PALERANG COUNCIL

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The Secretary
Standing Committee on Climate Change, Environment and Water
GPO Box 1020
CANBERRA CITY ACT 2601
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Dear Sir/Madam

Re: Submission to Inquiry into Ecological Carrying Capacity of the ACT and Region

Please find attached a submission by Palerang Council to the above inquiry. The submission includes input from Council staff, Councillors and community representatives on Council's Climate Change Advisory Committee.

Yours faithfully

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PALERANG COUNCIL

Submission to the ACT Legislative Assembly Standing Committee on Climate Change, Environment and Water

Inquiry into Ecological Carrying Capacity of the ACT and Region

November 2010

Introduction

The Palerang local government area covers 524 500 ha adjoining the eastern side of the ACT. It has an estimated population of 14 853 at June 2010.

A significant aspect of Palerang's demographics is the relatively large rural-residential population, many of which commute for employment within the ACT. The Palerang local government area (LGA) does not have a major regional centre like most rural LGAs with the urban population distributed across several villages. The approximate distribution of properties is:

- 3 500 rural-residential
- 2 500 village
- 1 500 rural

As a result, most residents live in rural areas with independent water supplies and sewage management systems and have to travel some distance to reach basic community services.

Much of the Palerang area is within the Upper Murrumbidgee catchment that includes the ACT, and includes portions of the Queanbeyan and Murrumbidgee River catchments that feed surface water into the ACT drinking water supply. The town of Bungendore extracts its bore water supply from the Lake George catchment. The Shoalhaven River, located in the eastern part of Palerang, also feeds into the Sydney drinking water supply.

Council's submission is structured under headings as per the matters identified in the inquiry.

a) The resources available to the ACT in terms of water, energy, and food sourced from within the Territory and outside it

Water

The border between NSW and the ACT is a political rather than a catchment boundary. Rivers such as the Molonglo, Queanbeyan and Murrumbidgee start in NSW, flow through the ACT and then back into NSW. These catchments provide Canberra with its supply and storage of water. The challenge is for people to work together across these boundaries so that both ACT and upper Murrumbidgee catchment natural resources are well sustained. The regional planning required for dealing with water is well illustrated by the inter basin transfers between the Murrumbidgee and Queanbeyan rivers to supply the Googong Dam storage which is located in Palerang and supplies the ACT.

Water availability is a limiting factor on urban development around the ACT (DP 2008). The following points should be considered in assessing potential reductions in future water availability:

- The recent drought has reduced rainfall, stream flows and dam storage levels. While it has been popularly referred to as the worst drought on record, it is noted that local records for Canberra are relatively short and there should be caution in considering this as a worst case. Both Braidwood and Bungendore have records exceeding 100 years and the rainfall during the 2000-2009 decade was not as low as the comparable period last century 1900-1909;
- Climate change is likely to change rainfall seasonality and may result in reduced annual rainfall and increased climatic uncertainty as reflected in the range of modelled predictions;

- As one of the major head water regions for the Murray Darling Basin (MDB) the Upper Murrumbidgee catchment will be subject to the impact of future regulations on extraction, interception and environmental flows;

The implications from the above points are that while the population continues to grow, water availability may continue to decrease beyond the recent drought conditions. Increased water conservation and recycling measures will be a major factor in ensuring that a sustainable population and natural environment will exist in the ACT and surrounding region into the future.

Sustainable planning for the region must relate water use, diversions and supply to land-use and development, consistent with the objectives of the Intergovernmental Agreement on a National Water Initiative (NWC 2004). This is especially the case for the Bungendore township which relies on a particularly shallow aquifer groundwater supply. The sustainability of this supply is under pressure from (ACT) commuter driven urban development. This situation requires an unprecedented level of integration of water, natural resource and land-use planning through improved institutional interaction and cross-sectorial policy development.

This planning will need to involve National, State (ACT/NSW), Regional (Catchment Management Authorities) and Local (Palerang, etc) governments and agencies. An acknowledgement of this need is the Memorandum of Understanding on Cross-Border Water resources which is linked to settlement principles contained in the Sydney-Canberra Corridor Regional Strategy (DP 2008). Palerang Council was also recently awarded funding under the Australian Government's Strengthening Basin Communities program for a Water Sustainability Snapshot and Adaption Planning project which aims to compile fundamental datasets to support integrated regional planning.

Energy

The amount of energy used to construct, heat, cool and light homes contributes most to the ACTs greenhouse gas emissions. Consumption of electricity and gas in the ACT has grown more quickly than the population and the average residential consumption of electricity is higher than the Australian average (ICRC 2007).

The ACT's ecological footprint target is designed to achieve a 15% decrease in the intermediate term and 30% in the longer term. The 30% per capita target reflects the need to firmly establish a trajectory towards global sustainability.

Careful planning is also needed to prevent the ecological footprint of the whole of Canberra increasing as the population grows in size and affluence. Assuming continued population growth at 1% each year until 2030, a 30% per capita decrease in footprint will only translate to a 10% decrease in the total impact of the Canberra population (1.9 million gha).

The Australian Capital Region (ACR) has high potential for the development of renewable energy production, particularly wind and solar. The 67-turbine Capital Wind Farm overlooking Lake George is the largest renewable electricity generator commissioned in NSW since the Snowy Hydro Scheme, with additional wind turbines and a solar farm proposed in the adjacent area.

Energy generation from waste is presently occurring at the Woodlawn mine site on the Palerang border. The City to Soil project aims to compost more of the organic waste currently going to landfill and improve soil carbon across the region.

Food

The ACR has potential for increased local food production, both privately and commercially within climatic and soil limitations, to support the local population and reduce the ecological footprint of imported goods. Increased recycling of organic waste

can improve soil quality and water conservation measures can improve irrigation. Individual households can be encouraged to grow more produce with the support of greywater retention. Opportunities exist for improved reuse of treated sewage and water retention through groundwater recharge.

b) Effective measures for assessing ecological footprint and carrying capacity

Ecological footprint seems to be a relatively good measure for sustainability. To properly apply the concepts here allowance needs to be made for potential changes to ecological carrying capacity due to climate change, the impacts of which require further understanding.

c) Current levels of resource use by ACT residents, including:

i) The current size of the ACT urban, ecological and carbon footprints and how this compares to national averages and similar sized cities globally; and

Virtually all products consumed in the ACT (food, clothing, energy, building materials, household and luxury items) are sourced from outside the ACT.

In 2003/04, Canberra's ecological footprint was 8.5 gha per person or 2.65 million gha – roughly 11 times the actual 253,800 ha the ACT occupies. It was the largest per capita footprint of any Australian city and is also high by world standards.

The ACT's carbon footprint reflects its energy usage which is growing more quickly than its population and Australian average. The ACT's average residential consumption of electricity is also higher than the Australian average.

ii) Trends in resource use in the ACT and the sustainability or otherwise of these trends continuing.

The trends need to be reversed or halted for sustainability to be achievable. It doesn't make sense to consider the whole ACR equally as opposed to ACT, as the areas just outside of the ACT are strongly affected by trends within Canberra. For example, most of the population increase in Palerang is associated with the ACT. Perhaps three zones need to be identified for adequate analysis – ACT, areas within a 100km road-radius (or so), and others. Perhaps other urban centres would be another category. This has impacts for instance on water resource availability and quality, which are stretched around Canberra, and more so as the Canberra population grows.

d) A sustainable level of resource use, in terms of ACT urban, ecological and carbon footprints, for the ACT

The ecological footprint for the ACT is higher than average for Australia, but for the ACR it is lower. Sustainability requires a lowering of the ACT footprint, but not at the expense of the surrounding areas - they too need to reduce in order to become sustainable in a time of climate change. Even the ACR footprints are above international averages, and above carrying capacity for key resources - eg water, and hydrocarbon usage (especially commuting). Community gardens, market gardens, and a significant increase in growing food locally, as well as reducing food miles and 'miles' for other resources, are critical for achieving sustainability.

Canberra's urban development relies heavily on extractive industries from the surrounding region. The 1995 ACT and sub-region planning strategy, position paper 4 on extractive industries, indicated that construction sand/gravel in particular would be exhausted within approximately 17 years. Council is not aware of more recent analysis to determine the current situation.

Council is aware of the demand to supply the Canberra construction industry which has influenced the incidence of breaches of consent conditions and illegal sand extraction operations. In addition, large amounts of construction site fill are trucked over the border from ACT to NSW, often without appropriate approvals and often containing contaminants. Of particular concern is the filling of erosion gullies which, while having the potential for good remediation outcomes, can result in contaminated fill polluting watercourses if not undertaken properly. Council has limited resources to monitor and take action against these illegal activities that continue to impact on the natural environment and road infrastructure.

e) Appropriate ecological carrying capacities based on current, higher and lower consumption models

The carrying capacity of the ACT has already been exceeded, as evidenced by the geographical size of its current footprint. The "maintain and improve" standard for biodiversity and provision of environmental services should be the starting point of any calculation of ecological carrying capacity. A system of offsets or interregional transfers to fund such outcomes needs to be facilitated. Any estimates of future changes in carrying capacity should pay due regard to emerging climate change data.

f) Effective measures for reducing the ACT's ecological footprint

In addition to internal Territory focused reduction measures a specific regional response is required to address the regional impacts of the ACT's growing footprint. This acknowledges the fact that the footprint has already exceeded the ACT's geographical boundary and because of growth is unlikely to ever contain its impacts within its boundaries. The ACT's ecological footprint extends particularly into the surrounding local government areas such as Palerang and ameliorative measures and/or offsets should be directed beyond the ACT's borders.

g) The environmental, economic and social impacts of reduced resource consumption and a sustainable population

Through a strategy of targeted investment in regional natural resource stocks increased sustainability outcomes can be achieved including:

- Cost effective regional offsetting of the ACTs growing ecological footprint;
- Improvement in the quality and quantity of ecosystem services used by the ACT including water and biodiversity;
- Reduction and long term reversal of habitat fragmentation through the re-establishment of whole of landscape connectivity;
- Carbon footprint offsetting through bio-sequestration. Offsetting the ACT's above average carbon footprint through remedial re-vegetation of riparian corridors for instance would deliver multiple benefits of improved water quality and quantity, increased landscape connectivity for biodiversity , carbon

sequestration and increased resilience to possible negative impacts associated with climate change .

h) The role of the ACT in the region in relation to population and resource use

The ACT should play a leading role in funding and facilitating the reduction of the regional impacts associated with the Territory's ecological footprint. The Territory should take some responsibility for the impacts its footprint has on less resourced neighbouring local government entities.

Palerang's role

Palerang is important when considering the ACTs' Ecological Footprint because:

- Palerang has the highest population growth of any NSW local government area outside of Sydney, albeit from a low base (ABS 2010). This has resulted in the area's limited water resources being increasingly used for residential development;
- Proximity to the ACT has been the major driver of population growth in Palerang;
- The majority of the population growth is located in the Bungendore and rural residential areas within easy commuting distance of the ACT;
- Continued peri-urban rural residential developments outside the ACT and Queanbeyan will mean more farm dams intercepting water for stock, domestic and amenity purposes. This will further impact on river flows particularly in the Yass, Queanbeyan, Molonglo and Lake George Catchments;
- River health is also under threat from loss of riparian vegetation, introduction of exotic species and poor water quality, although ongoing restoration programs are helping to ameliorate this threat;
- Recreational use of Palerang's natural environments by ACT residents has potential to deteriorate their natural values.

The ACT is located in the Upper Murrumbidgee catchment and is a part of the Murray–Darling Basin. As the largest city in the basin and a significant economic and educational centre, Canberra draws NSW residents towards its borders, increasing the density of settlement in the area. At the same time, some Canberra residents are relocating to NSW to enjoy semi-rural lifestyles not permitted in the ACT. This congregation of small-scale rural lifestyle properties around the ACT border has the potential to impact negatively on biodiversity, land and water values both inside and outside the ACT in the broader ACR including in the Palerang LGA. The majority of residents that live in the western half of Palerang commute to the ACT for employment and services.

Converting woodlands and grasslands into social and economic assets (new rural residential development with larger houses and more amenities) has been generally considered a necessary tradeoff against their loss. However, these natural assets are a limited, non-renewable resource – few are increasing; most are diminishing, in poor health or disappearing. For example, in 2009-10 eight species in the Palerang area were added to the NSW threatened species list and four Endangered species were reclassified as Critically Endangered (DECCW 2010). It is timely to set limits, particularly where feasible alternatives and opportunities to improve and protect natural resources still exist.

Many ACT and surrounding regional landscapes are not resilient. Plans for future development must ensure that continuing intervention in the ecological and hydrological functioning of the landscapes does not increase the risk of reduced ecosystem services. The effect is cumulative – as the resilience is lost, more ecological services are lost and social and economic costs increase. Future ACT and surrounding regional landscapes need to have long-term resilience, be self-regenerating and deliver ecosystem services. They need people actively engaged in better understanding and caring for them for future generations.

Sub-Regional Landscape Management Challenges

- **Habitat fragmentation** –Widespread fragmentation of remnant vegetation and associated loss of habitat and wildlife corridors is related to ACT driven rural residential and urban development. Many threatened species inhabit the peri-urban areas surrounding the ACT and further land fragmentation as well as increasing densities of residential development will most likely result in further biodiversity losses;
- **Changes to the hydrological regime -** The Yass River catchment (including the Wamboin/Bywong localities in Palerang) has vulnerable groundwater and surface water systems where extraction and interception of water, because of increasing rural residential development, has exceeded a sustainable rate resulting in long term environmental flow reductions, increased salinity, low water quality and falling water tables (IPNR 2004). The Lake George Alluvium groundwater sustainable diversion limit area has been identified as requiring a reduction in both the current diversion limit and use (MDBA 2010).

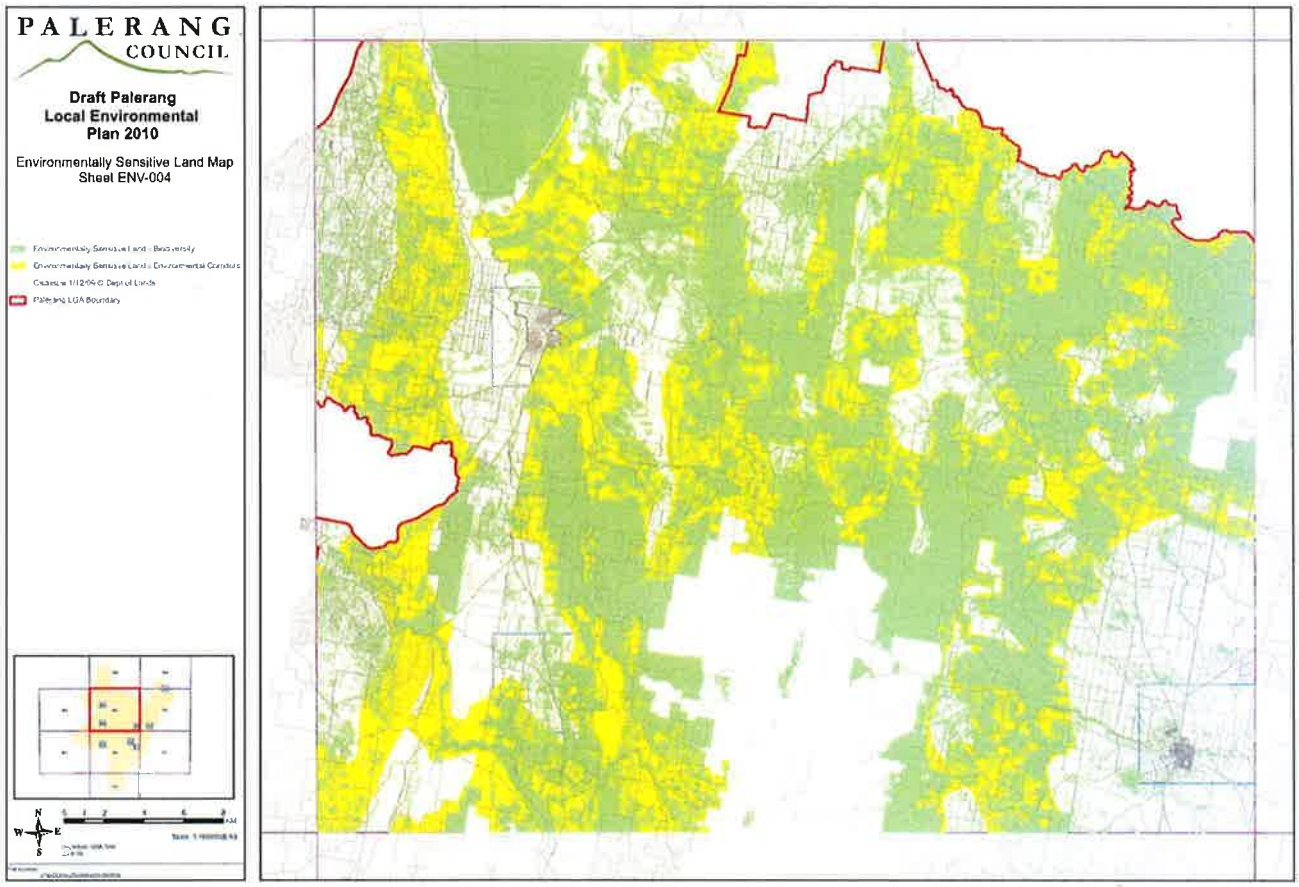
Suggested strategies to address the regional ecological footprint of the (EF) of the ACT

1. **Expansion of the "Working with our neighbours program".**

This program aims to build better relationships with neighbouring local governments and catchment authorities to address natural resource management (NRM) issues at a sub-regional scale. This program specifically provides for the sharing of natural resource management expertise with neighbours in the Murrumbidgee River catchment.

2. Integration of Palerang NRM strategic planning into a regional ACT EF reduction offset strategy.

As part of the development of the new Palerang Local Environment Plan areas of high biodiversity and potential habitat corridors (including riparian corridors) have been identified so as to attract targeted investment to achieve strategic "maintain and improve" environmental outcomes on a voluntary basis with landholders. An example draft map of environmentally sensitive land is included below (subject to revisions). Continued revegetation of riparian corridors will improve water quality for the ACT.



3. Murrumbidgee CMA Climate Change Corridors

The Murrumbidgee CMA is offering land managers incentives to conserve and connect native vegetation corridors within the Murrumbidgee Catchment area. The CMA will contribute to the cost of:

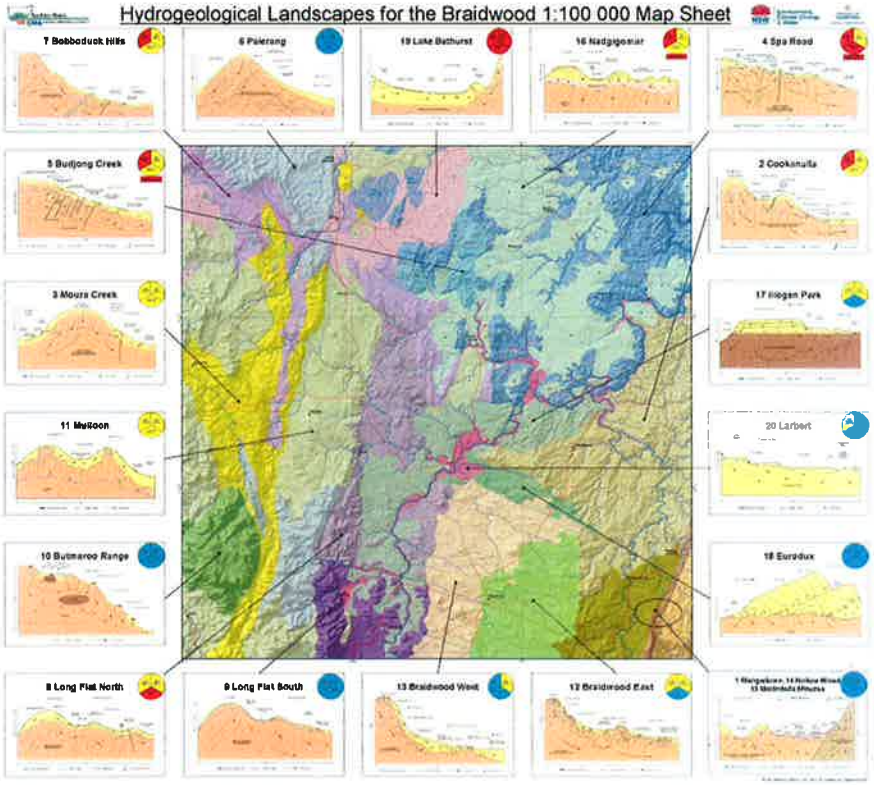
> "The protection and enhancement of existing remnant native vegetation through environmental stewardship, fencing, weed control and strategic species revegetation. The establishment and linkage of vegetation corridors with locally endemic native trees and shrubs through fencing, weed control, revegetation and alternative water provisions."

This program could be expanded with offset funding that can be accounted for in terms of a regional environmental footprint reduction strategy.

4. Salinity Mapping

The scope of National Water Initiative (NWI) funded ACT salinity studies should be extended to cover areas of Palerang in the Upper Murrumbidgee catchment.

Hydrogeological Landscape mapping (salinity hazard) has been undertaken in the eastern parts of Palerang (Braidwood 1:100 000 Map Sheet) and has been incorporated into strategic planning instruments. However, there remains a data gap in the west of Palerang between the Braidwood mapping and the ACT border. This area contains Queanbeyan, Molonglo, Yass rivers and the Lake George catchment. These waters supply not only the ACT itself but also ACT related rural residential developments.



5. Facilitation of Regional Carbon Banking Scheme

The ACT should investigate the creation of a local scheme within the Carbon Farming Initiative framework (DCCEE 2010) to facilitate a carbon bio-sequestration process whereby entities in the ACT can offset their carbon footprints through a strategically focused program of bio-sequestration and associated landscape repair in the local region. This would deliver multiple benefits to the ACT and to the surrounding regional areas that its footprint impacts on.

i) Relevant infrastructure issues

The ACT has been 'growing outside of its physical boundaries', and continues to stimulate population growth and an associated growth in resource usage in surrounding areas including within the Palerang Council area. A broad view needs to be taken on infrastructure development, and the use of scarce resources such as water, waste disposal, and infrastructure such as transport routes etc. Broadband networks could play a major part in this, by enabling better 'non-transport' options for people who live outside of Canberra but do work there. The region would do very well in the long-term if more train services, and other transport options that are less hydrocarbon intensive receive significant enhancements before the impacts of peak oil.

It is noted that the essential impact of peak oil will be a steeply increasing cost for many commodities, which needs to be factored into broader planning for sustainability in infrastructure, food security, transport, etc.

j) Any other relevant matter

Regional commuter bus services should be investigated as a method of reducing the impacts of single car commuter transport related energy impacts.

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