¹ An objective of the NSW Service Planning Guidelines for Sydney Bus Contract Regions.

² On the genealogy of place, see for example, Cresswell Tim (2004), *Place: a short introduction*, Blackwell Publishing.

³ British Medical Association (1999?) *Health effects of road transport*.

landuse thinking. It recognises people as subjective beings who value the independence and spontaneity of travel for some purposes on some occasions; and, of course, the concept values the use of human-power in walking and cycling and using public transport that is readily obscured by homogenous categories of 'passenger transport'.

People also need goods and services delivered to their houses and local centres, so motorised transport has a significant role in their movement, and in the system of urban governance (such as the use of space for parking vehicles). Furthermore, the availability and use of cars by people, not necessarily requiring ownership, can fill the mobility gap⁴ that will remain whatever the level of service by public transport.

National transport infrastructure investment, therefore, needs to be guided by clear objectives - a reduction in car use rather than simply an increase in public transport use. From a social perspective, travel has many benefits so that the simple objective of traditional Travel Demand Management 'reducing the need to travel' should no longer be acceptable without careful qualification.

Multi-modal planning and appraisal

A national approach is warranted as an enabler of multi-modal transport planning (and implementation) in towns and cities. This requires planning in relation to land use, and an acceptance that large cities are best served by a mix of modes owing to their differing operating characteristics and roles⁵. The selection of mode and route needs to take into account long-term scenarios for future transport infrastructure, e.g. some concern exists that the proposed Sydney CBD Metro Project could sterilise a future route for another rail Harbour crossing, and detract from the continuing need for a CBD light rail service, as well.

In contemporary transport practice, major multi-billion transport projects still do not encompass the physical facilities for people to access the service safely, comfortably. Neglect of these finer-grained details (relatively cheap) create sub-optimal first impressions for users and limit the services' reputation and ability to increase patronage, particularly from existing car travellers.

Urban mobility - enabling people to move around their urban habitats, cities and towns, is a function of government; it is as essential as other urban services, such as sewerage.

Although urban public transport planning and policy is a warrant for the Commonwealth government, a system-wide approach is needed for achieving improvements that are meaningful to people as travellers. Public transport is an element of a system of urban governance. This entails relating land development to transport, but also multi-modal transport planning and community participation. It should also entail attention to the physical facilities for access and connectivity for

⁴ The distinctive contribution of car sharing that enables households to be car-free. Bergmaier et al

⁵ Texts by Vukan Vuchic provide explanations in plain English.

people walking and cycling - often the fine-grained details that can make such a difference, such as the cross-ability of an intersection or shelters from rain and sun.

The Sydney St George Regional Transport Strategy⁶, funded by the State Roads & Traffic Authority, as an initiative of three councils (councillors, staff, and residents) could be funded and trialled as a new form of governing transport development; it has some resemblance to the regional and local transit authorities in the USA.

Sustainable urban mobility has become an issue of national importance. More commonly, we hear the lament over traffic congestion and that we cannot afford nor wish to go like this any more. Is it unrealistic to expect the existing institutional arrangements that have built car-dependent cities, with the corollary of traffic congestion?

The risk is that unless changes are made at the State level, to institutional arrangements and transport planning and appraisal for funding, we shall continue business-as-usual projects that lack connectivity or long-term logic, e.g. the purpose of duplicating the Iron Cove Bridge (road only) in Sydney rather than re-allocation of road space for bus priority lanes and its relation to the newer project, the CBDMetro with a station planned for Rozelle.

From Brisbane a recent news item reported that Brisbane commuters are seeking parking spots around Brisbane's public transport hubs⁷. Every day, almost 100,000 rail commuters reportedly vie for 18,168 parking spots. The inference here is that more spots are needed, and local political pressures would be undoubtedly strong. Holistic, integrated planning will be needed to avoid more land being devoted to car parking and encouraging short, high polluting motor vehicle trips - potential exists for innovations for spatially integrated and responsive services.

Sustainable urban mobility is crucial for international competitiveness as well as the ultimate health and well-being of people, of all ages and circumstances. Inadequate public transport, and facilities to enable safe access by walking and cycling, is one of the social determinants of health. Communities, or social housing, built in outer rings of cities without adequate public transport (including connectivity by walking and cycling) face a vicious circle of further disadvantage from restricted mobility, higher expenditures on transport⁸.

Efforts in Sydney

⁶ Copies available on request; thanks to Bob Miller, Transport Network Associates, for reminding me of this work.

⁷ <http://www.news.com.au/couriermail/story/0,23739,25242963-3102,00.htm>

⁸ Evident in the USA, Frumkin & others.

In October 2008, for metropolitan Sydney, Premier Rees convened a CBD Mobility Forum⁹. The Premier was candid about Sydney's centres policy - strengthening of centres with Transit-oriented development (TOD) rather than dispersed medium density - in acknowledging that it had not been implemented well. Regional centres within the metropolis require more cross-regional public transport services, e.g. a rail link between Hurstville and Strathfield (and safe cycling networks and better pedestrian facilities to accommodate the dominance of car use even for short trips).

Of the recommendations from the CBD Mobility Forum, the fifth recommendation seeks more streamlined governance by the (numerous) State transport agencies, although no mention is made of Treasury's role (as part of the state-owned corporations) nor the planning methodologies or the significant expectations from local government. Although I welcome the thaw in relations with the City of Sydney Council in getting on with light rail, the reallocation of road space, dealing with intersections for safe cycling etc, the tenor of many recommendations reflects the continuing pre-eminence given to private car travel, even in the SydneyCBD, and constricted span of control without vertical integration with national and local governments.

New York City now showing 'sustainable streets'

In March 2009, the Head of NYC Department of Transportation¹⁰, Janette Sadik-Khan produced a video report for Sydney's City Talks on their "sustainable streets" program. This video explains what was done and how by tackling the problems in a new way - a place-based people-way for sustainable urban mobility and retrieving precious open space by putting roads on diets.

⁹ CBD Mobility Forum (2008) recommendations
<http://www.nsw.gov.au/mobilityforum/index.asp>

¹⁰ Jeanette Sadik-Khan, NYC DoT, podcast to City Talks, 25 March 2009
<http://www.cityofsydney.nsw.gov.au/podcasts/>

2. Transport, environment, and health. What measures can the Commonwealth government take?

Links and data

The links between transport, environment and health are well documented¹¹, including occupational health exposures of professional drivers and railway workers¹².

The Senate Inquiry's terms of reference relate to the benefits of public transport, including walking and cycling. The benefits of 'active travel' are so well known that policy interventions have a good track record, e.g. the UK's National Heart Health Policy required all NHS health service facilities to adopt 'healthy travel plans', i.e. programs for encouraging staff, ambulatory patients and visitors to use active travel rather than car travel.

A new study from the USA has confirmed the intuitive expectation that employer-sponsored use of public transport is associated with the requisite level of physical activity to protect health from chronic disease¹³.

Many health studies of transport, understandably, have focussed on the extent and range of harm to health (encompassing categories of safety, physical and mental health, and social well-being). Efforts to curb the pollution and health damage, have been continually outstripped by the growth in car use¹⁴ and the lack health-promoting transport alternatives (active travel), e.g. the NSW government's Action for Air Quality Management Plan.

The extent of harm to health from transport is very considerable. Sources of harm include:

- safety/collisions resulting in death, trauma & disability - highest ratio of death to disability

¹¹ For example, the WHO European Office (1999), *Charter for Transport, Environment and Health* that arose from a meeting of European Ministers for Transport, Environment (& Planning), and Health in London; the classic references are listed in Mason (2000); many subsequent studies can be referenced on request.

¹² Long-term exposure to transport-related air pollution is associated with elevated incidence of and mortality levels from lung cancer.

¹³ Lachappelle U. & Frank L. (2009), 'Transit and Health: mode of travel, employer-sponsored public transit pass program, and physical activity', *Journal of Public Health Policy*, 3-, s73-94.

¹⁴ Quoting WHO (2005): Many of the positive effects of technological improvements risk being offset by an increase in the number of vehicles, of the number of kilometres travelled, by a trend towards replacing smaller vehicles with more powerful engines and an by increased use of diesel fuel. That is why technological improvements alone may be insufficient to bring concentrations of transport-related pollutants below levels that pose a threat to human health.

- transport-related air pollution - higher absolute number of deaths than from collisions¹⁵
- noise & vibration, factors disturbing sleep and a cumulative heart health risk factor
- sedentariness/reliance on car travel 'driving makes you fat' - displacement of 'active travel' and investment in active travel services
- indirect effects of climate change, e.g. heat stress - Sydney currently 150 to 200 deaths p.a. to between 300 and 400 by 2060.
- social exclusion, and over the life of people changing needs for public transport including mental health.

The big picture for transport policy is the big impact on health, well-being and social equity rather than the concerns about the precision of the estimates of harm or even the behavioural changes to reduce health risks. The WHO studies do make recommendations for a raft of measures to lower emission rates, including a shift in favour of public transport and increase in bicycling and walking which have additional positive effects on health.

I also recommend to the Inquiry to alert the ABC and the media more generally, about the health harm from transport-related air pollution and to consider more informative ways of reporting road traffic deaths and injuries.

For the Inquiry, the challenge is what measures the Commonwealth can take.

Commonwealth measures include:

- models for investment in transport infrastructure to require multi-modal assessment
- internalisation of externalities - the economic costs to health and the environment and social exclusion
- State arrangements in the division of portfolios between urban planning, roads, public transport, and local government make it difficult to introduce and implement policy for reducing the share of trips by car
- identification and phasing-out provisions
- NB Financial sustainability & LG Asset Mgt Planning
- support for review mechanisms, e.g. Victorian Public Transport Ombudsman

The health and environment portfolios have already been playing a role. Under the current Federal administration with the formation of IA and MCU, and as part of confirming a national transport policy, the roles related portfolios and programs could be reviewed and evolve.

¹⁵ WHO 2005 report *Health effects of transport-related air pollution*; BTRE (2005) *Health Impacts Of Transport Emissions In Australia: Economic Costs*, Working Paper 63. 2009 NSW Action for Air Report; 2007 NSW Parliamentary Report. Legislative Council General Purpose Standing Committee No 2(2006) *Health impacts of air pollution in the Sydney Basin*, Final Report and Government's Response: Tuesday 14 August 2007. <http://www.parliament.nsw.gov.au/prod/PARLMENT/committee.nsf/0/0E5CDC94A080D074CA25722800012331>

Travel Demand Management in Australia is often conflated with TravelSmart (a trademark brand), a joint Federal-State funded program administered through the former AGO, and now DEWHA. Its principal focus has been on (individual) behaviour change program addressing the information deficit of households and individuals about available public transport services, as a means of reducing greenhouse gas emissions. This produced some good results in behavioural terms, particularly in Western Australia; other areas were less successful, such as Townsville for reasons relating to its methodology.

Experience with other models, such as Mobility Management, concerned with the interaction of the supply and demand for services, are geared to organisational initiatives. Such models can produce longer term, deeper cuts. Complementary institutional reform could support such activities - such reform better suited to the National Transport Commission, rather than in environment/health/ greenhouse-energy portfolios with program funding of community partnership projects.

Nonetheless, it is timely to review broader models than the perspective underpinning the TravelSmart program for evolution of programs in Australia, rather than a simple expansion of TravelSmart; or extension of its methodology to other areas of urban sustainability. Further analysis and information is available.

Commentary: tools for prevention of harm and health-promoting transport

Transport has also been identified by the health policy community as a 'social determinant of health' and a factor in the widening gap of inequality in health¹⁶. In devising ways of closing this health inequality gap (mirroring the transport divide in Australia's major cities), the WHO Commission observed

Creating the organizational space and capacity to act effectively on health inequity requires investment in training of policy-makers and health practitioners and public understanding of social determinants of health. It also requires a stronger focus on social determinants in public health research.

and recommended:

6.3. Local government and civil society plan and design urban areas to promote physical activity through investment in active transport; encourage healthy eating through retail planning to manage the availability of and access to food; and reduce violence and crime through good environmental design and regulatory controls, including control of the number of alcohol outlets (see Rec 12.3). (p.66) [emphasis added]

The health policy community, through the WHO for example, has long recognised the necessity for 'inter-sectoral action for health' and transport is one such sector. The

¹⁶ WHO Commission on the Social Determinants of Health (2008) *Closing the gap in a generation: Health equity through action on the social determinants of health* http://www.who.int/social_determinants/final_report/en/index.html

health policy community also uses a package of measures, known as actions for health promotion expressed in the WHO Ottawa Charter for Health. These five actions span the range from personal development right through to re-orientation of the health sector and healthy public policy. Thus the efficacy of health action is in creating a more supportive environment for health within which organisations, such as hospitals, can collaborate in programs to increase the share of trips by 'active travel' rather than by private car. Organisations have a lot of potential leverage by influencing the status and prestige associated with travel and by shifting this toward more health-promoting, sustainable mobility.

A national approach is needed to reduce institutional barriers to organisations adopting a new, more sustainable approach to access by sustainable mobility.

Some American health and transport academics have expressed a vision for collaborative training of practitioners from different fields to help understand each other's disciplinary background and perspectives for action (at the system-level, organisational level, or social group and individual level).

Environment - the land

The urban environment comprises land used for settlement - buildings, parks, and space used for transport, principally road space and car parking.¹⁷ At a macro level, the density of development is known to affect:

- the level of car use
- the economic viability of public transport services.

At a micro level, a smaller geographic scale, lower density and dispersed activities are less likely to be accessible by walking or cycling.

Australian cities vary greatly geographic variability - a condition now well documented by the VAMPIRE studies. The practical implication is for the new social housing investments to be in accord with the principles of Transit Oriented Development, and supported by the full range of sustainable transport services.

A further implication of geographic variability is in the use of data - for it to be used a meaningful level of aggregation. Traditional transport policy has mistakenly used mode shares as basis for planning the future without spatial demographics or place-based thinking (e.g. where are the major trip generators?). An example is cycling at low mode shares¹⁸, resulting in the conclusion by former State governments (both Victoria and NSW) that investment should reflect that low level. Aggregation across the entire metropolitan area masked the variability across geographic areas, and failed to pick up substantial growth in the inner and middle rings of major cities¹⁹.

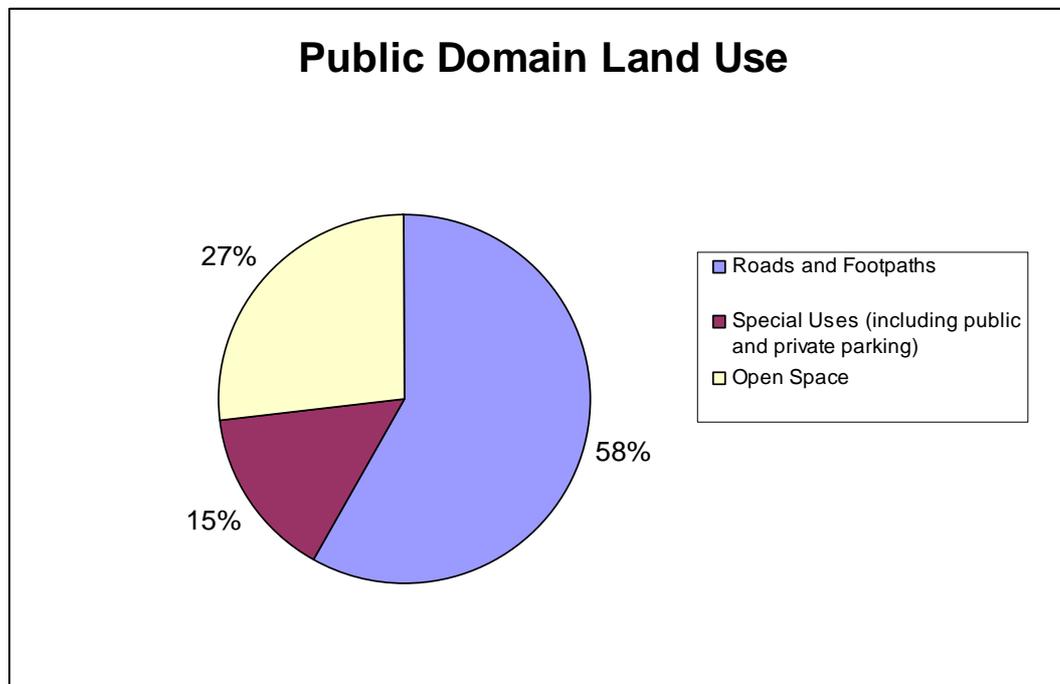
In Australian cities, most land is occupied by private and public buildings. Of the land in the public domain is used for roads and car parking. For example, the public domain

¹⁷

¹⁸ Further while data were drawn from the ABS Census, a reputable source, the information was only for journey-to-work trips and is collected at the end of June, typically mid-winter, the darkest, coldest period of the year.

¹⁹ Cf Telfer and Rissel

accounts for approximately 41% of the land in the local government area of Waverley, in Sydney, of which the majority is devoted to cars:



Council's transport policy aims to reduce the land area of the public domain devoted to cars: private motor vehicle movements, vehicular access and parking by 5% by 2010. This would free-up and allow the re-allocation of land to other uses: widening footpaths, cycleways, parks and community gardens. Council has also developed a greening policy that includes increasing canopy cover of the roadway and adjacent footpath, shading users and also reducing the Heat Island effect (and corresponding use of air conditioners).

Waverley Council also has a Green Links program²⁰, the development of key walking routes so that places are linked by amenable, direct, and safe walking routes, e.g. Bondi Junction to Bondi Beach. In a spatial planning sense, such routes/networks have a primary strategic significance. This program has entailed imagination and commitment; it has already entailed the use of "surplus land" (e.g narrow lanes at the back of houses) for incorporation into a network for walking (and/or cycling). This is the result of far-sighted policy of conditioning the sale of "surplus land" for this potential purpose that could be made explicit by advisers on 'financial sustainability' of councils²¹.

²⁰ <http://www.waverley.nsw.gov.au/greenlinks/>

²¹ Local Government and Shires Association of NSW Independent Inquiry into the Financial Sustainability of NSW Local Government (2006), *Are councils sustainable? Final report: findings and recommendations*. Authors: Percy Allan, Libby Darlison, Diana Gibbs.

Existing governance: barrier to innovation

In speaking of the urban environment/ 'built environment', the governance of these partitioned spaces is spread across fragmented legislation, portfolios, institutions, asset management models, professions and education courses.

Consequently, many cities and towns are ill-equipped to take-up innovations in the use of public road space and costly car parking space, such as 'car sharing' (distinct from car pooling and car rental) or new 'micro cars' (e.g. the Smart or the newer Mitsubishi iMiev electric sedan currently touring Australia). Unfortunately States continue administering the system with an old mindset, unaware as to how some innovations could alleviate the problem seen as the worst by transport economists: traffic congestion.

We do not seem to have nationally co-ordinated action to undertake the system changes that facilitate the uptake of practices that would enable people to travel without being dependent on car ownership and over-use.

Greenhouse gas emissions and environment protection

Concerns about climate change appear to have overshadowed other effects of transport on the environment, including the impact of land take on biological conservation.

From an urban governance perspective, the principles of ESD are sometimes referenced in urban planning legislation, at least as an objective whereas even that consideration or public interest is absent in most transport legislation. Recently, community groups have drawn attention to failure by the NSW regulator of pricing of to observe its statutory ESD obligations in its review of public transport tickets.

The US EPA recently reported a 'finding of endangerment' of carbon dioxide emissions to human health²² potentially bringing regulation of emissions within clean air legislation, aside from other types of schemes.

References

Black J Mason C Stanley K (1999), Travel Demand Management: policy context and an application by University of New South Wales (USNW) as a large trip generator' , *Transport Engineering in Australia* Vol 5, No. 2, pp. 64-73.

Dodson, J. and Sipe, N. (2005) "Oil vulnerability in the Australian city", Research Paper 6, Urban Research Program, Griffith University, Brisbane, www.griffith.edu.au/centre/urp

Fry D. (2008) *Central Sydney Walk to School Research Program 2004-2007*. Health Promotion Service, Sydney South West Area Health Service, Camperdown.

²² Reported in The Australian 25 March

Gehl J. (2007) Public spaces, public life: Sydney, Gehl Urban Quality Architects
<http://www.cityofsydney.nsw.gov.au/2030/documents/Public-Spaces-Public-Life.pdf>

Moser S C & Dilling L (eds), *Creating a climate for change. Communicating climate change and facilitating social change*, New York: Cambridge University Press. See especially Tribbia J. (2007) "Stuck in the slow lane of behaviour change? A not-so-superhuman perspective on getting out of our cars".

New C. & Rissel C., 2008 Cycling to work in Sydney: analysis of journey to work Census data from 2001 and 2006, Health Promotion Service Sydney South West Area Health Service, Sydney.

Owen H. & Day R.H., Scullion P. (1999) 'Cycling and Walking: Why Don't Hospitals Provide Facilities for Healthy Transport?' *Australian Journal of Primary Health* 5(2) 105 - 113.

Sperling Daniel & Gordon Deborah (2009) *Two billion cars. Driving towards sustainability*, Oxford University Press.

Sperling Daniel & Cannon James S. (eds) (2009), *Reducing climate impacts in the transportation sector*, Dordrecht : Springer.

WHO (1986) Ottawa Charter for Health Promotion, 1986
http://www.euro.who.int/aboutwho/policy/20010827_2

WHO (2009) Mental health, resilience and inequalities: how individuals and communities are affected
http://www.euro.who.int/mentalhealth/topics/20090309_1



