

A submission in response to the

**2012 Review of the
National Guidelines for Transport System
Management in Australia (2006)**

by the NSW Premier's Council for Active Living (PCAL)

December 2011



1.0 Introduction

1.1 Purpose of this submission

In August 2011, Infrastructure Australia convened a conference to address the promotion of active transport in Australian cities. Presentations included discussion by the Australian Transport Council (ATC) regarding an impending review of the *National Guidelines for Transport System Management in Australia (2006)*. The guidelines represent the most comprehensive national source of guidance to policy makers and practitioners about demand and economic appraisal of transport initiatives. The ATC invited submissions to help inform the National Guidelines review process and expressed particular interest in recent work to describe the costs and associated benefits of increased active transport use.

1.2 NSW Premier's Council for Active Living (PCAL)

PCAL aims to encourage more people in NSW to be more active every day. The Council's Terms of Reference are to:

- Provide leadership and advice to the Premier to encourage more people, to be more active, more often
- Initiate and manage partnerships and influence resource provision across government, non-government organisations and the private sector
- Make recommendations for mechanisms to implement and monitor progress against the PCAL workplan
- Report to the Premier of NSW and other key NSW decision makers as required.

The changes needed to increase active living inevitably require the involvement of multiple agencies, more than one level of government and often the private sector as lead change agents. As a result, PCAL comprises senior representatives from NSW Government agencies, and members from the business and community sectors. The Council provides an important forum for interagency and intersectoral collaboration through the promotion and implementation of active living principles. PCAL's priorities include active travel, healthy urban planning and the liveability of NSW cities and towns.

1.3 Why Active Living Statement

There is a rapidly growing body of evidence which shows that being active in everyday life not only has substantial positive impacts on our individual health, but also offers environmental, social and economic benefits. PCAL has summarised in its 'Why Active Living Statement'¹ the key evidence demonstrating the benefits of active living and the individual and social costs of a sedentary lifestyle. Key points highlighted within the statement include:

- Inadequate physical activity is a serious health problem that results in poor health outcomes including a greater risk of obesity, heart disease, stroke, type II diabetes, colon and breast cancer, depression and more.
- These chronic conditions impose enormous direct and indirect health costs² – heart disease, stroke and type II diabetes cost well over \$4 billion nationally in direct costs; obesity costs as much as \$2 billion.³ Of these direct costs over \$1.5 billion is attributable to physical inactivity.

¹ NSW Premier's Council for Active Living, 2010, *Why Active Living Statement*. Available at www.pcal.nsw.gov.au

² *The cost of physical inactivity – What is the lack of participation in physical activity costing Australia?* Medibank Private. August 2007.

³ *The Growing Cost of Obesity in 2008: Three years on*. Report by Access Economics for Diabetes Australia. 2008.

- Just over half the adult NSW population meets the recommended level of at least 30 minutes of physical activity on most days of the week required to obtain health benefits.⁴

Recent Victorian data⁵ has indicated that people who use public transport include an average of over 40 minutes of walking and/or cycling within their daily commute whereas private transport commuters (eg: car drivers) with no public transport use average less than ten minutes of active commuting. Improved active transport (walking, cycling and public transport use) provides a realistic opportunity to increase population levels of health enhancing physical activity with significant health, economic and other co-benefits. The recently released National Urban Policy⁶ also makes reference to the importance of healthy built environments due to the established body of evidence demonstrating clear health implications of major infrastructure policy and program implementation.

1.4 Historical view of walking and cycling as transport modes

Walking and cycling, as both access and stand alone modes of travel, are not widely recognised in transport planning and appraisal guidelines. These modes have been primarily described in qualitative terms, with detailed discussion and guidance reserved for motorised modes. Until recently there has been less understanding of the potential role of these 'active transport' modes in promoting positive transport, health and social outcomes. The lack of an appropriate framework and accepted parameters to quantitatively articulate the role of active transport options has meant the costs and benefits of these modes could not be measured in as rigorous a manner and with the same consistency as other motorised modes of transport.

However, recent work in Australia and New Zealand has seen the development and refinement of walking and cycling economic appraisal frameworks and parameter values.⁷ This has allowed for the benefits and costs of these modes to be undertaken in a theoretically rigorous manner which is consistent with cost benefit analysis frameworks adopted for other forms of transport. With this recent work comes the opportunity to update guidelines and methodology to ensure they reflect progress in the understanding of active transport. Individual jurisdictions have already taken the lead with the Victorian Department of Transport⁸ incorporating a suite of active transport parameter values within their Guidelines for Cost Benefit Analysis and the NSW Roads and Maritime Service (formerly Roads and Traffic Authority) Economic Appraisal Manual⁹ currently being updated to include parameter values for cycling and walking.

The planned update of the ATC National Guidelines provides an opportunity to adopt emerging best practice in the areas of active transport cost benefit appraisal, consolidate current research and identify a further research agenda. This brief submission specifies three key areas where the research evidence indicates more comprehensive incorporation of active transport appraisal into the ATC National Guidelines is now feasible and desirable to ensure informed policy decisions. These three areas are:

1. Including active transport within option development and appraisal of transport initiatives (policies, plans and projects).
2. Including active transport methodology and parameter values within future guidelines.
3. Further investigating the relationship between transport choices and health costs and benefits.

⁴ NSW Department of Health (2009). *2008 Report on Adult Health from the 2004 New South Wales Population Health Survey*. Centre for Epidemiology and Research.

⁵ Bus Association Victoria (2010). *Public Transport Use a Ticket to Health*.

⁶ Major Cities Unit (2011). *Creating Places for People An Urban Design Protocol for Australian Cities*.

⁷ PwC (2010). *Assessing the economic benefits of walking*. Report for the NSW Premier's Council for Active Living (PCAL).

⁸ Victorian Department of Transport (2010). *Guidelines for Cost Benefit Analysis*.

⁹ RTA (2009). *Economic Appraisal Manual RTA*.

2.0 – Inclusion of active transport considerations within option development

Best practice transport investment guidelines detail the need for a robust and comprehensive ‘optioneering’ process. Transport options considered should seek to address the overall policy goal and cover a full range of measures including infrastructure investment, demand management and regulatory / policy alternatives.

At present active transport modes are not usually considered within the option development process. A compelling body of evidence suggests all major transport investments should explicitly consider active transport as part of an option or as a stand-alone project.

Incorporating walking and cycling methodologies into the ‘optioneering’ stage of the appraisal process will serve three primary purposes:

1. Act as a tool to understand and quantify the merits of active transport solutions compared to options involving other modes, demand management or regulatory / policy changes. It is less likely that an active transport option would be competing directly with a major road or public transport investment, given the strategic goals (and scale) of these projects are likely to differ. It is more likely that an active transport project could be considered a viable alternate option to a smaller scale (corridor or localised) investment or policy change.
2. Understand how motorised mode options can be optimised through the integration of walking and cycling infrastructure and/or policies. Active transport can play a major role in supporting and optimising other modes, particularly public transport. Furthermore, considering and investing in active transport at this stage of the project is more efficient than trying to retrofit active transport infrastructure at a later date.
3. Act as a tool to measure the relative benefits and costs of different walking and cycling policies and/or infrastructure investment to ensure that active transport funding is being allocated in the most efficient manner to maximise the desired project outcomes.

Recommendation 1:

that the National Guidelines encourage all major transport investments to explicitly show, as part of their detailed ‘optioneering’ process, a consideration of active transport alternatives or investigation (quantification) of how active transport can be integrated and compliment the proposed solution.

Recommendation 2:

that the National Guidelines encourage all active transport policies and investment decisions to be prepared utilising the appropriate level of ‘optioneering’ and analysis to ensure consistency with the approach adopted by other modes and to ensure that funding is being allocated in the most efficient manner.

Adopting the recommendations above would be consistent with the need for proponents to have demonstrated and tested different investment options (ie – different modes: road vs. rail vs. bus), demand management or regulatory alternatives.

3.0 – Inclusion of active transport methodology and parameter values within future guidelines.

Walking (and in some cases cycling) is already considered within multimodal transport appraisals when observing and quantifying changes in walk access and egress. However, this approach only captures the perceived costs (eg: time taken) of walking to access another mode of transport, based on the assumption of value of travel time savings.

To offset the perceived time penalty of walking, there is a strong theoretical argument to include the appropriate walking benefits to users and the community. Failing to make this correction implies that within current public transport appraisal, an increase in walking is only registered as a cost to the user and society because it increases travel time. Recent studies^{10,11} demonstrate health and transport benefits should be included that may offset this travel time cost.

Correcting for the acknowledged benefits of walking (including contributions to achieving physical activity and maintaining health) requires an appropriate framework and parameter values to allow these benefits to be captured in a robust and consistent manner. The ATC National Guidelines currently include a comprehensive summary of parameter values that stem from changing use of a range of private vehicles, commercial vehicles and modes of public transport.

Work in NSW and Queensland (and New Zealand) has identified a corresponding set of parameter values which can be applied to changes in the level of walking and cycling. These have been developed over a number of studies and undergone peer review by agencies and external parties.¹² These parameters have subsequently been applied to value the costs and benefits of a range of active transport infrastructure investments and policy initiatives, informing infrastructure investment and policy formulation. These parameter values are summarised below.

Please note that the listed parameter values have been developed specifically for Queensland (where local conditions influence health costs, congestion costs and accident costs), with the calculation of values for other states and national figures currently underway. Furthermore, the methodology used to generate these values has undergone peer review in Queensland and is currently undergoing peer review in NSW and Victoria. Parameter values may change pending peer review feedback.

The different walking and cycling values of certain parameters shown below stem from the differing nature of the two active transport modes and the impact this has on the transport network and transport task.

¹⁰ SKM/PwC (2010), *Evaluation of the costs and benefits to the community of financial investment in the Naremburn to Harbour Bridge Active transport Corridor (Harbourlink) for North Sydney Council.*

¹¹ PwC (2010), *Estimating the benefits of walking. A cost benefit methodology*, for NSW Premier's Council for Active Living (PCAL).

¹² SKM/PwC (2011), *Benefits of inclusion of active transport in infrastructure projects*, for Qld. Department of Transport and Main Roads

Benefit		Walking	Cycling
Health	\$/KM	1.68	1.12
Decongestion	\$/KM		
Heavy	\$/KM	0.34	0.34
Medium	\$/KM	0.24	0.24
Light	\$/KM	0.06	0.06
Vehicle operating cost (car)	\$/KM	0.35	0.35
Vehicle operating cost (bicycle)	\$/KM		0.32
Injury costs	\$/KM	-0.37	-0.24
Noise reduction	\$/KM	0.09	0.09
Air quality	\$/KM	0.03	0.03
Greenhouse gas emissions	\$/KM	0.02	0.02
Infra. (roadway) provision	\$/KM	0.06	0.06
Parking cost savings	\$/KM	0.02	0.02

Source: TMR 2011, based on similar RTA and PCAL methodology used to generate NSW parameters

While the understanding and quantification of the costs and benefits of active transport has progressed significantly over the past five years, there are still a number of key areas where further research is required and methodologies need to be refined. These areas of work do not undermine the current applicability of the framework and parameter values, especially when applied with the appropriate risk adjusted sensitivity testing (eg a Monte Carlo simulation with defined ranges which underpins the parameter values presented above). However, a key task when incorporating the framework and parameter values is recognising current limitations and identifying these as key areas of future research to be co-ordinated at a national level through ATC or the Bureau of Infrastructure, Transport and Regional Economics. This will help ensure future research work is directed towards areas where greatest progress can be made.

Recommendation 3:

That the National Guidelines ensure public transport demand and economic appraisal methodology includes appropriate benefits as well as perceived costs associated with walking.

Recommendation 4:

That the National Guidelines include a nationally consistent set of walking and cycling parameter values, allowing for the robust, consistent quantification and understanding of the costs and benefits associated with these modes of transport.

Recommendation 5:

That ATC assist in outlining a consistent research agenda to further understand and accurately quantify the benefits and costs associated with active transport modes.

4 - Health costs and the link to transport choices

A key finding from the detailed investigation of the costs and benefits of active transport schemes was the importance of health benefits to users and the wider community. While these improved health benefits (and reduced health costs) are often a primary driver behind an individual's decision to either walk or cycle work in this area could also focus on the negative health costs associated with other mode choices which reduce physical activity. For example, recent research in the United States has drawn the correlation between obesity and heart disease and increased use and reliance on car travel, based on the sedentary nature of car travel.¹³ This research showed that each additional hour spent in a car per day was associated with a 6% increase in the likelihood of obesity while each additional hour spent walking per day was associated with a 4% decrease in the chance of obesity. While there is a direct cost to the individual, there is also an external cost to society through the increased health care burden placed upon society.

Investigation of the potential health costs associated with motorised travel and reduced physical activity requires further detailed research. Key future research questions include:

- Is there a similar link in Australia between motorised transport and health costs of lifestyle diseases (eg: obesity) as identified in the United States?
- What changes in health costs can be directly attributed to changes in travel behaviour and what costs emerge as an indirect or second order benefit?
- What is the marginal impact that changes in travel behaviour can have on identified health costs?

Recommendation 6:

That research be undertaken to further quantify the relationship between mode choices and health impacts at an individual and community level.

¹³ Frank, L. et. al. (2004), *Obesity relationships and community design, physical activity and time spent in cars.* AJMP 27 (2)

References

1. NSW Premier's Council for Active Living, 2010. *Why Active Living Statement*. Available at www.pcal.nsw.gov.au
2. Medibank Private, 2007. *The cost of physical inactivity – What is the lack of participation in physical activity costing Australia?*
3. Access Economics, 2008. *The Growing cost of obesity in 2008: Three years on*. Report for Diabetes Australia.
4. NSW Department of Health, 2009. Centre for Epidemiology and Research. *2008 Report on Adult Health from the 2004 New South Wales Population Health Survey*.
5. Bus Association Victoria, 2010. *Public Transport Use a Ticket to Health*.
6. Major Cities Unit, 2011. *Creating Places for People An Urban Design Protocol for Australian Cities*.
7. PwC, 2010. *Assessing the economic benefits of walking*. Report for NSW Premier's Council for Active Living. Available at: http://www.pcal.nsw.gov.au/draft_nsw_walking_strategy
8. Victorian Department of Transport, 2010. *Guidelines for Cost Benefit Analysis*.
9. Roads and Traffic Authority, 2009. *Economic Appraisal Manual*.
10. SKM/PwC, 2010. *Evaluation of the costs and benefits to the community of financial investment in the Naremburn to Harbour Bridge Active transport Corridor (Harbourlink) for North Sydney Council*.
11. PwC, 2010. *Estimating the benefits of walking: a cost benefit methodology* Report for NSW Premier's Council for Active Living.
12. SKM/PwC, 2011. *Benefits of inclusion of active transport in infrastructure projects*, for Qld. Department of Transport and Main Roads
13. Frank, L. et. al. (2004). *Obesity relationships and community design, physical activity and time spent in cars*. AJMP 27 (2)