Doctors for the Environment Australia
www.dea.org.au

Senate Rural and Regional Affairs and Transport Committee.

Inquiry into the investment of Commonwealth and State funds in public passenger transport infrastructure and services.

Submission from Doctors for the Environment Australia

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1. Introduction.

Doctors for the Environment Australia, Inc. (DEA) is a voluntary organisation of medical doctors in all states and territories. We work to prevent detrimental health outcomes – local, national and global – caused by damage to the environment.

We make this submission because we believe the provision of efficient public transport can have a significant positive impact on the health of communities. Furthermore, it provides an important strategy for reducing green house emissions, therefore mitigating climate change and the detrimental health outcomes associated with that. The health implications of climate change have been recently documented in our report:

"Climate Change Health Check 2020." [1]

Here we review our main findings which, we suggest, greatly strengthens the case for increased expenditure on public transport and appropriate planning supportive of this important resource. We also draw attention to our call for an urgent reduction of green house emissions. Certain improvements in public transport detailed in our *"Transport Policy"* fall into the category of actions which can be taken now. [2, 3] Transport is one of the largest and fastest growing contributors to Australia's greenhouse emissions, increasing by 30% from 1990 to 2005. Close to 90% of Australia's transport emissions originate from cars and trucks. Transport greenhouse gases are expected to grow (according to the Bureau of Infrastructure, Transport and Regional Economics) by 68% between 2000 and 2020.[4, 5]

2. The health benefits of public transport in cities and suburbs.

The health benefits to be derived from reducing urban pollution are considerable. As pointed out by the Intergovernmental Panel on Climate Change (IPCC) the saved health costs offset a significant proportion of the costs of reducing greenhouse emissions.

The replacement of private car transport with public transport, cycling or walking significantly reduces the occurrence of obesity, type 2 diabetes and several other disorders that represent a significant personal toll and economic drain on health services.

3. What are the facts in detail?

3.1 Cardio-respiratory diseases.

Pollution in the form of particulates and noxious gases from motor vehicles increases ill health from cardiovascular and respiratory diseases. Particulates are microscopic solid particles produced by the combustion of petrol and diesel and, combined with road dust, are suspended in the air and inhaled. This contributes to a cumulative decrease in lung function efficiency and can contribute to the incidence of breathlessness, heart disease and asthma. There is increasing recognition that even small exposures are injurious. A recent review of exposure to air pollution and, specifically, fine particulate matter derived from combustion, shows that this carries a similar degree of heart disease risk as is conferred by high blood pressure and high cholesterol levels.[6]

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[1] http://www.dea.org.au/UserFiles/File/pdf_documents/Climate_Change_Health_Check_2020.pdf

[2] http://www.dea.org.au/node/183

[3] http://www.ptua.org.au/federal/

[4] http://www.bitre.gov.au/

[5] http://www.bitre.gov.au/publications/93/Files/r107.pdf
(*Report 107: Greenhouse Gas Emissions from Transport: Australian Trends to 2020*)

[6] Editorial: *Air Pollution: the new cardiovascular risk factor*. Internal Medicine Journal, Journal of the Royal Australasian College of Physicians, Volume 38, 2008.

3.2 Low birth weight.

There is likely a correlation between low birth weight and urban pollution. Low birth weight carries additional morbidity and mortality. A reduction in available oxygen levels, and an increase in harmful particulates and gases, notably SO_2 and CO (sulphur dioxide and carbon monoxide respectively) found in urban environments with high vehicle density and activity (ie: the Australian urban built environment), are suspected of contributing to low birth weight and a higher incidence of pre-term delivery.[7]

3.3 Obesity and diabetes.

Australia faces an epidemic of obesity, with almost 60% of Australian adults and 25% of children being obese or overweight, with type 2 diabetes and other adverse health effects from physical inactivity and unhealthy diets prevailing. The use of private transport is a major factor in inactivity.

Currently diabetes is estimated to cost $6 billion annually. This is expected to double by 2020.[8]

A lack of regular, reliable public transport - at a service density adequate for urban Australia - contributes to high reliance upon private transport. It is, therefore, a factor in the development of detrimental health outcomes through the concomitant reduction of physical exercise. It also conditions people to opt for the car ahead of other forms of transport that require physical effort.

Research has indicated that each additional hour of daily driving leads to a 6% increase in the likelihood of obesity. On the other hand, daily activities such as walking, cycling to the shops or to public transport, can provide the level of physical activity recommended in the National Physical Activity Guidelines. In studies of cities throughout the world a positive relationship has been found between availability of public transport and lower levels of obesity. This is simply due to factors such as commuters needing to walk to and from the bus, tram and train stops.

3.4 Cancer.

The pollution in cities from car emissions causes an increase in colon, breast and, possibly, prostate cancer. The Premier's Council for Active Living (NSW) hints at this and there are reports in the literature indicating a correlation between compounds such as benzene, polycyclic aromatic hydrocarbons and other exhaust emissions contributing to pre and post menopausal breast cancer. [9,10]

There is a known relationship with breast cancer and exposure to carcinogens in exhaust fumes, particularly in children and young people. Recent research has also established a definite link between obesity and the above cancers.

3.5 Mental Health.

Public transport, by encouraging more exercise than use of the private car, improves mental health and can delay the onset of some forms of dementia. We draw attention to a recent paper entitled *"Hope, despair and transformation: Climate change and the promotion of mental health and wellbeing."*[11]

3.6 Osteoporosis.

The additional physical activity induced by the use of public transport is important in preventing osteoporosis. Walking and movement supports osteoblastic activity which, in turn, can contribute to an increase in bone density through calcium deposition.[12]

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[7] Krewski, D. et al. *Population Health Impact of Short Term Exposure to Urban Air Pollution*, http://www.hc-sc.gc.ca/sr-sr/finance/tsri-irst/proj/urb-air/tsri-29-eng.php.

[8] *National Priorities for turning around the Diabetes Epidemic 2007-2008*: Diabetes Australia.

[9] http://www.pcal.nsw.gov.au/__data/assets/file/0007/27646/active_living_statement.pdf

[10] McKeown, D. *Pollution Burden of Illness from Traffic in Toronto*. Toronto Public Health, 2007. http://www.toronto.ca/health/hphe/pdf/air_pollution_burden.pdf

[11] http://www.ijmhs.com/content/2/1/13

[12] Snow-Harter, C., and R. Marcus. 1993. *Exercise, Bone Mineral Density, and Osteoporosis*. Exercise and Sports Science Review. 21: 351-381

3.7 Motor vehicle accidents.

The development of good public transport systems is likely to result in fewer vehicle accidents and lower fatality rates simply by virtue of the reduction in number of vehicles on our roads or time vehicles spend on the roads. The potential savings in health and insurance budgets is significant.

4. Health & wellbeing in the city.

The World Health organisation provides an important definition of health. *"It is a state of complete physical, mental and social well being, not merely the absence of disease or infirmity."*

It is a fact that in cities dominated by private transport, green space is lost and communities are physically divided. Cars, roads and parking areas take up greater amounts of land, increasing urban sprawl and reducing arable land near population centres. Water run-off and flash flooding increases, as does the 'heat-sink' effect of cities. The latter may increase heat stress on vulnerable populations (eg: elderly, very young and infirm) during heat waves. The recent experiences in France stand as testament to this. Multimodal public transport has the capacity to reduce land usage footprint, thus leaving capacity for more green space within and around cities. In an ageing population, drivers no longer capable of maintaining licenses will be increasingly dependent on public transport to access medical care and social contacts. Personal mobility in an ageing population must be available to support independent living and the maintenance of social contact, essential for good mental health outcomes.

4.1 Health & wellbeing in the suburbs.

The present collapse in the price of oil should not allow us to forget that it is a finite resource and that the price will quite likely rise significantly over the next decade. As oil costs increase, residents of outer suburbs, often with lower incomes and increasingly disadvantaged by transport costs, need public transport to remain economically and socially viable. Inadequate transport can act as a stressor, contributing to demonstrable economic and health impacts on entire families. Throughout Australia many housing developments are proceeding without adequate public transport planning. The urban sprawl continues to incur public infrastructure costs and disadvantages residents in terms of the economic outlay necessary to fund private transport.

5. Transport & health in regional and rural communities.

We regard this issue to be of major national importance for the following reasons. As the scientific predictions of climate change take effect, these communities are coming under increasing physical, mental and economic stress. The problems of depression, anxiety, family breakdown and suicide are already evident. Climate change is affecting communities which are already disadvantaged by isolation and lack of services - including medical. The Lower Lakes region of South Australia is an example of this, as are parts of rural Victoria, western NSW and other remote locations throughout Australia.

We know from our rural members that if the question is asked of rural people "what is the one intervention that will have the greatest impact upon your life?", the answer is almost inevitably the provision of public transport. We can confirm from the experience of other countries that the one intervention we can undertake, with the knowledge that it will have a positive impact, is the provision of public transport. Reduction in isolation has a profound effect upon rural and regional communities.

In considering this matter we have to ask, firstly, what are the reasons behind the progressive depopulation of rural Australia? There are many which are not necessarily related to economic viability - though this is assuming greater importance with the advent of climate change. The range of issues that reduce viability relate to the provision, or lack of provision, of education, medical, banking, library and financial services - all of which are taken for granted in the cities and suburbs. Reliable public transport can ameliorate some of these deprivations.

Australia has always regarded rural areas as the back-bone of its existence. While this may now be more in the mythology of the nation than the current reality, we ignore rural and regional Australia at our peril in terms

of food security. The fall in world food production is already evident. We therefore regard the absence of strategic plans and public policy to address rural needs as an indictment of all Australian governments.

This issue is one of support for rural communities, providers of our nation's food and managers of the land and natural resources for us all. The matter is also one of equity. In short, more equitable nations have lower rates of chronic diseases. Caring societies are healthier societies.

6. Case study.

We refer to the Terms of Reference (item [f]) *"best practice international examples of public passenger transport services and infrastructure"*.

There are several European countries from which we can learn but we have chosen Switzerland which has integrated, state-owned transport. Travel is cheap, comfortable and efficient. More importantly the system ensures that regional and rural communities are included.

In Switzerland every city has an integrated, mostly electric, public transport system. For the inter-city traveller, there are "no speaking" coaches where you can work, or "family coaches" if you have children or wish to talk. Trains and buses run to time and there are inquiries for even minor delays. For rural communities there are bus or train services for workers and "direct to school and shopping" hubs. This transport is also utilized for post and delivery, reducing duplication and extracting greater utilization of the resource and associated capital. Employment within the service is distributed equitably to the villages and towns.

It might be seen unusual that a very conservative country, with financial services as its back-bone, should eschew private involvement in this system. However it operates within the national plan that dictates rural Switzerland as essential to the nation and which must be maintained.

Now it might be asked what relevance this could have when we compare a rural bus service in Switzerland that travels 20 kilometres to one in Australia that travels 200 kilometres. The relevance is that the overall cost in Australia is less. The terrain in Switzerland imposes larger overhead.

7. An interesting example of forward planning.

Switzerland will suffer further loss of permanent snow due to climate change and many pastures will become less productive because melt water supply will falter. The village of Isenfluh has been assessed as sustainable because its water catchment is large, and it depends only partly on snow melt. It sits on an alp 1000m above the floor of the Lauterbrunnen Valley. According to scientific climate change data it will be able to sustain its dairy industries. It is supplied four times a day with a post bus on a road which requires extensive and costly engineering, and which crosses a cliff with huge exposure. Two years ago a 1 kilometre section of this road was demolished by avalanche. Engineering reports indicated that this could not be rebuilt. In a matter of months a tunnel through solid rock of 2 kilometres had reconnected the village with the Lauterbrunnen valley at a cost of over $10M. The number of residents in the village is 80 (eighty). In effect the decision to act on this was taken as a result of the standard national strategy and policy which values rural Switzerland as much as urban Switzerland.

In Switzerland there is a national consensus as to the future needs of the country, based on sustainability and the integral importance of maintaining rural communities. Arguments about market forces, private versus public enterprise or subsidies are not entertained. It is interesting to note that politicians of this conservative country, who dare to suggest privatisation of this system, inevitably lose their seats. The sell-off of assets would be regarded as an abrogation of duty.

8. Some data from Switzerland.

The Swiss Federal Department of Environment, Transport, Energy and Communications runs transport in the entire country with: *"1700 persons devoted to the main concern of this department, namely, to assure the sustainable provision of primary services in Switzerland. We want to meet present requirements for infrastructure and at the same time to secure for future generations the chances of an intact environment".*

Most of the information from Switzerland is in French and German, including reports from their Department of Transport. However, the attached presentation: *"Creating and Financing a 21st Century Public Transportation System"* for the greater Washington area (US) provides an outline of the system in English.

In a wealthy country, with high car ownership, 20% of all journeys are now made by public transport and this is increasing rapidly. Your attention is drawn to the agreed sustainability principles enunciated on page 10: *"Equality between regions and mobility for everybody."*

In other documents (in German) we have determined the financing system is with funds from revenue streams including levies on private transport. These revenues are prevented from being placed into the equivalent of "consolidated revenue". Long-term investments cannot be financed with annual budgets.

Success in transport policy, in connecting a country, depends on a high level of service, suitable transport modalities, an "intelligent" timetable with a system of "hubs", and appropriate infrastructure of high quality.

9. Application to Australia.

An integrated transport policy is essential to the needs and health of all Australians and to mitigate greenhouse emissions.

To date our failure to provide this reflects a failure of this and the previous government to act in complex situations. The Murray-Darling Basin management presents similar problems of competing interests and administrations. It is an indictment that in recent boom times we have done little.

Simple, agreed aims can be achieved between Federal and State governments - as they have been between State and Cantons in Switzerland. These dictate policy based on sustainability of regions and the maintenance of equity.

In Australia, taking into account the scientific data on climate change, agricultural potential and the local industry base, we need to ask if our rural communities can remain economically viable. If so, the decision to provide adequate public transport must be made.

If we value the health of the citizens of this nation then we must also take the decision to provide suitable transport modalities for urban Australia.

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