SUSTAINABLE CITIES 2025

SUBMISSION
ACF Sydney Branch

INTRODUCTION

The need for urgent action on urban sustainability and the creation of sustainable cities in Australia is becoming critical. We are pleased to see the launch of this inquiry and the preparation of a discussion paper to prompt further input. We commend the House of Representatives Standing Committee on Environment and Heritage for this initiative and thank you for your invitation to contribute to this important work.

The Australian Conservation Foundation (ACF) is preparing a submission to this inquiry. This current submission is from the ACF Sydney Branch, and is focused on Sydney and other parts of NSW.[1] The submission recognizes the importance of direct impacts within the Sydney Region, the zone of influence (eg. impacts upon biodiversity of weekend vacationers traveling from Sydney) and the Ecological Footprint of Sydney, no matter where in the world that footprint is located. While not subscribing to the methodology of the Ecological Footprint (it is problematic in terms of boundaries, definitions, assumptions about the use of land and water, and seeking a common currency for evaluating impacts), the notion that Sydney (and other cities) has impacts upon the "distant elsewhere" is crucial.

This submission also recognizes that the best-planned city in terms of sustainability can only be as sustainable as the everyday practices of its citizens allow. Education and cultural change are necessary to improve sustainability. The inverse of this point is that structural factors (such as the availability of safe and efficient public transport) can strongly influence the everyday actions of urban residents.

This submission addresses the issues of population and household growth, and the impacts upon water, land, biodiversity and energy. It then considers how actions in two key sectors, ie new urban development and transport, may lead to more sustainable outcomes.

1. POPULATION AND HOUSEHOLD GROWTH

Looking at the issues confronting NSW, Sydney's population has grown faster than forecast, leading to increased housing construction and demand for infrastructure. The current estimate is 4.5 million people by 2013, NOT 2021 as originally forecast. Growth is also rapid along the coast of the State, with an annual population increase of 1.5%. The growth of a Greater Metropolitan Region, stretching from Port Stephens to south of Wollongong, is creating and exacerbating significant ecological sustainability issues.

The RATE of increase in new dwellings on Sydney's fringe has stabilised, while in the inner and middle rings of Sydney growth is 20% higher than nearly a decade ago. This reflects urban consolidation policies that offer a variety of housing (villas, townhouses and apartments). From an overall perspective, the majority of people continue to live in low-density housing in the outer suburbs of Sydney.

[1] The AVF Sydney Branch would like to acknowledge the generous assistance of ACF National Councillor, Dr. Colleen Watts, in the preparation of this submission.

Household size has reduced so that 52% of households now comprise one or two people. Consequently, an increased number of dwellings are required. For example, a drop of 0.19 in the average size of households between 1981 and 1996 resulted in demand for 110,000 more dwellings.

Increases in income, expenditure and population are driving increased levels of resource consumption and demand for infrastructure, which have significant environmental and economic consequences. While population growth in the region is important, the high resource use and disposal of wastes generated through consumption is very significant in the total environmental impact.

2. ENVIRONMENTAL AND NATURAL RESOURCE ISSUES
2.1 WATER

Sydney is currently drawing water at 106% of the safe yield of its dams, and environmental flows in the Hawkesbury Nepean are inadequate. This pattern is being repeated in other Australian cities and regional towns, with some cities such as Adelaide being at particular risk. There are now indications that climate change will further reduce dam yields significantly over the next forty years, which combined with the anticipated population increases (25% in Sydney's greater metropolitan region over the next twenty years) means that the way in which we use water must change. In NSW coastal towns are facing similar problems with water supply and the need to address water management and use is even more critical in some areas.

Using water more efficiently is far less costly and environmentally impacting than sourcing water from alternative sources. This is particularly important in Sydney's case where there is strong Government policy to not construct any more dams. Other sources such as desalination are costly - $0.75 - $1.50/kl. Water efficiency savings, on the other hand, are available at a cost between $0.11 - $0.79/kl.

Increasing water efficiency also reduced demand on sewage infrastructure with economic and environmental benefits. Managing stormwater through good design practice reduces the impact on waterways of run-off from new development and can provide a property level alternate source of water.

Concepts of DEMAND MANAGEMENT and GREATER EFFICIENCY are the way forward for addressing many of these issues. There are many benefits:

- Living standards and opportunities for the community can continue to improve
- Increasing costs of providing services can be reduced
- Environmental outcomes can be improved

Price reforms are a necessary part of any water usage regulations – this has been mooted in the Sydney GMR and should be rigorously applied. Fair and equitable calculation of basic water requirements, with reasonable price structure, should be brought in. Water consumption beyond the basic requirements should be heavily priced so that "luxuries" such as over watered gardens, swimming pools etc. are appropriately priced.

Retrofitting has been shown to be economically viable and a realistic contribution to water reforms. Government subsidies and assistance for this will probably be critical – and yet is money better spent than money spent on expanding infrastructure (i.e. dams).

The proposed WELS scheme (Water Efficiency Labelling and Standards) being considered on the national level by the Environment Protection and Heritage Council should be instituted vigorously. This will require labels on all showerheads, washing machines, dishwashers and toilets sold in Australia. It should be argued that taps, urinals and flow regulators should also be included and that labelling should be mandatory.

2.2 LAND

The impacts of urban growth, particularly suburban and ex-urban growth, on land are significant and often irreversible. Much of the biodiversity of our cities has been lost (see below), and some of the most productive agricultural land in Australia is being paved. The retention of agriculture within the Sydney Basin is vital. While this agriculture needs to become more sustainable, it is highly productive and its presence close to the major market reduces transport costs and greenhouse emissions. Recent losses in agricultural land are significant because there is little land left in the Sydney basin as urban development reaches the borders of national parks and World Heritage Areas such as the Blue Mountains.

The retention of agricultural land requires the creation of a protection zone, which should include adequate buffers to prevent complaints about smells and noise from newly arrived neighbours. The "greenbelt" proposed by the Greater Western Sydney Economic Development Board has potential in that it can protect flood-prone land from development pressures, protect agriculture and prevent some potentially harmful uses from being established in parts of the Hawkesbury-Nepean catchment. This proposed agricultural protection zone is, however, too narrow to act as an adequate buffer. It also should not be seen as a "greenbelt" barrier to urban development because, as Rob Freestone (2002) notes about greenbelts in general, this is unlikely to be effective.

The use of urban land should also be investigated. While previous approaches (such as the Green Street and Better Cities programs of the 1980s and 1990s) focused on reducing excessive land use primarily by reducing lot size, it should be noted that about one-third of urban land use is devoted to transport infrastructure, particularly for use by the automobile.

2.3BIODIVERSITY

Australia's major cities had high level of land and water biodiversity at the time of European conquest, which is what enabled these areas to support denser concentrations of Indigenous people. This was the case for Sydney. Unfortunately, much of this has been lost. While the exact figures vary (see Bridgman, et al, 1995 and Druce, 2001 for example), there is agreement that the losses are massive. Druce (2001) also highlights the vulnerability of remaining vegetation communities, many of which are endemic. This vulnerability stems from the fact that very little of the remaining vegetation is in conservation reserves, and is therefore subject to development pressures as Sydney expands. For example, 217.8 hectares of 10 832 hectares of Cumberland Plain Woodland were in conservation reserves as of 2001 (Druce, 2001). The last remaining viable vegetation community of sufficient size to support a variety of ecosystems, and to withstand island and edge effects, is the ADI site in Blacktown/Penrith. This is currently very threatened by development pressures. The compromise position reached on this site is an example of "death by a thousand cuts".

Another key source of biodiversity is public land. This includes government departments, ex-government departments that have been privatized, and land that was held in public trust for public benefit by private institutions. Some lands, eg. defence force lands, are significant remnant landscapes because they have not been subject to the pressures that surrounding lands have faced. The sale of environmentally significant public lands in order to raise

revenue should be halted. A comprehensive listing of these lands on a register is needed and only non-significant land should be considered for sale. The loss of these lands is a travesty because they represent one of the few remaining opportunities for biodiversity conservation in Sydney.

The other side of biodiversity conservation is biodiversity regeneration. All major developments should, in addition to minimizing impact on original land, water and vegetation, be required to produce a plan that demonstrates how they will enhance biodiversity through their design and landscaping.

2.4 ENERGY

About 95% of the energy that we use in Sydney is derived from fossil fuels. Total and peak energy demand is growing strongly, driven in large part by increased use of air conditioning in the residential and commercial sectors. Given the preponderance of coal fired generation, this means increasing greenhouse emissions, and it also implies very significant investment is now required in both generation and distribution capacity. It is estimated that $3 billion for new generation will be required over the next decade in Sydney and at least $5 billion for additional distribution capacity unless peak demand is considerably reduced.

The problem with coal-fired power stations includes a high loss of energy during transmission. While this is an issue in other forms of energy generation, the inefficiency of coal-fired power stations in the Hunter Valley, near Lake Macquarie and around Lithgow to supply energy for Sydney means that greenhouse gas emissions are unacceptably high.

It is important to consider that a decomposition of greenhouse emissions, while initially focused on electricity generation, has to consider the use of this electricity. While some industries have become more efficient per unit of production, the changes in peak demand due to air conditioning systems means that peak period provision is driving the demand for energy infrastructure. Good urban planning, landscape design (particularly shade trees), green architecture and campaigns to influence habits can assist to reduce this peak energy desire.

Alternative sources of energy, such as wind and solar power, are under-developed renewable resources. The viability of wind power is greater than previously thought because wind speeds at the height of the blades is greater than at the ground level. This increases the possible locations that are suitable for wind-energy generation. Our use of solar energy is very low considering the climate of Australian cities. In Sydney, there is potential to increase our use of solar power. Investments in these energy sources enables the development of the technology, thus improving energy efficiency and reducing the unit price of energy. Without investment, these renewable energy sources remain marginal and we rely upon coal and other fossil fuels.

There is also potential to de-link energy use from industrial output. One approach worthy of further investigation is Industrial Ecology. If Australian cities are going to be sites of industrial consumption, then they will have to maintain some industrial production or else the ecological footprint of the city will increase. Industrial production should not only be as clean as possible, it should also be planned with rail transport links in mind, and it should be planned to “close the loop” rather than adopting a linear “resource-waste” perspective. Sustainable cities require sustainable industrial production.

3. SECTORS THAT CAN CONTRIBUTE TO MORE SUSTAINABLE OUTCOMES
3.1 NEW DEVELOPMENTS

There is strong potential to reduce both water and energy usage in the residential sector at the time new buildings are constructed. Building this in at the planning stage is very cost effective when compared with the total and private costs of meeting future demand for energy, water and wastewater.

Victoria has already legislated to require that all new homes meet 5 star energy-rating requirements. The ACT requires homes to be rated for energy efficiency at the time of sale. The NSW Government has developed a comprehensive planning tool, the Building Sustainability Index (BASIX), to standardise good development practices across NSW and help streamline the planning process.

The Premier of NSW has recently announced that BASIX will be used to set minimum improvements in all new dwellings in Sydney (this should be extended to regional areas as well) that will reduce water use by 40% from July 2004 and energy use by 40% from July 2006. This has received widespread support from a range of stakeholders including Councils, the Development Industry and Sate Agency partners. These sorts of planning tools are to be encouraged, improved and, if necessary, made mandatory in all areas of Australia.

Beyond the residential sector, all new major developments, such as universities, schools, hospitals and significant sporting facilities, should be well catered for by public transport. It is important to improve both the sustainability of the facility itself, and the access to that facility.

3.2 TRANSPORT

Sydney's air quality has improved since the 1980s for many pollutants. However, vehicle use is growing at twice the rate of population and vehicles are the most important sources of Nox and VOCs (these pollutants are precursors for ozone, for which national standards are exceeded on some days each year). The rising use is expected to be more than offset by improved vehicle technologies and fuel quality, so that eventually overall vehicle emissions are likely to fall. (Note this assumes adoption of higher Euro standards by the Commonwealth, and these are yet to be mandated in full).

HOWEVER, this positive trend does NOT apply to greenhouse gas emissions or other impacts of vehicles such as noise, water pollution and the need for lands for roads, and traffic congestion with its attendant social impacts. If the trend continues to redevelopment of the inner city suburbs in Australia then attention to transport systems is absolutely essential. Increased population in inner suburbs, with attendant increased motor vehicle movements, will exacerbate greenhouse gases and air particles etc. and consequently the exposure per head of population will also increase – with attendant health problems.

The obvious answer is to encourage walking and cycling, and to improve the much touted public transport system – preferably under public rather than private management. At the moment much of the public transport system infrastructure in Sydney is crumbling and continuing to ignore this will not be helpful in the long run. The continual push to expand the road system at the expense of a comprehensive rail system, and to a lesser extent, a bus system is completely counter-productive. Governments seem able to find the finance (or create public-private partnerships to finance) increasingly problematic road infrastructure but

seem to be unable to translate this to a public transport system. There also needs to be a "carrot and stick" approach to public transport use – the Australian public will be weaned from its automobile use with difficulty. This would have to include such measures as heavily subsidised fares (rather than the current trend of increasing fares), better, faster and more available services, and such economic incentives as a "congestion" charge to be able to bring a car into the CBD for instance.

The example of the Northern Suburbs Rapid Transit System in Perth, which did not initially involve urban consolidation but rather a re-design of bus routes so that they fed the heavy rail spine, shows the potential for public transport investment to promote more sustainable transport use in cities. Patronage has increased since the early 1990s, almost to the point of saturation without further changes such as urban consolidation or a cultural change among non-rail users. New cross-suburban rail infrastructure, fed by buses, can significantly reduce car use in Australian cities.

CONCLUSION

It is imperative that Australian cities become more sustainable. While this may involve costs, these costs are better perceived as long-term investments. There is a huge environmental, social and economic cost if the sustainability agenda is not pursued. If we cannot afford sustainability, we certainly cannot afford unsustainable cities.

In order to be truly sustainable, people living in cities such as Sydney need to protect and enhance the environment within the city's borders, reduce the impact upon hinterlands and to avoid transferring the problem elsewhere by enlarging our Ecological Footprint. Anything less is not genuine sustainability.

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USEFUL SOURCE MATERIAL

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