



The Secretary
Standing Committee on Climate Change, Environment and Water
ACT Legislative Assembly
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Canberra ACT 2601
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Dear Ms Morrison,

Established in 1974, the Canberra Environment and Sustainability Resource Centre is the longest running environmental organisation in the ACT. Our mission is to support the community of Canberra and the South East region in the advancement of the principles of ecological sustainability and environmental protection through knowledge, education, information and practical application.

Our submission to the ACT Legislative Assembly Standing Committee on Climate Change, Environment and Water Inquiry into the Ecological Carrying Capacity of the ACT and Region builds a vision for a Canberra that is sustainable into the future, with practical measures identified to achieve this.

For any further information, please contact Genevieve Wauchope 6248 0885,
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Best Regards,

Genevieve Wauchope
Director

Submission to the ACT Legislative Assembly Standing Committee on Climate Change, Environment and Water Inquiry into the Ecological Carrying Capacity of the ACT and Region

Introduction

There are many communities who are starting to embrace a more self-sufficient way of life. This shift is often led by the community itself, however there is an important role for government to play in supporting and leading developments such as community gardens, providing areas of higher density for those who wish to live in them, and in the provision of effective public transport teamed with a planned walking city to increase active transport and make inner-urban areas safer and more welcoming.

These measures are not only integral to meeting a 40% emissions reduction target, but will bring the living heart back into our city, provide safer spaces for residents, build community and support local initiatives and small businesses. They will deliver significant reductions on our ecological footprint, and increase our carrying capacity markedly.

The Northey Street Gardens in inner-city Brisbane, and CERES in Melbourne, are just two examples of the support of communities for organic gardens. Both run various education projects, involve disadvantaged youth through programs such as Green Corps, provide a community hub, cut down the amount of food imported to their respective cities, and provide local employment. In Canberra, the waiting list for a plot in one of Canberra Organic Growers Society's gardens continues to grow, the Stephanie Alexander school food gardens project has parents involved with their school community, and children with healthy food, and the Canberra Environment Centre is seeing a rise in the number of childcare centres and community organisations seeking to build an edible garden of their own.

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

Food

The majority of the resources consumed in the ACT are imported. It is difficult to determine the exact quantity or proportion of food that is imported into the ACT. However it is very clear that it is a very small percentage and certainly far below what we are capable of producing.¹ There is a grass roots movement for change, evidenced by the support for programs on local food run through the Ginger Room at Old Parliament House, the resurgence of interest in community organic gardening through the Canberra Organic Growers Society (COGS), and the recent initiative of ANUGreen to source 85% of food provided to University Colleges locally.

Community interest in sourcing locally produced food has grown exponentially, as seen by the numbers of people attending farmers markets, and Choku Bai Jo, a Canberra 'direct farmers outlet' selling only local and Australian grown produce.

There is significant potential for more food to be grown within the ACT through Urban Agriculture programs. According to the ACT Government Report 'Measuring our Progress' "While only 10 per cent of Canberra's money is spent on food, the growing, making and delivering of the food to the ACT accounts for 20 per cent of the ACT footprint." Clearly,

¹ See report "Grown in the ACT Food Security and the Future of Canberra" Fusion Australia 2010; Anecdotally it has been estimated that more than 90% of the food we eat is produced outside the ACT region, see <http://www.abc.net.au/rural/regions/content/201007/2959615.htm>.

we need to produce more food in the Region, addressing our reliance on outside markets and the forces that act on them. We have little to no food security, and have an increased ecological footprint due to imported food that could be easily produced in the region. Whilst community garden projects, such as the Canberra Organic Growers Society, the Stephanie Alexander school gardens program, Permablitz are seeing involvement in their projects increasing, to produce adequate amounts of food for the community needs planning change matched with community support to best utilize our existing resources.

Water

Over 70% per cent of the nation's fresh water is used by agriculture in production, processing and packaging.² Australia has one of the highest levels of emissions from agriculture in the world, at over 26%.³ This figure does not include transport. The CSIRO has predicted that our region will become hotter and drier.⁴ Appropriate agricultural methods deliver significant water savings, as water becomes an increasingly valuable resource. Food price increases are expected as the impacts of climate change take hold. Providing for ourselves in a more sustainable way will protect us against future price shocks and fluctuations in availability.

Energy

The ACT region is an area that is well-suited to the generation of renewable energy. Solar and wind power are already in use, and there are many opportunities for expansion. Renewable energy generation within our region delivers emissions-free energy and creates local jobs. In 2009, the ACT imported all its energy, leaving us vulnerable to impacts on supply interstate, and contributing to transmission losses. As a price is placed on carbon, coal-fired power will become more expensive. An early move to renewable energy will assist in providing affordable, clean energy to the market, and protect the community against future energy cost increases.

Effective measures for assessing ecological footprint and carrying capacity;

Any footprint calculator must be comprehensive and include food, transport, energy, water use, and waste. The consumption of goods is also integral to any footprint calculator for the ACT. Studies by the Australia Institute show that those with high disposable incomes generally have the highest rates of consumption, and of waste. To accurately include consumer goods in any footprint calculator, they must be grouped according to the impact of their production, transport and use.

Current levels of resource use by ACT residents, including: The current size of the ACT urban, ecological and carbon footprint and how this compares to national averages and similar sized cities globally; and

Canberra has an ecological footprint significantly higher than the national average, and continues to grow from 8.5 global hectares in 2004.⁵ The Australian average in 2008 was 7.8 hectares, more than double the global average, and far higher than the 2.1 global hectares per person the planet can regenerate.⁶ This results not only from poor planning for energy efficiency, and a lack of effective public transport, but also our reliance on shipping in goods from outside the ACT “All this points to a city that is living and purchasing in an

² ABC Rural Report Canberra Region: July 21, 2010 see <http://www.abc.net.au/rural/regions/content/201007/2959615.htm>

³ *The Garnaut Climate Change Review Update 2011*; <http://www.garnautreview.org.au/chp7.htm>

⁴ ACT Government, *Weathering the Change 2007*

⁵ ACT Government, *Measuring Our Progress*

http://www.measuringourprogress.act.gov.au/a_sustainable_act/ecological_footprint

⁶ Environment Protection Agency Victoria,

<http://www.epa.vic.gov.au/ecologicalfootprint/ausFootprint/default.asp>

unsustainable way, with most of our goods being transported into our city.”⁷

Approximately 72% of our greenhouse gas emissions are from stationary energy, and we are the most heavily reliant on car use in the country. These issues are relatively simple to fix through efficiency, renewables and adequate public transport, and indeed most of the work on how to achieve all of these has been done.

A focus on greenfields development has encroached on natural areas, impacted on biodiversity, and cost our community good public transport, walkability and our city a living heart. Whilst little of the ACT area is urban, that area is growing with increased pressures on our nature parks and green spaces, and we have a “generally low population density.”⁸ There is scope to increase urban density in key areas, a move which would be welcomed by many in the community.

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

According to the ACT Office of the Commissioner for Sustainability and the Environment’s State of the Environment Report 2007/2008, resource use continues to increase in the ACT. Much of this resource use results in waste, with ACT residents spending “an average \$1475 per year on unused items”, largely from food. This is clearly unsustainable, however the Canberra community has long been involved in efforts to minimize their impact on the environment where they have the opportunity and education to do so. There are various mechanisms detailed below on initiatives to reduce the ecological footprint of the ACT, and addressing resource use.

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

A different approach is needed to ensure a sustainable level of resource use in the ACT. Better planning for energy efficiency particularly in housing and suburb design will deliver the cheap, easy and equitable means to achieve significant reductions in energy use & carbon emissions. A shift to renewable energy, created where possible within the region will obviously deliver significant cuts to greenhouse gas emissions. Appropriate public transport attractive to commuters will cause a modal shift, vital in a city where over 80% of trips to work are made in the car.⁹

Increased urban density as opposed to ‘greenfields’ development will address the problem of the urban footprint encroaching even more into our green spaces and nature reserves. Addressing consumption and waste through targeted education campaigns and opportunities for sustainable local business have been successful in changing behavior where they have been implemented. It is absolutely necessary to move to urban agriculture to allow Canberrans to source locally produced food.

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

The carrying capacity of a region is most often measured using current levels of consumption

⁷ <http://www.environmentcommissioner.act.gov.au/publications/soe/2007actreport/overview07>

⁸ <http://www.environmentcommissioner.act.gov.au/publications/soe/2007actreport/overview07>

⁹ Office of the Commissioner for Sustainability and the Environment *State of the Environment Report 2003*
<http://www.environmentcommissioner.act.gov.au/publications/soe/2003actreport/indicators03/transport03>

projected forward. In order for our communities to remain viable under the various threats presented by climate change, a radical change in the way we view and use our natural resources is necessary. The natural resources of our region must be worked with, and conserved, if we are to meet the challenges of a changing climate and a changing population.

A shift to much higher levels of food production is possible in our region, in a way that uses far less water and energy than produce shipped from overseas and interstate. This has the added benefit of providing fresh and healthy food, and building community. Agricultural methods that conserve water, build soil fertility, and make use of under-utilized urban areas are both achievable and necessary.

The assumption that everyone wants a quarter-acre block, is happy to have a long drive to work, and is not concerned about the impact they have on their environment is old fashioned and simply not reflected in the diversity of housing options demanded by contemporary Canberra.

The runaway success of the Canberra Handmade Market also reflects the growing movement to source locally produced, renewable and sustainable products. Where there is the opportunity to alter consumption methods to reflect a more locally produced culture, Canberrans have flocked to it.

The Farmers Markets have also grown significantly since their inception, and continue to grow, further demonstrating the beginning of a cultural shift to a preference for consumption of locally produced goods.

Effective measures for reducing the ACT's ecological footprint;

Strategies to significantly reduce the ACT's ecological footprint, whilst at the same time increasing the livability of the city and addressing equity have long been identified.

Energy

Energy efficiency is the 'low hanging fruit' of reduced greenhouse gas emissions. In 2008 the Conservation Council published "*Achieving Better Energy Efficiency in the ACT*" a roadmap to achieving significant reductions in energy use in the ACT that were inexpensive to implement, addressed social equity, and were written in partnership with energy, business and social justice experts. The recommendations were costed and effective, and must be implemented immediately if we are to meet the legislated 40% reduction target in an equitable manner. No further studies are necessary to implement these recommendations, the majority of which are low to no cost.

Renewable energy, particularly solar and wind can be produced within the ACT region, reducing transmission waste, breaking our reliance on importing dirty coal-fired electricity, and supporting the work of internationally renowned energy experts based in Canberra. In the sunniest capital city in the country, with world-renown solar experts; a solar thermal farm with storage capacity is a practical way of addressing our rising emissions. Wind generation is increasing in the ACT region, with space for more to supplement solar. A mix of energy is required to provide 100% renewable energy, and Canberra is uniquely placed to provide this with only the political will lacking.

Tri-generation plants included in new developments can provide heating, cooling and electricity at significantly less impact than burning coal, and are currently used with success overseas, commonly in Japan. These systems, whilst a transitional measure, will deliver significant cuts in emissions until renewable energy can replace them, and fit well in larger developments, such as medium-density housing, schools, universities and apartment blocks.

Transport

A light rail system for Canberra is long overdue. Light rail, with bus feeder systems will build the type of sustainable development the city must embrace in a carbon-constrained future. Light rail drives density, reducing pressure on greenfields development. With development close to existing services and public transport, the necessity of commuting long distances from outlying suburbs to workplaces and other services is eradicated. Unlike buses, light rail drives a modal shift from cars to public transport, so is effective in reducing car-trips associated emissions¹⁰. As one commentator said, “I would prefer to catch a train 10 times more happily than a bus any day.”¹¹

Introduction of light rail to the city, teamed with a walking plan, will revitalize the heart of the city, eradicating the need for vast, dark carparks that prevent many, particularly young women, using the city at night due to safety fears. Planning for a Walking City, with appropriate public transport, ensures a better flow of people through inner-urban areas, making these areas safer for the community.

Density

Mixed-use higher density living areas provide a number of positive environmental and social outcomes. Well planned urban areas provide housing to a greater number of people, help build community, and attract services into local areas. Areas that are used by more people more often are safer. Well lit, well populated areas with good walking plans, accessible by public transport will enliven our urban centres and deliver significant cuts in transport emissions, breaking our reliance on the car, and thus our need for more and more new roads.

Canberra has an ageing population. Older people are increasingly downsizing for the opportunities to build community to have easier access to necessary services, and to free themselves of the work and expense of maintaining bigger blocks. Younger people also flock to mixed-use urban centres for proximity to recreation and services, and to be closer to the life of the city.

Increased density in urban areas, as opposed to ‘greenfields’ development, will reduce pressure on Canberra’s bushlands and parks. Clearly housing people closer to necessary services, such as schools and shops will prevent increased emissions from the car-reliance that goes hand in hand with low density urban sprawl. Higher density housing also allows for the integration of tri-generation, and the possibility of bulk buys of solar panels for residents.

Food

Canberra, and the wider ACT region, must consider food production in any long-term sustainability planning. Our reliance on imported food drives increasing transport emissions, and supports water waste through broad scale agriculture. There will always be a market for food that cannot be sourced from the region, however importing what can easily be grown here makes little sense.

Urban food gardens provide much needed healthy food, particularly in areas of lower income. The opportunity for people to be involved in their food production reduces waste. Those who have grown their own food are less likely to throw it away, and can harvest as much as they need at a given time, also reducing waste. Children involved in their own food production are also more willing to eat healthier, and gain an understanding of ecological cycles. Community gardens provide important opportunities to grow and support community. Coming together for a common purpose provides the opportunity to meet and befriend those we live around.

¹⁰ “Peter Newman, Jeffrey R. Kenworthy, *“Sustainability and cities: overcoming automobile dependence”* 1999

¹¹ <http://www.nationalcapital.gov.au/haveyoursay/index.php/parking-discussion/discussion-paper/parking-management-options-and-encouraging-modal-shift/encouraging-modal-shift>

Collecting organic waste for compost that then goes back into the soil provides nutrients needed to grow food, and reduces landfill and the associated emissions from rotting garbage. Soil enriched in this way has better water retention, reducing the high water consumption of broadscale agriculture. Systems such as the 'hotrot' currently in use at the ANU can be utilized by small business serving local areas to collect organic food waste, compost it, and sell it back to the community.

Urban food gardens can be implemented alongside higher density housing, where residents are within walking distance of their food source, literally turning "food miles" into "food meters".

Disused urban spaces can be turned over to urban food gardens, changing under-lit, under used areas into vibrant community gardens.

Green roofs are another initiative with significant potential for the ACT. Green roofs are

"an extension of a building's existing roof which involves a high quality water proofing and root repellent system, a drainage system, filter cloth, a lightweight growing medium and plants. But it can also be a rooftop food production system that meshes the technologies of aquaponics, vermiculture, rooftop water harvesting, and solar-powered air moisture harvesting.

Green roofs can provide a wide range of public and private benefits, including significantly reduced fossil energy use, reduced peak runoff of roofwater, aesthetically pleasing cityscapes, longer roof life, and reduce 'heat island effects' of cities. Green roofs can provide building owners with a new revenue stream, plus reduction of organic matter going to landfill, and reduced air pollution through less use of diesel fuel in cities."¹²

Utilising Green Roof technology will further extend the urban agricultural area of Canberra.

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

The ACT is approximately 240000 hectares in size. At the current average rate of consumption (8.5 Ha per person) this means the ACT could theoretically support around 28,200 people. Even if you extrapolate this to the broader region it is clear that we use far in excess of what the region can support. Whilst much is made about predicted population growth, clearly the real and immediate issue is unsustainable resource consumption. It is realistically possible to significantly reduce consumption patterns through policy and behavioral change; there is no chance of significantly reducing the population. Immediate focus must be on reducing our ecological footprint through new initiatives, as detailed above.

Canberrans are demonstrably willing and able to change their behavior to reduce their ecological footprint. Water consumption decreased markedly as the community came to understand the importance of saving this precious resource. We have one of the highest rates of recycling in the country, with an increase from 42% to 75% resource recovery in 13 years.¹³ Various community projects, such as the Canberra Environment Centre's Sustainability Challenge, encouraging Canberran's to "shrink their eco-footprint", are welcomed enthusiastically by the community, with more than 300 participants in the two months it has been running. It is clear that the community is open to, and looking for,

¹² Green Roofs Australia website <http://greenroofs.wordpress.com/>.

¹³ Office of the Commissioner for Sustainability and the Environment, *State of the Environment Report 2007/2008*

further opportunities to live a more sustainable life. There is an important role for Government to play in the form of planning for a more sustainable future. Implementing initiatives such as a walking city, appropriate and adequate public transport, and the regulation of new homes and developments to meet high standards of energy efficiency are necessary, both to meet the demands of the community, and to reach the 40% emissions reduction target.

It is also important to consider the high impacts of relying on food imported into the Territory, and the water use Canberra supports outside its borders through broad-scale agriculture, and look to ways of addressing this through local, water efficient food production. There is an important role for Urban Agriculture to play in the ACT, through various mechanisms, such as planning for urban food gardens, through community initiatives such as COGS, through provision of space for food gardens in all medium to high density developments and through looking to new initiatives such as the 'eat your lawn' movement in Victoria, the 'eat your verge' movements cropping up all around Australia, and potential for new areas, such as rooftops, to be utilized for resource production.

Relevant infrastructure issues; and

As discussed above, a shift to light rail will drive the types of planning and development that will achieve significant reductions in the overall ecological footprint of the ACT. Provision of space for solar thermal is also an important consideration to reduce the impact of our city.

Conclusion

The Environment Centre has a vision of Canberra as a city of intelligent planning and design, a community living well into the future. A Canberra that has addressed as far as possible the challenges of climate change, and built a vibrant and resilient community, far less reliant on production outside our borders. A city able to house its people in comfort through housing and suburb design appropriate to our climate.

Our vision of Canberra is one of a community of vibrancy and strength, a community that has grown together through initiatives such as the creation of edible gardens to feed our neighbours and ourselves. A community that uses its waste as a resource. A community that can live more closely together, rather than isolated to the fringes of the city. A community built through shared activity and interests, that can provide for itself far more than it does now. A city that has effective public transport, increasing active transport and creating safe spaces within our urban areas, and combating the isolation and heavy resource use of the car.

As far as our ecological footprint is concerned, Canberrans are living well above their means. Business as usual is not an option if we are to address our impact on the natural environment, and proof ourselves against the price shocks and food and water reductions of a changing climate. A radical rethink of how we are to live in the future is necessary. Many of the answers to the question of our ongoing sustainability are available, and easily implemented.

We are an active and informed community, and have changed our behaviours to effect changes for our natural environment. Where there is imperative and education, Canberrans embrace changes for the protection of our environment and our community. There is strong imperative to act to reduce our ecological footprint, and to look toward the long term sustainability of our community.