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HOUSE OF REPRESENTATIVES
STANDING COMMITTEE ON
ENVIRONMENT AND HERITAGE

Submission to the Inquiry into Sustainable Cities 2025

Sustainability is about limiting the demands of society on environmental and material resources in order to maintain a predictable and sufficient yield from those resources.

Today's Sydney has outgrown its water supply – the predictable yield of rivers that can be diverted to Sydney, without causing serious ecological damage, is no longer sufficient. This is unsustainable. But water use is not the only example of unsustainable resource use in this city. Unsustainable over-exploitation of building sand and landfill sites is also evident. And goods and private vehicle traffic volumes have swamped Sydney's road system and public transport is woefully inadequate.

But how do we move from a now acknowledged unsustainable situation to a sustainable one? I'll confine my discussion to water use.

The starting point is the fact that Sydney's total water use is the product of per capita consumption multiplied by the number of residents. In order to move to a sustainable yield draw-down Sydney must reduce per-capita consumption immediately and fix the leaks in its distribution system. This is being done. Demand management measures have already been put in place to reduce per-capita consumption and residents have been offered subsidies to install rainwater tanks. And Sydney is already pumping water from the depleted Shoalhaven River into the Warragamba system, but at great energy cost.

Commendably too, new ways are being sought to re-use waste-water thus reducing the stress on raw-water sources, though all re-use strategies carry public health risks, consume energy and produce greenhouse gases. (Sewer-mining is rejected because locations aren't available [who'd want to live next to a sewage treatment plant?] and because small local plants have quality-control problems.) Sydney is thus already taking reasonable steps to lower per-capita water consumption and water-saving devices are being mandated in new buildings.

Despite all these measures, 4 million existing residents have little prospect of reducing their water use sufficiently. A sustainable water supply for Sydney depends on limiting its population growth. Failure to move to a stationary population will mean constant water price-hikes, or even rationing. One imagines that such a policy failure carries considerable political risks. Yet, not only is there a failure to move towards population equilibrium, but Federal Government policies are actually imposing population growth on Sydney.

I trust that the Committee understands the mathematical implications of continuous growth – the 'Bankers Rule'. Simply put, anything that grows at a steady rate will double in size according to the formula: Doubling time = $\frac{70}{\text{Average annual percentage increase}}$

Grow the population at 1 per cent per year and that population will double in 70 years.

Grow the number of cars by 2 per cent per year and the number will double in 35 years.

Grow waste generation at 3 per cent per year and you'll need to double the landfill capacity in just 23 years.

Continuous growth is a mathematical impossibility! This is not opinion – it is fact!

So, discussion about sustainability *must* set a reasonable timeframe for achieving a stationary population for our cities. Information about location, size and accessibility of resources (sand, gravel, clay, landfill, productive market-gardens, water etc.) needs to be collected, and sustainable yields need to be determined for each resource. Realistic estimates must be set for take-up of new technology, and the environmental costs of implementing the new technologies must be assessed.

The terms of reference imply that, somehow, good planning will achieve a sustainable city. However, as mentioned earlier, sustainability is about limiting the demands of society on environmental and material resources in order to maintain a predictable and sufficient yield from those resources – living off the interest while preserving the capital. Good planning and design is desirable, reducing per-capita demand is essential, but of themselves, they do not lead to sustainability. Only when per-capita demand multiplied by the population number is less than ongoing predictable yield of a city's resources can that city be said to be sustainable.

The Committee will inquire about, "The major determinants of urban settlement patterns and desirable patterns of development for the *growth* [my emphasis] of Australian cities". However, an understanding of sustainability requires that the *limits to growth* should be established.

In Sydney's case, population multiplied by per-capita demand exceeds the ongoing predictable yield of a number of resources. The city has dangerously crossed the threshold and its present rapidly growing population is unsustainable.

Mechanisms for the Commonwealth to bring about urban development reform and promote ecologically sustainable patterns of settlement (Terms of Reference, 5) will rely upon collecting information about limits to growth in various cities (or new city locations). In cities (like Sydney) where these limits have been exceeded, further growth should not occur.

Australia's population would naturally peak by around the end of the study period, *if* Federal Government population intervention ceased. It is interesting to note that many successful countries no longer have growing populations, and, I suspect, have a very good chance of achieving ecological sustainable settlements. Some are listed below:

Country	Population 2003 (millions)	Population 2050 (millions)
Sweden	8.9	8.7
Greece	11.0	9.8
Italy	57.4	44.9
Spain	41.1	37.3
Germany	82.5	79.1
Japan	127.7	109.7

Source: *State of World Population 2003*, United Nations Population Fund, New York.

Yours faithfully

Gordon Hocking