

Submission to the Environment and Planning References Committee Inquiry into Environmental Design and Public Health

**Doctors for the Environment Australia Inc.
Hon Secretary, Dr David Shearman
Victorian Chair, Dr Eugenie Kayak**

5 Fitzgerald Road PASADENA SA 5042

Phone: 0422 974 857

Email: admin@dea.org.au

<http://www.dea.org.au>



The following are members of our Scientific Committee and support the work of
Doctors for the Environment Australia

Prof. Stephen Boyden AM; Prof. Peter Doherty AC; Prof. Bob Douglas AO; Prof. Michael Kidd AM; Prof. Stephen Leeder AO;
Prof. Ian Lowe AO; Prof. Robyn McDermott; Prof. Tony McMichael; Prof. Peter Newman; Prof. Emeritus Sir Gustav Nossal AC;
Prof. Hugh Possingham; Prof. Lawrie Powell AC; Prof. Fiona Stanley AC; Dr Norman Swan; Professor David Yencken AO

Prepared for Doctors for the Environment Australia Inc. by
Dr Marion Carey MB, BS (Hons), MPH, FAFPHM, FRSPH,
Senior Research Fellow, Monash Sustainability Institute, Monash
University

Submitted to:

Mr Keir Delaney

keir.delaney@parliament.vic.gov.au

The Secretary Legislative Council Environment and Planning Committee Parliament
House Spring Street Melbourne VIC 3002

11 July 2011

About Doctors for the Environment Australia

Doctors for the Environment Australia is a voluntary organisation of medical doctors in all Australian states and territories. We work to address and prevent ill health caused by damage to the earth's environment.

The medical profession has a proud record of service to the community. This record not only includes personal clinical care, but also involvement in global issues that threaten the future of humanity. We aim to use our scientific and medical skills to educate governments and industry, the public and our colleagues to highlight the medical importance of our natural environment. To our patients we try to provide a role model in the care of the environment for this is part of a preventative health ethos.

Doctors for the Environment Australia is a branch of the International Society of Doctors for the Environment (ISDE), based in Switzerland, which is a global network of concerned medical professionals. There are now branches in 35 other countries. ISDE has significant achievements in Europe and has established strong links to and influence in the European Community and WHO.

Introduction

DEA commends the Legislative Council for initiating this inquiry and welcomes the opportunity to contribute.

We believe that a healthy natural and built environment is integral to the prevention of disease and promotion of good health and well-being.

We are aware that there is a large body of evidence in the scientific literature documenting the links between environmental design, urban planning, access to natural spaces and human health and well-being.

We believe the priority now is to draw upon that evidence, implement its lessons and embody them in the legislative and planning framework.

Improving health through environmental planning and design

We would direct the Committee to the many publicly available resources which cover the important aspects of urban and environmental design to optimise health, including practical guidelines such as

(1) “Healthy Spaces and Places : a national guide for designing places for healthy living”¹ This resource was developed by collaboration between the Australian Local Government Association, the National Heart Foundation of Australia and the Planning Institute of Australia and funded by the Australian Government Department of Health and Ageing.

“Healthy Spaces and Places “identifies the following key design principles to plan for healthy communities:

- active transport • aesthetics • connectivity • environments for all people
- mixed density • mixed land use • parks and open space • safety and surveillance:
- social inclusion • supporting infrastructure

(2) “ Healthy by Design: a planner’s guide to environments for active living” prepared by the Victorian Division of the National Heart Foundation²

(3) “The Healthy Urban Development Checklist” developed by the NSW government.³

The checklist is a tool for reviewing development plans through a health lens, and also for providing health input and advice to the earliest possible phases of the urban planning and development process.

The ten characteristics of healthy urban development detailed are:

- Physical activity
- Housing
- Transport and physical connectivity
- Quality employment
- Community safety and security
- Public open space

- Social infrastructure
- Social cohesion and social connectivity
- Environment and health.
- Healthy food

WHO Healthy Cities Program

The Healthy Cities movement promotes systematic policy and planning for health and emphasizes the social, economic and environmental determinants of health. Developing an integrated, intersectoral approach with community participation is an important feature of Healthy Cities.⁴

A Healthy Cities project:

- facilitates the health sector to play an advocacy role in incorporating health considerations into urban development and management
- integrates efforts of different stakeholders within and outside the health sector and coordinates their activities
- encourages and mobilizes communities to participate in the planning and management of urban development for better health and quality of life
- seeks political and local government commitment and support for the development and implementation of activities⁵

Harnessing community action – ecocities, transition towns

Community action can lead the way with models of healthy and sustainable urban living, with examples such as "Christie Walk Eco-city Development" in Adelaide.

Ecological cities focus on

- using local materials, and local energy, air and water flows to best advantage,
- incorporating natural ecosystems into urban areas, to host local wildlife, and to enhance the experience of urban public spaces.
- using vegetation to control urban microclimates, to stabilise temperature and humidity.
- enhancing the life of the community and relationships between people, by creating convivial social environments.⁶

Barriers to implementation

It is our understanding that current implementation of these principals and guidelines may not be optimal and that there may be a number of opportunities to overcome current barriers.

For example, *Environments for Health* was designed to provide an integrated planning approach for Municipal Public Health Plans (MPHPs) in Victoria, aiming to make public health a central focus for local government.

However an evaluation undertaken in 2006, revealed a number of barriers to progress. Whilst development of the MPHP is mandated, its implementation was not, and there was little accountability for implementing proposed actions. In some cases, the planning phase of the MPHP was considered to be an end in itself. It was suggested that there may be a lack of mainstreaming of the MPHP planning initiatives in the main planning schemes of councils. Respondents in the evaluation expressed concern that, if local authorities are to adopt a whole-of-government approach, this should also be exemplified at the state level.⁷

Why is incorporating health as a key priority in planning so important?

Reducing the burden of chronic disease

The human species is now predominantly urban. While living in cities can provide many benefits, some of the characteristics of urban life can be low levels of physical activity, unhealthy food choices, reliance on cars for transport, sedentary recreation, time pressures, loss of natural spaces, social isolation, noise and air pollution. These characteristics tend to be associated with a range of health conditions including obesity, heart disease, diabetes, cancer, worsening of respiratory disease, and mental health problems.⁸

According to the World Health Organisation, the rapid rise of chronic non-communicable diseases represents one of the major health challenges to global development in the coming century. World-wide they contribute to almost 60% of deaths (with predicted increases to 73% by 2020).

Yet there is “ a vast body of knowledge and experience” about how to prevent and control these diseases. Some of the most important of these conditions – obesity, cardiovascular disease, cancer, diabetes - are linked by common preventable risk factors including unhealthy diet, and physical inactivity⁹

Focus solely at the individual level of behaviour and life style changes has not stemmed this emerging health crisis. This seems to be at least partly because the way our environments are structured often makes this difficult. We tend to now live in “obesogenic environments “ that encourage over-eating and under-exercising. We need to turn this around and make healthy choices easier.

Urban design and transport systems have an impact on many aspects of health and wellbeing, including physical activity, obesity, mental health, and social connectedness. Inactivity and obesity are associated with urban environments with

urban sprawl, low housing density, overreliance on motor vehicle transport and poor public transportation and reduced opportunities for “active transport” such as walking or cycling.^{10,11}

In drawing the links between car dependence and urban sprawl, Trubka et al¹² note “The view that car dependency has led to the creation of obesogenic environments is now supported by a substantial number of studies and the case is being built for urban planning reform for active lifestyle improvements.”

“Decisions made outside the health sector often have a major bearing on elements that influence risk factors”, so these risk factors cannot be dealt with wholly within the health sector, but require an integrated whole-of –government approach.⁹

Less car dependence, more active travel: less obesity and heart disease

A US study estimated that each additional hour spent in a car per day was associated with a 6% increase in the likelihood of obesity, whereas each additional km walked per day was associated with an almost 5% reduction in the likelihood of obesity¹³.

“ Getting Active Australia”¹⁴ notes clear evidence of benefits from physical activity to obesity prevention, cardiovascular disease prevention, diabetes prevention and control, the primary prevention of some cancers, injury prevention and control, and the promotion of mental health.

“The environment in which people work and live can permit or deter people from being physically active.It is essential to work beyond the health sector to change these environments to enhance opportunities for accumulating more activity as part of everyday lifestyle.... In particular, interventions through the transport sector (‘active commuting’) may represent important ways to increase incidental physical activity.”

In Australia, it is estimated that the direct gross costs (2006/7) to the Australian economy of physical inactivity are \$1.49 billion¹⁵

A 5% increase in the proportion of people doing 30 minutes each day of moderate activity could save around 600 Australian lives per year, with significant savings to the health system.¹¹

Economic modelling of an active travel neighbourhood (walking and cycling) estimates savings in public health costs of \$164 per dwelling per year¹²

The National Preventive Health Taskforce¹⁶ noted :

"One of the greatest public health challenges confronting Australia and many other industrialised countries is the obesity epidemic. Australia is one of the most overweight developed nations, with over 60% of adults and one in four children overweight or obese. The prevalence of overweight and obesity has been steadily increasing over the last 30 years”.

The taskforce recommendations included embedding physical activity and healthy eating in everyday life and making health the responsibility of all sectors.

“Facilitate the adoption of consistent town planning and general building design that encourage greater levels of physical activity, and reorient urban obesity-promoting environments through appropriate infrastructure investments. For example, develop state and municipal plans to re-orient public transportation and increase urban density, support farmers’ markets, build bicycle paths and footpaths, and protect open spaces.”

According to survey of Victorians reported in 2007¹⁷, cardiovascular disease is responsible for 17% of the total burden of disease (of which ischaemic heart disease and stroke are the major contributors) and almost 6% of adult Victorians have been diagnosed with diabetes. Only 64% of Victorian adults report undertaking sufficient physical activity to confer a health benefit and about one half of Victorian adults are overweight or obese.

Cleaner air: better heart and lung health

Transport emissions are a major source of ambient air pollutants affecting health, as well as a significant contributor to greenhouse gas emissions. Therefore planning that discourages motor vehicle use and encourages active transport presents a win-win for health and the environment.^{18,19}

Air pollution causes lung inflammation, worsens heart and lung disease, can trigger asthma attacks, increases the risk of chest infections, and contributes to premature death.²⁰

Motor vehicles are a major source of pollutants such as nitrogen oxides and fine particles in city airsheds. Fine particles are able to penetrate deep into the lung, and are strongly linked to adverse health effects.

Oxides of nitrogen not only have adverse effects on health directly, but also react with other pollutants to form ozone in the presence of sunlight. Ozone can affect lung function even in healthy people, and worsens respiratory conditions such as asthma (a condition that affects 1 in 10 Australians).

There is strong evidence that traffic –related air pollution can exacerbate asthma in children, so that placing residential developments, schools and preschools near busy roads has direct health implications.²¹

It has been estimated that in the year 2000, motor-vehicle-related ambient air pollution accounted for between 900 and 2000 premature deaths in Australia.²²

Healthy Building design

Well-designed energy efficient buildings with improved natural light and ventilation can deliver environmental benefits through reduced emissions and health benefits with increased productivity. Good indoor air quality is important for good health, as evidenced by problems such as “Sick Building Syndrome”.^{23,24}

A NSW Legislative Assembly Standing Committee on Public Works (2001) reported “The Committee learnt that poor indoor air quality and associated health problems like Sick Building Syndrome are costing hundreds of millions, if not billions, of dollars per year in lost productivity...To these costs need to be added the hidden health costs borne by workers and society through sickness and ill health. In addition to these health and productivity concerns, current building design and operation is consuming large chunks of energy in order to support this artificial environment. There are then significant operating costs associated with poorly designed buildings.”²⁵

Reducing health impacts from climate change

According to the World Health Organization, climate change is one of the greatest threats to public health and it will affect, in profoundly adverse ways, some of the most fundamental pre-requisites for good health: clean air and water, sufficient food, adequate shelter and freedom from disease.

The elderly, the very young and those with existing heart and respiratory disease have been shown to be vulnerable to the increases in ambient heat and other impacts. We can expect more extreme weather events, threats to food and water security, sea level rises, changes in vector-borne, food and water borne disease, exacerbation of air pollution, increases in aeroallergens, mental health and refugee health impacts.

The January 2009 heatwave in Victoria is a sobering example of what we may need to prepare for, with temperatures 12–15°C above normal for much of Victoria. The Chief Health Officer’s report of that week documents a 62% increase in mortality above expected, a 25% increase in metropolitan emergency cases for Ambulance Victoria, and a 12% increase in hospital presentations with an 8 fold increase in direct heat-related presentations.²⁶

When we designing our cities and transportation systems in a low carbon way, we are also helping to prevent future health impacts. Healthy urban design also needs to consider climate change adaptation – keeping our cities cooler and greener, reducing the potential for worsening urban heat island and air pollution. Under projected climate change scenarios for Australia, there are likely be more problems with urban smog and increasing deaths from high temperatures, particularly in the elderly and chronically ill, with increased stresses on our health care system.

Public open space, contact with nature: improved mental health

Urban living disengages people from the natural environment and this can be detrimental to health and wellbeing. Victoria is a leader in promoting the “Healthy Parks, Healthy People” philosophy and there are major literature reviews exploring the evidence for the health benefits of contact with nature, even if this is just the local park. There is evidence that contact with nature may be positive for health in a number of ways, including recovering from stress, improving concentration and productivity, improving psychological state, and encouraging healthy childhood

development.^{23,27} “Parks and other natural environments are a fundamental health resource, particularly in terms of disease prevention.”²⁸

In fact, it has been recommended that people living in towns and cities should have an accessible natural green space of at least two hectares in size, located no more than 300 metres (or five minutes walking distance) from home. “Beyond blue to green: the benefits of contact with nature for mental health and wellbeing” written for *beyondblue*, the national depression initiative outlines this evidence²⁹

Even when public spaces are not natural ones, they provide opportunities for recreation and facilitate social contact. Opportunities to increase physical activity and reduce social isolation are opportunities for improved mental health.

Well designed and connected, people-friendly cities for good physical and mental health

It is easier to be physically active if it is enjoyable, part of our everyday lives and how we get around. More walkable, bikeable public transport-oriented cities with less traffic pollution, noise and congestion, and more pleasant public space facilitates this. More energy efficient buildings, with features such as roof gardens, can also create more attractive living environments. Better planned, less sprawling settlements make it easier to get around and reduce social isolation.

We have an opportunity to shape our cities to secure a sustainably healthy future by reducing fossil fuel combustion and vehicle use, improving public transport, being more physically active, making healthier food choices, creating more energy efficient buildings and well designed connected cities and towns. Let us take up that challenge in Victoria and make our planning and environmental design processes a benchmark for reflecting real commitment to integration and prioritisation of health and well-being considerations. The evidence for action is there – now we need the political will and planning and legislative changes to really make it happen.

References

- (1) Australian Local Government Association, National Heart Foundation of Australia and Planning Institute of Australia, 2009. Healthy Spaces and Places: A national guide to designing places for healthy living. Planning Institute of Australia, Canberra.
<http://www.healthyplaces.org.au/site/>
- (2) National Heart Foundation of Australia (Victorian Division) 2004. Healthy by Design: a planner's guide to environments for active living
<http://www.heartfoundation.org.au/SiteCollectionDocuments/Healthy-by-Design.pdf>
- (3) New South Wales Department of Health 2009. Healthy Urban Development Checklist. A guide for health services when commenting on development policies, plans and proposals.
http://www.health.nsw.gov.au/pubs/2010/pdf/hud_checklist.pdf
- (4) World Health Organisation: Urban health. <http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/urban-health/activities/healthy-cities>
- (5) WHO Regional Office for the Western Pacific March 2000. Regional Guidelines for developing a healthy cities project
http://www.google.com.au/search?hl=en&rlz=1T4TSHN_enAU313AU349&q=who+healthy+cities+initiative&oq=who+healthy+cities+&aq=1&aqi=g6g-v4&aql=undefined&gs_sm=c&gs_upl=759710111101010101312131213-111
- (6) Urban Ecology Australia <http://www.urbanecology.org.au/eco-cities/>
- (7) Centre for Health through Action on Social Exclusion, Faculty of Health, Medicine, Nursing and Behavioural Sciences, Deakin University and Program Evaluation Unit, School of Population Health, The University Melbourne December 2006. Evaluation of the *Environments for Health* Framework.
<http://www.health.vic.gov.au/localgov/downloads/evaluation.pdf>
- (8) Capon T. The way we live in our cities MJA 2007;187:658-661
http://www.mja.com.au/public/issues/187_11_031207/cap11053_fm.html.
- (9) World Health Organisation 2008. 2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases
<http://www.who.int/nmh/Actionplan-PC-NCD-2008.pdf>
- (10) Garrard J. 2009. Taking action on obesogenic environments: Building a culture of active, connected communities
[http://www.health.gov.au/internet/preventativehealth/publishing.nsf/Content/0FBE203C1C547A82CA257529000231BF/\\$File/commpaper-obes-env-garrard.pdf](http://www.health.gov.au/internet/preventativehealth/publishing.nsf/Content/0FBE203C1C547A82CA257529000231BF/$File/commpaper-obes-env-garrard.pdf)
- (11) Giles-Corti B, Foster S, Shilton T, Falconer R. The co-benefits of investing in active transportation. NSW Public Health Bulletin 2010; 21: 122-127.
http://www.publish.csiro.au/?act=view_file&file_id=NB10027.pdf

- (12) Trubka R, Newman P, Billsborough D. The cost of urban sprawl – physical activity links to health care costs and productivity. Environmental Design Guide April 2010.http://www.scribd.com/full/51685634?access_key=key-2lz4t7k45hh42dszeovd
- (13) Frank LD, Andresen MA, Schmid TL. Obesity relationships with community design, physical activity, and time spent in cars. Am J Prev Med 2004;27:87-96.
[http://www.ajpmonline.org/article/S0749-3797\(04\)00087-X/fulltext](http://www.ajpmonline.org/article/S0749-3797(04)00087-X/fulltext)
- (14) Bauman A, Bellow B, Vita P, Brown W, Owen N. Getting Australia Active: towards better practice for the promotion of physical activity (summary). National Public Health Partnership, Melbourne, Australia March 2002.
http://www.nphp.gov.au/publications/sigpah/gaa_summary.pdf
- (15) Bauman A. et al. Rissel C., Garrard J., Ker I., Speidel R., Fishman E., 2008 Cycling: Getting Australia Moving: Barriers, facilitators and interventions to get more Australians physically active through cycling, Cycling Promotion Fund, Melbourne
<http://www.cyclingpromotion.com.au/images/stories/downloads/CPFHlthRpr08V3prf1.pdf>
- (16) Australian Government Preventative Health Taskforce. Australia: the healthiest country by 2020. Technical Report No 1. Obesity in Australia: a need for urgent action. Commonwealth of Australia 2009
[http://www.health.gov.au/internet/preventativehealth/publishing.nsf/Content/E233F8695823F16CCA2574DD00818E64/\\$File/obesity-1.pdf](http://www.health.gov.au/internet/preventativehealth/publishing.nsf/Content/E233F8695823F16CCA2574DD00818E64/$File/obesity-1.pdf)
- (17) Victorian Government Department of Human Services. Your Health: A report on the health of Victorians 2005. Melbourne Victoria. State of Victoria, Department of Human Services December 2005
http://www.health.vic.gov.au/healthstatus/downloads/yourhealth2007_part3a.pdf
- (18) Dennekamp M, Carey M. Air quality and chronic disease: why action on climate change is also good for health. NSW Public Health Bulletin 2010; 21(6):115-121.
<http://www.publish.csiro.au/paper/NB10026.htm>
- (19) Watts G. The health benefits of tackling climate change. Executive Summary. Lancet series on health and climate change. Lancet 2009.
<http://download.thelancet.com/flatcontentassets/series/health-and-climate-change.pdf>
- (20) Younger M, Morrow-Almeida HR, Vindigni SM, Dannenberg AL. The Built Environment, Climate Change, and Health: Opportunities for Co-Benefits. Am J Prev Med 2008;35:517–526
[http://www.ajpmonline.org/article/S0749-3797\(08\)00682-X/abstract](http://www.ajpmonline.org/article/S0749-3797(08)00682-X/abstract)

- (21) HEI Panel on the Health Effects of Traffic-Related Air Pollution. Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects. HEI Special Report 17. Boston, MA: Health Effects Institute, 2010
<http://pubs.healtheffects.org/getfile.php?u=552>
- (22) Commonwealth of Australia Bureau of Transport and Regional Economics (BTRE). Department of Transport and Regional Services, Working Paper 63: Health impacts of transport emissions in Australia: economic costs. 2005.
- (23) Frumkin H. Healthy Places :Exploring the evidence. Am J Public Health 2003;93:1451-1456. <http://ajph.aphapublications.org/cgi/content/full/93/9/1451>
- (24) Australian Government Department of Sustainability, Environment, Water, Population and Communities. Air toxics and indoor air quality in Australia. State of knowledge report 2001.
<http://www.environment.gov.au/atmosphere/airquality/publications/sok/chapter6.html>
- (25) NSW Legislative Assembly Standing Committee on Public Works .Report Sick building syndrome. Report No.52/07. April 2001.
[http://www.parliament.nsw.gov.au/Prod/parlment/committee.nsf/0/c73bb66b35386533ca256aa80007541d/\\$FILE/5207%20Sick%20Building%20Syndrome%20Report.pdf](http://www.parliament.nsw.gov.au/Prod/parlment/committee.nsf/0/c73bb66b35386533ca256aa80007541d/$FILE/5207%20Sick%20Building%20Syndrome%20Report.pdf)
- (26) Victorian Government Department of Human Services. 2009. January 2009 Heatwave in Victoria: an assessment of health impacts.
[.http://www.health.vic.gov.au/chiefhealthofficer/publications/heatwave.htm](http://www.health.vic.gov.au/chiefhealthofficer/publications/heatwave.htm)
- (27) Maller C, Townsend M, Pryor A, Brown P, St Leger L. Healthy nature healthy people: contact with nature' as an upstream health promotion intervention for populations. Health Promot Int 2006;21:45-54.
<http://heapro.oxfordjournals.org/content/21/1/45.full>
- (28) Maller C et al. 2008. Healthy Parks, Healthy People. The health benefits of contact with nature in a park context. A review of the literature. Second Edition March 2008.
<http://www.parkweb.vic.gov.au/resources/mhphp/pv1.pdf>
- (29) Beyondblue to Green.: benefits of contact with nature for mental health and well-being. Townsend M, Weerasuriya R. April 2010
http://www.beyondblue.org.au/index.aspx?link_id=105.898&oid=1820