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Janet Holmes
Committee Secretary
Standing Committee on Climate Change, Water, Environment and the Arts
PO Box 6021
Parliament House
CANBERRA ACT 2600

Dear Ms Holmes

Inquiry into climate change and environmental impacts on coastal communities

I refer to your letter of 2 April 2008 seeking a submission into the above inquiry from Emergency Management Australia.

Attached find a joint submission from the Attorney-General's Department's Emergency Management Australia and Critical Infrastructure Protection Branch.

The action officer for this matter is Peter Koob who can be contacted on 02 6256 4602.

Yours sincerely

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Director General

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Inquiry into Climate Change and Environmental Impacts on Coastal Communities

Submission from Attorney-General's Department

30 May 2008

Executive Summary

Reports by the Intergovernmental Panel on Climate Change (IPCC) and the Interim Report – *Garnaut Climate Change Review* of February 2008 generally indicate that climate change will lead to an increased frequency of natural disasters. The IPCC's Second Working Group Report *Climate Change 2007 – Impacts, Adaptation & Vulnerability*, issued in April 2007 predicted climate change impacts for Australia, including among other things, "increases and intensity of heatwaves, fires, floods, landslides, droughts and storm surges".

The Attorney-General's Department (AGD) understands, from the Department of Climate Change, that with over 80 per cent of the Australian population living in the coastal zone and some 25,000 properties within one metre of sea level, there could be more than $25 billion of assets at risk from sea level rise and increased storm surge.

The 2005 Australian Greenhouse Office report *Climate Change Risk and Vulnerability: Promoting an efficient adaptation response in Australia*, has highlighted the need to review current emergency management priorities and responses taking into account the additional risks posed by climate change, and to build on existing programs and responsibilities.

Indications are that climate change may increase the intensity, frequency, size and overall impact of bushfires. Recent experience has demonstrated that in general, bushfire seasons are becoming longer and drier. The 2007 Bushfire Co-operative Research Centre (CRC) report *Bushfire Weather in Southeast Australia: Recent Trends and Projected Climate Change Impacts*, suggests that this trend will continue for the foreseeable future with fire seasons starting earlier and the number of very high and extreme fire risk days increasing as much as 30 and 50 per cent respectively by 2020.

The Australian Government is committed to providing a safe and secure Australia and through Attorney-General's Department encourages an 'all agencies', 'all hazards' approach to the prevention or mitigation of disasters, preparedness for their impact, response to that impact, and recovery from their consequences.

The AGD currently provides funds for natural disaster programs and projects including for bushfire, natural disaster mitigation, relief and recovery payments and disaster risk assessments. The Department has also developed the Critical Infrastructure Protection Modelling and Analysis Program which is an all-hazards computer modelling approach to determine the consequences of disasters and threats to critical infrastructure.

These programs inform likely impacts of climate change on coastal and other areas of Australia and fund mitigation, prevention, preparedness and recovery activities for natural disasters.

Critical Infrastructure Protection Modelling and Analysis

The Critical Infrastructure Protection Modelling and Analysis (CIPMA) Program is the flagship of the Australian Government's Critical Infrastructure Protection (CIP) initiative. The AGD is the lead agency for CIP and manages the CIPMA program. AGD has engaged Geoscience Australia to lead the technical development of CIPMA. The CIP and CIPMA Programs could assist in informing issues which are also a focus of the Standing Committee's enquiry, such as:

- the impacts on infrastructure from coastal population growth;
- the impact of climate change on coastal area critical infrastructure to inform strategies to deal with climate change adaptation, particularly in response to projected sea level rise; and
- governance and institutional arrangements for the coastal zone.

In some parts of Australia, up to ninety per cent of critical infrastructure is privately owned or operated on a commercial basis. Other critical infrastructure is owned by the Australian Government or State and Territory governments. Examples of critical infrastructure that communities rely on include essential services such as electricity, gas, water, transport, health services, communications and finance and banking systems.

CIP brings together a significant number of existing strategies and procedures that deal with prevention, preparedness, response and recovery arrangements for disasters and emergencies. It is not a new discipline; rather, a blending of existing specialisations such as law enforcement, emergency management and national security and defence. CIP relies on the active participation of the owners and operators of infrastructure, regulators, professional bodies, industry associations, all levels of Government and the public to identify critical infrastructure, analyse vulnerability and interdependence to protect from and prepare for all hazards.

This approach is exemplified by the operation of the Trusted Information Sharing Network (TISN). This is a forum in which owners and operators of critical infrastructure share information in a confidential environment on issues which affect critical infrastructure. It is made up of a number of Infrastructure Assurance Advisory Groups (IAAG) for different sectors such a transport, banking and finance, energy and water. TISN could assist in bringing together key stakeholders to discuss the impact of climate change on critical infrastructure that coastal communities rely on as well as relevant governance and institutional arrangements.

In addition to TISN, the CIPMA Program is another key component of the Australian Government's cooperative efforts with business and State and Territory Governments to enhance the protection of critical infrastructure and strengthen the resilience of Australian society and its economy. The CIPMA Program is a computer based capability which uses an 'all hazards' approach to undertake computer modelling to determine the consequences of different disasters and threats (human and natural) in critical infrastructure. The extensive amount of data held under this capability could assist analysis of the impact of climate change on key infrastructure that coastal communities rely on each day. For example, the CIPMA capability has previously been tasked to assess the impacts of natural and human made disaster scenarios on the North West Shelf.

CIPMA modelling can highlight vulnerabilities of critical infrastructure and test the business continuity planning of industry and Government at all levels. Any analysis derived from CIPMA tasking is provided back to infrastructure owners to improve the resilience of their assets. The priority sectors for CIPMA at present are banking and finance, communications, energy and water with plans to capture other critical sectors in coming years.

A key principle of the CIPMA Program is that security and other measures have to be tailored to meet the needs of individual businesses, and be proportionate to the risk and capacity of the market to justify and fund the investment. This focus on private business reflects the reality, noted previously, that much of Australia's key infrastructure is privately owned and/or operated. It is crucial that Government at all levels engage these owners and operators early in the development of adaptation and mitigation strategies to address the impacts of climate change on this infrastructure.

CIPMA outputs are targeted to assist owners and operators of critical infrastructure to assess and respond to their calculation of these risks. This is reflected in the stakeholder driven tasking program for CIPMA in which individual business or Government bodies ask critical questions of the capability. These critical questions or 'tasking' are converted into scenarios which then provide crucial data regarding infrastructure weaknesses and sector interdependencies enabling Government and business to develop risk management strategies.

In cases when prevention is not possible or is uncertain, the information acquired through the TISN forums and the CIPMA tasks can be used to inform the preparedness planning of infrastructure owners and operators to increase the resiliency of their respective infrastructure assets in the event of a disaster. This in turn contributes to community resiliency by allowing the maintenance or quick resumption of critical functions during a disaster.

CIPMA's strengths are in modelling and analysing the impact of particular events on critical infrastructure. As such, it is best suited to support the prevention and preparedness planning phases of decision making in areas such as emergency management and critical infrastructure protection. Despite this focus, CIPMA's flexibility would allow it to make a more limited, but still useful contribution, in the response and recovery phases of emergency management by supporting ongoing planning. For example, if infrastructure was damaged due to a natural disaster within an area that had been modelled by CIPMA, the program would be able to run the scenario and determine the estimated recovery time of the infrastructure damaged or destroyed, the estimated cost of recovery and the flow-on effects of a critical infrastructure service disruption within and across sectors.

The CIPMA Program is a flexible decision making tool that can provide vital information for Government and business operators of critical infrastructure. This tool allows planners, operators and responders to gain a clearer picture of critical vulnerabilities and develop prevention and preparedness plans that will allow for an appropriate response and a quicker recovery in the event of a disaster, including from the impacts of climate change on coastal communities.

Natural Disaster Mitigation Program (NDMP)

The NDMP aims to develop communities which are better able to withstand the effects of floods, storms, bushfires, earthquakes, cyclones and other rapid onset natural disasters. Projects that qualify for funding include risk management studies, early warning systems, community awareness and readiness measures, property buy-back schemes and structural works to protect against damage eg. flood levees.

Current mitigation measures eligible under the NDMP, such as flood levees, asset protection (bushfire break) zones, cyclone shelters, disaster risk management studies, disaster warning systems, and community awareness measures, will remain valid with the increasing impact of climate change on coastal communities.

Bushfire Mitigation Program (BMP)

The Bushfire Mitigation Program is a national program aimed at identifying and addressing bushfire mitigation risk priorities across Australia. All three levels of government provide funding under the BMP. It funds construction and maintenance of fire trails and associated accessibility measures that contribute to safer communities better able to prepare for, respond to and withstand the effects of bushfires.

In April 2007, the Australian Government allocated $20 million in funding to the Bushfire Mitigation Program in the four years to 30 June 2011.

In the first three years of the BMP, $15 million was provided to the states and territories for almost 2,000 projects including the construction, maintenance or upgrading of fire trails, the construction of bridges, and some water supply and fire trail signage projects. The BMP funds the construction, maintenance and signage of effective fire trail networks.

Aerial Fightfighting

The Bushfire Co-operative Research Centre (CRC) report *The Effectiveness and Efficiency of Aerial Firefighting*, of August 2006 indicates that the use of ground firefighting resources with initial aerial firefighting support is the most economically efficient approach to fire suppression.

Through the National Aerial Firefighting Arrangements, originally established in 2003, the Australian Government is providing $41.2 million over four years until 2010-11 (approximately $10 million per annum) to assist with the seasonal establishment of a national fleet of specialised firefighting aircraft which can be deployed as needed to areas experiencing high fire risk and activity.

Funds are provided to the National Aerial Firefighting Centre Limited (NAFC) a joint company formed by the states and the Australian Capital Territory in association with the Australasian Fire Authorities Council Inc. The aircraft leased through these arrangements supplement existing state based capacity. The NAFC is responsible for the national coordination of resources and sharing of aerial firefighting equipment between

jurisdictions ensuring that the type, timing and location of aircraft is managed to address the immediate and/or seasonal fire risks across Australia.

All states and the Australian Capital Territory participate in the arrangements. The Northern Territory has decided not to be part of this national arrangement but continues to work with the states and the Australian Capital Territory to determine how best it might benefit from the scheme. Australian Government funding covers up to half the annual cost of leasing and positioning aircraft.

Natural Disaster Relief and Recovery Arrangements (NDRRA)

Through the Natural Disaster Relief and Recovery Arrangements (NDRRA), the Australian Government provides funding to alleviate the financial burden on states and territories and to support the provision of urgent financial assistance to disaster affected communities.

The NDRRA are automatically triggered when state/territory expenditure on an event exceeds the small disaster criterion of $240,000. The NDRRA is a demand driven contingency fund with payments subject to submission of claims for reimbursement by the states and territories.

The NDRRA covers a range of measures including personal hardship and distress assistance, and the restoration or replacement of essential public assets. The NDRRA is also able to provide funds to the states for concessional interest rate loans to small businesses, primary producers, voluntary non-profit bodies and needy individuals. In severe events, a community recovery package (comprising grants for small businesses and primary producers, and a community recovery fund) is also available to further help people, businesses and communities recover from devastating natural disasters.

The NDRRA Determination defines the types of natural disasters eligible for consideration under the NDRRA as "a naturally occurring, rapid onset event". It excludes: drought, frost and heatwave; events caused significantly by human activity; and human health issues such as epidemic.

Land use planning and building codes

One of the recommendations from *Natural Disasters in Australia, reforming mitigation, relief and recovery arrangements, 2002* report to the Council of Australian Governments provides:

"Heads of Government of the Commonwealth, States and Territories, and the President of the Australian Local Government Association (ALGA) agree to endorse and jointly implement the following commitments to reform the way Australia manages natural disasters and achieve safer, more sustainable communities and regions in economic, social and environmental terms: take action to ensure more effective statutory State, Territory and Local Government land use planning, development and building control regimes that systematically identify natural hazards and include measures to reduce the risk of damage from these natural hazards."

Since then considerable effort by the Australian Building Codes Board has been directed to incorporating natural hazard and specific bushfire material into building codes and guides. The Australian Building Codes Board's Strategic Plan for 2007-2011 specifies climate change and sustainability issues for incorporation into building codes and land use planning. Emergency managers have worked closely with the Board in reforms to date and will continue to do so.

As part of the Council of Australian Governments *National Climate Change Adaptation Framework*, the Local Government and Planning Ministers Council is coordinating a national report on the extent to which planning and development systems are responsive to the impacts of climate change. This complements the National Coastal Vulnerability Assessments being undertaken under the Adaptation Framework.

The Ministerial Council for Police and Emergency Management – Emergency Management is working closely with the Local Government and Planning Ministers Council to facilitate a ready exchange of emergency management information and inputs to planning and local government issues against a background of predicted impacts from climate change.

Risk assessment work through Australian Emergency Management Committee (AEMC)

The 2002 report to the Council of Australian Governments (COAG) *Natural disasters in Australia: Reforming mitigation, relief and recovery arrangements* advocated a 'fundamental shift in focus towards cost-effective, evidence-based disaster mitigation'. The report stated that in Australia there was a 'lack of independent and comprehensive systematic natural disaster risk assessments, and natural disaster data and analysis.' One key solution proposed to address this gap in our knowledge was to develop and implement a national programme of systematic and rigorous disaster risk assessments, which are applicable to all areas of Australia, in particular coastal areas.

In response, the National Risk Assessment Framework for Sudden Onset Natural Hazards (not yet a public document) has been developed by the National Risk Assessment Advisory Group (an Australian Emergency Management Committee working group). This framework focuses on risk assessment for sudden onset natural hazards to underpin natural hazard risk management and natural hazard mitigation.

The natural hazards covered are those defined in the report to COAG: bushfire, earthquake, flood, storm, cyclone, storm surge, landslide, tsunami, meteorite strike and tornado. The aim of the framework is to establish a nationally consistent approach to the assessment of risk across Australia down to local level. Guidelines which will form the basis for national implementation of assessments under this framework are being drafted and will be submitted to the Australian Emergency Management Committee in early 2009.

These guidelines will augment the existing minimum standard for the Australian Standards *Risk Management Standard AS/NZS 4360*. They will be gradually implemented across Australia during a period to be agreed by the Australian Emergency Management Committee.

The COAG Working Group on Climate Change and Water is establishing a nationally cooperative approach to long-term climate change adaptation, including the development of action plans to implement the National Climate Change Adaptation Framework. The Director General of EMA is leading the disaster management and emergency services National Adaptation Research Plan drafting team that will propose research priorities.

References

- Australian Greenhouse Office. 2005. Climate Change Risk and Vulnerability: Promoting an efficient adaptation response in Australia
- Bureau of Transport Economics. 2001. Economic Costs of Natural Disasters in Australia, Report 103
- Bushfire Co-operative Research Centre. 2007. Bushfire Weather in Southeast Australia: Recent Trends and Projected Climate Change Impacts
- Bushfire Co-operative Research Centre. 2006. The Effectiveness and Efficiency of Aerial Firefighting in Australia.
- Council of Australian Governments. 2007. National Climate Change Adaptation Framework.
- Department of Transport & Regional Services. 2002. Natural Disasters in Australia: Reforming mitigation, relief & recovery arrangements – A report to the Council of Australian Governments by a high level official's group.
- Emergency Management Australia. 2002. Planning safer communities: Land use planning for natural hazards.
- Garnaut, R. 2008. Interim Report – Garnaut Climate Change Review.
- G.Elsworth & K.Anthony-Harvey-Beavis. 2007. National Local Government Emergency Management Survey. ALGA
- Intergovernmental Panel on Climate Change. 2007. Climate Change 2007 – Impacts, Adaptation & Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the IPCC
- Standards Australia. 2004. Risk Management Standard AS/NZS 4360.
- United Nations Development Program. 2007. Human Development Report 2007/2008. Fighting climate change: Human solidarity in a divided world
- http://www.ema.gov.au/agd/ema/emainternet.nsf/Page/Communities_Natural_Disasters_NDMP_About_the_NDMP