



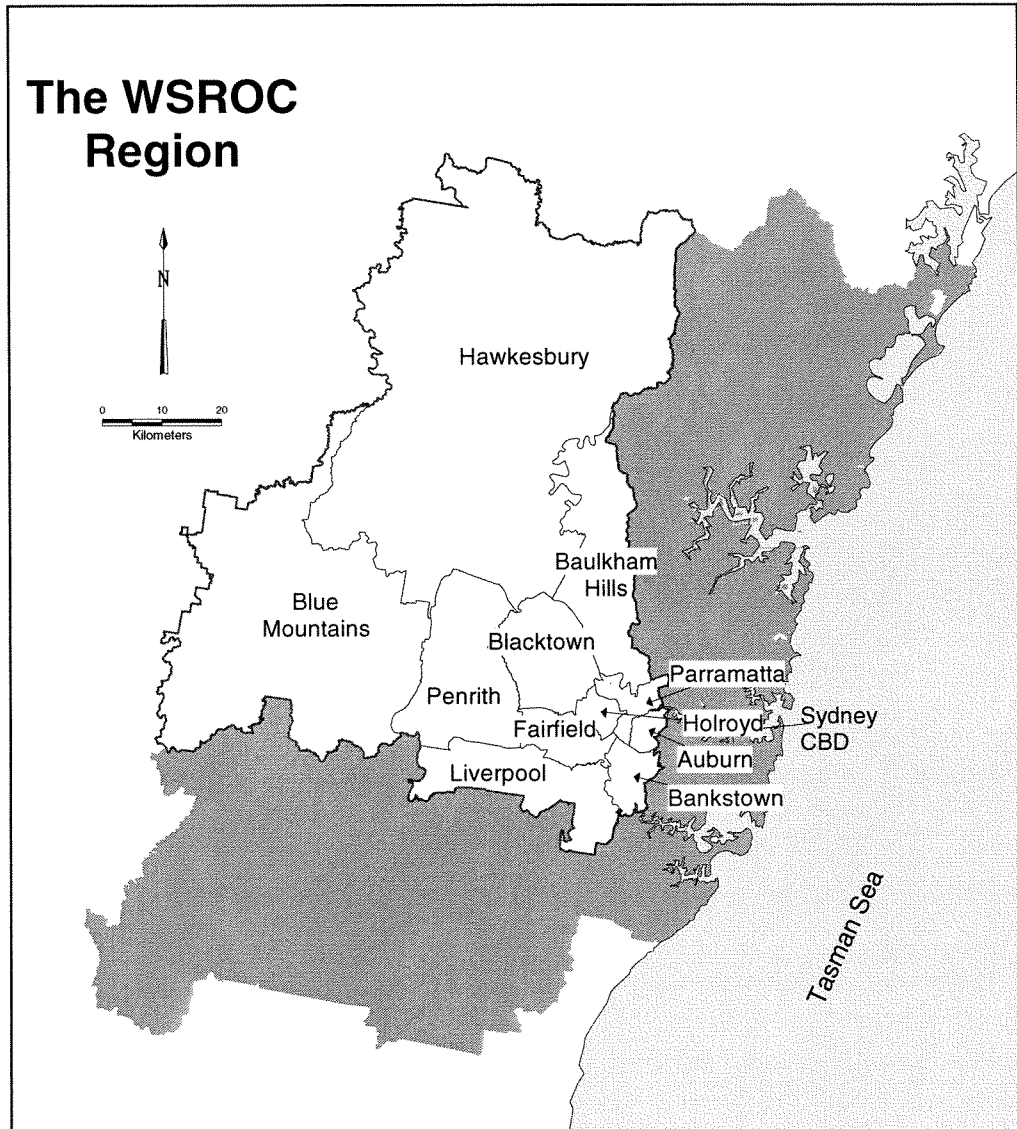
**Submission on the Inquiry
into
Sustainable Natural Resource
Management with regard to Climate
Change**

**by the NSW Legislative Assembly Standing
Committee on Natural Resource Management
(Climate Change)**

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Prepared by the

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SUBMISSION TO THE INQUIRY NATURAL RESOURCE MANAGEMENT AND CLIMATE CHANGE

1. INTRODUCTION

WSROC welcomes the opportunity to provide comment to this Inquiry.

The impact of Climate Change on Natural Resource Management (NRM) is a crucial issue for local government in Western Sydney, given the land and natural resources that councils either directly control or regulate through land use planning and development control.

The uncertainties that anticipated changes to Australia's and the Region's climate create in planning and decision-making for land use and resource management are a major concern for Western Sydney Councils. Planning for a sustainable balance between development and conservation is difficult enough within a stable climate context. Achieving sustainability under an unstable, or evolving climate regime is an even bigger challenge.

It is important to note that local government has been required to demonstrate sustainability in its land management practices since the mid 1990s, a requirement that is to date not explicitly placed upon either State or Federal governments.

Accordingly it is appropriate that this Inquiry consider recommending that sustainability, and sustainability reporting, be a requirement of all NSW government planning and policy development.¹

To date the focus of public attention on climate change has largely been limited to a few iconic natural resources (i.e. the Great Barrier Reef, Kakadu National Park), agricultural production in rural areas and coastal development. While not diminishing the importance of these areas and impact of climate change upon them, it should be remembered that most Australians live in urban areas. The Western Sydney Region alone is home to 11% of the nation's population. The home environments of the population, and their response to changes to these environments, will be crucial to successful climate change adaptation by the Australian community.

Therefore it is recommended that this Inquiry carefully investigate the impact of climate change upon urban environments away from the coastline. Natural areas and resources (such as water, biodiversity, air quality) are key features of urban environments and the management of these resources will have an impact upon the quality of life for the population and the ability of the community to positively adapt to climate change.

As you would be aware, the Western Sydney Region is earmarked for significant development and population growth over the next 25 years. The Region's natural areas and resources are already severely compromised by the current level of development and the anticipated growth can only worsen this, if not managed sensitively. As is discussed in detail below, recent changes to the planning system in NSW and also recent decisions regarding the impact on flora and fauna communities of new residential growth in the Region, do not inspire confidence that the required sensitivity will be demonstrated. Many Western Sydney

¹ With respect to Sustainability goals and reporting by NSW government instrumentalities, the Standing Committee may wish to refer to WSROC's submission to the Public Accounts Committee Inquiry on this issue in October 2004, which broadly recommended detailed analysis of sustainability reporting processes. In 2007, the NSW State Government should be in position to implement appropriate sustainability goals, actions and reporting on this issue.

urban environments are the result of “scorched earth” clearing followed by large proportions of land covered in asphalt, concrete or building development with little revegetation. Currently there are no mechanisms to ensure that mature trees and vegetation communities are retained, which would assist in creating more liveable urban environments, ameliorate climate change impacts and conserve biodiversity. Development practices need to improve and the NSW Government should develop and implement new standards.

2. DEVELOPMENT PRESSURES ON WESTERN SYDNEY

Western Sydney is growing rapidly in terms of both land development and population. Significant pressure to further develop many areas of Western Sydney LGAs is currently coming directly from the NSW State Government. Under the Metropolitan Strategy and sub-regional planning processes, Councils are expected to identify sufficient housing lots and employment sites to meet pre-determined targets.

Development pressures on the Region tend to limit Local Government’s capacity to implement (or incorporate into new development plans) appropriate and needed NRM impact mitigation measures under current (known) climatic conditions, let alone the anticipated impact of climate change impacts.

As the knowledge of the degree of climate change is still developing, and understanding of the impacts of these changes on natural systems is an additional source of uncertainty, a precautionary approach would be appropriate in policies and regulation for the conservation of natural resources. Land development planning and regulation should accordingly be characterised by flexibility and responsiveness both to local circumstances and emerging climate information and management practices innovation.

It is WSROC’s view that:

- ~ recent changes to the planning system have imposed greater rigidities and spatial blindness to local conditions, particularly the introduction of the standard LEP template;
- ~ the potential impacts of new development on natural resources and environments is inadequately considered in current NSW government land development processes;
- ~ this concern is heightened by the increasing uncertainty arising from climate change scenarios; and
- ~ the over-riding or suspension of Environmental Impact Assessment processes that recent amendments to the Environmental Planning and Assessment Act (1979) allow, is a retrograde step in regard to NRM at a time when careful consideration and information gathering is required to manage for changing climatic conditions.

Recommendations:

R1. Environmental sustainability should be a goal in the legislation of all NSW Government activity. Further, the identification of environmentally unsustainable practices, strategies to address these and appropriate action taken should be monitored and reported upon in all NSW Government Planning processes.

R2. More specifically, the position of Sustainability Commissioner, initially proposed to oversee the Sydney Metropolitan Strategy should be re-created and appropriately resourced. The Commissioner should be empowered to provide an independent assessment of environmental sustainability in land development for the Sydney Metropolitan region and be an interface with the community on this issue.

R3. The NSW planning system should be reformed to reflect a sustainability framework, and include the identification of appropriate goals, strategies and monitoring.

3. BIODIVERSITY

The two principle concerns regarding biodiversity conservation in the context of climate change are that:

- ~ existing areas zoned as high biodiversity value may degrade (ie lose flora and / or fauna as a result of climate intolerance, a changed bushfire regime [see below], weed invasions, etc.). Changes to temperature and rainfall patterns may impact vegetation community patterns, particularly in the west of the Western Sydney Region where cool climate and wetland communities currently exist. Hence there is an imperative to better identify, understand and preserve these communities where possible; and
- ~ other areas not currently considered of most biodiversity value may consequently become of relatively greater biodiversity value, requiring reassessment and/or rezoning.

Councils are concerned both for any degradation of existing conservation values and also the capacity, under the current (amended) planning and regulation system, for them to re-assess conservation values and implement appropriate management strategies.

Currently most Councils fund bushland works and other environmentally related works through short term grant programs, a process which is inherently unsustainable. In some instances, Councils are forced by financial constraints to implement management regimes that are not optimal for biodiversity conservation. This can include the zoning of high biodiversity value areas as open space, in order that they can be managed within available resources.

In order to maximise the potential for biodiversity conservation under changing climatic conditions, greater emphasis may be required with respect to linkages between communities (green corridors) and seed banks. This implies either land acquisition or rezoning.

It is of note that the recent changes to the NSW planning regulations covering the use of s94 funds, specifically rule out land purchase for conservation, indicating councils must rely upon zoning for this purpose.

Recommendations:

R4. The NSW planning system should be reformed to deliver greater, not lesser, flexibility for local government in the re-assessment and designation of land as high conservation value;

R5. In order to take advantage of this flexibility there is a need for significant new resources to monitor and review land conservation status, particularly in the LGAs where development pressure is for change of land use from rural or conservation uses to residential and urban development; and

R6. There is a need for more resources and enhanced partnership development for research and modelling of potential impacts upon flora and fauna communities that are identified as most vulnerable to temperature and rainfall variations.

4. FLOODING

Current catchment management strategies are not informed by climate change predictions. Predicted flood heights and areas of inundation for significant rainfall events and consequent catchment yields are based on past experience and extrapolations, not upon changed climatic conditions.

Some LGAs are already regularly affected by flooding and these impacts are likely to worsen under the anticipated climate change scenarios. These impacts could be in the form of increased risk of loss of life, damage to property, required relocation of improvements and damage / changes to riparian vegetation communities (see biodiversity above).

The urbanisation of catchments (particularly as a result of urban consolidation) is increasing the proportion of land that is impervious to water (i.e. asphalt, concrete and buildings) which is increasing runoff into watercourses, increasing the risk and extent of flash flooding and causing erosion. These development practices are also failing to take into account the overland flow drainage patterns that characterise large low lying areas of Western Sydney, which also contribute to local inundation during extreme weather events.

Accordingly, catchment yield modelling under extreme storm events for anticipated changed climatic conditions needs to be carried out. It is uncertain whether storm frequency data is either available and/or has been analysed.

While this information and modelling is being collected and conducted, (i.e. in the short to medium term - 5 to 10 years), conservative / precautionary policies regarding development in flood prone or potentially flood prone areas need to be pursued. Under the pressures for development noted above this is difficult without research and modelling data.

The predicted rises in sea levels and more frequent tidal surge events could also increase the frequency and/or impact of flooding and / or local inundation in parts of Western Sydney. This carries a risk to property and potentially can change littoral vegetation communities and their resident fauna.

On this issue it is very difficult to make predictions with any degree of confidence, as this relies upon modelling of various polar ice melting and sea water expansion scenarios. Accordingly, a wise policy would be to apply a conservative and precautionary approach, again in the face of development pressure, particularly for river frontages.

Recommendations:

R7. There is a need for review of flood height predictive tools and modelling of catchment yields and flooding/inundation patterns under a range of likely climate change scenarios in order to inform development planning for flood prone, or likely to be flood prone areas;

R8. Support should be provided to local government to research and plan for local area flooding patterns that are likely as a result of redevelopment and climate change;

R9. The NSW planning system should be reformed to support Local Government in regulating development for the purposes of minimising flood damage risk under the anticipated changed climatic conditions; and

R10. There is a need for modelling of tidal river/creek systems under climate change scenario(s), including changes to littoral vegetation community patterns.

5. CATCHMENT WATER YIELDS

Outside of flooding events, anticipated climate change scenarios indicate overall reduced catchment water yields. This would likely lead to impacts (both “+” and “-“) to riparian communities, in-stream biodiversity and overall reduced water availability for irrigators and other current water extractors in the Western Sydney river and creek system.

In combination with changes to flooding patterns, changes in rainfall and catchment yields can also alter the wetting regime of vegetation communities away from streamlines and so significantly alter floristic composition resulting in a modified ecosystem (see biodiversity above).

Better understanding of the likely impact of these changes is required in order for Councils to manage natural areas and vegetation communities in these catchments.

In the context of these uncertainties, Councils are also concerned that the BASIX scheme may be inadequate in reducing water use in new developments and in redevelopments. As it is not known whether the arbitrary reductions in water use required for BASIX compliance will be sufficient to ensure sustainability under changed climatic conditions, it would be prudent to facilitate or encourage local initiatives to secure above-BASIX savings where local innovation is developed².

The planning and regulation system should facilitate the development and adoption of continuous improvement in standards and “best practice” rather than a minimalist approach based on basic, arbitrary levels. The system should encourage developments to “compete” on resource use and sustainability, as development standards and community expectations change.

The long term maintenance of Water Sensitive Urban Design (WSUD) and Stormwater Retention initiatives is a major concern. WSUD and Stormwater retention decentralises the management and maintenance of water, which in itself has numerous environmental benefits (i.e. biodiversity and vegetation cover) as well as better utilisation of available water.

However there is currently a lack of skills and resources for construction and maintenance of these schemes. Stormwater levies are collected by only some councils and WSUD is reliant upon agreement and cooperation with developers.

It should also be noted that NSW is far behind other states in the promotion and resourcing to implement WSUD.

Recommendations:

R11. There is a need for data collection, analysis and modelling of water yields for the catchments in the Western Sydney Region (i.e. Hawkesbury Nepean catchment, the Parramatta River catchment and the Georges River catchment) that are likely due to various climate change scenarios; and

R12. Following from R 11, there is a need for re-assessment of water extraction policies for Western Sydney river and creek systems. Such a re-assessment should be undertaken through a partnership between industry and environmental groups, local councils and research institutions.

² This is apparent in recent initiatives of a number of councils in the Sydney Metro Region which have sought to raise the bar through development approval guidelines.

6. AGRICULTURE IN THE WESTERN SYDNEY BASIN

Crop failures and/or decreased yield for some agricultural products in NSW are now considered likely impacts under all climate change scenarios. Accordingly, it is important that agricultural yields in Western Sydney (which is likely to be less affected than areas west of the Great Dividing Range) are retained, diversified and even increased to compensate for more severe impacts on agricultural production in areas outside of the Region.

In this context there is a significant concern that the NSW planning system and policy (particularly the NSW State Plan and Sydney Metropolitan Strategy) have no mechanisms to retain land in agricultural production in the face of short-term gains that can be secured from redevelopment. (This inadequacy in policy and regulation could be argued to apply for biodiversity values as well as agricultural ones.)

It is notable that in other major city and hinterland regions (i.e. London, Brisbane, Melbourne), a precautionary and sustainability principle is being applied in agricultural production and land management policies, such as to retain and/or expand agricultural production on the basis of surety of supply, energy efficiency of distribution and produce quality (i.e. 'freshness').

Major issues in Western Sydney regarding climate change relate to management of the peri-urban fringe. Initiatives such as the Sydney Water Recycled Flows project and recent studies by the Irrigation Futures Cooperative Research Centre on South Creek, are contributing to addressing some issues. However, current studies underway are unlikely to be sufficient to understand fully the issues, nor are any measures for sustainable long term water use yet being taken. There is a lack of long term planning in this zone, though it is understood that a Rural Lands Review is to be conducted in the future.

However, despite the lack of strategic policy direction regarding agriculture in the Sydney basin, significant regional development strategies and precinct plans are being developed as part of the Growth Centres Strategy and these have been undertaken with minimal consultation with local government or investigation into potential impacts.

A number of negative impacts are anticipated on the market garden industry, potentially resulting in the loss of an incredibly valuable source of fresh food supply to the Sydney basin. Whilst it is acknowledged that the productivity of agricultural lands could be increased, planning reforms will still be required to balance competing land uses.

Recommendations:

R13. The proposed Rural Lands Review for the Sydney basin should include the specific task of identifying strategic measures to retain and improve agricultural production of rural lands;

R14. The NSW Government should develop a specific policy and accompanying incentives for the retention of agricultural land and agricultural production in the Sydney Basin. It is WSROC's view that this should take the form of an urban growth boundary. This policy and incentives should be inserted in the Sydney Metropolitan Strategy, as part of a sustainability framework for this Strategy and be regularly reported upon against goals for sustainable agriculture in the Region;and

R16 Following from the discussion above on catchment water yields and uses for water extracted from the river system, there needs to be a reassessment of priorities for water extraction for various uses, in particular water extracted for playing fields and agricultural irrigation.

7. BUSHFIRE FREQUENCY AND INTENSITY

Changes in bushfire intensity and frequency ultimately change flora and fauna composition, as well as posing greater risks to life and property. It is likely that bushfire risks will be worsened by climate change. However there are existing principles in place, under the NSW Environmental Planning and Assessment Act and significant research has been done into appropriate forms of development adjacent to fire prone areas. Some councils (i.e. in our region Blue Mountains City Council in particular) have already imposed more stringent restrictions on development adjacent to bushland in response to recent significant bushfire events.

The inherent (or perceived) conflict in the community between the need to minimise risk to life and property and preserve conservation values is likely to be exacerbated by increased temperatures and reduced rainfall.

It is of concern to Councils managing native bushland areas that more aggressive management practices may be expected of, or imposed upon, them, which would unnecessarily compromise biodiversity and general conservation values.

Outside of risk management issues, Councils anticipate that there would need to be a greater investment in fire fighting resources and in coordination between agencies to manage fire in natural areas.

Recommendations:

R17. There is a the need for more research and modelling of bushfire intensity, frequency and behaviour under anticipated changed climatic conditions, which should be developed in partnership with local government, research institutions and other stakeholders; and

R18 There is likely to be a need for greater investment in risk management practices, fire fighting resources and cooperation / coordination between agencies which should be facilitated and resourced by the NSW Government.

8. TEMPERATURE RISES AND THE BUILT ENVIRONMENT

Data collected and analysed by Greening Australia shows a significant warming of the local climate in Western Sydney in terms of increased frequency of high temperature days over the past 50 years (see Greening Australia's submission to the Growth Centre Commission; 2005). This data shows a 200% increase in number of days per year over 35^o C and an average summer maximum temperature increase of 2^o C.

These changes are attributed (by Professor Andy Pittman, UNSW) to the loss of tree cover and the creation of large areas of heat absorbing surfaces and buildings in Western Sydney over this period. This phenomenon is effectively an "urban heat island effect" (or perhaps more appropriately a "suburban heat island effect") that has been widely recognised and measured in cities across the world.

These significant temperature changes will be exacerbated by climate change / global warming. International research has identified significant health impacts of higher average temperatures and particularly the occurrence of extreme temperature days.

The health and energy consumption impacts of higher temperatures could be ameliorated by large scale revegetation programs and the development of regulation measures that improve the temperature environment in urban areas. Design and materials used in houses and other buildings could be better developed, promoted and regulated.

However the capacity of local councils to affect these changes is limited by the current planning system and available funds. Revegetation and local environment improvements are expensive and currently unbudgeted, apart from the limited "Greening Western Sydney" program. The BASIX scheme (see above) operates through stipulating 'maximum' impositions on development rather than minimum requirements that councils can vary according to local circumstances. There is a lack of flexibility for councils to impose appropriate conditions on development to effectively ameliorate these impacts.

Recommendations:

R19. There is a need for detailed research and modelling of the regional level temperature and rainfall changes that could be anticipated under climate change scenarios. Greening Australia and the University of NSW have already begun this task, having completed initial data analysis and proposing new research on the Urban Heat Island effect in Western Sydney. The NSW government and local councils should consider partnering with these organisations, including the provision of funding.

R20 Significant financial resources need to be devoted to modifying urban environments to both limit greenhouse gas production and ameliorate impacts for urban populations. To effect this there needs to be a partnership between State and Federal governments providing research and funding for local level interventions.

9. WHOLE OF GOVERNMENT APPROACH

As is apparent from the above, there is clearly both the imperative (given the seriousness of the climate change issue) and the practical necessity for a true Whole of Government Approach to managing development and natural resources in the context of anticipated climate change.

This approach must include an integration of appropriate reforms of the Environmental Planning and Assessment Act and the NSW planning system generally, particularly LEPs and changes to the BASIX scheme. These changes need to be accompanied by the introduction of active support and incentives from both the State and Federal Governments.

It is of great concern to Western Sydney Councils that recent NSW planning reform, policy developments and changes to executive powers of government, seem to be counter to these goals, particularly regarding the new LEP template, which provides 'surety' to developers rather than facilitating responsiveness for local government.

Recommendations:

(See particularly recommendations 1 – 5, 13, 14, 18, 20)