Australian Sustainable Built Environment Council

Pathway to Productive and Sustainable Infrastructure Workshop Report

June 2015

Acknowledgement:

This report was prepared by Waterfield Consulting and ASBEC's Infrastructure Working Group.

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1. EXECUTIVE SUMMARY

The Australian Sustainable Built Environment Council is the peak body of key organisations committed to a sustainable built environment in Australia. ASBEC's membership consists of industry and professional associations, non-government organisations and government observers who are involved in the planning, design, delivery and operation of our built environment, and are concerned with the social, economic and environmental impacts of this sector.

ASBEC recognises that the shift towards more sustainable and productive cities and regions must inherently be underpinned by more of the right infrastructure. That infrastructure must be delivered with a view to its long-term sustainability, and maximise productivity across transport, water, electricity and telecommunications networks.

In October 2014, ASBEC held a half day workshop, hosted by Infrastructure Australia, to identify pathways to deliver the infrastructure we need to maximise national productivity and sustainability. There were over 35 participants, representing key infrastructure and built environment peak bodies, infrastructure planning and funding authorities, institutional investors, infrastructure owner/operators, design and delivery organisations, government and academia.

The result was a shared perspective on a range of challenges and opportunities that currently inform the planning, design and delivery of infrastructure across Australia. Participants agreed on those key priorities and recommendations for further action: roadmap to support the delivery of more productive and sustainable infrastructure.

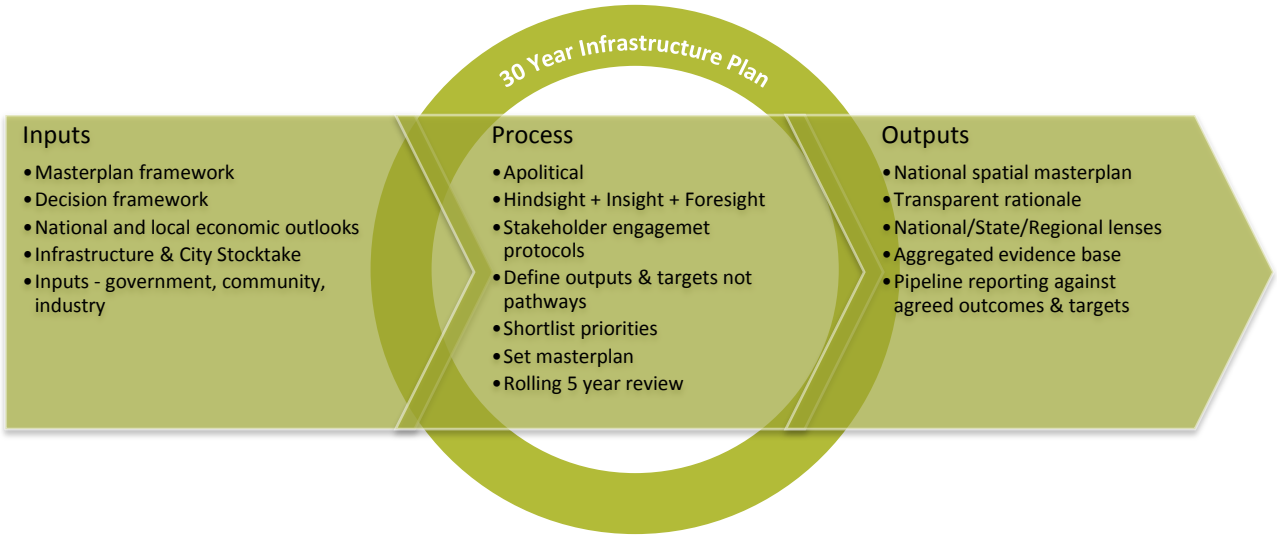
Australia faces a series of challenges in its current infrastructure planning process, including the politicisation of plans and decisions; funding and finance constraints, limited business case analysis, lack of foresight and resilience, a constrained tender and contract structure, and the increasing impact of community sentiment.

The approach to infrastructure planning outlined in this report responds to many of these challenges and opportunities and advocates for:

- **A 30 Year Infrastructure Plan** developed by Infrastructure Australia.
- **Collaborative Stakeholder Engagement** informing the design and delivery of the 30 Year Infrastructure Plan, founded in collaboration between community, industry and government.
- **Five Pathways** guiding the implementation of the plan through Engagement, Planning, Decision, Funding and Execution.

The 30 Year Infrastructure Plan seeks to combine hindsight, insight and foresight to create a long term plan which can endure inevitable change across government, community and industry. A National Spatial Masterplan will augment the Infrastructure Plan, leverage existing national geospatial data and critical infrastructure networks and in so doing:

- Inform a more detailed vision of infrastructure gaps and priorities nationally.
- Highlight growth areas, major industry hubs and nationally significant infrastructure corridors.
- Facilitate agreements between governments identifying priority projects for funding.
- Improve public debate, transparency and accountability for those decisions made.



Infrastructure Australia is the logical authority to oversee the development and communication of the 30 Year Infrastructure Plan through:

- effective long-term planning in consultation with state and territory governments.
- independently and transparently advising governments on infrastructure priorities scheduling and timing of spend.
- engagement with key stakeholders.
- supporting continuity in project selection and delivery across electoral cycles..
- collaboration with state and territory governments, supporting the development and delivery of their infrastructure plans and scheduling, sharing research, data, skills needs and information, and providing for integrated infrastructure planning across jurisdictions.

The 30 Year Infrastructure Plan is proposed as a continuous, rolling plan, with a 5 year review cycle. This will ensure long-term thinking is applied, that previous plans are monitored for their effectiveness, and lessons learned and implemented continuously.

2. WORKSHOP CONTEXT: THE NEED FOR PRODUCTIVE & SUSTAINABLE INFRASTRUCTURE

Australia's ongoing success in delivering more productive and liveable cities and regions in the future is dependent on those decisions we make today about the infrastructure we need. Underperforming infrastructure and unmet infrastructure needs are one of our great economic challenges. Cities are increasingly the powerhouses of Australia's productivity: home to over 80 per cent of our population and generating over 80 per cent of our GDP.

Infrastructure is built for the long-term. Decisions made over 100 years ago still inform our infrastructure priorities today and the way in which our infrastructure networks and systems operate. In this context stakeholders agree that infrastructure planning must be conducted over a minimum of 30 years to account for long-term economic and demographic changes. Too often infrastructure decisions appear to be driven by politics and a 3-year political cycle to the detriment of good planning and prioritisation.

As infrastructure is increasingly seen as a critical productivity lever by governments, the more important it is that infrastructure decision making accounts for issues associated with climate change, resilience, biodiversity, health and liveability, resource management, and the inexorable shift from carbon intensive sources of energy.

'Productive and sustainable infrastructure' is critical to creating jobs, increasing GDP, and building the resilience and liveability of our communities, this is defined as follows:

- **Productive:** Timely; fit for purpose; complementary; facilitates trade and industry; supports inclusion and community; delivers wider economic benefits and natural capital.
- **Sustainable:** Adaptive; resilient; flexible and restorative across whole of life, and all in the context of the triple bottom line (social, economic and environmental).
- **Infrastructure:** As already discussed, the physical structures and facilities (e.g. buildings, transport networks, energy and power supplies, telecommunications) needed for the operation of society.

3. CURRENT CHALLENGES

The challenges Australia faces today in infrastructure planning are well documented and have been fully explored in a range of inquiries and reports in recent years. This report does not aim to regurgitate these findings, but as part of the context in which workshop participants identified recommendations for further action, the following were included and referenced in discussion:

- **Politicisation of infrastructure plans and decisions** – election 'announcements', planning horizons of years vs decades, partial, watered down and kneejerk solutions.
- **Elongated decision making** - feasibility and scoping studies, impact analyses, lengthy and stalled tender and contractual processes, funding delays.
- **Funding constraints** – Government budget constraints and spare appetite. Lack of policy settings supporting private investment – typically due to lack of certainty, and unattractive investment risk.
- **Excluding or not valuing the wider economic benefits** (including social and environmental aspects) as part of a projects business case, and further not tracking and monitoring whether the wider economic benefits have been facilitated for and ultimately realised
- **Not including and evaluating sustainability risks and opportunities** as part of infrastructure project business case analysis, but rather relying on regulatory processes (e.g. environmental impact studies) which occur essentially after the decision to proceed has been made
- **Impact of community sentiment** – An increasingly knowledgeable and vocal community wanting to influence direction. On the surface attributed to minority groups, but more often reflecting a lack of timely, effective, collaborative engagement.
- **Propensity to only consider hard and large new infrastructure** rather than smaller enabling solutions leveraging current infrastructure asset stock. Increasing maintenance costs of existing infrastructure
- **Lack of infrastructure resilience** in current decision making will impact our ability to adapt to changing future technological, environmental and social needs, or allow for re-purposing.
- **Lack of long term foresight** – As above there is a risk that our current planning and build is focusing on current or short-term futures rather than planning for future generations. We need a whole-of-life approach.
- **Crisis decision making on infrastructure** is leading to stop gap or kneejerk solutions. This presents an inability to benefit from economies of scale due to short term planning.
- **Extreme and systemic risk aversion** resulting in delays in project procurement, increased project costs, over-specification and consequently under-innovation. Smarter risk sharing, collaborative procurement and delivery models with outcomes based performance criteria are needed across the supply chain.

4. FUTURE TRENDS

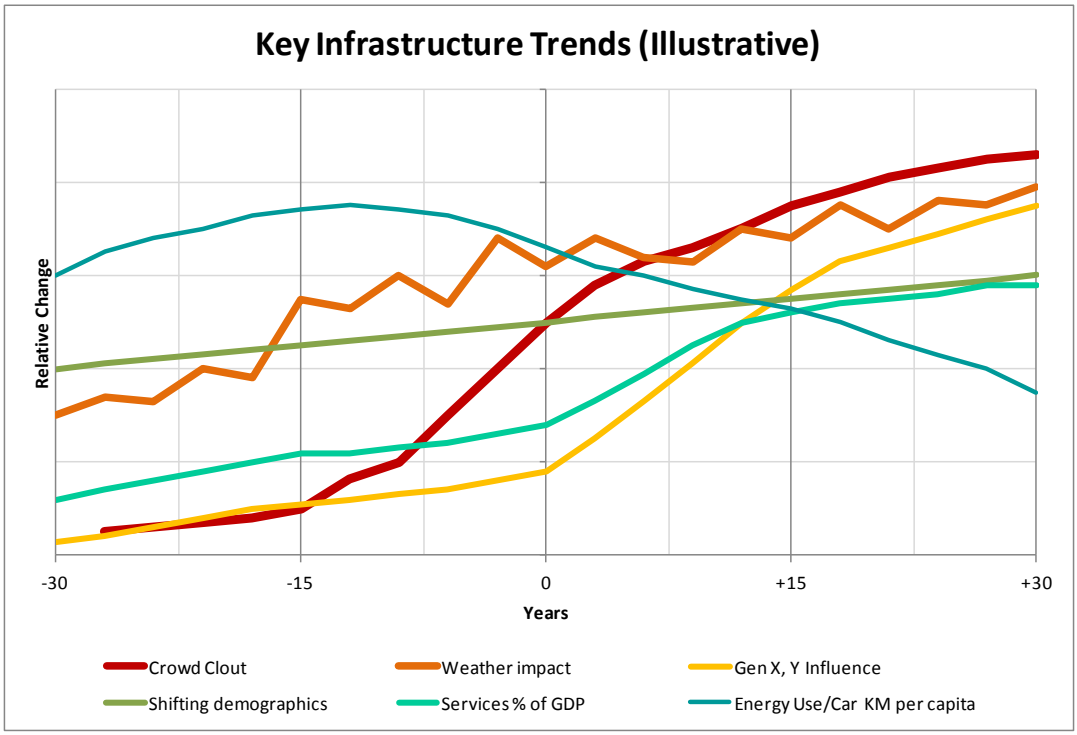
There are a number of currently observable trends that may develop over the next 15-30 years[1] that carry significant implications for infrastructure policy with a view to its sustainability and productivity specifically. Not all known trends and drivers were explored by workshop participants. For example, key drivers associated with funding and financing; delivery models; and decision making are also relevant, remain well explored and understood in existing literature, so were not the focus in this workshop. The table below provides a summary perspective on those trends, drivers and their implications as discussed:

Trend	Drivers	Implications for Infrastructure
Declining consumption in key areas - Energy consumption per household - Car usage pa (KM travelled)	- Pricing sensitivity/response - Community sentiment - Demographic and cultural change - Innovation – efficiencies, alternatives	- Adaptation of longer term plans – build for the 'new' not for the 'old' approaches. - Rethink balance roads vs public transport - Rethink urban design - Use push/pull mechanisms to expedite positive change
Changing shape of industry - Manufacturing in long term decline - Increasing importance of Services	- Global economy - Australia's scale, capability and capacity	- Adaptation of longer term infrastructure plans (i.e. requirement for 'soft' vs 'hard' infrastructure). - Rethink approach to transport hubs, logistics - Address Import capability
Increasing weather severity and impact - Weather volatility noted as increasing - Higher $ impact of extreme weather events	- Increasing population density - Infrastructure design and resilience issues - Climate change	- More emphasis on planning for adaptive and resilient infrastructure - Risk mitigation for existing infrastructure
Demographics are shifting - Population growth and increasing cultural diversity - Population density increasing - Housing density increasing in cities - Work patterns are changing	- Population growth - Immigration - Response to urban sprawl - Connectivity - Generation X, Y, Z impact thinking	- Plan for decentralisation/hubbing as population/ lifestyle solutions - Proactive urban planning for future precincts - Adaptation of existing underutilised infrastructure
Natural resource productivity impacts - Cumulative biodiversity impacts - Depleted resources Species extinction - Waste	- Intergenerational responsibilities - Costs - Loss of natural capital and ecosystem services - Establish/maintain Australia as a leader regarding natural environment custodian - Economic benefits	- Need for integrated planning - Reduced easement availability - Increased project costs - Smarter more innovative lower impact solutions sought and valued - Infrastructure should be considered as part of the solution wherever possible

[1] These trends were identified by the workshop participants, representing key infrastructure and built environment peak bodies, infrastructure planning and funding authorities, institutional investors, infrastructure owner/operators, design and delivery organisations, government and academia.

Trend	Drivers	Implications for Infrastructure
Increasing "Crowd clout" - Increasing ability for people who 'care' to influence and have a voice - Boomers moving through to retirement - Gen X/Y/Z foothold as tomorrow's leaders	- Ubiquitous information and connectedness - Shifting community values and desire to influence - Generational shift (in terms of who is setting strategy and making decisions, and their values) - Population aging	- Increasing political sensitivity to big decisions – slower decisions - Having to consider a wider range of social , cultural, environmental and technological factors - Opportunity to establish a culture of innovation and early engagement - Use push/pull mechanisms to drive positive change - Adapt decision making to performance based standards - Restorative outcomes will be a necessity to reverse biodiversity and liveability impacts generated over time.
Increasing cost burden of infrastructure - Maintenance/upkeep $ trending up - Adaptation/reuse/removal is expensive - Crisis management, crisis responses	- Burgeoning infrastructure assets - Infrastructure design and resilience issues - Lengthy/inefficient decision making process	- Early and hard decisions for replacement/repair - Foresight on practical solutions that pre-empt future infrastructure requirements

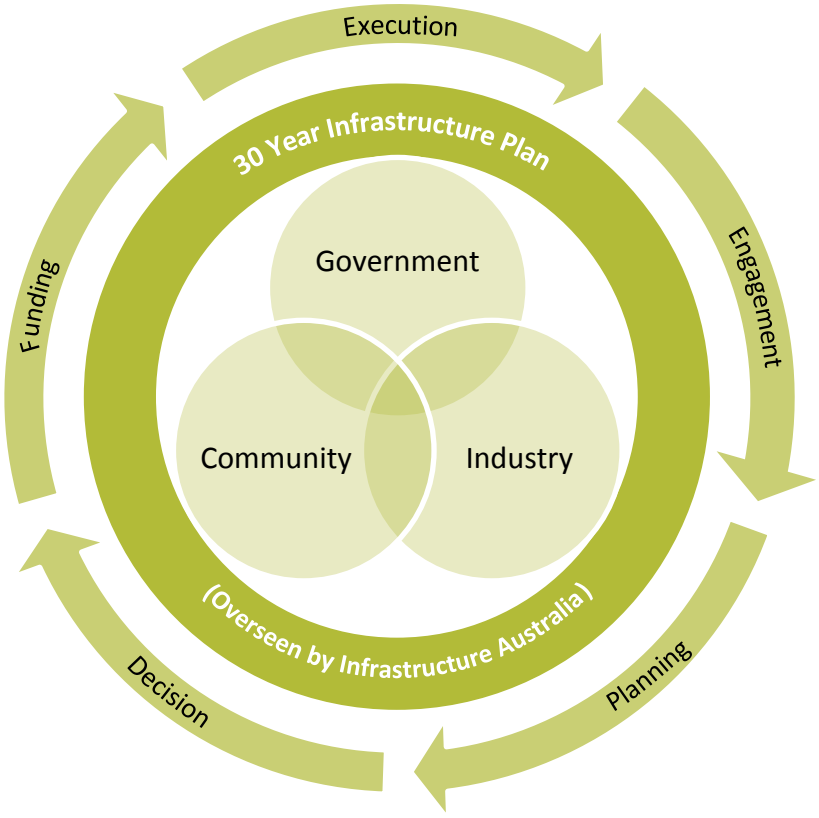
The graphic presented below provides an illustration of how these currently observable trends may develop over the next 15-30 years. The combined effect of these (and other) trends will have in influencing future infrastructure requirements. The quality of infrastructure decisions made today, or even 30 years ago will either be celebrated as visionary, or lambasted for a lack of foresight.



5. A PROPOSED INFRASTRUCTURE PLANNING FRAMEWORK

Australia needs to adopt an approach to deliver more sustainable and productive infrastructure which responds to the opportunities and challenges we face. A model for a new Infrastructure Planning Framework reflects those areas of priority and agreement identified by workshop participants. Key elements are:

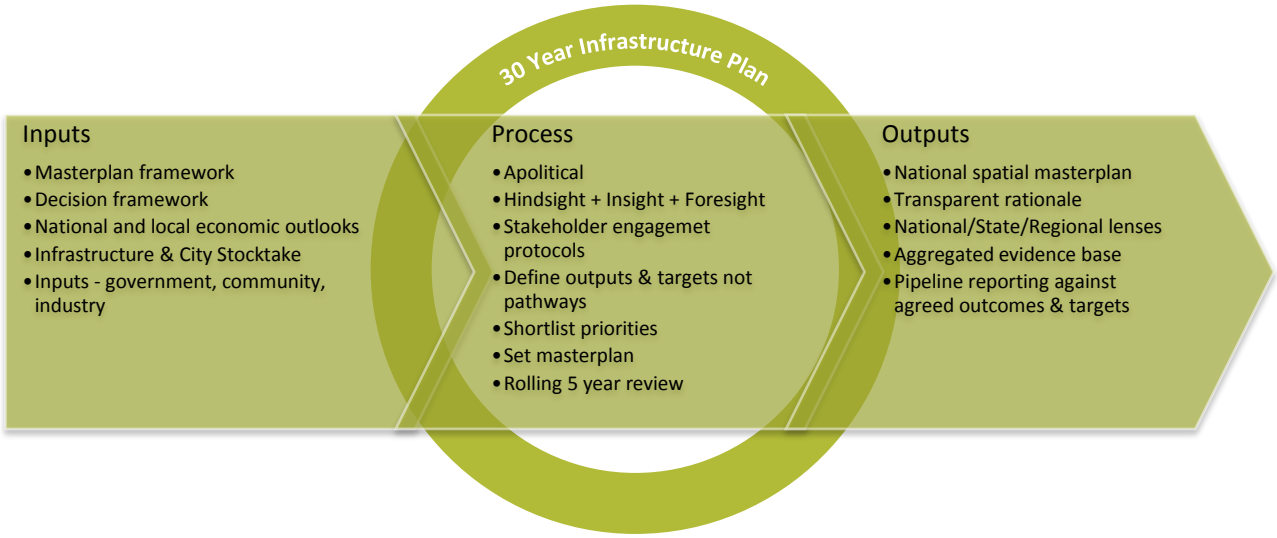
- **30 Year Infrastructure Plan** developed by Infrastructure Australia.
- **Collaborative Stakeholder Response** informing the design and delivery of the 30 Year Infrastructure Plan, founded in collaboration between community, industry and government.
- **Five Pathways** guiding the implementation of the plan through engagement, planning, decision, funding, and execution.



The elements outlined above are explained in further detail in the following pages.

6. 30 YEAR INFRASTRUCTURE PLAN

A 30 Year Infrastructure Plan seeks to combine hindsight, insight and foresight to create a long term plan to provide evidence based advice to governments, more informed public debate, better decision making, and clearer accountability for those decisions made by our elected representatives.



A National Spatial Masterplan will augment the 30 Year Infrastructure Plan. Leveraging existing national geospatial data and critical infrastructure networks, the Spatial Plan willl:

- Inform a more detailed vision of infrastructure gaps and priorities nationally.
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- Facilitate agreements between governments identifying priority projects for funding.
- Improve public debate, transparency and accountability for those decisions made.

Infrastructure Australia is the logical authority to oversee the development and communication of the 30 Year Infrastructure Plan through:

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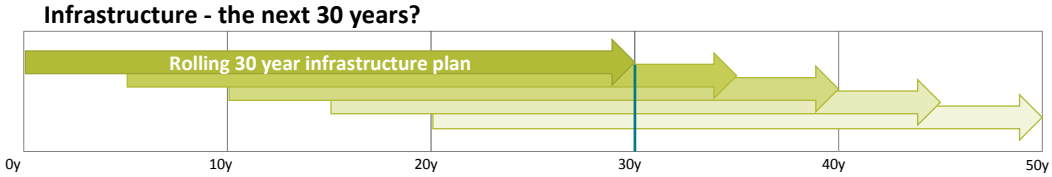
- supporting continuity in project selection and delivery across electoral cycles..
- collaboration with state and territory governments, supporting the development and delivery of their infrastructure plans and scheduling, sharing research, data, skills needs and information, and providing for integrated infrastructure planning across jurisdictions..
- establishing a nationally consistent approach to cost benefit calculation/quantification/qualification including Wider Economic Benefit analyses.
- Facilitating unsolicited proposals for incorporation into forward planning.

The 30 Year Infrastructure Plan is proposed as a continuous, rolling plan, with a 5 year review cycle. This will ensure long-term thinking is applied, that previous plans are monitored for their effectiveness, and lessons learned and implemented continuously.

Infrastructure - the next 30 years?



The recommendations and associated process are all cognisant that infrastructure funding and finance decisions are inherently influenced by the democratic process. It is vital that our leaders are empowered to make infrastructure decisions which are informed by a consistent, rigorous and transparent process, overseen by a robust governance model.

7. FIVE PATHWAYS TO IMPLEMENTATION

Implementation of the 30 year Infrastructure plan requires an approach which complements the current ecosystem. As noted previously the influence of the three stakeholders Government, Community and Industry has changed dramatically over the last 30 years and implementation must be cognisant of the current environment.

The five pathways are outlined below:

Pathway	Objectives
1. Engagement - In a connected society, positive community sentiment is pivotal to project selection and execution. - The broader community has an innate awareness of what is 'wrong'. - Industry too has strong awareness of the business impact of shortfalls in infrastructure, and the experience and insight to address it. - Education and 2-way communication is required pre-planning thru to completion. - Sections of industry can also be part of the solution – where engaged to innovate, price and manage risk appropriately.	- To ensure Community has voice and influence - To ensure Community is informed - To ensure Industry has voice and influence - To promoted infrastructure as a genuine investment opportunity
2. Planning - Aim to meet current (expected) requirement, but plan for the long term (e.g. 100+ years). - Be clear which level of Government will act, and will most objectively and effectively deliver Australia's required infrastructure. - Build in resilience. - Make decisions, taking into account "whole of life" social, economic and environmental considerations. - Build in flexibility to adapt and re-use (the ability to expand with growth).	- To ensure infrastructure solutions are cost effective and adaptable. - To provide flexibility for a future world with different requirements. - To identify and reverse environmental and social risks
3. Effective Decisions - Dramatically improve the speed from initial concept to execution - Shift to specifying required outcomes - rather than specifying solutions and technical requirements. - Government must move towards more collegiate approach to risk and opportunity - Broaden cost benefits to include social and political consequences – triple bottom line. Create a methodology to be able to calculate longer term economic and productivity uplift benefits of infrastructure. - Ensure decisions 'stick'	- To develop a robust decision making framework. - To provide predictability and consistency - To deliver infrastructure sooner and more cost effectively - To reduce investment risk
4. Creative funding solutions - Develop a range of approaches to attract private investment - Provide mechanism for industry/constructors to submit proposals on known priorities. - Encourage alternative funding mechanisms	- To improve attractiveness of infrastructure as an investment opportunity - To extend funding beyond government budget limitations - To reduce risk profile
5. Execution - Private sector to be an integral part of delivery - Provide transparency of process and progress - Encourage innovation	- To allow Government to govern (vs being civil engineers etc.) - To ensure that Government is an informed client - To improve efficiency of execution

8. WHERE TO FROM HERE?

Australia's leaders have rightly prioritised the delivery of major infrastructure, to boost productivity and pave the way for economic growth. Given the current challenges facing infrastructure planning, this focus needs to be underpinned by rigorous, consistent and transparent advice increasing the accountability for future infrastructure decisions.

We call on Australia's leaders to embrace the principles outlined in this report, and facilitate the development of a 30 Year Infrastructure Plan, overseen by Infrastructure Australia. This Plan should be created through active engagement with and between community, industry and government, and implemented through the five pathways we have outlined in engagement, planning, decision-making, funding and execution.

A 30 Year Infrastructure Plan underpinned by a collaborative governance model will empower political leaders to make better infrastructure decisions delivering more productive and liveable communities across Australia.

9. ABOUT THIS REPORT

A half day workshop organised by the Australian Sustainable Built Environment Council (ASBEC) and hosted by Infrastructure Australia was held in Sydney on 15 October 2014 to identify pathways to productive and sustainable infrastructure. The result was an agreed perspective on the infrastructure landscape; infrastructure opportunities and challenges and a pathway to productive and sustainable infrastructure.

There were over 35 participants, representing key infrastructure and built environment peak bodies, infrastructure planning and funding authorities, institutional investors, infrastructure owner/operators, design and delivery organisations, government and academia.

Organisations represented

ACT Government Environment and Planning
ActewAGL
Arup
Australian Constructors Association
Australian Institute of Architects
Australian Institute of Landscape Architects
Australian Local Government Association
Australian Logistics Council
City of Sydney
Colonial First State
Consult Australia
Council of Capital City Lord Mayors
CRC for Low Carbon Living
Department of Infrastructure and Regional
Energy Supply Association of Australia
Engineers Australia
GHD
Green Building Council of Australia
Heart Foundation
Infrastructure Australia
Infrastructure Sustainability Council of Australia
Leighton Contractors
McConnell Dowell
NSW Office of Environment and Heritage
Parliamentary Secretary to the Minister for Industry
Planning Institute of Australia
Premier's Council for Active Living
Property Council of Australia
Roads Australia
Steel Stewardship Forum
TransGrid
Transport for NSW
Transurban
UrbanGrowth NSW
Water Services Association of Australia

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