

Auckland Regional Public Health Service

Rātonga Hauora ā Iwi o Tamaki Makaurau



Working with the people of Auckland, Counties Manukau and Waitemata

Auckland Regional Public Health Service

Cornwall Complex
Floor 2, Building 15
Greenlane Clinical Centre
Private Bag 92 605
Symonds Street
Auckland 1150

11th February 2009

Clerk of Emissions Trading Scheme Special Select Committee
Select Committee Office
Parliament Buildings
Wellington 6011

Submission on the Emissions Trading Scheme Review

1. Thank you for the opportunity for the Auckland Regional Public Health Service (ARPHS) to provide a submission to the Emissions Trading Scheme Review.
2. This submission represents the views of the Auckland Regional Public Health Service (ARPHS). ARPHS provides public health services for the three district health boards in the Auckland region (Auckland, Counties Manukau and Waitemata District Health Boards), with the primary governance mechanism for the Service resting with Auckland District Health Board. Please refer to Appendix 1 for more information on ARPHS. This submission represents the views of ARPHS and does not necessarily represent the views of the three District Health Boards.
3. ARPHS understands that all submissions will be available under the Official Information Act 1982, except if grounds set out under the Act apply.
4. The primary contact point for this submission is:

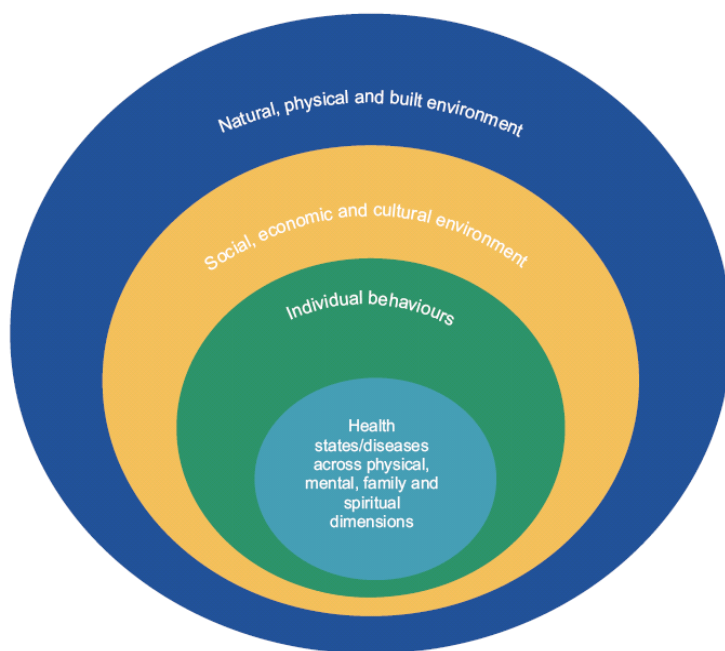
Dr Janine Manuel
Public Health Scientist
Healthy Environments Team
Auckland Regional Public Health Service
Private Bag 92 605
Symonds Street
Auckland 1150
09 623 4600 ext 27081
jmanuel@adhb.govt.nz

1.0 EXECUTIVE SUMMARY AND KEY RECOMMENDATIONS

5. Changes to the prevailing climatic conditions will impact on the entire population and climate variability is predicted to have wide ranging impacts for population health.
6. **There are already a wide range of health impacts that have been observed or are projected: health-related mortality and morbidity; health effects from increasing extreme weather events (floods, windstorms, fires, droughts); changes in distribution of vectors, animals, and plants, and potentially associated infectious diseases and allergic disorders; an increase in food and water borne diseases, as well as stresses on drinking water supply; and health effects from the interactive effect of temperature / humidity and air pollutants on air quality.**
7. In addition to the economic consequences of climate change New Zealand's policy response needs to consider:
 - the health impacts from climate change
 - the short, medium and long term consequences of policies that will influence health outcomes and the potential differing health outcomes for the New Zealand population at the macro and micro levels
8. New Zealand will be adversely affected by some of these issues and health and other sectors need to be planning mitigation and adaptation strategies. Action to mitigate and adapt to climate change should be implemented now and not delayed.

2.0 CLIMATE CHANGE IMPLICATIONS FOR PUBLIC HEALTH

9. Each person's health is affected by a wide range of factors (see figure below¹). Only some of those factors are within an individual's control. As a public health service ARPHS's focus is on those health issues that can be effectively and efficiently addressed through a population level approach.

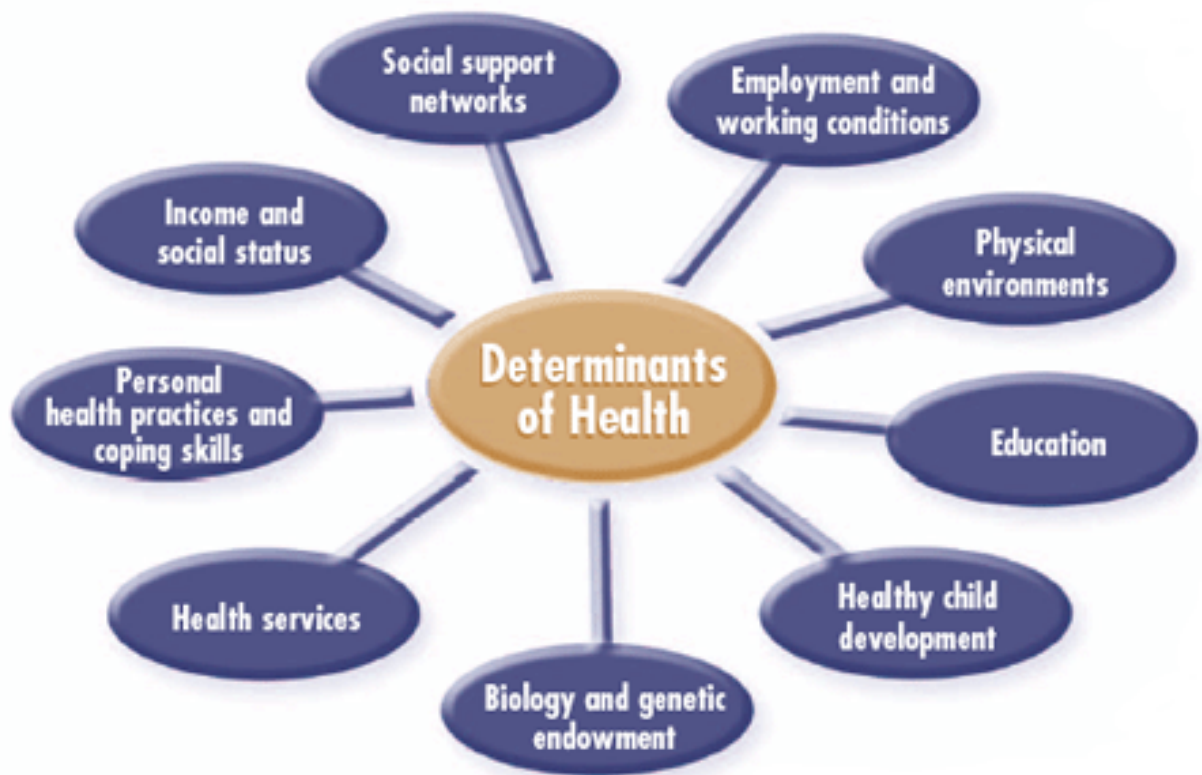


¹ Dahlgren and Whitehead (1991), Policies and Strategies to Promote Equity in Health, World Health Organisation

10. It has been estimated that less than 10 percent of the determinants of health are within the control of the health system.

“The remaining ninety percent are dependent upon decisions made elsewhere in the economy. It is these decisions which will be influenced by any public health policy which is to have meaningful outcomes”².

11. New Zealand’s health services (both public and private) are focused on treating ill health and measured on their ability to provide timely and effective treatment. The causes of that ill health are however, largely outside the health sector’s control as set out on the following illustration³ and it is desirable that all major decisions are considered for their health implications.



Generic Possible Health Impacts

12. Over time people will increasingly feel the effects of climate change on their health, jobs and housing, and the most vulnerable members of society are likely to be the hardest hit.
13. There is a wide range of health impacts that have been observed or are projected⁴ from climate change that may cause premature death or illness. These can be summarised as follows:

² Carruthers et al. 1999, Improving Health Improvement Programmes: The Early Lessons, Research Report 35, School of Public Policy, University of Birmingham, cited in Effective Strategies for Tackling the Wider Causes of Ill-Health.

³ Climate Change: Preparing for the Health Impacts, Health Canada, Accessible through <http://www.hc-sc.gc.ca/sr-sr/pubs/hpr-rpms/bull/2005-climat/2005-climat-6-eng.php>

⁴ Bulletin of the World Health Organization Print ISSN 0042-9686, Bull World Health Organ vol.78 no.9 Geneva 2000
Bulletin of the World Health Organization Print ISSN 0042-9686 Bull World Health Organ vol.78 no.9 Geneva 2000 Andrew K. Githeko; Steve W. Lindsay; Ulisses E. Confalonieri; Jonathan A. Patz

➤ **Tropical disease arrival in New Zealand:**

- Malaria, dengue, yellow fever, encephalitis and other tropical (vector borne) diseases may become established due to warmer weather allowing exotic mosquitoes e.g. *Aedes albopictus* and other fauna to survive and breed in New Zealand.
- History has shown that the arrival of new diseases has a disproportionate impact on populations that have had no prior exposure to the disease, e.g. Maori deaths from Spanish influenza were seven times those of the European population⁵. The introduction of new tropical diseases in New Zealand would pose a significant threat in view of the high proportion of residents with no protective antibodies.

➤ **Disease and ill health caused by extreme weather** (the prevalence of floods, windstorms, fires and droughts is expected to increase):

- Trauma deaths, injuries, enteric infections (due to disruption in sewage disposal and drinking water supplies) mental health problems, heat exhaustion, rodent-borne disease e.g. leptospirosis and poisoning caused by toxic substances leakage,
- Potential collateral damage to health sector infrastructure will also affect treatment provision.

➤ **Increases in food and waterborne disease:**

- Higher temperatures present a greater risk of contamination from poor food handling practices or issues such as cyanobacteria blooms affecting shellfish.
- Reductions in food quality due to increased numbers of helminths⁶, protozoa and viral and bacterial gastro-intestinal pathogens and increased contaminants from issues such as pesticide run-off.

➤ **Increases in respiratory diseases:**

- There is a complex interaction between extreme temperatures and the degree of air pollution. Concentrations of air pollutants are a function, in part, on temperature and humidity. Both short and long-term exposures to pollution (in particular ground level ozone and particulate matter) are associated with a large number of health effects (including premature death and increased illness).

➤ **Impacts on health from changes to food supply:**

- Increases in the price of foods such as grain⁷ resulting from drought.
- Reductions in the quantities of kai moana⁸ available caused by changes to the acidity of oceans.

⁵ New Zealand History On Line "Uneven Rates of Death – 1918 Influenza Pandemic
<http://www.nzhistory.net.nz/culture/1918-influenza-pandemic/death-rates>

⁶ A type of parasitic worm

⁷ See World Bank "Restoring Confidence in Global Grain Markets"

<http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/0,,contentMDK:21936922~pagePK:64165401~piPK:64165026~theSitePK:469372,00.html>

⁸ University of Chicago (2008, November 26). Ocean Growing More Acidic Faster Than Once Thought; Increasing Acidity Threatens Sea Life, <http://www.yaleclimatemediaforum.org/2008/06/covering-ocean-acidification-chemistry-and-considerations/>, and Aquatic Food Sources May Be Threatened By Rising Carbon Dioxide <http://www.sciencedaily.com/releases/2007/12/071210103939.htm>

➤ **Impacts on health service provision:**

- Increased prevalence of tropical diseases in countries overseas may lead to an increase in the numbers of viraemic travellers (persons carrying viruses in their blood) arriving in New Zealand and needing treatment.
 - All of the issues outlined above will impact on individuals. Many of these individuals will then require treatment from the health sector. Treating the consequences of climate change will reduce the funding available for other health service priorities.
14. The Paris heatwave of 2003 provides one example of the potential scale of impacts where it has been estimated that there were 14,800 excess deaths⁹ resulting from the extreme temperature.
15. The recently published Intergovernmental Panel on Climate Change Working Group II report Chapter 8 Human Health provides a more detailed summary of potential health issues¹⁰ and the Public Health Advisory Committee¹¹ and Ministry for the Environment¹² have also considered the issues for New Zealand.

Possible impacts on the Auckland Region

16. The Auckland Region contains 32.4 percent of New Zealand's population¹³ with the majority of that population concentrated in a relatively small metropolitan area around the Manukau and Waitemata harbours.
17. The Auckland Region is the entry point for 70% of travellers from overseas and The Ports of Auckland and Auckland International Airport handle 75% of New Zealand's imports¹⁴. In addition the Port of Tauranga's Metroport facility at Onehunga imported 110,000 (TEU¹⁵) containers¹⁶ in 2008. Sixty seven percent of those containers were devanned in the Auckland Region.
18. These factors mean that the Auckland region is likely to be disproportionately at risk from changes in communicable disease patterns and extreme weather events leading to flooding. Impacts on the Auckland region are likely to have consequential impacts on New Zealand's economic performance.
19. Within the Auckland region some parts of the population may be disproportionately impacted by climate change; these additional impacts are likely to be a reflection of issues founded on ethnicity and on socio-economic deprivation.

⁹ Dhainaut J-F, Claessens Y-E, Ginsburg C and Riou B (2003) *Unprecedented heat-related deaths during the 2003 heat wave in Paris: consequences on emergency departments*, PubMed Central Critical Care Forum accessible through <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=420061>

¹⁰ Accessible through <http://www.ipcc-wg2.org/>

¹¹ See National Health Committee – *The Health of People and Communities*, 2002 accessible through [http://www.phac.health.govt.nz/moh.nsf/pagescm/775/\\$File/Health+of+People.pdf](http://www.phac.health.govt.nz/moh.nsf/pagescm/775/$File/Health+of+People.pdf)

¹² See MFE Climate Change material accessible through <http://www.climatechange.govt.nz/physical-impacts-and-adaptation/> and *Climate Change: Potential Effects on Human Health in New Zealand*, 2001 <http://www.mfe.govt.nz/publications/climate/effect-health-sep01/effect-health-sep01.pdf>

¹³ 2006 Census

¹⁴ Committee for Auckland, *The Case for Auckland*, 2006, page 10 accessible through <http://www.competitiveauckland.co.nz/content/images/committee/Case%20for%20AKL.pdf>

¹⁵ TEU – Twenty Foot Equivalent Unit a standardised measurement for containers

¹⁶ Port of Tauranga Ltd Annual Report accessible through <http://www.port-tauranga.co.nz/images.php?oid=2515>

20. Auckland is home to both the least and most deprived populations in New Zealand¹⁷. People in the lowest income bracket spend a higher proportion of their income on non-discretionary expenses such as household fuel and power¹⁸ and high energy prices are already causing significant hardship in a high proportion of households¹⁹. These households are likely to be less able to make the necessary investments to adapt to climate change issues. Any inability to adapt to climate change has potential consequences for health service demand.
21. Potential climate refugees from low lying Pacific nations are likely to impact most on current Auckland Pacific residents. Pacific populations will potentially face pressure to provide accommodation for relatives forced to migrate and increased competition for necessities such as housing and employment.

3.0 SPECIFIC COMMENTS ON THE COMMITTEE'S TERMS OF REFERENCE

22. As a public health authority ARPHS does not believe that it is able to contribute to the Committee's deliberations across all its terms of reference. ARPHS does, however, believe that its views will be of assistance to the Committee in selected areas.

Require a high quality, quantified regulatory impact analysis to be produced to identify the net benefits or costs to New Zealand of any policy action, including international relations and commercial benefits and costs

23. ARPHS supports the need for a high quality, quantified regulatory impact analysis being produced for climate change policy options. Climate change differs from most issues that New Zealand is facing due to its gradual onset, widespread rather than localised effects and the reality that the most important effects will probably be indirect. Assessing the net benefits or costs to New Zealand of any policy action will be challenging. In terms of the health elements of climate change policies there will be health costs (either to society at large or individuals) including:

- Cost of treatment / costs of death
- Lost economic production caused by ill health
- Lost educational attainment caused by ill health
- Opportunity costs resulting from the need to re-build health infrastructure after extreme weather events

The majority of these costs are likely to be negative costs, but there also exists the potential for positive health gains from warmer winter temperatures.

24. ARPHS believes that it will be extremely challenging for those charged with undertaking the regulatory impact analysis to ensure that it meets the adequacy test contained in Treasury's current guidance material²⁰ and that an appropriate understanding of benefits and costs of policy actions over differing time periods is gained. Unless all relevant issues are considered as part of the regulatory impact analysis it is unlikely that optimum policy actions for New Zealand will be selected.

¹⁷Royal Commission on Auckland Governance research report – The Role of Local Government in Achieving Social Wellbeing for the Auckland Region
[http://www.royalcommission.govt.nz/rccms.nsf/0/1E73E883A8268158CC25755100146EF9/\\$FILE/Social%20Well-Being%20paper%20updated%20Feb%20202009.pdf?open](http://www.royalcommission.govt.nz/rccms.nsf/0/1E73E883A8268158CC25755100146EF9/$FILE/Social%20Well-Being%20paper%20updated%20Feb%20202009.pdf?open)

¹⁸ Statistics New Zealand Household Economic Survey, 2007 and 2004 <http://www.stats.govt.nz/store/2006/06/household-economic-survey-yejun04-hotp.htm?page=para004Master>

¹⁹ Creedy J, Sleeman C. Carbon Taxation, Prices and Welfare in New Zealand, Research Paper 937, University of Melbourne.

²⁰ Accessible through <http://www.treasury.govt.nz/publications/guidance/regulatory>

Health impact assessment

25. ARPHS believes that decisions around New Zealand's response to climate change issues are likely to have significant long term influence on the health of both individuals and communities. In addition some populations are likely to be exposed to increased environmental risk as a result of climate change.
26. ARPHS suggests that as part of the Committee's deliberations, and prior to the formulation of its recommendations, that a formal health impact assessment²¹ be undertaken. Health impact assessment is a formal process that assists policy development by providing a 'health lens' through which the impacts of policy choices can be assessed. Health impact assessments also allow policies to be fine tuned to maximise health benefits and to mitigate potential harm. Undertaking a formal health impact assessment will help support and inform the regulatory impact analysis. This will help ensure that the Committee's final report back to the House of Representatives can include a detailed assessment of the health implications from its recommendations.

Identify the central/benchmark projections which are being used as the motivation for international agreements to combat climate change; and consider the uncertainties and risks surrounding these projections

27. In NZ, NIWA²² states there is evidence demonstrating New Zealand is already experiencing climate change. This includes:
- Increasing temperatures: about 0.9 °C over the past 100 years.
 - Reduced frost frequency over most of the country: Canterbury and Marlborough experience about 20 fewer frosts per year now than in the early 1970s.
 - Retreat of major South Island glaciers: volume of ice in the Southern Alps reduced by almost 11% in the past 30 years.
28. It is now widely accepted by the scientific community that climate change is taking place, in some cases much faster than originally expected (e.g. ocean acidification²³). ARPHS has no reason to question current international scientific understanding of climate change or recent national projections, while accepting that there is uncertainty around projections. Resolving these uncertainties to the appropriate degree in an appropriate timescale and understanding the risks associated with action (and inaction) is desirable.

Consider the impact on the New Zealand economy and New Zealand households of any climate change policies, having regard to the weak state of the economy, the need to safeguard New Zealand's international competitiveness, the position of trade-exposed industries, and the actions of competing countries

29. It is prudent to consider the impact on the New Zealand economy and households of climate change policies. This is something that all governments should consider in their response to climate change. The risk from such an approach is that climate change response may become a 21st Century tragedy of the commons²⁴ whereby humanity suffers catastrophic consequences through governments and individuals acting solely in their own short term best

²¹ See "An Idea Whose Time Has Come

New opportunities for Health Impact Assessment in New Zealand public policy and planning" for further information on health impact assessment

<http://www.moh.govt.nz/moh.nsf/0/716C83DA11C4EA81CC25729100730347>

²² NIWA Climate Change Release <http://www.niwa.co.nz/news/mr/2008/2008-05-27>

²³ UNESCO media release "Scientists confirm oceans acidifying at an unprecedented rate" accessible through http://portal.unesco.org/en/ev.php-URL_ID=43690&URL_DO=DO_TOPIC&URL_SECTION=201.html

²⁴ Hardin G, 1968 *Tragedy of the Commons* accessible through

http://www.garretthardinsociety.org/articles/art_tragedy_of_the_commons.html

interests. Tragedy of the commons type issues are one area where Adam Smith's 'invisible hand' of the market²⁵ is unlikely to deliver the optimum outcome.

30. The New Zealand government has already shown leadership in dealing with similar tragedy of the commons type issues for the fishing industry through its quota management system. ARPHS believes that New Zealand and New Zealanders have an honourable reputation in international affairs and that the New Zealand government has the potential to lead by example in its response to climate change and also ensure that minimal short term damage to New Zealand's economic, social and environmental performance occurs.
31. New Zealand also has a clean green image that is seen as a valuable competitive advantage²⁶, there is a risk to New Zealand if the reality of New Zealand's emissions record damages this image. As the New Zealand Institute has cautioned, "New Zealand needs to manage its exposure to international consumer and government action". Any changes that damage New Zealand's economy are likely to have flow on effects to population health given the links between standard of living and health status²⁷.

Examine the relative merits of a mitigation or adaptation approach to climate change for New Zealand

32. New Zealand is responsible for about 0.1% of global carbon emissions²⁸, although New Zealand's rate of carbon emissions²⁹ is increasing, and in the period since 1990 emissions have increased by 63% (compared to a global rate of increase of 29%). These figures are somewhat at variance with New Zealand's clean green image and branding. While New Zealand's total contribution to global carbon emissions is not large, the reality is that all countries need to aim towards carbon neutrality, in order to slow or halt anthropogenic climate change.
33. New Zealand and all New Zealanders need to contribute to reducing the causes of climate change and to adapt to climate change. Although New Zealand may not be a large contributor to climate change, New Zealand is part of the problem and must also be part of the solution by providing strategies to reduce the causes of climate change. New Zealanders will also face the impacts of climate change and this will require an adaptation-based policy response.
34. In terms of wider policy action responses 'no regrets' or 'few regrets' adaptation strategies should be adopted in addition to any new initiatives. No regrets or few regrets strategies are those that bring benefits that more than cover costs even if currently projected climate changes do not fully eventuate³⁰. This approach would see those current policies and strategies that deliver collateral climate change benefits more actively pursued.

²⁵ Adam Smith, *The Wealth of Nations* accessible through <http://www.bibliomania.com/2/1/65/112/frameset.html>

²⁶ NZ Institute *Economics of Climate Change project*, accessible through http://www.nzinstitute.org/index.php/climatechange/paper/were_right_behind_you_a_proposed_new_zealand_approach_to_emissions_reductio/

²⁷ Overviewed in the Briefings to Incoming ministers from the Ministry of Social Development accessible at <http://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/corporate/bims/social-outcomes-bim-2008.pdf> and Ministry of Health accessible at http://www.beehive.govt.nz/sites/all/files/MoH_BIM.pdf

²⁸ UNDP Human Development Report 2007-08, Table 24 accessible through http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf

²⁹ Ministry of Economic Development, *Energy Greenhouse Gases Emissions 1990 – 2007 Report* accessible through http://www.med.govt.nz/templates/MultipageDocumentTOC_38356.aspx

³⁰ MFE Climate Change: *Potential Effects on Human Health in New Zealand* accessible through <http://www.mfe.govt.nz/publications/climate/effect-health-sep01/effect-health-sep01.pdf>

35. ARPHS's own role is expected to involve further consideration of how current activities such as vector borne communicable disease surveillance and public health emergency management preparedness may need to be strengthened to respond to climate change issues.
36. By way of an example of a 'no regrets' or 'few regrets' policy action with wider applicability, in Auckland the Employers and Manufacturers Association estimates that the cost of traffic congestion is \$4 billion per annum³¹ in costs for additional time and fuel.
37. Theoretically it would be possible to build additional roading capacity to reduce this cost. The reality is that a roading programme adequate to eliminate the majority of congestion would require substantial additional land for roads (not something that Auckland's population or geography make readily available), require substantial funding through general taxation, hypothecated funding from transport taxation, and local authority rates. Past road construction experience suggests that such new road construction is likely to release substantial latent demand. The twin pressures from latent demand³² and projected population growth in the region mean that it is probably impossible to build one's way out of current congestion.
38. For Auckland however, 43% of peak hour journeys are 5 km or less in distance³³ and as such could potentially be replaced by active transport modes such as walking or cycling. Policy action to help to support the attainment of (and ideally exceeding) the current New Zealand Transport Strategy³⁴ target for active transport of 30% in urban areas is likely to provide a far more cost effective (partial) solution to the cost of congestion than investing the same money in road building.
39. Such an approach would reduce the cost of congestion, reduce the demand for imported oil and would also help reduce the estimated 20% contribution to New Zealand's climate change emissions from transport.
40. From the health sector view point greater use of active transport will reduce the incidence (and costs) of some non communicable diseases such as obesity, type 2 diabetes and cardiovascular disease³⁵. The impact on traffic related air pollution (and associated respiratory illness) is likely to be disproportionately larger than the total volume of traffic reduced. Most of these shorter journeys are likely to be undertaken by vehicles with cold engines and there is evidence that cold start emissions are far higher than emissions from engines that have reached full operating temperature as noted in the Health and Air Pollution (HAPiNZ)³⁶ study.

³¹ See http://www.ema.co.nz/News_24_10_2003.htm

³² An analysis based on 2001 Census and vehicle registrations suggests that at this time there were approximately 312,000 vehicles that were available for non work purposes or not used during the day, see Auckland Regional Land Strategy 2005 accessible through <http://www.arc.govt.nz/plans/regional-strategies/auckland-regional-land-transport-strategy-2005.cfm>

³³ See ARTA Sustainable Transport Plan page 24 accessible through <http://www.arta.co.nz/assets/arta%20publications/2007/ARTA%20Sustainable%20Transport%20Plan%202006-16.pdf>

³⁴ See NZ Transport Strategy Page 6 accessible through <http://www.transport.govt.nz/assets/Downloads/NZTS-final-PDF.pdf>

³⁵ An overview of the links between car use, climate change and obesity can be found in Davis A, Valsecchi C & Ferguson M (2007) *Unfit for Purpose: How Car Use Fuels Climate Change and Obesity*, Institute for European Environmental Policy available through http://www.ieep.eu/publications/pdfs/2007/IEEP%20-%20Unfit%20for%20purpose_transport%20climate%20change%20and%20obesity.pdf

³⁶ Fisher G, Kjellstrom T, Kingham S, Hales S, Shrestha R, et al. Health and Air Pollution in New Zealand. A Research Project Funded by: Health Research Council of New Zealand for the Ministry for the Environment and Ministry of Transport. June 2007, accessible through <http://www.hapinz.org.nz/>

Consider the case for increasing resources devoted to New Zealand-specific climate change research

41. ARPHS believes that there is a need to increase resources devoted to New Zealand specific climate change research. The information presented earlier in this submission around health implications from climate change is based largely on global views and trends. The potential impacts on a localised area such as the Auckland region may be quite different from the global picture and to other areas of New Zealand.
42. ARPHS has recently commissioned its own research into climate change and the public health implications for the Auckland region. This research will help it to better understand the reality of the public health issues and risks as they apply to the Auckland region. Information currently available is not sufficiently detailed or specific to help inform ARPHS's own response to climate change or to enable ARPHS to better support and advise the region's district health boards and councils of health issues and risks that they need to consider in their forward planning.
43. Further research across a range of areas into specific issues may be necessary (e.g. methods to maximise the potential gains from capturing and utilising food waste biogas in landfills, or from diverting food waste from landfill into biogas plants or anaerobic digesters to capture higher levels of the methane produced). The need for specific further research, should however, not be used as an excuse to delay action.

Examine the relative merits of an emission trading scheme or a tax on carbon or energy as a New Zealand response to climate change

44. ARPHS does not have particular views around the relative merits of emissions trading schemes or taxes on carbon as a response to climate change. It can understand concerns around New Zealand's international competitiveness in terms of charging for carbon if competitors do not face similar charges.
45. In general it supports exonerates principles in dealing with the impacts of undesirable behaviours and practices. ARPHS does not believe that it would be equitable or good policy to exempt segments of the community from facing the impacts of their actions around carbon emissions, if the cost of such exemptions then falls on those sectors of the community that have neither profited from the emissions, nor have the ability to mitigate the costs of such emissions trading or carbon taxes.
46. Care will also need to be taken to ensure that any policy actions do not produce adverse effects that impact either on the New Zealand population or vulnerable populations elsewhere, for example, Oxfam³⁷ believes that the use of biofuels may result in land use changes that reduce naturally occurring carbon sinks (such as rain forest and wetlands) and , can cause a rise in the price of basic foodstuffs (Oxfam refers to a World Bank statement that the price of food has risen about 83% over 3 years). If biofuels are proposed as a response to climate change it will be important to ensure that biofuels achieve significant carbon dioxide reduction and do not replace food crops or destroy biodiversity such as rainforests³⁸.

³⁷ Accessible through <http://www.oxfam.org/campaigns/agriculture/biofuels/faq>

³⁸ Accessible through <http://www.i-sis.org.uk/BiofuelsBiodevastationHunger.php>

47. A majority (85%) of New Zealanders believe that the country has an obligation to provide what help it can to those overseas living in poverty³⁹, and that our altruistic attitude is one of the foundations of New Zealand's international reputation. It is therefore likely that New Zealanders will believe the Country has an obligation, if taking part in carbon-trading markets to ensure these are functional and fair in nature and do not compromise the living standards of vulnerable people.
48. Both emissions trading schemes and carbon taxes rely on sending price signals which will then induce behaviour change. People living in areas of high socio-economic deprivation potentially will be less able to respond to such price signals and adapt their behaviours. For example if you currently rely on a private vehicle to access employment (as an effective, efficient and economic public transport system isn't available) you may be faced with a choice of either cutting back on essential household expenditure on food and heating or relinquishing your employment. You are also unlikely to have the 'discretionary' income to adapt your living conditions by investing in technology (such as energy efficient appliances, housing or fuel efficient vehicles). Changes in living conditions driven by pricing signals from putting a price on carbon emissions may well contribute to increased demands for expenditure in the health sector.
49. Price signals may have perverse impacts and create risks for the wider population if for example price rises were to encourage some individuals and households to reduce water use below that necessary for hygiene purposes, there will be an increased risk of communicable disease in these households. There will also be an associated increased risk to the wider community from communicable disease originating in such households).

4.0 IMPACTS ON INEQUALITIES

50. Within the wider population, socially disadvantaged and marginalised groups (including Maori and Pacific peoples) have poorer health and suffer disproportionate health inequalities. The IPCC Human Health report⁴⁰ also concludes that those at greater risk from climate change related health issues include "the urban poor, the elderly and children..." Responses to climate change have the potential to increase or reduce the level of health inequalities suffered by these groups.
51. Internationally, climate change is recognised as an issue impacting on environmental justice. Environmental justice is concerned with the even distribution of environmental risk. Thus, environmental justice may be defined as equal access to a clean environment and equal protection from issues of environmental harm irrespective of race, income, class or any other differentiating feature of socioeconomic status. As such, ARPHS believes that any changes to New Zealand's climate change policies need to be made in the understanding of how decisions made may affect population health - with particular regard to environmental justice and issues that have the potential to improve or reduce the health outcomes for specific groups.
52. As strategies to adapt to climate change are formulated it will not be sufficient to evaluate their impacts on the population at large. It will also be essential that the strategies are evaluated on their impacts on those in the lower socio-economic deciles. It may also be necessary to put particular mitigation measures in place to limit disproportionate impacts of climate change adaption strategies on those least able to change their life styles and adapt.

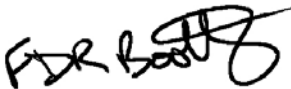
³⁹ NZAID Overseas Aid a Qualitative and Quantitative Study 2007 accessible at <http://www.nzaid.govt.nz/library/announcements/umr-overseas-aid-study-july07.pdf>

⁴⁰ Accessible through <http://www.ipcc-wg2.org/>

5.0 CONCLUSION

53. Thank you for the opportunity to provide comment on the issues covered by the Committee's terms of reference. ARPHS believes that climate change is a significant long term issue facing the Auckland region and New Zealand. Given the potential risks posed to public health by climate change, ARPHS believes that it is appropriate to take a precautionary approach to the issue i.e. national action should be taken to prepare for, as well as mitigate against, climate change.
54. ARPHS believes that it will be important to ensure that New Zealand is influential in global debates on actions to address the causes of climate change and, as stated above, internally New Zealand must act to adapt and mitigate the impacts of climate change on society.

Yours sincerely,



Frank Booth
Service Manager
Auckland Regional Public Health Service



Dr Denise Barnfather
Medical Officer of Health
Healthy Environments
Auckland Regional Public Health Service

Appendix 1 - Auckland Regional Public Health Service

Auckland Regional Public Health Service (ARPHS) provides public health services for the three district health boards (DHBs) in the Auckland region (Auckland, Counties Manukau and Waitemata District Health Boards), with the primary governance mechanism for the Service resting with Auckland District Health Board.

ARPHS has a statutory obligation under the New Zealand Public Health and Disability Act 2000 to improve, promote and protect the health of people and communities in the Auckland region. The Medical Officer of Health has an enforcement and regulatory role under the Health Act 1956 and other legislative designations to protect the health of the community.

ARPHS' primary role is to improve population health. It actively seeks to influence any initiatives or proposals that may affect population health in the Auckland region to maximise their positive impact and minimise possible negative effects on population health.

The Auckland region faces a number of public health challenges through changing demographics, increasingly diverse communities, increasing incidence of lifestyle-related health conditions such as obesity and type 2 diabetes, outstanding infrastructure needs, the balancing of transport needs, and the reconciliation of urban design and urban intensification issues.