TOMORROW’S CITIES TODAY
Tomorrow’s Cities Today was developed through the generous individual contributions and peer review provided by Consult Australia’s Infrastructure Roundtable and Sustainability Roundtable. Under the chairmanship of Tom Pinzone and Ashak Nathwani respectively, Consult Australia’s roundtables gather together experts across disciplines drawn from Australia’s leading firms consulting in the built and natural environment.
Disclaimer

Tomorrow’s Cities Today is published by Consult Australia. It represents collective viewpoints for consideration by governments, community and industry stakeholders. The information contained herein does not necessarily represent the views of individual contributors or their respective firms.
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABOUT CONSULT AUSTRALIA</td>
<td>7</td>
</tr>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>8</td>
</tr>
<tr>
<td>SUMMARY OF KEY RECOMMENDATIONS</td>
<td>10</td>
</tr>
<tr>
<td>WHY CONSULT AUSTRALIA?</td>
<td>12</td>
</tr>
<tr>
<td>THE ROLE OF CITIES IN AUSTRALIA</td>
<td>13</td>
</tr>
<tr>
<td>PRODUCTIVITY</td>
<td>16</td>
</tr>
<tr>
<td>An Integrated Funding Framework for Transport Infrastructure</td>
<td>18</td>
</tr>
<tr>
<td>Understanding Good and Bad Debt</td>
<td>19</td>
</tr>
<tr>
<td>Broader, Stronger Cost Benefit Analysis</td>
<td>20</td>
</tr>
<tr>
<td>High Speed Rail?</td>
<td>21</td>
</tr>
<tr>
<td>User-Charging for Transport Infrastructure</td>
<td>21</td>
</tr>
<tr>
<td>Washington State Road Pricing Pilot</td>
<td>23</td>
</tr>
<tr>
<td>Supporting Integrated Planning</td>
<td>24</td>
</tr>
<tr>
<td>Establishing a Nexus between Strategic Planning and the Community</td>
<td>24</td>
</tr>
<tr>
<td>Attractive Densities and Land Use Mixes</td>
<td>25</td>
</tr>
<tr>
<td>SUSTAINABILITY</td>
<td>30</td>
</tr>
<tr>
<td>Mitigation</td>
<td>31</td>
</tr>
<tr>
<td>Australian Green Infrastructure Council (AGIC)</td>
<td>32</td>
</tr>
<tr>
<td>Adaptation</td>
<td>33</td>
</tr>
<tr>
<td>National Climate Change Adaptation Research Facility (NCCARF)</td>
<td>33</td>
</tr>
<tr>
<td>Prepare, Protect, Adapt and Innovate for Climate Change</td>
<td>35</td>
</tr>
<tr>
<td>Green Depreciation</td>
<td>36</td>
</tr>
<tr>
<td>Chicago Adaptation Strategy</td>
<td>37</td>
</tr>
<tr>
<td>Supporting Green Skills</td>
<td>38</td>
</tr>
<tr>
<td>Resilience &amp; Connectivity for Sustainable Urban Development</td>
<td>39</td>
</tr>
<tr>
<td>Managing Extreme Flood Events</td>
<td>39</td>
</tr>
<tr>
<td>LIVEABILITY</td>
<td>42</td>
</tr>
<tr>
<td>Healthier Communities</td>
<td>43</td>
</tr>
<tr>
<td>Supporting Social Inclusion</td>
<td>43</td>
</tr>
<tr>
<td>Demographic Change</td>
<td>45</td>
</tr>
<tr>
<td>Age-Friendly Community Planning and Design</td>
<td>46</td>
</tr>
<tr>
<td>GOOD GOVERNANCE</td>
<td>48</td>
</tr>
<tr>
<td>Australian Government Leadership</td>
<td>48</td>
</tr>
<tr>
<td>Measuring Success</td>
<td>49</td>
</tr>
<tr>
<td>Best-Practice Local Government</td>
<td>50</td>
</tr>
<tr>
<td>Delivering Infrastructure</td>
<td>51</td>
</tr>
<tr>
<td>COAG Infrastructure Working Group</td>
<td>51</td>
</tr>
<tr>
<td>Funding the Future</td>
<td>52</td>
</tr>
<tr>
<td>LEVERAGING BEST PRACTICE</td>
<td>53</td>
</tr>
<tr>
<td>Productivity - Financing the Future - Value Capture</td>
<td>55</td>
</tr>
<tr>
<td>Sustainability - Kelvin Grove Urban Village, Queensland</td>
<td>57</td>
</tr>
<tr>
<td>Liveability - The new Royal Children’s Hospital, Melbourne, VIC</td>
<td>58</td>
</tr>
<tr>
<td>Smart Cities - The Sun Corridor mega-region, from Phoenix to Tucson</td>
<td>59</td>
</tr>
<tr>
<td>APPENDIX A: ASBEC Built Environment Policy and Program Matrix</td>
<td>61</td>
</tr>
<tr>
<td>APPENDIX B: COAG Criteria for Strategic Planning of Capital Cities</td>
<td>62</td>
</tr>
</tbody>
</table>
Consult Australia is the association for professional services firms within the built and natural environment; influencing policy, creating value and promoting excellence.

As an association, our primary focus is on improving the commercial environment for our members and raising standards across the industry.

Our member firm services include, but are not limited to: design; architecture; technology; engineering; planning; landscape architecture; surveying; cost consulting (quantity surveyors); project management; and management solutions. We represent some of the industry’s biggest players in this space with our member firms collectively employing more than 50,000 staff.

Consult Australia’s vision is to drive business success for consulting companies in the built and natural environment through collaboration, education, support and advocacy. We are dedicated to providing support and advocacy to our members with integrity, commitment, evidence based positioning, responsible actions and respect.

Consult Australia achieves these goals through a range of top down (improving regulation and creating opportunities) and bottom up (building capacity and community to reduce risk) support and services to members.

Consult Australia is a member of the Australian Sustainable Built Environment Council (ASBEC), the Australian Construction Industry Forum (ACIF), and the Australian Services Roundtable (ASR). Consult Australia is a host organisation for the annual Built Environment Meets Parliament (BEMP) summit.
Executive Summary

Much has been said about Australia’s urban policy landscape in recent years. There is a wide and deep body of research, debate and policy across industries, sectors and governments. In itself this is a testament to increasing recognition of the capacity for Australia’s cities to influence so many of those indicators by which we measure our quality of life: our happiness, health, prosperity, connectedness and security.

Following the 2010 Intergenerational Report, the State of Australian Cities 2010 and 2011 reports and the Our Cities discussion paper and consultation program, the publication in March 2011 of the Australian Government’s National Urban Policy is a welcome step forwards. Our Cities, Our Future has decisively shifted the debate of recent years from local or state focused interests to a debate of critical national importance, and from research and ideas to a debate about political leadership, and the implementation of practical policy changes that deliver measurable outcomes.

Importantly the National Urban Policy describes the goals, objectives and principles to guide urban policy development and investment across Australia. Taken alongside the Government’s Sustainable Population Strategy and Regional Policy Agenda, the Government hopes to provide for evidence-based policy development that meets current and future challenges.

Figure 1: National Urban Policy goals, objectives and principles

IN ITSELF THIS IS A TESTAMENT TO INCREASING RECOGNITION OF THE CAPACITY FOR AUSTRALIA’S CITIES TO INFLUENCE SO MANY OF THOSE INDICATORS BY WHICH WE MEASURE OUR QUALITY OF LIFE: OUR HAPPINESS, HEALTH, PROSPERITY, CONNECTEDNESS AND SECURITY.
As outlined in Figure 1, the framework provided through *Our Cities, Our Future* is necessarily broad, and flexible enough to accommodate any order of priorities as set by government. What then, with limited resources, are the priorities? What is next for our cities?

In this context it is timely to take stock; to consider what next steps should be taken. Priorities need to be set, and a plan for action which will realise a positive future for our cities must take priority. That is the objective of *Tomorrow’s Cities Today*: outlining those policy initiatives we believe are now critical for today’s policy-makers to deliver the cities we need and want to live in tomorrow. These recommendations are by no means exhaustive, but with the prioritisation and implementation of these initiatives, we believe Australian cities will be better placed to deliver the outcomes voters expect—and will increasingly demand—of their governments in the years ahead.

*Tomorrow’s Cities Today* uses the goals set through the National Urban Policy (productivity, sustainability, liveability and good governance) to provide practical recommendations for governments: a plan for action.
SUMMARY OF KEY RECOMMENDATIONS

PRODUCTIVITY

Recommendation 1: The Australian Government lead the establishment of a Public Infrastructure Investment Strategy that includes clear criteria that provide for cost-benefit analyses against which to determine the merits of significant (possibly debt-leveraged) government investment in infrastructure projects.

The Strategy would be developed and agreed by a Bi/Multi-Party Parliamentary Public Infrastructure Investment Committee. Infrastructure Australia would advise the Government of those Projects of National Significance that warrant public investment against the criteria identified.

Recommendation 2: Governments must commit to undertaking pilot studies of new road pricing mechanisms including road-user charges. Such studies should include extensive community consultation, consider impacts across the whole transport system, and draw on overseas experience to maximise the likelihood of public acceptance, success and a sustainable source of infrastructure funding in the future.

Recommendation 3: The Australian Government develop a National Spatial Plan to provide a spatial framework for urban policy, infrastructure delivery and population distribution.

Recommendation 4: Governments at all levels prioritise and plan for the delivery of sustainable, liveable, higher density residential development in our cities alongside essential economic infrastructure.

SUSTAINABILITY

Recommendation 5: A price on pollution will drive low carbon solutions, innovation, business R&D and investment in new technologies. A price on pollution must set in a manner that accounts for the needs of smaller businesses and emissions intensive trade exposed (EITE) industries.

Recommendation 6: The Australian Government facilitate the development of a National Adaptation Plan to ensure coordination, prioritisation and delivery of adaptation initiatives nation-wide.

Recommendation 7: Governments prioritise and lead the coordination and delivery of green skills through the education system, and in partnership with industry, universities and the Vocational Education and Training sector.

LIVEABILITY

Recommendation 8: The Australian Government’s Social Inclusion Agenda should include the built environment (encompassing active and public transport infrastructure) as a social inclusion priority area.

This should be supported by relevant expertise on the Australian Social Inclusion Board to support advice to government on the opportunities for the built environment and infrastructure to support the disadvantaged within our communities.

Recommendation 9: The increased benefits for mobility, access and social inclusion created by increased public and active transport options for disadvantaged populations need to be accounted for in project evaluations and cost-benefit analyses informing infrastructure development.

Recommendation 10: Government plan for the delivery of more age-friendly built environments, including consideration of retirement living, ageing in place, health-care, mobility and options for affordable living.
GOOD GOVERNANCE

Recommendation 11: The Australian Government create a ministerial portfolio for cities and urban development, alongside local government and regional development to deliver integrated building, precinct and city policy and programs, supported by appropriately resourced agencies and departments.

Recommendation 12: COAG agree that all States will have in place; in the near term, plans that meet the nine criteria for the future strategic planning of all cities with populations over 100,000 people or populations likely to achieve 100,000 by 2050, and that the Commonwealth will link future infrastructure funding decisions in those cities to meeting these criteria.

The review of cities against the COAG criteria should be integrated with the annual publication of the State of Australian Cities 2010 and 2011 reports—and the development of the Australian Government’s sustainability indicators—to provide a regular, single comprehensive overview of city performance.

Recommendation 13: A Productivity Commission review of what constitutes best-practice local government (including reference to size, structure, powers and geographic reach) in Australia’s major cities, with reference to a city’s ability to achieve the COAG Cities Criteria; the indicators of city performance established by the State of Australian Cities 2010 and 2011 reports and the objectives established through the National Urban Policy and Sustainable Population Strategy.

The outcomes of this review should be incorporated into a revised COAG Cities Criteria and explicitly linked to commonwealth funding agreements to incentivise the delivery by the states of best-practice local government.

Recommendation 14: Develop a robust, independent and transparent process and governance model for the evaluation, prioritisation and decision-making supporting infrastructure delivery as a ‘best-practice’ approach for implementation across state and territory governments.

State, territory and federal infrastructure ministers and their governments should be transparently held accountable to the independent advice provided through such a governance model through the publication of an annual ministerial response; detailing the rationale informing subsequent infrastructure prioritisation and funding by governments.

Recommendation 15: A Productivity Commission review of the benefits of a Sovereign Wealth Fund for Australia as a mechanism to boost productivity and meet future demands for funding arising from forecast climate and demographic change.

Recommendation 16: Position Australia as a centre of excellence in urban and city development: Internationally recognised for the best minds in urban design, planning, engineering and architecture of cities that is evident in models of best practice implemented in our own backyard.
WHY CONSULT AUSTRALIA?

Drawing on the expertise of Consult Australia’s member firms, our recommendations reflect the wide array of professional disciplines that sit within these firms: engineering, architecture, planning, design, surveying, project management and environmental analysis. Our member firms’ own business advantage is based on harnessing Australia’s best minds across these fields in a multidisciplinary approach. The environmental, social and economic challenges to which our firms develop innovative, tailored and efficient solutions are the very same challenges currently dominating the headlines and exercising the minds of policy makers and elected representatives across the country.

Consult Australia is well positioned to provide advice on these issues. Following the publication in 2009 of Sydney Towards Tomorrow, Consult Australia has leveraged its members’ expertise in urban development, infrastructure design and planning to provide authoritative advice on policy reform. In November 2010, Consult Australia continued this work with the launch of Transporting Australia’s Future, a call to action for governments to back new ways to secure infrastructure funding specifically for transport infrastructure as a core driver of productivity. This report recommends widespread tax reform and the establishment of new governance mechanisms to ensure sustainable sources for infrastructure funding. With a growing infrastructure deficit across Australia, and with funding being redirected in response to some of the most costly natural disasters Australia has ever experienced, it is vital that longer term funding is released to build the economic infrastructure critical to urban development and national productivity.

In February 2011, Consult Australia released Seizing the Sustainability Advantage providing a blueprint for reform and new initiatives to ensure a sustainable Australia. Consult Australia is a strong advocate for the development of more sustainable communities through better use of transit corridors, integrated planning, and land-use that facilitates better use of existing and planned infrastructure. Alongside these initiatives a whole of government approach to sustainability across economic, demographic and environmental concerns is essential. The prioritisation of a National Framework for Sustainability and an Adaptation Plan must guide business, government and the community to deliver long-term solutions.

These are complex issues with no easy answers. Tomorrow’s Cities Today brings together some of Australia’s best thinking on urban development to recommend priorities for reform and next steps to ensure we continue to build communities for a more productive, sustainable and liveable Australia.
The challenges facing our cities associated with higher than previously forecast population growth, climate change and the need for a more sustainable approach to urban planning, affordability, liveability and governance are substantial.

The summer of 2010-11 has seen new challenges for our cities and regional centres with unprecedented damage caused by flood, cyclone and bushfire. With their immediate impact on urban and commercial infrastructure these disasters highlight the importance of adaptation in our built environment and the far reaching role of our cities in supporting the wider economy. It is via the infrastructure provided through our cities: the road, rail and ports that connect our cities with the rest of the world that we are able to harness the continued opportunities emerging from the resources boom, and connect with the global economy.

The State of Australian Cities 2010 and 2011 reports note that Australia is one of the most urbanised countries in the world, with 75 per cent of our population living in cities. In summarising the importance of our cities, other distinguishing features noted in the State of Australian Cities 2010 and 2011 reports included:

- Australia’s population has grown by three million in the past decade;
- Productivity growth has slowed and then declined since 1998;
The major cities account for 80 per cent of the nation’s economic activity;

Over 71 per cent of people aged over 65 in Australia are residents of the major cities;

93 per cent of residents who speak another language other than English live in the major cities;

People with tertiary qualifications are highly concentrated in the major cities;

The major cities have a substantially higher median and mean average income, with significantly greater proportions in the highest two income deciles;

Labour force participation is substantially higher in major cities than in the rest of Australia;

Based on relative industry sector employment share, the major cities are dominated by finance and business services, retail and manufacturing industries;

About 85 per cent of Australians live within 50 kilometres of the coast. More than 700,000 dwellings are within three kilometres of the coast and less than six metres above existing sea level;

Household size continues to decrease as couple families with children continue to decline as a proportion of household mix;

Australia’s major cities continue to experience strong population growth. Of the 2,915,607 people added to the population between 2001 and 2010, major cities absorbed 81 per cent;

Treasury projections show that the number of traditional working age people to support each retiree is expected to fall from five people today, to 2.7 people in 2049-50;

About 70 per cent of energy is consumed indirectly in products and services used. For example, the energy embodied in the construction of a building is many times greater than the energy used within that building in a year;

Urban air pollution is estimated to account for one per cent of the disease burden in Australia and more than 3,000 premature deaths, mainly among the elderly; and

The difference between ambient air temperatures in a city and its surrounding rural areas can be three to four degrees Celsius higher in summer months.

What do we want our cities to achieve?

These kinds of figures clearly demonstrate the central role of cities in shaping our economy and our community. In this context it becomes more important than ever to consider what we want our cities to achieve, what they should deliver and against these objectives, what they should look like.

As it is implemented the National Urban Policy should support a broader national conversation to help generate the responses to these larger cultural questions. As we grapple with the challenges of climate change, an ageing and growing
WE DON’T MAKE CITIES IN ORDER TO MAKE INFRASTRUCTURE. WE MAKE INFRASTRUCTURE IN ORDER TO SUPPORT CITIES; IT’S A SECONDARY, SUPPORTING ACTIVITY. CITIES ARE ABOUT EXCHANGE—OF COMMERCE AND CULTURE PRINCIPALLY."

The National Urban Policy is an important step towards this complex discussion, and the role of the Australian Government in prioritising our cities as a national concern must be commended. However, equally it is important that governments, industry, the community and academia, continue to consider what we want our urban centres to provide and how we can get there. The four goals of productivity, sustainability, liveability and good governance are part of this, but in achieving these we must think broadly about how they interrelate, and what they mean in practice for each of us.

It is important to clearly identify those practical actions that can be taken now to continue the steps towards these broader objectives. Tomorrow’s Cities Today commences that discussion, but also outlines key recommendations governments must consider as our cities continue to drive productivity and economic growth across Australia. To meet the vast challenges before us, investment in our cities must be prioritised, planned and aligned with broader local, state and national policy settings. These policy settings themselves should reflect and lead our national values and culture, and be established through an ongoing dialogue between all stakeholders.

REFERENCES:

2 Ibid. Page 21
5 Hill, Dan. April 2011. Same Old New World Cities: how vision and strategy are amongst the many things missing from the Australian Government’s National Urban Policy discussion paper. Architecture Australia. Page 38
The development of Australia’s cities will also be central to improving productivity performance. Much of a city’s capacity to accommodate population increases while supporting productivity growth is reliant on the efficacy and adequacy of its infrastructure, including its housing stock. The sustainability of Australia’s cities will also be dependent on better governance in the planning and organisation of city infrastructure and more efficient use of existing infrastructure.6
The productivity benefits of clustering, agglomeration and co-location that come with great urban developments are well-documented as are the accompanying challenges. Cities provide the opportunity for firms to co-locate, but with co-location comes congestion caused by employees, customers and others competing for access to key areas at peak times of the day and week. The challenge for cities is to ensure that congestion is managed, access is maintained and businesses can continue to co-locate and function efficiently for maximum productivity.

Policy to support growth in business co-location is important because city economic density—output per unit of land area (the outcome of business co-location)—is increasingly recognised as an important source of national productivity growth. As economies become more advanced, and as the services sector becomes a more important engine of economic growth, the economies of scale that cities provide are becoming increasingly important. This is all well demonstrated through the benefits achieved by: easier labour market recruitment; face-to-face access to suppliers and customers; and the knowledge transfers between businesses—all critical to innovation.

Australian central business districts comprise a relatively small share of metropolitan employment relative to global benchmarks, yet our metropolitan areas are not especially large in world terms. These two facts together suggest that there is or should be substantial scope to increase the economic density of our central business districts, which would in turn boost national productivity performance.

Growing economic density depends on improving accessibility—by road transport and especially, given the constrained geography of many city employment nodes, by public transport—so that more people can be transported quickly and reliably without an increase in congestion. However, access in many parts of our cities is widely recognised as being often inadequate. In opinion surveys undertaken by the University of Sydney’s Institute of Transport and Logistics Studies, public transport is consistently seen as the most important transport issue in every state of Australia. Both the economic opportunity from improving access in our cities and the challenges that it presents are clear.

THE CHALLENGE FOR CITIES IS TO ENSURE THAT CONGESTION IS MANAGED, ACCESS IS MAINTAINED AND BUSINESSES CAN CONTINUE TO CO-LOCATE AND FUNCTION EFFICIENTLY FOR MAXIMUM PRODUCTIVITY.
AN INTEGRATED FUNDING FRAMEWORK FOR TRANSPORT INFRASTRUCTURE

Australia’s economy is more dependent on transport than most other Organisation for Economic Co-operation and Development (OECD) countries. We owe Australia’s economic and social development and well-being in large part to past investment decisions in transport infrastructure. Transport and logistics represent some 14 per cent of Australia’s GDP and account for some 330 million kilometres of travel made every day in capital cities. In addition to growth within our cities, intercity movements are also growing at an average annual rate of 3.9 per cent. Our transport infrastructure provides access to employment, facilitates social inclusion, and allows our cities to grow. It moves 520 billion tonne kms of freight each year, supplying Australia’s industry, enabling export revenues, and supporting our economy. Transport represents up to 8 per cent of industry output. These figures indicate that with increasing demand for transport infrastructure, gaps persist, particularly in, near, and between our major cities.

Consult Australia’s 2010 report Transporting Australia’s Future canvases a range of funding mechanisms emerging around the world that can provide sound and proven revenue streams. New ideas need to be integrated with existing policy to deliver the necessary change.

Better use of existing assets, taxation reform, private financing and public financing are all necessary to meet the demand for better transport infrastructure. Consult Australia does not consider any one of these funding streams will by itself provide a solution. All represent opportunities for reform.

In this context, the Australian Government’s 2011 Statement of Expectation for Infrastructure Australia (IA) builds on many of these areas. Consult Australia supports initiatives through IA to:

- Further refine the National Public Private Partnership Policy and Guidelines, promoting best practice PPP procurement and options for private and superannuation sector investment, and identify reform to increase competition in project financing;
- Develop and lead strategies on ‘asset sweating’ through the Infrastructure Working Group to maximise existing infrastructure and increase efficiency and performance; and
- Consider the identification of where projects could be privately financed, where user charges might be considered as a means of project funding, and where alternative financing models are appropriate.

These initiatives, alongside the Government’s commitment to a Productivity Commission review of fuel excise, carbon content and the role of user charging are important steps to advance the full range of options available to release funding to support infrastructure investment.
UNDERSTANDING GOOD AND BAD DEBT

Increasingly challenging for governments of all stripes, where budget bottom-lines have become more politicised, is the identification of projects worthy of public financing. In this context governments must reconsider the extent to which surplus-driven budgets and unquestioning dedication to AAA credit ratings limit opportunities to invest in long-term productivity-enhancing infrastructure. The ‘fiscal populism’ that now characterises governments’ approach to debt is at the expense of much-needed infrastructure investment.

Nicholas Gruen of Lateral Economics characterises much opposition to government debt as a ‘faux economic rationalism’: ‘Australian governments have embraced the notion that all debt is bad, but most of the time debt is only bad if it’s used to fund recurrent expenditure. [...] there is a particular perversity in arbitrarily constraining the borrowing of the entity that enjoys the lowest borrowing cost — the government — especially at a time when our largest cities groan under the weight of a widely recognised infrastructure crisis’.12

In recent years Queensland’s significant investment in infrastructure has been funded in part by a willingness to sacrifice their AAA credit rating: moving to a AA+ rating by Standard & Poors in February 2009 following the Global Financial Crisis (GFC). This was a decision that brought disproportionate criticism given the significant capital works program supporting the Queensland economy and likely boosting productivity in the longer-term13.

However, the increasing politicisation of surpluses and deficits cannot be ignored. Nor can recent criticism and opposition levelled at the decision-making process, cost-benefit analysis and budget-reporting informing government funding of the National Broadband Network. A bi-partisan approach to public infrastructure investment, supported by independent advice, is urgently required to encourage a more complex debate about budget policy.

RECOMMENDATION 1:

A Public Infrastructure Investment Strategy that includes clear criteria that provide for cost-benefit analyses against which to determine the merits of significant (possibly debt-leveraged) government investment in infrastructure projects.

The Strategy would be developed and agreed by a Bi/Multi-Party Parliamentary Public Infrastructure Investment Committee. Infrastructure Australia would advise the Government of those Projects of National Significance that warrant public investment against the criteria identified.

Implementation of the Strategy agreed by the Public Infrastructure Investment Committee (possibly similar in model to the Multi-Party Climate Change Committee) would be binding on the Government who would be bound to regularly report their progress in meeting its objectives.
Critical in assessing the merits of public investment in infrastructure is the application of a broad cost-benefit analysis. Increasingly infrastructure projects are viewed as ‘ready to proceed’ only where utilisation is close to capacity. The benefits of a longer-term view of infrastructure investment, and governments’ vital role in facilitating those longer-term benefits as part of a vision for our cities, needs to be re-established.

When the Sydney Harbour Bridge was built the daily traffic crossing the bridge was around 11,000 vehicles; the bridge today sees around 160,000 vehicles a day. This represents an investment in infrastructure with the capacity to realise demand some 14 times what was required at the time of construction. Would the Sydney Harbour Bridge be built today? And if a skeptic suggests not, in the absence of this type of leadership and vision, how can we hope to meet the infrastructure needs of the next eighty years?

Governments need to consider less easily quantified benefits that come with some forms of infrastructure investment. The transformation achieved in Bilbao through the construction of the Guggenheim Museum is often quoted and in some cases poorly emulated. Similarly, the Sydney Opera House demanded unforeseen investment by the governments of the time. But there is no doubt that this is a similarly ‘transformational investment’ that has been recouped both economically and culturally in the decades that have followed — though this would not likely have been reflected in any cost-benefit analysis.

Similarly again, Barangaroo has the potential to generate enormous long-term benefits for NSW and Australia as a significant expansion of Sydney’s productive capacity and an opportunity to develop new iconic world-class architecture. However, there is a risk that the cost-restrictions governing the project have reduced the potential long-term gains for the tax-payer that might come with greater government investment and vision. Can Barangaroo be for Sydney and Australia in the 21st Century what the Opera House was in the 20th Century?

The Government has committed Infrastructure Australia to work more closely with the states and territories and industry to promote better targeted investments in infrastructure linked to national priorities. These will help ensure the best value for money for the tax-payer. This, alongside the publication of cost benefit analyses and a commitment to undertake evaluations of infrastructure post-build, will support a longer-term understanding of the value of our infrastructure investment.

However, the criteria governing cost benefit analysis are generally not well understood by the public and are also subject to change and influence. Good governance is critical to resolving this issue. Recommendation 14 of this report advocates the development of a robust, independent and transparent process for the evaluation, prioritisation and decision-making supporting infrastructure delivery as a ‘best-practice’ approach for implementation across state and territory governments. A gap analyses of current decision making processes and how they are made would support this recommendation. Ultimately, ministers should be transparently held accountable to this advice through the publication of an annual ministerial response; detailing the rationale informing subsequent infrastructure prioritisation and funding by governments.
HIGH SPEED RAIL?

Such debates are timely as the Government considers the feasibility study into the economic benefits and financial viability of a new multi-billion dollar high speed rail network connecting the cities along Australia’s East coast. This type of infrastructure, like the National Broadband Network, has the potential to realise benefits that are unforeseen at the time of construction. While clearly patronage and revenue forecasts are important considerations as are other modal implications (for example, shifting passengers from planes to trains), less tangible longer-term benefits for regional ‘transit-oriented’ economic development are more difficult to foresee. Cascading social and other business benefits arising from an East coast transport spine may not be realised for some decades, but should be accounted for in some way in determining the suitability of this infrastructure for government investment.

USER-CHARGING FOR TRANSPORT INFRASTRUCTURE

CURRENT ROAD TAX ARRANGEMENTS WILL NOT MEET AUSTRALIA’S FUTURE TRANSPORT CHALLENGES. POORLY FUNCTIONING ROAD NETWORKS HARM THE AMENITY, SUSTAINABILITY, LIVEABILITY AND PRODUCTIVITY OF SOCIETY. MOVING FROM INDISCRIMINATE TAXES TO EFFICIENT PRICES WOULD ALLOW AUSTRALIA TO LEVERAGE THE VALUE OF ITS EXISTING TRANSPORT INFRASTRUCTURE.

Currently government funding for transport infrastructure is mainly sourced through consolidated revenue, reflecting a political balancing between competing demands. Given other pressures on government investment, this is unlikely to change over the short term. Many ‘user charges’ are woven into the current consolidated taxation system. Current revenue streams derived from transport infrastructure are mainly limited to:

- Fuel Excise;
- Vehicle registration;
- Parking fees;
- Tolls and Ticket fares; and
- GST.

Reliance on traditional fuel excise as the key revenue tool is internationally recognised as having limited longevity, with diminishing reserves and increased fuel efficiency curtailing revenues. An infrastructure funding regime based on fuel taxes has no sustainable future.
RECOMMENDATION 2:

Governments must commit to undertaking pilot studies of new road pricing mechanisms including road-user charges.

Such studies should include extensive community consultation, consider impacts across the whole transport system, and draw on overseas experience to maximise the likelihood of public acceptance, success and a sustainable source of infrastructure funding in the future.

Road user charging and efficient road pricing has gained increasing recognition in Australia as providing an appropriate market-led solution to a burgeoning infrastructure deficit, increasing maintenance costs, dwindling government funds and frustrated community expectations.

Australia’s future tax system: Report to the Treasurer (Henry Review), in considering a move towards greater use of user charging as part of its tax reform agenda recommends that governments:

ANALYSE THE POTENTIAL NETWORK-WIDE BENEFITS AND COSTS OF INTRODUCING VARIABLE CONGESTION PRICING ON EXISTING TOLLED ROADS (OR LANES), AND CONSIDER EXTENDING EXISTING TECHNOLOGY ACROSS HEAVILY CONGESTED PARTS OF THE ROAD NETWORK. 15

The Henry Review also supports the aims of the COAG Road Reform Plan and recommends an acceleration of its timetable towards mass-distance-location-based charging.

The Henry Review suggests that, where tolls are levied by private infrastructure operators, state governments should negotiate to compensate operators if the switch to variable tolls involves a loss of revenue (and conversely to pass the gain to road users or government if there were gains in revenue). The Review notes that the introduction of congestion pricing on existing roads would place stress on existing public transport services and draw attention to inadequacies. Introduction of user charging should be coordinated with—and help finance—additional investment in public transport.

The Henry Review notes that the implementation of user charging would lead to less congested roads, shorter travel times and investment in road infrastructure that addresses user demand and provides a foundation for further productivity growth, improved living standards and more sustainable cities. In exchange for targeted charges, road users benefit. They would pay less fuel tax, motor vehicle stamp duties could be abolished, and compulsory third party insurance (set through improved data on vehicle...
use) would be fairly priced. The revenue from efficient user charges could help finance new urban transport infrastructure, and cover the cost of heavy vehicle damage.\(^6\)

Since the Henry Review, as part of a recast of its responsibilities, Infrastructure Australia has been charged to consider where user charges might be considered as a means of project funding, and where alternative financing models are appropriate. In addition, indications that the Government will request the Productivity Commission to review whether fuel excise should be levied based on carbon content have also included reference to a review of the need for road-user charges.

These initiatives are welcome steps, but governments must commit further to the identification of pilot opportunities and mechanisms to ensure community acceptance of this policy change in the medium-term.

**WASHINGTON STATE ROAD PRICING PILOT**

The Puget Sound Regional Council Traffic Choices Study recruited a statistically significant sample of volunteers and, after establishing their baseline “before-tolling” driving routine, began charging them for access to selected roadway facilities during particular time periods in the day. In other words, they had to pay road tolls. The study monitored driving behaviour of participants for an average of approximately 18 months per household.

Participants did not lose money. They were given a travel budget (or endowment account) from which tolls were deducted. If their driving patterns remained unchanged over the study, they would “spend” their account balance by the time the experiment concluded. If they changed their driving patterns to reduce the amount of driving on toll roads, they would keep the difference. This method held participants financially harmless, yet offered them the incentive of keeping their leftover budget if they changed their driving patterns. In this way, the study introduced real price incentives of a toll system, and measured whether and how much participants responded to those incentives.

The Study found that participants made small-scale adjustments in travel that, in aggregate, would have a major effect on transportation system performance. Done right, this type of road user charging could provide broad benefit, including lower vehicle emissions, fewer accidents, travel time savings, improved roadway performance reliability, and lower vehicle operating costs. For motorists to be better off, however, the revenues from road tolling must be used to provide additional benefits to users of the transportation system.

Puget Sound Regional Council (www.psrc.org/transportation/traffic/faq/)

---

THE REVENUE FROM EFFICIENT USER CHARGES COULD HELP FINANCE NEW URBAN TRANSPORT INFRASTRUCTURE, AND COVER THE COST OF HEAVY VEHICLE DAMAGE.\(^6\)
CONSULT AUSTRALIA BELIEVES GOOD PLANNING PROVIDES THE POTENTIAL TO ACHIEVE INTEGRATED, SUSTAINABLE OUTCOMES MORE EFFICIENTLY AND PROVIDES A ROBUST FRAMEWORK TO GUIDE FUNDING, PROJECT DEVELOPMENT AND DELIVERY OVER A LONG PERIOD.

ESTABLISHING A NEXUS BETWEEN STRATEGIC PLANNING AND THE COMMUNITY

The value, cost and role of strategic planning, whether of the urban structure or of the infrastructure that serves it, is rarely readily understood by the community. The main exception to this assertion is in the face of implementation, where communities might rally to oppose a project due to its impacts on them. There is an acute need for the community to better understand the need for infrastructure and how to plan for it, as well as engage in the process that results in the plan that affects their community.

This nexus between people, their level of service expectations, the associated infrastructure requirements and its costs needs to be better communicated and addressed in order to instil a clear understanding of the planning process required to best achieve optimal land use and infrastructure outcomes.
It is essential that governments support longer-term planning goals in consultation with business and the community. All governments have a responsibility to support decision making and community consultation that provides for and delivers integrated planning, land-use and infrastructure.

At a national level this can be supported with a national spatial policy and plan to provide an overarching framework. The National Ports Strategy and National Freight Strategy currently under development are part of this spatial approach to integrated planning; but a more comprehensive strategy is required in the longer term. Such a plan would clarify population distribution and provide a tool to evaluate how best to accommodate our citizens. For example, do we want more and stronger regional centres or larger mega-cities? A national spatial plan would provide the basis for planning and infrastructure delivery well into the future and support evaluations of supply chain links between cities and regions. Vulnerabilities and risks to our agricultural land from urban development could be assessed, alongside opportunities to diversify food supply chains and increase resilience.18

**RECOMMENDATION 3:**
The Australian Government develop a National Spatial Plan to provide a spatial framework for urban policy, infrastructure delivery and population distribution.

**ATTRACTIVE DENSITIES AND LAND USE MIXES**

**THERE ARE SEVERAL WAYS TO MAXIMISE YIELDS ON LAND USE, IMPROVE PRODUCTIVE CAPACITY, AND LEVERAGE INVESTMENTS IN INFRASTRUCTURE. ONE SUCH MEANS IS TO INCREASE DENSITIES SURROUNDING TRANSPORT CORRIDORS, INTERCHANGES AND ACTIVITY CENTRES.**19

The mix and density of land uses are fundamental characteristics of different cities. Density in each different land use or mixture of land uses creates opportunities and limitations to the live/work/play choices available to citizens of that city. Those choices are currently under pressure from influences such as population growth which adds an estimated 1000 persons per week to some of Australia’s major cities; housing shortage/affordability; rising fuel costs resulting in mortgage stress in car-dependent outer suburbs; a trend towards obesity in suburbs not conducive to healthy living; and a decline in the quality of the environment (page 28).

Density and mix can apply to a range of employment and workforce and residential uses. Density is usually referred to in terms of persons per square kilometre. Current Australian and global benchmarks for the bulk urban densities of major cities are summarised in Table 1: Major Cities – Population and Density.

Critical to the delivery of a more sustainable and liveable city is the concept of development within the existing developed footprint. Certainly green-fields development will continue, but often stated objectives reducing this to a percentage or less, of new dwellings, will require a major rethink of how “infill” development proceeds.
Absolutely central to the concept of greater population density within the existing footprint, is the concept of greater demand on infrastructure of all forms. However, significant limitations exist in relation both to capacity of existing infrastructure to meet the demands of greater population, but also in relation to the ability to readily enhance capacity of existing assets.

Solutions to providing adequate service delivery will require innovation (delivery may be in demand reduction rather than supply increase), recognition of the linkages between services (water and wastewater, telecommunications and broadband connection etc) and sophistication in delivery models.

Increased density reduces the cost and increases the efficiency of most forms of infrastructure networks, including water, waste, telecommunications, electricity and gas, and transport. However, people do not make their lifestyle choices on the basis of cost and efficiency alone.

The current focus on high density, high rise housing for urban consolidation in major cities has been largely driven by the desire by government and others for a quick fix to achieve the maximum possible “density benefit” from the minimum available land area in the shortest time. In the longer term this ignores the clear potential adverse community and social implications of developing large concentrations of high rise, high density housing in inner urban areas.

The broad issue is to inform the choices of Government, developers and communities to:

- Establish acceptable densities and mixes for different urban localities;
- Assess suitability of existing infrastructure for an increase in densities;
- Research best practice in medium/high density planning and design;
- Ensure infrastructure precedes or coincides with higher-density development;
- Plan for nourishing quality denser suburbs, e.g. incorporate open spaces; and
- Resolve conflicts between state and local governments on density planning.

In many Australian cities the density of dwellings has been increasing but the number of persons per dwelling or per household has been decreasing. Consult Australia recognises this is an ongoing trend that needs to be taken into account in urban planning decision making.

Specific challenges that arise include:

- The alignment of planned transport routes and the corridors of denser population, and how this will affect the success of transport infrastructure strategy;
- The community embracing a denser housing model and the effect that this will have on private car use, and how this will interface with moderation of traffic congestion;
- Gaining acceptance of appropriate and consistent international benchmarks to support community debate around good quality denser living; and
Quantifying and analysing efforts to date that have been made in denser population planning and design. Investigating what can be done to minimise the adverse environmental impacts and carbon footprint of the many Australians who make a deliberate choice to live and work in lower density areas.

There is a strong linkage between the urban density of a city and lower levels of car dependence for its population and higher levels of public transport use for commuting to work. Urban form influences travel mode, and the more dense our cities are (in terms of dwellings per land area) then the more likely it is that we can afford to provide high quality, frequent passenger transport systems like light rail or heavy rail. Consideration of utility corridors or ‘critical infrastructure corridors’ where power, water and telecommunications assets are co-located in a single infrastructure corridor makes financial and environmental sense.

Consult Australia supports a continued emphasis across states and territories towards Transit Oriented Development (TOD) and ongoing work integrating land use and infrastructure planning that provides for urban regeneration and sustainable greenfield developments. In this context opportunities to prioritise and plan for the delivery of sustainable, liveable, higher density residential development alongside essential economic infrastructure are substantial.

**RECOMMENDATION 4:**

Governments at all levels need to prioritise and plan for the delivery of sustainable, liveable, higher density residential development in our cities alongside essential economic infrastructure.
## TABLE 1: MAJOR CITIES - POPULATION AND DENSITY

<table>
<thead>
<tr>
<th>Grouping of Cities</th>
<th>City (Year of Data)</th>
<th>Density (persons per square km)</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australian State Capital Cities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brisbane 2006</td>
<td>900</td>
<td></td>
<td>1,676,000</td>
</tr>
<tr>
<td>Hobart 2001</td>
<td>1000</td>
<td></td>
<td>129,000</td>
</tr>
<tr>
<td>Canberra 2006</td>
<td>1100</td>
<td></td>
<td>356,000</td>
</tr>
<tr>
<td>Perth 2006</td>
<td>1200</td>
<td></td>
<td>1,256,000</td>
</tr>
<tr>
<td>Adelaide 2006</td>
<td>1400</td>
<td></td>
<td>1,040,000</td>
</tr>
<tr>
<td>Melbourne 2006</td>
<td>1600</td>
<td></td>
<td>3,372,000</td>
</tr>
<tr>
<td>Sydney 2006</td>
<td>2000</td>
<td></td>
<td>3,641,000</td>
</tr>
<tr>
<td><strong>Major Southern Hemisphere Cities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johannesburg 2007</td>
<td>2900</td>
<td></td>
<td>7,275,000</td>
</tr>
<tr>
<td>Durban 2010</td>
<td>3500</td>
<td></td>
<td>2,880,000</td>
</tr>
<tr>
<td>Cape Town 2010</td>
<td>5000</td>
<td></td>
<td>3,400,000</td>
</tr>
<tr>
<td>Buenos Aires 2010</td>
<td>4900</td>
<td></td>
<td>13,070,000</td>
</tr>
<tr>
<td>Santiago 2010</td>
<td>6500</td>
<td></td>
<td>5,950,000</td>
</tr>
<tr>
<td><strong>Major European Cities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rome 2001</td>
<td>3200</td>
<td></td>
<td>2,750,000</td>
</tr>
<tr>
<td>Paris 2010</td>
<td>3400</td>
<td></td>
<td>10,475,000</td>
</tr>
<tr>
<td>Berlin 2010</td>
<td>3500</td>
<td></td>
<td>3,450,000</td>
</tr>
<tr>
<td>London 2001</td>
<td>5100</td>
<td></td>
<td>8,278,000</td>
</tr>
<tr>
<td>Madrid 2001</td>
<td>5500</td>
<td></td>
<td>4,900,000</td>
</tr>
</tbody>
</table>
PRODUCTIVITY REFERENCES:


9 Nominated by 45 per cent or more of respondents. See Institute of Transport and Logistics Studies. Quarter 4, 2010. Interfleet Transport Opinion Survey (TOPS).


12 Gruen, Nicholas. 23 November 2010. Paying for Australia’s infrastructure deficit. www.inside.org.au


16 The Productivity Commission has also reported favourably towards user pays and distance based charges for heavy vehicles, informing COAG’s decision to proceed with mass distance charges for heavy vehicles; see: Productivity Commission. April 2007. Road and Rail Freight Infrastructure Pricing: Inquiry Report.


SUSTAINABILITY

ENVIRONMENTAL SUSTAINABILITY HAS BEEN BROUGHT TO THE FOREFRONT OF THE DISCUSSION AS ADVANCEMENT IN SCIENTIFIC KNOWLEDGE HAS HIGHLIGHTED THE DAMAGE WE ARE ABLE TO DO, AND HAVE DONE, TO THE NATURAL ASSETS AND RESOURCES OF OUR PLANET. IT HAS BROUGHT US TO A CRITICAL JUNCTURE BETWEEN OUR APPROACH OF EXPLOITING THESE RESOURCES TO THE MAXIMUM EXTENT, AND ATTEMPTING TO FIND THE PATHWAY TOWARDS PRACTICES NECESSARY FOR A PROSPEROUS AND SUSTAINABLE FUTURE.  

21
MITIGATION

SUPPORTING LOW EMISSIONS TECHNOLOGIES, SUCH AS HYBRID AND ELECTRIC VEHICLES, IS AN IMPORTANT STEP IN REDUCING OUR OVERALL EMISSIONS, AND STIMULATING INNOVATION WITHIN OUR ECONOMY.22

Consult Australia believes that certainty on the role of carbon within the economy must be achieved and will drive low-emissions technologies and stimulate innovation. Since the first moves by the Government to introduce a Carbon Pollution Reduction Scheme in 2008, Consult Australia has supported a market-based mechanism to put a price on pollution as the most efficient policy response to achieve substantial abatement in emissions—including not just carbon dioxide, but encompassing the four greenhouse gases listed under the Kyoto Protocol and those gases produced by them.

RECOMMENDATION 5:

A price on pollution will drive low carbon solutions, innovation, business R&D and investment in new technologies.

A price on pollution must be set in a manner that accounts for the needs of smaller businesses and emissions intensive trade exposed (EITE) industries.

THE CHALLENGE FOR CITIES IS TO ENSURE THAT CONGESTION IS MANAGED, ACCESS IS MAINTAINED AND BUSINESSES CAN CONTINUE TO CO-LOCATE AND FUNCTION EFFICIENTLY FOR MAXIMUM PRODUCTIVITY.
However, equally we recognise that a price on pollution will not by itself achieve the industry transformation necessary to achieve a low carbon economy. We recommend that a wide lens be cast on the opportunities that exist in moving to a low carbon and more sustainable future. This requires us to acknowledge that responding to climate change is but one part of sustainability. If we see sustainability only through the rubric of climate change then we risk failure in responding to broader systemic issues (for example, demographic change, affordability, health and social equity) that also demand sustainability as an end goal and which are critical to the liveability of our cities (see Chapter 3).

Infrastructure planning and delivery itself presents multiple opportunities to contribute towards a more sustainable vision. Planning infrastructure to meet the objectives of a sustainable future will prioritise solutions that: improve connectivity, reduce emissions, minimise energy, waste generation and water use. Infrastructure itself should be built with regard to more sustainable social, environmental and economic criteria, for example through sustainable procurement decisions, recycled material selection, improved energy efficiency and consideration of alternative water supplies.

Consult Australia is a strong supporter of the Australian Green Infrastructure Council (AGIC). AGIC is a member based industry association committed to the delivery of more sustainable outcomes from the design, construction and operation of Australia’s infrastructure. AGIC is a not-for-profit national industry association formed to establish a rating scheme to enhance sustainability in Australian infrastructure. It is AGIC’s mission to:

- Benchmark, advance and promote the concepts and knowledge of sustainability throughout the design, construction and life cycle of infrastructure projects;
- Recognise and reward organisations that deliver world leading sustainable solutions in the design, construction and operation of national infrastructure;
- Provide a roadmap to assist infrastructure stakeholders to achieve sustainable outcomes;
- Define sustainability performance benchmarks for industry participants;
- Provide independently certified sustainability ratings; and
- Encourage and promote the highest standards of sustainability performance.

www.agic.net.au
ADAPTATION

WE NEED TO CONTINUALLY WORK TO ADAPT AND MINIMISE THE EXPOSURE OF OUR CITIES AND REGIONS TO RISK, AND ENSURE OUR URBAN AREAS ARE PLANNED AND BUILT TO ENABLE RESPONSES TO BE TIMELY AND APPROPRIATE TO MITIGATE NEGATIVE CONSEQUENCES.

It is generally accepted by experts that even with substantial efforts to achieve global mitigation of carbon emissions, adaptation will be required to maintain the quality of life we currently enjoy. To be successful adaptation will entail significant public and private investment over a considerable period of time. A nationally consistent adaptation plan needs to be developed, and kept constant across political cycles, to protect Australia against the threat of damage from climate change, and to help us manage other demographic and economic changes already forecast (for example, population ageing).

Risk management has been identified as the predominant approach for adaptation. However, due to uncertainties with change, the fundamental information for a risk management approach is not available. For example, in relation to climate change, the level of mitigation, extent of change impacts, and probabilities of these impacts occurring cannot be quantified. Without this information, a full risk management analysis cannot be completed. Therefore, an overall precautionary approach needs to be relied on, in conjunction with risk management principles.

Consult Australia strongly supports the National Climate Change Adaptation Research Facility (NCCARF) recognising the potential value of interdisciplinary collaboration in the area of climate change adaptation. NCCARF’s responsibilities to: identify critical gaps in the information available to decision-makers; synthesise existing and emerging national and international research on climate change impacts and adaptation; develop targeted communication products; and initiate integrative research against national priorities are all vital in informing our approach to adaptation.

NCCARF complements activities and projects currently underway in other institutions across Australia and demonstrates the potential for interdisciplinary collaboration, and the results this can generate. The potential for further coordination and action building on this initiative is substantial.

www.nccarf.edu.au

A NATIONALLY CONSISTENT ADAPTATION PLAN NEEDS TO BE DEVELOPED, AND KEPT CONSTANT ACROSS POLITICAL CYCLES, TO PROTECT AUSTRALIA.
As adaptation requirements become more generally accepted, planners and designers, rather than climate change experts, are increasingly being relied on to include adaptation considerations in new design accounting for ‘likely’ climate change scenarios. These scenarios are redefining the services expected by clients and point to a rapid need for clear parameters against which to measure project designs. Without clear guidelines, liability for future climate change impacts may be unintentionally placed on the designer or planner of the project.

Without clearer policies, increasing levels of liability and ambiguity will push engineers, designers and architects to over-compensate and therefore over-design for protection against this and increase the costs of their services, and project construction costs. Continued collaboration between the private sector, the scientific community, and government is essential to establish a policy framework and clear parameters, on which to base industry standards for consulting in the built and natural environment.

**RECOMMENDATION 6:**

The Australian Government facilitate the development of a National Adaptation Plan to ensure coordination, prioritisation and delivery of adaptation initiatives nation-wide.
PREPARE, PROTECT, ADAPT AND INNOVATE FOR CLIMATE CHANGE

In preference to the general classification of climate change adaptation, governments need to segment research and action into four distinct areas. All four need to be addressed individually, but together they form essential elements of a prosperous future for Australia:

Prepare: Climate change adaptation is still considered by some a distant and innocuous risk. Private and public institutions need to be educated, their preparedness established, and resources provided to assist them in becoming prepared. Adaptation needs to be considered now in Environmental Impact Assessments, local planning procedures and included through other appropriate standards.

Protect: There needs to be immediate action for protective measures on many assets —natural and human made—which will be under direct threat if climate change predictions eventuate. Either natural or built assets should not be lost by accident.

Adapt: Action needs to identify ways we can adapt to climate changes as they eventuate to minimise the impacts of climate change on Australia. In many instances there may be no alternative than to retreat or abandon in which case there will be emerging issues related to insurance and compensation.

Innovate: In order to maintain and improve the quality of life in Australia, and increase prosperity for the long term, we need a concerted effort to develop innovative responses. Government initiatives and incentives will be required to reduce the risk for the private sector and provide return on investment for government.

A National Adaptation Plan will ensure that the standard of adaptation, and therefore protection, is sufficient in all areas of Australia. The requirements for adaptation are immense, and it is unreasonable to expect that we will be able to afford the cost of all action. Therefore, planning is vital to identify the cost of adaptation action against the potential cost of no action, to prioritise projects and initiatives and support evidence based policy development.

A National Adaptation Plan for Action will need to:

- Establish how prepared the public and private sector are;
- Establish value-at-risk in recommending scenarios outlining the impact of climate, economic and demographic change;
- Include adaptation considerations in planning and construction approvals;
- Consider changes to urban infrastructure;
- Adjust regulatory and policy frameworks to account for required adaptation requirements;
- Review social services and changing community needs;
Provide clear recommendations for the modification of planning frameworks, legislation and design guidelines; and

Prioritise the preservation of ecosystems which do not have the means to adapt.

Adaptation will take a long time to plan and implement, but needs to pre-empt forecast changes to our existing way of life. It cannot be a reactive policy, but must progress sufficiently to permit its evolution and the identification of lessons learned. In responding to climate change, adaptation to our changing natural environment needs to commence well before the full effects are known.

**GREEN DEPRECIATION**

The Australian Government’s substantial investment in Tax Breaks for Green Buildings is a welcome step towards a systematic approach incentivising building adaptation and retrofit to improve energy efficiency. Through this measure, businesses that retrofit certain commercial buildings to significantly improve energy efficiency are able to apply for a one off bonus tax deduction.

A longer-term commitment to Green Depreciation of investment in our current building stock provides one of the few ways to influence investment in existing buildings. Targeting these buildings is essential to obtain a substantial change in the building sector (given that new buildings represent only two to three per cent of the stock of buildings). Analysis suggests that green depreciation would only need to bring forward a relatively small proportion of refurbishment investment to make a significant reduction in energy demand and greenhouse gas emissions (Australian Sustainable Built Environment Council. 2008. Second Plank Report. www.asbec.asn.au).

Alongside investments to improve the energy efficiency of our building stock, Consult Australia supports the development of the Australian Green Infrastructure Council (AGIC) rating scheme for infrastructure, and the widespread adoption of Green Star and the National Australian Built Environment Rating System (NABERS) as essential components supporting the development of a more sustainable built environment.
CHICAGO ADAPTATION STRATEGY

The Chicago Climate Action Plan (CCAP) was launched in September 2008 following the deliberations of a Climate Change Task Force—including leading scientists, government, not-for-profit and business leaders—created to describe Chicago’s future climate and identify the implications for city life. The Task Force examined ways to reduce emissions and how Chicago could prepare for forecast climate change.

The CCAP provides a framework for reducing greenhouse gas emissions to 25 per cent below 1990 levels by 2020 and 80 per cent below 1990 levels by 2050. The CCAP outlines 26 actions to mitigate greenhouse gases and includes an ambitious adaptation plan with nine main strategies for the city:

1. Manage Heat: Update the heat response plan, focusing on vulnerable populations, complete further research into urban heat island effect and pursue ways to cool hot spots.

2. Pursue Innovative Cooling: Launch an effort to seek out innovative ideas for cooling the city and encourage property owners to make green landscape and energy efficiency improvements.

3. Protect Air Quality: Intensify efforts to reduce ozone-precursors through mitigation programs that reduce driving and emissions from power plants.

4. Manage Stormwater: Collaborate with the Metropolitan Water Reclamation District on a Chicago Watershed Plan that factors in climate changes and uses vacant land to manage stormwater.

5. Implement Green Urban Design: Implement key steps in Chicago’s Green Urban Design plan to manage heat and flooding. These steps will enable Chicago to capture rain where it falls and reflect away some of the intensity of the sun on hot days.

6. Preserve Our Plants and Trees: Publish a new plant-growing list that focuses on plants that can thrive in altered climates. Also draft a new landscape ordinance to accommodate plants that can tolerate the altered climate.

7. Engage the Public: Share climate research findings with groups most affected—social service agencies, garden clubs, etc. Help individual households to take their own steps to reduce flooding and manage heat waves, such as installing rain barrels and back-up power for sump pumps and planting shade trees.

8. Engage Businesses: Work with businesses to analyse their vulnerability to climate change and take action.

9. Plan for the Future: Use the Green Steering Committee of City Commissioners to oversee City implementation efforts and the Green Ribbon Committee of business and community leaders to assess how the plan is being implemented, recommend revisions, and report to the Mayor and all Chicagoans on progress.

www.chicagoclimateaction.org

THE CCAP PROVIDES A FRAMEWORK FOR REDUCING GREENHOUSE GAS EMISSIONS TO 25 PER CENT BELOW 1990 LEVELS BY 2020 AND 80 PER CENT BELOW 1990 LEVELS BY 2050.
With new emerging markets in adaptation, energy efficiency, resource management, retrofits, energy assessments and audits there is an escalating demand for skills to meet these new markets. Increasingly in the built environment, these are referred to as ‘green skills’, and their shortage for industry will be critical in determining our capacity to achieve a low carbon, clean energy future.

When we refer to ‘green skills’ we are describing those technical skills, knowledge, values and attitudes needed in the workforce to develop and support sustainable social, economic and environmental outcomes in business, industry and the community.\textsuperscript{24}

Mechanisms to ensure the supply of these skills must become a focus for both industry and government if market demand for more sustainable products and services is to be met. In this context green skills need to become embedded across the education lifecycle. This will require coordination by government across secondary and tertiary education, vocational education and training, and professional development through a strong partnership with industry. The cross-disciplinary nature of green skills and their application across industries indicates that delivery must focus on market sectors. This may be particularly true in the built environment for example, where skills need to be directed across infrastructure, commercial buildings, residential buildings, manufacturing and resources.

It is clear that as the markets for these skills emerge across these sectors, to be globally competitive and avoid capacity constraints, the domestic supply of these skills through education and training must be a priority.

\textbf{RECOMMENDATION 7:}

Governments prioritise and lead the coordination and delivery of green skills through the education system, and in partnership with industry, universities and the Vocational Education and Training sector.
RESILIENCE & CONNECTIVITY FOR SUSTAINABLE URBAN DEVELOPMENT

Australian cities and regions, both coastal and inland, will likely face increased challenges from climate change and other natural environmental hazards. These may include extreme weather and storm events, sea level rise, cyclonic activity, increasing temperatures, heatwaves and bushfires.

Australia, particularly Queensland, has recently been struck by a sequence of extreme weather events. Cyclone Yasi and the floods of December 2010 / January 2011 saw more than 75 per cent of Queensland officially declared a disaster zone. The impact on infrastructure and homes was devastating but the scale of the tragedy became that much more apparent with tragic news of human fatalities.

Sustainable urban development is a useful concept in considering opportunities to alleviate the impact of extreme weather events, and extreme floods in particular. Sustainable urban development provides a framework focused on creating urban communities where both the current and future needs of residents are met. There are two important principles—resilience and connectivity—that underpin sustainable urban development.

- By defining the risks associated with potential extreme events and translating those risks into planning and design solutions urban planners attempt to increase an urban feature’s capacity to absorb change. This capacity, otherwise known as its resilience, allows it to persist in the face of the change and thereby improves its sustainability.

- The elements of the physical, biological, social and economic system in which we operate are fundamentally connected. This interconnectivity is relevant in all systems, but particularly in urban environments, where the proximity of the component elements and the frequency of interactions are higher.

Sustainable urban development provides a mechanism for framing numerous alternative solutions to the challenges of extreme events. When applied to the process of effective decision-making, the concept of connectivity allows us to highlight the importance of removing restrictive governance structures and bureaucratic boundaries that can limit the scope of decision making.

Simply put, decisions related to complex, interacting systems are best made without limiting the issues that can be taken into account or the scope of these decisions. At times, the tiered governance structure in Australia can slow decisions, limit their scope and impact on their effectiveness—this should be guarded against and challenged at all times. If we fail to do this, we will inherit poorer decisions.

MANAGING EXTREME FLOOD EVENTS

These high-level principles, of resilience and connectivity are usefully illustrated in the following four areas of response available to help manage the impact of extreme flood events.

1. Managing existing developments and structures in areas at risk of flooding

The most effective means of minimising the impacts of flooding is of course, not to have people and critical infrastructure in a floodplain, however this may not always
be a practical or even desirable solution. Having recognised that some developments need to remain in these locations, the traditional response has been to add resilience through structural flood mitigation works, such as levees or channel improvements. These are aimed at modifying a flood’s behaviour to keep it away from infrastructure, homes and people.

An alternative approach, with a clearer focus on the well known connectivity between a catchment development and consequent flood intensity in a floodplain, would likely offer additional flood management options. Key features of such an approach would include:

- Managing catchment vegetation cover;
- Protecting catchment wetlands; and
- Minimising the use of impermeable surfaces.

Each of the above initiatives would reduce the intensity of downstream flood events. A frequent challenge with this approach however, is differences in the responsible management structures for catchments versus floodplains, because they are often geographically separated. Catchments and floodplains may be managed by different local government areas, by different departments or even by different states. It is therefore necessary to consider governance approaches and structures which explicitly recognise the connectivity between these areas and ensure sympathy for the needs of both when developing management solutions.

2. Managing future developments which may be built in areas at risk of flooding

As indicated above, limiting development in floodplains is the best mechanism to ensure the negative impact of flooding is minimised.

In many parts of the world floodplains are being restored to give rivers room to flood safely. Floodplain lands have been converted to serve more flood-resilient uses, including pasture, forestry, recreation, and nature conservation. The holistic and integrated thinking that underpins this type of “land-use” response is extremely attractive, but does come with some challenges.

In Australia, floodplain land has traditionally served industrial, agricultural and residential uses. This is because rivers have been such an important transport route for this country, the rich soils have provided attractive agricultural land, and waterside living is considered attractive. Re-allocating floodplain land away from its traditional uses may have a number of knock-on effects, the first being the need for land in other areas. Specifically, this may have a range of economic and social consequences, including urban sprawl, excessive competition for alternative land and the development of additional and costly infrastructure needs etc.

The planning response required to ensure a fully functional and sustainable community throughout this kind of land re-allocation and redevelopment would be most effective if it were underpinned by a governance structure with broad ranging scope and jurisdiction, both geographically and in the issues it were able to address.

3. Managing the residual risks of flood events that exceed management measures

Certain events are so extreme that the most thorough and comprehensive management plans are not be able to eliminate their impact. In these situations, emergency measures
aimed at modifying the response of the at-risk population, are critical. These include flood warnings, evacuations and recovery plans.

With the highly stochastic nature of the country’s climate, Australians have become extremely competent at this kind of emergency management. Our effectiveness at emergency management is largely thanks to a philosophy that political and other organisational boundaries that hamper quick and efficient decision-making during an extreme event, must be suspended to ensure that a unified approach prevails.

4. Managing the probability of the extreme events occurring at all

The scientific evidence linking human activity to climate change, and hence to extreme weather events, has been well established. In an urban environment, the burning of fossil fuels through vehicle use and stationary energy generation is a major contributor to greenhouse gas emissions.

It is clear that city planning and building design impacts on, among other things, resident’s reliance on private vehicles and demand for electricity. Poorly planned and developed cities experience urban sprawl and poor public transport systems. This in turn leads to excessive private vehicle use, greenhouse emissions and a likely contribution to the effects of climate change.

Similarly, building designs that largely ignore passive methods of temperature regulation ensure continued electricity demand and the continued rise of greenhouse gas emissions. Sustainable urban planning can mitigate these risks, providing a positive environmental outcome.

SUSTAINABILITY REFERENCES:

24 www.deewr.gov.au/Skills/Programs/WorkDevelop/ClimateChangeSustainability/Pages/default.aspx
LIVEABILITY

The wellbeing of the community is critical to the liveability of our cities. There is a role for the Australian government in leading better quality and design of the public domain, improving public health outcomes and redressing spatially concentrated disadvantage.27

More liveable cities will bring benefits not just for our health or for the socially disadvantaged. In and of itself better health outcomes and greater social inclusion will result in an improved standard of living, increased labour force participation and a more productive economy. Liveability and productivity are mutually reinforcing. But even beyond this positive cycle the links between the liveability of our cities and their attractiveness as places to live, work, and learn, to build businesses, homes and raise families is critical.

Those cities that will be the most competitive in the international war for talent will be the most liveable and the most economically successful. Cities looking to compete as destinations for the tourist dollar will be those that balance the social, cultural and economic infrastructure that combined creates a world-class destination.

And while we must respond to the challenges of a rapidly ageing population, equally the liveability of our cities should be guided by broader demographic change. Smaller households, greater numbers of single-person households and changing aspirations need to be met. The suburban dream and quarter-acre block resonate less with more people than ever before: our cities must plan to reflect that shift.

Whether we are aiming for a short-term tourism boost, long-term economic advantage or healthier, happier communities, the liveability of our cities will be key.
HEALTHIER COMMUNITIES

The impact of our cities and their car dependence on our health and wellbeing is striking. The economic costs of congestion are well known. Increasingly the social costs are gaining prominence. Longer commutes have been shown to have negative consequences for personal productivity and overall health and wellbeing.28 People with longer commutes have been shown to be relatively less well off: less likely to be partnered and have lower wages—partners of individuals with longer commutes have been shown to have lower wellbeing.29 Reducing congestion must be a focus for governments investing in infrastructure and planning our cities.

Alongside the costs of congestion, for those diseases or conditions comprising Australia’s National Health Priority Areas (e.g. including Type 2 Diabetes, Coronary Heart Disease, Stroke) physical inactivity has been ranked second only to tobacco smoking, in terms of the burden of disease and injury from risk factors in Australia.30

PHYSICAL ACTIVITY HAS A BENEFICIAL EFFECT ON IMPROVING VARIOUS ASPECTS OF HEALTH INCLUDING CARDIOVASCULAR DISEASE, MUSCULOSKELETAL HEALTH AND DIABETES. PHYSICAL ACTIVITY MAY ALSO ASSIST IN THE REDUCTION IN SYMPTOMS OF DEPRESSION AND REDUCE THE RISKS OF DEVELOPING SOME CANCERS, SUCH AS PROSTATE CANCER.31

In this context, in addition to reducing congestion, the links between active and public transport and healthier communities are of increasing importance. ‘Cycling, walking and the use of public transport promote health in four ways. They provide exercise, reduce fatal accidents, increase social contact and reduce air pollution.’32

SUPPORTING SOCIAL INCLUSION

In planning our cities and prioritising infrastructure investment, governments must give greater weight to the fact that better built environments, urban spaces, reduced congestion and access to high quality public and active transport help achieve greater social inclusion and better health outcomes across the community.

RECOMMENDATION 8:

The Australian Government’s Social Inclusion Agenda should include the built environment (encompassing active and public transport infrastructure) as a social inclusion priority area.

This should be supported by relevant expertise on the Australian Social Inclusion Board to support advice to government on the opportunities for the built environment and infrastructure to support the disadvantaged within our communities.
The promotion of social inclusion through increasing accessibility to the transport network is an objective of the Australian Transport Council. The expansion of the ATC National Guidelines for Transport System Management in Australia to Urban Transport provides an important focus on those criteria to be considered in evaluating urban transport projects. These guidelines provide important analysis of the value of reduced car ownership, avoided car parking, decongestion, crowding, walking, access, and wait and frequency of services.

This type of analysis is critical to our understanding of the broad economic and social values attached to different infrastructure investments and urban development. However, to achieve greater social inclusion, it is critical that guidelines and standards that inform decision making comprehensively reflect the breadth of economic and social costs and benefits that we increasingly understand to exist.

**RECOMMENDATION 9:**

The increased benefits for mobility, access and social inclusion created by increased public and active transport options for disadvantaged populations need to be accounted for in project evaluations and cost-benefit analyses informing infrastructure development.

In addition, cost-benefit analyses of investments in public and active transport, and other infrastructure investments, need to include consideration of the costs and benefits in terms of improved health and social outcomes; particularly where mobility and social access is improved for the vulnerable and disadvantaged. The economic and social value of this type of outcome is demonstrably higher and must be reflected in policy and investment decisions.
DEMOGRAPHIC CHANGE

DESIGN FOR THE YOUNG AND YOU EXCLUDE THE OLD; DESIGN FOR THE OLD AND YOU INCLUDE THE YOUNG.

(BERNARD ISAACS, FOUNDING DIRECTOR OF THE BIRMINGHAM CENTRE FOR APPLIED GERONTOLOGY)

The Intergenerational Report 2010 clearly outlined the implications for Australia’s economy and productivity from an ageing population. Slowing economic growth, decreasing labour force participation, increasing demands associated with an ageing population, and improvements in health services and related technology will create enormous fiscal pressures for governments.

AGING AND HEALTH PRESSURES ARE PROJECTED TO RESULT IN AN INCREASE IN TOTAL GOVERNMENT SPENDING FROM 22.4 PER CENT OF GDP IN 2015–16 TO 27.1 PER CENT OF GDP BY 2049–50. AS A CONSEQUENCE, SPENDING IS PROJECTED TO EXCEED REVENUE BY 2.75 PER CENT OF GDP IN 40 YEARS TIME.33

As noted earlier in this paper, improving productivity (alongside participation and sustainable population growth), is critical to dealing with many of those challenges associated with an ageing population.

And while this economic response is crucial, equally it is vital that we consider now how to design our built environments such that they accommodate an ageing population; are liveable cities for that population; and in so doing maximise the productivity and participation that such a population is able to provide.

The past decade has seen substantial work at all levels of government to consider the future demands of an ageing population. Opportunities to create age-friendly communities through better planning and design; to improve mobility options; support recreation and inclusion and encourage smart housing choices are extensive. However, just as there is an increasing need for a National Adaptation Plan to coordinate and support the multiple responses to adaptation in response to climate change, equally there is a demand for a long-term plan, alongside appropriate resources, to support the development of age-friendly built environments.

RECOMMENDATION 10:

A plan for the delivery of more age-friendly built environments, including consideration of retirement living, ageing in place, health-care, mobility and options for affordable living.
AGE-FRIENDLY COMMUNITY PLANNING AND DESIGN

The Local Government Population Ageing Action Plan 2004-08 established through a partnership between the Australian Local Government Association (ALGA) and the Australian Government Department of Health and Ageing provides a strong framework to consider changes required to the local built environment arising from an ageing population.

ALGA’s 2006 report Age-friendly built environments: Opportunities for Local Government notes: the way communities are designed and built can have a significant impact on the health and well-being of seniors and their quality of life. Many seniors spend a great deal of time in their local neighbourhood. They tend to shop locally, regularly use public facilities such as libraries and parks and participate in local social and recreation activities. Consideration in planning, designing and building environments that are safe and accessible to seniors is vital in supporting their desire to live in their own homes and local communities. A range of responses are considered: ‘Age-Friendly Community Planning and Design’ includes:

Update planning and development processes

☐ Create a social impact assessment framework for addressing age-friendly issues within the planning process;
☐ Disseminate a brochure outlining age-friendly principles and requirements to builders and developers;
☐ Offer information sessions to local design professionals, builders and developers to highlight seniors’ needs and requirements; and
☐ Access professional advice to assist and up-skill Council staff.

Enhance urban and community design strategies

☐ Integrate the needs of seniors in urban and community planning, particularly housing, transport, health and social services;
☐ Stimulate development of mixed-use projects that encourage an environment built to the human scale - interconnected streets and paths;
☐ Implement a community renewal program, incorporating age-friendly principles to revitalise and improve areas of disadvantage;
☐ Employ GIS technology to determine land-use trends and predict future growth - such as walkability, mixed use and street connectivity; and
☐ Establish appropriate mechanisms that will give seniors the opportunity to provide input into community design issues.

www.alga.asn.au
LIVEABILITY REFERENCES:


31 Ibid.


GOOD GOVERNANCE

LACK OF INTEGRATION AND POOR STRATEGIC ALIGNMENT OF METROPOLITAN PLANNING AND INFRASTRUCTURE DELIVERY DETRACTS FROM THE PRODUCTIVITY, SUSTAINABILITY AND LIVEABILITY OF CITIES.  

AUSTRALIAN GOVERNMENT LEADERSHIP

Consult Australia supports the intent of the Australian Sustainable Built Environment Council’s (ASBEC) ‘call to action’ for a streamlined, co-ordinated approach to urban management policy. This will be achieved through a higher profile for urban development and cities policy within cabinet.

RECOMMENDATION 11:

The Australian Government create a ministerial portfolio for cities and urban Development, alongside local government and regional development to deliver integrated building, precinct and city policy and programs, supported by appropriately resourced agencies and departments.

Bold leadership is required to foster greater consistency and alignment across the policy and planning initiatives affecting our built environment. ASBEC has identified (as at February 2011, before the announcement of the Government’s Carbon Tax policy) nearly 40 Australian Government programs, strategies and initiatives which impact the built environment (See Appendix A). These traverse eight ministers and their portfolio departments. An integrated and collaborative approach is necessary to encourage innovation and excellence, break down silos, use resources more efficiently and ensure our cities are liveable, affordable and sustainable.
MEASURING SUCCESS

lack of integration and poor strategic alignment of metropolitan planning and infrastructure delivery detracts from the productivity, sustainability and liveability of cities.

metropolitan planning and governance that supports nationally agreed principles and outcomes need to be a priority. consideration should also be given to which level of government is the most appropriate to deliver facilities and services in the most efficient and effective ways.

In 2009 the Council of Australian Governments (COAG) agreed that by 1 January 2012 all States will have in place plans that meet nine criteria (see Appendix B) for the future strategic planning of capital cities, and noted that the Commonwealth will link future infrastructure funding decisions to meeting these criteria.

This type of indicator-led tool, linked to funding decisions, to measure the success of strategic planning and incentivise reform is critical. However, it must be recognised that whether a city is a state or territory capital should not determine the importance of strategic and integrated planning. The State of Australian Cities 2010 and 2011 reports provided a robust framework for the identification of those 18 cities in Australia critical to our productivity and way of life. In addition, those cities anticipated to achieve a population of 100,000 people by 2050 should be planning now to accommodate that increase.

RECOMMENDATION 12:

coag agree that all States will have in place, in the near term, plans that meet the nine criteria for the future strategic planning of all cities with populations over 100,000 people, or populations likely to achieve 100,000 by 2050, and that the Commonwealth will link future infrastructure funding decisions in those cities to meeting these criteria.

The review of cities against the COAG criteria should be integrated with the annual publication of the State of Australian Cities 2010 and 2011 report, and the development of the Australian Government's sustainability indicators to provide a regular, single comprehensive overview of city performance.

bold leadership is required to foster greater consistency and alignment across the policy and planning initiatives affecting our built environment.
The outcomes of this review should be incorporated into a revised COAG Cities Criteria and explicitly linked to commonwealth funding agreements to incentivise the delivery by the states of best-practice local government: geographically larger, better resourced local government.

RECOMMENDATION 13:

A Productivity Commission review of what constitutes best-practice local government (including reference to size, structure, powers and geographic reach) in Australia’s major cities, with reference to a city’s ability to achieve: the COAG Cities Criteria; the indicators of city performance established by the State of Australian Cities 2010 and 2011 report; and the objectives established through the National Urban Policy and Sustainable Population Strategy.

The outcomes of this review should be incorporated into a revised COAG Cities Criteria and explicitly linked to commonwealth funding agreements to incentivise the delivery by the states of best-practice local government: geographically larger, better resourced local government.
DELIVERING INFRASTRUCTURE

A clear and transparent, long term approach to the prioritisation of infrastructure delivery is essential at all levels of government. Many projects are prioritised through clear and rational assessment, but in some cases decision making risks being misconstrued and may appear to be driven by political exigency where no clear process or guidelines for assessment have been developed. When communities are competing for dollars spent, clear processes are essential to assess, rank and prioritise infrastructure delivery. These must be robust and stand the test of changing political and economic circumstances.

While Infrastructure Australia has instituted clear processes to assess and evaluate projects—and improved transparency through the commitment to publish cost-benefit analyses—to date such a process is not replicated across all states and territories. This has led to delays in infrastructure delivery, budget blow-outs, and the politicisation of project prioritisation and selection. In an increasingly competitive labour market, the implications for industry and the wider economy are significant where resource planning, forecasting and delivery estimates are compromised.

An emphasis on the development of more robust infrastructure plans across the states and territories is commendable towards identifying needs, but does not in itself go far enough to provide secure funding over the medium to long-term. Nor does this adequately prioritise delivery and decision making through a robust and consistent framework.

**RECOMMENDATION 14:**

*Develop a robust, independent and transparent process and governance model for the evaluation, prioritisation and decision-making supporting infrastructure delivery as a ‘best-practice’ approach for implementation across state and territory governments.*

*State, territory and Federal infrastructure ministers and their governments should be transparently held accountable to the independent advice provided through such a governance model through the publication of an annual ministerial response; detailing the rationale informing subsequent infrastructure prioritisation and funding by governments.*

**COUNCIL OF AUSTRALIA GOVERNMENTS INFRASTRUCTURE WORKING GROUP**

Consult Australia congratulates the recent achievements of the Council of Australian Governments Infrastructure Working Group which has resulted in regulatory reforms aimed at cutting red tape and promoting efficiencies in the delivery of infrastructure projects.

In addition to current work examining the potential benefits of achieving greater national consistency in the use of contracts in infrastructure delivery, Consult Australia urges the development of robust procurement guidelines and risk management practices. Alongside an examination of the need for better contracting conditions and practices, these initiatives will establish the benefits of reform in these areas for productivity, efficiency and delivery across infrastructure projects in our urban centres.
FUNDING THE FUTURE

Recommendations in this paper for a National Adaptation Plan, and a plan for the delivery of more age friendly built environments will not be achieved without a sustainable funding stream. Our policy response to the twin challenges of an ageing population and climate change are dependent on early action today and additional government funding well into the future. However as the Intergenerational Report 2010 observed, a less productive economy is a consequence of our ageing population.

In this context, and alongside a once in a generation resources boom and an ever increasing infrastructure deficit, the question of a sovereign wealth fund for Australia in addition to the current Future Fund (tasked with meeting unfunded public-sector pension liabilities) is sensible.

A SIMPLE RULE FOR INFLOWS INTO SUCH A FUND WOULD BE TO REQUIRE ALL BUDGET SURPLUSES BE TRANSFERRED TO IT. OUTFLOWS COULD BE LIMITED TO INVESTMENTS IN LONG-LIVED PHYSICAL OR HUMAN CAPITAL, AND PERMITTED ONLY DURING PERIODS WHEN THE ECONOMY’S OUTPUT IS BELOW POTENTIAL (THERE ARE IDLE RESOURCES).37

RECOMMENDATION 15:

A Productivity Commission review of the benefits of a Sovereign Wealth Fund for Australia as a mechanism to boost productivity and meet future demands for funding arising from forecast climate and demographic change.

GOVERNANCE REFERENCES:

35 Ibid.
36 Ibid.
37 Turnbull, Malcolm. 7 April 2011. Speech to the international CEO’s forum: Another sovereign wealth fund for Australia – making sure we don’t blow the bounty of the boom.
LEVERAGING BEST PRACTICE

WE MUST HAVE GREAT CITIES HOUSING INNOVATIVE KNOWLEDGE PRODUCING ENVIRONMENTAL AND DESIGN INDUSTRIES TO BOTH SAVE OUR CITIES AND CREATE A NEW ECONOMIC ENGINE FOR THE NATION

The policies and plans agreed to now should reflect not just the immediate needs of our cities and regions as they are currently, but must accommodate the challenges and vision for our cities in the future. Governments at all levels must clearly state an ambitious vision for our cities and how this can be achieved. This means capturing the benefits of the resources boom mark II, while simultaneously preparing for forecast changes to our environment and a post-resources economy. These are significant challenges.

Living in one of the world’s most heavily urbanised nations, and with an economy built more in services (employing approximately 85 per cent of Australians and 78 per cent of industry value) than resources, agriculture or manufacturing, there is substantial opportunity for Australia to expand our role as a world leader in industries associated with the built environment and urban development.
RECOMMENDATION 16:

Position Australia as a centre of excellence in urban, city and green precinct development: internationally recognised for the best minds in urban design, planning, engineering and architecture of cities that is evident in models of best practice implemented in our own backyard.

With increasing urbanisation in every Australian state, new growth centres such as those announced in South East Queensland (Ripley Valley, west of Ipswich, and Yarrabilba and Flagstone in Logan), present rare opportunities to plan from the ground up. These developments can be flagships for a new Australian urbanism that meets the needs of the future in a sustainable, liveable and productive way.

There is an opportunity in fostering Australian excellence in cities to support innovation in planning and urban design, support new industries and realise a new vision for our cities. A welcome consequence of governments seeing the value in good planning and design supporting the development of our cities would be the growth in associated skills and industries within Australia. Governments can support these industries by collaborating with industry and academia to establish best practice; current proposals for Cooperative Research Centres designing better cities and regional centres are steps forward in this space.

Green Star Communities, created through the Green Building Council of Australia (GBCA), is part of this change. Green Star Communities inspires and contributes to a national conversation about how we plan, design, build, maintain and renew sustainable communities. The GBCA define a sustainable community as having aspirations for the future that acknowledge the challenges brought about by change. It is liveable, resilient, diverse and adaptable. It strives for a lower carbon and ecological footprint. A sustainable community evolves through policy and collaborative practice that respects and embraces the aspirations of existing and future community stakeholders.40

These statements are no longer just aspirational, or part of a ‘vision’. Already the design of cities, buildings, communities and precincts around Australia are demonstrating Australian excellence in urban design, planning and infrastructure delivery. Consult Australia member firms represent some of the leaders in this field, bringing to life the vision for a new Australian urbanism.

LEVERAGING BEST PRACTICE REFERENCES:

38 Blakely, Edward. 4 November 2010. Online Opinion: Building cities is Australia’s next export industry. The United States Studies Centre: University of Sydney, www.ussc.edu.au

39 Australian Services Roundtable (www.servicesaustralia.org.au)

PRODUCTIVITY: FINANCING THE FUTURE – THE ROLE OF VALUE CAPTURE IN INFRASTRUCTURE INVESTMENT

The deteriorating condition of infrastructure in Australia has been widely reported in recent years and is evidenced on a daily basis by declining service levels on public transport systems, traffic congestion and skyrocketing housing costs. While Australia appears to have dodged the worst of the GFC for the time being at least, the declining state of infrastructure, one of the country’s largest asset classes, is raising international concerns about Australia’s global competitiveness.

Consult Australia member Sinclair Knight Merz (SKM), alongside Consult Australia and a number of peak professional associations, have advocated for the introduction of value capture funding methods such as Tax Increment Financing (TIF) to contribute to urban infrastructure investment.

What is Value Capture?

Value capture funding is based upon the premise that;

- Certain public investments in community infrastructure contribute directly and indirectly to increases in surrounding property values, and
- Mechanisms should be put in place to divert a portion of that uplift in property value to help pay for the infrastructure.

Value capture methods introduce greater transparency and equity into public infrastructure investments and avoid the intergenerational imbalances caused by upfront levies, which increase housing costs and stifle economic activity.

Figure 1 – TIF Conceptual Model
Tax Increment Financing (TIF) Model

The most widely used value capture method is TIF. The primary benefit of TIF is its dedicated long term commitment to specific, value-creating infrastructure investments, thereby providing the community and the private sector with certainty regarding key community infrastructure investments. Rather than being constrained by yesterday’s budgetary conditions, TIF programs unlock economic development obstacles and expand revenue generating activities.

Case Study – the M4 East Extension

The M4 East Extension is recognised by the NSW Government as one of eight major infrastructure projects for the State in its Submissions to Infrastructure Australia (August 2010).

The NRMA commissioned SKM to examine the urban renewal benefits and additional public revenues that would arise from the construction of the M4 East Extension. Land along Parramatta Road is significantly underutilised due to traffic congestion, fragmented land holdings, inefficient land use patterns and a prevalence of vacant and neglected properties. Currently, it is estimated that only 50 per cent of allowable density is developed within the corridor.

The study found that urban renewal improvements along Parramatta Road could be realised by diverting regional commuter and freight traffic from local roads into a proposed M4 East Extension tunnel, and by instigating a comprehensive, long term urban renewal program within the corridor. The kinds of urban renewal improvements considered included:

- Streetscape amenities such as updated shop-fronts, wider footpaths, bus shelters and landscaping;
- Cycle and pedestrian improvements to improve safety;
- Dedicated, priority public transport lanes and amenities to increase ridership and encourage retail trade; and
- Parks, open space and public buildings to compliment private investments.

These improvements, estimated to cost $1.78 billion over 25 years, would foster the creation of more compact residential and commercial development patterns, dramatically enhance the urban environment, protect existing inner city neighbourhoods, and bring vital residential and business activity to the corridor. With greater densities and improved urban amenities, the study estimated that up to 23,000 new residential units could be added to the corridor over the next 25 years. The total costs of the 8.5 km tunnel and urban renewal improvements along the Parramatta Road corridor were estimated to be $7.4 billion (2010).

Next, innovative funding strategies were examined which would capture the value created from residential and commercial developments resulting from the rejuvenation of the Parramatta Road corridor. Increased revenue from stamp duty on property transfers, the sale of additional development allowances, and other revenue sources were estimated to generate over $10 billion in public revenue over 25 years that would not otherwise be available without the M4 East Extension. These ‘incremental’ public revenues would more than offset the $7.4 billion costs of the tunnel and urban renewal improvements.


www.skmconsulting.com
SUSTAINABILITY: KELVIN GROVE URBAN VILLAGE, QUEENSLAND

Kelvin Grove Urban Village, developed as a joint initiative from the Queensland Government and the Queensland University of Technology and involving Consult Australia member firm Aurecon, demonstrates best practice in sustainability for community precincts. Based on the principles of Ecological Sustainable Development, it considers environmental, social and economic factors to create a long-term sustainable mixed-use urban development. To enhance liveability, community consultation provided many of the foundations for this sustainable urban development.

The design guidelines for new developments within the Village demand high standards of environmental sustainability, incorporating measures to reduce energy usage and water consumption. These include ventilation to suit the climate, energy-efficient appliances, solar power, and other methods to conserve water, manage waste and encourage recycling.

Embodying the key principles outlined in Tomorrow’s Cities Today, the multi award-winning village encourages productivity and enhances liveability in this sustainability-conscious development.

Sustainability - Water Management features:
- Landscaping design allows rainwater to percolate through parking areas to replenish the underground water table, and prevents erosion from stormwater.

Sustainability - Material use:
- Close to 100 per cent of timber materials were recycled or restored for re-use or were re-milled into flooring, decking, building materials, park benches and other timber products;
- More than 750 tonnes of removed concrete was re-used for road base and other infrastructure; and
- Aluminium, steel items, metal fixtures, fencing and lighting were also recycled with some products donated to community groups.

Liveability - Urban Design features:
- Specific design integrates a range of land-uses to a suitable and desired density to create opportunities to the way in which the community lives, works and plays in the area;
- The integration of the village was designed to blend with the existing and evolving Kelvin Grove neighbourhood, and allow growth and change over time;
- In initial phases of developing their ‘smart city’ initiatives, the village include Information and Communications Technology to form a ‘wired community’; and
- The mix of housing densities, ownership patterns, price and building types suited to different income levels, lifestyles, cultures and age groups enhances liveability of the area for a varied population.

www.aurecongroup.com
LIVEABILITY: THE NEW ROYAL CHILDREN’S HOSPITAL, MELBOURNE, VIC

The new Royal Children’s Hospital development in Melbourne, Victoria has been designed to address the needs of both current and future generations, embody sustainable design features and functionality and set the bar for innovation in the built environment. The development commonly referenced as ‘a hospital in a park and a park in a hospital’, has been designed to achieve a 5 star Greenstar design rating based on the Green Building Council Australia health pilot tool. Its embodiment of sustainability, liveability and productivity illustrates forward thinking best practice.

Consult Australia member Norman Disney & Young (NDY) has been an integral part of the design of the hospital, providing a blueprint for the trigeneration plant and technology that contributes to the achievement of the Ecologically Sustainable Development (ESD) targets set out in the design phase.

Sustainability - Water Management features:
- Blackwater Treatment Plant with 180,000 litre/day capacity which provides Grade A recycled water for the toilet flushing and drip irrigation in selected areas;
- Chilled Water Storage comprising two 300,000 chilled water tanks to offset peak demands under extreme load conditions; and
- Rainwater collection from 75 per cent of new roof areas with storage tanks collecting 85 per cent of runoff.

Sustainability – Facility features:
- Heat-led Trigeneration system that produces a 37 per cent CO₂ reduction;
- Evacuated-tube Solar Hot Water pre-heating domestic hot water for use by the inpatient unit;
- Mixed Mode Ventilation in the main street to provide a low resistance air path - saving up to 85 per cent of energy consumption and up to 92 per cent of CO₂ emissions;
- A Biomass Boiler (600kW) to heat domestic hot water; and
- Active Chilled Beams to provide excellent air quality and temperature control.

Liveability features:
- Tram superstop with special wheelchair / pram access;
- Increased disabled and pram-friendly parking;
- 500 secure bike spaces, 50 motorcycle spaces, nearby shower and change facilities; and
- Colour and floor patterns to provide people of all cultures and backgrounds with a visual map of the hospital.

www.ndy.com
SMART CITIES: THE SUN CORRIDOR MEGA-REGION, FROM PHOENIX TO TUCSON

Increasingly we will find the solutions to shared global challenges — from climate change to outmoded infrastructure — in how our cities and regions work, which is why Consult Australia member AECOM’s Global Cities Institute was created.

Focus one for the AECOM Global Cities Institute is the Sun Corridor — a mega-region stretching from Phoenix to Tucson in the United States. With a focus on: how diversification of the region will assist it to realise its full economic potential; the importance of regional sustainability; and the rise of the mega-region organisation within this corridor, the development of this area is indicative of the potential for cities of the future. The approach AECOM has taken to emphasise the explicit links and interdependence of these three themes follows a focus on productivity; sustainability; liveability and good governance.

Fundamental to each of the plans, reports, and visioning exercises already conducted are five common sustainable development principles. These principles provide the framework for an approach to sustainable growth in the Sun Corridor:

- Preserve open space and the natural environment
- Enable development of multiuse activity centres composed of location-efficient land uses
- Create quality job centres proximate to a range of housing options
- Develop a multimodal transportation network for efficient community and regional mobility and to create economic opportunity
- Shape community environments through information and communications technology

The fifth principle emphasises the ‘smart cities’ approach to urban development.

Transport

As the population of the Sun Corridor grows and urban areas expand and densify, the adaptation of transport systems have the potential to reduce GHG emissions, increase mobility and be a desired form of transportation. Features include:

- Productive Time: the incorporation of broadband into public transportation systems will increase productivity of users; and
- Intelligent Transportation Corridors: the integration of multiple systems into one intelligent information network will improve road safety, enable traffic and road management and provide real-time updates to facilitate smoother journeys.

The Built Environment

Planners, architects, engineers, developers, owners, operators and regulatory agencies play a critical role in the design of new and revitalised communities and their overall consumption of energy, water, and fossil fuels, as well as the generation of GHGs. Features include:

- Intelligent Building Design: optimising sun orientation, harvesting daylight and using energy-efficient techniques (e.g. air flow, heat exchange etc); and
- Innovative technology-based products: Individual pieces of equipment within building systems can be monitored and controlled appropriately. Examples include lowering motorized window coverings according to weather conditions.
- The design of Civic Space Park, Phoenix also encompasses sustainability in the built environment.
Examples include:

- Porous concrete paving and landscape design provide for stormwater collection and filtration, which will recharge surrounding groundwater;
- Solar panels on the top of the park’s shade structures will generate 75 kilowatts of power, enough to power 8-9 residential homes and offset the park’s lighting and electrical needs; and
- When its trees and vegetation reach maturity, more than 70 per cent of the park will be shaded from the desert sun.

**Smart Grids**

Smart grids integrate information transmitted securely via the Internet with electrical infrastructure.

- Smart meters: real-time energy consumption and billable rates, for example, provide consumers with the ability to make more informed decisions about their energy, natural gas and water use.

**Healthcare and Education:**

The integration of the Internet with infrastructure and products means that industry-specific solutions are being created, particularly for education (distance learning) and healthcare (remote medical advice).

- Remote access: centres, businesses, districts and outlying areas can be connected for education and healthcare needs.

**Safety and Security**

Technology for emergency services, first responders and law enforcement are reshaping the urban landscape and community infrastructure.

- High Definition Video Surveillance technology: improves local security and safety; and
- International border safety and security: technologies contribute to improved crossing efficiencies.

**Collaboration Technology**

These technologies have become essential as a workplace tool allowing for greater individual and group productivity.

- High-Definition Bi-Directional Video: connects multiple participants worldwide to simultaneously view and collaborate on the same project applications such as word documents and spreadsheets; and
- Virtual Private Networks: allow employees to access all software and documents at a home office to increase productivity and daily efficiency.

**Broadband access**

Broadband access underpins these technologies and is now referred to as the fourth core utility after water, natural gas, and electricity.
APPENDIX A: ASBEC BUILT ENVIRONMENT POLICY AND PROGRAM MATRIX AS AT 24 FEBRUARY 2011

<table>
<thead>
<tr>
<th>Prime Minister Gillard</th>
<th>Department of Prime Minister and Cabinet</th>
<th>COAG Expert Advisory Panel</th>
<th>COAG Reform Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minister O’Connor</td>
<td>Dept. of Regional Development and Local Government</td>
<td>Regional Development Committee (NSW Australia wide)</td>
<td>Australian Council of Local Government</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Regional &amp; Local Community Centre Infrastructure Program</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Local Government Reform Fund</td>
</tr>
<tr>
<td>Minister Cormack</td>
<td>Dept. of Climate Change and Energy Efficiency</td>
<td>PM’s Task Group on Energy Efficiency</td>
<td>Commercial Building Disclosure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tax Breaks for Green Building</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low Carbon Communities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>National Solar Schools Program</td>
</tr>
<tr>
<td></td>
<td>Dept. of Infrastructure and Transport</td>
<td>Multi-Party Climate Change Committee</td>
<td>Australian Carbon Trust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>National Strategy on Energy Efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Green Leases</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Energy Efficiency in Government Operations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Solar Cities</td>
</tr>
<tr>
<td>Minister Albanese</td>
<td>Dept. of Infrastructure and Transport</td>
<td>Major Cities Unit</td>
<td>State of Australian Cities Report</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>National Urban Policy ‘Our Cities’</td>
</tr>
<tr>
<td></td>
<td>Dept. of Sustainability, Environment, Water Population and Communities</td>
<td>Annual report on COAG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dept. of Sustainability, Environment, Water Population and Communities</td>
<td>Australian Building Codes Board - Building Code of Australia</td>
<td>Green Building Fund</td>
</tr>
<tr>
<td></td>
<td>Commonwealth Property Ownership Framework</td>
<td>Commonwealth Property Management Framework</td>
<td>Housing Affordability</td>
</tr>
<tr>
<td></td>
<td>Dept. of Finance</td>
<td>Smart Grid, Smart City</td>
<td>National Waste Report</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HVAC High Energy Efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Renewable and Distributed Generation Working Group</td>
</tr>
</tbody>
</table>

Appendix B: COAG National Objective and Criteria for Future Strategic Planning of Capital Cities

Objective
To ensure Australian cities are globally competitive, productive, sustainable, liveable and socially inclusive and are well placed to meet future challenges and growth.

Criteria
Capital city strategic planning systems should:

1. Be integrated: -
   a. Across functions, including land-use and transport planning, economic and infrastructure development, environmental assessment and urban development, and
   b. Across government agencies;
2. Provide for a consistent hierarchy of future oriented and publicly available plans, including: -
   a. Long term (for example, 15-30 year) integrated strategic plans,
   b. Medium term (for example, 5-15 year) prioritised infrastructure and land-use plans, and
   c. Near term prioritised infrastructure project pipeline backed by appropriately detailed project plans;
3. Provide for nationally-significant economic infrastructure (both new and upgrade of existing) including: -
   a. Transport corridors,
   b. International gateways,
   c. Intermodal connections,
   d. Major communications and utilities infrastructure, and
   e. Reservation of appropriate lands to support future expansion;
4. Address nationally-significant policy issues including: -
   a. Population growth and demographic change,
   b. Productivity and global competitiveness,
   c. Climate change mitigation and adaptation,
   d. Efficient development and use of existing and new infrastructure and other public assets,
   e. Connectivity of people to jobs and businesses to markets,
   f. Development of major urban corridors,
   g. Social inclusion,
   h. Health, liveability, and community wellbeing,
   i. Housing affordability, and
   j. Matters of national environmental significance;
5. Consider and strengthen the networks between capital cities and major regional centres, and other important domestic and international connections;
6. Provide for planned, sequenced and evidence-based land release and an appropriate balance of infill and greenfields development;
7. Clearly identify priorities for investment and policy effort by governments, and provide an effective framework for private sector investment and innovation;
8. Encourage world-class urban design and architecture; and
9. Provide effective implementation arrangements and supporting mechanisms, including: -
   a. Clear accountabilities, timelines and appropriate performance measures,
   b. Coordination between all three levels of government, with opportunities for Commonwealth and Local Government input, and linked, streamlined and efficient approval processes including under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999,
   c. Evaluation and review cycles that support the need for balance between flexibility and certainty, including trigger points that identify the need for change in policy settings, and appropriate consultation and engagement with external stakeholders, experts and the wider community.
Contact:
Megan Motto, Chief Executive
Jonathan Cartledge, Director of Policy

Consult Australia
Level 6, 50 Clarence Street
Sydney NSW 2000
P. 02 9922 4711
F. 02 9957 2484
E. info@consultaustralia.com.au
W. www.consultaustralia.com.au