

Transport as a Determinant of Health: What Role for the Health Sector ?

Robert Catford, 2003

Abstract

The health sector and other sectors have traditionally concentrated on the health damaging impacts of transport but there is an increasing focus on the fact that transport can be health promoting¹. The role of supportive environments in assisting individuals to use healthier forms of transport is being increasingly recognised. Creating a supportive environment for healthy transport involves many sectors and requires capacity building especially in the skill of intersectoral collaboration and recognising the health impact of policy and practice. We briefly review the literature on effective intersectoral collaboration and examine some examples of practice and the attitudes towards collaboration. We explore a growing momentum for change and shifting priorities in NSW on a policy and planning level in non-health sectors in NSW that will facilitate healthier transport options. We aim to provoke discussion and convince the health sector that there is a strong mandate for taking a more proactive role in encouraging healthy transport and impressing other sectors of the value of having the health sector actively involved. We seek to define a role for the health sector and recommend a number of strategies to implement. A critique of the development of an active transport portfolio at the federal level by the Strategic Inter-governmental forum on Physical Activity and Health (SIGPAH) in conjunction with the National Public Health Partnership (NPHP) and by interviews with representatives of the Health, Transport, Planning and Local Government sectors help to define the role for the health sector.

Transport as a Determinant of Health

Transport, a significant activity in our everyday lives, is a major determinant of health both directly and indirectly and thus deserves significant attention from the health sector². WHO called for the health sector to show leadership in promoting healthy transport choice to their communities, while adopting organisational-based programs for cutting car use by staff members and visitors. In recent years, increased car use has displaced healthier forms of transport. In 1996 in Sydney, 70% of commuters traveled alone in a private vehicle, 15% by train, 6% by bus and 9% by other means including ferry, bicycle and walking³. Solitary private motor vehicle use continues to increase its proportion of journeys undertaken and the amount of vehicle kilometres traveled. Current transport and land use planning foster habitual car use. Health damaging influences of transport include: traffic injuries; air pollution; noise pollution and

vibration; stress and anxiety; loss of land and planning blight; and severance of communities by roads¹. Transport can be health promoting especially if car dependence is avoided and greater opportunity is made of active transport, the use of public transport, cycling and walking. Active Transport, a health term, is defined as physical activity undertaken as a means of transport and not purely as a form of recreation. There has been growing international recognition in the last 20 years of the problems of car dependence and the Ottawa Charter of Health Promotion⁴ provides guidance on how to address the health impacts that arise. Complex determinants of health like transport require new ways of addressing health issues. The Ottawa Charter recommends building healthy public policy across sectors that impact on health. It recommends creating supportive environments, recognising the inextricable links between people and their environments. As a result, systematic assessment of the health impact of environments is suggested. It also recommends the reorientation of health services, increasingly in a health promotion direction, beyond its responsibilities for providing clinical and curative services. These principles influence the direction of this paper and a number of recommendations that are made. In following the lead of the Ottawa Charter, WHO Europe, involving relevant ministers in the fields of health, transport and environment, recognised the need for healthy public policy by developing the Charter for Transport, Environment and Health (1999)⁵. It recommended a set of goals for reducing the health-damaging impacts of transport and increasing the health-promoting impacts of transport.

Australia: a Car-dependent Nation

Australia is highly car dependent despite being one of the most urbanised populations in the world. The following statistics obtained from Ausroads, Transport NSW and the Rail, Bus and Tram Union^{3,6,7} demonstrate this: from 1981 to 1997, the population of Sydney increased by 20% but car ownership increased by 47% and car use has increased by 20%; Australia maintains one of the most extensive road networks per capita in the world with 23 persons/km of road. Transport is the second largest item of household expenditure in Australia (15.5%) and 93.6% of this is for private motoring whereas only 6.4% is for public transport; our transport greenhouse gas emissions per capita are the third largest in the world; 62% of all the fuel used is for land transport used in urban areas; our roads are over engineered to cater for heavy trucks thus dramatically increasing the costs of construction and maintenance; Australia has the second highest car ownership rates in the world, 0.47 cars per person.

Australia has a culture of car ownership and this coupled with a sense that Australia has unlimited land availability has led to some of the least dense and geographically-largest cities in the world. The Commonwealth government supports car dependence in a number of its policies. It doesn't see itself as responsible for urban transport yet funds the Roads to National Importance program to fund inter-state roads in urban areas because they are considered to be of national importance. It also funds the Roads to Recovery program that provides funding to local government for the upgrade of the

road network. These federal policies have led to an expansion of freeways across Australian cities, at the expense of market share for other modes of transport⁷. The national rail system doesn't receive the same consideration. All the major rail lines spreading out from Central station in Sydney could be seen as nationally significant infrastructure as they make direct links with other states.

In order to overcome car dependence and encourage healthier forms of transport, all levels of government need to stop subsidising the real costs of private road transport. The total costs of roads to the community outweigh the fees collected through fuel taxes, insurance premiums and registration fees by \$19 billion⁷. Expenditure on roads includes: road construction and maintenance, road crashes (\$15 billion), pollution and other health costs (\$3 billion), tax refunds for motor vehicles (\$2.8 billion), congestion costs (\$11 billion). Due to fringe benefits tax concessions, government and company cars make up 40% of peak hour traffic and 20% of all traffic. Cars offered as a fringe benefit are taxed b/w 7-26%. The more kilometres driven the more the benefit to the individual which is not a sustainable incentive. Public transport passes are not afforded tax concessions.

The Health-damaging Impacts of Transport

The report of the 1994 UK Royal Commission on Environmental Pollution⁸ has been an influential study on the environmental health impacts of transport. It found that present use of vehicles, the construction of vehicles and transport infrastructure might be in conflict with the aim of sustainability in a number of respects: using up finite resources of fuel and other finite resources; contributing to irreversible changes in climate through emissions of greenhouse gases; producing other forms of pollution with widespread effects which are either irreversible or cause serious long-term damage; causing serious damage to human health and quality of life; materially eroding the stock of natural and semi-natural habitats and areas with amenity or cultural value; and promoting patterns of land use which depend for their viability on transport systems which will have one or more of the above effects.

Pollution. Levels of noise and air pollution from transport continue to be at levels injurious to health 10% of Australians are subjected to unacceptable noise levels caused by traffic and 40% to undesirable noise levels⁹. Noise can disturb sleep and cause annoyance. Traffic noise can increase heart rate, blood pressure and adrenaline output. Despite improvements in technology to late model vehicles and the use of cleaner fuels, Sydney's air pollution continues to deteriorate due to the increased volume of traffic. In Australia, motor vehicles are responsible for 40-49 % of the various pollutants in the air and are the largest source of human-made pollutant emissions in urban airsheds⁹. Small particles can lead to heart and lung disease, asthma attacks, decreased lung function. Carbon monoxide can lead to increased cardio-vascular disease, neurological disturbances, visual impairment and reduced ability to learn. Oxides of nitrogen can lead to increased chance of respiratory illness especially in young children. Lead can affect functioning of most organs especially the central nervous system of young

children. Organic compounds and other air toxins can lead to increased risk of cancers. Its estimated that air pollution kills 1000 Australians per year.

Injury and Fatalities. During the last 30 years, the number of road fatalities in NSW has almost halved, however, injury rates remain high and account for significant costs to the community. The majority of fatalities and injuries are caused by private motor vehicle use. Each fatal road crash is estimated to cost \$2 million⁶, leading to a total of \$15 billion p.a. cost to the community. Public health measures have accounted for the decline in fatalities – seat belts, drink driving campaigns, speed limits as well as improvements in vehicle design and improved roads. However, pedestrian death rates make up 18% and cyclists 3% of all road fatalities which is unacceptably high and significantly disproportionate to their mode share of travel (roughly 6% for the former and 1% for the latter³). 75% of these fatalities occur in urban areas whereas higher rates of vehicle drivers and passengers are killed in rural areas. Pedestrians and cyclists are the most vulnerable road users and should be afforded the greatest level of protection. Pedestrian and cyclist safety is a key impediment for individuals that might otherwise be prepared to undertaken healthier forms of transport. The NSW Roads and Traffic Authority should consider the development of a road hierarchy whereby the most vulnerable road users are given first consideration.

Social Health. Transport impacts on the social health of the population. The distance between people increases as cities sprawl. More travel in cars means less unplanned contact with neighbours and people on the street and less street life as the number of cars increase. This can lead to increased social isolation, loss of spontaneous exchange, community severance, decreased perception of safety, higher crime rates and greater social inequity. Traffic does not just take over physical space, it has a zone of influence that intimidates and takes over a space psychologically. As the speed and volume of traffic increases, the zone of influence grows and the home territory shrinks¹⁰. Greater car dependence tends to lead to a reduction in the number of local shops especially in poor areas and particularly affects less mobile people. People living in deprived neighbourhoods, where comparatively few people own cars, have difficulty reaching those shops which sell a range of affordable foods to make up a healthy and balanced diet leading to 'food deserts'¹¹. Special uses, such as housing for older people, schools, hospitals, universities and community centres are used by a high proportion of public transport dependent people, some of whom have restricted mobility¹¹. These services need to be provided in accessible locations preferably close to mass transit nodes.

Transport as a Health-promoting Activity

In addition to reduce the negative health impacts of transport, active transport modes are health-enhancing as they require a higher degree of physical activity. Taking public transport requires more physical activity at the beginning and end of the trip than does private motor vehicle use and so is included as active transport. The proportion of travel undertaken by healthier forms of transport in Australia and most other countries has decreased due to increased car use and car ownership. In 1951 in the United Kingdom, cycling accounted for around one-quarter of all road traffic. This plummeted to only 1%

of all traffic by 1973¹. In 1998 Sydney residents owned around 1.2m bicycles including 39% of all households. However, only 1% of the Sydney population cycles each day. Bicycles account for 0.5% of all trips undertaken on weekdays in Sydney and around 0.7% of trips to work. In Holland, up to 50% of commuters in some medium-sized cities ride a bike to work. Average commuter rates across Holland are 30%¹². Some might counter that Holland has higher rates of cycling due to its flat terrain and shorter distances than urban areas in Australia, however it also has more wind and the weather is far less suited to cycling than in Australia. The average distance for most urban car trips in Australia are short enough to make cycling a feasible alternative. It may also be no surprise that Holland doesn't have a childhood obesity problem. School children in the UK in 1970 were travelling to school independently in large numbers. 80% of children under 12 used cycling, walking, public T or a combination. The study was repeated in 1990 to find that independent travel to school had fallen to only 8%¹².

Healthier forms of transport are more equitable than private motor vehicle transport as they are available to all members of the community. Children, people with disabilities, people with lower socio-economic status who can't afford a driver's licence and the elderly are particularly disadvantaged by a transport system focusing on private motor vehicle use. 37% of Australians don't have a driver's licence and so are disadvantaged by an increasing focus on a system that caters better to the private motor vehicle. The NSW Government's Action for Transport 2010³ is making some attempts to improve access to other forms of transport. All new construction of public transport facilities must provide access for people with disabilities. This includes improving access to stations via lifts and ramps, 500 new low floor buses, and 400 new taxis with wheelchair facilities. More money is also being spent to make the public transport system safer, more comfortable and attractive to users.

Sydney's growing car dependence has been increasing in parallel with the increases in sedentary behaviour. Active transport provides opportunity to undertake physical activity within daily routines and busy schedules. Physical inactivity is associated with high direct health costs conservatively estimated at around \$400 mill per year in Australia. Sports Medicine Australia, 2002 stated that diseases of inactivity are now the biggest killer of women and second only to smoking for men in Australia. Engaging in regular physical activity even of moderate intensity, reduces the risk of diseases such as cardio-vascular disease, type 2 diabetes, osteoporosis, colon cancer, obesity and injury/falls. It's also been shown to facilitate better stress management, alleviate depression and anxiety, strengthen self-esteem, enhance mood and boost mental alertness. It provides social benefits through increased social interaction and integration¹³.

Activity levels of children can affect their academic performance, concentration, behaviour, stress levels, and self-image as well as preparing a child for later life. Independent travel via walking or cycling can help to develop confidence and independent learning¹⁴. Commuting to school by healthier forms of transport is an excellent option in that it need not interfere with an already overcrowded school curriculum and yet still presents opportunities for developing road safety skills and

social skills as well as providing physical activity. It helps to develop healthy levels of physical activity that may be sustained in later life. Walking buses and a few cycling buses, encourage walking and overcome the safety concerns of parents.

The NSW Chief Health Officer has recommended that 'every adult in NSW should accumulate 30 minutes of moderate physical activity on most days of the week.' The 30 minutes can be broken down into 10 minute segments and accumulated during the course of the day. This is realistic and attainable regardless of your time commitments. In a 1999 physical activity survey 92% of respondents believed that their health could be improved by participation in 30 minutes of moderate intensity physical activity each day¹⁵. However, participation rates are declining. Evidence like this seems to demonstrate that simply receiving and understanding a health message is not always enough to alter behaviours. There is increasing evidence of the lack of effectiveness of programs focusing mainly on lifestyle change. An example cited¹⁶ is the Multiple Risk Factor Intervention Trial in the US where despite 6 years of intensive lifestyle programs with men in the top 10% of risk for cardio-vascular disease, only minor changes were made to eating and smoking behaviours. Researchers are now reflecting on the implications for health promotion of the current emphasis on recommendations for moderate physical activity built in to daily routines rather than vigorous episodes added to life. Because there are many more daily opportunities to engage in moderate activity than in vigorous activity, it is now necessary to consider a much wider range of policies and settings. The first piece of the National Heart Foundation's SEPA¹⁶ (Supportive Environments for physical activity project) research studied people's experience of building walking or cycling into the daily activities of work, shopping, child care and leisure. The conclusions pointed to the importance of agencies outside the health sector taking a leading role in policy development.

SEPA and other research is challenging the dominant role of structured physical activity programs that add physical activity to our daily routines and investigating incidental physical activity strategies such as active transport or household activities through the provision of supportive environments for physical activity. Active transport approaches offer great promise in terms of population access, affordability, time involved, and the likely amount of physical activity that active commuting requires. Active Transport rests on the premise that incidental physical activity embedded into daily life has the potential to be sustained. Most people who are initially attracted to structured physical activity programs have been found to be unlikely to maintain it year after year. For sporting activities, there are not only the constraints of weather and time, but often the costs of entry and problems of access and availability¹². Bauman et al. states that while there is a dearth of quality evidence supporting the efficacy of these new strategies, there is a clear suggestion that much of the physical activity encouragement and facilitation occurs at the environmental change level. Substantial work is required in the development of indicators and in the trialing of innovative interventions to confirm that this setting has the potential to contribute to population levels of physical activity, as is thought to be the case¹³.

Recommendation: Undertake research and data collection on the health impacts of transport, both the health-promoting and health-damaging aspects, especially investigating the efficacy of active transport interventions on an individual behaviour change level and an environmental level.

NSW Obesity Summit, 2002

There is growing concern at the increasing levels of obesity and overweight in the Australian population. One in 5 Australian adults is obese¹⁷, 67% of males are either overweight or obese and 52 % for females. Over 5% of children are obese and 14-18% are overweight. Obese children have a 25-50% chance of progressing to adult obesity. Obesity increases risk factors for developing heart disease and type 2 diabetes. Physical inactivity is a major factor influencing the rise in obesity and overweight. Because cardio-vascular disease risk factors tend to track from childhood to adulthood, establishing physical activity patterns in childhood is a key to reducing adult cardio-vascular disease¹⁷.

Transport and planning were one of 9 target areas for resolutions proceeding from the NSW Obesity Summit¹⁷. Under Transport and Planning, there were 10 resolutions. Of particular note were the following resolutions:

9.4 "That an alliance be established and coordinated by Premier's Department comprised of Planning, Education, Health, Transport, Sport and Recreation, Local Government and other key stakeholders to deliver planning that encourages active transport and access to fresh food";

9.2 " That funding for roads and transport infrastructure and maintenance be aligned with a transport hierarchy that recognises walking, cycling and public transport to reduce car dependence.

9.6 " That the introduction and full implementation of the draft State Environmental Planning Policy (SEPP) 66 on integrated land use and transport planning be supported" The NSW Government has announced \$5 million to target youth obesity but has failed to allocate any of these monies towards the encouragement of encouraging young people to return to active transport.

Recommendation: That the health sector lobbies the NSW Government to implement the above resolutions in particular the establishment of an intersectorial alliance to ensure a broad public policy approach to the problems of obesity.

Cycling and Walking

Cycling and brisk walking are realistic means whereby the great majority of the population can keep fit. Both are forms of aerobic exercise which minimise the risk of muscle or ligament injury, and represent straightforward, cheap and much more widely available means of maintaining good health than sports.

Walking is the main option for increasing physical activity in sedentary populations as it is the most utilised mode of physical activity for the majority of the population. 60% of Western Australians walk for recreation and 25% for transport¹⁸. Between 1991 and 1997, Sydney residents reduced walking trips by 3% ie. from 20 to 17% of all trips especially by children and teenagers whose passenger trips increased at the expense of walking. There was a 25% increase in the distances traveled for passenger-related trips and many of these were children being driven to school. Between 8am-9am (peak hour), an average of 1 in every 10 car trips are 'education escort'³. This has had a growing impact on peak hour congestion.

Cycling enables a far greater geographical area to be accessed than walking. In Sydney, the average length of car trips is 9.4km. Short distances such as these are very conducive to cycling. In fact motorists commuting to work in Sydney travel at an average speed of 17.62 km/hr. A cyclist can average up to 30km/hr¹⁹. Personal safety fears appear to have increased significantly in recent years and this has had a detrimental effect on both walking and cycling as primary and secondary modes of transport. The safety concerns for cycling have led consciously or otherwise to cycling rarely being included as a recommended form of exercise. Safety should be an additional incentive for action, not a reason for delaying priority measures for cyclists. It could be argued that the dangers of cycling have been unduly influenced by exaggerated fears about the scale of risk entailed for the fatality rate is only 1 in every 25 million kilometres cycled. This rate should be compared firstly, with the much lower rate in the Netherlands where safe routes are commonplace for cyclists, and secondly with the fatality rate attributable to heart disease resulting from lack of exercise¹².

There is considerable evidence that people want change. The WA Department of Transport, 1999 found that 78% of residents consider the growth of car traffic has had negative impacts over the past 10yrs and 78% would like to see a greater focus in transport policy and planning on healthier forms of transport¹⁸.

Healthy Transport as Public Policy: what role for the other sectors

Ausroads²⁰ describe the following travel demand management strategies available to government in order to reduce car use and encourage the use of other modes of transport. The strategies provide ideas for each sector might contribute without stipulating who is responsible for the implementation:

1. Infrastructure (such as traffic calming, small transport network changes to advantage healthier forms of transport such as bus-only lanes on major roads)
2. Regulation and pricing (taxes, parking prices, tolls, congestion charges, vehicle registration charges. Subsidising car use must stop and be replaced by subsidising healthier forms of transport eg tax breaks on annual train passes)

3. Behavioural change (travel blending, TravelSmart and other individual dialogue marketing)
4. Education/Awareness/Information (traveller information, Transport Access Guides, marketing campaigns)
5. Technological (communication substitution – eg internet, telephone, telecommuting work-from-home. It also includes videoconferencing, fax, mobile calls, email. These are all attempts to reduce the need for travel)
6. Integrated strategies (combinations of the above). Mobility Management strategies, particularly popular in Europe, generally use a number of the above strategies.

Intersectoral collaboration is required to negotiate who is responsible for implementing these strategies and to work cooperatively for the efficient utilisation of resources.

Land Use Planning and Transport

In Australia, evidence is emerging that income is no longer the most significant factor determining car usage or even ownership. Now it's the quality of public transport available. The lower levels of car ownership and use in suburbs with good public transport are also accompanied by higher rates of walking (and in some cases cycling)²¹. The 'New Public Health' recognises that environmental and structural factors have a greater impact on health than individual behavioural factors. To provide an example, there are higher rates of healthier transport use to Sydney's CBD than to other areas due to the quality of the transport network and limitations placed on parking.

Intersectoral collaboration is already occurring between the transport, planning and local government sectors in policy and procedural development and some pooling of funds. The Draft State Environmental Planning Policy (SEPP 66) (2001) by Planning NSW, RTA and Transport NSW¹⁹ is part of a series of policies, guidelines and research on land use planning and transport supporting Shaping Our Cities²², the metropolitan planning strategy for the Greater Metropolitan Region (GMR). The policy initiatives recognise that the built environment heavily influences travel modal splits and has tended to encourage the use of the private motor vehicle. Shaping Our Cities contains strategies to reduce car travel, make greater use of public transport, cycling and walking and provide more equitable access to jobs and services. It recognises that planning guidelines in the past have tended to encourage development that supports car dependence by not allowing high density housing and mixed use zoning. The draft SEPP (State Environmental Planning Policy) 66 aims to better integrate land use and transport planning at the local level by putting in place provisions to guide: the preparation of draft Local Environment Plans (LEP); the adoption of Development Control Plans (DCP) and master plans; and the consideration of Development Applications (DAs). SEPP 66 relates to most urban areas in NSW and applies to developments generally greater than 1000 square metres of floor space including parking stations with more than 200 spaces, residential flat buildings containing more than 300

units, and residential subdivisions that create more than 500 lots. Its disappointing that the policy doesn't extend to smaller developments or guide urban renewal.

The policy¹⁹ states that implementing the strategies outlined will:

- help achieve the aims of the government's air quality management plan, Action for Air;
- enhance the viability of investment in new public transport under the NSW transport plan, Action for Transport 2010;
- help achieve a range of social, environmental and economic goals including equity, neighbourhood amenity and lower road congestion; and
- support the NSW Government's commitment to the National Greenhouse Strategy.

The planning policies focus on increasing the density of the existing 'urban footprint' especially close to mass transport nodes and placing density and locational conditions on new urban residential areas especially in 'greenfield' sites. There has been an increase in the percentage of new homes in Sydney that are multi-unit dwellings from 27% in 1987 to 54% in 1998, well on the way to the state government's target of 65%. Most multi-unit dwellings are located close to transit nodes. Reliance on the urban fringe for new housing has been reduced from 42% to around 27% in recent years.

Accessible Development principles¹⁹ from the draft SEPP 66 encourage active transport and include:

1. concentrate development in centres – mixed use within an acceptable walking distance of 400-1000m of major public transport nodes. These types of centres attract much higher levels of active transport use. Concentrating activities lets people make a single trip for a range of purposes;
2. Align centres within corridors ie along major transport corridors;
3. Link public transport with land use strategies – for example, Parramatta Regional Environment Plan is integrating transport and land use planning with the planning of substantial improvements in the public transport network to accommodate a large increase in size of workforce and population;
4. Connect streets – provide street networks with multiple and direct connections to public transport services and efficient access for buses. Conventional suburban development is often characterised by circuitous roads, many cul-de-sacs and few footpaths. These require more 'dead running' for buses, are often too narrow, add to trip times, and increase walking distances;
5. Improve pedestrian access – a walkable environment is very important in generating public transport because all public transport users are pedestrians for some part of their journey. Walkable urban areas increase the potential catchment area for public

transport services. This includes features like well-marked direct routes, personal safety features like good lighting, shading, clear sight lines, a reasonable level of street activity, wide and well-maintained paths;

6. Improve cycle access – people need to be convinced that cycling is reasonably safe, convenient and comfortable. This means providing an easy to follow and direct network of on-road and off-road routes as well as storage and other end-of-trip facilities;
7. Manage parking supply – eg the type and number of parking spaces are appropriate to the land use eg short stay parking for retail purposes. Parking should be placed at the rear of buildings or internal. Parking incentives, such as cheaper rates or reserved spaces, should be provided for high occupancy vehicles including car pools and community buses. Councils should set maximum parking limits on developments and prevent long-stay parking in areas highly accessible by public transport;
8. Improve road management – managing road traffic flows and priority of transport modes eg transit lanes, bus lanes, traffic calming to slow traffic down;
9. Implement good urban design – eg buildings that are human scaled and oriented to the street with clear pedestrian entries provide natural surveillance, a sense of security for pedestrians, and visual interest. Car access and movement b/w buildings and the street should not create pedestrian barriers or be given priority. Building setbacks should be avoided to provide ‘eyes on the street’.

The draft SEPP 66 policy is unclear regarding distance to existing or programmed mass transit nodes. It says households should ideally be within 800m (10minutes) total walking distance of an existing or programmed mass transit node served at least every 15min in peak hour or within 400m (5minutes) of a bus route served at least every 30min. However the policy also states that new residential development should be substantially within 5 km of an existing or programmed mass transit node served at least every 15min in peak hour. Average travel speeds in an urban environment have been estimated at 5km/hr for pedestrians and 18km/hr for cyclists. The policy recognises the capacity of a large section of the community to cycle a distance of 5km (ie a trip of a little over 15 minutes, given a manageable cycling speed of 18km/hr). It will be essential to provide secure bicycle parking facilities at transit nodes and it is also preferable that mass transit systems allow for the carriage of bicycles for those travelers that also require a further cycle journey at the other end of their trip. At this stage no buses or the new transitway systems will cater for the carriage of bicycles. The carriage of bicycles on trains at peak commuter periods is also very inconvenient as no storage space is provided on trains.

The NSW government has adopted a target minimum density of 15 dwellings per hectare for new residential release areas. It believes that this will slow the consumption of land and ensure that there are enough people to support viable and effective public transport services. This minimum number of dwellings per hectare is seen to be able to

support bus services. Much higher densities are desirable to support transitway, light rail and heavy rail services and achieve significant shifts to non-car modes. Its questionable how successful the new Western Sydney bus transitways will be as many pass through areas of low density development or dispersed industrial areas. The NSW Government has also applied pressure to local urban councils to alter zoning regulations to allow for more medium-density residential development in established areas close to transit nodes.

The policy also states that its important that public transport is made available as residents move in to new areas to avoid a possible decision to purchase (usually a second) car. Discretionary travel will be hard to influence away from car use once a car becomes available and the up-front costs of purchase have been 'forgotten'. If this view is correct then it seems likely that for many areas of Sydney may be too late for public transport or it will require a considerable range of incentives and disincentives to alter ingrained car dependence. New public transport infrastructure is being implemented too slowly in many areas. Freeway development should cease and all available monies be put directly into fast-tracking public transport projects. Major new housing developments in Western Sydney may lie to some degree within 5km of a proposed mass transport mode but by the time the public transport infrastructure will be provided car dependent-behaviour will be already ingrained. Examples of this can be seen in new housing areas in Sydney's north-west sector such as Kellyville. The proposed transitway for the north-west sector will not be complete till 2008. In the meantime new housing estates have been established and the area only provided with a poor bus service. The NSW Government has bowed to political pressure to plan and fast-track the upgrade of Windsor Rd by 2006 which will further encourage car dependence.

Re-dressing the Balance in Transport Planning

The current NSW government is making some attempt to redress the imbalance of government policy that has encouraged car dependence by developing a more balanced transport policy that provides for all modes of transport. The current transport plan for NSW, Action for Transport 2010³ released in 1998, is described as an integrated transport plan for Sydney designed to reduce the rate of car growth. The motivation seems to stem from the need to decrease air pollution and reduce traffic congestion, which are health-damaging aspects of transport. There is a growing recognition in some segments of government, at least at a policy level, that the traditional approach to road building, 'predict and provide' by increasing road capacity, only leads to 'induced traffic growth'. The 10 point action plan includes: getting the best out of the current transport system; improving air quality; reducing car dependency; getting higher patronage of public transport; safeguarding our environment; providing for cyclists and pedestrians; and preventing accidents and saving lives. The plan focuses mainly on the health- damaging impacts of transport ie accident prevention and air pollution but has includes a number of measures to encourage active transport.

Action for Transport 2010 plans a network of new public transport initiatives in Western Sydney mostly bus transitways. However the timeframes for their implementation have in many cases been delayed, postponed indefinitely or planned to be built many years later while road infrastructure projects continue to be fast-tracked. The NSW government has also lobbied vigorously with the Commonwealth government for the shared funding of the Western Sydney Orbital, a ring-road freeway that will complete the chain of freeway around Sydney. These road developments will only encourage further car use and driving greater distances. The Sydney Morning Herald, in a recent article, demonstrated evidence of how freeway development can divert commuters from public transport to car use. They cite statistics showing an increase of daily use of the M5 since the M5 East extension was completed from 54,236 in January 2001 to 82,989 in January 2003. Correspondingly, CityRail patronage on the East Hills Line that runs roughly parallel to the M5 in a 12 month period from 2001-02 reduced by 384,450.²³

In 1998, the NSW Government launched Action for Air, a 25-year air quality management plan. It recognised the growing proportion of air pollution caused by transport. The Action for Transport 2010 plan aims to reach the targets of halting the growth in per capita vehicle-kilometres traveled by 2011 and halting the growth in total vehicle-kilometres traveled by 2021. To achieve these targets, there will need to be a significant shift to other modes of transport and/or a reduction in the amount of travel undertaken. However, the NSW Governments policy to construct new urban freeways only serves to increase vehicle-kilometres traveled and is therefore in conflict with the targets set out in Action for Air. In 2001, Action for Air was reviewed and an important action identified for NSW Health was the promotion of 'active transport'.

The NSW Roads and Traffic Authority funds local governments to develop PAMPs (Pedestrian Access and Mobility Plans) and bike plans in order to determine designated routes for active transport. Infrastructure costs are either met by council or the Roads and Traffic Authority or are co-funded. PAMPs identify existing pedestrian facilities, determine where access and mobility needs improving, and identify pedestrian links b/w major pedestrian trip generators.

'Connecting the Central Coast: the Central Coast Transport Action Plan'²⁴ is the first localised plan of its type in NSW. It builds on Central Coast Moving Forward, a regional planning document released in 2001, and was developed by Transport NSW in conjunction with local councils and other groups. This is an excellent development and should be duplicated in all areas. It offers the potential as a vehicle for intersectoral collaboration. Local Transport Plans are commonplace in Britain and involve a number of sectors in their development. The plans often interrelate with local Health Improvement Plans. However, the Central Coast already has a high-level of car dependence and the funding levels in this plan remained skewed towards encouraging road transport, primarily cars. While upgrading roads will have some benefits to the bus system and cyclists, it will likely also encourage more people to drive.

The Role of the Health Sector in Encouraging Healthy Transport

The health sector in Australia has begun to make some attempts to integrate transport issues into the domain of health, however, Australia has been slow to follow the lead of other developed countries in encouraging active transport as a key solution for overcoming sedentary behaviour and in reducing other health problems directly related to transport. In NSW, South-East Sydney Area Health Service and Central Sydney Area Health Service are leading the way by working towards an active transport policy.

A significant though inconsequential attempt at recognising active transport as a key area of future focus for the health sector in Australia was the production of the report 'Promoting Active Transport: an intervention portfolio to increase physical activity as a means of transport'²⁵. It was a case study in applying the 'portfolio' approach to public health planning by SIGPAH (Strategic Inter-Governmental forum on Physical Activity), a sub-committee of the NPHP (National Public Health Partnership). SIGPAH has identified the area of transport as a high-priority setting to promote physical activity. The project determined that the health sector should be the custodian of the portfolio.

Representatives from various government sectors and non-government agencies were invited to take part in workshops designed to develop the portfolio. This consultation was supported by an extensive literature search. The overall aims of the portfolio²⁵ as defined by the decision-making group were to:

- Increase the proportion of people travelling by foot, bicycle, non-motorised or public transport for a sustainable environment and better health; and
- Increase the number of trips by foot, bicycle, non-motorised or public transport for a sustainable environment and better health.

The key determinants of active transport identified from the literature and the input of the decision-making group related to:

- The existence of a social milieu that accepted active transport as a normal and safe part of life;
- Urban planning that facilitates active transport between homes, workplaces, recreational and shopping facilities;
- The provision of facilities that support active transport including use of public transport; and
- The need for an intersectoral approach to increase the use of active transport.

Interventions were identified for nine settings²⁵: schools; universities; workplaces; shopping areas; health services; government (both commonwealth and state); local government; transport; and the media. The five top-scoring interventions within each setting were selected for the final portfolio. Interventions with high scores across many sectors included: provision of safe, reliable and adequate public transport; production and promotion of active transport access guides for locations and institutions; provision of facilities such as showers, safe storage and bike paths to facilitate active transport; institutional and government policies and planning to facilitate active transport; and collection of baseline and monitoring data. Specifically under the 'Health Services' setting, the interventions identified were: education/ awareness raising of active transport as physical activity; public transport facilities that are safe, adequate and reliable; data collection of all transport modes – baseline and monitoring data; advice – use of active prescriptions and other opportunities to promote active transport; and advocacy for active transport modes.

An incomplete list of interventions has been developed possibly due to the lack of adequate consultation with each sector. It doesn't identify some of the Ausroads strategies including behavioural change campaigns, regulation and pricing measures, technological changes to work structures; and other measures designed to reduce the need to travel. The portfolio identifies key interventions for each setting but doesn't negotiate which sectors undertake the interventions.

The SIGPAH report is a positive development in so far as it indicates that the health sector in Australia is starting to increase its awareness of the health-promoting benefits of active transport interventions. However, the process in which the portfolio was developed was flawed. There were 37 stakeholders who participated in the 2 decision-making workshops: 20 represented government health departments or health organisations from the non-government sector; 7 were academics mostly from health backgrounds; 7 represented transport from government departments or non-government organisations; and there was little or no representation from the planning, environment, local government or education sectors. Such an unbalanced approach to consultation will impact on the credibility of the portfolio and affect the likely success of future intersectoral collaboration. The portfolio is designed to assist public health planning for healthy public policy and is not exclusively designed to be a health sector document. Many of the interventions outlined will require the cooperation and ownership by other sectors. Other sectors are likely to ignore the portfolio as they may not feel that they have been equal players in the development of this document.

The portfolio failed to develop an understanding that the other sectors are pursuing the same objective ie. the increased use of public transport, walking and cycling, but not necessarily for health reasons. The Transport sector pursues the objective on the grounds of reducing traffic congestion, increasing economic efficiency and reducing pollution. The environment sector encourages the use of 'sustainable transport' as it does not impact significantly on the natural and urban environment and uses

sustainable forms of energy. Motor transport and its infrastructure are not seen as sustainable. The planning sector pursues the objective as it assists in developing more compact cities and discourages far-flung development that requires extensive infrastructure. The education sector might pursue the objective as it leads to improved safety and health of its students and the development of independence and confidence. Local government pursues the objective as it meets their sustainability goals, reduces local congestion, and increases social equity. Effective intersectoral collaboration requires that the various sectors increase their understanding of each other's agenda. The portfolio approach introduced by SIGPAH is a flawed attempt to foster intersectoral collaboration as it remains a health agenda.

Special mention should be made of the academic work undertaken by Chloe Mason focusing on the role of the health sector in Australia in encouraging healthy transport. In her article, *Healthy People, Places and Transport*²⁶, she advocates for the inclusion of transport in health promotion by addressing comprehensive systemic processes to build capacity rather than simply adding a new priority to the list. She encourages a close working relationship between the health and environmental protection sectors. Mason suggests the first step that can be undertaken by the health sector is to review the way transport access to its own health sites is communicated. She suggests that practical ways for the health sector to encourage healthy transport choice would be: for clinicians to 'prescribe' active transport, as is being used in Victoria with the 'Active Script' program with General Practitioners; run demonstration projects on the benefits and applications of 'active transport'; for medical administrators and all health agencies to develop transport access guides and develop 'healthy transport plans'; and for increasing the level of health advocacy to highlight the health impacts of the transport system²⁷. The British Medical Association has been very active as advocates for active transport¹.

Environmental Impact Statements (EIS) have been a feature of planning processes in NSW for the last two decades especially for large developments, and have been of benefit in assessing the potential environmental damage for a proposed development. However, the effects on social structure and cohesion, education, employment, community structure and infrastructure, recreation opportunities, and health factors are not well addressed in conventional EISs. It is essential that these factors are also assessed in order to provide a better appreciation of the human costs and benefits of developments. Health Impact Assessments are an attempt to address the limitations of the EIS in terms of health considerations.

Recommendation: That NSW Health recognise that it has a role to play in assessing the health impacts of transport policies, practices and projects. Explore developments in Australia and overseas for the use of Health Impact Assessments for assessing the health-damaging and health-promoting impacts of transport policies, practices and projects. One example is a report published for the NHS Executive London titled "Informing Transport Health Impact Assessment in London"²⁸.

Effective Intersectoral Collaboration

Intersectoral collaboration is a complex intervention strategy that cannot be adequately addressed in this article. However, an attempt has been made to cover the main points in the literature regarding critical success factors. Gray²⁹ maintains that a collaborative alliance is an interorganisational effort to address problems too complex and too protracted to be resolved by unilateral action. The organisations need to bridge their differences and achieve mutual benefits from working together. In any collaboration the partners must develop, over a period of time, a shared understanding of the problems that are to be solved and the goals to be achieved. To be successful, a collaboration must include a group of stakeholders that is diverse enough to represent the critical components of the problem. Collaboration needs to have the support or involvement of management and staff at various levels. Negotiation and conflict resolution skills are essential. Trust between collaborators is built by the ability of the partners to undertake the work which forms their part of the collaboration, the ability to relate well across organisational boundaries, and values and motivations supporting joint activity.. McKinlay³⁰ identifies challenges within the health sector to applying intersectoral collaboration as including: overcoming institutional and disciplinary insularity or 'silos'; effectively addressing the issue of absorption and subordination of public health within biomedical and acute care clinical service entities; and encouraging expansion beyond 'risk-factorology' to multilevel explanations that promise different types of interventions.

There is considerable literature in the area of active transport that identifies the necessity of working collaboratively across sectors to change complex environmental and behavioural factors that maintain car dependence and reduce the attractiveness of more active lifestyles. The literature also indicates that effective collaboration is challenging and requires a re-thinking of priorities and the ways sectors are structured to overcome the 'silo' mentality that McKinlay alluded to. It requires capacity building within sectors as the skills required to effectively collaborate may not necessarily exist in their current form. The following representatives of the key sectors that can influence healthy transport choice recognise the importance of intersectoral and intrasectoral collaboration and some positive examples of collaborative efforts emerged.

Recommendation: That the health sector look for opportunities to work collaboratively within the health sector and with other sectors in the area of healthy transport: possibilities exist already such as physical activity workgroups, involvement in projects like the Parramatta patronage trial, helping to develop safer routes to school for children walking and cycling. Other opportunities may need to be created like those that exist in the United Kingdom: advocate for the development of local transport plans and the development of regional health improvement programs.

Interviewing Representatives of the Four Key Sectors that can influence Healthy Transport Choice: Transport, Planning, Health and Local Government

One-hour interviews were undertaken with representatives of the four key sectors in NSW that can influence healthy transport. The interviews were designed to further gain understanding of how each sector defines its role in the encouragement of healthy transport, their experience of intersectoral collaboration and their opinion as to the role of the health sector in this field. The interviews were semi-structured and informal. Transcripts of the interviews were not kept but each interviewee was given the opportunity to comment on the final draft of the article. I mainly refer to the person rather than their position as the views expressed are of the individual and not necessarily the sector they belong to. By 'representative', I refer to the fact that they work within a given sector rather than have been chosen by the sector as their representative. Recommendations made in this section reflect the opinion of the writer and not necessarily the opinion of the interviewee.

The First Interview undertaken was with Dr Chloe Mason, a well-recognised academic with expertise in the field of active transport. While her academic background is in public health, environment and organisational development, she states that she has chosen to work on health issues through other sectors as a way of overcoming inequalities in health. Chloe has worked in the field of occupational health and safety, has worked on a transport plan for the University of NSW, transport guidelines for SEDA (Sustainable Energy Development Authority) and more recently for the Roads and Traffic Authority on the development of transport access guides. She is also currently assisting South-East Sydney and Central Sydney Area Health Services in the development of active transport policies and programs.

Chloe sees bigger opportunities to influence health by working internally to create change in other sectors. She maintains that it is firstly necessary to understand the other sectors and talk the same language as they do rather than talk health at them. She isn't concerned about what the other sectors' objectives are for pursuing policies so long as the policies lead to healthy outcomes. Chloe is concerned that the health sector has a tendency to not understand the requirements of successful intersectoral collaboration and of being bound by what medical sociologists refer to as 'health imperialism'³¹ ie. defined by a sense of superiority over other sectors, an ignorance about the goals and thinking of other sectors and an assumption of their rightful position as leaders. She believes that the Active Transport Intervention Portfolio highlights some of these presumptions. For these reasons, she believes that the other sectors are sceptical or at least cautious about health sector involvement in the field of transport. Chloe believes that the first thing that the health sector can do is to attend to healthier transport policies within its own services and through that learn more about influencing the policies of local government.

Chloe is also concerned that in NSW the Health sector tends to view health issues through an individual paradigm rather than recognising the wider structural/environmental determinants of health. The focus remains at the individual treatment and behavioural change level and unless there is a significant paradigm shift in the health sector, she feels that it is unlikely that the health sector will play a significant role in the field of active transport. The individual focus impacts on the health sectors' determination of the value of research.

Recommendation: Redefine the role of the Health sector: in NSW, there needs to be a paradigm shift reflected in policy, practice and funding towards prevention and public health measures that recognise the environmental determinants of health and a reduction in the attention given to treatment and individual determinants of health.

The Second Interview was with Kendall Banfield, Sustainable Transport (Cycling) Strategist in the Sustainability Unit of Planning NSW but who also works part of the week within the RTA. Kendall's position is designed to assist and encourage local governments to use available resources and planning guidelines to improve provisioning for cyclists and pedestrians especially through increased use of developer contributions under Section 94 of the Environmental Planning and Assessment Act, 1979.

The Sustainable Transport (Cycling) Strategist position is co-funded by Planning NSW and RTA, an example of positive collaboration between two sectors. It is an example of the gradual recognition within government of the complex inter-relationship of determining factors in issues like healthy transport and therefore the importance of moving more towards a whole-of-government approach to many issues. Kendall stressed the importance of senior management support for an issue as being a key determinant as to whether an issue receives the attention it requires. He also felt that the development of personal relationships between senior management in separate sectors was a key factor in the likelihood of successful intersectoral collaboration. He sees his position as having a pivotal role in increasing the sharing of information and understanding between the two sectors and thereby increasing the likelihood of further collaboration in the area of sustainable transport. Kendall says he has once collaborated with Central Sydney Area Health Service by co-funding the cost of providing a speaker to a workshop on active transport due again as a result of building relationships with key personnel.

Kendall was unaware of the Active Transport Intervention Portfolio and didn't feel that it would be given any consideration by Planning NSW or the Roads and Traffic Authority. He sees a need for the investigation of health and social factors when assessing new development but is concerned that engineers and planners see such reports as often being 'motherhood statements', evidence not supported by scientifically-rigorous measurement.

Kendall believes that the draft SEPP 66, when implemented, will significantly assist in ensuring that new large developments are located close to major public transport routes

and will be more accessible by walking and cycling. Mixed zoning will become increasingly possible across Sydney as heavy industry will continue to move out of the more established and denser parts of Sydney making way for redevelopment in established areas which are generally more accessible to healthier forms of transport. He also sees the start of a trend towards councils developing maximum car parking requirements for development rather than the current trend to stipulate minimum rates of parking. South Sydney, Willoughby and Parramatta councils in Sydney have introduced such measures. This will increase the cost of parking and reduce the level of congestion created by new development. Planning NSW in recent years has extended its role to the provision of shared pathways around the Sydney Harbour foreshore and may extend this to other green corridors in the future which would assist in the development of off-road cycling and pedestrian networks.

The Third Interview was with Dr Chris Rissell, Director of Public Health with Central Sydney Area Health Service (CSAHS). Chris is a keen commuter cyclist and has had some success placing active transport on the agenda at CSAHS. The Public Health unit has gained the support of the Chief Medical Officer, the third most senior post at CSAHS, and all facility managers have been asked to review their access maps with a view to developing transport access guides and start to think about strategies for active transport. Chris is confident that CSAHS will develop its own policy on active transport. Like Kendall, Chris believes that the interests and attitudes of senior management can raise an issue onto an organisation's agenda or can create barriers to the recognition of an issue like active transport. Chris, like Chloe, feels that it is appropriate for the health sector to focus initially on improving the health impacts of transport within their sector. This provides an opportunity for learning about the issue and evaluating intervention strategies before focusing on influencing the broader community.

Chris doubts that the other sectors see a role for health in encouraging public transport, cycling and walking. He feels that other sectors, notably the RTA, are poor at consulting the health sector and see the health sector as thwarting development progress. Chris believes that Health Impact Assessments should be mandatory for all major developments especially major road developments. To work successfully with other sectors, he believes that it is imperative for the health sector to become better listeners and seek a common agenda.

Chris was familiar with the Active Transport Intervention Portfolio and believes that it won't be implemented by the health or other sectors. He agreed that there were serious flaws in the under-representation of a number of key sectors and felt that it is an unattractive document that senior health management wouldn't understand or be bothered to read. Chris referred to a United Kingdom National Health Service document called 'The Healthy Toolkit'³² which provides an attractive and easy to follow briefing about the importance of active transport as an issue. It details all the practical strategies that can and are being implemented in health facilities across the United Kingdom. He supplied all CSAHS senior management with copies of this document.

Recommendation: That the health sector encourage the utilisation of healthier forms of transport in its own sector and accept that transport is a significant determinant of health That can no longer be considered the responsibility of another sector. It would then be in a stronger position to advocate for similar changes in other sectors: all efforts should be made to ensure health services are accessible by healthier forms of transport for patients, their relatives and staff. All Area Health Services should develop an active transport policy and create the position of active transport officer that can assist with the coordination and development of transport access guides.

'The Healthy Toolkit'³² by the National Health Service documents a number of strategies that are being implemented in health facilities across the United Kingdom. These measures usually come under the umbrella of transport plans and transport access guides. Parking should be limited and involve fees in hospital grounds. Health facilities should ask council to implement time limits on all parking in surrounding areas. Staff and visitors should be encouraged to use active transport through a number of measures such as: subsidised public transport passes; mileage payment made for work trips using bicycles; reducing the number of health service vehicles and end salary sacrificing for lease back arrangements on cars for staff; provide showers and secure bicycle storage areas at all major health services. Targets should be set for increasing the use of active transport by staff and visitors.

The Fourth Interview was with Roshan Aryal, Senior Project Officer, Outcomes (Accessibility) at Parramatta Council. Parramatta City Council is an interesting local government agency to focus upon as it is one of only a few councils in NSW to have a Regional Environment Plan (REP) developed in conjunction with Planning NSW and is forecast to undergo rapid changes. The REP is focused around Parramatta central business district which is being developed by the state government to be the headquarters for Western Sydney and Sydney's second central business district. There is projected to be jobs growth from 37,000 to 60,000 in the Parramatta central business district by 2021. The REP includes the performance target for journey-to-work modal split of 60% non-automotive transport and 40% automotive transport to Parramatta central business district by 2021. Unfortunately, there isn't data on the current journey-to-work modal split to Parramatta central business district. In order to manage such growth and meet the modal split target, there needs to be a significant modal shift from the dominant current use of private motor vehicles for accessing the CBD to other forms of transport.

The growth of Parramatta central business district provides an opportunity to plan for increased reliance on healthy forms of transport. Significant transport infrastructure is being developed to encourage people to shift to public transport, walking and cycling including: a network of bus transitways into Parramatta; the Parramatta-Chatswood rail link is planned; the station will be significantly upgraded; more state transit buses will come to Parramatta from the east; the Parramatta bike plan will be completed; a number of other long-distance cycleways will provide safe cycling access into the CBD; a Pedestrian and Mobility Plan (PAMP) has been developed for the CBD to improve walking access and circulation around the CBD; and a draft Transport Management

and Accessibility Plan (TMAP) has been developed for the CBD. A whole of government approach to intersectoral collaboration is about to take place called the Parramatta Patronage Trial that is designed to increase the use of public transport by commuters. The RTA, as part of this approach, are working with large companies and government departments in the development of transport access guides for staff and customers.

Parramatta Council will be involved in the Parramatta Patronage trial and are actively involved in the encouragement of public transport, cycling and walking. Roshan indicates that this is being done through travel demand management policies like limiting the availability and convenience of car parking, the development of infrastructure such as footpaths and cycleways and informing the community of the existence of the infrastructure. Through Development Control Plans, council can influence the type and design of development that favours the use of sustainable transport. Under the REP, council has moved to maximum levels of car parking for developments rather than the traditional minimum levels of car parking required. There has been an increase in time-restricted on-street parking in and around the CBD and the state government has introduced levies on businesses for each car parking space. Large developments require Masterplans that council comments on but the consent authority has switched to the Minister for Planning. Masterplans are progressively conducting Transport Management and Accessibility Plans rather than the traditional traffic study that tended to focus simply on road transport and what modifications were required to manage an increase in road transport. The REP and Planning NSW's Plan First policy have encouraged a shift to place management which looks at planning the needs of an area more holistically and will require a far greater level of collaboration internally and externally. For transport, this will necessitate a broader view of providing the mobility needs of an area than simply traffic management.

Roshan states that council is also seeking to make internal changes to the way it uses transport. A transport plan for Parramatta City Council is being developed which will include a transport access guide. Roshan says that he has consulted with the health sector on how it could promote active transport. He feels that there is a role for the health sector in this field focused mainly on promoting the benefits of healthier forms of transport. Parramatta council has increased its funding of walking and cycling infrastructure and developed the Parramatta Cycling Guide. The Parramatta City Council Bike Plan has set a target for cycling to make up 5% of all work trips to Parramatta central business district by 2021. This will require a network of safe infrastructure. There is a growing awareness that Section 94 (Environmental Planning and Assessment Act, 1979) contributions from developers should be used for sustainable transport infrastructure and not the development of new car parks and other infrastructure required by motor vehicles. Parramatta City Council are in the process of reviewing their current contribution plan to reflect the REP's greater emphasis on encouragement healthy transport modes.

Recommendation: That all areas of the health sector should be involved in:

1. informing the community of the health benefits of active transport as a form of physical activity and of the health-damaging consequences of car dependency;
2. raise awareness of active transport facilities available;
3. work collaboratively with other sectors on multi-media educational campaigns utilising the health sector's expertise in health promotion strategies
4. Raise awareness amongst other sectors of the health sectors' mandate to actively promote transport choice and clarify what capacities the health sector can offer to assist in the mutual goal of encouraging healthy transport
5. Ensure health sector input into the municipal planning instruments of councils that impact on health eg. Council's Management Plans, Social Plan, Local Environment Plan, Development Control Plan, and the State of the Environment report. Advocate for councils to have public health plans as exist in Victoria.

There was considerable overlap of opinion between the 4 representatives interviewed regarding a number of issues. All interviewees discredited the 'Active Transport Portfolio' document or had not heard of it. All interviewees saw a role for the health sector in promoting healthy transport but there was a lack of clarity as to what role they could play. All interviewees acknowledged the importance of intersectoral collaboration but there had not been considerable experience of working in this mode and some concern about the difficulty of successfully implementing it.

Conclusion

There is considerable evidence to indicate that transport, a major activity in our daily lives, can be a source of health promotion or health damage. The Ottawa Charter on Health Promotion⁴ recognises that health promotion is the responsibility of all sectors and also calls for the reorientation of the health sector to placing greater emphasis on health promotion. Healthy public policy is required across all sectors to encourage healthy transport and is the responsibility of all sectors. The policies and practices of the transport, planning and local government sectors have significant influence on the community's utilisation of healthy transport modes but there is a role for the health sector. As a significant employer and service generator, the health sector is a large trip generator and thus has a responsibility to encourage healthy transport use by staff and visitors. The health sector has a significant role to play in determining the health impact of the policies and practices of other sectors including their impact on transport use. The health sector should research and inform the public and other sectors on the impact of transport use on health, both the health promoting and health-damaging capacity of transport. The health sector should recognise the importance of promoting healthy transport as a means of preventing illness.

References

1. British Medical Association. Road Transport and Health, UK, 1997
2. Wilkinson, R. and Marmot, M. (eds)(1998) Social Determinants of Health. The Solid Facts. WHO
3. Transport NSW. Action for Transport 2010, Sydney 1998
4. WHO (1986) Ottawa Charter for Health Promotion.
5. WHO Regional Office for Europe. Charter on Transport, Environment and Health, UK,1999
6. Austroads. Roadfacts 2000: an overview of the Australian and the New Zealand road systems. Sydney 2000
7. Rail, Tram and Bus Union. Rail and Urban Public Transport: a new policy for a new century. Sydney, 2002
8. Royal Commission on Environmental Pollution. 18th Report – Transport and the Environment. UK, 1994
9. NSW Environment Protection Authority. State of the Environment Report, 1997
10. Appleyard D. Livable Streets, US 1991

11. Health Education Authority. Making the Links: Integrating sustainable transport, health and environmental policies. UK, 1999
12. Hillman M. Health Promotion and non-motorised transport. In: Fletcher T, McMichael AJ, ed. Transport policy and urban health. UK, John Wiley and Sons, 1997
13. Bauman A, Bellew B, Vita P, Brown W, Owen N. Getting Australia Active: towards better practice for the promotion of physical activity. National Public Health Partnership. Melbourne, 2002
14. Hillman M et al. One false move...A Study of Children's independent mobility. UK 1990
15. Armstrong T, Bauman A, Davies J. Physical activity patterns of Australian adults. Australian Institute of Health and Welfare, 2000
16. Dunn S, Wright C, Cox R, Atkinson R, MacDougall C. Creating Supportive Environments for Physical Activity: Encouraging walking in the 21st century. In: Australia: Walking the 21st Century Conference. February 2001. Perth, WA
17. NSW Childhood Obesity Summit. Communique. September, 2002
18. Bull F, Milligan R, Rosenburg M et al. Physical activity levels in Western Australians, 1999.
19. Transport NSW, Roads and Traffic Authority and Planning NSW. Integrating Land Use and Transport: improving transport choice---guidelines for planning and development. Planning NSW, 2001

20. Ausroads. Travel Demand Management: a resource book. Sydney 2002
21. Mees, P. Transport and Healthy Cities. In: Health Promotion Journal of Australia, Vol 10, no. 3, Dec 2000
22. Planning NSW. Shaping our Cities. NSW 1996
23. Malkin B and Kerr J in Sydney Morning Herald, April 9, 2003
24. Connecting the Central Coast: the Central Coast Transport Action Plan. Transport NSW 2001
25. National Public Health Partnership (NPHP) and the Strategic Inter-Governmental forum on Physical Activity (SIGPAH). Promoting Active Transport: an intervention portfolio to increase physical activity as a means of transport. Melbourne, 2001
26. Mason, C. (2000) "Healthy People, Places and Transport" in Health Promotion Journal of Australia Vol 10, No. 3, Dec 2000, pp190-196
27. Mason, C. (2000) "Transport and Health: en route to a healthier Australia ?" in Medical Journal of Australia 2000; 172: 230-232
28. AEA Technology, (2000) " Informing Transport Health Impact assessment in London"
29. Gray, B. (1989) Collaborating: finding common ground for multi-party problems. Jossey Bass, USA

30. McKinlay JB, Marceau LD. To boldly go..., *American Journal Public Health*, 2000;90:25-33

31. Degeling, P. (1995) "The Significance of 'sectors' in calls for urban public health intersectorialism: and Australian perspective" in *Policy and Politics*, Vol 23 no.4, pp289-301

32. Transport 2000. *The Healthy Toolkit; a guide to reducing car trips to NHS facilities*, UK 1998