Progress since the 2016 Australian Infrastructure Plan

Infrastructure Australia

April 2021

Building a better working world

Ernst & Young
11 Mounts Bay Rd,
Perth WA 6000

Tel: +61 8 9429 2356
ey.com/au

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Perth WA 6000

Tel: +61 8 9429 2356
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Purpose of our report and restrictions on its use

This Report was prepared at the instructions of Infrastructure Australia, solely for the purpose of providing an informed view of the progress made by various jurisdictions and sectors in addressing 78 recommendations contained in the 2016 Infrastructure Plan. This Report should not be used or relied on for any other purpose. Any party accessing this Report should exercise its own enquiries, due diligence and care with respect to use of this Report and obtain independent advice on any specific issues concerning it.

In carrying out our work and preparing this Report, we have worked solely on the instructions of Infrastructure Australia and have not taken into account the interests of any party other than Infrastructure Australia. This Report has been constructed based on publicly available information current throughout June and July 2020, and information which has been provided by the client and state-based infrastructure bodies. Since this time, while some updates to reflective substantive changes have been made, material changes may have occurred which are not reflected in this Report.

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Limitations

Our work in connection with this assignment is of a different nature to that of an audit or evaluation of progress made against recommendations. This Report is based on inquiries of, and discussions with a range of public sources, state-base infrastructure bodies, government agencies and Infrastructure Australia itself. We have not sought to verify the accuracy of the data or the information and explanations provided by any stakeholders.

Purpose and methodology

Purpose of the review

Infrastructure Australia (IA) is currently working to develop the 2021 Australian Infrastructure Plan. EY was engaged to undertake a review of progress made against the 78 recommendations made in the 2016 Australian Infrastructure Plan. The review will guide IA in the development of the new 2021 Plan in providing an understanding of those recommendations that have been 'completed', and those recommendations whereby limited progress has been made.

Approach to the review

To make informed views as to the progress made against each of the 78 recommendations, EY and Infrastructure Australia sought examples that could be used to evidence a level of progress for each jurisdiction or sector.

EY and Infrastructure Australia consulted with infrastructure bodies and central agencies from each jurisdiction to support the identification of progress made across each recommendation.

Categorisation definitions

A 'progress' category was identified for each recommendation by EY and Infrastructure Australia collaboratively. The overall assessment of progress was categorised as follows:

- **No progress:** There is no evidence to suggest action has been taken by the responsible entity to address the recommendation.
- **Sporadic progress:** There is a small selection of evidence to suggest some progress has been made by the responsible entity or in some jurisdictions and/or sectors to address the recommendation.
- **Mixed progress:** There is evidence in some jurisdictions and/or sectors to suggest good progress has been made to address the recommendation, however this good progress could not be identified for all jurisdictions or sectors.
- **Broad-based progress:** Action has been taken to progress the recommendation consistently across the majority of jurisdictions and/or sectors.
- **Significant progress:** Significant steps have been made in all jurisdictions and/or sectors. The recommendation has almost been completed or is complete to the extent that it can be (i.e. some actions will always be ongoing).
- **Complete:** The recommendation is rather discrete as to what needs to be achieved, and the responsible entity has taken action to address the recommendation in full.

A 'priority' category was also identified collaboratively between EY and Infrastructure Australia. The 'priority' raking provides a sense of the degree to which each recommendation was considered as topical, relevant and appropriate for inclusion in the 2021 Australian Infrastructure Plan. The overall assessment of priority was categorised as follows:

- **Low:** The recommendation could be included in the 2021 Australian Infrastructure Plan but does not require substantial additional focus or resources.
- **Moderate:** The recommendation remains relevant and of importance for consideration in the 2021 Australian Infrastructure Plan.
- **High:** The recommendation remains very relevant and it is considered important for further consideration in the 2021 Australian Infrastructure Plan.

Findings of the review

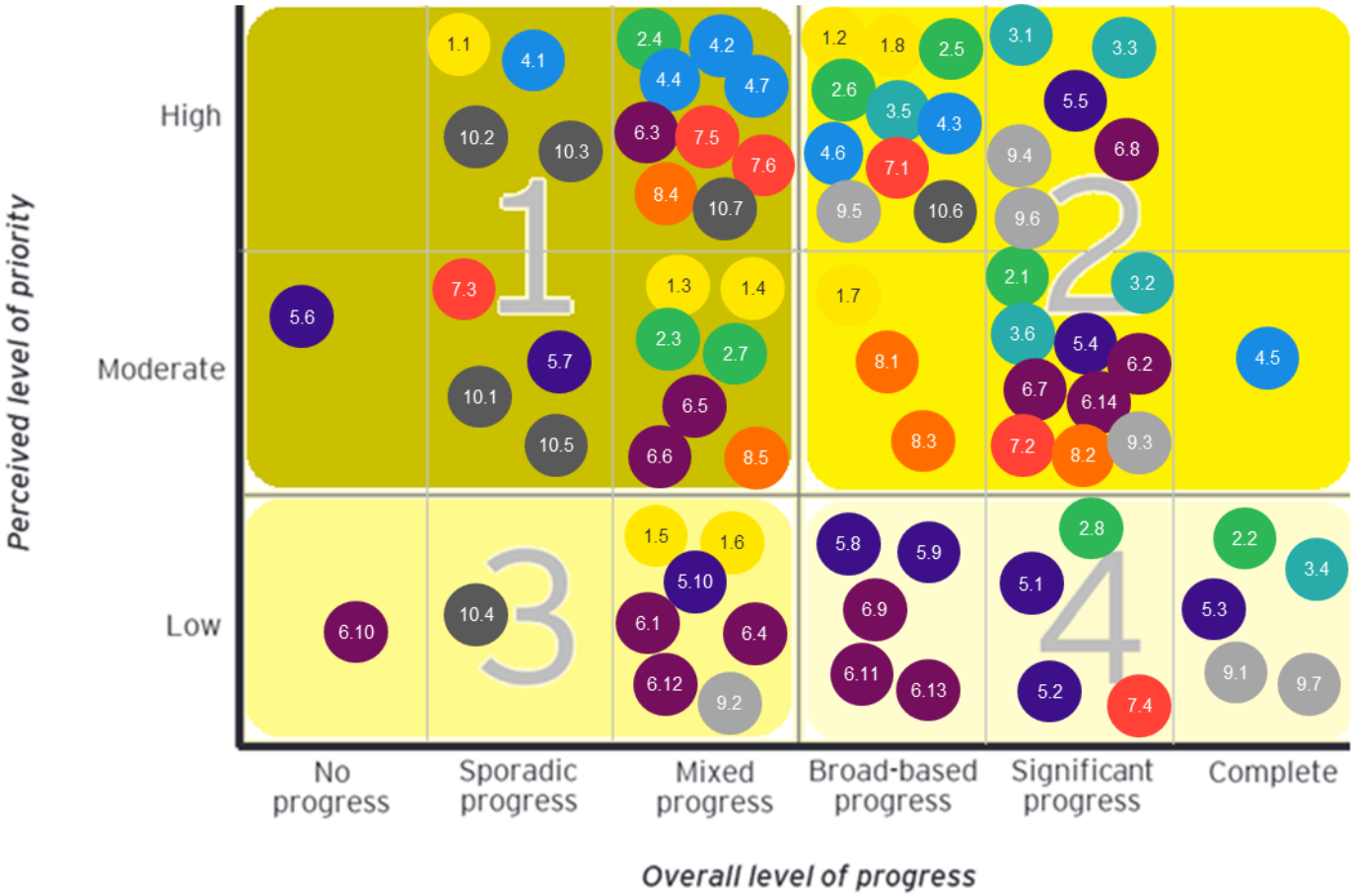
For each recommendation, the classification of 'progress' and 'priority' helped to develop overarching findings. The figure below maps each of the 78 recommendations on a matrix with 'progress' and 'priority' scales guiding the placement of the recommendation on the matrix. The figure illustrates four groups representing a potential order of focus, the first area of focus being those recommendations that sit in the

upper left group. By definition these recommendations are of moderate or high priority for which there has been a relatively low level of progress in actioning since 2016.

The four groups can be interpreted from high to low importance for consideration as part of the 2021 Australian Infrastructure Plan:

- **Group 1:** *Important for the 2021 Australian Infrastructure Plan*. High or moderate priority yet limited progress suggesting a need for the 2021 Australian Infrastructure Plan to address to encourage action.
- **Group 2:** *Somewhat important for the 2021 Australian Infrastructure Plan*. High or moderate priority with good progress already. The 2021 Australian Infrastructure Plan may seek to address to encourage continued progress.
- **Group 3:** *Somewhat unimportant for the 2021 Australian Infrastructure Plan*. Low priority with limited progress suggests that the topic of the recommendations is not highly important, but the 2021 Australian Infrastructure Plan may seek to address on account of relative absence of progress to date.
- **Group 4:** *Unimportant for the 2021 Australian Infrastructure Plan*. Low priority with good progress already suggesting that suitable action is already in place.

Figure 1: Overall assessment of progress and priority of the 2016 Infrastructure Plan recommendations



The colour of the recommendations mapped correspond to the 2016 Australian Infrastructure Plan categories. These categories also form the sections within this report. A key for reference is as follows:

1	Productivity	6	Competitive Markets
2	Population	7	Sustainability and Resilience
3	Connectivity	8	Remote and Indigenous Communities
4	Regional	9	Governance
5	Funding	10	Best Practice

Figure 1 highlights a number of findings including (but not limited to):

- Few recommendations are considered complete; however, this can be partially attributed to the recommendations made often being generic in nature and often supportive of concepts that are ongoing with no discrete end-target.
- Many recommendations fall in the first group. It is considered prudent that IA focus on this group of recommendations for the 2021 Australian Infrastructure Plan.
- There is a reasonable proportion of recommendations in which broad-based progress or significant progress has been made.

The table below details the recommendations that fall into the first group. A list of the recommendations that fall into groups two, three and four is provided in the Appendix.

Table 1: Group 1, Important for the 2021 Australian Infrastructure Plan, high and moderate priority

Recommendation		Level of progress
High priority		
1.1	The Australian Government should establish Infrastructure Reform Incentives, which link additional infrastructure funding to the delivery reform outcomes.	Sporadic
2.4	All governments should ensure that processes are in place to deliver high-quality, well-designed, higher density development, connected to infrastructure and public amenities.	Mixed
4.1	State and territory governments should deliver long-term regional infrastructure plans.	Sporadic
4.2	The Australian Government should prioritise investment in regional infrastructure where the population is growing quickly and where the bulk of our regional economic growth can be found.	Mixed
4.4	The Australian Government should remove barriers to entry for mobile network providers in regional Australia to facilitate improvements in coverage, competition and service quality.	Mixed
4.7	Drinking water in all regional communities should meet the minimum standards in the Australian Drinking Water Guidelines.	Mixed
6.3	Infrastructure community service obligations should be well-defined, transparently disclosed to the community, paid for by taxpayers rather than other users and, wherever possible, exposed to a competitive process to ensure services are routinely delivered at the right level, for an efficient price.	Mixed
7.5	Infrastructure owners and operators should develop and maintain strategies to improve the resilience of infrastructure and minimise the costs of mitigating risks by considering resilience within whole-of-life cost projections.	Mixed
7.6	Australia's energy and water supplies should be resilient to market and environmental changes and risks.	Mixed
8.4	Governments should consider infrastructure investments that support reforms to increase the economic independence of remote Indigenous communities. Reforms should take into account the findings and recommendations of the COAG Investigation into Indigenous Land Administration and Use, and draw on the Commonwealth IPP and White paper on Developing Northern Australia.	Mixed
10.2	The Australian Government should make funding for nationally significant projects contingent upon proponents agreeing to post-completion reviews.	Sporadic
10.3	The COAG Infrastructure Working Group should deliver a national infrastructure skills plan to ensure Australia has the right people with the right skills to deliver our infrastructure to 2031 and beyond.	Sporadic
10.7	Project proponents should routinely develop strategies to ensure the full benefits of infrastructure investments are realised.	Mixed

Recommendation		Level of progress
Moderate priority		
1.3	Caps, curfews and other restrictions on how our infrastructure is operated and used should be avoided where possible.	Mixed
1.4	Innovation in infrastructure service delivery should be encouraged through positive, flexible regulatory frameworks.	Mixed
2.3	To meet the demands of population growth Sydney, Melbourne, Brisbane and Perth should accelerate the delivery of high-quality, higher density development within established urban areas.	Mixed
2.7	Local government reform processes should be initiated across Australia to consolidate the number of councils and increase the efficiency, service quality, financial viability and strategic profile of local government.	Mixed

Recommendation		Level of progress
Moderate priority		
5.6	The Australian Government should continue providing incentives for state and territory governments to improve the efficiency of their balance sheets by recycling appropriate publicly owned assets to fund investments in productive infrastructure, and consider broader applications of incentive payments to advance reform.	None
5.7	Australia's state and territory governments should seek to increase the funding sustainability of public transport provision both through the pursuit of operating efficiencies and a more appropriate alignment of the funding burden between public transport users and taxpayers.	Sporadic
6.5	Governments, through the COAG Energy Council and the Australian Energy Market Commission, should introduce more flexible network tariffs in the near term.	Mixed
6.6	The Australian Energy Market Commission, in cooperation with governments, should develop electricity metering competition to facilitate the efficient, market-led rollout of smart metering technologies, taking into account positive and negative lessons from Victoria.	Mixed
7.3	Australia's light and heavy vehicles should keep pace with global best practice efficiency and emissions standards.	Sporadic
8.5	Governments and private sector proponents should liaise with remote communities to better understand unique local characteristics and ensure infrastructure projects best meet their needs.	Mixed
10.1	A national Infrastructure Performance Measurement Framework should be developed to provide routine measurement of the performance and efficiency of Australia's infrastructure projects, networks and systems.	Sporadic
10.5	Federal, state and territory governments should adopt international standards by default unless there is a compelling rationale for the development of a non-conforming Australian and jurisdictional standard.	Sporadic

Source: EY analysis

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1 Productivity

1. Productivity

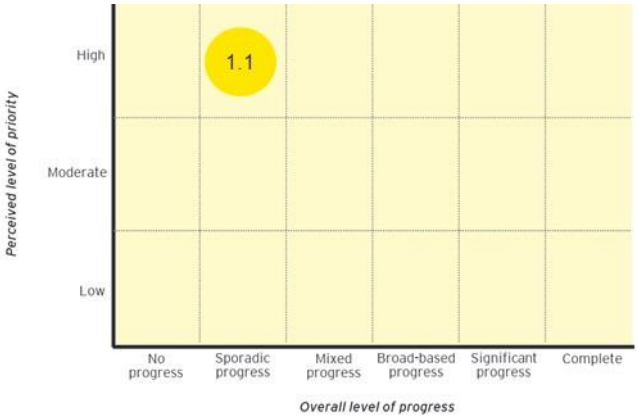
1.1 The Australian Government should establish Infrastructure Reform Incentives, which link additional infrastructure funding to the delivery reform outcomes.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Sporadic progress
Perceived level of priority: High

Rationale from 2016 Plan

Incentives are required for governments to adhere to and champion infrastructure reforms set out in the 2016 Australian Infrastructure Plan. Past success of funding-based programs to incentivise action and other government initiatives suggest that infrastructure reform incentives are a key part of improving the design, operation and services of public infrastructure.



Approach to assessment

The 2016 Australian Infrastructure Plan referenced the National Competition Policy (NCP) and Asset Recycling Initiatives as successful examples of Australian Government incentives for infrastructure reform. It was noted that these incentives could provide a blueprint for a new incentive framework to drive implementation of reforms contained within the 2016 Australian Infrastructure Plan. New examples of Australian Government incentives linked to infrastructure reforms were investigated to assess whether progress had been made against this recommendation.

Evidence-based assessment

Some progress as to the Australian Government playing a role in incentivising reform is underway. However, we found no evidence to suggest that a suite of 'Infrastructure Reform Incentives' or a coordinated program of incentives exists to drive ongoing and holistic infrastructure reform.

Examples of context and progress are set out below. Note that many of the below examples are expanded upon in further recommendations.

- For context, the **Asset Recycling Initiative** (ARI) was wound up in the 2016-17 Budget as per its original timeline. The ARI contributed approximately $3 billion in additional funds allocated to participating jurisdictions. The ARI involved monetisation of existing public assets through sale or lease to the private sector, with funds received being reinvested in new infrastructure. New South Wales, Australian Capital Territory, Victoria and the Northern Territory reached agreements with the Commonwealth, however the remaining states did not take part.[1]
- **City Deals** is a partnership between all three tiers of government and communities to improve the productivity and liveability of cities. The total federal funding commitment to the City Deals program is $5.7 billion. The program has incentivised large-scale economic development projects, some of which have been completed and some of which are pertinent to future infrastructure planning.[2]
- **Large scale on-road trials** have commenced trialling various mechanisms for heavy vehicle road user charging including a per km model.[3]

[1] Review of the National Partnership Agreement on Asset Recycling, January 2019, http://www.federalfinancialrelations.gov.au/content/downloads/reviews/asset/Review_NPA_asset_recycling-2019.pdf

[2] Australian Government, 2019-20 Budget, https://budget.gov.au/2019-20/content/community.htm

[3] Department of Infrastructure, Transport, Regional Development and Communications, National Heavy Vehicle Charging Pilot, 2020, https://www.infrastructure.gov.au/roads/heavy/charging-trials/index.aspx

- The Australian Government supported Recommendation 1.1 in November 2016 but required identification of an appropriate reform agenda and capacity to provide the necessary funding. In June 2018 Infrastructure Australia published the 'Making Reform Happen' as part of the reform series. The paper reiterated and evidenced the need for an incentive-based reform program for Australia. Several recommendations were made by Infrastructure Australia in the 'Making Reform Happen' paper that would be pertinent to the successful implementation of an incentive-based reform program by the Australian Government.[4]
- In November 2020, the Australian Government established the **Infrastructure and Transport National Cabinet Reform Committee**. The Committee is tasked with coordinating efforts to deliver infrastructure investment stimulus between jurisdictions, and presenting opportunities to National Cabinet to improve freight transport connectivity across all transport modes by mid-2021.[5] While not financially incentivising state reform, this forum provides an opportunity for the Australian Government to influence reform by states.

Implications for the 2021 Australian Infrastructure Plan

Some progress has been made on this recommendation, but it is relatively ad-hoc. There has been no sustained and holistic approach to the provision of reform incentives. The concept of infrastructure reform incentives could be considered as a live and topical issue for the 2021 Australian Infrastructure Plan. Potential options as set out in 2018 by Infrastructure Australia should continue to be put on the agenda. The above examples suggest that infrastructure reform incentives can be helpful in areas such as removing risk, testing controversial ideas or encouraging coordination in the delivery of infrastructure across sectors and governments.

[4] Infrastructure Australia, June 2018, 'Making reform Happen', https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/ifa_224631_making_reform_happen_reform_paper_web_fa3.pdf

[5] Prime Minister of Australia, November 2020, 'Media statement', https://www.pm.gov.au/media/national-cabinet-2

1.2 Governments should make greater use of well-regulated market-based solutions to improve the efficiency of Australia's infrastructure and support productivity growth.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

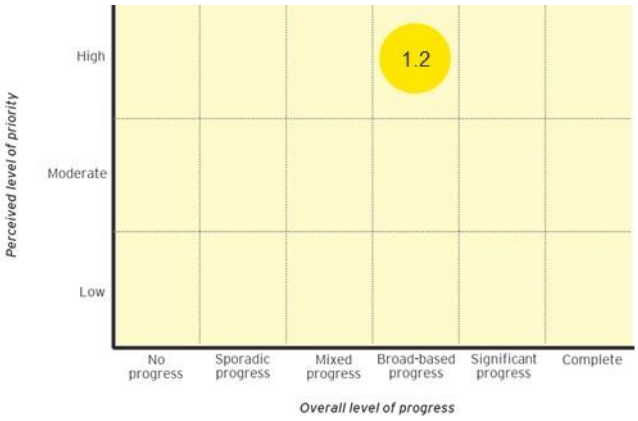
Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

Governments should focus on improving outcomes for consumers by seeking private sector involvement in infrastructure services. In cases where users bear an unreasonable burden of service changes, governments should provide transitional support or compensation through tax and welfare systems.

Approach to assessment

Judgement as to the progress against this recommendation is made by considering progress made against a number of related recommendations.



Evidence-based assessment

Broad-based progress has been made against this recommendation. There is evidence of progress made across most sectors and the general attitude of using market-based solutions to improve efficiency is becoming more accepted. Market based solutions include pricing structures, increased outsourcing of services through competitive procurement and licensing requirements. There is a divergence of views regarding whether assets should be publicly or privately owned. The issue of ownership will vary between infrastructure sectors and it may be more important to focus on service outcomes. Evidence demonstrating progress is as follows. The same evidence is referred to in later sections of this report where relevant.

- The **energy** market is one of the more mature sectors in focusing on market-based solutions, which apply regardless of ownership (private or public) and is constantly evolving to improve efficiency of infrastructure service delivery. In South Australia, the electricity networks are leased long-term. In New South Wales the government maintains a minority holding in distribution networks. Western Australia and Queensland and Tasmania have some way to go in divesting public assets. However, the different market structures in these areas are recognised. The Western Australian Government did however recently support the move towards a more light-handed access regime to facilitate third-party access to the North-West Interconnected System evidencing some appetite to introduce greater competition and private sector involvement.
- The **transport** sector is progressing towards greater private sector involvement albeit at varying degrees across ports, airports, rail and road.
  - There are examples of privately-operated ports however they are usually leased;
  - Airports are predominately owned by local councils across regional Australia or are privately owned in capital cities;
  - Rail networks are largely publicly owned, and they are often leased to private infrastructure operators under franchising arrangements. There are also examples of Public Private Partnerships predominately in New South Wales, Queensland and Victoria.
  - For road transport, the West Connex project is one globally recognised example of a motorway project being privately financed. Road maintenance contracts are often tendered to private providers (for example, the Roads and Maritime Services stewardship contracts).
- The **water** sector is slow in moving towards greater private sector involvement. Public opinion surrounding the privatisation of water utilities is thought to be on impediment here. There are however examples of greater exposure of water to corporatised business models (i.e. flexible water tariffs).

- The **telecommunications** sector is similar to roads in that the underlying fixed-infrastructure network is publicly owned, with the exception of mobile tower infrastructure. There is however a commitment to sell NBN Co. upon complete roll out and relinquishment of the universal service obligation.[6]

Implications for the 2021 Australian Infrastructure Plan

Despite reasonable progress being made, there is still further scope to push ahead as far as this recommendation goes. The concept of this recommendation should continue to be relevant for the 2021 Australian Infrastructure Plan: Transport, water and telecommunications might be focal areas; as might learnings from other sectors as to how best to utilise market-based solutions to manage the transition towards improved infrastructure service delivery.

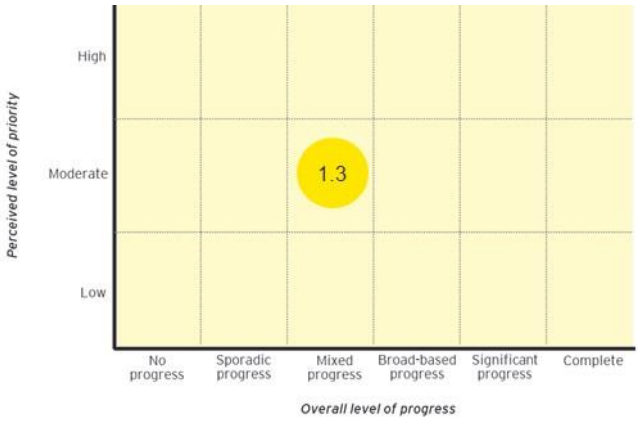
[6] Australian Department of Infrastructure, Transport, Regional Development and Communications, nbn legislative framework, https://www.communications.gov.au/what-we-do/internet/national-broadband-network/nbn-legislative-framework

1.3 Caps, curfews and other restrictions on how our infrastructure is operated and used should be avoided where possible.

Entity(ies) responsible: State Government
Sectors subject to assessment: Various
Australian Government response: Supported in-principle
Overall assessment of progress: Mixed progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Moving people and freight is fundamental to developing Australia as a connected and competitive economy. Removing restrictions could open new opportunities for growth and development via productivity gains.



Approach to assessment

Desktop research and Australia-wide consultation was conducted to understand whether on the main, caps, curfews and other restrictions in place have been generally removed since 2016, or whether there has been a heightened level of restrictions put in place.
A general assessment has been made taking several examples from various sectors and jurisdictions to evidence change. A detailed assessment would require substantial amount of time and consultation with a large pool of agencies across the country and thus has not been completed in detail in this instance.

Evidence-based assessment

As a broad statement as to whether progress has been made, no material or collective movement has taken place to remove or avoid putting in place caps, curfews and other restrictions on how infrastructure is operated and used. Caps and curfews remain, however there are examples of innovative technological solutions and pricing incentives to improve efficiency whilst working within the confines of existing caps and curfews.

There remains many caps and curfews in place as evidenced below across a sample of jurisdictions.

- In **New South Wales** there are examples of curfews in place such as the Sydney Airport operating hours being restricted to after 6am and before 11pm. Notable as a recent development, is that Western Sydney airport is expected to operate 24/7 without caps or curfews. Western Sydney Airport is a good example of precinct-based planning being developed with the aim of avoiding potential conflicts that necessitate the use of curfews. [7]

  There are examples of finding innovative ways to work around restrictions and anecdotal evidence suggests that there is a move to use price incentives as opposed to regulations such as caps and curfews. One of the key actions within New South Wales Freight and Ports Plan is to boost the efficiency of the rail network and trade gateways. This would include facilitating new technology and improved coordination of Port Botany freight movements to work within restrictions and working with the Australian Government to trial an outcomes-based approach to managing noise emissions from freight aircraft operating inside the curfew.
- In **Northern Territory** there is no curfew that applies to the Darwin Airport or the Darwin Port.[8]
- In **Queensland** there is no curfew that applies to the Brisbane Airport, but one that applies for the Gold Coast Airport.
- In **Victoria** there are examples of after-hours curfews in place in the 'last mile' delivery nearing the Port of Melbourne[9] but the Port of Melbourne itself operates 24/7.[10] There is no curfew that applies to the Melbourne Airport, but one that applies for the Essendon Fields Airport.

[7] Transport New South Wales, September 2018, NSW Freight and Ports Plan 2018-2023
[8] Darwin Port, Harbour Control, https://www.darwinport.com.au/facilities-services/harbour-control
[9] Department of Economic Development, Jobs, Transport and Resources, Delivering the Goods – Victorian Freight Plan, 2018
[10] Port of Melbourne, Port Operations, https://www.portofmelbourne.com/port-operations/

- In **South Australia** there are examples of curfews in place such as the Adelaide Airport operating hours being restricted to after 6am and before 11pm. The Adelaide Airport Curfew Regulations 2018 detail the number of movements made by international aircraft, low noise heavy freight aircraft, as well as curfew times for all aircraft operations.[11]
- In **Western Australia**, the Port of Fremantle operates 24/7[12] and there is no curfew that applies to the Perth Airport.[13]
- An array of water restrictions exists across regional areas, and states and territories. Restrictions relate to seasons, days and times in which property owners are allowed to water gardens, wash cars or hose down surfaces. There is little evidence suggests that there have been movements to price water in a way so as to disincentivise particular activities and watering times in a normal environment. However, the Independent Pricing and Regulatory Tribunal in New South Wales has produced a review of prices for Sydney Water that would come into effect in July 2020. The review has recommended a move to flexible prices so that in average weather conditions the typical household's water bill would fall approximately 7%, but in drought conditions the proposed flexible pricing would cause a 7% increase in the typical household's water bill.[14]

In the context of COVID-19

Regulations, caps and curfews have been put to the test in the COVID-19 environment. The need to activate economic development activities and commence infrastructure projects has resulted in some regulatory processes being expedited. In some instances, the successful navigation of simpler or expedited regulatory frameworks has supported the argument for more flexible regulatory environments and has demonstrated the ability of government agencies to coordinate responses quickly.

- As a result of the COVID-19 environment, the Deregulation Taskforce was brought into the Department of Prime Minister and Cabinet as part of the Government's JobMaker agenda.
- Many regulatory approvals have been fast-tracked as a result of COVID-19. With respect to infrastructure the focus has been looking at fast-tracking approvals for large infrastructure projects.[15]

Implications for the 2021 Australian Infrastructure Plan

There are pockets of progress away from caps, curfews and restrictions but nothing of a substantive and holistic scale. While still a relevant topic for infrastructure reform into 2021 and beyond, it may be appropriate for Infrastructure Australia to refer to specific instances in which caps, curfews and restrictions are used to the detriment of efficiency outcomes and set out options for how they might be best be removed to enhance flexibility while managing other competing objectives (such as the management of noise for example). For many infrastructure providers, the replacement of restrictions with, say pricing regimes, would be a relatively complex task.

[11] Australian Government Federal Register of Legislation, Adelaide Airport Curfew Regulations 2018, https://www.legislation.gov.au/Details/F2018L01689

[12] Fremantle Ports, The Port, https://www.fremantleports.com.au/the-port

[13] Department of Infrastructure, Transport, Regional Development and Communications, Airport Curfews, 2019, https://www.infrastructure.gov.au/aviation/environmental/curfews/index.aspx

[14] IPART NSW, June 2020, Review of Prices for Sydney Water, https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/pricing-reviews-water-services-metro-water-prices-for-sydney-water-corporation-from-1-july-2020/legislative-requirements-prices-for-sydney-water-corporation-from-1-july-2020/final-report-review-of-prices-for-sydney-water-june-2020.pdf

[15] Prime Minister of Australia, 'Address – CEDA's State of the Nation Conference', 15 June 2020, https://www.pm.gov.au/media/address---ceda's-state-nation-conference

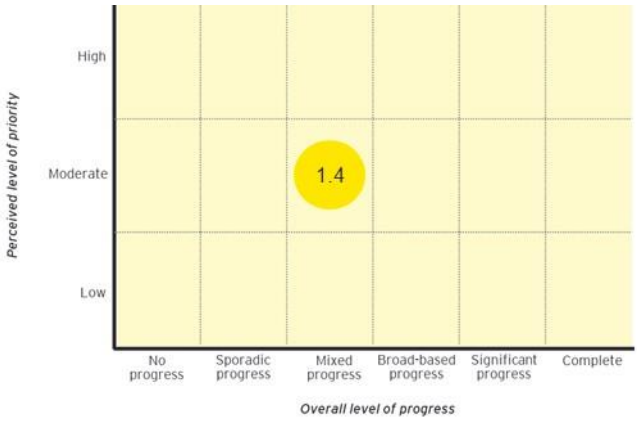
1.4 Innovation in infrastructure service delivery should be encouraged through positive, flexible regulatory frameworks.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Where emerging technologies and delivery models disrupt infrastructure markets, governments should respond quickly to ensure regulatory settings maximise productivity growth and reflect the long-term interests of customers.



Approach to assessment

It is difficult to make a judgement on mass as to whether this recommendation has incited action in the development and use of flexible regulatory frameworks. Examples of work being completed by bodies such as the ACCC, Energy Securities Board and Productivity Commission were sought to understand whether regulators were supporting frameworks to provide appropriate outcomes for users. Secondly, research was conducted to identify the principles encouraged by Better Regulation Units in each jurisdiction and whether progressive themes such as flexibility, innovation and outcomes-based were commonly used.

Evidence-based assessment

Industry regulators have demonstrated recent progress in encouraging flexible and outcomes-based regulatory frameworks. A sample of examples is listed below.

- Within the **energy** sector, the Energy Securities Board released an issues paper on Post 2025 Market Design in late 2019 which contributes to the Strategic Energy Plan Outcomes. In identifying the potential design of the energy market in 2025. [16] The Australian Energy Market Commission has developed a series of reforms with the objective of customers accessing reliable energy at the lowest possible costs taking an outcomes-based approach to market reforms and future regulation.[17]
- Changes to the **telecommunications** universal services obligation will occur via the Telecommunications Reform Package. The reform package will promote competition and improve access to broadband services. In particulate the Statutory Infrastructure Provider regime has commenced recently and will be part of a new Universal Service Guarantee. New wholesale and retail rules will also be introduced to encourage greater competition.[18]
- Within the **transport** sector, the Productivity Commission undertook an inquiry into the economic regulation of airports to determine whether current regulation promotes the efficient operation of airports and related industries. The inquiry found that the current approach to airport regulation benefits passengers and the community and was fit for purpose. The inquiry demonstrates a level of vigilance in ensuring regulatory frameworks are supporting positive outcomes, and not impeding on users of infrastructure.[19]

[16] COAG Energy Council and Energy Securities Board, September 2019, Post 2025 Market Design, http://www.coagenergycouncil.gov.au/sites/prod.energycouncil/files/publications/documents/EC%20-%20Post%202025%20Market%20Design%20Issues%20Paper%20-%2020190902_0.pdf

[17] Australian Energy Market Commission, 2020, "Our forward looking work program", https://www.aemc.gov.au/our-work/our-forward-looking-work-program

[18] Department of Infrastructure, Transport, Regional Development and Communications, 2020, Telecommunications Reform Package, https://www.communications.gov.au/what-we-do/internet/telecommunication-reform-package

[19] Productivity Commission, 22 October 2019, Economic Regulation of Airports (2019), https://www.pc.gov.au/inquiries/completed/airports-2019#report

- Within the **water** sector, there has been much activity through the ACCC inquiring into the Murray-Darling Basin water market. In August 2019 the Government announced that it would direct the ACCC to conduct an inquiry into markets for tradeable water rights in the Murray-Darling Basin. The ACCC was asked to recommend options to enhance markets for tradeable water rights, including options to enhance operations, transparency, regulation, competitiveness and efficiency. [20]

The concepts of outcomes-based regulations, responsiveness to change, flexibility and innovation are prevalent in government guidance towards better regulations and is more apparent in some jurisdictions than others. Regulatory approvals pertinent to the delivery of new infrastructure have been tested in the COVID-19 environment which may give rise to quicker regulatory approval processes in the future and act as precedence in the move towards greater flexibility in regulatory frameworks.

- The **Australian Capital Territory** does not appear to have made any progress in ensuring flexibility within its regulatory framework, however the Australian Government has recently fast-tracked a number of infrastructure projects and in doing so, reduced the regulatory approvals process as reported in Recommendation 1.3. Major Projects Canberra delivered the COVID-19 Surge Centre in a number of days as part of COVID-19 response. The project involved designing a COVID-19 Surge Centre in seven days and building 1,778 square meters of the centre in 37 days which required rapid procurements and customised contracts to be developed. The COVID-19 Surge Centre is an example of innovation in delivery and the flexibility of the Australian Capital Territory's regulatory frameworks.[21]
- The **New South Wales** Guide to Better Regulation contains a commitment towards the encouragement of innovation and the promotion of digitisation, noting the critical influence on incentives and flexibility to compete throughout the economy. Further to traditional principles supporting good regulatory practice, the concept of healthy and dynamic private and public sectors, innovation, flexibility and responsiveness are also conveyed.[22]
- The **Northern Territory** Government Regulation-Making Framework details alternatives to regulatory tools as a means to encourage flexibility and appropriate use of regulations.[23]
- The **Queensland** Government Guide to Better Regulation is highly focussed on the pathway in which regulations are created or amended. Guidance materials have a focus on outcomes and risk-based regulations but refer to New South Wales and Victorian documentation for good practice.[24]
- It is not clear as to whether the **South Australian** Government has made progress towards the promotion of flexibility within regulatory frameworks since the publication of its Better Regulation Handbook in January 2011.[25]
- On available evidence, **Tasmania** does not appear to have made purposeful progress in ensuring flexibility within its regulatory framework however the Tasmanian Government has produced a Red Tape Audit Report in an attempt to instil more effective regulations in place across a range of industries inclusive of major projects and infrastructure.[26]
- The **Victorian** Guide to Regulation communicates standard principles such as addressing cost effectiveness, clarity, avoidance of duplication, and addressing the underlying causes of harm. Other principles include the alignment of regulations in a way that is proportionate to the harm or risk to the community, and flexibility to accommodate changes in technology, markets, risks and community views.[27]

[20] Australian Competition & Consumer Commission, 2020, Murray-Darling Basin water markets inquiry, https://www.accc.gov.au/focus-areas/inquiries-ongoing/murray-darling-basin-water-markets-inquiry

[21] ACT Government - Major Projects Canberra, April 2020, 'Delivering the COVID-19 Surge Centre'

[22] New South Wales Treasury, 2019, Guide to Better Regulation, https://www.treasury.nsw.gov.au/sites/default/files/2019-01/TPP19-01%20-%20Guide%20to%20Better%20Regulation.pdf

[23] Northern Territory Treasury, November 2017, The Northern Territory Government Regulation-Making Framework, https://treasury.nt.gov.au/__data/assets/pdf_file/0020/490007/I-ECO-RMF.pdf

[24] Queensland Treasury, May 2019, Guide to Better Regulation, https://qpc.blob.core.windows.net/wordpress/2019/06/Queensland-Government-Guide-to-Better-Regulation-May-2019.pdf

[25] Government of South Australia, January 2011, Better regulation Handbook, https://publicsector.sa.gov.au/wp-content/uploads/SA_Better-Regulation-Handbook_2011.pdf

[26] Tasmanian Government, 2019, Tasmanian Red Tape Audit Report 2019-20, https://www.cg.tas.gov.au/__data/assets/pdf_file/0018/221841/Tasmanian_Red_Tape_Audit_Report_2019.pdf

[27] Victorian Commissioner for Better Regulation, November 2016, Victorian Guide to Regulation, https://www.vic.gov.au/how-to-prepare-regulatory-impact-assessments

- The Better Regulation Unit in **Western Australia** communicates principles that touch on the following themes. Terms such as flexible, innovation, and technology are seldom used, if at all:
  - Risk-based assessments and decision making focussed on outcomes;
  - Delivering maximum net benefits to community;
  - Providing clarity and certainty for all affected parties;
  - Avoiding duplications; and
  - Allowing well-considered, efficient and effective administration and enforcement arrangements.[28]

In the context of COVID-19

On the 15th of June the Australian Government announced a priority list of 15 major projects to be fast-tracked for approval under a bilateral model between the Commonwealth, states and territories. An assessment team will work on accelerating the fast-tracked projects with more than $72 billion in public and private investment. Under this approach, there is a desire to achieve a 50% reduction in approval times for major projects. The New South Wales Government has been working with the Commonwealth to complete the Commonwealth assessment and approval of Snowy 2.0 in under two years.[29]

- A sample of the 15 major projects that have been fast-tracked for approval includes:
  - Inland Rail from Melbourne to Brisbane;
  - Marinus Link between Tasmania and Victoria;
  - Olympic Dam extension in South Australia;
  - Emergency town water projects in New South Wales; and
  - Road, rail and iron ore projects in Western Australia. [30]

Implications for the 2021 Australian Infrastructure Plan

This recommendation remains relevant for the 2021 Australian Infrastructure Plan. Despite much government activity being dedicated towards the use of flexible regulatory frameworks, it would be interesting to understand private sector views as to the effectiveness of this action; and an exercise of benchmarking the Australian approaches with those of international peers might also be useful noting that Australia must compete on a global scale for private investment funds into infrastructure. The COVID fast tracking approach may yield some valuable lessons that could provide good content for further recommendations in this space as well.

[28] Western Australia Treasury, 2020, Better Regulations Program, https://www.wa.gov.au/sites/default/files/2020-03/agency-information-paper-better-regulation-program.pdf

[29] Prime Minister of Australia, 'Address – CEDA's State of the Nation Conference', 15 June 2020, https://www.pm.gov.au/media/address---ceda's-state-nation-conference

[30] Prime Minister of Australia, 'Address – CEDA's State of the Nation Conference', 15 June 2020, https://www.pm.gov.au/media/address---ceda's-state-nation-conference

1.5 Given current expenditure levels are unlikely to be sufficient to provide the infrastructure Australia needs over coming decades, a material increase in funding for infrastructure from both public and private sources is required to meet our infrastructure challenges and boost productivity.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

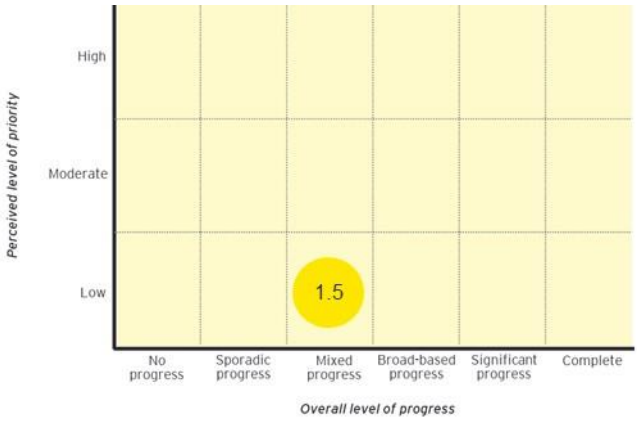
Overall assessment of progress: Mixed progress
Perceived level of priority: Low

Rationale from 2016 Plan

Governments should use infrastructure investments to support opportunities for productivity growth across the economy.

Approach to assessment

Government funding and planned expenditure on infrastructure was analysed to understand whether there is an upward trend in public funding thereby addressing one aspect of the recommendation. A proxy for private infrastructure spending was also analysed. This assessment was performed prior to the release of 2020-21 state budgets in late 2020.

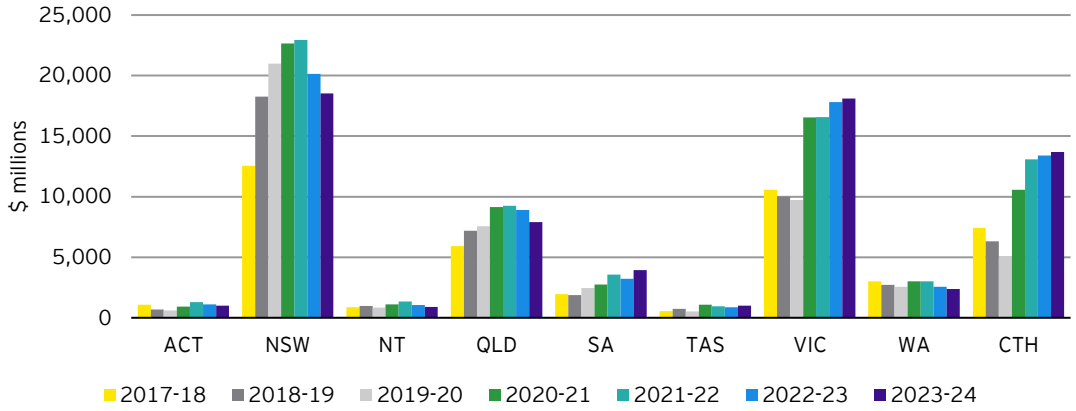


Evidence-based assessment

Mixed progress has been made against this recommendation. Noting that different jurisdictions are within various points of infrastructure lifecycles, some state and territories demonstrate an upward trend, others downward, and some peaking in 2019-20 before falling in the future. From a private perspective, the trend over 2016 to 2020 has been variable be ultimately stable across jurisdictions bar Western Australia. Private new capital expenditure in Western Australia has halved over the 2016 to 2020 period.

- Infrastructure Partnership Australia records committed government infrastructure funding by jurisdiction. The figure below details the funding previously allocated to infrastructure projects and the forward estimates across each jurisdiction.

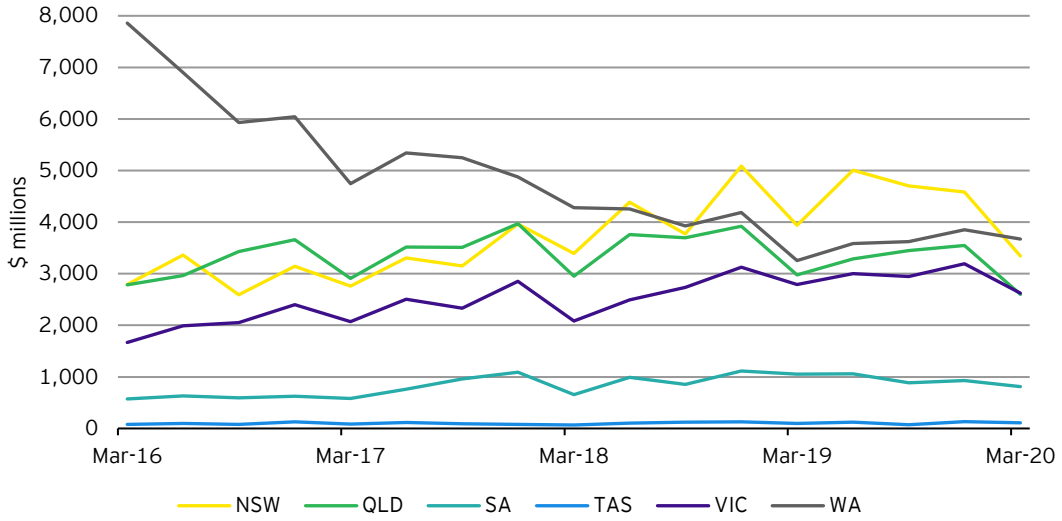
Figure 2: Committed Government Infrastructure Funding, by jurisdiction



Source: Infrastructure Partnerships Australia, Committed Government Infrastructure Funding, https://infrastructure.org.au/chart-group/government-infrastructure-investment/

- The Australian Bureau of Statistics reports on private new capital expenditure on buildings and structures. Equipment, plant and machinery is not included, however private dwellings are. Private new capital expenditure on buildings and structures is used as a proxy for infrastructure and is detailed in the figure below.

Figure 3: Private new capital expenditure on buildings and structures, by jurisdiction



Source: Australian Bureau of Statistics, Cat. 5625.0, Private new capital expenditure on buildings and structures, current prices, by jurisdiction

Implications for the 2021 Australian Infrastructure Plan

There does not appear to be a strong need to include a recommendation of this nature in the 2021 Australian Infrastructure Plan. Government and private spending on infrastructure are the result of many factors and as such a blanket recommendation that more funding is needed is unlikely to engender targeted action. Emerging market constraints additionally require further analysis in order to understand the capacity of the industry to support further elevated investment.

1.6 The Australian Government should consolidate its existing fragmented funding pools into an integrated and transparent Infrastructure Fund.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

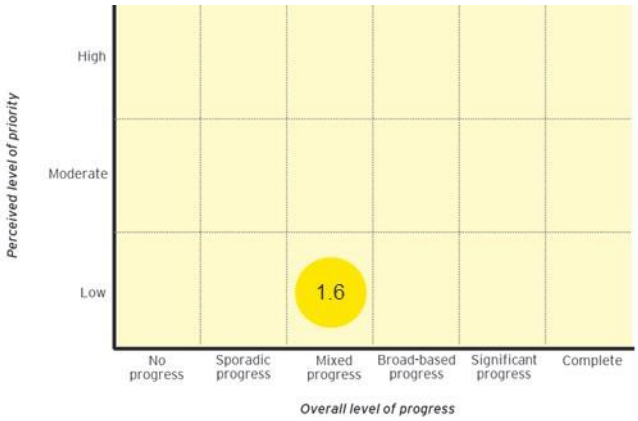
Overall assessment of progress: Mixed progress
Perceived level of priority: Low

Rationale from 2016 Plan

Where the alignment of policy objectives allows for the efficient consolidation of funding programs, the Australian Government should pool existing funds into an Infrastructure Fund.

Approach to assessment

An investigation as to whether there has been an effort to consolidate federal funds was undertaken.



Evidence-based assessment

There is no evidence to suggest that funding has been collated into a single infrastructure fund. There is however evidence indicating that federal funding has been collated into broader streams such as, energy, regional development and smart infrastructure. Evidence of consolidation of funding since 2016 includes:

- The Department of Infrastructure, Transport, Regional Development and Communications administers **Infrastructure Investment Program** which forms a substantial component of the Australian Governments' $110 billion rolling infrastructure plan over 10 years from 2020-21. The program consolidates investment in transport infrastructure across Australia.
- Established in 2016, the Australian Government's **Building Better Regions Fund** delivers funding to regional Australia over a period of four years. Building Better Regions funding has been directed to projects outside of the major capital cities. The Infrastructure Projects Stream of the Fund was open to investment-ready projects that would create jobs, drive economic growth and build regional communities for the longer term.[31]
- The **Smart Cities and Suburbs Fund** was established by The Australian Government, committing $50 million in a competitive program to support projects that apply innovative technology-based solutions to urban challenges between 2017 and 2020.
- The **Northern Australia Infrastructure Facility** (NAIF) was established in 2016.[32] NAIF provides funding for project proponents seeking financing for greenfield or brownfield projects in northern Australia.
- The **National Water Grid Authority** was established in 2019. It works with state and territory governments to provide funding to water infrastructure projects that support primary industries, promote the growth and sustainability of regional economies, and build drought resilience.[33]

Implications for the 2021 Australian Infrastructure Plan

Examples cited above show progress towards the transparent definition of infrastructure funds to achieve different policy objectives. In addition, the funds bring in an element of competition to entities seeking funding support. Good progress has been made and this could serve as platform to continue the encouragement of pre-determined funds for particular policy objectives and funding outcomes; including the use of transparent application and decision-making processes.

[31] Department of Infrastructure and Regional Development, November 2016, Building Better Regions Fund Infrastructure Projects Stream, https://www.infrastructure.gov.au/department/ips/files/log/Document%201_.pdf
[32] Northern Australia Infrastructure Fund (NAIF), https://naif.gov.au/
[33] National Water Grid Authority, Evidence-based water infrastructure investments, https://www.nationalwatergrid.gov.au/framework

1.7 Governments should increase funding for investments in projects and technologies that make better use of existing infrastructure.

Entity(ies) responsible: State and Local Government
Sectors subject to assessment: Various sectors
Australian Government response: Supported

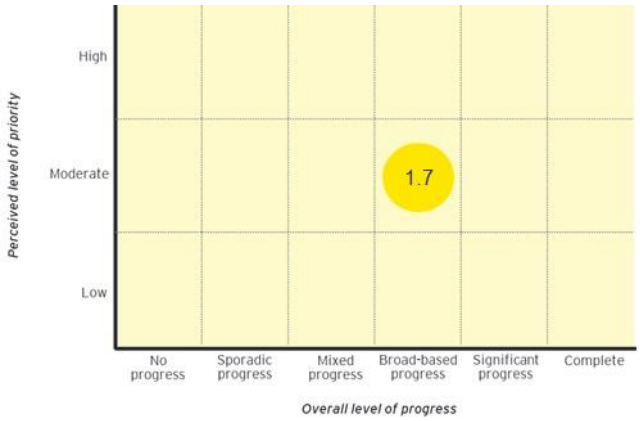
Overall assessment of progress: Broad-based progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Australia can extract more from existing infrastructure networks through smarter operation, maximising their productive capacity and delaying the need for large-scale investments.

Approach to assessment

A sweep of 'smart' initiatives and funding at the state and local government level was conducted to evidence whether progress has been made against this recommendation.



Evidence-based assessment

There is an array of examples at the state level across sectors that demonstrate a 'smart' or innovative solution being applied to large-scale infrastructure as well as smaller local government owned infrastructure. Despite there being an array of 'smart' projects making better use of existing infrastructure, these examples are not supported or encouraged by a State-level strategic plan to consider existing assets, nor does the Australian Government include funding arrangements to encourage 'sweating' assets.

Large-scale infrastructure examples

- Smart motorways or managed motorways help manage congestion and improve safety to get the most out of existing road infrastructure. VicRoads Managed Motorways project, Main Roads' Kwinana Freeway (northbound) smart freeway project in Western Australia, portions of Queensland's Bruce Highway and the M4 Smart Motorway project in New South Wales are all examples of smart motorway management principles and technology being used to mitigate building new road infrastructure. Austroads (the peak organisation of Australasian road transport and traffic agencies) has developed a Guide to Smart Motorways to provide practitioners with a standardised set of smart motorway information.[34]
- Smart train signalling or high capacity signalling projects are occurring across Australia to improve the existing train track infrastructure. Smart signalling projects can make better use of existing rail networks by allowing more trains to run more often. Examples of projects include METRONET's High Capacity Signalling project in Western Australia, High Capacity Metro Trains project in Victoria, and 'More Trains, More Services' in New South Wales.
- Reform changes have led to the deployment of smart meters within the National Electricity market catchment. Smart meters give the public access to a wider range of services from private operators, including more frequent energy usage data, a wider range of pricing options, and the ability to access products and services enabled by smart meters such as demand management.[35]
- Anecdotally, ARENA has put significant funding into electricity market projects to support better use of the existing electricity network, for example the management of electricity demand and support of greater integration of solar into the energy network. Similarly, commonwealth funding has been allocated via the National Water Grid Authority to improve the efficiency of operations of private water infrastructure in irrigation.

[34] Austroads, 2016, Guide to Smart Motorways, https://austroads.com.au/network-operations/network-management/guide-to-smart-motorways
[35] Australian Energy Regulator, https://www.aer.gov.au/consumers/my-energy-service/smart-meters

- Smart water meters have been deployed across Australia. Smart water meters can save water by early leak detection and can identify patterns in water usage. A recent pilot in the Mid-Western Regional Council in New South Wales attempted to identify leaks within the local water infrastructure network.[36]

Local Government examples via Smart Cities Funding

- Some of the larger Smart Cities grants include:
  - Wollongong City Council: Illawarra-Shoalhaven Smart Water Management
  - Canterbury Bankstown Council: Closing the Loop on Waste Project
  - Logan City Council: Community-focused smart technologies to enhance flood resilience
  - Cumberland Council: Granville Smart Precinct Pilot Project.[37]

Implications for the 2021 Australian Infrastructure Plan

Despite broad-based progress, the matter of making better use of existing infrastructure remains important and topical and hence the concept should be carried forward for the 2021 Australian Infrastructure Plan.

[36] Department of Infrastructure, Transport, Regional Development and Communications, Smart Water Meters, 2020, https://www.infrastructure.gov.au/cities/smart-cities/collaboration-platform/smart-water-meters.aspx

[37] Department of Infrastructure Transport, Cities & Regional Development, 2020, Smart Cities and Suburbs, https://www.infrastructure.gov.au/cities/smart-cities/

1.8 Infrastructure operators should generate, collect and use data to drive greater productivity in infrastructure service delivery.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

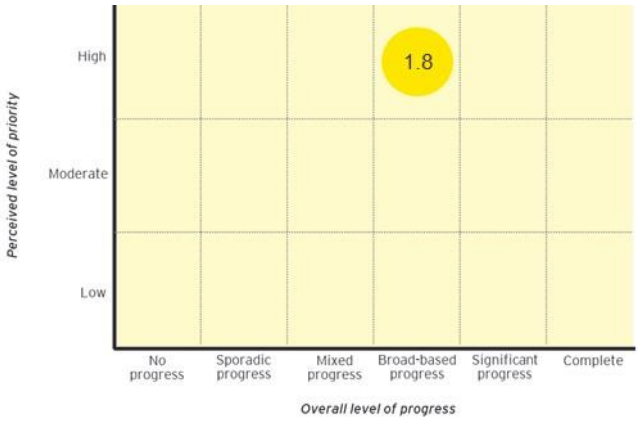
Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

Readily available data can facilitate improvements to the delivery and use of services and can enhance the productive capacity of networks.

Approach to assessment

Evidence of data sharing is particularly prevalent in the transport sector, and hence examples in the sector were used to interpret progress against this recommendation.



Evidence-based assessment

Jurisdictions were found to provide transport data to the public through open data platforms. New South Wales and Victoria are progressing with third-party integration through Uber.

- Transport for **New South Wales** established the Open Data Hub in 2016 to provide a central location for all transport-related open data. The Open Data Hub provides data across all modes of transport and information including toll fees, travel zones and fines in various data formats free to download. This platform encourages the reuse of data through an open policy framework, which supports real-time operational data to be effectively relied upon by third-party users such as Uber. Sydney was the first city in the Asia Pacific region to integrate a public transport option in its app aligning real-time bus, train, ferry and light rail departure and arrival times.[38] Anecdotal evidence suggests that similar progress is also being made in other jurisdictions.
- The New South Wales Government recently released its Digital Twin of the Western Sydney City Deal in partnership with CSIRO's Data61. The Digital Twin can be used by planners, infrastructure owners, builders, policymakers and residents to better understand and respond to the built and natural environment around them. Infrastructure developers can use the Digital Twin to identify the location of underground utilities before building works commence or see the potential impacts of planned future infrastructure.[39] Similar projects are being developed in Queensland and Victoria.
- In New South Wales larger amounts of data on housing outcomes are being collected to ascertain the longer-term outcomes of tenants as part of the Social and Affordable Fund. Data is collated from various sectors to assist in driving more appropriate service delivery and improve outcomes of social and affordable housing users.
- Also in the social infrastructure sector, the New South Wales Department of Justice is aspiring to collate information across corrections, courts and police on asset utilisation and condition. It is hoped that better collaboration and sharing of data will improve asset management.
- The Department of Transport in **Victoria** announced in 2019 that Melbourne would be the first international launch city for Uber's aerial ridesharing service. This will require the Victorian Government to provide significant access to air traffic data to help Uber deliver the business case for the commercial launch in 2023.[40]

[38] TfNSW, August 2019, Public Transport Information Now in Uber App, https://opendata.transport.nsw.gov.au/public-transport-information-now-uber-app
[39] NSW Digital Twin, Digital twins at CSIRO's Data61, https://data61.csiro.au/en/Our-Research/Our-Work/Future-Cities/NSW-Digital-Twin/NSW-Digital-Twin
[40] Department of Transport, June 2019, Melbourne selected as first international city for Uber Air, https://transport.vic.gov.au/about/transport-news/news-archive/melbourne-selected-as-first-international-city-for-uber-air

- On 14 June 2018, the Federal Minister for Urban Infrastructure and Cities announced the release of the National Infrastructure Data Collection and Dissemination Plan. The Data Plan summarises priority projects aimed at addressing infrastructure data and information gaps. The Data Plan focuses on data used to assess and inform the performance, investment and planning related to Australia's transport, water, energy and communications infrastructure networks and assets. Infrastructure use and impact are also assessed as part of the Data Plan. Examples of priority projects are detailed in the table below.

Table 2: National Infrastructure Data Collection and Dissemination Plan projects

Data and information gap	Project
Measuring freight performance	Freight performance indicators
Measuring transport's economic contribution	Transport Satellite Account
Reporting on water, energy and communications infrastructure use and performance	Develop non-transport metrics in the Infrastructure Performance Dashboard
Data sharing guidance, methods and standards	NSW Data Sharing Taskforce
Open data to support the implementation of Connected and Automated Vehicles (CAVs)	Investigation into key road operator data attributes that will be used as part of the CAV system

Source: National Infrastructure Data Collection and Dissemination Plan

- Similarly, in the energy sector there are examples of real-time data collection and reporting dashboards, for example the Australian Energy Market Operator National Electricity Market data dashboard.[41] Energy reforms in the Northern Territory generation, network and retail sectors have also led to greater data availability.
- A new digital control maintenance management system was delivered as part of Canberra's streetlight network upgrade. Real-time monitoring of the network automatically detects faults and can improve productivity in quickly replacing broken infrastructure.[42]
- The Tasmanian Government and partners to the Hobart City Deal have committed to a Smart Traffic Management initiative that will maximise the efficiency of traffic flow through an agreed framework. Technology used as part of the initiative will drive decision making and will include a database to inform strategic land use decision making. [43]
- The Bureau of Infrastructure, Transport and Regional Economics has produced an Infrastructure Performance Dashboard that covers all major economic infrastructure sectors. The dashboard enables a national and state-level comparison of investment, prices, reliability and more.[44]
- Further to the above, the Australian Government is encouraging government agencies to collate all data on to the government website: www.data.gov.au. Since 2013, over 7,000 additional data sets have been published. Some key government actions since 2013 are highlighted below:
  - On 26 November 2017 the Government announced its intention to implement a Consumer Data Right, as part of the Productivity Commission's recommendations in its Data Availability and Use Inquiry report.
  - An Open Data Toolkit has been created to give data custodians and users a central source of information on how to publish data.
  - The Open Data 500 Australia survey took place. The aim was to better understand how Australian organisations are using public sector data.
  - The Public Sector Data Management Report was released in December 2015. The report focussed on Australian Public Service practices and identified the current status and strategies for improving the use of and access to non-sensitive data.

[41] Australian Energy Market Operator, 2020, National Electricity Market, https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/data-nem/data-dashboard-nem

[42] Australian Capital Territory, Streetlighting, https://www.cityservices.act.gov.au/roads-and-paths/road-infrastructure-and-maintenance/streetlighting

[43] Tasmanian Government, 2019, Hobart City Deal, https://www.hobartcitydeal.com.au/__data/assets/pdf_file/0006/197538/Hobart_City_Deal_-_web_accessible.pdf

[44] Bureau of Infrastructure, Transport and Regional Economics, 2020, Infrastructure Performance Dashboard, https://www.bitre.gov.au/data_dissemination/priority_projects/infrastructure_performance_dashboard

- The Australian Government released its Public Data Policy Statement in December 2015. This statement formalises the Government's commitment to open data and data-driven innovation.[45]

Implications for the 2021 Australian Infrastructure Plan

There has been broad-based progress on this recommendation as government, consumers and vendors realise the power of data. Technological developments enabling data collection, sharing and use are naturally enabling increasing activity in this space. Nonetheless, the fundamentals of good information management are still a challenge, noting:

- Intra-government data sharing arrangements are not available;
- Data quality decision-frameworks are not available in any state or territories;
- User-data has not been released in all states or territories;
- Obtaining data for digital twins has been difficult. The concepts of data sharing amongst agencies and moving towards the default of providing access to public information remains challenging;
- Utilities data sharing arrangements are still one of the biggest risks in major projects; and
- The situation in regard to water however may require some attention as there has been relatively little progress.

[45] Department of Prime Minister and Cabinet, 2015, Open Data, https://www.pmc.gov.au/public-data/open-data

2 Population

2. Population

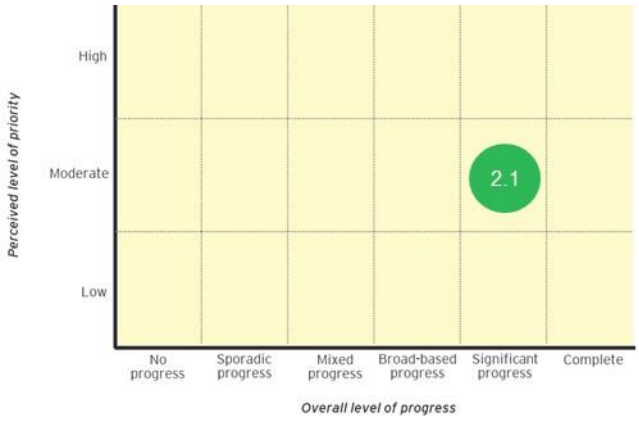
2.1 The Australian Government should drive change in the planning and operation of Australia's cities through the use of *Infrastructure Reform Incentives*.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

The Australian Government often makes significant grant and funding contributions for the delivery of infrastructure in major cities. The funding relationship is an important mechanism to support the development of cities and can incentivise quality planning and operations.



Approach to assessment

The City Deals Program is an example of an Australian Government initiative to drive infrastructure reform in the planning and operation of Australia's cities. Research was conducted as to the objectives of the City Deals program and outcomes achieved.

Evidence-based assessment

The total federal funding commitment to the City Deals program is $5.7 billion.[46] Other than City Deals, there has been limited progress in incentivising reforms in the planning and operation of Australian cities.

- City Deals is a partnership between the three tiers of government, and communities to improve the productivity and liveability of cities. The program was developed in 2015 and works to align the planning, investment and governance required to accelerate growth and job creation, stimulate urban renewal and drive economic growth.
- Seven City Deals have been agreed to date, with two more announced yet not finalised (Perth and South East Queensland). City Deals have been progressed in Townsville, Launceston, Western Sydney, Darwin, Hobart Geelong and Adelaide.[47]
- The Townsville City Deal was the first to be agreed in 2016. A report on City Deals highlights the commitments that were completed in 2019, such as the substantive completion of the Northern Queensland Stadium, Haughton Pipeline (business case for stage 2), the opening of the Townsville City Bus Hub and Port of Townsville Channel upgrade (preliminary work). Another example of change in planning and operation in the City of Townsville is the Townsville Eastern Access Rail Corridor has been reserved for future economic activity.[48]
- The Launceston City Deal was signed in 2017 and initially agreed to a five-year program, which given recent achievements was extended to a 10-year program in total. The 2019 report highlights achievements such as the City Heart project revitalising Launceston's CBD, a new precinct plan for

[46] Australian Government, 2019-20 Budget, https://budget.gov.au/2019-20/content/community.htm
[47] Department of Infrastructure, Transport, Regional Development and Communication, 2019, https://www.infrastructure.gov.au/cities/city-deals/index.aspx
[48] Department of Infrastructure, Transport, Regional Development and Communication, 2019, https://www.infrastructure.gov.au/cities/city-deals/townsville/files/2019-progress-report.pdf

University of Tasmania's Inveresk campus and the commencement of the Launceston Apprenticeship Pipeline Project helping the construction industry train more apprentices across different projects.[49]

UK City Deals

The Australian Government's City Deals program is modelled on the UK Government's City Deal policy. In 2012, the UK Government committed funds to approximately 40 programs in eight cities spread across 30 years as part of the first wave of the initiative. A UK City Deal is a customised package of funding and decision-making powers negotiated with local authorities and targets different strategies depending on the barriers to growth each city faces. Almost all government funding is for capital development.[50]

As an example, the Greater Manchester City Deal includes plans to:

- Create a revolving Infrastructure Fund by allowing Greater Manchester to 'earn back' a portion of additional tax revenue from gross value-added increases resulting from local investment in infrastructure;
- Establish a Greater Manchester Investment Framework to bring together core economic development funds;
- Create a City Apprenticeships and Skills Hub and strengthen Greater Manchester's Business Growth Hub;
- Set up a Low Carbon Hub with a plan to reduce emission by 48% by 2020; and more.

The Greater Manchester City Deal contained stretch-type objectives and was considered one of the more ambitious deals at the time of the signing in 2012.[51]

In 2015, the UK National Audit Office conducted a review of the City Deals three years into the initiative but thought it too early to understand whether the City Deals would have an overall impact on growth. At the time of the review, Government had committed approximately £2.3 billion. As at 2020, there are over 35 City and Region Deals across England, Scotland, Wales and Northern Ireland.[52]

Implications for the 2021 Australian Infrastructure Plan

It is relatively early to form definitive conclusions about the effectiveness of the City Deal initiative in terms of its ability to generate real outcomes. However, the initiative has gained a lot of interest and generated much discussion about potential City Deal type projects in different cities. It is interesting to note, that the initiative has tended to target smaller cities. The spirit of Recommendation 2.1 is not necessarily geared specifically towards smaller cities, and hence for the 2021 Australian Infrastructure Plan, consideration could be given to suggesting that some form of similar approach be taken to generate outcomes in some of Australia's bigger cities.

[49] Department of Infrastructure, Transport, Regional Development and Communication, 2019, https://www.infrastructure.gov.au/cities/city-deals/launceston/files/launceston-annual-progress-report-2019.pdf

[50] Australian Housing and Urban Research Institute, 7 April 2017, 'What is a UK City Deal?', https://www.ahuri.edu.au/policy/ahuri-briefs/what-is-a-uk-city-deal

[51] UK Government, July 2012, https://www.gov.uk/government/publications/city-deal-greater-manchester

[52] UK Government, House of Commons Library, Briefing Paper No. 7158, March 2020, City Deals, https://researchbriefings.files.parliament.uk/documents/SN07158/SN07158.pdf

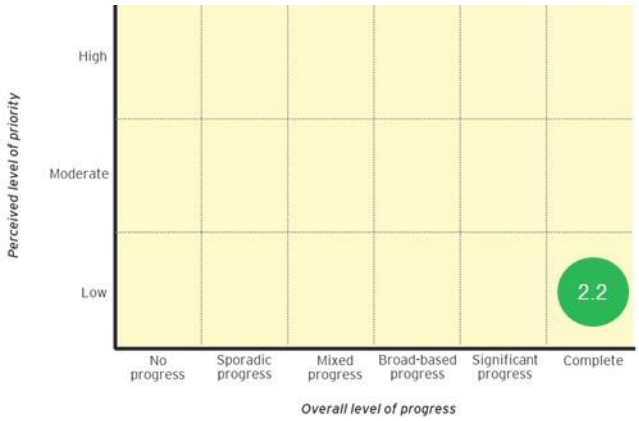
2.2 The Australian Government should deliver a National Population Policy to identify Australia's population pathway over the next 50 years and outline the Australian Government's options to shape that growth.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Not supported

Overall assessment of progress: Complete
Perceived level of priority: Low

Rationale from 2016 Plan

In 2016, Australia's population was projected to increase to over 30 million people by 2031, with increasing density in Australia's capital cities putting pressure on Australia's capital city infrastructure.[53]



Approach to assessment

A desktop search was conducted to ascertain progress against this recommendation.

Evidence-based assessment

The Australian Government's established of the Centre for Population, and the recent release of Australia's first Population Statement, indicates that this recommendation has been addressed.

- In 2019, the Minister for Population, Cities and Urban Infrastructure launched the Centre for Population to be based inside of Treasury. The purpose of the Centre for Population is to work with States, Territories and Local government to progress population policy. The work the Centre undertakes includes identifying population issues, gathering population datasets and population insights and tailoring policy to meet the needs of all Australians.[54]
- Australia's first Population Statement was released by the Centre for Population in December 2020.[55] Developed in consultation with state and territory governments, it provided a comprehensive analysis of population trends and projections, particularly taking into account the impact of COVID-19. The statement's launch also coincided with a national agreement between states and territories to align population projections across five core principles.[56]
- The Australian Government did not initially support the 2016 Australian Infrastructure Plan's call for a national population policy, indicating that its five-yearly Intergenerational Report already examines demographic trends across the population. While true to some extent, the Intergeneration Reports do not necessarily cover off on the links, and hence necessary policy responses, between population growth, land use and infrastructure needs.[57]
- At a jurisdictional level, all state and territory governments have delivered long-term infrastructure plans, within which population growth, and infrastructure implications, are analysed.

Implications for the 2021 Australian Infrastructure Plan

The establishment of the Centre for Population within the Australian Treasury, and the subsequent release of the first Population Statement, will complement and support State and Territory Government jurisdiction planning. This mitigates the need to further advocate for a National Population Policy.

[53] Making Reform Happen: Using incentives to drive a new era of infrastructure reform, Infrastructure Australia (June 2018)
[54] Australian Government, Centre for Population, https://population.gov.au/#why
[55] Centre for Population, December 2020, 'Population Statement', https://population.gov.au/publications/publications-population-statement.html
[56] Minister for Population, Cities and Urban Infrastructure, December 2020, 'First annual population statement released today', https://minister.infrastructure.gov.au/tudge/media-release/first-annual-population-statement-released-today
[57] Infrastructure Australia, December 2018, https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/ifa_225232_planning_liveable_cities_report_2018_fa_web_hr.pdf

2.3 To meet the demands of population growth Sydney, Melbourne, Brisbane and Perth should accelerate the delivery of high-quality, higher density development within established urban areas.

Entity(ies) responsible: State Government
Sectors subject to assessment: Development
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

As part of metropolitan planning processes, governments should take steps to reduce urban sprawl by accommodating high-quality, medium to high-density apartments in established urban areas.

Approach to assessment

A review of government initiatives implemented to address higher quality and higher density living in urban areas was conducted. Building approvals data were also analysed. The assessment focussed on the willingness of the four cities referred to in the recommendation to accommodate growing density, and if the respective state has outlined strategic plans to further grow inside the inner metro of each city.

Evidence-based assessment

The evidence outlined below suggests there is mixed progress amongst the larger Australian cities as to the acceleration of high-density developments in urban areas. Sydney and Brisbane have an absence of both strategic documentation and quantitative evidence to suggest there has been an acceleration in high density developments. Greater Melbourne has experienced a small decrease in the number of building approvals for high density, but progress has been made towards improving design quality. Steps have been taken to improve the quality and liveability within Perth, and high-density building approvals have remained steady.

- In **Sydney**, the growing inner-metro area is characterised by high apartment and house prices and somewhat limited housing choices closer to the CBD. The New South Wales Government is encouraging support for low-rise medium density housing.[58] The Greater Sydney Region Plan: A Metropolis of Three Cities has two objectives around housing and liveability: (i) achieving a greater supply of housing and (ii) generating more diverse and affordable housing. High density living however does not seem to be an objective explicitly referred to in the Greater Sydney Region Plan, rather the Plan refers to the New South Wales Department of Planning and Environment's Medium-density design guide.[59]
- As apartment developments have increasingly been built in inner **Melbourne**, the high cost of living has pushed population to more affordable locations in Victoria which has required the State Government to amend planning provisions. In 2017, the Government introduced the Better Apartments Design Standards in the Victoria Planning Provisions, to improve the internal design of new apartments and enable better use of smaller spaces to allow liveable and sustainable accommodation.[60] Infrastructure Victoria released a consultation paper in early 2020 documenting the findings from consulting community on 'density' and good urban design. Consultation findings are said to inform the update of the 30-year infrastructure strategy.[61] This was followed by Infrastructure

[58] Planning Liveable Cities, A place-based approach to sequencing infrastructure and growth, December 2018, https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/ifa_225232_planning_liveable_cities_report_2018_fa_web_hr.pdf

[59] Greater Sydney Commission, March 2018, Greater Sydney Region Plan: A Metropolis of Three Cities, https://gsc-public-1.s3-ap-southeast-2.amazonaws.com/greater-sydney-region-plan-0618.pdf?pMbPYxwen5IHg4GSB6td4yKiKVogFi4c

[60] Victoria Government, Better Apartments in Neighbourhoods Discussion Paper 2019

[61] Infrastructure Victoria, February 2020, 30-year Infrastructure Strategy Engagement Report, https://www.infrastructurevictoria.com.au/wp-content/uploads/2020/05/Density-done-well-engagement-report-FINAL.pdf

Victoria's 'Growing Together' paper, released in December 2020, which advocated better integrated infrastructure and land use planning. It highlighted benefits of encouraging housing in established areas, such as better use of existing infrastructure, and productivity and liveability benefits.[62]

- The Queensland State Infrastructure Plan acknowledges growing density in **Brisbane** and the need for higher density residential developments. However, as far as possible to ascertain, Brisbane has not prepared a state-led approach to deliver high-quality, high density living in established urban areas since 2016.
- In Western Australia, the State Government developed the planning platform DesignWA to improve **Perth's** planning and liveability. The platform is led by the Western Australian Government's Department of Planning, Lands and Heritage with the objective of supporting improved liveability particularly in higher density areas by providing design and planning resources.
- The table below documents the average number of building approvals for higher density residential buildings over the 2012 to 2015 period, compared to the 2016 to 2019 period, in greater capital city areas of Sydney, Melbourne, Brisbane and Perth. In general, other than for Greater Sydney, there was not a consistent uplift in the average number of building approvals pre and post 2016.

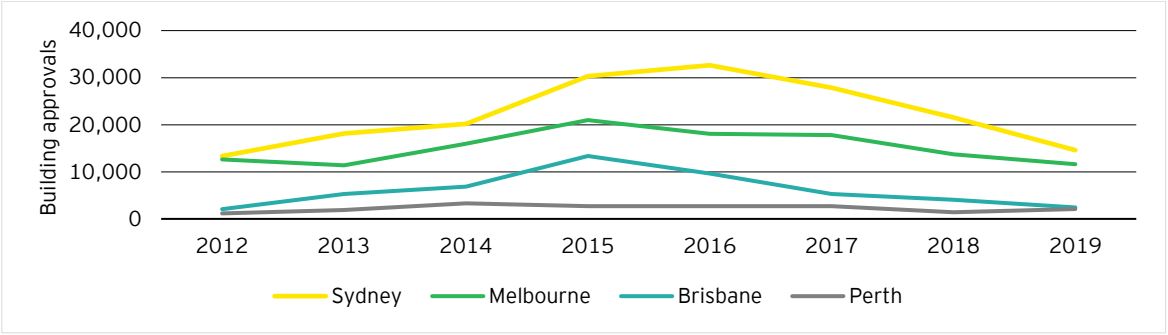
Table 3: Number of building approvals for flats, units and apartments (four or more storey)

City	Average approvals between 2012-2015	Average approvals between 2016-2019
Greater Sydney	20,480	24,151
Greater Melbourne	15,228	15,295
Greater Brisbane	6,876	5,368
Greater Perth	2,269	2,230

Source: ABS, 2019, Building Approvals by Greater Capital Cities Statistical Area (GCCSA)

The figure below identifies a downward trend in building approvals for high density residential building in greater capital cities since 2016. Noting that there may be other factors at play, the number of building approvals for high density residential living has decreased to a similar level experienced in 2012.

Figure 4: Annual number of building approvals for flats, units and apartments (four or more storey)



Source: ABS, 2019, Building Approvals by Greater Capital Cities Statistical Area (GCCSA)

In the context of COVID-19

COVID-19 may result in consumer and market preferences shifting towards regional, urban fringe and/or lower-density developments. Given potential changing preferences, over-correction towards inner city approvals should be avoided. This reflection is also relevant for Recommendation 2.4.

Implications for the 2021 Australian Infrastructure Plan

While governments have tended to advocate for high density inner city high density living and developed guidelines with the objective of encouraging liveability, there appears relatively little evidence of any

[62] Infrastructure Victoria, December 2020, Growing Together, https://www.infrastructurevictoria.com.au/wp-content/uploads/2020/12/Growing-together-December-2020-1.pdf

marked increase in approvals for inner city areas. It may be the case that planning regulations are yet to be reformed to ensure an appropriate regulatory response to stated policy objectives. A resulting conclusion is that the concept of the promotion of high quality and high-density development, suited to population demographics, should continue to be a focal point for the 2021 Australian Infrastructure Plan.

2.4 All governments should ensure that processes are in place to deliver high-quality, well-designed, higher density development, connected to infrastructure and public amenities.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Development
Australian Government response: Supported

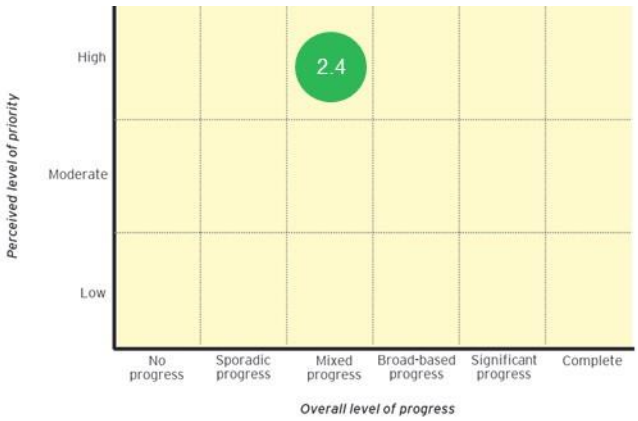
Overall assessment of progress: Mixed progress
Perceived level of priority: High

Rationale from 2016 Plan

State and local governments should align the delivery of higher density developments with relative certainty in drivers of change over the short, medium and long term.

Approach to assessment

Similar to the case for Recommendation 2.3, we guided our analysis by conducting a review of legislation and government initiatives implemented across all levels of governments. Our approach deviated from the previous recommendation in looking at investigations targeting the pre-emptive planning stages of high-density development.



Evidence-based assessment

Mixed progress has been made in addressing this recommendation, with the majority of progress evidenced in New South Wales and Victoria. The documentation included in 2.3 somewhat evidences the 'processes' sought in recommendation 2.4. Government Architects continue to the play a role in defining design principles.

- The Government Architects Network Australia provides strategic design leadership in urban design protocols.[63] The Government Architects facilitate competitive design processes in which project proponents invite designers to submit design proposals for projects. Design competitions are regarded as a successful procurement model as they help prioritise good design.[64]
- The **Australian Capital Territory** Planning Strategy highlights the importance of delivering high- quality, well-designed, higher density development, connected to infrastructure and public amenities.[65] The Canberra light rail network opened in 2019 was largely based on land use and agglomeration benefits.
- **New South Wales** and **Victoria** adopted the Movement and Place Framework which aims to seek consideration of place when developing transport systems, through collaborative working between the community, movement and place practitioners and to ensure that transport systems better support places.[66] Whilst this framework is applicable to the broader aim of achieving all road and environmental outcomes, significant consideration is given to planning practitioners in higher density areas. In Victoria, the Movement and Place Framework was a direct recommendation of the *Plan Melbourne 2017* strategy. In New South Wales, use of the Framework aligned to the sentiments in *Future Transport Strategy 2056* (TfNSW 2018), *Connecting to the future: Our 10 Year Blueprint* (TfNSW 2019), as well as the *Greater Sydney Region Plan* (Greater Sydney Commission 2018), and *Better Placed* (GANSW 2017).
- Infrastructure Victoria has conducted a series of research exploring future urban growth options, finding that the majority of infrastructure supporting residential development can be designed and

[63] Government Architects Network Australia, http://www.gana.gov.au/government_architects/

[64] Government Architect New South Wales, May 2018, Government Architect's Design Excellence Competition Guidelines, https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/guidelines/draft-design-excellence-competition-guidelines-2018-05.pdf

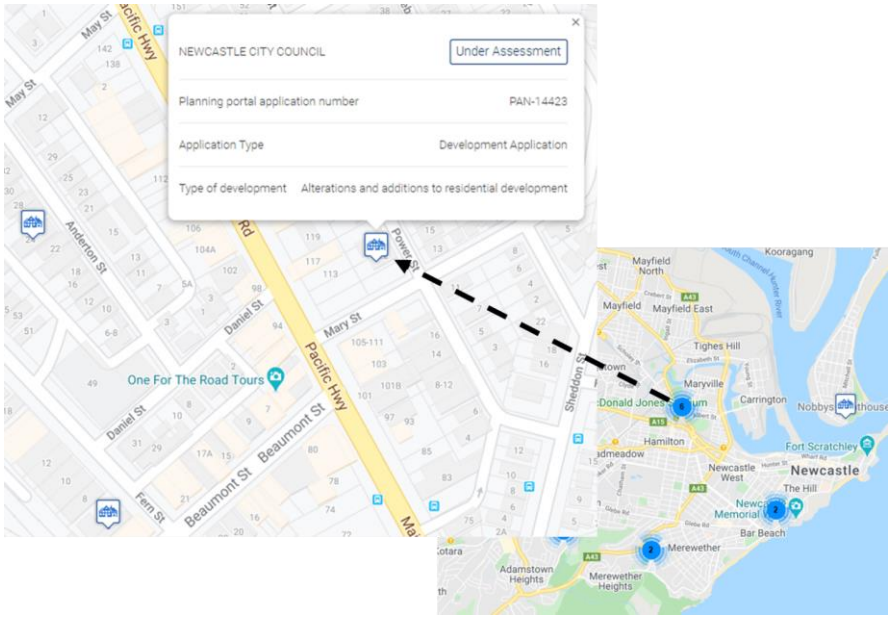
[65] ACT Government, 2018, ACT Planning Strategy, https://www.planning.act.gov.au/act-planning-strategy

[66] Government Architect New South Wales, https://www.governmentarchitect.nsw.gov.au/guidance/movement-and-place

delivered within a three-to-five-year period, enabling it to keep pace with housing development.[67] Infrastructure Victoria also conducted community engagement in early 2020 on the community's view on 'density done well', asking what would be needed for residents to embrace greater urban density. This research will inform the update of Infrastructure Victoria's 30-year Infrastructure Strategy.[68]

- In **South Australia** the 30-year Plan for Greater Adelaide includes an urban development target aiming for 75% of development to be urban infill developments.[69] The target is supported by reforms to the local Development Act whereby development plans were amalgamated into one planning design code. An ePlanning portal is also being developed in line with the development reforms.[70]
- The **Western Australian** and **New South Wales** Governments provide transparent planning services on their respective websites including:
  - Planning Portal: Through the portal, users can map their area to a relatively high granularity seeing the number of development applications, the status of these development and the developed type as shown in Figure 5. This portal provides transparency in the community, ensuring processes are also adhered too.[71] Other services provided through the New South Wales Planning Portal are the Interactive House and ePlanning Spatial Viewer described below.
  - Interactive House: This tool provides planning information for complying and exempt developments. The tool allows the user to click on various sections of the house to understand the most recent legislation applied to that area i.e. solar panels must comply to State Environmental Planning Policy (Infrastructure) 2009.[72]
  - ePlanning Spatial Viewer: Within the New South Wales Planning Portal, the spatial viewer enables digital mapping services to support more effective planning by enabling users to envisage elements such as heritage land, land zoning, hazards, open spaces, public facilities.[73] This service is also offered in Western Australia through its platform ArcGIS Online.[74]

Figure 5: Exert from the ePlanning Spatial View: Newcastle proposed developments



Source: NSW Planning Portal

[67] Infrastructure Victoria, April 2019, Infrastructure Provision in Different Development Settings, https://www.infrastructurevictoria.com.au/project/research-infrastructure-provision-in-different-development-settings/
[68] Infrastructure Victoria, February 2020, 30-year Infrastructure Strategy Engagement Report, https://www.infrastructurevictoria.com.au/wp-content/uploads/2020/05/Density-done-well-engagement-report-FINAL.pdf
[69] Department of Planning, Transport and Infrastructure, Government of South Australia, The 30-year Plan for Greater Adelaide, https://livingadelaide.sa.gov.au/__data/assets/pdf_file/0003/319809/The_30-Year_Plan_for_Greater_Adelaide.pdf
[70] Department of Planning, Transport and Infrastructure, 2020, Planning Reforms, https://www.saplanningportal.sa.gov.au/planning_reforms
[71] NSW government, Planning Portal, https://www.planningportal.nsw.gov.au/
[72] NSW Government, Interactive House, https://www.planningportal.nsw.gov.au/interactive-house
[73] NSW Government, ePlanning Spatial Viewer, https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address
[74] WA Government, City of Perth, https://www.perth.wa.gov.au/develop/planning-and-building-applications/mapping

Implications for the 2021 Australian Infrastructure Plan

As per the finding for Recommendation 2.3 and rationale outlined above, the concept of the promotion of high quality, well-connected and high-density development should continue to be a focal point for the 2021 Australian Infrastructure Plan.

2.5 Government should aim to grow the population of our smaller capital cities, in particular Adelaide, Hobart and Darwin beyond their current projections.

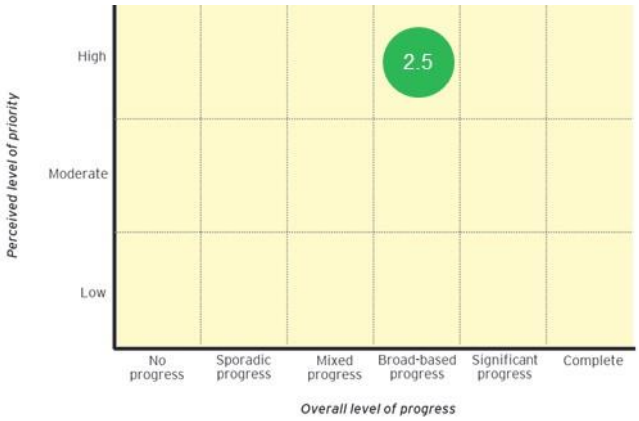
Entity(ies) responsible: Federal, State and Local Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported
Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

Infrastructure Australia suggested developing infrastructure and services to accommodate increasing cultural diversity whilst growing a skilled workforce.

Approach to assessment

A comparison of population projections to actual population growth between 2016 and 2020 was made to assess progress against this recommendation.



Evidence-based assessment

On the whole, mixed progress has been experienced. In Darwin and Hobart, partial progress has been made in addressing this recommendation via state-based efforts to incentivise population growth. Adelaide achieved greater growth than was projected at the time in 2016. All cities accommodated a greater share of total capital city population in 2019 compared to 2016.

- In March 2019 the Australian Government reduced the permanent migration cap from 190,000 to 160,000 and increased the number of regional places to 25,000. The outcomes for these two initiatives are to reduce the migration in Sydney, Melbourne and Brisbane and encourage stronger distribution of skilled workers to regional Australia. Adelaide, Hobart and Tasmania all now qualify to as regional and will gain priority processing on regional visas.[75]
- In 2016, **Adelaide** was expected to host a population of 1.35 million in 2019, targeting a growth rate of 4.63%. This was marginally exceeded by approximately 0.2% which could be attributed to a growing defence industry and a strong food and wine industry. The South Australian Government has stated its intention for population growth to reach the national average, which would see annual growth increase from 12-14,000 to approximately 30,000 over the medium term.[76]
- **Hobart** is recording relatively strong population growth with a total growth rate of 6.01%, exceeding 2016 projections.[77] In 2018, the Tasmanian Government delivered ambitious expectations for 2050 population growth which highlights Tasmania's advantages in that:
  - Tasmania does not have acute shortages of land or water for household use in the major urban areas where most population growth is likely to occur.
  - The scale of possible population increases in Tasmania's cities is not expected to result in the same congestion issues that some cities in mainland Australian are facing.
  - Environmental impacts are likely to be manageable under current regulatory arrangements.
- **Darwin** recorded a significant decline in population in 2019, resulting in a lower than forecasted growth rate from 2016. In response, the Northern Territory developed its population strategy: 'Welcome to the Territory'. This strategy outlines incentives to migrants looking to relocate for education and career purposes. The aim of the strategy is to boost population growth and has funded $19 million to attract workers to the Territory.[78]

[75] Morrison Government increases regional migration target, 26th October 2019, Prime Minister, Minister for Population, Cities and Urban Infrastructure, Minister for Education, Minister for Immigration, Citizenship, Migrant Services and Multicultural Affairs
[76] Infrastructure SA, May 2020, 20-year state infrastructure strategy, https://www.infrastructure.sa.gov.au/__data/assets/pdf_file/0006/197511/20-Year-State-Infrastructure-Strategy-Full.pdf
[77] ABS, Population Projections, Australia, 2017
[78] Northern Territory government, 2019, https://theterritory.com.au/

- The table below details the change in population over the 2016 to 2019 period and illustrates the comparison between forecast population and the population growth realised. The 'population burden' each city shares as a percentage of total city population (i.e. the distribution of population across Australian capital cities) was also recorded for 2016 and 2019. Since 2016 all cities have increased their population burden thus providing some reprieve to larger capital cities, however this increase was relatively modest in Darwin and Hobart.

Table 4: Population forecasted vs actuals for Adelaide, Darwin and Hobart from 2016 to 2019.

	Adelaide			Darwin			Hobart		
Indicator	2016 (actual)	2019 (forecast)	2019 (actual)	2016 (actual)	2019 (forecast)	2019 (actual)	2016 (actual)	2019 (forecast)	2019 (actual)
Population (no.)	1,295,714	1,357,090	1,359,760	136,828	152,705	147,255	222,356	235,843	236,136
Difference (%)	-	4.63%	4.82%	-	10.97%	7.34%	-	5.89%	6.01%
Population burden of total capital cities	7.5%		8.2%	0.8%		0.9%	1.3%		1.4%

Source: ABS population forecasts and actuals, 2016 and 2019, Cat. No. 3218.0

Implications for the 2021 Australian Infrastructure Plan

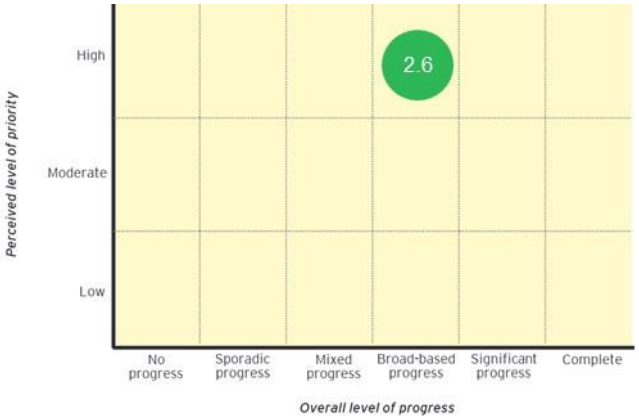
On the whole, there has been relatively good progress on this recommendation. Governments in each of the jurisdictions identified in Recommendation 2.5 have developed policy plans to encourage greater population growth, and with the exception of Darwin, actual population growth since 2016 has exceeded projections at the time. The introduction of the Australian Government's regional migration program may also contribute to this objective going forward. For the 2021 Australian Infrastructure Plan, a more targeted recommendation around the specific population burdens and infrastructure needs of our major capital cities relative to both smaller cities and regional areas might be more appropriate and tangible. It is also worth noting that actual population outcomes are the result of myriad factors and hence a more actionable recommendation might focus on the infrastructure spend (so as to create the conditions for population growth) in our non-major capital cities.

2.6 The cities of Newcastle, Wollongong, Geelong, the Sunshine Coast and the Gold Coast should be supported by governments, businesses and local communities to grow their populations and economies.

Entity(ies) responsible: Federal, State and Local Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported
Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

Infrastructure Australia outlined the need for governments and businesses to support the five cities listed, three of which were forecasting slower population growth compared to the relatively high growth rates in Sydney, Melbourne and Brisbane.



Approach to assessment

Where possible, analysis of building approval rates guided an assessment of local government willingness to grow each city. Building approval rates were coupled with a review of city council documents to explore recent initiatives supporting growth for local businesses and communities.

Evidence-based assessment

Broad-based progress has been achieved in addressing this recommendation. The five cities listed have grown through improved broadband and public transport connections as is prevalent by local government publications detailing rollouts over short- and medium-term timelines. Evidence is documented below.

- The table below details the population growth experienced across the five cities in the last year.

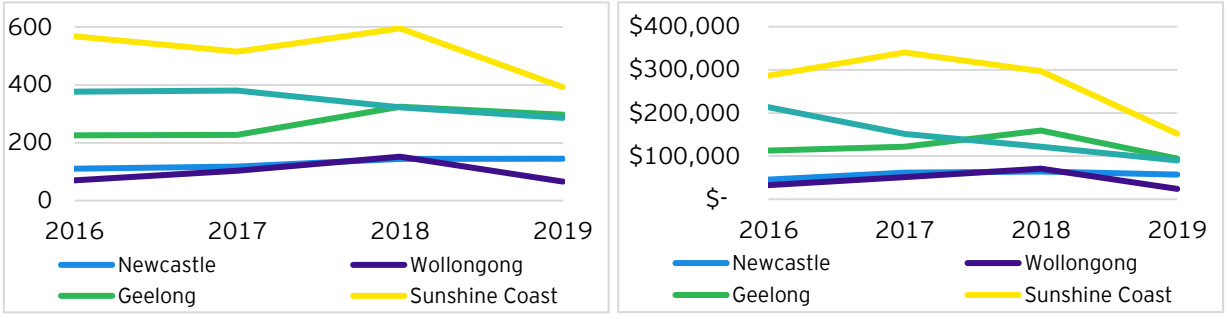
Table 5: 2019 population, change since 2016

Indicator	Newcastle	Wollongong	Geelong	Sunshine Coast	Gold Coast
Population change since 2016 (No.)	4,864	7,720	19,405	25,587	45,215
CAGR (%)	0.75%	1.19%	1.83%	2.37%	2.25%

Source: ABS - Regional Population Growth, Australia, 2018-19 Cat. No. 3218.0

- The two figures below outline the trends in the average monthly number and value of building approvals since 2016 as an indicator of economic activity.

Figure 6: Average monthly number (a) and value (b) of building approvals since 2016 by LGA



Source: ABS, 2019, Building Approvals by Local Government Areas

- **Newcastle** has experienced a steady increase in the number and value of building approvals. The population of Newcastle has grown slightly over the last year, and at 0.75% (compound annual growth rate) over the 2016 to 2019 period. In 2016 the City of Newcastle released a multi-award-winning strategic planning document guiding the city a smart and innovative future. The Newcastle Smart City

Strategy comprises objectives surrounding smart and innovative technologies, collaboration, and revitalisation and renewal projects.[79]

- **Wollongong** experienced a steady increase in the number and value of building approvals until 2018 but declines from 2018 to 2019. Wollongong experienced small population growth in the past year, slightly greater than the average growth experienced over the 2016 to 2019 period. The Wollongong City Council developed the Economic Development Strategy (2019–2029) to outline critical transport projects to improve inter-city and regional connectivity. The Wollongong City Council details its support of a 5-year plan to grow arts and creative industries within the area in hopes to attract a more diverse population.[80]
- In **Geelong**, building approvals were steady through 2016 and 2017 but rose rapidly in 2018 to level out again. Population growth had been steadily increasing between 2011 and 2016, recording a 2.6% growth rate in 2016. This has steadied, recording an annual rate of 1.83% in late 2019.[81] Geelong was recognised as Australia's only UNESCO City of Design as a result of successful implementation on various initiatives such as:
  - Geelong's first SMART.NODEs were switched on along the Waterfront, improving access to WIFI, USB charge facilities, high-speed internet and data analytics;
  - a trial of asphalt made with 20 per cent recycled plastics started on three sections of road in Geelong, saving the equivalent of 3,500 kilograms of plastic from landfill; and
  - the Geelong After Dark event attracted 32,400 people to Central Geelong, with 270 artists delivering 56 activities.[82]
- The **Sunshine Coast** has experienced the highest recent population growth of the five cities, averaging 2.05% a year over the 2016 to 2019 period (building approvals however have fallen). In 2018, the Sunshine Coast Council entered into commercial agreements that will see an international broadband submarine cable come ashore on the Sunshine Coast and be in service by mid-2020. This will provide the fastest data connectivity from the east coast of Australia to Asia and the second fastest to the United States by mid-2020.[83]
- The **Gold Coast** has experienced a decline in building approval numbers over the 2016 to 2019 period. Population in the Gold Coast increased 2.25% in over the year to 2019, slightly higher than the 1.9% average experienced over the 2016 to 2019 period. In 2018, Gold Coast hosted the 2018 Commonwealth Games. The Queensland Government invested $1.86 billion into the Gold Coast to host the Games, resulting an additional economic boost estimated of $1.8 billion.[84] The Gold Coast Light Rail Stage 2 was completed prior to the Games through a public-private-partnership, and became operational in late 2017.

Implications for the 2021 Australian Infrastructure Plan

Progress towards this recommendation has been positive. For the 2021 Australian Infrastructure Plan, it may be prudent to focus specifically on the cities referred to in this recommendation with a view to setting out what each might need from a policy and infrastructure perspective such that they can continue to grow into major population centres or genuine second cities. A selection of additional smaller scale centres might also be selected as a new round of target candidates for growth beyond 2021.

[79] City of Newcastle, Newcastle Smart City Strategy, https://newcastle.nsw.gov.au/Living/Our-City/Smarter-Living/Strategy-and-Actions

[80] Economic Development Strategy 2019 – 2029, Wollongong City Council, 2019

[81] Population & Growth Scenarios: Geelong Settlement Strategy Amendment C395 October 2019, https://www.geelongaustralia.com.au/common/public/documents/amendments/8d6f0bcb1cec127-CouncilExpertWitnessStatement-JeremyReynolds-DemographicsandPopulation.PDF

[82] City of Greater Geelong, May 2020, Successful projects and activities strengthen Greater Geelong's reputation, https://www.geelongaustralia.com.au/clevercreative/news/item/8d80222e09d840f.aspx

[83] Sunshine Coast Council Annual report 2018-19

[84] Gold Coast 2018 Commonwealth Games, Post Games Report, Queensland Government

2.7 Local government reform processes should be initiated across Australia to consolidate the number of councils and increase the efficiency, service quality, financial viability and strategic profile of local government.

Entity(ies) responsible: State and Local Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Noted

Overall assessment of progress: Mixed progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Consolidation of local governments was encouraged to ensure a level of service quality could be obtained by having critical mass.

Approach to assessment

Desktop research was conducted to identify whether local government consolidation had taken place or remains topical.

Evidence-based assessment

New South Wales is the only state in which local government amalgamations have occurred since 2016. There has been discussion and work being performed in other states to investigate the feasibility of amalgamations, but no decisive action. COVID-19 has encouraged discussions regarding amalgamations given the financial stress of some local governments. Overall mixed progress has been made in addressing this recommendation.

- In May 2016 the **New South Wales** Government ordered a Local Government (Council Amalgamations) Proclamation with the objective to constitute and amalgamate various local government areas. Approximately 39 local governments were amalgamated into 17 new areas.[85] In November 2017, the Parliament passed laws to allow regional councils to voluntarily form new Joint Organisations to strengthen regional co-ordination and improve delivery of important infrastructure and services.[86]
- In late 2017 the Property Council of Australia commissioned analysis to determine the economic impact of amalgamating state-wide councils from 68 to 32 in **South Australia**. The analysis reported approximately $65 million in annual savings; however, no such amalgamations have taken place.[87] In 2019 the Local Government Association of South Australia suggested it would continue to work with all political parties to progress reforms such as forced amalgamations.[88]
- In **Tasmania** work is being done to understand the feasibility of amalgamating 24 of Tasmania's 29 councils. Work is ongoing and no such amalgamation has taken place.[89]
- There is no evidence to suggest **Victoria** has amalgamated local councils, rather a move towards alternatives such as rate capping and price benchmarking.
- **Western Australia** had plans to almost halve the number of local governments in 2015, but the reform agenda was disbanded.
- In 2017 the Productivity Commission released the five-year productivity review. The paper suggested that state-driven amalgamations of local governments in Queensland and New South Wales are often

[85] New South Wales Government, 12 May 2016, Local Government (Council Amalgamations) Proclamation 2016 under the Local Government Act 1993
[86] Parliament of New South Wales, November 2017, Local Government Amendment (Regional Joint Organisations) Bill 2017, https://www.parliament.nsw.gov.au/bills/Pages/bill-details.aspx?pk=3469
[87] Property Council of Australia, 11 October 2016, 'Council Amalgamations to Deliver $500m to State', https://www.propertycouncil.com.au/Web/Content/Media_Release/SA/2016/Council_amalgamations_to_deliver__500m_to_state.aspx
[88] Local Government Association of South Australia, February 2019, Local Government Reform: Briefing Paper, https://www.lga.sa.gov.au/__data/assets/pdf_file/0033/471696/Local-Government-Reform-Briefing-Paper-February-2019.pdf
[89] Tasmanian Government,2018, Local Government Reform, http://www.dpac.tas.gov.au/divisions/local_government/about_councils/voluntary_council_amalgamations

contentious with feelings that larger local government areas will lead to less responsive in governing.[90]

- There is evidence in various states and territories of greater collaboration at the local government level. For example, in Victoria, nine Regional Councils have been developed and serve as a platform for engagement with multiple Victorian Government agencies. The South East Queensland Mayors or the Council of Mayors (SEQ) is another example of collaboration however these pre-date the 2016 Australian Infrastructure Plan.
- For context, the **Northern Territory** amalgamated 51 community government councils operating in remote Indigenous communities in 2008.[91] There is no significant evidence to suggest this is a topical discussion within the Northern Territory.
- For context, **Queensland** merged 157 local councils to 73 over 10 years ago.

Implications for the 2021 Australian Infrastructure Plan

The track record suggests that it can be politically difficult to implement a recommendation such as this and hence more evidence might be needed if the case for local government consolidation is going to remain on the agenda.

[90] Productivity Commission, 2017, https://www.pc.gov.au/inquiries/completed/productivity-review/report/productivity-review-supporting16.pdf

[91] Northern Territory, Local Government Service Delivery to Remote Indigenous Communities, https://www.uts.edu.au/sites/default/files/1337742323_LG_Service_Delivery_to_Remote_Indigenous_Communities.pdf

2.8 Each state and territory government should deliver and consistently update long-term land-use plans for all Australian cities.

Entity(ies) responsible: State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

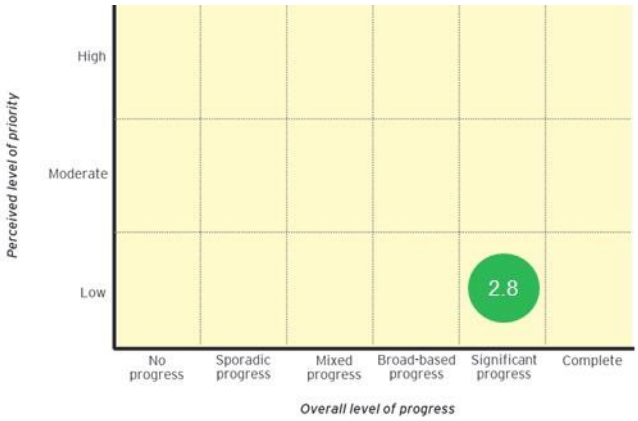
Overall assessment of progress: Significant progress
Perceived level of priority: Low

Rationale from 2016 Plan

Long-term land-use planning is particularly important in managing urban population growth pressures and supporting state and territory to better allocate infrastructure services.

Approach to assessment

A review of state and territory strategies was conducted to assess the extent to which land-use plans have been developed. A desktop scan of the regional land-use strategies was also pursued.



Evidence-based assessment

Long-term land-use plans have been implemented across all states and territories.

- The New South Wales Government delivered nine long-term land use plans in 2017 making it the first time the entire State has been covered by strategic land use plans. *A Metropolis of Three Cities* is **Sydney's** 40-year vision (to 2056) prepared concurrently with *Future Transport 2056* and *State Infrastructure Strategy 2018-2038* to align land use, transport and infrastructure outcomes for Greater Sydney.[92]
- The Victorian Government delivered **Melbourne's** planning strategy; *Plan Melbourne* in 2017 to integrate land-use, infrastructure and transport until 2050. The document includes a five-year implementation plan that is to be updated at the end of each five-year period.[93]
- The Department of Planning, Lands and Heritage published a long-term land-use plan for Western Australia with the suggestion that it would be regularly reviewed and updated. This strategy encompasses future land use in the **Perth**, citing it will be home to 75% of the state's population by 2056.[94]
- **Canberra's** land-use plan, the *Territory Plan,* was published by the ACT Planning & Land Authority and was recently updated February 2020. [95]
- *The Darwin Regional Land Use Plan 2015* presents a broad rational foundation for long term land use and development, highlighting key regional policies that respond to the immediate and foreseeable issues associated with the region's natural environment and the human communities within it.[96]
- In 2017, the South Australia Government updated *the 30-year Plan for Greater Adelaide,* addressing future land-use, transport networks and infrastructure.[97]
- *Southern Tasmania Regional Land Use Strategy 2010-2035* is the land-use strategy for **Hobart** which was most recently updated in February 2020.[98]

[92] Greater Sydney Commission, 2017, Metropolis of Three Cities, https://www.greater.sydney/metropolis-of-three-cities
[93] Plan Melbourne, 2017, Environment, Land, Water and Planning, Victoria Government, https://www.planmelbourne.vic.gov.au/__data/assets/pdf_file/0009/377127/Plan_Melbourne_2017-2050_Summary.pdf
[94] Department of Planning, Lands and Heritage, State Planning Strategy 2050, https://www.dplh.wa.gov.au/getmedia/d698cbff-65c6-4afb-b4b7-9e12e6a3b5dd/FUT-SPS-State_Planning_Strategy_2050
[95] ACT Government, Territory Plan 2008, https://www.legislation.act.gov.au/ni/2008-27/Current
[96] Department of Lands, Planning and the Environment, Northern Territory Government, Darwin Regional Land Use Plan 2015, https://nt.gov.au/__data/assets/pdf_file/0019/240247/darwin-regional-land-use-plan-2015.pdf
[97] Department of Planning, Transport and Infrastructure, Government of South Australia, The 30-year Plan for Greater Adelaide, https://livingadelaide.sa.gov.au/__data/assets/pdf_file/0003/319809/The_30-Year_Plan_for_Greater_Adelaide.pdf
[98] Southern Tasmania Regional Planning Project, Southern Tasmania Regional Land Use Strategy, 19 February 2020, Southern Tasmania Regional Land Use Strategy 2010 - 2035 (planningreform.tas.gov.au)

- *Brisbane City Plan 2014* is the planning document for land-use in Brisbane if which Council regularly updates via a table of amendments.[99]

Local Government examples

A sample of local governments were investigated to understand the uptake of long-term land-use plans on a local government level.

- The City of Greater Geelong has in the past created rural land use plans, and infrastructure plans including a Social Infrastructure Plan currently under review. There is lacking evidence to suggest a long-term land use plan has been developed.[100]
- The City of Gold Coast regularly updates its City Plan inclusive of land use and economic development projects. There is lacking evidence to suggest a long-term land use plan has been developed.[101] The City of Sunshine Coast does not seem to have a long-term land-use plan.
- The City of Newcastle has a Local Strategic Planning Statement documenting the 20-year land use vision which gives effect to the Greater Newcastle Metropolitan Plan 2036, and contains priorities from the Community Strategic Plan, Newcastle 2030.[102]

Implications for the 2021 Australian Infrastructure Plan

The use of long-term land use plans is prevalent and hence the recommendation is considered to be largely complete. This concept could be considered a low priority for the 2021 Australian Infrastructure Plan. If desired, work could be considered as to the effectiveness of content within these plans and the degree of community engagement.

[99] Brisbane City Council, Brisbane City Plan 2014, https://www.brisbane.qld.gov.au/planning-and-building/planning-guidelines-and-tools/brisbane-city-plan-2014/brisbane-city-plan-2014-mapping

[100] City of Greater Geelong, Report and Documents, https://www.geelongaustralia.com.au/documents/results.aspx?s=0&c=227

[101] City of Gold Coast, City Plan, https://www.goldcoast.qld.gov.au/planning-and-building/city-plan-2015-19859.html

[102] City of Newcastle, Local Strategic Planning Statement, https://www.newcastle.nsw.gov.au/Development/Land-Use-Planning/Planning-Policies

3 Connectivity

3. Connectivity

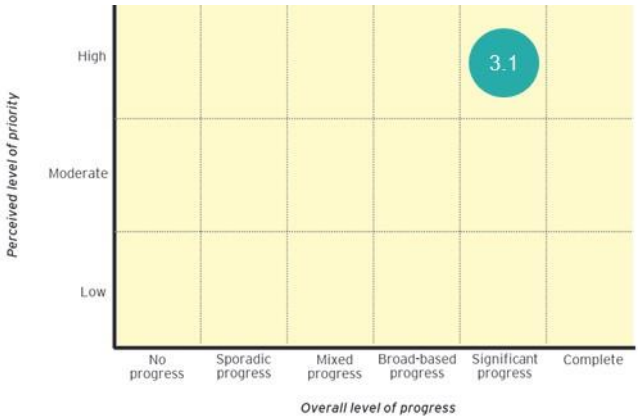
3.1 Governments should upgrade legacy capital city passenger transport infrastructure to deliver higher capacity, high-frequency services across all modes.

Entity(ies) responsible: State based transport authorities
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: High

Rationale from 2016 Plan

This recommendation was established to ensure investment and funding is allocated to the right transport solutions. Existing transport networks will have to be upgraded to meet increased levels of demand. Private passenger vehicles are currently the dominant mode of transport across our major cities. Over coming decades, meeting the demands of population growth will require a change in the balance of transport options in our cities, with single modes or combinations of modes servicing different journey types as appropriate.



Approach to assessment

We undertook desktop research to assess the recent planning and delivery of public transport projects in capital cities which set out to upgrade existing infrastructure with the purpose for increase capacity and frequency.

Evidence-based assessment

The following examples highlight evidence of State governments upgrading legacy passenger transport infrastructure to deliver higher capacity, high frequency services across all modes in capital cities:

- **Transport Canberra:** The ACT Government has invested in Stage 1 of the Canberra Metro, a new light rail system operating in the capital. The current network is being expanded 1.7km (including 3 new stops) between Commonwealth Park and Woden.[103]
- **TfNSW, Sydney**: TfNSW is currently delivering the largest transport infrastructure project in the State's history, including AU$41.4 billion of investment over the next four years. This includes Sydney and Parramatta Light Rail, Sydney Metro North West, Metro City & South West, Metro West and Western Sydney Airport along with the Sydney Growth Train project (24 new eight-car suburban trains).[104]
- **TransLink, Brisbane:** The Queensland Government is currently developing several major transport projects to improve capacity and frequency of services in the Brisbane and South East Queensland region. These include, Cross River Rail, Brisbane Metro (rapid inner-city bus line) and improved run transitways/bus priority routes.[105]
- Patronage in **South Australia** is low resulting from various incentives to drive into the CBD, for example there is a high number of car parks per capita in South Australia and parking costs are reasonably low. Regardless, the South Australian Government has continued the electrification of

[103] Canberra Metro, 2020, https://www.transport.act.gov.au/about-us/public-transport-options/light-rail/light-rail-network
[104] TfNSW Major Projects Hub, 2020, https://www.transport.nsw.gov.au/projects/major-projects-hub
[105] TransLink Projects and initiatives, 2020, https://translink.com.au/about-translink/projects-and-initiatives

Adelaide's rail network and Infrastructure South Australia is undertaking work to improve patronage and deliver higher frequency services as appropriate.[106]

- The **Tasmanian** Government and state-based agencies have developed or planned for a number of projects improving passenger transport integration via the Hobart City Deal. Within the Hobart City Deal there is a vision for Greater Hobart Transport which includes new infrastructure such as the Hobart Transit and new ferry services, and the activation of legacy infrastructure such as the northern suburbs rail transit corridor.[107]
- **Department of Transport Victoria (DoTV), Melbourne**: DoTV is currently undertaking several large-scale, capital projects to improve Melbourne's public transport network. These include, Melbourne Metro Tunnel, Level Crossing Removal Project (removing 75 existing level crossings across Melbourne), high capacity metro trains, along with extra buses and trams.[108]
- **PTA, Perth**: Phase 1 of Metronet includes approximately 72km of new passenger rail and 18 new stations to be delivered over the next 4 years. The State Government will incorporate several projects into Metronet to increase capacity and frequency across the network. Examples include a level-crossing removal program, high capacity signalling across the network, and the procurement of 246 new railcars (C-Series).[109]

Implications for the 2021 Australian Infrastructure Plan

There has been a substantive investment in trunk line public transport infrastructure since 2016. A consideration for the 2021 Australian Infrastructure Plan might be the effectiveness of feeder or 'last-mile' services with a view to ensuring accessibility exists so as to maximise the use of the investment into heavy trunk line infrastructure.

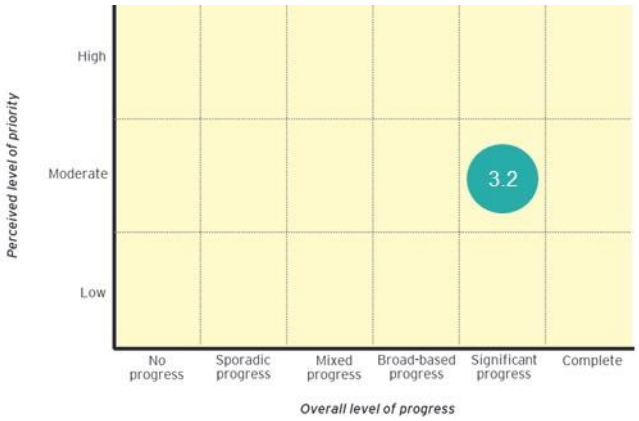
[106] Department of Planning, Transport and Infrastructure, 2018 Rail Network Electrification, https://dpti.sa.gov.au/electrification/electrification
[107] Tasmanian Government, 2019, Hobart City Deal, https://www.hobartcitydeal.com.au/__data/assets/pdf_file/0006/197538/Hobart_City_Deal_-_web_accessible.pdf
[108] PTV Improvements and projects, 2020, https://www.ptv.vic.gov.au/footer/about-ptv/improvements-and-projects/
[109] Metronet, 2020, https://metronet.wa.gov.au/home

3.2 Data regarding the real-time operation, use and performance of Australia's transport networks should be made publicly available to enable the private sector to develop customer-focused mobile applications.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Transport
Australian Government response: Supported
Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

In a high-population, high density city, public transport networks will need to transition to a model where commuters use an efficient combination of modes to complete a single journey. To assist this process, all governments should adopt an 'open data' policy and quickly release new data regarding the operation and performance of urban public transport networks.



Approach to assessment

We undertook desktop research to assess progress against this recommendation.

Evidence-based assessment

There is a number of examples of public provision of transport data from numerous sources, including real-time, usage and performance data demonstrating broad-based progress against this recommendation. Many state-based transport authorities have created their own proprietary applications for live transport tracking and monitoring. This includes installing GPS systems into bus, train and tram fleets and providing data on real-time operations information (notably, Sydney, Melbourne, Brisbane and Perth networks):

- **Transport Canberra** and Uber partnered in late 2016 throughout the festive season to provide discounted Uber trips home when connecting from the Rapid Transport Night Rider Bus Service.[110]
- **Transport for New South Wales (TfNSW)***:* TfNSW's Open Data Hub is the central location for all TfNSW open data, established in April 2016 at the Future Transport. The Open Data Hub hosts more than 100 datasets that contain over 300 resources (APIs, files and other documents). Since the launch of the Hub in April 2016 we have had more than 27,500 users register to use the portal and more than 4.8 billion unique API hits.[111.] The Open Data Hub highlights several private sector users of the data it produces, including *Google Maps, Citymapper, Moovit* and *AnyTrip*.
- **Public Transport Authority (PTA)**: The PTA provides several live and performance open source data:
  - *Live spatial data*: The PTA provides Transperth stop and route spatial data for public use. This includes granting users access to Google Transit API (application programming interface) for use in the development of private applications[112].
  - *Surveys and Statistics*: The PTA provides online performance and reliability statistics on both its train and bus networks. These are updated regularly and provided as an open source to the public. In addition, the PTA undertakes regular passenger surveys which are made publicly available.[113]
- **Bureau of Infrastructure, Transport and Regional Economics (BITRE)***:* The BITRE provides economic analysis, research and statistics on infrastructure, transport and regional development issues to inform government policy development in addition to wider community understanding (including private sector). BITRE's role is to gather and analyse information about the transport

[110] Uber, 29 November 2016, Transport Canberra and Uber Late Night Rides, https://www.uber.com/en-AU/blog/canberra/nightrider/
[111] TfNSW Innovation, Open Data: https://opendata.transport.nsw.gov.au/
[112] Public Transport Authority, Spatial Data Access: https://www.transperth.wa.gov.au/About/Spatial-Data-Access
[113] Public Transport Authority, Surveys and Statistics: https://www.transperth.wa.gov.au/About/Surveys-Statistics

industry and transport services. Today this role extends to analysis of trends and issues relating to infrastructure provision, cities and regional development.[114]

- **Data.gov.au**: The Australian Government provides open-source data to the public via the Data.gov.au website. This includes transport specific data highlighting usage and performance statistics released by various federal and state agencies on an on-going basis.[115]

Examples of private applications utilising Australian transportation data:

- **Moovit:** The Moovit application allows for both real-time (where available) and scheduled timetable tracking of public transport networks worldwide. It utilises open-source data, as provided by transport agencies, and mapping technology to allow users to plan journeys in real-time. Where transport assets have been fitted with GPS, the user can track the transport mode in real time. Additionally, it allows for planning journeys over multiple modes of transport and a variety of route variations. Moovit provides access to public transport information for capital cities and many regional centres in Australia, along with integrating with Uber for ride-sharing options where public transport is not readily available.[116]
- **Google Maps Transit**: Similar to Moovit, Google Maps allows for both real-time (where available) and schedule timetable tracking. Additionally, Google Maps provides for mass-transit overlay of its maps to help guide users where transport stations and stops are located along with trip planning. In addition, Google Maps integrates its public transport/transit data with live traffic data. This can provide users with potential delays on the network.[117]

It is understood there are movements within Victoria, further to Data Vic, to provide open data concerning real-time transport data, however there does not seem to be evidence of data publicly available at this stage.

Implications for the 2021 Australian Infrastructure Plan

Technological developments and increased awareness of big data capabilities has tended to result in good progress being made against this recommendation; with this progress happening relatively organically. It may not be necessary for this to be a focal area for the 2021 Australian Infrastructure Plan.

[114] BITRE: https://www.bitre.gov.au/about
[115] Data.gov.au: https://data.gov.au/data/
[116] Moovit, https://moovitapp.com/
[117] Google Transit, https://support.google.com/maps/answer/6142130?hl=en

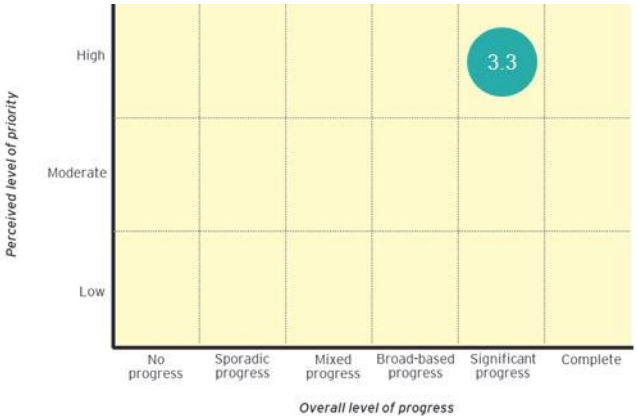
3.3 Governments should increase funding to address gaps in access to passenger transport on the outskirts of Australian cities.

Entity(ies) responsible: State Government
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: High

Rationale from 2016 Plan

Increasing distances between where people live and work creates shallow labour markets, which make it harder for the economy to match work skills with employer demands. Better job matching increases the human capital of business and individuals, and therefore economic output. Investments by Government should prioritise high-population areas and focus on the delivery of connecting transport infrastructure and services, which will deliver 'hub and spoke' connection, enabling these communities to more easily access mass transport networks.



Approach to assessment

We undertook desktop research to assess the recent State Government funding of public transport projects targeting the outskirts of Australian cities.

Evidence-based assessment

- **Sydney**: As previously stated, the New South Wales State Government has committed to funding and delivering the largest transport infrastructure project in the state's history, including AU$41.4 billion of investment over the next four years (i.e. forward estimates). In relation to addressing gaps in access to passenger transport on the outskirts of the city, this includes Parramatta Light Rail, Sydney Metro North West, Metro West, Metro Western Sydney Airport and the Sydney Growth Train project (24 new eight-car suburban trains).[118] In June, the Commonwealth and NSW governments announced the fast-tracking the Sydney Metro-Western Sydney Airport project with a funding package commitment of $3.5bn. It is expected that the project, including 16kms of dedicated above and below ground heavy rail line, will be completed in 2026 to coincide with the opening of Western Sydney International Airport.[119] *The Greater Sydney Region Plan: A Metropolis of Three Cities* also goes some way to lifting attention towards Greater Sydney and the outskirts as opposed to the CBD. The Greater Sydney Region plan looks to connect metropolitan centres such as the Sydney CBD and Greater Parramatta and metropolitan clusters such as Greater Penrith, Liverpool and Campbelltown-Macarthur.[120] Activation of the Greater Sydney Region plan with transport investment is now important.
- **Melbourne**: The Victorian Government has initiative an AU$57 billion "Big Build" program of projects, including a "Suburban Transport Blitz". This includes several major passenger transport projects aimed at addressing the outer suburban passenger transport gaps in and around Melbourne. In additional to the Melbourne Metro Tunnel, Level Crossing Removal Project (removing 75 existing level crossings across Melbourne), High capacity metro trains, the Victorian Government outlines the Melbourne Airport Rail, Suburban Rail Loop and Western Rail Plan as projects to address suburban transport gaps. [121]
- **Perth**: As part of the Metronet, the State Government will incorporate several projects to increase accessibility to passengers on the outskirts of Perth. Examples include the procurement of 246 new railcars (C-Series) to run on the existing lines serving outer suburban locations, 14km northern extension of the Joondalup line to Alkimos, additional suburban stations, extension of the Armadale

[118] TfNSW Major Projects Hub, https://www.transport.nsw.gov.au/projects/major-projects-hub
[119] Inframation New, June 2020, https://www.inframationnews.com/news/5114271/australia-to-fasttrack-western-sydney-airport-rail.thtml
[120] Greater Sydney Commission, 2017, Metropolis of Three Cities, https://www.greater.sydney/metropolis-of-three-cities
[121] Victoria' Big Build, https://bigbuild.vic.gov.au/budget

line to Byford and the new Morley/Ellenbrook line serving the north-eastern suburbs.[122] These projects, budgeted at approximately AU$4.1 billion[123], represent an increase in funding to address gaps in outer suburb passenger transport. Prior to Metronet (2017) there were limited passenger transport projects proposed for Perth's outskirts.

On-demand transport, as a form of passenger transport occurs when the passenger or hirer determines the locations for the beginning and end of the journey, as well as the time of travel. On-demand transport is under reform in Western Australia. The Transport (Road Passenger Services) Act 2018 is intended to make the on-demand transport industry safer, fairer and simpler. The aim of the changes being to level the playing field and provide customers and service providers more choice through competition.[124]

- **Brisbane**: The Queensland Government funded several projects with the aim of improving passenger transport accessibility. This includes the New Generation Rollingstock project (75 new trains), expansion of the Goldlink light rail and Gold Coast rail station, North Coast Line upgrade between Beerburrum and Nambour.[125]
- **Hobart:** Hobart has agreed to a City Deal which looks at the northern suburbs and a broad transport vision, however there are no active projects.[126]
- There is limited evidence within the cities of Canberra and Adelaide that suggests greater funding has been allocated to address gaps in access to passenger transport on city outskirts.

Implications for the 2021 Australian Infrastructure Plan

With some progress being made on this recommendation, a focus for 2021 might be to hone in on the accommodation or facilitation of on-demand transport as a potential low cost, and market-led, solution to public transport accessibility in the outskirts of capital cities. An observation from the evidence is that the majority of the examples are heavy-trunk infrastructure projects. A consideration for the 2021 Australian Infrastructure Plan might be the effectiveness of feeder or 'last-mile' services with a view to ensuring accessibility exists so as to maximise the use of the investment into heavy trunk line infrastructure.

[122] Metronet, https://metronet.wa.gov.au/home
[123] WA State Budget, https://www.ourstatebudget.wa.gov.au/2019-20/transport.html
[124] WA Department of Transport, https://www.transport.wa.gov.au/On-demandTransport/about-on-demand-transport.asp
[125] Qld State Budget 2019/20, https://budget.qld.gov.au/files/BP3.pdf
[126] Department of Infrastructure, Transport, Cities and Regional Development, 2019, Hobart City Deal, Smart Cities Plan, https://www.infrastructure.gov.au/cities/city-deals/hobart/files/hobart-city-deal.pdf

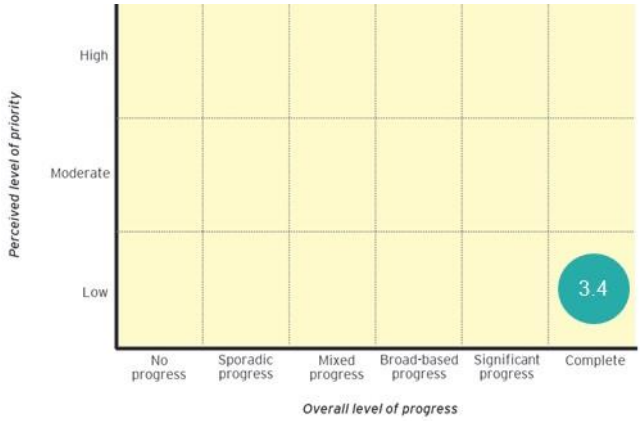
3.4 Australia needs a National Freight and Supply Chain Strategy. Infrastructure Australia, in partnership with governments and the private sector, should lead the development of the Strategy.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Complete
Perceived level of priority: Low

Rationale from 2016 Plan

The National Land Freight Strategy was agreed by the COAG Transport and Infrastructure Council in 2013, and the National Port Strategy was agreed by COAG in 2012. These strategies brought a national focus to dealing with the growth in Australia's freight volumes; and were aimed at better integrating planning across government, industry and transport modes, supported by better data and performance measures. The Australian Government hoped these strategies would form an integrated national freight and supply strategy for reform and investment.[127]



Approach to assessment

Our assessment of progress was based on evidencing the existence of a national approach to freight and supply chains.

Evidence-based assessment

The National Freight and Supply Chain Strategy exists and is now in the implementation phase.

- In August 2019, the Australian Government published the 20-year National Freight and Supply Chain Strategy. It is the first time Australian governments have agreed to a national approach to Australia's freight and supply chains.
- The Strategy outlines four critical action areas, building on past reforms including the *National Ports Strategy* and *National Land Freight Strategy*, jurisdictional freight and infrastructure plans and ongoing national reform efforts, like *Heavy Vehicle Road Reform* and the *National Road Safety Strategy*. The four critical action areas are:
  - Smarter and targeted infrastructure investment;
  - Enable improved supply chain efficiency;
  - Better planning, coordination and regulation; and
  - Better freight location and performance data.
- The Strategy requires the contribution of all tiers of government and industry and includes 5-yearly reviews. Input into the consolidated implementation arrangements of the Strategy will indicate how local governments can be involved in taking action particularly around planning.[128]

Implications for the 2021 Australian Infrastructure Plan

The development of the National Freight and Supply Chain Strategy effectively responds to this recommendation. The efficiency of movement of freight nonetheless will always be pertinent to the operation of well-functioning economy and as such the 2021 Australian Infrastructure Plan may seek to continue to make the case for action against the objectives set out in the Strategy.

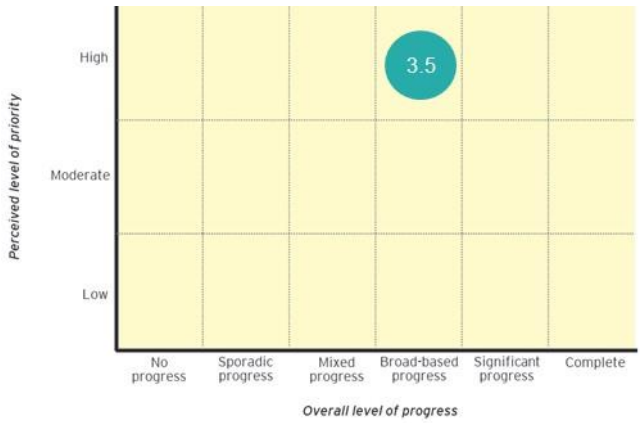
[127] Department of Infrastructure and Regional Development, November 2016, The Australian Government's Response to Infrastructure Australia's Australian Infrastructure Plan
[128] Transport and Infrastructure Council, August 2019, National Freight and Supply Chain Strategy, https://www.freightaustralia.gov.au/sites/default/files/documents/national-freight-and-supply-chain-strategy.pdf

3.5 All governments should establish targeted investment programs focused on removing first and last mile constraints across the national freight network.

Entity(ies) responsible: State Government
Sectors subject to assessment: Transport
Australian Government response: Supported
Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

The first and last mile of freight journeys often occur on local road and passenger rail networks and hence conflicts and constraints regularly occur where freight intersects with residential or other commercial-use activities. Constrained freight paths impact productivity and can increase costs (often passed onto consumers).



Approach to assessment

The National Freight Strategy and state-based strategies were reviewed to understand the level of targeted investment around the concept of first and last mile constraints, thereby assessing progress against this recommendation.

Evidence-based assessment

There is evidence to suggest that work is being undertaken to reduce last mile constraints. However, it is not evident that state and territory governments have established targeted investment programs focussed on addressing first and last mile constraints across the national freight network. On a federal level, the Urban Congestion Fund is expected to invest $4 billion over the next 10 years to reduce congestion in urban areas, with the intent being to deliver a more reliable road network for commuters and freight.[129] Sporadic progress has been made regarding the identification of issues and potential planning improvements which is evidenced below.

- The **Australian Capital Territory** National Freight and Supply Chain Strategy Implementation Arrangements document outlines the Australian Capital Territory's approach to coordinating freight transport strategies and initiatives. First and last mile constraints are not a focus; however, the Implementation Arrangement document includes 'Smarter and targeted investment' action areas. For instance, the Australian Capital Territory Transport Corridors Study includes a priority list of possible road transport infrastructure initiatives that will guide improvements to the transport network over the next ten years.[130]
- The **New South Wales** Freight and Ports Plan 2018-2023 identifies last-mile constraints and suggests ways to overcome these constraints, including last-mile deliveries by aerial drones or land-based drones in suitable areas. The New South Wales Government committed to supporting local councils to improve the amenity of key urban centres through planning for freight and servicing in new developments. This includes the provision of guidelines to assist local councils identify scope for the potential lifting of delivery curfews in highly congested areas; and the promotion of logistics facilities in mixed-use developments.[131]
- The **Northern Territory** has capacity within its logistics network, which is not currently constrained by congestion and the first and last mile issues encountered in other States, however The Territory-Wide Logistics Master Plan acknowledges that much more can be done to maximise freight and

[129] Department of Infrastructure, Transport, Regional Development and Cities, Urban Congestion Fund, https://investment.infrastructure.gov.au/key_projects/initiatives/urban_congestion_fund.aspx
[130] Australian Capital Territory, 2019, ACT National Freight and Supply Chain Strategy Implementation Arrangements, https://www.freightaustralia.gov.au/sites/default/files/documents/191530_NFSCS_ACT_Implementation_Arrangements_accessible.pdf
[131] Transport New South Wales, September 2018, New South Wales Freight and Ports Plan 2018-2023

logistic networks given that 75 percent of all roads are unsealed.[132] The Plan has four key focus areas:

- Smarter and targeted infrastructure investment;
- Enable improved supply chain efficiency
- Better planning, coordination and regulation; and
- Better freight location and performance.

- The **Queensland** Freight Strategy highlights the challenges of connectivity to rail, ports and intermodal facilities and accepts that consideration should be given to first and last mile issues, particularly in regional areas. The strategy also includes a commitment to optimise the use of existing freight infrastructure and target investments towards creating economic opportunities. More information is expected to be provided in Queensland's rolling two-year Freight Action Plan.[133]
- **South Australia's** Freight Council developed a paper addressing first- and last-mile issues that pre-dates the 2016 Australian Infrastructure Plan. The paper highlights the first- and last-mile constraints, the benefits of addressing the constraints and advocates for targeted funding to address issues. The South Australian Freight Council advocated for the Northern Expressway and Northern Connector to be gazetted for heavy vehicles, which was subsequently open for heavy vehicle access reducing freight constraints.[134]
- **Tasmania's** Integrated Freight Strategy suggests targeted capital investment in regional infrastructure will support productivity on key regional and last mile freight connections. To reduce last-mile constraints the Tasmanian Government is said to be investing in appropriate land use planning provisions to protect road function and prioritising local infrastructure investment on roads that provide last-mile access.[135]
- The **Victorian** Freight Plan highlights the 'first and last mile' constraint as one of the most significant impediments to efficient end-to-end freight movements in Victoria. The Plan suggests that there is significant opportunity to drive innovations in automation to reduce costs in both urban and rural areas and to trend towards more innovative and investments such as the electrification of vehicles, drones and autonomous vehicles. The Plan outlines Victoria's goal to work closely with all level of governments to coordinate efforts and target investments across the State. [136]
- **Western Australia's** Regional Freight Transport Network Plan identifies off-network access issues including last kilometre journeys as a priority. An action was identified to improve planning for the first and last kilometre of regional road freight journeys. In conjunction with local government, the State Government will also seek Australian Government funding for local road upgrades to address first and last kilometre transport productivity and economic development issues.[137]

In the context of COVID-19

The COVID-19 period has highlighted domestic supply chains and constraints such as last-mile constraints as a result, in part, of heightened demand for supermarket products. Industry is looking for a permanent easing of regulatory constraints.

Implications for the 2021 Australian Infrastructure Plan

Evidence suggests that the concept of first and last mile constraints is on the agenda for many jurisdictions. Evidence of genuine progress in terms of the achievement of real outcomes is difficult to obtain. For this reason, the matter of addressing first and last mile constraints could continue to feature in the 2021 Australian Infrastructure Plan.

[132] Northern Territory Government, 2020, Territory-Wide Logistics Master Plan, https://dipl.nt.gov.au/__data/assets/pdf_file/0012/887790/TerritoryWideLogistics_MPlan_WEB-1.pdf

[133] Queensland Department of Transport and Main Roads, 2019, Queensland Freight Strategy, https://www.publications.qld.gov.au/dataset/5ce2fd9d-05a7-4693-8100-6f5a5144f124/resource/ae528968-a698-422c-bdc7-2a38a911de45/fs_download/queensland-freight-strategy.pdf

[134] South Australian Freight Council, November 2015, Moving Freight: The First and Last Mile, http://www.safreightcouncil.com.au/userfiles/FirstLastMile.pdf

[135] Infrastructure Tasmania, April 2016, Tasmanian Integrated Freight Strategy

[136] Victoria State Government, 2018, Delivering the Goods – Victorian Freight Plan

[137] Western Australian Department of Transport, 2018, Regional Freight Transport Network Plan, https://www.transport.wa.gov.au/mediaFiles/about-us/ABOUT_P_RegionalFreightPlan_FullA3.pdf

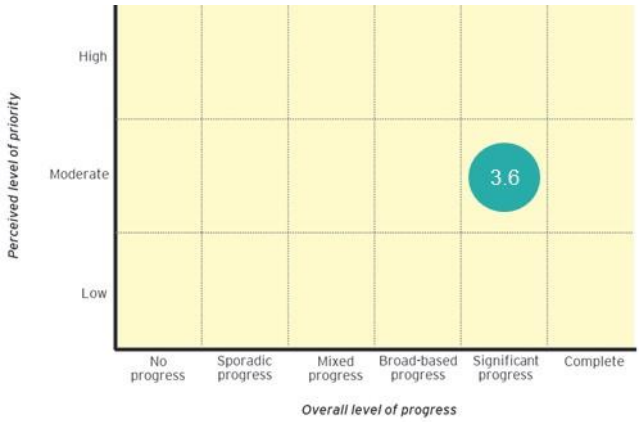
3.6 The Australian Government should work with communities and business to maximise opportunities created by the National Broadband Network.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Telecommunications
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

The delivery of the NBN is an important opportunity for Australia. The entry of the NBN into communities should be met by initiatives that ensure businesses and individuals take advantage of this.



Approach to assessment

The recommendation was supported by suggestions of delivering tailored toolkits, information packs and education courses to support individuals and businesses to understand and capitalise on the technological advancements made possible through access to high-speed broadband. A review of NBN Co. community programs was undertaken as part of the assessment of progress.

Evidence-based assessment

There is a number of guiding materials and content provided on the NBN Co website. There is also evidence of NBN Co personnel on-the-ground, working and liaising with community and business stakeholders.

- Current NBN initiatives to support communities and businesses include:
  - Tips and hints as to how to maximise connectivity via boosting WIFI or choosing the right speed;
  - The Technology Choice Program which provides the option to pay for a change to the nbn™ access technology at your premises (residential or business);
  - Information on device compatibility for businesses with lift phones, medical alarms, fire alarms etc.;
  - Business nbn™ Readiness Tool which creates a tailored checklist for connecting services over the nbn™ broadband access network;
  - Business nbn™ ICT Channel Program supporting businesses get the most out of the nbn™ broadband access network, especially those without in-house IT support. The program helps support small and medium businesses with their migration requirements;
  - A number of materials concerning nbn™ success stories, guidance on picking a provider, plan or IT solution, and facts sheets on the nbn™ access network;
  - Business nbn™ offering a range of wholesale products and services and services to service providers (including priority bandwidth); and
  - Materials guiding enterprises and governments on the appropriate level of service, choice of broadband providers and data requirements, and options for business access technology.
- The NBN Co, also provides information for retail service providers of internet connectivity services to encourage competitive tension.
- In terms of on-the-ground support and working with communities, the expansion of NBN Local was rolled out in 2017. NBN Local expands the on-the-ground community and stakeholder engagement team who work to help educate residents and businesses on the NBN rollout and to address issues resulting from the rollout or transition.[138]

[138] NBN Co, Various weblinks within the host website, https://www.nbnco.com.au/

- The NBN Co has developed a report titled Connecting Australia analysing the impact of greater connectivity on small businesses and households. The report cites a growth in new businesses, growth in self-employed women, and shrinking the digital divide.[139]

Implications for the 2021 Australian Infrastructure Plan

With the NBN relatively well-entrenched and understood across Australia, it is arguably the case that material to do with the specifics of this recommendation need not be addressed in the 2021 Australian Infrastructure Plan. Broader concepts such as data sharing, digitisation of assets and the use of online data and tools to aid infrastructure planning however, should continue to remain relevant.

[139] NBN Co., 2018, Connecting Australia, http://www.connectingaustralia.com.au/pdf/Connecting_Australia_Report.pdf

4 Regional

4. Regional

4.1 State and territory governments should deliver long-term regional infrastructure plans.

Entity(ies) responsible: State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

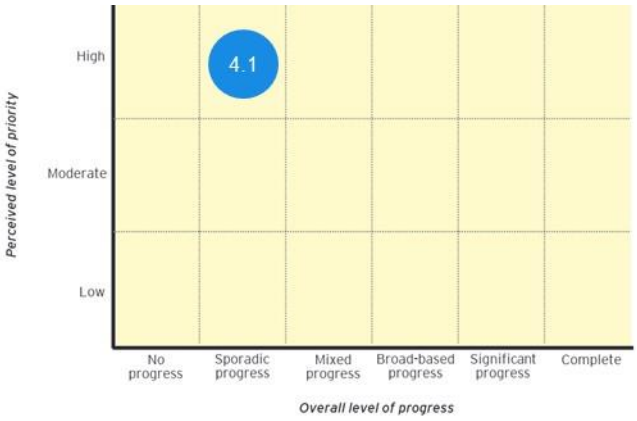
Overall assessment of progress: Sporadic progress
Perceived level of priority: High

Rationale from 2016 Plan

Long term regional infrastructure plans could identify gaps in infrastructure networks and identify priorities to support productive regional industries and provide transparency for the private sector.

Approach to assessment

Consultation with state-based infrastructure bodies was undertaken to understand progress against this recommendation and to obtain a perspective on the approach towards developing regional infrastructure plans.



Evidence-based assessment

There is limited evidence suggesting regional infrastructure plans are prevalent across each jurisdiction. There are examples of regional development plans inclusive of infrastructure for some regional centres. Work is being completed to identify regional strengths and competitive advantages to ensure infrastructure spend in the regions is appropriate and supportive of economic growth trends.

- In 2017, the **New South Wales** Department of Planning finalised a suite of Regional Plans. Ten Regional Plans cover New South Wales with each setting the framework and directions for strategic planning and land use over a 20-year timeframe. Plans also comprise future outlooks on jobs, growth, infrastructure. housing and the environment.[140]
- The **Northern Territory** Government has not developed any regional infrastructure plans, however there is less of a distinction between remote, regional and urban areas within the Territory and hence the Northern Territory's 10-year infrastructure plan contains numerous infrastructure initiatives for the regions. [141] The Barkly Regional Deal takes the form of a regional development plan for the Barkly region. [142]
- The **Queensland** Government has been producing regional plans since the early 2000s, the latest of which included the North Queensland Regional Plan 2020 and the South East Queensland Regional Plan 2017. The regional plans include infrastructure priorities and are holistic in their approach to long-term strategic growth planning for the region.[143]
- The **South Australian** Government has not developed any regional infrastructure plans, however there is anecdotal evidence suggesting work is being undertaken to develop a regional

[140] New South Wales Department of Planning, 2017, Regional Plans, https://www.planning.nsw.gov.au/Plans-for-your-area/Regional-Plans
[141] Northern Territory Government, 2019, 10 year infrastructure plan 2019-2028, https://dipl.nt.gov.au/__data/assets/pdf_file/0006/775176/10-year-infrastructure-plan-2019-print.pdf
[142] Department of Infrastructure, Regional Development and Cities, 2020, Barkly Regional Deal, https://www.regional.gov.au/regional/deals/Barkly.aspx
[143] Queensland Department of Infrastructure, Local Government and Planning, Regional Planning in Queensland, https://dilgpprd.blob.core.windows.net/general/factsheet-regional-planning-in-queensland.pdf

development strategy for South Australia that may include a suite of regional plans tailored for each region.

- The **Tasmanian** Planning Commission has developed regional and use strategies for the three Tasmanian regions. Regional land use strategies indicate how much land should be made available for future development, inclusive of infrastructure.[144] These plans pre-date the 2016 Australian Infrastructure Plan. It is not apparent whether specific regional infrastructure plans exist.
- The formation of Regional Partnerships (a collective of local government areas) within **Victoria** is leveraged by multiple state-based agencies. Each Regional Partnership has identified regional priorities, outcomes and projects that are outlined in a roadmap.[145] As part of the 30-year infrastructure strategy update, Infrastructure Victoria is developing regional industry profiles to identify comparative advantages and socio-economic disadvantages.[146]
- As pointed to within the Infrastructure **Western Australia's** discussion paper, developing the regions will be a priority within its inaugural infrastructure strategy.[147] Previously regional plans and blueprints have been developed for major regional centres by the regional development commission and have been broader than infrastructure detailing comprehensive packages of economic development opportunities.

Implications for the 2021 Australian Infrastructure Plan

There is much activity dedicated towards regional infrastructure planning, but approaches appear relatively ad-hoc and inconsistent across jurisdictions. It may therefore be useful if the 2021 Australian Infrastructure Plan addressed the topic and put forward guidance on how best to approach regional infrastructure planning also taking into account governance structures that may dictate how regional infrastructure plans are best embedded into wider infrastructure decision making processes.

[144] Tasmanian Planning Commission, 2020, Regional land use strategies, https://www.planning.tas.gov.au/tasmanian_planning_system/regional_land_use_strategies

[145] Regional Development Victoria, 2020, Regional Partnerships, https://www.rdv.vic.gov.au/regional-partnerships

[146] Infrastructure Victoria, 2020, Infrastructure Priorities for the Regions, https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[147] Infrastructure Western Australia, June 2020, A Stronger Tomorrow – Discussion Paper, https://infrastructure.wa.gov.au/DiscussionPaper

4.2 The Australian Government should prioritise investment in regional infrastructure where the population is growing quickly and where the bulk of our regional economic growth can be found.

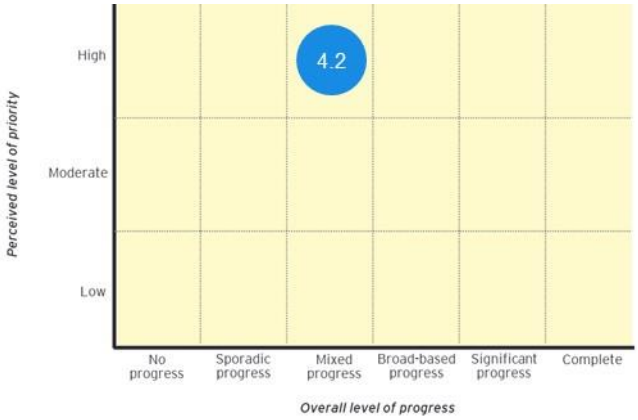
Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported in-principle

Overall assessment of progress: Mixed progress
Perceived level of priority: High

Rationale from 2016 Plan

Efficient, liveable and productive regional hubs should be considered national economic assets and a key priority for government.

Regional Australia Institute published a paper analysing population mobility between capital cities and regional area across various age groups. The paper found that more people were moving from capital cities to regional areas exacerbating the need to ensure regional infrastructure is prioritised in areas of strong population growth and economic growth.[148]



Approach to assessment

Research was conducted to identify whether regional economic and population growth are guiding principles within infrastructure assessment frameworks, or within regional funding strategies.

Evidence-based assessment

There is limited evidence to suggest that Australian government funding has been directed at regional infrastructure in areas demonstrating high economic and population growth. The numerous regional funding programs all aim to generate economic and population growth as a result of the funded projects. Some examples are included below.

- The Regional Deals initiative has thus far struck deals to develop plans for the Barkly Region, Hinkler Region, and Albury Wodonga Region. These areas are not necessarily considered high growth regional areas.[149]
- The Regional Growth Fund is designed to grow regional populations and economies however higher growth areas do not seem to form part of the assessment framework.[150]
- The Northern Australia Infrastructure Facility (NAIF) was developed on the foundation that it is important to deliver economic and population growth into northern Australia. The NAIF project assessment framework includes the level of public benefit a project will provide and implicitly supports the premise of allocating funding to infrastructure projects in growth areas.[151]

Implications for the 2021 Australian Infrastructure Plan

This topic could be addressed in the 2021 Australian Infrastructure Plan as per the broader discussion on the provision of guidance as to effective regional infrastructure planning that is referred to in the commentary on Recommendation 4.1 above.

[148] Regional Australia Institute, June 2020, Understanding Population Mobility in Regional Australia, http://www.regionalaustralia.org.au/home/wp-content/uploads/2020/06/RAI_2020_The_Big_Movers_Population_Mobility_Report.pdf
[149] Department of Infrastructure, Transport, Regional Development and Communications, 2020, Regional Deals, https://www.regional.gov.au/regional/deals/
[150] Department of Infrastructure, Regional Development and Cities, 2018, Regional Growth Fund, https://www.regional.gov.au/regional/programs/files/RGF-Program-Guidelines.pdf
[151] Northern Australia Infrastructure Facility, 2020, NAID Strategy Overview, https://naif.gov.au/our-governance/naif-strategy-overview/

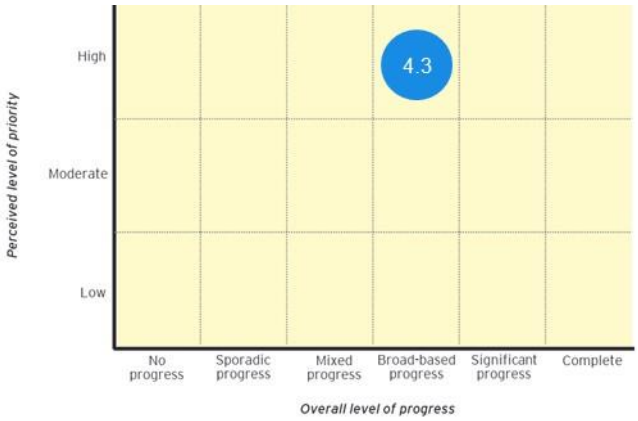
4.3 Regional infrastructure investment should respond to each community's particular needs, its changing demographics, and what is affordable.

Entity(ies) responsible: State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

Some regional areas have a limited or declining economic base. Government investment needs to be affordable and equitable, and guided by community requirements. Spreading infrastructure investments thinly across all regional communities may not be efficient.



Approach to assessment

Desktop research was undertaken to understand whether there was evidence of widespread regional consultation concerning infrastructure across jurisdictions.

Evidence-based assessment

To ensure regional infrastructure responds to the needs of the community and is affordable is an ever-present challenge to which state and territory governments are becoming more aware. There does not seem to be widespread change, rather examples of initiatives that suggest a movement in the right direction. The majority of the examples below point to an economic development focus to activate the regions. There is less evidence to suggest that there is a focus on delivering affordable infrastructure.

- The **New South Wales** Regional Development Framework guides the New South Wales Government's approach to regional investments and aims to:
  - Provide quality services and infrastructure in regional New South Wales – ensuring equitable services across the State;
  - Align efforts to support growing regional centres; and
  - Identify and activate economic potential by looking across regional New South Wales for opportunities to change the economic outlook.[152]
- In **Victoria** the Stronger Regional Communities Program (SRCP) aims to support rural and regional towns in attracting families and young people to live and work in regional Victoria. This initiative forms a framework to ensure infrastructure investment meets the needs of each regional community. The SRCP invests in community-led initiative and partnerships that aim to enhance the conditions for economic growth, as tailored to reflect the conditions of each region. Examples of activities that can attract funding include:
  - Locally led partnerships to address economic development challenges and growth opportunities;
  - Increasing local community participation, diversity and collaboration in planning, decision making and regional priority projects; and
  - Initiatives that build skills, increase participation and grow local economic programs.[153]
- Infrastructure Victoria's 30-year Infrastructure Strategy makes recommendations and lists objectives pertinent to ensuring regional infrastructure is responsive and adapts to changing demographics. For example, the need to address infrastructure challenges in areas with low or negative population growth, improving access to jobs and services for people in regional and rural

[152] Infrastructure New South Wales, February 2018, State Infrastructure Plan, https://insw-sis.visualise.today/documents/INSW_2018SIS_BuildingMomentum.pdf
[153] Regional Development Victoria, Stronger Regional Communities Program, https://www.rdv.vic.gov.au/grants-and-programs/stronger-regional-communities-program

areas, and to manage threats to water security, particularly in regional and rural areas.[154] In developing the 30-year Infrastructure Strategy, Infrastructure Victoria leant on the regional profiles previously developed. Regional profiles contain comparative advantages, regional industry profiles and regional disadvantages.[155]

- In **Western Australia** the local infrastructure body has released a consultation report that communicates the themes resulting from public submissions raised from a consultation process, one of which was the needs of regional and remote communities. Although the State Infrastructure Strategy is yet to be published, the needs of regional and remote communities have been identified as a principal role of Infrastructure WA.[156]
- Another example of Western Australian Government intervention perhaps more pertinent to particular infrastructure needs and affordability is the Regional Services Reform Unit undertaking an assessment of municipal and other services within Aboriginal communities. Consultation with local community leaders identified the failures of government service delivery (inclusive of infrastructure).[157]
- There are a number of regional infrastructure funding programs including the Regional Growth Fund in New South Wales, the Regional Infrastructure Fund in Victoria, and the Royalties for Region program in Western Australia. All of these funding initiatives aim to respond to regional community needs and changing demographics.
- At the federal level the Regional Deals program (based on the City Deals model) brings together all tiers of government to deliver tailored infrastructure and economic development projects to reflect each region's comparative advantages, assets and challenges.[158]
- Regional infrastructure investment meeting local needs is a current area of focus for Infrastructure Australia. This will be reflected in forthcoming work, including the revision to the *Infrastructure Australia Assessment Framework* and research on regional infrastructure gaps, and in the updated *Statement of Expectations for Infrastructure Australia* issued by the responsible Minister.

Implications for the 2021 Australian Infrastructure Plan

The topic of appropriate and affordable infrastructure provision in the regions remains topical and should feature in the 2021 Australian Infrastructure Plan, particularly in light of current infrastructure assessment frameworks that may tend to favour city-based infrastructure provision as a result of the use of tools such as benefit-cost analysis (broadly, the more people that can benefit from infrastructure provision, the higher will be the benefit-cost ratio). With recent trends showing a net movement of population away from cities and towards regional areas, it is likely the case that regional infrastructure provision will become more, rather than less, important over time. COVID-related impacts might exacerbate such trends even further.

[154] Infrastructure Victoria, 2019, 30-year Infrastructure Strategy, https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/03/IV_30_Year_Strategy_WEB_V2.pdf
[155] Infrastructure Victoria, 2020, Regional Comparative Advantage and Addressing Regional Disadvantage, https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/
[156] Infrastructure WA, February 2019, Consultation Report, https://www.infrastructure.wa.gov.au/sites/default/files/2019-09/IWA_Consultation_Report_Feb2019.pdf
[157] Regional Services Reform Unit, 2017, 'Key insights from consultation with remote Aboriginal communities in Western Australia', https://regionalservicesreform.wa.gov.au/sites/regionalservicesreform.wa.gov.au/files/docs/RESOURCES/RSRU_Consultation%20Report.pdf
[158] Department of Infrastructure, Transport, Regional Development and Cities, 2020, Regional Deals, https://www.regional.gov.au/regional/deals/

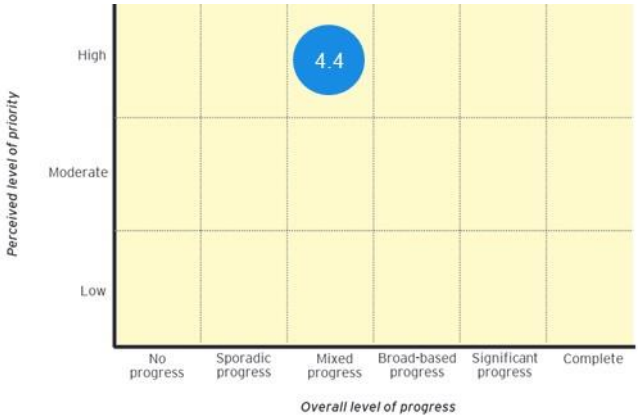
4.4 The Australian Government should remove barriers to entry for mobile network providers in regional Australia to facilitate improvements in coverage, competition and service quality.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Telecommunications
Australian Government response: Supported in-principle

Overall assessment of progress: Mixed progress
Perceived level of priority: High

Rationale from 2016 Plan

Where possible and appropriate, National Broadband Network infrastructure including towers should be made available to mobile network providers. This would include taking steps to encourage mobile network providers to co-locate their mobile infrastructure.



Approach to assessment

Assessment as to progress against this recommendation was guided by the outcomes of the Regional Telecommunications Review 2018.[159] Recent funding initiatives by Australian and State Governments to enable mobile network providers in gaining access to regional Australia were also sought.

Evidence-based assessment

- The Australian Government is currently funding the Mobile Black Spot Program, delivering improved coverage outcomes and benefits to regional Australia with 812 base stations activated as at 16 April 2020.[160] This investment totals more than $680 million, with contributions from federal, state and local governments and communities. The base stations will provide almost 90,000 square kilometres of new and upgraded handheld mobile phone coverage and over 205,000 square kilometres of new external antenna coverage.[161] Without funding such as this, regional and remote communities may receive limited assistance from mobile network providers as small populations mean it is not commercially viable to invest in these geographies. To this end there remains limited competition in infrastructure provision, and hence potential for barriers to entry for retailers. Anecdotally, other countries have pushed ahead with providing improved regulatory frameworks enabling co-location of mobile infrastructure between providers.
- An example of where the mobile black spot funding has been allocated in **Western Australia** is detailed below.
  - The Regional Telecommunications Project (RTP) is an $85 million State Government initiative, administered by the Department of Primary Industries and Regional Development. The focus of this project is on improving high-speed mobile voice and data coverage across regional Western Australia.
  - The completed Regional Mobile Communications Project was a $40 million State Government initiative that has successfully provided reliable mobile voice and broadband coverage across 137,000 square kilometres of regional Western Australia. The project increased mobile phone coverage across regional Western Australia by up to 31 per cent, and boosted access to next generation broadband services.

[159] Department of Infrastructure, Transport, Regional Development and Cities, 2018, Regional Telecommunications Review – Getting it right out there, https://www.communications.gov.au/publications/2018-regional-telecommunications-review-getting-it-right-out-there
[160] Australian Government, Department of Infrastructure, Transport, Regional Development and Communications, Mobile Black Spot Program, https://www.communications.gov.au/what-we-do/phone/mobile-services-and-coverage/mobile-black-spot-program
[161] Australian Government, Regional Telecommunications Review 2018 Issues Paper, http://www.rtirc.gov.au/docs/rtirc-issues-paper-2018.PDF

- The Australian Government indicated in December 2017 it would develop a new Universal Service Guarantee (USG) to replace the outdated universal service obligation (USO). The USG will modernise the existing USO arrangements by ensuring consumers have access to broadband as well as voice services. A key issue in the development of the USG is whether it is still good value for money to fund Telstra to deliver voice and payphone services relative to other models in which there is a greater reliance on alternative networks once NBN has been rolled out. [162]

Implications for the 2021 Australian Infrastructure Plan

As per recommendation 4.3 above, it is suggested that the case for continued focus on the provision of, and access to, regional infrastructure should remain topical for the 2021 Australian Infrastructure Plan. Findings from this review point a range of government-led initiatives, which suggest that market-driven solutions are not being generated within the current regulatory and commercial frameworks. Exploration as to how market-based outcomes can be better facilitated might be valuable in the context of the 2021 Australian Infrastructure Plan.

[162] Productivity Commission, June 2017, Telecommunications Universal Service Obligation, https://www.pc.gov.au/inquiries/completed/telecommunications#report

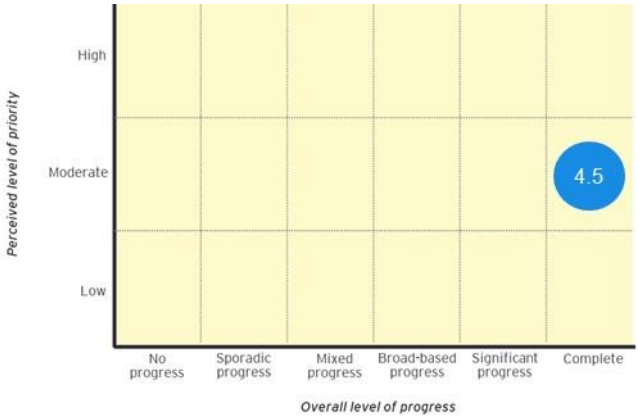
4.5 The development of the proposed National Freight and Supply Chain Strategy should be informed by CSIRO's Transport Network Strategic Investment Tool (TRANSIT).

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Complete
Perceived level of priority: Moderate

Rationale from 2016 Plan

TRANSIT will be one tool used to support the ongoing work on the National Freight Strategy by the COAG Transport and Infrastructure Council, which requires work to achieve greater data consistency for the value of freight supply chains and for domestic freight generally.



Approach to assessment

In Recommendation 3.4, it was identified that a National Freight and Supply Chain Strategy has indeed been developed. Assessment of progress against this recommendation was to determine the extent to which the strategy was informed by CSIROs TRANSIT tool.

Evidence-based assessment

The TRANSIT tool is not referenced in the National Freight and Supply Chain Strategy; however, we understand the significant quantity of analysis that is contained in the tool could have contributed to the development of the Strategy.

- The TRANSIT tool was originally applied to the beef industry before being extended to 98 per cent of all agriculture transport across Australia through an initiative in the Agricultural Competitiveness White Paper (released in 2015). More recently it has been extended to include fuels, forestry, mining, manufacturing and general freight. It has also been applied to freight transport on the proposed Melbourne to Brisbane Inland Rail project.
- TRANSIT has been used to improve infrastructure in the following ways (but not limited to):
  - Informed the $3.5 billion Roads of Strategic Importance program;
  - Assisted the planning of 'future freight' at a regional scale for different locations across Australia and provided input into regional freight and supply chain plans across Australia;
  - Estimated average transport reduction costs of $76 per tonne for shifting transport of east coast agriculture from road to rail, or $31 per tonne to shift from coastal rail to inland rail;
  - Estimated transport cost (plantation to processing or port) of $23 billion for 800 million cubic metres over 25 years, for all Australia's plantation forestry;
  - Provided new capacity to estimate the impact of road improvements for the Australian tourism industry; and
  - 'Transit Web' provides government and industry with the capacity to test infrastructure and regulatory scenarios.[163]

Implications for the 2021 Australian Infrastructure Plan

The continued development of the TRANSIT tool will continue to enable opportunities to promote its use in infrastructure planning, and the 2021 Australian Infrastructure Plan may seek to continue to encourage this.

[163] CSIRO, 2020, Transport logistics – TRANSIT, https://www.csiro.au/en/Research/LWF/Areas/Landscapes/Transport-logistics-TRANSIT

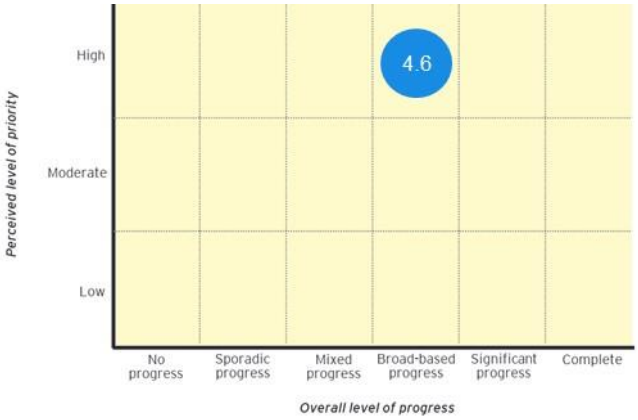
4.6 Governments should commit to increasing information on the feasibility, economic viability and sustainability of new water resource developments and infrastructure in priority catchments.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Water
Australian Government response: Supported

Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

Water resource assessment will provide information to establish water management plans, allowing for better informed decisions about public and private investments and supporting further development of water markets.



Approach to assessment

Strategic water plans from various jurisdictions were reviewed. Desktop research was also conducted to ascertain the roles of various water bodies such as the National Water Grid Authority.

Evidence-based assessment

Consultation has suggested that there are some coordination issues across jurisdictions that are hampering progress in this area. The lack of continuity that surrounds some national water bodies, as well as the changing landscape that surrounds the Murray-Darling Basin inquiries has caused difficulties in the provision of information on the feasibility and sustainability of new water resource developments. Nevertheless, there are areas of progress referenced below at a state-level suggesting that transparency of water resource management is becoming more prevalent.

- The **Australian Capital Territory** Water Strategy provides a long-term strategic guidance to manage the Territory's water resources. It is intended to guide the development, integration and implementation of investment undertaken by government agencies and private developers involved in planning and water management and water use. The Water Strategy was published in 2014, prior to the 2016 Australian Infrastructure Plan.[164]
- In **New South Wales** the State Government developed a Metropolitan Water Plan and Water Reform Action Plan in late 2017. One of the priorities within the action plan is to improve the health of priority waterways and catchments to support environmental, social, cultural and economic needs and values. There are actions identified to ensure transparency in how to allocate and manage water, but there is lacking information on increasing information on new water resource developments.[165] However, the New South Wales Government is developing approximately 20 Water Resource Plans detailing the availability and management in place for each resource.[166]
- The purpose of the **Northern Territory** Our Water Future Discussion Paper was to develop the Northern Territory's first overarching strategic plan for water. The paper has a large focus on the use of water in mining and offshore operations and for Indigenous economic development and regional employment. The discussion paper directs readers to a wide range of information posted on the internet to improve water information availability in the Territory. A range of current Water Allocation Plan papers have been published by the Territory, however the Our Water Future Discussion Paper has not been refreshed since its publication in 2015.[167] Anecdotally there is

[164] Australian Capital Territory Department of Environment and Planning, 2014, ACT Water Strategy 2014-2044, https://www.environment.act.gov.au/__data/assets/pdf_file/0019/621424/ACT-Water-Strategy-ACCESS.pdf
[165] New South Wales Government, December 2017, Water Report Action Plan, https://www.industry.nsw.gov.au/__data/assets/pdf_file/0016/136204/nsw-government-water-reform-action-plan.pdf
[166] New South Wales Government, Water Resource Plans, https://www.industry.nsw.gov.au/water/plans-programs/water-resource-plan
[167] Northern Territory Government, 2015, Our Water Future, https://denr.nt.gov.au/__data/assets/pdf_file/0006/269304/NT-Water-Strategic-Plan-Discussion-Paper.pdf

work currently being undertaken to assess water security in Darwin for the next 20 years. Currently groundwater extraction is above sustainable estimates.

- In **Queensland** the State Government has developed a range of water plans and other planning documents across various water plan areas, as well as communications documenting the science behind water plans and management.[168]
- The **South Australian** Water Sensitive Urban Design Policy sets out the South Australian Government's position on water sensitive urban design in a local context and provides targets for new developments in the State. It also details the role that government plays in collaboration with other stakeholders to maximise the use of new water developments. The policy pre- dates the publication of the 2016 Australian Infrastructure Plan[169]
- The **Tasmanian** TasWater Long Term Strategic Plan 2018 – 2037 is the State's first Long Term Strategic Plan and sets out outcomes to deliver on over a 20-year period. It identifies major capital expenditure projects in various Tasmanian regions.[170]
- In **Victoria** the Water for Victoria Plan details the priority catchments, water resources and key water infrastructure occurring in and around each water region. A number of actions were identified within the Water for Victoria Plan. In January 2020, an Action Status Report was developed to demonstrate the status of actions identified in the Water for Victoria Plan. Relevant actions supporting this recommendation include (but are not limited to):
  - Investing in integrated catchment management;
  - Understanding and applying climate science to water management;
  - Improving knowledge and information about waterways and catchments; and
  - Increasing water market transparency and information sharing.[171]
- The **Western Australian** Water for Growth provides a roadmap of the work the State Government was undertaking to ensure that the State is able to meet demand over the next 30 years. Water for Growth was published prior to the 2016 Australian Infrastructure Plan Report however it outlines information on how the State planned to develop new water resources, particularly in regional areas such as the Pilbara and other mining focused areas.[172]
- The Department of Infrastructure, Transport, Regional Development and Communications and Australian Government established the National Water Grid Authority with objectives to:
  - Develop, in partnership with state and territory governments, a national framework for investment in water infrastructure to identify a pipeline of priority water infrastructure projects;
  - Use world best science to determine where and how Australia's water resources can be sustainably developed to increase security and reliability of supply; and
    - Deliver the Government's $3.5 billion commitment to identify and build new water infrastructure through the National Water Infrastructure Development Fund.[173]

Implications for the 2021 Australian Infrastructure Plan

Some progress has been made yet a coordinated national approach to water resource development is still emerging. With the importance and value of water resources only likely to increase over time (due to both a drying climate and increasing market opportunities for the export sale of irrigated agriculture), it is recommended that this topic be kept on the agenda for the 2021 Australian Infrastructure Plan.

[168] Queensland Government, Water plan monitoring, reporting and review, https://www.business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/planning/monitoring-review

[169] South Australia Department of Environment, Water and Natural Resources, 2013, Water Sensitive Urban Design Policy

[170] TasWater, 2018, Tasmania Long Term Strategic Plan 2018-2037

[171] Victorian State Government, January 2020, Water for Victoria Action Status Report, https://www.water.vic.gov.au/__data/assets/pdf_file/0023/457061/WfV-Action-Status-Report-January-2020.pdf

[172] Western Australia Department of Water, 2014, Water for Growth, https://water.wa.gov.au/__data/assets/pdf_file/0013/2614/107261.pdf

[173] National Water Grid Authority, https://www.nationalwatergrid.gov.au/about

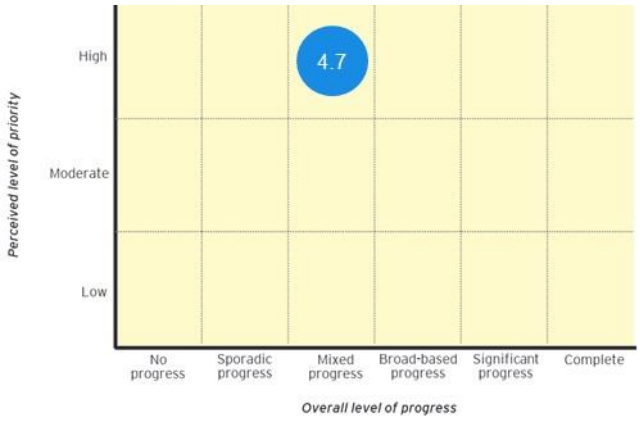
4.7 Drinking water in all regional communities should meet the minimum standards in the Australian Drinking Water Guidelines.

Entity(ies) responsible: State Government
Sectors subject to assessment: Water
Australian Government response: Noted

Overall assessment of progress: Mixed progress
Perceived level of priority: High

Rationale from 2016 Plan

The Government encourages state and territory governments to identify areas of highest risk for action through audits of the performance, financial viability, and capacity constraints of local governments all of which could prevent water providers from meeting minimum standards.



Approach to assessment

An assessment as to whether drinking water in regional areas meets minimum standard was guided by the standards set in the United Nations' Sustainable Development framework (of which Australia is party to).

Evidence-based assessment

The Productivity Commission Inquiry Report into National Water Reform summarised that drinking water quality generally meets existing guidelines outside of remote communities.[174] Action is being taken where issues remain in some remote communities. Further work may be required particularly in Western Australia and Northern Territory due to remoteness of both jurisdictions.

Australian water standards:

- Under the United Nations' Sustainable Development (SDG) Goal 6, target 6.1, affordable and drinkable water is a target for all members by 2030, including Australia. The Australian Government is obliged to address water, sanitation and hygiene (WASH)-related aspects of the SDGs. The regulatory environment for maintaining public health standards through safe drinking water provision in remote communities follow those of the state or territory in which they are located. In this way, these communities are required to adhere to the same standards as urban areas, taking guidance from the Australian Drinking Water Quality Guidelines.[175]

Some recent examples of actions being taken:

- The **Australian Capital Territory** Water Strategy outlines a plan to provide clean and safe water for the Territory.[176]
- Since the 2010 **New South Wales** Public Health Act 2010, the State has assisted 74 regional utilities to develop and implement safe drinking water management systems and have increased the awareness of drinking water risk management for remote and Aboriginal communities. Work is continuing to ensure implementation of clean drinking water management systems by private suppliers and water carters. [177] In 2017 a Safe and Secure Water Program was established to

[174] Australia Government Productivity Commission, No. 87, 19 December 2017, National Water Reform, https://www.pc.gov.au/__data/assets/pdf_file/0007/228175/water-reform.pdf
[175] Water Source, 12th April 2018, Australian Indigenous remote communities and water, sanitation and hygiene, https://watersource.awa.asn.au/publications/technical-papers/australian-indigenous-remote-communities-and-water-sanitation-and-hygiene/
[176] Australian Capital Territory Department of Environment and Planning, 2014, ACT Water Strategy 2014-2044, https://www.environment.act.gov.au/__data/assets/pdf_file/0019/621424/ACT-Water-Strategy-ACCESS.pdf
[177] Public Health Research and Practice, 2016, Safe drinking water in regional NSW, Australia, https://www.phrp.com.au/issues/april-2016-volume-26-issue-2/safe-drinking-water-in-regional-nsw-australia/

address key risks to regional water safety and security, and to provide sustainable water and wastewater services to regional towns across New South Wales.[178]

- In the **Northern Territory** the Power and Water Corporation constructed a new water treatment plant to deliver an improved quality of drinking water for one of the most remote northern Australian townships. The new $6.4 million water treatment system was connected to the Borroloola reticulation network in September 2018. The upgrade will secure Borroloola's water supply system for the next 30 years and also incorporates the ability to service Garawa town camps into the future.[179]
- **Queensland's** WaterQ: a 30-year strategy for Queensland's Water sector report identifies the challenges that regional areas are facing as service providers grapple with how to maintain infrastructure and water quality in the region with a shrinking customer base. One of the Strategic Priorities is to ensure that rural water efficiency and cleanliness is maintained in the State. The report provides a five-year plan to meet objectives which includes advising on appropriate technologies and solutions, via an industry-led water innovation panel.[180]
- The **South Australian** Water Our Plan 2020-2024 document includes a priority to invest in programs that improve the taste of drinking water in Adelaide and the quality of some regional supplies. This includes upgrading regional properties from non-drinking to drinking water supplies.[181]
- **Tasmania** published the Tasmanian Drinking Water Quality Guidelines in 2015, however the guidelines do not provide any information relating to regional clean drinking water supplies or initiatives.[182]
- The **Victorian** Water Plan Strategy includes a Victoria's Regional Statement which sets a new approach to the way government will work with regional Victoria to meet its water needs. The document leverages the establishment of the nine new Regional Partnerships across the State to direct regional priorities directly to government.[183]
- In **Western Australia** the Improving Water Quality in Remote Aboriginal Communities initiative will improve the quality and supply of drinking water in 28 remote communities in the Kimberley, Pilbara and Goldfields regions and deliver safe and clean water supplies for residents and service providers. This project is managed by the Department of Housing as the works address public health problems and $12 million will be funded under the State's Royalties for Regions fund.[184]

Implications for the 2021 Australian Infrastructure Plan

Our assessment is that work in this space is ongoing and hence we recommend that the topic of drinking water quality be on the agenda for the 2021 Australian Infrastructure Plan. Strengthening the case for a continued presence on the agenda is the fact that it is unlikely that there is a realistic non-government driven solution to this issue. It might be appropriate that the 2021 Australian Infrastructure Plan canvasses potential technological solutions and takes stock of effectiveness of the above-mentioned initiatives to date so that learnings can be shared and applied.

[178] NSW Department of Planning, Industry and Environment, 2017, Safe and Secure Water Program, https://www.industry.nsw.gov.au/water/plans-programs/infrastructure-programs/safe-and-secure-water-program/about

[179] PowerWater website, https://www.powerwater.com.au/about/projects/past-projects/improving-borroloola-water

[180] Queensland Cabinet, 2014, WaterQ: a 30-year strategy for Queensland's water sector, https://cabinet.qld.gov.au/documents/2014/Jun/WaterQ/Attachments/WaterQ.pdf

[181] SA Water, 2020, Our Plan 2020-2024, https://www.sawater.com.au/__data/assets/pdf_file/0018/421056/SA-Water-Our-Plan-2020-24.pdf

[182] Tasmania Government, 2015, Drinking Water Guidelines

[183] Victoria State Government, 2016, Water for Victoria Water Plan, https://www.water.vic.gov.au/__data/assets/pdf_file/0030/58827/Water-Plan-strategy2.pdf

[184] Department of Primary Industries and Regional Development, Improving Water Quality in Remote Aboriginal Communities http://www.drd.wa.gov.au/projects/Water/Pages/Improving-Water-Quality-in-Remote-Aboriginal-Communities.aspx

5 Funding

5. Funding

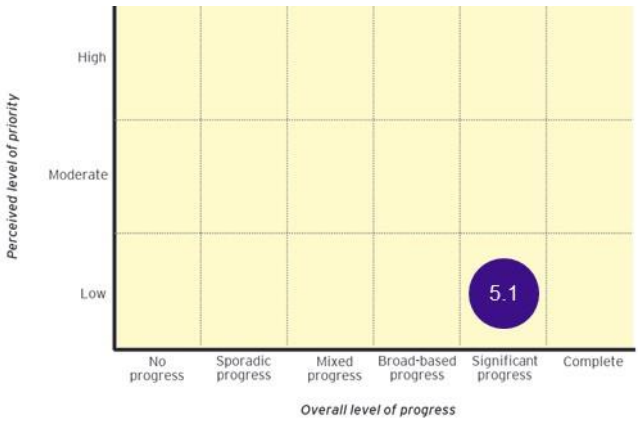
5.1 The Australian Government should require all project proponents seeking Australian Government funding to consider whole-of-life maintenance costs in their business case, and where possible they should be captured within the proposed contract structure.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported in-principle

Overall assessment of progress: Significant progress
Perceived level of priority: Low

Rationale from 2016 Plan

Including a mandatory test for inclusion of maintenance costs within procurements will place discipline on proponents seeking funding to understand, expose and account for the future maintenance needs of public infrastructure.



Approach to assessment

Comprehension of the requirements of considering whole-of-life maintenance costs in Public Private Partnership contracts, local strategic asset management guidelines and Infrastructure Australia's own assessment framework was undertaken to ascertain whether consideration whole-of-life maintenance costs is normal practice.

Evidence-based assessment

There are numerous infrastructure assessment frameworks and asset management frameworks in place that require consideration of whole-of-life maintenance costs. Examples are listed as follows:

- Infrastructure Australia's Assessment Framework details the requirements of cost-benefit analyses to include probabilistic risk-based cost estimates over the identified time period (the period in which the problem or opportunity is forecasts to eventuate). The assessment framework also refers to whole-of-life costs as needing to be considered in project risk assessment and management as part of a post completion review (stage five in the assessment framework). Cost estimates are part of the documentation that is reviewed as part of a post- completion review.[185]
- National PPP Guidelines developed by the Australian Government require consideration to whole-of-life costing to manage risk and protect the public interest. Whole-of-life costs are crucial to defining the service payment profile.[186]
- State and territory strategic asset management frameworks commonly refer to the need to ensure costs are clarified across the full life of the proposed asset.[187]

Implications for the 2021 Australian Infrastructure Plan

Evidence suggests that this recommendation has been complete thanks to the enhanced focus on, and development of, infrastructure assessment frameworks. Hence it may not be necessary to broach this topic in the 2021 Australian Infrastructure Plan.

[185] Infrastructure Australia, March 2018, Assessment Framework

[186] Department of Infrastructure, Transport, Cities and Regional Development, December 2008, https://www.infrastructure.gov.au/infrastructure/ngpd/files/Overview-Dec-2008-FA.pdf

[187] Western Australian Strategic Asset Management Framework, New South Wales Asset Management Policy, Victoria Asset Management Accountability Framework etc.

5.2 Australia's public infrastructure asset owners should routinely use fixed-term maintenance contracts to deliver funding certainty for providers and better asset condition for users.

Entity(ies) responsible: State Government
Sectors subject to assessment: Transport
Australian Government response: Supported

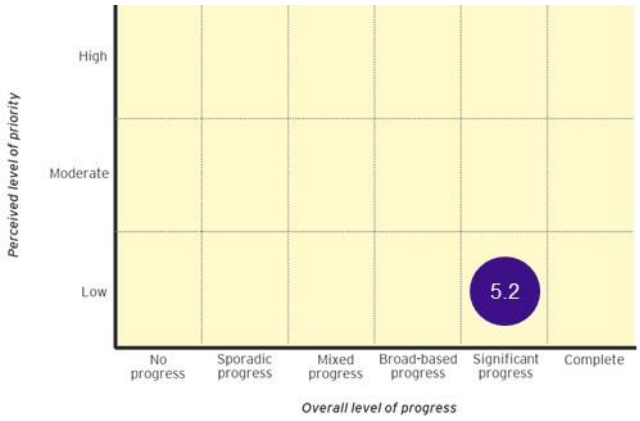
Overall assessment of progress: Significant progress
Perceived level of priority: Low

Rationale from 2016 Plan

Those sectors which have the most advanced user pays frameworks have the lowest likelihood of maintenance gaps.

Approach to assessment

A review of trends in maintenance contracts was conducted to identify whether the uptake of fixed-term maintenance contracts has increased since 2016 across various sectors. The majority of the evidence used to inform a judgement as to progress is anecdotal.



Evidence-based assessment

There is evidence of numerous examples of public infrastructure asset owners routinely using fixed-term maintenance contracts

- In New South Wales and Victoria there is a trend toward the use of fixed term contracts however performance-based contracts are also used so as to incentivise desired outcomes.
- In **New South Wales** the maintenance and operations contract for the New South Wales ferry system was awarded for a 9-year term. Sydney Metro City & South West and Sydney Metro North West were procured under a PPP with a fixed term of 15 years. The Country Regional Network operate and maintain contract has a 10-year term. The Roads and Maritime Services Stewardship Maintenance Contracts and Performance Specified Maintenance Contract were progressively introduced in 2013 and 2014 and are due to expire in mid-2021.
- The Western Roads upgrade project also in Victoria has a maintenance contract for services over 20 years. Metro Trains and Yarra Trams in Melbourne both have 7-year maintenance contracts and abatements for non-compliance to performance standards.

Implications for the 2021 Australian Infrastructure Plan

Evidence suggests that the use of fixed term maintenance contracts is relatively common. Decisions around the nature of maintenance contracts for specific assets are made on a case-by-case basis and the effectiveness of guidance stipulating a particular type of contract may be somewhat limited. For these reasons, the concept behind this recommendation is thought to be a low priority for the 2021 Australian Infrastructure Plan.

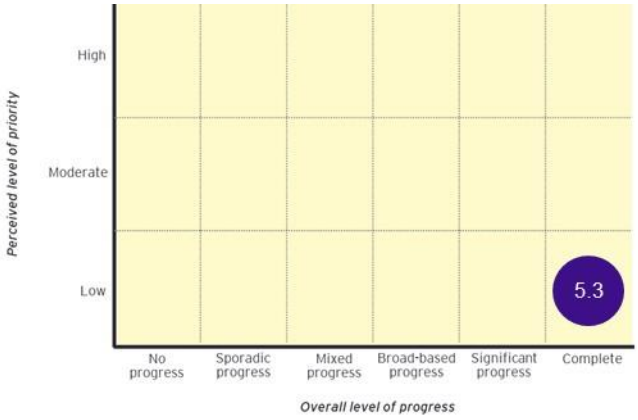
5.3 The Australian Government should initiate a public inquiry, to be led by a body like the Productivity Commission or Infrastructure Australia, into the existing funding framework for roads and development of a road user charging reform pathway.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Complete
Perceived level of priority: Low

Rationale from 2016 Plan

Road user charging provides a platform to reduce congestion, to identify where and when additional capacity is required and can help determine how best to use roads as part of an integrated transport system. There is an opportunity to develop a fairer, more sustainable and more efficient funding framework.



Approach to assessment

A desktop review was undertaken to understand whether a public inquiry had taken place to identify shortcomings in the existing charging framework.

Evidence-based assessment

In 2017, the Productivity Commission led a public inquiry into the existing funding framework for roads and developed a road user charging reform pathway. Evidence is as follows:

- The Productivity Commission's five-year productivity review investigated funding and investment for better roads. Supporting paper number nine details the need for road funding and investment reform and reports on instituting new funding and investment mechanisms.
- The supporting paper documents:
  - Initial steps along the reform pathway;
  - Key considerations under new governance mechanisms;
  - Governance arrangements under road user charging reform;
  - Considerations in aligning heavy vehicle reform programs;
  - Transition and design considerations for road pricing; and
  - How a road fund could work in a phased reform process.

The Productivity Commission outlines a number of road fund models under different scenarios to support a pathway to reform.[188] However, consideration of existing funding frameworks was only a component of the broader inquiry. A substantive review of this areas has not been completed.

Implications for the 2021 Australian Infrastructure Plan

While the recommendation is judged to be complete, the implementation of road funding and pricing reform is limited. It is appropriate for the 2021 Australian Infrastructure Plan to continue to focus on this issue with a view as to identifying and overcoming constraints to the implementation of road funding and pricing reform.

[188] Productivity Commission, August 2017, Shifting the Dial: 5-yr Productivity Review – Supporting Paper No. 6

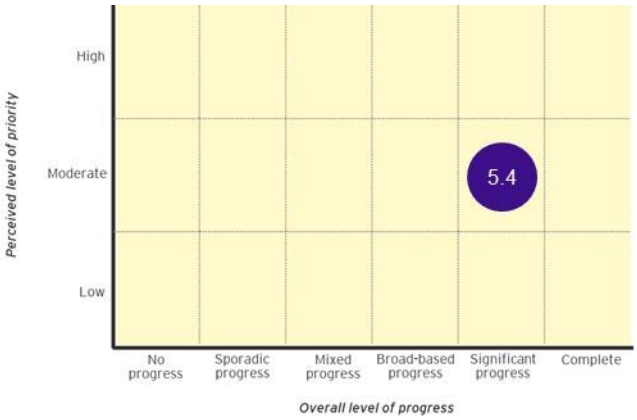
5.4 Federal, state and territory governments should commit to the full implementation of a heavy vehicle road charging structure in the next five years.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

It was recommended all existing registration and usage charges under the PAYGO model be removed and that supporting regulatory and investment frameworks be introduced. The PAYGO model is limited in its capacity to measure the full costs of heavy vehicle access to the road network and to efficiently charge users for these costs. Ensuring heavy vehicles are charged for the true costs they impose on the broader network is believed to be important to increasing competitiveness of Australia's freight networks.



Approach to assessment

An assessment as to progress towards implementing a heavy vehicle road charging structure was guided by desktop research into the adoption of different charging structures since 2016, and the progress of the National Heavy Vehicle Charging Pilot (announced in 2017).

Evidence-based assessment

Progress has been made to addressing this recommendation via the nation-wide effort to trial various heavy vehicle road use charges. Evidence suggesting progress has been made includes:

- The PAYGO model is based on historical spending and apportioned using fleet averages of heavy vehicles. The Australian Government, through the Council of Australian Governments Transport and Infrastructure Council identified the aim to switch to future spending plans and a more precise allocation to individual vehicles.
- Between July 2019 and January 2020, the heavy vehicle industry has participated in a National Heavy Vehicle Charging Pilot funded by the Australian Government. The first stage of the trial included a small scale on-road trial which included 12 operators and 259 vehicles. The trial tested existing telematics technology and used a simple per km charge rate used based on the vehicle configuration. Monthly mock invoices were provided to participants.
- A large scale on-road trial is planned to start later in 2020 and will continue for up to 18 months. The trial will consider 100 operators and more than 1,000 vehicles. Options supporting road user charges include the testing of telematics, manual options and on-board scales to determine road impact. Multiple per km charge rates based on location, configuration and actual weight will be trialled and again monthly mock invoices provided to participants to compare to current heavy vehicle charges. Following the large scale on-road trial an independent trial evaluation will be undertaken.[189]

Implications for the 2021 Australian Infrastructure Plan

Activity in this space has been good with a number of trial processes being instigated since 2016. As per the case for Recommendation 5.3, actual implementation of a revised and permanent heavy vehicle road charging structure is not yet complete and hence it may be prudent for the 2021 Australian Infrastructure Plan to address this topic in terms of understanding how trials have gone and steps that might be needed to affect implementation.

[189] Department of Infrastructure, Transport, Regional Development and Communications, National Heavy Vehicle Charging Pilot, 2020, https://www.infrastructure.gov.au/roads/heavy/charging-trials/index.aspx

5.5 Federal, state and territory governments should also commit to the full implementation of a light vehicle road charging structure in the next 10 years.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Transport
Australian Government response: Noted

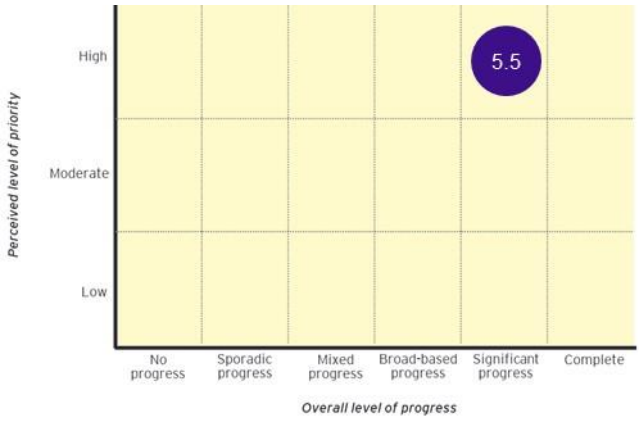
Overall assessment of progress: Significant progress
Perceived level of priority: High

Rationale from 2016 Plan

Road user charging can provide a platform to reduce congestion and identify where additional capacity is required. Existing road user-related revenue streams are forecast to be constrained due to the introduction of electric vehicles.

Approach to assessment

An assessment as to progress towards implementing a light vehicle road charging structure was guided by desktop research into the adoption of different charging structures in various jurisdictions since 2016.



Evidence-based assessment

Despite the amount of research, analysis and conversation surrounding the need to reform light vehicle road user charges, there has progress in addressing this recommendation has been slow. Significant progress was made in late 2020 with several states announcing the introduction of road user charging schemes. Evidence supporting this conclusion as follows.

- The Australian Government has focussed efforts on reforming heavy vehicle road user charges and related reforms. In 2018 the Australian Government decided not to proceed with a previously promised inquiry into taxing light vehicles based on distances travelled.[190]
- Australian cities including Melbourne, Sydney and Brisbane have adopted toll roads for light vehicles along some roads as a means of funding road infrastructure. As a form of disincentive, Melbourne, Perth and Sydney use parking levies to discourage travel to congested locations.
- Infrastructure Victoria supports national reforms for sustainable road user charging. Infrastructure Victoria developed series of papers that outlines the problems with the current approach to transport pricing in Victoria, and the benefits and limitations of introducing a new road pricing regime to reduce congestion and make the most efficient use of the state's transport network.[191] This is one example of research and documentation that is supportive of light vehicle road user charging structure.
- The NSW Review of Federal Financial Relations, released in August 2020, recommended the phasing in of a nationally compatible and fair road user charging scheme, using electric vehicles as a pilot, and new user charges to replace some existing charges.[192]

[190] "Deputy PM Michael McCormack shelves inquiry into road pricing", October 5, 2018, Andrew Tillett, Australian Financial Review, https://www.afr.com/politics/deputy-pm-michael-mccormack-shelves-inquiry-into-road-pricing-20181004-h1688d
[191] Infrastructure Victoria, 'The Road Ahead', 2019, https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/The-road-ahead-final-web.pdf; Infrastructure Victoria, 'Good Move', 2020, https://www.infrastructurevictoria.com.au/2020/03/25/good-move-fixing-transport-congestion/
[192] NSW Government, 'NSW Review of Federal Financial Relations', 2020, https://www.treasury.nsw.gov.au/federal-financial-relations-review

- South Australia became the first state to announce the introduction of road user charging for electric vehicles, [193] followed shortly by Victoria,[194] both in December 2020. Both charges are due to commence in mid-2021.

Implications for the 2021 Australian Infrastructure Plan

A way forward for the 2021 Australian Infrastructure Plan might be to focus on confined instances where different approaches to road user charging could be implemented. For example, charging for entry into CBD areas during peak hours. There is still a need for these reforms to be considered given falling fuel excise revenue as a result of greater fuel efficiency in vehicles and the introduction of electric vehicles which will be compounded by budgetary pressures post COVID-19.

[193] "South Australia to become first state to introduce electric vehicle user charge", 11 November 2020, ABC News, https://www.abc.net.au/news/2020-11-11/sa-to-introduce-electric-vehicle-user-charge/12869302
[194] "Victoria's proposed electric car road usage tax gets mixed reactions", 22 November 2020, ABC News, https://www.abc.net.au/news/2020-11-22/victoria-electric-car-tax-reax-industry-infrastructure-greens/12908238

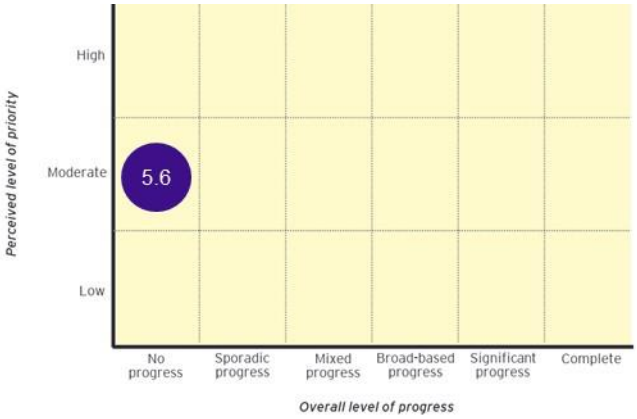
5.6 The Australian Government should continue providing incentives for state and territory governments to improve the efficiency of their balance sheets by recycling appropriate publicly owned assets to fund investments in productive infrastructure and consider broader applications of incentive payments to advance reform.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: No progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Australia's immediate and longer-term infrastructure shortfall was believed to require substantial capital. Recycling capital was identified as an option to help release capital to be reinvested in productive infrastructure.



Approach to assessment

In 2014, the Council of Australian Government agreed the National Partnership Agreement of Asset Recycling Initiative (ARI) to unlock funds from existing state-owned assets to invest in additional infrastructure. A desktop assessment was undertaken to identify the outcomes of the asset recycling initiative.

Evidence-based assessment

There is no evidence to suggest that the ARI will be renewed in any form. Findings that led to this conclusion are as follows.

- The ARI was wound up in the 2016-17 Budget consistent with the original timeline. The ARI contributed approximately $3 billion in additional funds allocated to participating jurisdictions.
- In January 2019 a review of the National Partnership Agreement (NPA) on Asset Recycling was conducted. The review concluded that the NPA did reduce funding constraints for additional infrastructure investment. For the jurisdictions that participated, Commonwealth funding and support helped incentivise government decisions to be made and provide some reprieve for balance sheets.
- The review of the National Partnership Agreement (NPA) on Asset Recycling reflected comments from participating jurisdictions, and cited that New South Wales suggested asset divestment mean greater capacity on the balance sheet, with debt levels maintained within reasonable parameters and forward fiscal pressures relieved. The jurisdictions that participated provided positive feedback as to the NPA's impact on economic activity, employment and improved living standards.[195]
- In October the Australian Government rejected a push from New South Wales to bring back federal incentives for state asset recycling referring to its own budget position as being poorer than that of New South Wales.[196]

[195] Review of the National Partnership Agreement on Asset Recycling, Australian Government, The Treasury, 2019, http://www.federalfinancialrelations.gov.au/content/downloads/reviews/asset/Review_NPA_asset_recycling-2019.pdf
[196] Phillip Coorey, 11 October 2019, Australian Financial Review, 'Frydenberg rejects states' asset recycling push', https://www.afr.com/politics/federal/frydenberg-rejects-states-asset-recycling-push-20191010-p52zb1

Implications for the 2021 Australian Infrastructure Plan

It may be the case that the broadness of this recommendation makes it unwieldy and difficult to implement. A targeted approach to the encouragement of asset recycling acknowledging the political and other challenges may be the best way forward for the 2021 Australian Infrastructure Plan. Give the relative absence of progress, it is considered reasonably important that this concept be revisited in the 2021 Australian Infrastructure Plan.

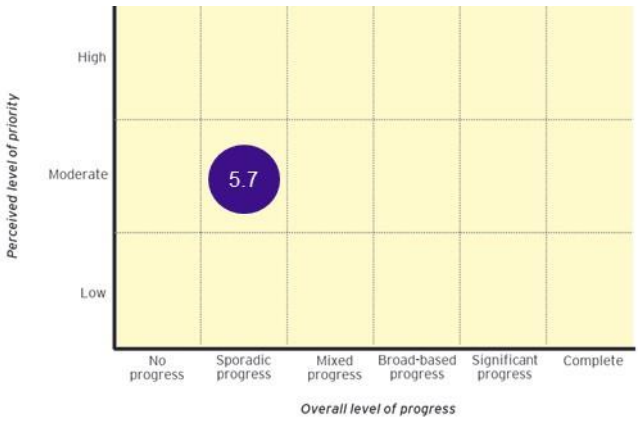
5.7 Australia's state and territory governments should seek to increase the funding sustainability of public transport provision both through the pursuit of operating efficiencies and a more appropriate alignment of the funding burden between public transport users and taxpayers.

Entity(ies) responsible: State Government
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Sporadic progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

As at the time of writing the 2016 Australian Infrastructure Plan it was estimated that users of public transport paid for approximately 20-25% of the cost of public transport, with the remaining being paid by taxpayers. It was argued that the current balance between user-pays and taxpayers funding public transport was unsustainable and a more appropriate alignment of the funding burden was required.



Approach to assessment

Trends in ticket prices for public transport were investigated to identify whether state and territory governments had commenced a transition towards shifting the cost burden onto the user of public transport. Evidence of operating efficiencies were also investigated.

Evidence-based assessment

There is little evidence to demonstrate a concerted effort to reducing the funding burden of delivering public transport on taxpayers. This is illustrated by the trend in public transport fares. Most jurisdictions have stated in respective state budgets that public transport fares will rise in line with inflation. However, there is evidence of state and territory governments improving the efficiencies of operations to mitigate large increases in the cost of transport service provision.

- Public transport fares in the **Australian Capital Territory** have typically increased in line with inflation in recent years. Anecdotally, there are challenges in charging greater fares given relatively low patronage.
- The Independent Pricing and Regulatory Tribunal (IPART) in **New South Wales** published a review of public transport fares in Sydney and surrounds in mid-2016. The review determined the increase in the average adult fare should be limited to 13 per cent over the determination period until June 2019. This meant that fares could increase by an average of 4.2 per cent a year (including inflation) over three years following 2016. As a result of the IPART determination public transport fares would have continued to cover around 25% of efficient costs while taxpayers funded the remaining.[197] In the years since the review fares have increased with inflation only, but in response to COVID fares have fallen for non-peak period travel.
- The **Northern Territory** 2019-20 Budget did not note a rise in the revenue sought from bus fares and passes from the previous year, evidencing little change in public transport fares.[198]
- In **Queensland** TRANSLink service fares were increase in January in line with inflation.[199]

[197] IPART NSW, May 2016, Public transport fares in Sydney and surrounds, https://www.ipart.nsw.gov.au/Home/Industries/Transport/Reviews/Public-Transport-Fares/Public-Transport-Fares-in-Sydney-and-Surrounds
[198] Northern Territory, May 2019, Budget Statements, https://budget.nt.gov.au/__data/assets/pdf_file/0005/689945/2019-20-BP3-book.pdf
[199] TRANSLink, New Fares for 2020, https://translink.com.au/tickets-and-fares/fares-and-zones/new-fares-2020

- In **South Australia** the Adelaide Metro announced that as in previous years, bus, train and tram fares will increase by approximately 2 per cent in line with the Consumer Price Index.[200]
- Public Transport **Victoria** stated that as at 1 January 2020, public transport fares will increase by 1.7 per cent on average in line with the Consumer Price Index.[201] Infrastructure Victoria has conducted analysis looking into transport network pricing from a perspective of easing congestion in Melbourne. The analysis proposed to change what people pay for and did not seek to increase total revenue raised from fares.[202]
- The **Western Australian** Government announced in the previous budget that public transport fares would increase by inflation. Effective from March 2020 household fees and charges (transport fares included) would be frozen in response to COVID-19.[203] Western Australia's public transport transit cards and its associated ticketing infrastructure is planned to be upgraded to improve its sophistication. Technological advancements in how patrons purchase tickets may allow for greater flexibility in ticket prices potentially enabling a greater focus on user pays. A recent example of an attempt to ensure users of public transport bear a greater burden of the cost of service provision is the concept of the $2 a day park'n'ride. Patrons parking at train stations who use the train as part of a leg of their transit are required to pay for parking.

Implications for the 2021 Australian Infrastructure Plan

The review finds relatively little appetite for raising public transport ticket prices. Anecdotal information suggests that governments are unwilling to raise fares markedly because of potential impacts on patronage, for which governments are trying to encourage. In addition, COVID-19 implications on public transport patronage may also work to discourage interest among governments in marked increases in ticket prices. The topic behind the recommendation being the allocation of the burden of public transport costs does, however, remain important. For the 2021 Australian Infrastructure Plan, it may be appropriate to explore options for more flexible ticket pricing to reflect for example, peak and off-peak travel.

[200] Adelaide Metro, Fare Changes 2020, https://adelaidemetro.com.au/Announcements2/News/Fare-Changes-2020

[201] Public Transport Victoria, December 2019, Public transport fares in 2020, https://www.ptv.vic.gov.au/news-and-events/media-releases/2019/12/20/public-transport-fares-in-2020/

[202] Infrastructure Victoria, March 2020, 'Good Move: Fixing Transport Congestion', https://www.infrastructurevictoria.com.au/report/4-transport-network-pricing-is-the-best-solution/

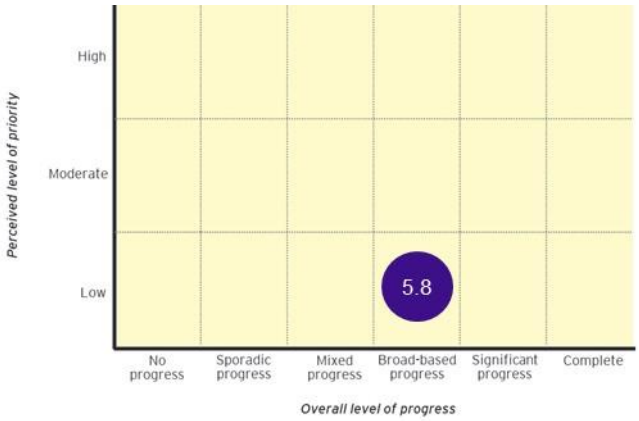
[203] Western Australia State Government, 16 March 2020, COVID-19 economic response: Relief for businesses and households, https://www.mediastatements.wa.gov.au/Pages/McGowan/2020/03/COVID-19-economic-response-Relief-for-businesses-and-households.aspx

5.8 The Australian Government should undertake a review of its capacity to use increased public borrowing to support an expanded economic infrastructure investment program.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported in-principle
Overall assessment of progress: Broad-based progress
Perceived level of priority: Low

Rationale from 2016 Plan

Increased use of public debt to support investment can provide a smarter approach to delivering economic infrastructure, provided investments are well-considered, well-executed and make a positive contribution to the economy.



Approach to assessment

Desktop research and consultation with relevant agencies was undertaken to determine whether a formal review of borrowing capacity has been undertaken. Related concepts such as the infrastructure pipeline, supportive infrastructure assessment frameworks to ensure effective spend and cost of capital were also considered in assessing progress.

Evidence-based assessment

There is an absence of evidence to suggest a formal review of public borrowing capacity has been undertaken.

However, governments regularly review their borrowing capacity, and borrow in line with their capacity. For instance, the Australian Government's annual Budget and Mid-Year Economic and Fiscal Outlook contain official revenue and spending forecasts, which the Australian Office of Financial Management (AOFM) uses to plan the Australian Government's borrowing programs.[204]

In the 2020-21 Budget, due to the COVID-19 pandemic, the Australian Government's funding requirements increased, which will see net debt increasing from 36.1% of GDP at 30 June 2021 to 43.8% of GDP by 30 June 2024.[205] This increased debt was raised in the context of favourable borrowing costs, and conditions are favourable for the Australian Government to borrow more.[206]

Implications for the 2021 Australian Infrastructure Plan

To date, there has been limited evidence of government borrowing constraints stifling infrastructure spend, as evidenced by the increase in public spending during the COVID-19 pandemic. For this reason, this recommendation is not of high priority for the 2021 Australian Infrastructure Plan.

[204] Australian Office of Financial Management, About, https://www.aofm.gov.au/about

[205] Australian Government, 2020, Budget Paper No. 1 Statement 7: Debt Statement, https://budget.gov.au/2020-21/content/bp1/download/bp1_bs7.pdf

[206] ABC News, 2020, 'Budget 2020 takes Australia towards a trillion-dollar debt, but most experts say it isn't a problem. Here's why', https://www.abc.net.au/news/2020-10-09/federal-budget-2020-debt-deficit-blowout-explained/12741472

5.9 The Australian Treasury should evaluate the viability of reporting debt under a more transparent structure, at all levels of government, to allow for greater clarity and support increased investment in productive infrastructure.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Not supported

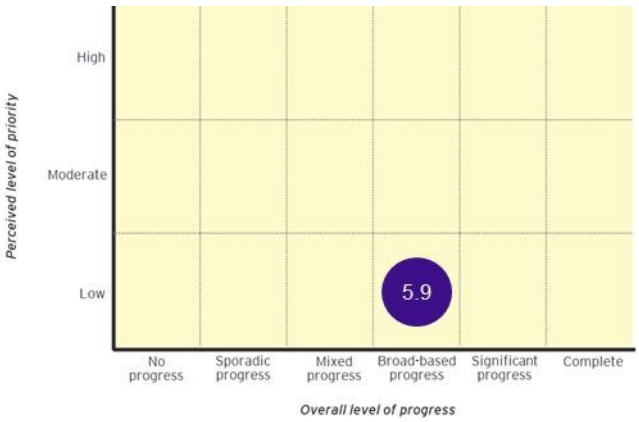
Overall assessment of progress: Broad-based progress
Perceived level of priority: Low

Rationale from 2016 Plan

Improved clarity about the composition of investments to which debt is allocated will increase public awareness of the role borrowing can play in meeting Australia's infrastructure needs.

Approach to assessment

Financial and budget reporting requirements were consulted to form a view on the current standard of reporting debt and to identify any changes that have taken place.



Evidence-based assessment

There is some evidence to suggest that effort has been made to report debt under a more transparent structure, despite the Australian Government not supporting this recommendation as documented in its response to the *2016 Australian Infrastructure Plan*.[207]

- As detailed in the *Prioritising Reform: Progress on the 2016 Australian Infrastructure Plan*, the 2017-18 Federal Budget implemented a new reporting approach that gives greater prominence to the net operating balance over the underlying cash balance. Investment in capital projects (including infrastructure) is excluded from the net operating balance. Under this approach, debt raised for infrastructure investments with proven long-term economic benefits is treated separately from debt raised for recurrent expenditure.[208]
- There are financial reporting standards for each state and territory government that guide how debt is recorded. For example, the Financial Reporting Operations Framework in Victoria and the Financial Reporting Requirements for Queensland Government Agencies.
- In 2018 the Australian Government developed the Transparency Portal, a central repository of publicly available corporate information for all Commonwealth bodies. All annual reports for all Commonwealth entities and companies will be available for the 2018-19 reporting cycle. Over time, the portal will be expanded to incorporate additional information such as corporate plans and portfolio statements. This demonstrates a move towards greater accessibility of financial reports for the public.[209]

Implications for the 2021 Australian Infrastructure Plan

Governments adhere to financial reporting standards when reporting debt and other balance sheet outcomes. Taking this into account, it is not considered overly necessary to continue to prosecute a case for change and hence the concept behind this recommendation is considered a relatively low priority for the 2021 Australian Infrastructure Plan.

[207] Department of Infrastructure, Transport, Cities and Regional Development, November 2016, The Australian Government's Response to Infrastructure Australia's Australian Infrastructure Plan, https://www.infrastructure.gov.au/infrastructure/publications/files/Australian-Government-Response-to-Australian-Infrastructure-Plan_Nov-2016.pdf

[208] Infrastructure Australia, 2018, Prioritising Reform: Progress on the 2016 Australian Infrastructure Plan

[209] Australian Government, 2018, Transparency Portal, https://www.transparency.gov.au/

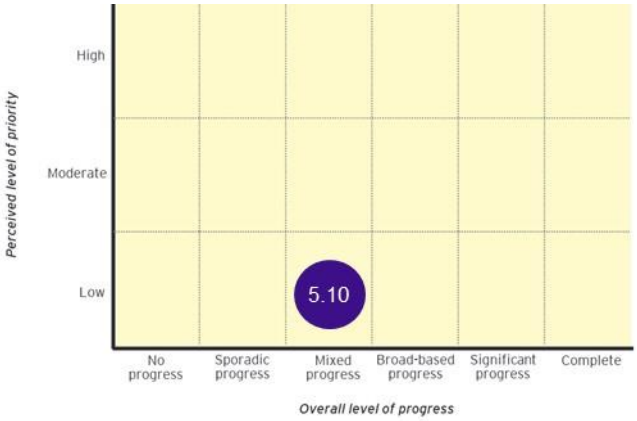
5.10 Governments should routinely consider value capture opportunities in all future public infrastructure investments.

Entity(ies) responsible: State Government
Sectors subject to assessment: Transport and planning
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceive level of priority: Low

Rationale from 2016 Plan

It was recommended that value capture opportunities to be identified and implemented early in planning processes, before specific options are developed to maximise benefits to taxpayers. To encourage the application of value capture models, it was also suggested that the Australian Government should impose a mandatory requirement for initiatives and projects seeking federal support. Under some models, the captured revenue stream can be used to repay a portion of the up-front financing used to deliver the infrastructure.



Approach to assessment

A review of public business case evaluations was conducted to assess the frequency in which value capture models are considered in the delivery of infrastructure projects. The review looked at business case evaluations originating from various sectors and jurisdictions, and identified where value capture models were considered, where they were not and why. A desktop scan of the concept of value capture was also pursued.

Evidence-based assessment

There has been mixed progress across jurisdictions in incorporating value capture models within future public infrastructure investments. The evidence is as follows.

- Within the Infrastructure Australia guidelines and assessment framework for Stage 3 and 4 (Business Case Development and Business Case Assessment), the concept of value capture is encouraged as part of the consideration of the delivery strategy and operations strategy, and project financing.
- Of the past project evaluations conducted by Infrastructure Australia since July 2016, (of which there were 52), eight referenced the project business case giving due consideration to value capture (one project each in Queensland and Tasmania, two projects in Western Australia and four projects in Victoria).
- Of these project evaluations, only two projects (North East Link and the Monash Freeway Upgrade Stage 2) committed to developing value capture project plans or mechanisms. At the time the business case was submitted, the Yanchep Rail Extension, Thornlie-Cockburn Link and Melbourne Metro projects suggested value capture options were being considered.
- Queensland and Tasmanian projects (Peak Downs Highway Realignment and Derwent River Crossing Capacity projects respectively) cited limited potential for value capture. In the case of the Derwent River Crossing Capacity project, there was thought to be minimal expected change in service levels, rate increases, or user charges were thought to be inappropriate.[210]
- In Western Australia, METRONET is currently reviewing the State Planning Policy 3.6 Infrastructure Contributions. Options were explored for a value capture mechanism that would generate a portion of funding for State Infrastructure, including METRONET. Relatively subdued housing and property market conditions resulted in value capture not being pursued.[211]

[210] Infrastructure Australia, 2020, https://www.infrastructureaustralia.gov.au/project-evaluations/past-evaluations?page=1
[211] METRONET, 2020, 'Value Capture, https://www.metronet.wa.gov.au/about/value-capture

- In early 2017 the Victorian Government developed a Value Creation and Capture Framework to, amongst other things, provide guidance on value capture mechanisms developed by Victorian government agencies.[212]
- The New South Wales Government is consulting on a property tax model that would enable home buyers the choice to pay either stamp duty and land tax (where applicable) or a new annual property tax.[213]
- Local Government implicitly apply value capture methods via council rates. There have been other examples of value capture applied by local councils including the City of Parramatta's Voluntary Planning Agreements introduced in 2018. The Voluntary Planning Agreement a form of development contribution (sharing the proceeds of a sale with the City of Parramatta).[214]
- In October 2016 Infrastructure Victoria published 'Value Capture – Options, Challenges and Opportunities for Victoria'. The policy paper was written to build community awareness and understanding on the concept of value capture, and to advise the Victorian Government on steps to take to improve the way it is used to fund infrastructure.[215]
- In December 2016 Infrastructure Australia published 'Capturing Value' as part of its Reform Series. The paper details the existing and potential forms of value capture, and the risks and sensitivities that should be managed. The paper also provides a framework for advancing and applying value capture.[216]

Implications for the 2021 Australian Infrastructure Plan

The concept of value capture seems embedded as a consideration for governments when planning major infrastructure projects. The actual use of value capture mechanisms is however relatively limited. The main reason for the absence of the use of value capture appears to be its limited potential to generate funds for infrastructure provision.

[212] Victorian Government, 2017, 'Value Creation and Capture Framework', https://www.vic.gov.au/value-creation-and-capture-framework

[213] New South Wales Treasury, November 2020, The NSW Budget 2020-2021, https://www.treasury.nsw.gov.au/sites/default/files/2020-11/NSW%20TSY%20TF%20-%20Glossy.pdf

[214] City of Parramatta, 2018, Development Contributions, https://www.cityofparramatta.nsw.gov.au/business-developmentplanning/development-contributions

[215] Infrastructure Victoria, October 2016, Value Capture – Options, Challenge and Opportunities for Victoria, https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/IV18-Value-Capture-Options_Final-web_v2_0.pdf

[216] Infrastructure Australia, December 2016, 'Capturing Value', https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/Capturing_Value-Advice_on_making_value_capture_work_in_Australia-acc.pdf

6 Competitive markets

6. Competitive markets

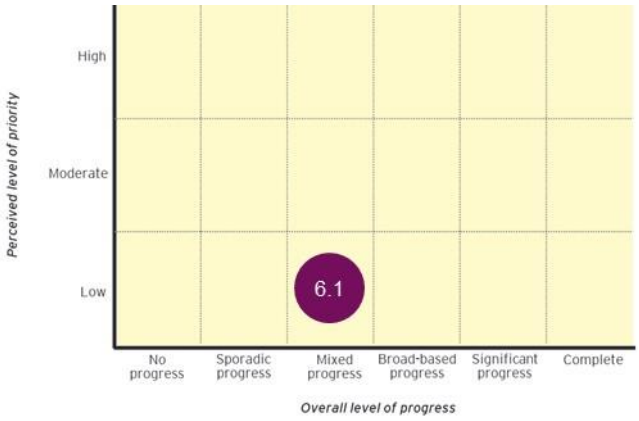
6.1 Where a competitive market for supply of infrastructure services exists, or could exist, governments should efficiently exit direct service provision, allowing the market to allocate supply to meet demand.

Entity(ies) responsible: State Governments
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported in-principle

Overall assessment of progress: Mixed progress
Perceived level of priority: Low

Rationale from 2016 Plan

The role of government should be to set the right conditions – good planning, regulatory and market structures – to ensure the efficient delivery and use of infrastructure. A role for governments in funding infrastructure will likely remain, but it should be restricted to those circumstances where there is real and unresolved market failure.



Approach to assessment

We undertook desktop research in conjunction with consultation to assess progress.

Evidence-based assessment

The competitive outcomes sought by this recommendation can be achieved a number of ways. There are several recent examples of state governments exiting direct service provision of infrastructure and allowing the private sector to manage aspects of service delivery. Though not an exhaustive list, the examples below highlight where this has occurred:

- **Transport**: In recent years Public Transport Victoria (PTV) has undertaken a program to franchise much of its public transport operations in metropolitan Melbourne and major regional centres. In September 2017 PTV signed a seven-year operations contract with Metro Trains Melbourne, a private joint venture between MTR, John Holland and UGL.[217] Confirmed along with the Metro Train contract, a contract extension for the operations of Melbourne's extension tram network was awarded to Keolis Downer.[218] Both contracts were drafted to embed key service requirements and associated abatements to ensure both private operators met the needs of PTV and its customers.[219]
- **Electricity and Smart Metering**: Prior to the 2016, several areas of the electricity sector in the National Electricity Market (NEM) were either partly or fully privatised. In recent years the sector has seen a slowing in the process. However, in December 2019 the "Power of Choice" reform came into effect. The reform changes meant that previous rules which held that deployment of smart meters, and metering in general, which was controlled by network operators, was opened to electricity retailers through a new embedded network manager role. This gave the public access to a wider range of services from private operators, including more frequent energy usage data, a wider range of pricing options, and the ability to access products and services enabled by smart meters such as demand management. This also means that the installation and maintenance of smart metering can now be managed by the private sector.[220]

As highlighted with the examples above, there have been several recent examples of state governments exiting direct service provision of infrastructure. However, over the same period there

[217] Metro Trains, https://www.metrotrains.com.au/who-we-are/
[218] Yarra Trams, https://yarratrams.com.au/about-us
[219] ABC News, https://www.abc.net.au/news/2017-09-12/metro-contract-extended-for-melbournes-train-network/8895462
[220] Australian Energy Regulator, https://www.aer.gov.au/consumers/my-energy-service/smart-meters

have been examples of State Government's in-sourcing aspects of infrastructure service provision. Though not an exhaustive list, the examples below highlight where this has occurred:

- **Water treatment**: In late 2019 Western Australia's state water utility, Water Corporation, in-sourced previously privately delivered water production and wastewater treatment services. In 2012, the Water Corporation entered into an alliance agreement to deliver these services in July 2012. The agreement, named Aroona Alliance, is a partnership between Suez Water Pty Ltd (Suez), Broadspectrum and Water Corporation. This has seen 170 Aroona Alliance employees being transferred to the Water Corporation. This follows the decision to transition metropolitan network operations and maintenance services back into the Water Corporation by March 2020, bringing 250 previously privatised jobs into the publicly owned utility. These services are being brought back in-house 25 years after they were privatised by the then Liberal Government.[221]
- **Prisons and justice**: In 2019 the Queensland Government in-sourced custodial servants in all prisons, following a Crime and Corruption Commission (CCC) inquiry that found problems in having a mix of public and private management. The Government suspended procurement processes for the privately-run Arthur Gorrie Correctional Centre and Southern Queensland Correctional Centre in July 2018 after receiving the CCC's findings. Both are now being serviced by the public sector. The Government cited that the transfer of services back to public operation would lead to improve staff safety and a reduction risks associated with corruption, inappropriate relationships, excessive use of force, misuse of authority and information.[222]
- **Health services**: in early 2020, the WA Government significantly scaled back the privatisation of services at Perth's Fiona Stanley Hospital (FSH). Non-clinical services at FSH were privatised in the mid-2010s when a 20-year contract was signed with global infrastructure services firm, Serco. The changes to the contract have seen 65% of Serco staff return to the public sector who provide cleaning, catering, orderly and domestic assistance services.[223] In Victoria the Mildura Base Hospital was the only publicly owned, privately operated hospital in Victoria. In August 2019, it was announced it would return to public hands after 20 years.[224]

Implications for the 2021 Australian Infrastructure Plan

Progress on this recommendation has been mixed, with some states and sectors progressing with exiting direct service provision of infrastructure. However, there has been many instances where the reverse has occurred. Differing opinions as to the best method to extract competitive outcomes plays a role in the preference of governments to progress this recommendation.

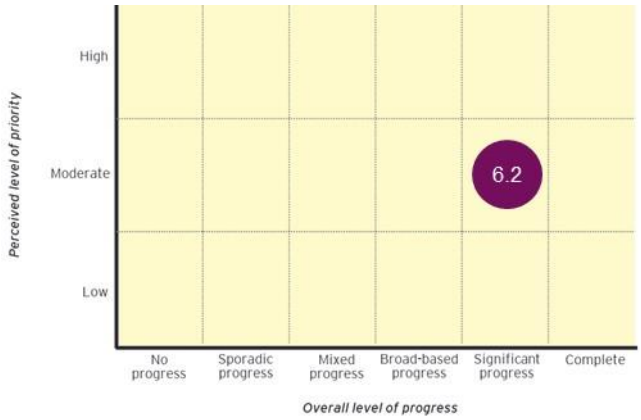
[221] WA Ministerial Media Statement, https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/11/More-privatised-water-services-coming-back-into-public-hands.aspx
[222] The Mandarin, https://www.themandarin.com.au/106271-queensland-government-takes-back-control-of-privately-run-prisons/
[223] ABC News, https://www.abc.net.au/news/2020-03-09/wa-government-reduces-serco-services-at-fiona-stanley-hospital/12039042
[224] Victorian Department of Premier and Cabinet, August 2019, 'Mildura Base Hospital: Back in public hands', https://www.premier.vic.gov.au/mildura-base-hospital-back-in-public-hands/

6.2 Where commercially viable monopoly infrastructure remains in public ownership, governments should define an appropriate independent regulatory framework which protects consumers and taxpayers, before divesting those assets into a well-functioning, well-regulated market.

Entity(ies) responsible: Federal, State and Local Government
Sectors subject to assessment: Various
Australian Government response: Supported in-principle
Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

At the time of writing the 2016 Australian Infrastructure Plan it had been recently recommended in the Harper Review that competition policies should be reviewed to ensure that unnecessary restrictions on competition are removed. It was thought that government business activities should not enjoy net competitive advantages over private sector competitors simply by virtue of public sector ownership and recommended new roles for the Australian Council for Competition Policy.



Approach to assessment

Data documenting public asset sales in recent years was gathered to assess the scale of monopoly infrastructure divested from public ownership. Discrete examples are then identified to evidence whether an appropriate regulatory framework existed pre-divestment.

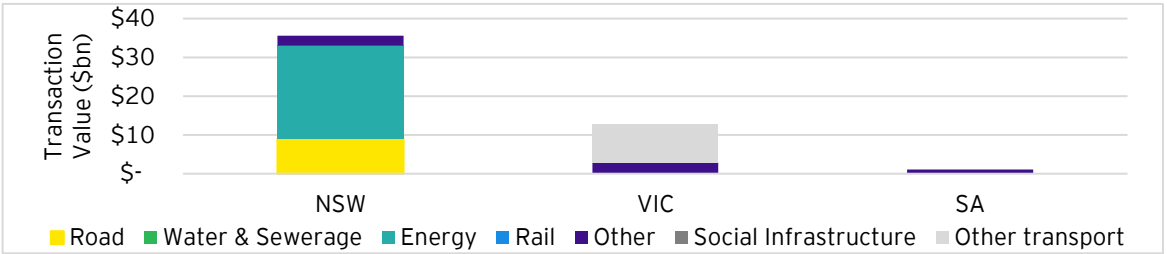
Evidence-based assessment

Regulatory environments are rather mature in the energy sector and hence there is a strong existing framework or at least precedence when divestments occur. Regulatory frameworks are still developing in sectors such as transport and are yet to be fully realised in the digital and telecommunications sector. As sectors mature and develop various market structures, this recommendation may not necessarily still be applicable to all sectors.

Different jurisdictions are more developed in than others. While New South Wales and Victoria are rather mature in privatisations and thereby building appropriate regulatory frameworks, Western Australia is not as mature. Although hard to pass judgement as to progress across all sectors and jurisdictions, and dependent on the political appetite to privatise public assets, broad-based progress has been made in addressing this recommendation.

- Since mid-2016, eight privatisations have been carried out across Australia with a transaction value of approximately $50 billion. New South Wales has been most active in this space, privatising approximately five major assets across road, energy and land and property, whilst in Victoria the Port of Melbourne was privatised for approximately $9.7 billion. All major privatisations are shown below in Figure 7.

Figure 7: Australian privatisations between 2016 and 2019



Source: Infrastructure Partnerships Australia

Examples of frameworks developed across sectors

- The National Disability Insurance Scheme and the release of **disability** services from state and territory provision is an example of governments collaborating to define an appropriate framework before divesting service provision and in some cases assets into a well-functioning and regulated market. Since 2016 Western Australia, South Australia, Queensland and the Northern Territory amongst others have transitioned to the national scheme. Projects administered by the Department of Social Services (DSS) concerning investigation of 'thin markets' is an example of work being completed by government to ensure that competition is such, and demand is sufficient in markets before releasing services into private hands. Where there is not enough supply or demand in particular markets (for example regional and remote communities), the DSS commissioned frameworks to be developed and solutions to be trialled to instil appropriate market functions. Pricing structures have continuously been reviewed to ensure pricing is fair for participants and providers.[225]
- In the **transport** sector there are some regulatory frameworks already in existence to support privatisation of the operations of services. Australian **rail** networks are largely publicly owned but provide private infrastructure operators or Government-owned corporations to lease rail assets and provide public services.[226] Private infrastructure operators are held accountable by respective regulatory authorities. Regulators delivering railway regimes inclusive of pricing structures across their respective jurisdictions are:
  - ACCC (Australian Competition and Consumer Commission)
  - QCA (Queensland Competition Authority)
  - ERAWA (Economic Regulation Authority WA)
  - ESCOSA (Essential Services Commission of SA)
  - ESCV (Essential Services Commission Victoria)
  - IPART (Independent Pricing and Regulatory Tribunal)
- In other areas of transport there are regulatory frameworks or conditions of sale that have been constructed before the complete privatisation of the public asset. For example, the Victorian Government's **Port** of Melbourne sale required an independent regulatory framework due to it being the second highest privatisation deal in Australia (after TransGrid). The transaction included a 15-year non-compete clause included in the contract and in return the private owners are subject to competitive neutrality pricing guidelines applying to a state sponsored second port.[227]
- In the **energy** sector there is quite a precedence for privatisation (to varying degrees) and a regulatory framework to reflect privatisation activity. There is also movement in states with less precedence for privatisation. For example, the Minister for Energy announced the Western Australian Government's intention to implement a 'light-handed' regulatory regime to facilitate fair and reasonable third-party access to the North West Interconnected System (NWIS). The NWIS reform is aimed at making the power system more efficient, removing barriers to entry for new projects and retailers, improving the security and reliability of power supply in the region, and facilitating better coordination between market participants. The establishment of an independent system operator will improve the security and reliability of power supply in the region and help facilitate better coordination between market participants. The new regulatory arrangements are intended to commence in early 2020. [228]
- In the **digital and telecommunications** sector there is yet to be a sale of NBN Co. There are pre-conditions for the sale of the NBN Co that are embedded in the NBN Co legislation. Requirements for the sale of the NBN includes:
  - The Productivity Commission has an inquiry into regulatory, budgetary, consumer and competition matters relating to the nbn;
  - A Parliamentary Joint Committee considers the findings of that report; and

[225] Department of Social Services, 2019, Thin Markets Project, https://engage.dss.gov.au/ndis-thin-markets-project/

[226] Transport and Infrastructure Council, National Rail Vision and Work Program, https://www.transportinfrastructurecouncil.gov.au/sites/default/files/National_rail_vision_and_work_program.pdf

[227] Victoria Premier, 25th February 2016, Major Breakthrough On Lease Of The Port Of Melbourne, Media release, https://www.premier.vic.gov.au/major-breakthrough-on-lease-of-the-port-of-melbourne/

[228] AEMO, November 2018, Review of Independent System Operator Role in North West Interconnected System, https://www.wa.gov.au/sites/default/files/2019-08/AEMO-Review-of-ISO-NWIS-Final-Report.pdf

- the Minister for Finance makes a disallowable declaration that conditions are suitable to sell nbn.[229]

Local Government Area perspective

- The vast majority of regional airports are owned by local councils, many of which struggle to finance ongoing maintenance.[230] The Australian Government announced the Regional Airports Program Grant to help local councils repair and maintain regional airports. The total funding summed to approximately $41 million in Federal funding.[231] A lack of evidence suggests regional airports across Australia are being targeted for divestment, rather they are being funded through reoccurring grants program.

Implications for the 2021 Australian Infrastructure Plan

There has been good progress against this recommendation. If the concept of asset divestment is to feature in the 2021 Australian Infrastructure Plan, it may be appropriate to target specific examples where divestment might be possible and the underlying rationale for it. It is noted that decisions on asset divestment can be politicised.

[229] Australian Department of Infrastructure, Transport, Regional Development and Communications, nbn legislative framework, https://www.communications.gov.au/what-we-do/internet/national-broadband-network/nbn-legislative-framework

[230] Australian Government, Department of Infrastructure, Transport, Regional Development and Communications, Regional Airports Program Grants, March 2020, Regional aviation policy Issues Paper

[231] Australian Government, Department of Infrastructure, Transport, Regional Development and Communications, Regional Airports Program Grants – Round 1 funding details

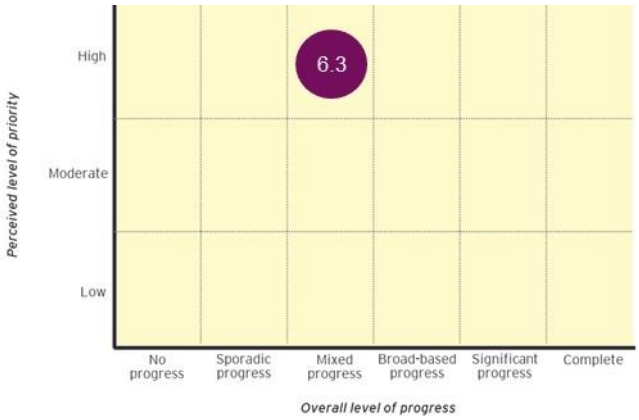
6.3 Infrastructure community service obligations should be well-defined, transparently disclosed to the community, paid for by taxpayers rather than other users and, wherever possible, exposed to a competitive process to ensure services are routinely delivered at the right level, for an efficient price.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: High

Rationale from 2016 Plan

Currently most community service obligations (CSO) are hidden or their funding is determined without clear and transparent objectives which can result in poor service outcomes. CSOs can be either a regulatory obligation from government and/or a service provided by a private party in which governments pay for the service to be provided.



Approach to assessment

On mass it is difficult to make a judgement as to whether governments are seeking to: define individual CSOs; disclose the cost and funding source of CSOs; ensure that CSOs are paid for by taxpayers and are not cross-subsidised; and expose the delivery of CSO outcomes to a competitive process. Research was conducted to identify whether any mass movements toward defining CSOs have been undertaken.

Evidence-based assessment

There is limited evidence to suggest that wholesale change towards the treatment of CSOs has taken place. In 1997 the Productivity Commission released a paper to report on government progress in implementing new approaches to CSOs, but no such inquiry has been undertaken since. In particular the paper analysed whether there was better specification of the non-commercial objectives of Government Business Enterprises, whether the costs of CSOs were more transparent, and whether the inconsistencies in the national performance monitoring of Government Enterprise Businesses had been reduced. No such report has been developed in recent years. The most topical CSO is the Telecommunications Universal Service Obligation, and there are also many examples in the transport sector.

Telecommunications Universal Service Obligation

- The Telecommunication Universal Service Obligation (TUSO) is documented and defined on the Federal Department of Infrastructure, Transport, Regional Development and Communications, with related services benchmarked within the Telecommunications (Consumer Protection and Services Standards) Act 1999.[232] By nature of the telecommunications industry in Australia, there is competition amongst retail service providers (but to a lesser extent amongst telecommunication infrastructure owners). Retail competition does contribute to ensure services are delivered at an efficient price.
- In 2017 the Productivity Commission completed a public inquiry into the Telecommunications Universal Service Obligation. The inquiry was largely orientated around the definition of the TUSO and whether it was still relevant given the changes in telecommunications technology. The Productivity Commission argues that the sizeable public investment in National Broadband Network infrastructure that will provide wide-spread services at capped prices should be the new minimum standard for universal service delivery. It was suggested that the transition to the newly

[232] Federal Department of Infrastructure, Transport, Regional Development and Communications, Universal Service Obligation, https://www.communications.gov.au/what-we-do/phone/phone-services/universal-service-obligation

proposed universal service framework would be complex and may be impeded by the "opaque contract with Telstra", and the surrounding legislative architecture.

- The Productivity Commission discusses how much funding should be granted to performing the CSO and who should pay, the contents of which aligns to the principles articulated within this recommendation.[233]
- The Australian Government has been progressing legislation to recover the cost of this CSO via a broad- based levy on service carriers and has flagged a move away from a similar structure to the TUSO opting for consideration of both voice and data telecommunications. Given the scale of the CSO, a cross-subsidy from users as well as taxpayers will be required.
- The Environment and Communications Legislation Committee presented the Telecommunications Legislation Amendments (Competition and Consumer) Bill 2019 and the Telecommunications (Regional Broadband Scheme) Charge Bill 2019 handed down the complementary Bills in February 2020. The Bills suggest that the NBN Co. is the new default fixed-line operator in Australia, and that a broadband tax on non-broadband operated fixed line services will be in place from 1st July 2020.[234]

Implications for the 2021 Australian Infrastructure Plan

While increased transparency and competition in the delivery of CSO's has not been uniform, some progress has been made. While full transparency and competition may in some cases be challenging, clearer attention should be given exposing the nature of CSOs, performance against them and opportunities for improved outcomes.

[233] Productivity Commission, June 2017, Telecommunications Universal Service Obligation, https://www.pc.gov.au/inquiries/completed/telecommunications#report

[234] The Senate, Environment and Communications Legislation Committee, Telecommunications Legislation Amendments (Competition and Consumer) Bill 2019 and the Telecommunications (Regional Broadband Scheme) Charge Bill 2019, https://parlinfo.aph.gov.au/parlInfo/download/committees/reportsen/024420/toc_pdf/TelecommunicationsLegislationAmendment(CompetitionandConsumer)Bill2019andtheTelecommunications(RegionalBroadbandScheme)ChargeBill2019.pdf;fileType=application%2Fpdf

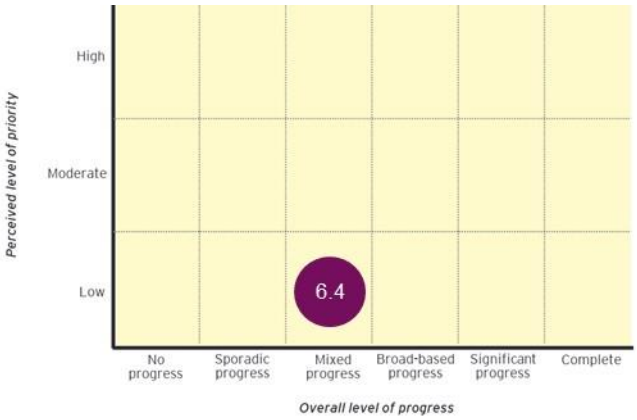
6.4 All governments should transfer their remaining publicly owned electricity generation, network and retail businesses to private ownership.

Entity(ies) responsible: State Government
Sectors subject to assessment: Energy
Australian Government response: Noted

Overall assessment of progress: Mixed progress
Perceived level of priority: Low

Rationale from 2016 Plan

It was thought at the time of writing the 2016 Australian Infrastructure Plan that public ownership of commercial businesses, including monopolies in well-regulated markets, distorts outcomes, stifles competition and harms consumers. Queensland, Western Australia, Tasmania and Northern Territory were encouraged to divest electricity network assets.



Approach to assessment

Desktop research of government publications and reports from energy regulatory bodies such as the Australian Energy Regulator informed an assessment of progress.

Evidence-based assessment

A high-level overview

A summary of public and private ownership is reported in the table below. Changes in ownership have occurred since 2016, however varied market structures and cost to service may support a different approach to encourage competition within the sector, as opposed to discrete privatisation.

Table 6: Energy ownership across jurisdictions

State	Generation	Transmission	Distribution	Retail
New South Wales	●	●	◐	●
Victoria	●	●	●	●
Queensland	◐	○	○	◐
Western Australia	○	○	○	◐
South Australia	●	●	●	●
Tasmania	○	○	○	◐*
Northern Territory	○	○	○	○
Australian Capital Territory	n/a	●	◐	◐

● Privatised ◐ Partially Privatised ○ Public

*Tasmania retail offers a competitive platform but is yet to be commercialised.

NB: The Australian Capital Territory's electricity network is a joint public and privately-owned entity

NB: In New South Wales, one electricity network is privately owned, two are 50.4 per cent privately owned and one is fully government owned.[235]

[235] Energy Networks Australia Guide to Australia's Energy Networks, https://www.energynetworks.com.au/resources/fact-sheets/guide-to-australias-energy-networks/

Recent notable examples

- In alternative direction, the New South Wales transferred its primary share (58%) of Snowy Hydro to the Commonwealth in order to invest the $4 billion received into rural and regional New South Wales in 2018.[236]
- Between 2016 and 2018 the New South Wales Government significantly divested energy market ownership through the part-privatisation of Endeavour Energy, Ausgrid and TransGrid.[237]

Implications for the 2021 Australian Infrastructure Plan

Outcomes suggest the take up of the concept of electricity privatisation has been taken up in the larger jurisdictions but not to the same extent in the smaller jurisdictions: Northern Territory, Tasmania, Western Australia and Queensland. Further exploration of the performance of competition in improving user outcomes would help to build support for this reform.

[236] Deputy Premier of NSW and Minister for Regional NSW, 2nd March 2018, Boon for the bush: Regional NSW to reap $4.154 billion in Snowy transaction, https://www.treasury.nsw.gov.au/sites/default/files/2018-03/20180302%20-%20Media%20Release%20-%20Berejiklian%2C%20Barilaro%20%26%20Perrottet%20-%20Boon%20for%20the%20Bush%20-%20Regional%20NSW%20to%20reap%20%244.154%20billion%20in%20Snowy%20transaction.pdf

[237] Parliament NSW, June 2017, Privatisation in NSW: a timeline and key sources, https://www.parliament.nsw.gov.au/researchpapers/Documents/Privatisation%20in%20NSW%20-%20a%20timeline%20and%20key%20sources.pdf

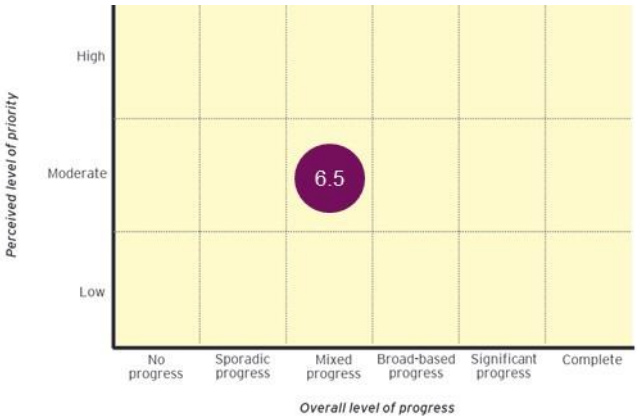
6.5 Governments, through the COAG Energy Council and the Australian Energy Market Commission, should introduce more flexible network tariffs in the near term.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Energy
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

More flexible tariff arrangements would benefit consumers and appropriately incentivise behaviour. Infrastructure spend could be reduced if tariffs appropriately influence consumption patterns so as to reduce demand during peak periods.



Approach to assessment

Desktop research was conducted to identify evidence of a shift to flexible tariffs (or cost reflective tariffs). Publications by bodies such as Energy Networks Australia and COAG Energy Council were reviewed.

Evidence-based assessment

Mixed progress has been made in shifting towards flexible network tariffs. A rule change in 2014 combined with widespread agreement suggests progress may likely continue to be made in the future. However, there are technical and socio-economic nuances that need to be considered before implementing cost reflective tariffs in full. Some of the constraints of introducing cost reflective tariffs include:

- Ensuring cost reflective tariffs handed down by network businesses are passed on to consumers by retailers;
- Consideration going towards the socio-economic status of consumers that can maximise the benefits provided by cost reflective tariffs (i.e. those that are home during the day); and
- Technological barriers such as the uptake of smart meters.[238]

Evidence of progress is listed below.

- The Australian Energy Market Commission's Distribution network pricing arrangement rule change in 2014 mandated a progressive move towards cost reflective tariffs. Within the rule change there is a mandate for electricity network businesses to present a tariff structure statement articulating how progress is to be made toward cost reflective tariffs.[239] New South Wales, Queensland and South Australia have commenced implementation of cost reflective tariffs with multiple distributors submitting tariff structure statements moving towards greater cost reflectivity.[240]
- Energy Networks Australia (coming from a network business perspective only) has developed a handbook in support of the shift to cost reflective tariffs. The handbook outlines a pathway to tariff reform.[241]
- The Distributed Energy Integration Program (DEIP) is a collaboration of government agencies, market authorities, industry and consumer associations aimed at maximising the value of

[238] Australian Energy Market Commission, September 2019, Economic Regulatory Framework Review, https://www.aemc.gov.au/sites/default/files/2019-09/Final%20report%20-%20ENERFR%202019%20-%20EPR0068.PDF
[239] Australian Energy Market Commission, 2014, Distribution Network Pricing Arrangements, https://www.aemc.gov.au/rule-changes/distribution-network-pricing-arrangements
[240] Australian Energy Regulator, 2020, Determinations and Access Arrangements, https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements
[241] Energy Networks Australia, Electricity Network Tariff Reform Handbook, https://www.energynetworks.com.au/resources/fact-sheets/electricity-network-tariff-reform-handbook-at-a-glance/

customers' distributed energy resources. The DEIP released a report acknowledging that tariffs, regulatory frameworks and existing reforms need to evolve further to support the shift to a two-way system and the equitable integration of distributed energy resources. The report recommends a focus on accelerating the transition toward cost reflective pricing in a way that addresses broad community concerns.[242]

Implications for the 2021 Australian Infrastructure Plan

Broad based progress has been positive though not apparent in all jurisdictions. For this reason, it may be appropriate for the 2021 Australian Infrastructure Plan to continue to address this issue, particularly in light of rapid technological change in the energy sector and heightened consumer awareness about the consumption of electricity.

[242] Distributed Energy Integration Program, 2020, Access and Pricing Reform Package, https://arena.gov.au/assets/2020/07/deip-accesspricing-reform-package-outcomes.pdf

6.6 The Australian Energy Market Commission, in cooperation with governments, should develop electricity metering competition to facilitate the efficient, market-led rollout of smart metering technologies, taking into account positive and negative lessons from Victoria.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Energy
Australian Government response: Supported

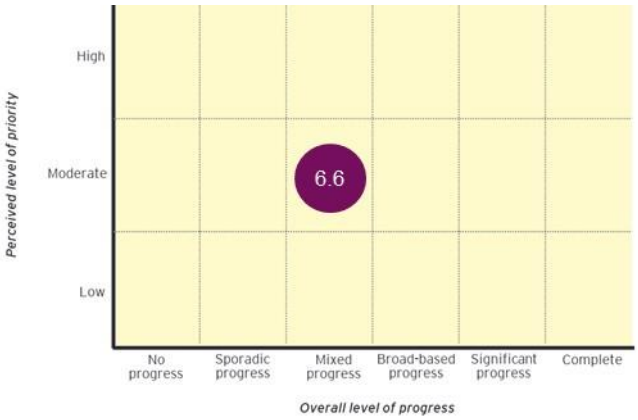
Overall assessment of progress: Mixed progress
Perceive level of priority: Moderate

Rationale from 2016 Plan

Smart metering technologies will support more flexible and efficient electricity tariff arrangements.

Approach to assessment

An investigation as to whether smart meters have been rolled out across jurisdictions was undertaken.



Evidence-based assessment

Smart metering technologies have been rolled out to every jurisdiction abiding by the National Electricity Rules and the National Electricity Retail Rules, however in some instances implementation of smart meters has been relatively slow due to technical and safety issues. Large scale roll out of residential consumer smart metering in Western Australia has not taken place.

- In late 2015, the Australian Energy Market Commission made a final rule that will open up competition in metering services and will give consumers more opportunities to access a wider range of services. The competitive framework is designed to promote innovation and lead to investment in advanced meters. The new rule arrangements commenced in December 2017. The final rule changes who has overall responsibility for the provision of metering services, which can now be performed by a new type of registered participant - a Metering Coordinator. Retailers are required to appoint a Metering Coordinator for their retail customers. Maintenance and the reading of smart and advanced meters has been made contestable.[243]
- Before this recommendation was made the Victorian Government rolled out Victoria's smart electricity meters to record electricity consumption on a periodic basis. The smart meters provide Victorian consumers options to use a flexible pricing plan by delivering higher costs for electricity usage when demand is high and vice versa.[244]
- As at August 2018, 9 months since the metering rules were changes, more than 500,000 smart meters had been installed across the national electricity market.[245] As of mid-2019, approximately 3.3 million smart meters were installed across the national electricity market. Safety and technical issues have impeded smart meter installation in some instances.[246]

Implications for the 2021 Australian Infrastructure Plan

The implementation of this recommendation is considered as partially complete. The focus of the 2021 Australian Infrastructure Plan should re-orientate focus on the barriers to implementation to ensure the goal of full implementation is met.

[243] Australian Energy Market Commission, November 2015, Expanding competition in metering and related services, https://www.aemc.gov.au/rule-changes/expanding-competition-in-metering-and-related-serv
[244] Victoria Government, Smart meters, Environment, Land, Water and Planning, https://www.energy.vic.gov.au/electricity/smart-meters
[245] Australian Energy Market Commission, 9 August 2018, 'Smart meter installations across the national electricity market update', https://www.aemc.gov.au/news-centre/media-releases/smart-meter-installations-across-national-electricity-market-update
[246] Smart Energy International, 28 June 2019, 'Falling behind Down Under', https://www.smart-energy.com/industry-sectors/smart-meters/falling-behind-down-under/

6.7 Australia's electricity and gas markets should move to full retail price deregulation as soon as practically possible.

Entity(ies) responsible: State Government
Sectors subject to assessment: Energy
Australian Government response: Supported

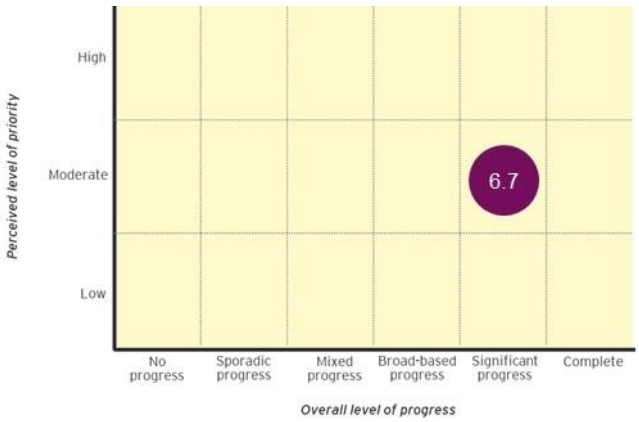
Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

This recommendation supported more efficient energy markets in all jurisdictions via the introduction of full retail price deregulation where effective competition exists.

Approach to assessment

Desktop research and consultation was conducted to identify recent moves in price controls by state governments to reflect a more competitive market.



Evidence-based assessment

This recommendation has largely been addressed; however, the development of a default market offering has introduced regulation to an otherwise fully deregulated National Electricity Market (bar Regional Queensland, Western Australia and the ACT). There are similar examples of regulation in the gas retail market.

Electricity

The introduction of retail competition commenced in most National Electricity Market regions in the early- to mid-2000s. Price controls were removed in 2009 (Victoria), 2013 (South Australia), 2014 (New South Wales), and 2016 (south east Queensland). According to the ACCC, the overall expectations of lower retail prices through an opening up of the electricity market to competition has not been upheld. Some of the key findings communicated in the ACCC's report into restoring electricity affordability include:

- **Lack of true market competition:** the retail landscape is concentrated. This is primarily the result of the way in which the customer databases of the publicly owned electricity providers were sold. These customer databases were largely acquired by AGL, Origin, and Energy Australia, which continue to hold by far the largest market shares today.
- **Economies of Scale:** the large customer databases purchased by retailers such as AGL, Origin and Energy Australia include inactive customers, who have rarely (if ever) changed retailers or deals. This has given larger energy retailers a stable and valuable revenue stream not available to new entrants and smaller retailers.
- **Lack of a transparent pricing comparisons:** the focus on discounts has become counter-productive, with consumers unable to effectively compare and rank offers. This leads to both inflated costs (because retailers 'compete' in inefficient ways to attract and retain customers), poor outcomes for individual consumers and an inability for smaller retailers to put significant competitive pressure on larger retailers when confusion prevails in the market. [247] As stated in the Victorian Energy Market report 2016-17, an electricity customer who looks online for a new electricity deal will typically find themselves facing a list of over 230 generally available offers. [248]
- The Australian Energy Regulator determined default market offer prices to lightly regulate the retail prices of electricity, effective 30 April 2019 following the ACCC's recommendations. The default market offer is a mechanism for determining a reference bill amount for each network distribution region, from which headline discounts offered by retailers can be calculated. In this

[247] ACCC, June 2018, Restoring electricity affordability and Australia's competitive advantage Retail Electricity Pricing Inquiry–Final Report, https://www.accc.gov.au/system/files/Retail%20Electricity%20Pricing%20Inquiry–Final%20Report%20June%202018_0.pdf

[248] Essential Services Commission, 2017, Victorian Energy Market Report, https://www.esc.vic.gov.au/sites/default/files/documents/victorian-energy-market-report-2016-17-20171121.pdf

sense, it is intended that the retail prices advertised would unlikely deviate too much from the default market offer.[249]

- Western Australia and regional Queensland do not have full retail price deregulation.

Gas

- As at 2017 residential retail gas prices across Australia were deregulated with the exception of New South Wales and Western Australia. The Western Australia's Government regulates gas prices to small users and under the Energy Coordination (Gas Tariffs) Regulations 2000, sets gas price caps each year.[250]
- In July 2017, the New South Wales Government deregulated retail gas prices. However, the Independent Pricing and Regulatory Tribunal was asked to forecast gas prices for two years to help customers and the Government benchmark retail prices movements.[251]

Implications for the 2021 Australian Infrastructure Plan

The implementation of this recommendation is considered largely complete and hence the concept of full retail price deregulation is not considered a high priority for the 2021 Australian Infrastructure Plan. There are numerous pockets of inactivity which may provide the bases for targeted recommendations in this space.

[249] Australian Energy Regulator, Retail electricity prices review – Determination of default market offer prices, 2018, https://www.aer.gov.au/retail-markets/retail-guidelines-reviews/retail-electricity-prices-review-determination-of-default-market-offer-prices

[250] Oakley Greenwood commissioned by COAG Energy Council – Gas Major Projects, 2018, Gas Price Trends Review 2017, https://www.energy.gov.au/sites/default/files/gas_price_trends_review_2017.pdf

[251] Resources and Energy NSW, 2017, Retail gas prices are deregulated, http://www.resourcesandenergy.nsw.gov.au/?a=580322

6.8 Governments and regulators should evaluate the likely impacts of emerging and disruptive technologies on the national electricity market and recommend specific reforms to address potential regulatory failure and technology disruption.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Energy
Australian Government response: Supported

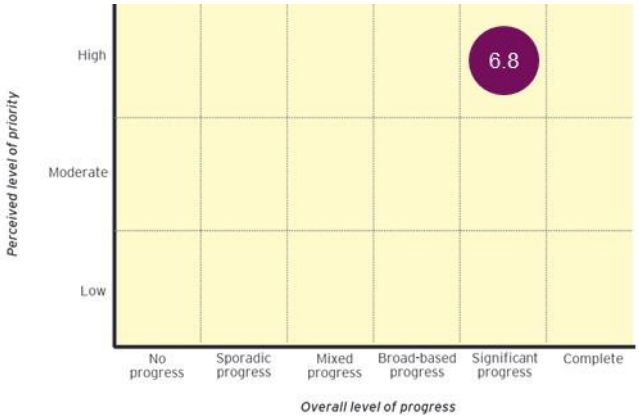
Overall assessment of progress: Significant progress
Perceived level of priority: High

Rationale from 2016 Plan

Evaluation of the impacts of technological disruption on the National Electricity Market will support government and business leaders guide the transition of an electricity market that creates community and business confidence.

Approach to assessment

Government initiatives responding to technological changes in the electricity market were sought to assess progress to date in addressing this recommendation.



Evidence-based assessment

There is a lot of movement in the electricity market as a result of disruptive technologies. The Australian Energy Market Commission has conducted a review of the impact on distributed energy resources and state that reforms to regulation are necessary. New technology has also resulted in:

- Numerous rule changes under the National Electricity Rules and National Electricity Retail Rules;
- Encouragement for jurisdictions to adopt new metering technology; and
- Investigations into flexible network tariffs.

Examples of responses by government and regulators are detailed below.

Strategic evaluations

- The Energy Securities Board released an issues paper on Post 2025 Market Design in late 2019 which contributes to the Strategic Energy Plan Outcomes. In identifying the potential design of the energy market in 2025, work is being completed to consider:
  - All aspects of the energy supply chain and all service procurement models;
  - Risk allocation, risk management and cost recovery arrangements;
  - Investment signals and the integration of physical and financial markets;
  - The impact and opportunities presented by related markets (i.e. fuel, hydrogen etc,); and
  - The roles of Governments.

  Australia's energy transition and implications for market design includes the integration of distributed energy resources, system security and reliance, and the integration of variable renewable energy into the power system.[252]
- The Australian Energy Market Commission (AEMC) undertook an economic regulatory framework review of integrating distributed energy resources (such as solar panels, battery storage and electric cars). Within the review the AEMC sets out a range of options to create more dynamic markets and manage the network challenges that are created by increasing penetration rates of

[252] COAG Energy Council and Energy Securities Board, September 2019, Post 2025 Market Design, http://www.coagenergycouncil.gov.au/sites/prod.energycouncil/files/publications/documents/EC%20-%20Post%202025%20Market%20Design%20Issues%20Paper%20-%2020190902_0.pdf

distributed energy resources.[253] The AEMC also undertook a review of the regulatory frameworks for stand-alone power systems.[254]

In April 2020, the three energy market bodies (the Australian Energy Regulator, Australian Energy Market Commission and the Australian Energy Market Operator) developed a regulatory work plan to ease regulatory pressure on the energy sector during the COVID-19 period while also protecting key reforms underway for energy consumers.[255]

Market related initiatives

- In late 2015 the Australian Energy Market Commission made a final rule that will open up competition in metering services and will give consumers more opportunities to access a wider range of services including new technologies and distributed energy resources. The new rule arrangements commenced in December 2017.[256]
- The Australian Renewable Energy Agency (ARENA) allocated $12.5 million in funding for pilot projects and studies to integrate distributed energy resources (i.e. behind the meter renewable and non-renewable generation, energy storage, electric vehicles and enabling technologies such as smart meters) into the electricity system. The objective of the project was to help demonstrate new ways to understand and manage the impact of high distributed energy resources penetration in different parts of the distribution network. [257]
- There is work being completed to improve the interoperability of power systems to improve productivity and reduce market failures that occur as a result of an inability for system components to 'communicate'. Interoperability will enable customers to individualise and optimise their energy services and support grid optimisation.[258]

Implications for the 2021 Australian Infrastructure Plan

The implementation of this recommendation is considered largely complete. However, the task of evaluating the impacts of emerging and disruptive technologies on the national energy market is most likely something that will continue to need consideration going forward as technologies and consumer behaviours and expectations continue to evolve. Hence this topic is considered a relatively high priority for the 2021 Australian Infrastructure Plan.

[253] Australian Energy Market Commission, September 2019, Economic Regulatory Framework Review, https://www.aemc.gov.au/sites/default/files/2019-09/Final%20report%20-%20ENERFR%202019%20-%20EPR0068.PDF

[254] Australian Energy Market Commission, October 2019, Review of the regulatory frameworks for stand-alone power systems, https://www.aemc.gov.au/market-reviews-advice/review-regulatory-frameworks-stand-alone-power-systems

[255] Australian Energy Regulator, May 2020, Joint market body prioritisation framework – COVID-19, https://www.aer.gov.au/publications/corporate-documents/joint-market-body-prioritisation-framework-covid-19

[256] Australian Energy Market Commission, November 2015, Expanding competition in metering and related services, https://www.aemc.gov.au/rule-changes/expanding-competition-in-metering-and-related-serv

[257] Australian Renewable Energy Agency, March 2018, https://arena.gov.au/funding/distributed-energy-resources/

[258] Australian Energy Market Operator, April 2019, Technical Integration of Distributed Energy Resources, https://www.aemo.com.au/-/media/Files/Electricity/NEM/DER/2019/Technical-Integration/Technical-Integration-of-DER-Report.pdf

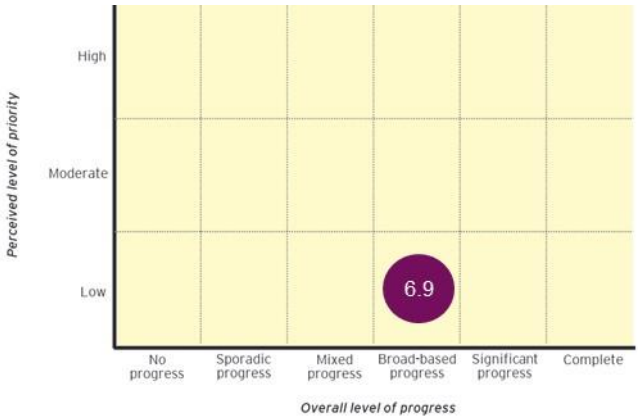
6.9 NBN Co should be privatised into an appropriately regulated market in the medium term.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Telecommunications
Australian Government response: Supported

Overall assessment of progress: Broad-based progress
Perceived level of priority: Low

Rationale from 2016 Plan

The Australian Government should commission a scoping study to assess the most appropriate approach, structure and timing to deliver a privatised NBN model. The scoping study must assess the most appropriate approach and structure for a privatised NBN and should include options to efficiently support delivery of NBN services in regional and remote areas that are non-commercial.



Approach to assessment

Desktop research was conducted to understand the types of initiatives the Australian Government, state governments or the NBN Co. have developed to privatise the government-owned corporation.

Evidence-based assessment

The Australian Government believes the NBN should be privatised once it has completely rolled out and operationalised the network. Pre-conditions to this privatisation are embedded in the legislative framework outlining what needs to occur before the sale takes place.

Requirements for the sale of the NBN include:

- The Communications Minister declaring that the NBN should be treated as built and fully operational;
- The Productivity Commission has an inquiry into regulatory, budgetary, consumer and competition matters relating to the NBN;
- A Parliamentary Joint Committee considers the findings of that report; and
- the Minister for Finance makes a disallowable declaration that conditions are suitable to sell NBN.[259]

Messaging from the Australian Government more recently (in the wake of recent bushfires and COVID-19) has suggested that there are other priorities that may pre-empt privatisation of the NBN. The Australian Government would like to the NBN Co. to continue its focus on delivering its business plan and driving take-up of services for the time being.[260]

Implications for the 2021 Australian Infrastructure Plan

While the act of privatising the NBN has not been carried out, the organisation has been set up with a legislative framework that results in privatisation once the network is complete. In this sense, the recommendation is complete, and the outcome simply depends on timing. The inclusion of this recommendation in the 2021 Australian Infrastructure Plan is not considered a high priority.

[259] Australian Department of Infrastructure, Transport, Regional Development and Communications, nbn legislative framework, https://www.communications.gov.au/what-we-do/internet/national-broadband-network/nbn-legislative-framework
[260] Minister for Communications, Cyber Safety and the Arts, 6 April 2020, Speech to the CommsDay Summit, https://www.paulfletcher.com.au/portfolio-speeches/speech-to-the-commsday-summit

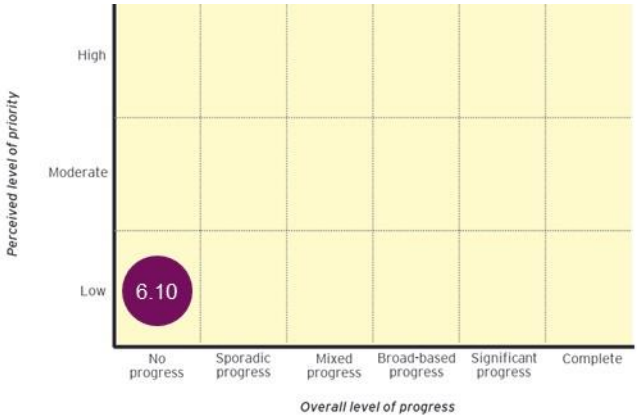
6.10 Governments should define a pathway to transfer state-owned metropolitan water utility businesses to private ownership to deliver more cost-effective, customer-responsive services.

Entity(ies) responsible: State Government
Sectors subject to assessment: Water
Australian Government response: Noted

Overall assessment of progress: No progress
Perceived level of priority: Low

Rationale from 2016 Plan

Privatised water utility providers will lead to more cost effective and customer responsive services in light of growing metropolitan populations and the cost of consumer water bills. Further to the above, it was recommended that a pathway should be set to implement policy and institutional reforms to promote competitive neutrality in advance of privatisation, including full cost recovery pricing and commercial rates of return on capital.



Approach to assessment

Evidence of privatisations or reforms in urban water sector was sought as a means to identify evidence of progress against this recommendation.

Evidence-based assessment

Little to no progress has been made in the way of privatising metropolitan water utility businesses.

- There are no examples of privatising any metropolitan water utility businesses within Australia. There are however some smaller-scale examples of defined water activities being developed under public private partnership models. For example, the Victorian desalination plant and Western Australia's Mundaring wastewater treatment plant. The Victorian Government has also sold off its share of Snowy-Hydro.[261]
- Infrastructure Australia's Reforming Urban Water paper further outlined the case to reform metropolitan water utility businesses. The paper benchmarked the progress in urban water reform across jurisdictions. Pertinent to this recommendation are suggested reforms around cost recovery, price regulation and reforms supporting competitive neutrality.[262]
- Many metropolitan water utility businesses are required to employ corporate models in that a function of the entity is to provide services for profit. For example, the Water Corporation in Western Australia, under the Water Corporations Act 1995, is charged with acting 'in accordance with prudent commercial principles' and to 'endeavour to make a profit'.[263]

Implications for the 2021 Australian Infrastructure Plan

The track record on this recommendation suggests that there are challenges (or perhaps a reluctance by governments) with the privatisation of state-owned water assets. If the topic is to be broached in the 2021 Australian Infrastructure Plan, a more targeted or phased recommendation may facilitate ownership reform or encourage the outsourcing of various water and wastewater services to the private sector while retaining asset ownership with the state.

[261] Victorian Government, 29 June 2018, https://www.premier.vic.gov.au/victoria-finalises-snowy-hydro-sale-with-commonwealth/
[262] Infrastructure Australia, December 2017, Reforming Urban Water, https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/reforming_urban_water_web_version.pdf
[263] Western Australian Government, Water Corporations Act 1995, https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc_29466.pdf/$FILE/Water%20Corporations%20Act%201995%20-%20%5B04-d0-03%5D.pdf?OpenElement

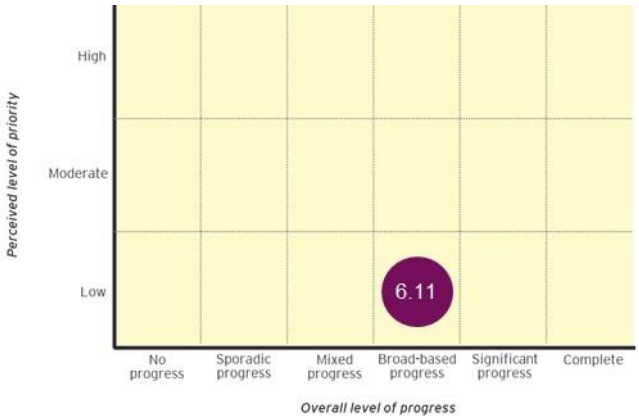
6.11 The Murray-Darling Basin Authority should undertake a comprehensive investigation into issues inhibiting the efficient functioning of water markets in the Murray-Darling Basin including information and transparency, trade processing times and register compatibility.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Water
Australian Government response: Supported in-principle

Overall assessment of progress: Broad-based progress
Perceived level of priority: Low

Rationale from 2016 Plan

Efficient and effective water markets in the Murray-Darling Basin would create benefits to water users. A comprehensive investigation will highlight the limiting factors for efficient water markets to be achieved.



Approach to assessment

Desktop research was conducted to identify whether an investigation has taken place and the findings of such investigation. An Australian Competition and Consumer Commission (ACCC) inquiry (2019) and a report on the analysis of efficiency measures in the Murray-Darling Basin were reviewed.

Evidence-based assessment

Since 2016 there has been substantial work commissioned to identify issues inhibiting the efficient functioning of water markets in the Murray-Darling Basin. A sample of the work performed is detailed below, providing evidence of progress against this recommendation.

- In 2018, the Department of Agriculture and Water Resources commissioned EY to analyse efficiency measures in the Murray-Darling Basin relevant to the delivery of 450GL of additional water by 2024. Looking forward (as at the time of writing) it was said that uncertainty surrounded the management of environmental water including State watering plans and that the management of constraints was also impacting stakeholders. The report recommended that there be greater focus on centrally collecting information and data specifically relating to water efficiency measures to support effective water allocation and a functioning market.[264]
- In late 2018, the Productivity Commission completed its five-yearly review of the Murray-Darling Basin Plan (which includes new management arrangements such as water trading rules to be in place by July 2019). The Productivity Commission inquiry suggested that new management arrangements have been established for several elements. This included new requirements to improve water market information and market confidence which are in place. The Basin Plan trading rules also include a mechanism to validate or remove restrictions on trade. At the time of writing the mechanism had not yet been extensively applied, but that it had the potential to improve the efficiency of water markets. The inquiry suggested that as at late 2018 there were other elements with a significant amount of work still to occur.[265]
- In August 2019, the Government announced that it would direct the ACCC to conduct an inquiry into markets for tradeable water rights in the Murray-Darling Basin. The ACCC was asked to recommend options to enhance markets for tradeable water rights, including options to enhance operations, transparency, regulation, competitiveness and efficiency. The ACCC is expected to

[264] Ernst and Young, 2018, 'Analysis of efficiency measures in the Murray-Darling Basin', https://www.mdba.gov.au/sites/default/files/Analysis-of-Efficiency-Measures-Final-Report-v2.pdf
[265] Productivity Commission, December 2018, Murray-Darling Basin Plan: Five Year assessment – Productivity Commission Inquiry Report, https://www.pc.gov.au/inquiries/completed/basin-plan/report/basin-plan.pdf

provide a final report on the inquiry by 26 February 2021. An issues paper was released for public comment and public forums have been held to seek views.[266]

Implications for the 2021 Australian Infrastructure Plan

Much progress in terms of activating reviews and investigations has taken place for this recommendation. Issues surrounding the allocation of water markets within the Murray-Darling Basin appear to be more market driven than infrastructure driven. For both these reasons, there may not be much to be gained from continuing to push the need for ongoing investigations by Infrastructure Australia in its 2021 Australian Infrastructure Plan.

[266] Australian Competition & Consumer Commission, 2020, Murray-Darling Basin water markets inquiry, https://www.accc.gov.au/focus-areas/inquiries-ongoing/murray-darling-basin-water-markets-inquiry

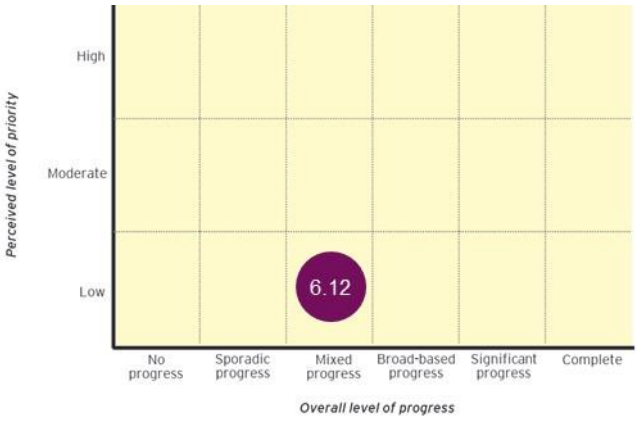
6.12 The Australian Government should work with state and territory governments to establish an independent national body to deliver a National Water Reform Plan and drive market reforms across the metropolitan and regional water sectors.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Water
Australian Government response: Not supported

Overall assessment of progress: Mixed progress
Perceived level of priority: Low

Rationale from 2016 Plan

The establishment of corporatised metropolitan water and competitive productive water market structures though the National Water Initiative (NWI) has improved the use of metropolitan and productive water, but it was the view of Infrastructure Australia that a renewed national effort is still required to complete water reforms. In the name of efficient and effective water markets, Infrastructure Australia recommended that a national water reform agenda be developed by a national body.



Approach to assessment

Desktop research was conducted to ascertain progress against this recommendation.

Evidence-based assessment

The Australian Government did not support this recommendation as documented in its response to the 2016 Australian Infrastructure Plan.[267] There has been no national body established to champion national water reforms, however future inquiries are planned to revisit progress of the NWI in 2020 and 2023. The National Water Grid Authority may also expand in its mandate. Findings from our research include:

- Infrastructure Australia's 2017 research paper 'Reforming Urban Water' outlined the case for reform and proposed a national pathway for reform. The reform paper took stock of progress made to date in reforming metropolitan and regional urban water sectors, but the absence of a national body to drive reforms was reiterated as progress on this had not been made. [268]
- The Productivity Commission conducted a public inquiry into the reform of Australia's water resources sector and delivered a final report in May 2018. The Productivity Commission was required to:
  - Assess the outcomes of the NWI and related water reform efforts;
  - Consider the potential and realised benefits of NWI implementation;
  - Consider the scope for improving the NWI; and
  - Make recommendations on the future reform priorities.
- The National Water Reform Inquiry report developed by the Productivity Commission stated the NWI remains nationally relevant and the principles it contains are sound. A judgment was passed that suggested there had been good progress by states and territories in implementing the NWI but there remains further work to do.

[267] Department of Infrastructure, Transport, Cities and Regional Development, November 2016, The Australian Government's Response to Infrastructure Australia's Australian Infrastructure Plan, https://www.infrastructure.gov.au/infrastructure/publications/files/Australian-Government-Response-to-Australian-Infrastructure-Plan_Nov-2016.pdf

[268] Infrastructure Australia, December 2017, 'Reforming Urban Water', https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/reforming_urban_water_web_version.pdf

- The National Water Reform Inquiry suggested that governments needed to complete unfinished business from the NWI and respond to challenges posed by population growth, climate change and changing community expectations.[269]
- A second National Water Reform Inquiry is currently underway and looks into the progress of all Australian governments in achieving the objectives, outcomes and timelines of reform directions proposed in 2004 under the National Water Initiative.[270]
- The Department of Infrastructure, Transport, Regional Development and Communications and Australian Government established the National Water Grid Authority whose objectives are to:
  - Develop, in partnership with state and territory governments, a national framework for investment in water infrastructure to identify a pipeline of priority water infrastructure projects;
  - Use world best science to determine where and how Australia's water resources can be sustainably developed to increase security and reliability of supply; and
  - Deliver the Government's $3.5 billion commitment to identify and build new water infrastructure through the National Water Infrastructure Development Fund.[271]

Implications for the 2021 Australian Infrastructure Plan

It may be prudent for Infrastructure Australia to focus on the relationship between Commonwealth, state and territory and local water policy, planning, delivery and operational agencies.

[269] Productivity Commission, May 2018, National Water Reform, https://www.pc.gov.au/inquiries/completed/water-reform#report

[270] Productivity Commission, July 2020, National Water Reform, https://www.pc.gov.au/inquiries/current/water-reform-2020#issues

[271] National Water Grid Authority, https://www.nationalwatergrid.gov.au/about

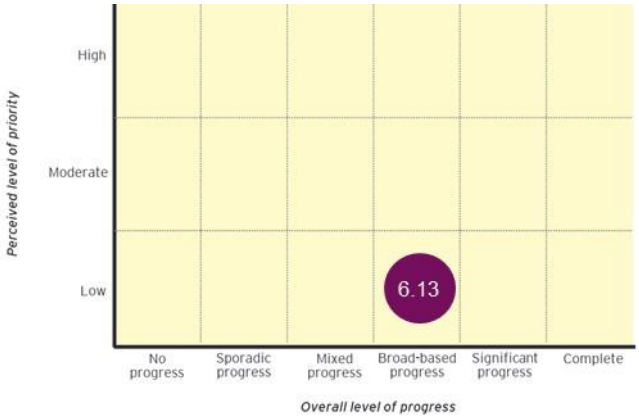
6.13 Australia should seek to transition the revenue and funding framework for roads to be consistent with other utility networks by establishing a corporatised delivery model.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Transport
Australian Government response: Noted

Overall assessment of progress: Broad-based progress
Perceived level of priority: Low

Rationale from 2016 Plan

As part of the broader public inquiry into road funding reform, the Australian Government should direct a body like Infrastructure Australia or the Productivity Commission to research the merits of a corporatised model for Australia's road network. This would enable a clearer link between road-usage and road funding.



Approach to assessment

Research was also conducted to understand what steps, if any, had been taken in investigating a corporatised road delivery model.

Evidence-based assessment

There is evidence to suggest there is active progress on this recommend, albeit tangible action is likely to be somewhat dependent on the outcomes of the National Heavy Vehicle Charging Pilot. Post this trial there is likely to be consideration as to the potential governance arrangements and models that could be applied in shifting towards a corporatised delivery model for Australia's road transport network.

- Road user charges are being trialled on a per kilometre basis as part of the National Heavy Vehicle Charging Pilot. The Government has stated that it is too early express a view on how a corporatised delivery model would apply to light vehicles. The Government appears intent to wait until the trial is completed and investigations into the feasibility of corporatised models are undertaken before forming a view as to possible next steps[272]
- In 2019, Infrastructure Australia released a paper as part of a Working Group Report under the International Transport Forum, outlining a corporatised delivery model for the Australian road network. The paper argues for a shift towards a corporatised approach to road governance and a gradual transition to the use of a regulated asset base. Under this approach, public road agencies are transformed to state-owned road corporations as a first step, implying a change in governance.[273]

Implications for the 2021 Australian Infrastructure Plan

There has been, and still is, a fair degree of activity in this space and hence it may be prudent for the 2021 Australian Infrastructure Plan to revisit the topic so as to encourage the continuation of momentum toward the objective of corporatised delivery models for roads.

[272] Department of Infrastructure, Transport, Regional Development and Communications, National Heavy Vehicle Charging Pilot, 2020, https://www.infrastructure.gov.au/roads/heavy/charging-trials/index.aspx
[273] International Transport Forum, 2019, A Corporatised Delivery Model for the Australian Road Network, https://www.itf-oecd.org/sites/default/files/docs/corporatised-delivery-model-australian-road.pdf

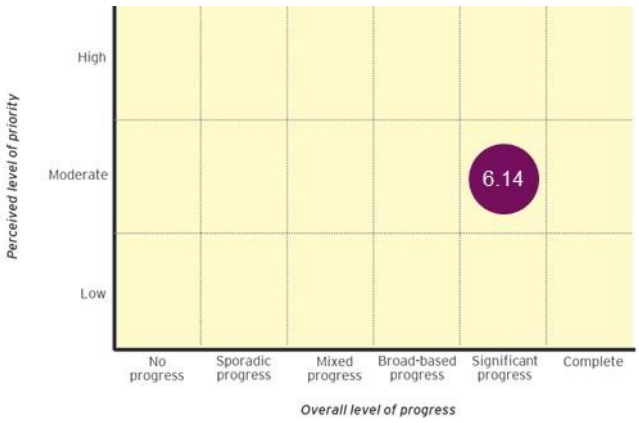
6.14 Governments should adopt a default option of exposing public transport services to contestable supply through franchising.

Entity(ies) responsible: Federal and State
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

With the expected increase in population of our four largest cities to be close to 50% by 2031, effective and efficient public transport will be key to making these cities functional. Most public transport networks are currently government-owned and operated, with relatively low recovery of operating costs (20-25%). Therefore, the future of operations of bus and rail networks across the country needs to be consider options to lower the cost provision while improving the quality of services.



Approach to assessment

We undertook desktop research and consultation to assess recent government activity in exposing public transport service to contestable supply.

Evidence-based assessment

There is a number of mature and well understood public transport franchising models in existence across Australia. These extend to trains, trams, ferries and bus services in multiple cities and regions. Since 2015, various new public transport operations have commenced operations under private management, including Sydney Light Rail, Sydney Metro and Canberra Metro. There is a broad move to increase contestability to support to improve customer service and value for money, including Adelaide light and heavy rail, Transport for Newcastle and STA bus contracts in New South Wales.

- Franchising has not been adopted within the **Australian Capital Territory**. The bus network is operated is government owned and operated. The Canberra light rail system is privately operated under a PPP model.
- **New South Wales:** 11 of the 14 bus regions in the Sydney metropolitan area are currently franchised, with the final 3 currently out to tender as at May 2020.[274]. Sydney's Light Rail network us currently privately operated by Transdev, who also operates a number of metropolitan and regional bus lines[275]. Sydney's extensive suburban rail network is currently operated by the government. However, the newly launched Sydney Metro Northwest is operated privately by the Metro Trains Sydney (MTS) franchise as part of a PPP concession. Similar to the Melbourne Metro consortia, MTS is made up of Hong Kong based MTR Corporation, John Holland Group and UGL Rail[276]. This contractual arrangement will be novated for the second stage, Sydney Metro City, South West. Finally, Sydney Ferries are also franchised.
- **Northern Territory:** Private operators run all bus services in Darwin after being franchised in 2014 via a tender process. Examples of private operators include BusLink and Territory Transit (Transit Systems).[277]
- **Queensland**: Ferry, tram and many bus services are currently franchised. RiverCat ferry services are currently franchised to SeaLink Travel Group (River City Ferries). Bus franchising is mixed, with some regional networks franchised (e.g. Gold Coast and Sunshine Coast), whereas the largest service provider in Brisbane is currently operated by the City of Brisbane itself (Transport

[274]Transport for NSW, https://www.transport.nsw.gov.au/news-and-events/media-releases/world-class-transport-operators-invited-to-register-for-bus-tenders
[275] TransDev Sydney, https://www.transdevsydney.com.au/about-us/company/
[276] MTS, https://www.ourmetro.com.au/about-us/
[277] Infrastructure Australia, 2019, Customer Focused Franchising, https://www.lek.com/sites/default/files/insights/pdf-attachments/On-The-Buses_Australian-Bus-Franchising_LEK_Feb2016%281%29.pdf

Brisbane). The Gold Coast tram network, G:Link, is currently operated under a public private arrangement by Keolis Downer. All rail services are currently operated by the government owned Queensland Rail.

- **Tasmania**: In Hobart, urban public transport services are operated by Metro Tasmania which is a government-owned business formed in 1998. Currently, there is no publicly available information or announcements on possible intent to franchise the State's public transport operational services.[278]
- **Victoria**: Much of metropolitan Melbourne and regional Victoria's public transport service are exposed to contestability through franchising. In late 2017, the Victorian Government extended major service franchise agreements with Metro Melbourne Trains and Yarra Trams.
- **South Australia**: Adelaide's metro bus services are currently franchised to a number of different private service operators. In March 2020, privately owned Torrens Transit took over the operations of Adelaide's tram line for an 8-year term[279]. Additionally, the South Australian Government called for Expressions of Interest for the operation of Adelaide Metro Train Services, with Keolis Downer selected to commence operations in 2021. This procurement process seeks to deliver better and more customer-focused outcomes.[280]
- **Western Australia**: Since 1995, the Public Transport Authority (PTA) has franchised most metropolitan and regional centre bus and ferry services. These franchise contracts continue to operate, with contracts being either tendered or rewarded to the market on a regular basis, e.g. SeaLink Travel Group in October 2019 for extensions to the Canning and Southern River bus contracts[281].

Implications for the 2021 Australian Infrastructure Plan

The inclusion of the concept of franchising in the 2021 Australian Infrastructure Plan is not considered a high priority given the current level of franchising activity in public transport networks across Australia.

[278] Tourism & Transport Forum Australia, 2016, On the Buses, https://www.lek.com/sites/default/files/insights/pdf-attachments/On-The-Buses_Australian-Bus-Franchising_LEK_Feb2016%281%29.pdf

[279] In Daily, https://indaily.com.au/news/local/2020/03/10/private-operators-named-for-adelaides-tram-network/

[280] Infrastructure Magazine, https://infrastructuremagazine.com.au/2019/11/04/sa-government-seeks-eois-for-adelaide-metro-operation/ ; Keolis Downer, 202, 'Keolis Downer to operate and maintain train passenger services in South Australia', Keolis Downer to operate and maintain train passenger services in South Australia - Keolis Downer

[281] Sealink Travel Group, https://www.sealinktravelgroup.com.au/news-media/2020/western-australian-bus-contracts-extended/

7 Sustainability and resilience

7. Sustainability and resilience

7.1 Australia's energy and transport sectors should deliver emissions reductions in line with international commitments.

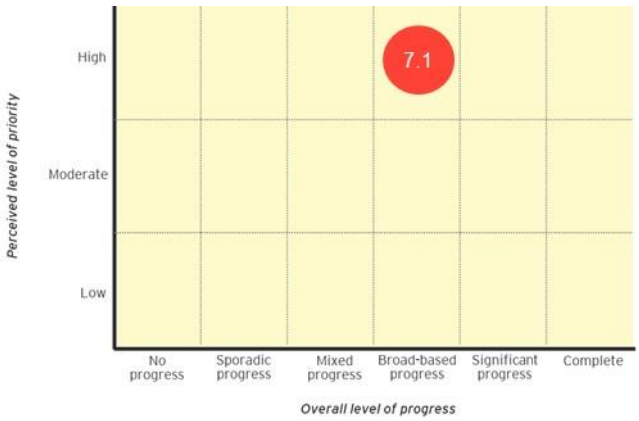
Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Energy and Transport
Australian Government response: Supported
Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

It was recommended that Australia improve in the viability of less emission-intensive forms of energy and transport infrastructure. Australia has two obligations for future emissions reductions under the Kyoto Protocol and the Paris Agreement.

Approach to assessment

A collection of data was gathered to track Australian progress on both obligations. An assessment as to the progress of each jurisdiction on these obligations was conducted.



Evidence-based assessment

Australia's emissions projections as at 2019 suggest that emissions caused by the electricity sector will continue to fall in line with Australia's international commitments. Countering this, emissions caused by transport have not fallen since 2016 and are expected to remain stagnant or rise slightly through to 2030. Further evidence detailed below suggests broad-based progress against this recommendation.

- Under the Kyoto Protocol, Australia is required to reduce greenhouse gas emissions 5% below 2000 levels by 2020. Australia is projected to overachieve on this objective according to the Department of Environment and Energy' report (2019); Australia's Emissions Projections.
- Australia's longer-term target is to achieve 26-28% below 2005 levels by 2030 (under the Paris Agreement). As per Australia's Emissions Projections 2019 Report, Australia is expected to miss its longer-term target. Australia's emissions projections as at 2019 projected to decline to 511 metric tonnes of carbon emissions in 2030 (16% below 2005 levels). The decline in recent years is reported to be a result from declines in the electricity sector as a result of rooftop solar and the inclusion of 50 per cent renewable energy targets in Victoria, Queensland and the Northern Territory.
- Electricity and transport contributed to 34% and 19% of Australia's emissions in 2019 respectively. Electricity emissions have been declining since 2016 as renewable energy has become a more significant player in the market, specifically rooftop solar.
- Road transport is the biggest contributor to transport emissions, with expectations being that emissions will continue rising until 2030 due to growing population demanding higher fuel consumption. This could potentially be offset slightly by expected improvements in engine efficiencies in passenger vehicles.[282]
- The Australian Government announced in October 2019, the Grid Reliability Fund to support clean energy projects that will be financed by Clean Energy Finance Corporation (CEFC). The aim of the

[282] Department of Environment and Energy, December 2019, Australia's emissions projections, https://publications.industry.gov.au/publications/climate-change/system/files/resources/4aa/australias-emissions-projections-2019-report.pdf

fund is to ensure Australia can meet it's 2030 Paris Agreement target and support projects relying on newer forms of energy generation. The CEFC will not invest in coal projects.[283]

- All state and territories have a net zero emissions target which is set to be achieved by 2050.
- The Infrastructure Sustainability Council of Australia (ISCA) continues to encourage sustainability within infrastructure design, construction and operations. The ISCA 2019 Impacts Report details the impact from all ISCA certified projects to December 2018. Infrastructure lifecycle impacts over the 2018 period included 2.2 million total avoided tonnes of carbon emissions.[284]

Implications for the 2021 Australian Infrastructure Plan

Progress against this recommendation appears reasonable with many governments acting and developing climate change plans. Technological developments also continue at a rapid pace thus helping cleaner forms of energy become increasingly more commercially viable. There is a need for the 2021 Australian Infrastructure Plan to address this recommendation for the purpose for ensuring progress towards lower emissions in the infrastructure is maintained. A change in the transport emissions trend is also required.

[283] Clean Energy Finance Corporation, October 2019, https://www.cefc.com.au/media/files/cefc-welcomes-announcement-of-1-billion-grid-reliability-fund/

[284] Infrastructure Sustainability Council of Australia, 2019 Impacts Report, https://isca.org.au/getmedia/01f3c635-4a9b-46d8-8b81-eb000a56218c/ISCA_2019Report_Digital_Final.aspx

7.2 Building on the Energy White Paper, governments should work with the private sector to develop a cohesive strategy for supporting a transition to a lower emissions electricity generation sector at lowest cost to users and taxpayers.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Energy
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Governments should work with the private sector to encourage innovation and growth in renewable and lower emissions technologies and other developments to reduce emissions. Further to the above, the recommendation advocates for the lessening of regulatory barriers to entry for decentralised energy sources.

Approach to assessment

Desktop research was conducted to identify whether a strategy existed, and any success that may have occurred as a result.

Evidence-based assessment

Since 2016, governments have worked to develop strategies to support the transition to a lower emissions electricity generation sector. State governments have moved to implement jurisdictional plans, with the federal government moving to implement policies that would support parts of the transition.

- In early 2018 the COAG Energy Council and Energy Security Board developed the final design of the National Energy Guarantee (the Guarantee) for consideration to Australian Government ministers. The Guarantee detailed how energy and emissions policies could work together to encourage new investment in both low emissions technologies and in dispatchable energy such that the electricity system achieves its share of emission reduction targets, operates reliably and lowers electricity prices. The Energy Security Board designed the Guarantee mechanism to be fuel and technology neutral and to provide investment signals so that the cheapest, cleanest and most reliable generation (or demand response) is built as appropriate.[285] However, this work was not executed by the Australian Government following leadership changes.
- State governments, including New South Wales and Victoria, have since moved to develop jurisdictional electricity strategies that would support private sector investment in the transition. While this looks to fill the absence of a cohesive national strategy, jurisdictional policy does not provide consistency at a national scale.
- The Australian Government's Technology Investment Roadmap and 2020 Low Emissions Technology Statement identify priority technologies and economic stretch goals to bring down cost and achieve commercial scale.[286] The policy includes funding for commercialisation and development that will support technological transitions. However, this focus on priority technologies does not provide a cohesive strategy to support a full transition of the electricity sector.

[285] COAG Energy Council and Energy Security Board, August 2018, National Energy Guarantee, http://coagenergycouncil.gov.au/sites/prod.energycouncil/files/publications/documents/Final%20Detailed%20Design%20-%20National%20Energy%20Guarantee.pdf

[286] Department of Industry, Science, Energy and Resources, September 2020, Technology Investment Roadmap: First Low Emissions Technology Statement 2020, https://www.industry.gov.au/data-and-publications/technology-investment-roadmap-first-low-emissions-technology-statement-2020

- The energy market bodies continue to focus on supporting the transition. The Energy Security Board will soon release advice on a long-term, fit-for-purpose market framework that could apply from the mid-2020's to deliver a secure, reliable and lower emissions electricity system at least-cost.[287]

Implications for the 2021 Australian Infrastructure Plan

As a strategy was developed but not implemented, it is recommended to remain in scope for the 2021 Australian Infrastructure Plan.

[287] COAG Energy Council, September 2020, Post 2025 Market Design Consultation Paper, http://www.coagenergycouncil.gov.au/energy-security-board/post-2025

7.3 Australia's light and heavy vehicles should keep pace with global best practice efficiency and emissions standards.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Sporadic progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

The Australian Government should enforce standards to ensure companies inform consumers on vehicle efficiencies and emissions. As most of Australian light and heavy vehicles are imported, standards for Australian light vehicles reflect European standards and heavy vehicles must meet European, US or Japanese equivalent standards.

Approach to assessment

Recent comparable emissions data was used in assessing progress. Australia currently uses the European method for on-road emissions performance, and as such the appropriate comparison to measure Australian emissions is against European emission levels.

Various Australian and State Government publications and documented initiatives encouraging consumers to reduce their carbon footprint were reviewed.

Evidence-based assessment

Work is being completed to address this recommendation however as at 2018, Australian light vehicles were not keeping pace with emission benchmarks overseas. As per Australia's Emissions Projections 2019 Report, emissions caused by transport have not fallen since 2016 and are expected to remain stagnant or rise slightly through to 2030.[288] Australia is one of few countries globally without an emission standard for liquid fuel.

Evidence supporting this conclusion is as follows.

- In 2018, the National Transport Commission produced a report examining emission intensity from new Australian light vehicles. It was found that Australian light vehicle emissions are higher than in Europe, and that a likely contributor is the existence of fewer government incentives for lower emissions vehicles. In Europe, incentives include: low diesel taxes compared to petrol taxes to encourage consumers to purchase (lower running cost) diesel vehicles, cash incentives for consumers to buy low carbon dioxide vehicles and regulation on carbon dioxide emissions from motor vehicles to hold manufacturers accountable for emission targets.[289]
- The State of Electric Vehicles 2019 report details the policies implemented by each state and territory to encourage the uptake of electric vehicles. In summary:
  - Half of the state and territory governments have a government fleet target: ACT, NSW, QLD and SA;
  - Two state governments have plans to procure electric buses for public transport (NSW and SA);
  - Most state and territory governments have committed some funding to public charging infrastructure (bar NT and WA); and

[288] Department of Environment and Energy, December 2019, Australia's emissions projections, https://publications.industry.gov.au/publications/climate-change/system/files/resources/4aa/australias-emissions-projections-2019-report.pdf

[289] National Transport Commission, June 2019, Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2018, https://www.ntc.gov.au/sites/default/files/assets/files/Carbon%20dioxide%20emissions%20intensity%20for%20new%20Australian%20light%20vehicles%20%282018%29.pdf

- Only the ACT has electric vehicle readiness requirements for new buildings and precinct developments.[290]

- Australia is currently developing the National Electric Vehicle Strategy, which is intended to support the transition to electric vehicle technology. The Strategy will be supported by the Australian Renewable Energy Agency and the Clean Energy Finance Corporation. [291]
- In October 2018, Infrastructure Victoria published specific advice on what infrastructure is required to support zero emissions vehicles, on request by the Victorian Government. This work was supported by extensive vehicle emissions modelling of automated and zero emissions vehicles.[292]

Implications for the 2021 Australian Infrastructure Plan

Consumer behaviour in Australia does not appear to be matching that of other nations where consumers are observed as increasingly moving away from high emissions vehicles. Further direction on this recommendation for the 2021 Australian Infrastructure Plan may do best to focus on consumer choice and behaviour and the possible role of incentives to encourage lower levels of vehicle emissions. Direct investment into supporting infrastructure to further encourage uptake of low emissions vehicles may also need to be considered in the 2021 Australian Infrastructure Plan.

[290] Electric Vehicle Council, August 2019, State of Electric Vehicles, https://electricvehiclecouncil.com.au/wp-content/uploads/2019/09/State-of-EVs-in-Australia-2019.pdf
[291] Department of the Environment and Energy, 2019, A National Strategy for Electric Vehicles, https://publications.industry.gov.au/publications/climate-change/system/files/resources/447/national-strategy-electric-vehicles.pdf
[292] Infrastructure Victoria, October 2018, Advice on Automated and Zero Emissions Vehicles Infrastructure, https://www.infrastructurevictoria.com.au/project/automated-and-zero-emission-vehicle-infrastructure/;

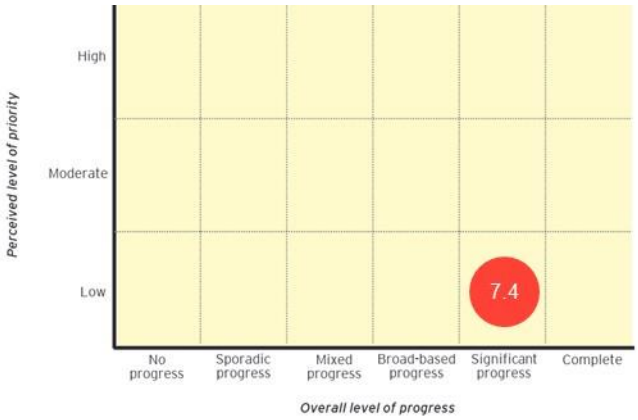
7.4 Where this has not already begun, state, territory and local governments should demonstrate integration of active transport strategies through transport and land-use planning.

Entity(ies) responsible: State and Local Government
Sectors subject to assessment: Transport
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: Low

Rationale from 2016 Plan

Active transport provides benefits such as the reduction of carbon emissions, health care costs and traffic congestion. In cities like Melbourne and Sydney where congestion costs are high and population is growing faster than the national average, active transport strategies have been implemented to better utilise spaces.



Approach to assessment

An assessment as to progress towards the integration of active transport strategies was guided by a scan of existing transport and land-use planning documentation for capital and regional cities.

Evidence-based assessment

At the capital city level, active transport is integrated into transport and land-use planning to varying degrees. There are some plans that have strong integration between planning and active transport, and there are some plans that do not mention active transport and rather focus on public transport, demonstrating mixed progress.

At the local government level, there has been a number of examples introducing active transport into transport and land use planning.

- As per Recommendation 2.8, there are many long-term land-use plans for Australian capital cities. These include:
  - A Metropolis of Three Cities for Sydney
  - Plan Melbourne
  - State Planning Strategy 2050 for Perth
  - Territory Plan (2020 Update) for Canberra
  - Darwin Regional Land Use Plan 2015
  - Southern Tasmania Regional Land Use Strategy 2010–2035 for Hobart
  - 30-year Plan for Greater Adelaide
  - Brisbane City Plan 2014.
- The long-term land-use plans listed above often integrated transport and planning with examples of active transport, but not all. Examples in which there has been strong integration between land-use and active transport activities include the City of Melbourne's Transport Strategy and Perth and Peel @3.5 million.
- In **Victoria**, the City of Melbourne introduced its Transport Strategy 2030 in which it details the implementation of active transport and the benefits to the larger community. A rising issue is that people living in areas poorly serviced by public transport or without active transport options typically have lower incomes and are spending a higher proportion of their incomes on cars and transport.[293]

[293] City of Melbourne, 2020, Transport Strategy 2030, https://www.melbourne.vic.gov.au/SiteCollectionDocuments/transport-strategy-2030-city-of-melbourne.pdf

- In **Western Australia**, Transport WA announced the Perth and Peel@3.5 million strategy in March 2018, addressing active transport plans such as the 2050 Cycling and Walking Network. This network plan proposes significant enhancements to existing and new active transport infrastructure include:
  - An extension to the current 172 km of metropolitan off-road commuter cycle paths to over 850 km; and
  - New active transport bridges; Three Points Bridge, connecting Chidley Point, Point Walter and Point Resolution; three bridges crossing the Swan River between Heirisson Island and Maylands; and three bridges over the Canning River between Salter Point and Waterford. [294]

Local government examples

- Prior to 2016, the City of Newcastle (Newcastle Transport Strategy 2014), City of Wollongong (Bike Plan and Pedestrian Plan), City of Gold Coast (Gold Coast City Transport Strategy 2031), City of Bunbury (Local Planning Strategy – Integrated Transport Study) and the City of Greater Geelong (Integrated Comprehensive Transport Plan 2015) all had a number of policy activities dedicated to active transport, some of which integrated with existing transport and land-use strategies.[295]
- Since 2016:
  - The Sunshine Coast Council has developed an Integrated Transport Strategy in which active transport has a strong presence.
  - The City of Wagga Wagga has developed an Integrated Transport Strategy 2040 of which active travel forms a key stream of strategic planning.
  - Cycling and the walking and pedestrian networks form a key part of the Ballarat Integrated Transport Plan.
  - The City of Port Phillip is currently developing Future Streets: An Integrated Transport Strategy. Safe, connected and convenient active transport options is a key success factor currently being drafted into the plan.
  - The Active Transport Action Plan was developed by the City of Ipswich as part of a suite of transport strategies developed and branded as iGo.

Implications for the 2021 Australian Infrastructure Plan

The concept of active transport appears to be well-embedded into transport and land use plans. There does not appear to be an overarching need for the 2021 Australian Infrastructure Plan to address this recommendation other than for the purpose for encouraging continued progress towards the development of active transport integration strategies.

[294] Department of Transport, Public Transport Authority, March 2018, Perth and Peel@3.5million, The Transport Network, https://www.transport.wa.gov.au/mediaFiles/projects/PROJ_P_Perth_Peel_3.5million_TransportNetwork.pdf
[295] Various local government websites

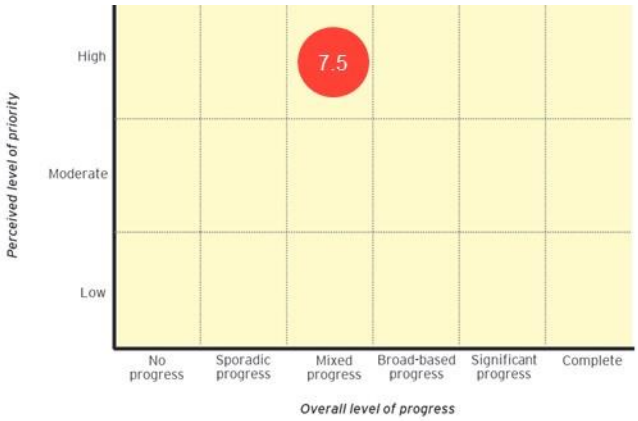
7.5 Infrastructure owners and operators should develop and maintain strategies to improve the resilience of infrastructure and minimise the costs of mitigating risks by considering resilience within whole-of-life cost projections

Entity(ies) responsible: State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: High

Rationale from 2016 Plan

The costs of managing risks should reflect consumer preferences, balancing pricing and reliability considerations. Resilient infrastructure can mitigate the costs of mitigating risks.



Approach to assessment

The concept of purposefully building and maintaining resilient infrastructure was researched throughout strategic asset management frameworks and amongst state and local governments. The Resilient Sydney strategy by City of Sydney is an example that reflects progress against this recommendation. Similar examples were sought to ascertain how widespread the concept of resilient infrastructure is.

Evidence-based assessment

There is an absence of evidence to suggest significant progress has been made against this recommendation however the recent bushfires have increased resilience as a focus area. The majority of the current conversation surrounding resilience concerns environmental and sustainability factors that could impact infrastructure and communities, rather than building resilient principles within the design, operation and maintenance of infrastructure. Investigation of respective strategic asset management frameworks uncovered a similar finding.

- Resilient Sydney is a strategy for city resilience, documenting five directions and 35 actions to be achieved over five years. In 2015, Sydney won a place in the 100 Resilient Cities initiative developed by the Rockefeller Foundation to help cities become more resilient to physical, social and economic challenges. Actions within the strategy are centred around people, climate, social cohesion, emergency response and governance. There are elements of embedding resilience in infrastructure within the strategy.[296]
- Resilient Melbourne is also part of the 100 Resilient Cities initiative. The Resilient Melbourne Strategy attempts to develop initiatives to reduce exposure to future shocks, improve community resilience to emergencies, improve quality of life and building resilience into thinking within institutions and ways of working. Again, there are elements of infrastructure resilience within the strategy but is not an overarching focus.[297]
- Strategic asset management frameworks and equivalents across all jurisdictions were searched to find any reference to resilient infrastructure. Queensland, Victoria and Western Australia's strategic asset management frameworks do not refer to resilient infrastructure or the need to consider resilience.

[296] City of Sydney, 2018, Resilient Sydney, https://www.cityofsydney.nsw.gov.au/vision/sustainable-sydney-2030/resilient-sydney#page-element-dload
[297] City of Melbourne, 2016, Resilient Melbourne Strategy, https://resilientmelbourne.com.au/strategy/

- New South Wales' asset management policy expects agencies' asset management plans to contain an assessment of the resilience and vulnerability of the assets to the impacts of climate change, natural disasters and human-related threats.[298]
- South Australia's strategic asset management framework encourages contingency planning for infrastructure to include resilience analysis, however the concept of resilience seems limited to risk management rather than a strong focus on embedding resilience into infrastructure planning.[299]
- There is an absence of evidence to suggest that a specific project or policy is looking to address infrastructure resilience in Tasmania, however as a concept it is embedded in the Tasmanian Draft Infrastructure Strategy. [300]
- Infrastructure Western Australia's State Infrastructure Strategy Discussion Paper contemplates the importance of resilience at the early stages of planning and design of infrastructure. Resilience is said to be an area of focus moving forward.[301]
- Critical infrastructure resilience forms a part of the Department of Home Affairs within the Australian Government. A Critical Infrastructure Resilience Strategy Plan and supporting policy statement was developed in 2015. The strategy has not been updated; however, it is understood COVID-19 and recent bushfires across Australia has incited a number of projects concerning infrastructure resilience.[302]

Resilience in UK infrastructure

The UK's National Infrastructure Commission produced a report on resilient infrastructure systems in May 2020. The UK's National Infrastructure Commission developed a framework for resilience as part of the resilient infrastructure systems report.

The report calls for government to publish a full set of resilience standards every five years and infrastructure operators to undertake regular and proportionate stress tests. These actions were proposed to be supported by infrastructure operators developing and maintaining long term resilience strategies.[303]

Implications for the 2021 Australian Infrastructure Plan

Some good progress here provides a platform for the 2021 Australian Infrastructure Plan to share some of the learnings from selected jurisdictions so as to continue to keep the concept of infrastructure resilience on the agenda going forward, particularly for the jurisdictions that have not progressed rapidly on this front.

[298] New South Wales Treasury, Asset Management Policy, https://www.treasury.nsw.gov.au/sites/default/files/2019-11/TTIP19-07%20NSW%20Asset%20Management%20Policy%20-%20Master%20Approved_31%20October%202019.pdf

[299] South Australia Treasury, Strategic Asset Management, https://www.dpti.sa.gov.au/facilities_management/strategic_asset_management_sam

[300] Infrastructure Tasmania, 30-year infrastructure strategy, https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0011/199019/Our_Infrastructure_Future_-_30_year_Infrastructure_Strategy_Consultation.pdf

[301] Infrastructure Western Australia, June 2020, State Infrastructure Strategy Discussion Paper, https://www.infrastructure.wa.gov.au/sites/default/files/2020-06/40681%20INFWA_InfrastructureWA_Discussion_Paper_FINAL.pdf

[302] Department of Home Affairs, Critical Infrastructure Resilience, https://www.homeaffairs.gov.au/about-us/our-portfolios/national-security/security-coordination/critical-infrastructure-resilience

[303] UK National Infrastructure Commission, May 2020, 'Anticipate, React Recover: Resilient infrastructure systems', https://www.nic.org.uk/wp-content/uploads/Anticipate-React-Recover-28-May-2020.pdf

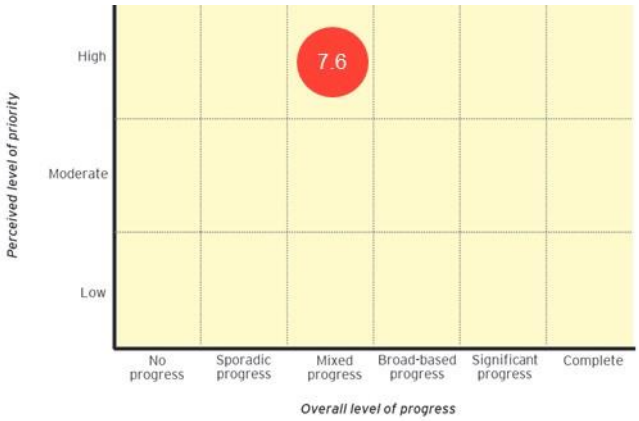
7.6 Australia's energy and water supplies should be resilient to market and environmental changes and risks.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Energy and Water
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: High

Rationale from 2016 Plan

The introduction of technologies supporting environmental outcomes has an impact on how electricity is generated and consumed and presents challenges for the electricity market. Supplies of electricity, gas and water should be resilient to global shocks and changes in climate. Governments should maintain oversight of energy and water markets to ensure the incentives of service providers in managing risks are appropriately aligned with consumer needs.



Approach to assessment

Research was conducted to understand what policy instruments or capital projects have been developed to incentivise resilient infrastructure, particularly to incentivise more reliable electricity generation and ensuring water supplies are independent of rainfall.

Evidence-based assessment

There is a lot of work going on in the **energy** market at a federal level to make electricity infrastructure more resilient to climate change (and the resultant market impacts), particularly from the perspective of greater penetration of solar energy and battery storage technologies. There is less evidence to suggest great progress has been made on a state and territory level.

- The Australian Renewable Energy Agency (ARENA) allocated $12.5 million in funding for pilot projects and studies to integrate distributed energy resources (i.e. behind the meter renewable and non-renewable generation, energy storage, electric vehicles and enabling technologies such as smart meters) into the electricity system. The objective of the project was to help demonstrate new ways to understand and manage the impact of high distributed energy resources penetration in different parts of the distribution network. Studies were also intended to help start-ups, networks, retailers, government and system operators develop solutions to address the technical, regulatory and commercial challenges of managing a grid with high penetration of distributed energy resources.[304]
- The Energy Securities Board released an issues paper on Post 2025 Market Design in late 2019 which contributes to the Strategic Energy Plan Outcomes. In identifying the potential design of the energy market in 2025, work is being completed to consider:
  - All aspects of the energy supply chain and all service procurement models;
  - Risk allocation, risk management and cost recovery arrangements;
  - Investment signals and the integration of physical and financial markets;
  - The impact and opportunities presented by related markets (i.e. fuel, hydrogen etc,); and
  - The roles of Governments.

  Australia's energy transition and implications for market design includes the integration of distributed energy resources, system security and reliance, and the integration of variable renewable energy into the power system.[305]

[304] Australian Renewable Energy Agency, March 2018, https://arena.gov.au/funding/distributed-energy-resources/

[305] COAG Energy Council and Energy Securities Board, September 2019, Post 2025 Market Design, http://www.coagenergycouncil.gov.au/sites/prod.energycouncil/files/publications/documents/EC%20-%20Post%202025%20Market%20Design%20Issues%20Paper%20-%2020190902_0.pdf

Similarly, in the **water** sector there is a focus on infrastructure being put in place to support resilient water networks. However, anecdotal evidence does suggest that the amount of work being performed in this area is still affected by rainfall, and that recent rainfall in New South Wales did delay some investigations of further water projects. Nevertheless, the points below evidence the work currently underway.

- The drought experienced by Queensland and New South Wales has acted as a catalyst to build additional dam and water infrastructure.

  The **New South Wales** government announced $567 million in funding to commence Stage 1 of the delivery of the Wyangala Dam and Dungowan Dam projects in New South Wales. Investigations into a third dam on the Mole River are also underway. All three projects have been declared Critical State Significant Infrastructure (high priority infrastructure projects essential to the State for economic, social or environmental reasons).[306]

- The Independent Pricing and Regulatory Tribunal in New South Wales has produced a draft review of prices for Sydney Water that have come into effect in July 2020. The draft review proposes to move to flexible prices so that in average weather conditions the typical household's water bill would fall approximately 12%, but in drought conditions the proposed flexible pricing would cause a 2% increase in the typical household's water bill.[307]

- The **Queensland** Government has announced a number of drought assistance measures including:
  - $95 million funding to commence the construction of a water pipeline to deliver water security for the Beaudesert area. The pipeline will connect Beaudesert communities to the south-east Queensland water grid. The 27km pipeline will also bring the Maroon Dam onto the south-east Queensland water grid adding capacity to the grid.[308]
  - $24 million will be spent on upgrading the Ewen Maddock Dam as part of an ongoing dam improvement program.[309]
  - a $1 million feasibility study due in April that will consider a potential pipeline to link Warwick to water from Wivenhoe via Toowoomba.
  - $2.4 million worth of water infrastructure, as well as costs to cart water.
  - $3.939 million replacing pipelines between Storm King Dam and Mount Marley Water Treatment Plant.
  - Nearly $950,000 to the Southern Downs Regional Council to progress water security projects related to new and rejuvenated bores and fixing leaks in the reticulation system.
  - $2.48 million towards a pipeline to transport recycled water to Warwick industrial estate.[310]

Implications for the 2021 Australian Infrastructure Plan

Tying in with recommendation 7.5, the concept of infrastructure resilience is still considered pertinent (despite mixed progress in the area). Some form of recommendation, such as something similar to 7.5 is considered appropriate for the 2021 Australian Infrastructure Plan.

[306] New South Wales Government, 11 May 2020, 'Stage 1 begins on state significant dams', https://www.nsw.gov.au/news/stage-1-begins-on-state-significant-dams

[307] IPART NSW, March 2020, Review of Prices for Sydney Water, https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/pricing-reviews-water-services-metro-water-prices-for-sydney-water-corporation-from-1-july-2020/legislative-requirements-prices-for-sydney-water-corporation-from-1-july-2020/draft-report-review-of-prices-for-sydney-water-march-2020.pdf

[308] Queensland Government, 11 March 2020, 'New pipeline brings jobs, water security to Beaudesert', http://statements.qld.gov.au/Statement/2020/3/11/new-pipeline-brings-jobs-water-security-to-beaudesert

[309] Queensland Government, 29 February 2020, 'Sunshine Coast contractor wins bid for major dam upgrade', http://statements.qld.gov.au/Statement/2020/2/29/sunshine-coast-contractor-wins-bid-for-major-dam-upgrade

[310] Queensland Government, 20 February 2020, 'Funding advance to progress Emu Swamp Dam', http://statements.qld.gov.au/Statement/2020/2/20/funding-advance-to-progress-emu-swamp-dam

8 Remote and Indigenous

8. Remote and Indigenous

8.1 To improve planning, coordination and delivery of infrastructure investments in remote and very remote regions, governments should: Commit to the ongoing integration of essential service delivery via existing local government frameworks; Draw on best practice principles for delivering remote infrastructure by working with communities; and Consider tendering the provision of economic infrastructure services and assess the merits of pooling investments across communities to establish scale and attract more private sector interest and innovation.

Entity(ies) responsible: State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Broad-based progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Integrating essential service delivery via existing local government frameworks will improve planning, coordination and the delivery of infrastructure investments in remote and very remote communities.

Approach to assessment

Desktop research was conducted to identify examples of government investing in essential services.

Evidence-based assessment

In Queensland the inquiry into service delivery delivered numerous findings reconciling with the intent of this recommendation and in the Northern Territory the Government continues to deliver via its Homelands Program. There is evidence in Western Australia that a number of initiatives have been rolled out to remote and very remote areas.

All initiatives aim to achieve best practice with extensive consultation with community. There is however lacking evidence to suggest the provision of economic infrastructure services is pooled to attract more private sector interest.

Northern Territory

- The Northern Territory Government coordinates essential services to remote Indigenous communities. The Homelands Program contributes to the delivery of municipal and essential services, as well as housing maintenance.[311]

Queensland

- The Queensland Productivity Commission undertook a review of service delivery in Queensland's remote and discrete Indigenous Communities. The review found there was a strong commitment by all tiers of Government but that the operating model was flawed with previous reforms delivering passive dependence on government funding. The review recommended that key to

[311] Northern Territory Government, Services to remote communities and homelands, https://nt.gov.au/community/local-councils-remote-communities-and-homelands/services-to-remote-communities-and-homelands

achieving sustained improvement is to enable Aboriginal and Torres Strait Islander communities to develop solutions for themselves. [312]

Victoria

- In Victoria the Rural Councils Transformation Program provides seed funding of between $2 million and $5 million to support the implementation of transformative projects on a regional level. Groups of three of more councils can apply to pool funds across local government areas. The program encourages councils to share knowledge, costs and resources so that local governments can deliver more efficient, effective and sustainable services.[313]

Western Australia

- The Department of Housing administers the Remote Area Essential Service Program which provides essential repairs and maintenance services for power, water and wastewater infrastructure in Aboriginal communities in remote areas of the Kimberley, Pilbara, Murchison, Goldfields and Central Desert. The Royalties for Regions Regional Community Services Fund has invested $30 million over one year to enable Aboriginal communities to continue to operate within this program. Key services provided include:
  - Planned and unplanned maintenance of essential services
  - Emergency breakdown services
  - Water quality testing
  - Monitoring and reporting
  - Advice on capital works priorities and scopes
  - Aboriginal enterprise and employment.[314]
- In addition to the above Remote Area Essential Service Program, the Western Australian State Government has committed to progressively bring basic services in remote Aboriginal communities up to minimum standards in the regional services reform roadmap. Part of the roadmap comprises the Essential and Municipal Services Upgrade Program in which Government funding for improvements will be prioritised for communities with strong leadership on education and employment, and business opportunities. Throughout 2017 and 2018 infrastructure audits were carried out as part of the program. Infrastructure upgrades and service delivery stated in late 2018.[315]

Australia-wide

- The Roads to Recovery Program supports the maintenance of the nation's local road infrastructure assets. The Australian Government announced $138.9 million additional Roads to Recovery funding in the 2020 calendar year for the 128 Local Government Areas eligible for the Drought Communities Programme Extension.[316]

Implications for the 2021 Australian Infrastructure Plan

Broad based progress has been made in this space however it is likely that more can be done and hence it is appropriate that a version of this recommendation be maintained in the 2021 Australian Infrastructure Plan.

[312] Queensland Productivity Commission, June 2018, Service Delivery in Queensland's remote and discrete Indigenous Communities, https://www.qpc.qld.gov.au/inquiries/service-delivery-in-queenslands-remote-and-discrete-indigenous-communities/
[313] Victorian Department of Environment, Land, Water and Planning, Rural Councils Transformation Program, https://www.localgovernment.vic.gov.au/media-releases/rural-councils-transformation-program
[314] WA Department of Primary Industries and Regional Development, Remote Area Essential Services Program, http://www.drd.wa.gov.au/projects/Health/Pages/Remote-Area-Essential-Services-Program.aspx
[315] Regional Services Reform Unit, Essential and Municipal Services Upgrade Program, https://regionalservicesreform.wa.gov.au/p/essential-and-municipal-services-upgrade-program
[316] Department of Infrastructure, Transport, Regional Development and Communications, 2019, Roads to Recovery Program, https://investment.infrastructure.gov.au/infrastructure_investment/roads_to_recovery/

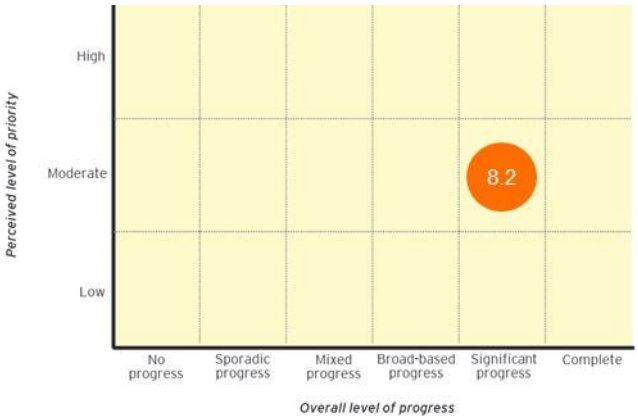
8.2 Renewable energy should replace diesel generation in remote communities wherever it is affordable and efficient to do so.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Energy
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

New technology creates opportunities for remote communities to be more resilient. Many remote communities rely on diesel generators for electricity supply. The increasing affordability of renewable energy and the often-small size of remote communities are cause for governments to continue to support a transition toward renewable energy with the aim of replacing diesel generators where practical and affordable.



Approach to assessment

A review of policy stances was undertaken to understand whether concerted effort has been made to transition remote communities toward renewable energy solutions.

Evidence-based assessment

There are numerous examples of projects within State Government working towards renewable energy solutions in remote communities. Replication of the projects referenced below could lead to greater progress in this area.

- As part of **New South Wales** Net Zero Plan Stage 1: 2020-2030, a priority focus was made to support remote communities to install solar power. Research has not revealed evidence of implementation of this commitment.[317]
- There is activity at the Australian Government level via Indigenous Business Australia (IBA), however this is a bespoke example. In 2016, IBA and Manungurra Aboriginal Corporation collaborated to purchase solar panels to generate cheaper electricity in two communities in the Barley region, **Northern Territory**. Solar panels and batteries were installed by an Aboriginal owned business. The two communities have grown substantially as a result of the cheaper cost of electricity.[318]
- The **Queensland** Government has developed a Decarbonising Remote Communities Program. Four Indigenous communities in Queensland's far north will have new renewable energy systems as part of the $3.6 million program. The renewable energy systems will reduce reliance on diesel power.[319]
- The **Western Australian** State Government has invested $11.6 million in Horizon Power's solar farm construction project in remote Kimberley Aboriginal communities as part of its commitment to clean energy. The Remote Communities Centralised Solar Project will result in hundreds of kilowatts of solar being installed in the large east Kimberley remote communities of Warmun and Kalumburu. Planning is also underway for solar farm construction in the west Kimberley communities of Ardyaloon, Beagle Bay, Djarindjin, Lombadina and Bidyadanga in 2020/21.[320]

[317] NSW Department of Planning, Industry and Environment, 2019, Net Zero Plan Stage 1: 2020-2030, https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/net-zero-plan-2020-2030-200057.pdf?la=en&hash=D65AA226F83B8113382956470EF649A31C74AAA7

[318] Manungurra Aboriginal Corporation, 2016, Solar Installation Project, https://manungurra.com.au/development/

[319] Queensland Department of Natural Resources, mines and Energy, August 2019, Solar for remote communities, https://www.dnrme.qld.gov.au/energy/initiatives/solar-remote-communities

[320] Horizon Power, 2020, Remote Communities Centralised Solar Project, https://horizonpower.com.au/our-community/projects/remote-communities-centralised-solar-project/

Implications for the 2021 Australian Infrastructure Plan

Some progress has been made on this recommendation yet is relatively small scale. The topic is relevant for the 2021 Australian Infrastructure Plan but perhaps a deeper consideration of how and by who a recommendation such as this be implemented would be more valuable.

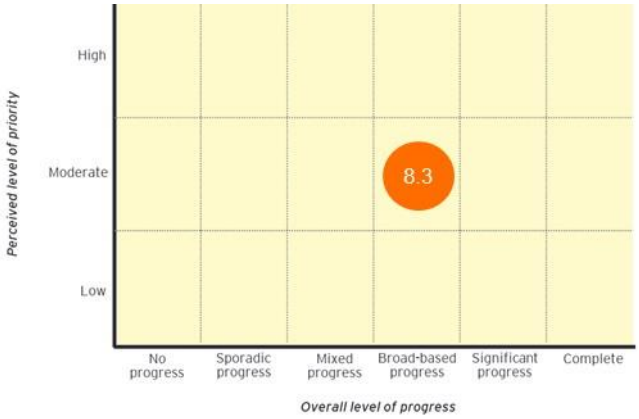
8.3 Governments should develop coordinated strategies with remote communities to remove barriers and maximise the benefits of the National Broadband Network and the opportunities it enables for households and businesses.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Telecommunications
Australian Government response: Supported in-principle

Overall assessment of progress: Broad-based progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

In the transition to e-government and online service delivery and retail, remote communities are at risk of being left behind and with lower quality goods available, and lower quality service provision. Access to high-speed broadband can provide access to services similar to that of urban populations.



Approach to assessment

Desktop research was conducted to understand what type of initiatives the Australian Government, state governments or the NBN Co. have developed to remove barriers and maximise the opportunities that the NBN presents to remote communities.

Evidence-based assessment

Evidence recorded below suggested that there has not been coordinated effort in addressing this recommendation, however there are examples in various jurisdictions that demonstrate progress.

Federal level

- In 2018 the Department of Infrastructure, Transport, Regional Development and Communications developed a Regional Telecommunications Review via the Regional Telecommunications Independent Review Committee. The guiding premise of the Review was that Australia should use telecommunications infrastructure to maximise economic benefits in the region.
- Amongst many recommendations communicated in the Regional Telecommunications Review, it was suggested that there are compelling factors for additional capital investment in telecommunications infrastructure. It was acknowledged that the viability of many economic opportunities in remote Australia is dependent on additional telecommunications investment. [321]
- The nbn™ Fixed Wireless and Sky Muster™ satellite services have been implemented post the Infrastructure Australia Review so as to meet the needs of remote businesses and government users. Sky Muster™ satellite services have been in use since 2016 and at the time of writing the Regional Telecommunications Review suggested the lived experience of using Sky Muster™ services differed from NBN Co communications.
- In October 2019 the NBN Co. launched a new business unit solely focussed on meeting customer needs and raising the digital capability of regional and remote communities across Australia. The new business unit comprises engineering and operational teams to ensure the nbn™ network build is completed, and community and stakeholder engagement is undertaken. This will go some way to ensure opportunities for remote households and businesses are maximised.[322]

[321] Regional Telecommunications Independent Review Committee, '2018 Regional Telecommunications Review: Getting it Right Out There', 2018, Department of Infrastructure, Transport, Regional Development and Communications
[322] nbn™, 'NCN Co announces major initiatives to boost commitment to regional and remote Australia', 31 October 2019, https://www.nbnco.com.au/corporate-information/media-centre/media-statements/regional-announcement

State level

- From a state perspective **New South Wales** has initiated the Connecting Country Communities Fund. The $50m fund will build and upgrade mobile base stations and involve the New South Wales Government to work directly with telecommunications service providers to improve mobile and digital connectivity in regional and rural areas.[323]
- In the **Northern Territory**, the Digital Territory Strategy established a framework for maximising digital opportunities across business, industry, education, community and government sectors. One tranche of the strategy is to Connecting Territory Communities by linking communities with ICT industry and digital entrepreneurs so they can develop new solutions to long-standing community problems and leveraging investment with service providers.[324]
- **Queensland's** Digital 1st Strategy has been formulated to enable the government to design, develop and deliver digital services to the community so that better collaboration and connectivity is fostered in the community. A key focus in the strategy is to improve regional and remote connectivity for government agencies so that digital service delivery to regional and remote communities is enhanced. The State intends on developing a digital infrastructure plan to implement on an iterative basis to ensure that investments are made wisely and local issues for regional communities are incorporated into strategic planning.[325]
- **South Australia** released its Information and Community Technology (ICT) Strategy in 2018 which outlines the State's strategic direction in delivering better digital services to South Australians via new technological opportunities. The strategy makes little mention to how it will deliver its objectives to the regional and remote communities in South Australia.[326] Anecdotal evidence suggested that outputs from existing government initiatives improving connectivity could be leveraged to support regional and remote areas. The Schools with Internet Fibre Technology (SWiFT) project is a collaboration between the South Australian Department of Education and Telstra to connect over 99% of public schools to high-speed fibre optic cable throughout 2019 and 2020.[327]
- **Tasmania's** Our Digital Future strategy outlines the State's plan to ensure that communities, businesses and public services are well-equipped to adopt and adapt to the use of new technologies. One of the key directions of the State's plan is to support initiatives that encourage the benefits of digital transformation to accrue more evenly across all sectors of the community and regions of the State. This includes providing more equitable coverage and connectivity to regional areas in Tasmania. [328]
- In **Victoria** the Connecting Regional Communities Program aims to address digital issues and develop fit for purpose digital solutions. Infrastructure trials funded under this program are designed to inform the development of a Victoria-wide digital policy.[329]
- **Western Australia's** ICT Strategy 2016-2020 positions the public sector to use opportunities provided by current and emerging technologies to deliver efficient, reliable ICT services. One of the core capabilities is to provide integrated communications - leveraging a whole-of-government network to connect securely to agencies and other service providers. The outcome is to ensure that services between metropolitan Perth and regional locations are comparable.[330]

Implications for the 2021 Australian Infrastructure Plan

While some progress on this recommendation, it is not clear whether there has been active engagement with communities to determine appropriate solutions. There has been somewhat of an

[323] NSW Government, 2020, Connecting Country Communities, https://www.nsw.gov.au/regional-growth-fund/connecting-country-communities

[324] Digital Territory, 2020, https://digitalterritory.nt.gov.au/digital-directions/connecting-territory-communities

[325] Queensland Government, 2017, Digital1st, https://digital1st.initiatives.qld.gov.au/documents/digital-strategy.pdf

[326] South Australia, 2018, South Australian Government ICT Strategy 2018-2021, https://www.dpc.sa.gov.au/__data/assets/pdf_file/0004/45922/sagov-ICT-strategy-2018-2021.pdf

[327] South Australian Department of Education, 2019, Schools With internet Fibre Technology, https://www.education.sa.gov.au/sites-and-facilities/upgrades-and-new-schools/improved-internet

[328] Tasmania Government, 2020, Our Digital Future, https://digital.tas.gov.au/our-digital-community

[329] Department of Jobs, Precincts and Regions, 2018, Connecting Regional Communities Program, https://djpr.vic.gov.au/connecting-victoria/connecting-regional-communities-program

[330] Western Australia Department of Premier and Cabinet, Digital WA: State ICT Strategy 2016-2020, https://www.wa.gov.au/sites/default/files/2018-06/Digital%20WA%20State%20ICT%20Strategy.pdf

infrastructure focus to date. For the 2021 Australian Infrastructure Plan, there could be consideration for further community engagement to understand user perspectives and potential scope for investment in awareness and capability building to ensure the potential benefits of the NBN are understood and able to be accessed.

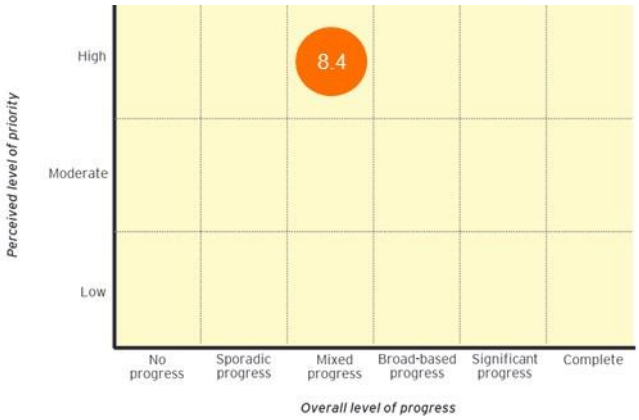
8.4 Governments should consider infrastructure investments that support reforms to increase the economic independence of remote Indigenous communities.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: High

Rationale from 2016 Plan

Remote infrastructure investments can help communities become more economically independent. Infrastructure Australia posited Governments could support remote communities to better participate in the mainstream economy by targeting investment towards addressing infrastructure gaps that realise the full value of Indigenous land.



Approach to assessment

Indigenous Land Use Agreements, examples of government agencies building capacity in developing economic infrastructure and the normalisation of municipal services were identified as examples to investigate changes occurring in the facilitation of the economic independence of remote Indigenous communities.

Evidence-based assessment

Western Australia has made progress investing in discrete economic development opportunities to support the economic independence of remote Indigenous communities. There are elements of progress in other jurisdictions however a focus was placed on Western Australia as a best practice example. More broadly the Australian government's Indigenous Business Australia and Indigenous Procurement Policy goes some way to encouraging economic independence.

Western Australia:

- The Yamatji Nation Indigenous Land Use Agreement (ILUA), between the Western Australia State Government and the Yamatji Nation Native Title holders, resolves the State Government's native title compensation liability in relation to 48,000 square kilometres of land in the mid-west of Western Australia. The ILUA is one of the largest agreements of its kind in Australia. An economic package of $442 million will be granted over 15 years, $325 million held in trust and $70 million of value for economic development opportunities. Economic development opportunities include a portfolio of housing, a portfolio of land parcels, commercial development land parcels, water allocation, tourism assets and more. This is an example of the Western Australian Government providing existing infrastructure to increase the economic independence of Indigenous communities.[331]
- The South West Settlement is another ILUA currently in development in Western Australia containing similar economic development opportunities for the Noongar Nation residing in parts of the South West of Western Australia with the objective of improving the economic independence of Indigenous communities.

Northern Territory:

- In 2016, The Australian Government, through Indigenous Business Australia (IBA) and Manungurra Aboriginal Corporation collaborated to stabilise Manungurra's finances and assist Manungurra to become economically independent and self-sufficient on their traditional land. Manungurra stabilised their income from mining royalties by investing alongside IBA, and with the financial return purchased solar panels to generate cheaper electricity. The permanent population

[331] Department of Premier and Cabinet WA, Yamatji Nation Indigenous Land Use Agreement, https://www.wa.gov.au/sites/default/files/2020-03/07.Agreement%20Overview_final.pdf

increased as a result of the cheaper cost of living which then enabled them to set up a School of the Air and improve education opportunities. The population increase also meant the communities qualified for government funding to coordinate economic development opportunities.[332]

- The Barkly Regional Deal is the first regional deal in Australia. The Barkly Regional Deal is a 10-year $78.4 million commitment between the Australian Government, the Northern Territory Government and Barkly Regional Council, signed following a six-month consultation process. The Deal aims to improve the productivity and liveability of the Barkly Region via economic growth and social outcomes, including reducing overcrowding and improving child safety.[333]

More broadly

- IBA has been party to several examples of partnering with local Indigenous Corporations in developing businesses, infrastructure and service delivery solutions to improve the economic independence of remote Indigenous communities.
- The Australian Government's Indigenous Procurement Policy (IPP) has been in place since July 2015. The IPP has generated $2.7 billion in economic activity for the Indigenous business sector and has involved a total of 19,527 contracts being awarded to 1,935 Indigenous businesses by the Commonwealth and major suppliers.[334]
- Other sources of government funds are increasingly pointing to the need to identify Indigenous outcomes as part of the project evaluation frameworks, including the Department of Infrastructure, Transport, Regional Development and Cities' Infrastructure Investment Division, Australian Renewable Energy Agency, Clean Energy Finance Corporation, Northern Australia Infrastructure Facility and the Office of National Assessments.

Implications for the 2021 Australian Infrastructure Plan

While there is evidence of positive progress in this area, there remains much economic and social difficulty in many regional and remote communities. Perhaps for this reason, it may be prudent for the 2021 Australian Infrastructure Plan to continue to focus on this issue as the provision of appropriate and good quality infrastructure has a significant bearing on economic and social outcomes.

[332] Manungurra Aboriginal Corporation, 2016, Solar Installation Project, https://manungurra.com.au/development/

[333] Department of Infrastructure, Regional Development and Cities, 2020, Barkly Regional Deal, https://www.regional.gov.au/regional/deals/Barkly.aspx

[334] National Indigenous Australians Agency, 2019, Indigenous Procurement Policy, https://www.niaa.gov.au/indigenous-affairs/economic-development/indigenous-procurement-policy-ipp

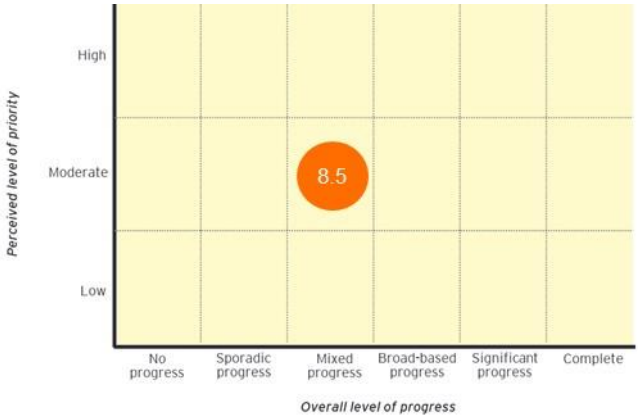
8.5 Governments and private sector proponents should liaise with remote communities to better understand unique local characteristics and ensure infrastructure projects best meet their needs.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Remote communities can identify priority needs and suitable approaches to implementation tailored to local circumstances, hence greater consultation and liaison with remote communities could focus infrastructure investment and target known problems.



Approach to assessment

Recent examples of progress include individual state-based procurement targets, private joint ventures, and state-wide community consultations. These examples were investigated further to understand whether there has been a significant shift in-depth liaison prior to infrastructure project developments.

Evidence-based assessment

There is evidence to suggest that there is broad-based progress to better consult with remote communities. Social infrastructure related to disability service provision and housing are sectors that seem to present the greatest maturity in consulting with indigenous and remote communities.

Federal level

- The Northern Australia Indigenous Reference Group was established in December 2017, the group advises government about northern Australia matters and help shapes the implementation of the northern Australia agenda to ensure it benefits local Indigenous landowners, communities and businesses.[335]
- Empowered Communities is led by Indigenous people, for Indigenous people and represents a concept and organisation spread across eight regions in Australia. Empowered Communities received funding by the Australian Government in 2016 for three years, with a three-year extension granted until 2022 to continue implementation. Empowered Communities aims to empower communities by building partnerships between Indigenous organisations, government and corporate Australia. Each of the eight regions has experienced varying progress in developing a backbone organisation. Identifying objectives, delivering a progress report and making progress towards empowering communities.[336]
- One of the eight regions is the East Kimberley in **Western Australia**. The backbone organisation Binarri-binyja Yarrawoo (BBY) and its members organisations and government partners has previously worked on employment and housing through two projects: '100 jobs' and the 'North West Aboriginal Housing Fund'. In 2017, the Western Australian Government and Empowered Communities entered a partnership to co-design the first project under the North West Aboriginal Housing Fund. The partnership is intended to create a pathway for economic empowerment through the development of a sustainable and transformational housing market that supports better health, education and employment outcomes.[337]

[335] Department of Industry, Science, Energy and Resources, 2019, Northern Australia Indigenous Reference Group, https://www.industry.gov.au/about-us/our-structure/office-of-northern-australia/northern-australia-advisory-groups
[336] Empowered Communities, 2020, Our Journey, https://empoweredcommunities.org.au/our-journey/
[337] Empowered Communities – East Kimberley, 2017 Report, https://empoweredcommunities.org.au/wp-content/uploads/2018/04/EC-Baseline-Report-East-Kimberley-Final.pdf

- The National Disability Insurance Scheme (NDIS) developed a Rural and Remote Strategy in early 2016 and an Aboriginal and Torres Strait Islander Engagement Strategy in 2017. Both strategies refer to the need to consider:
  - Service delivery in the context of the level of infrastructure and existing services in the region and the need to share infrastructure;
  - The need to heavily consult with Indigenous communities as they transition to the NDIS; and
  - The need to expand local infrastructure and resources to provide quality disability services.[338]

  The NDIS Thin Markets project led by the Department of Social Services included widespread consultation with disability service providers, peak bodies, and state government disability providers.

  There have also been concepts discussed to change the dynamic in which NDIS funding is provided to participants in remote communities. Feedback by providers throughout the Thin Markets project suggested that allocated participant funding is often untouched due to an array of cultural, social and economic parameters limiting participants in taking up their entitlements. Rather than individualised funding, participants could pool a portion of their funds to go towards the construction of new infrastructure. These funds could be invested in new infrastructure in an attempt to encourage Indigenous community members with disabilities to access services in culturally safe infrastructure that could provide a holistic service.[339]

State level

- The **Northern Territory** Government implemented a local decision-making policy comprising local decision-making agreements across housing, education social services and more. Local Decision Making is a 10-year plan that aims to provide a pathway so that communities can have greater control over government service delivery based on their community aspirations.[340]
- The **Western Australian** Regional Services Reform Unit (RSRU) has a mandate to reform areas concerning improved living conditions, supporting families build skills through improved service redesign and delivery, and support areas of education employment, housing and infrastructure. Throughout 2017 the RSRU conducted wide-spread consultation with Aboriginal communities in Western Australia to give local community leaders and residents a voice, and the opportunity to talk about the community's aspirations and the success and failures of government service delivery (inclusive of infrastructure).[341]
- In **New South Wales** and in Western Australia there have been reforms to state legislation concerning Indigenous heritage. Reforms are enabling greater consultation with Indigenous community members with the right to speak for country so as to inform heritage assessments of infrastructure projects occurring in remote areas. In Western Australia, greater consultation is proposed to occur through the use of Local Aboriginal Heritage Service providers which will be based all across the State. In New South Wales it is expected that a Board of Aboriginal heritage experts be formed across areas to speak for country.
- There are a number of joint ventures that have occurred between the private sector and Aboriginal corporations which have led to a better understanding of local characteristics and hence place-based infrastructure solutions, particularly in the mining sector.

[338] National Disability Insurance Scheme, Strategies, https://www.ndis.gov.au/about-us/strategies/aboriginal-and-torres-strait-islander-strategy

[339] This content is recalled from EY personnel involved in the DSS Thin Markets Project

[340] Northern Territory Department of the Chief Minister, February 2020, Local Decision Making, https://dcm.nt.gov.au/news/2020/what-is-local-decision-making

[341] Regional Services Reform Unit, 2017, 'Key insights from consultation with remote Aboriginal communities in Western Australia', https://regionalservicesreform.wa.gov.au/sites/regionalservicesreform.wa.gov.au/files/docs/RESOURCES/RSRU_Consultation%20Report.pdf

In the context of COVID-19

During the COVID-19 response there was a need to protect vulnerable cohorts which included Indigenous communities. Across Australia Aboriginal Health Policy outfits sitting in their respective state-based health departments engaged with Aboriginal Advisory Groups or similar in which National Aboriginal Community Controlled Health Organisations (NACCHOs) and Aboriginal Medical Services (AMSs) sat. NACCHOs, AMSs and state Health Departments collaborated to ensure health infrastructure best met the needs of remote communities.

Consultation with remote communities that fall into the biosecurity areas limiting access to communities (under the COVID-19 response) has presented challenges for government in consulting with communities.

Implications for the 2021 Australian Infrastructure Plan

Good progress has been made in this area but as per comments on Recommendation 8.4, economic and social outcomes in remote communities are still relatively poor. For this reason, it is recommended that there be a continued focus on issues surrounding infrastructure provision in these communities.

9 Governance

9. Governance

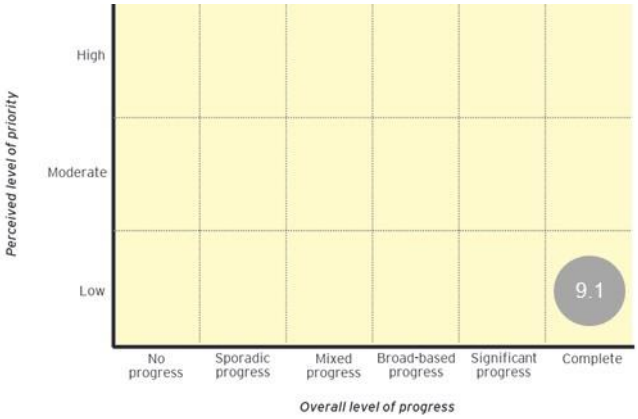
9.1 All state and territory governments should deliver long-term infrastructure plans.

Entity(ies) responsible: State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Complete
Perceived level of priority: Low

Rationale from 2016 Plan

Long-term infrastructure plans detailing 15 years and beyond, can deliver more effective changes in demand for infrastructure. To be effective, planning should be integrated across different sectors and networks, and aligned with broader land and economic development.



Approach to assessment

Assessment of progress was guided by a collection of state jurisdictional long-term infrastructure plans and assessed implementation comparisons where appropriate. The long-term infrastructure plans varied across sectors highlighting a wide contrast of infrastructure services demanded by regions and cities.

Evidence-based assessment

The evidence below suggests that a long-term infrastructure plan has been delivered in most jurisdictions. Evidence of progress against this recommendation is as follows.

- Infrastructure **New South Wales** released its infrastructure strategy; Building Momentum (2018-2038), addressing land use and infrastructure challenges. It is the State's most recent long-term infrastructure plan outlining three key themes: a long-term transport strategy, a regional plan for Greater Sydney and the implementation of a regional development framework. Infrastructure NSW is supporting the proposed 'hub and spoke' model for regional New South Wales to provide more effective services across regional centres. Sydney requires a more equitable investment distribution to address the needs of central and west Sydney as opposed to the high investment recently delivered to the east (WestConnex and Sydney Metro).[342] In addition, Infrastructure NSW has developed the Corrective Services Infrastructure Strategy (2017-37); an outcomes-focused infrastructure strategy to guide investment in corrective services assets.
- The **Queensland** Government's strategic direction for planning and prioritising the investment and delivery of infrastructure is articulated by the 5 yearly State Infrastructure Plan. Building Momentum provides Queensland Government with independent advice regarding major infrastructure.
- Infrastructure **Victoria** delivered its first comprehensive 30-year infrastructure strategy in December 2016, which included 137 recommendations.[343] This was followed up with a

[342] Infrastructure NSW, 2018, State Infrastructure Strategy; Building Momentum, https://insw-sis.visualise.today/documents/INSW_2018SIS_BuildingMomentum.pdf
[343] Infrastructure Victoria, 2016, Infrastructure Victoria 30-year, https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/03/IV_30_Year_Strategy_WEB_V2.pdf

subsequent draft of its second 30-year infrastructure strategy in December 2020, with the final strategy due for release in mid-2021.[344]

- The State Planning Strategy 2050 is **Western Australia's** overarching long-term strategy informing all regional and local planning strategies, policies and approvals across Western Australia regions.[345]
- Infrastructure **South Australia** delivered the State's 20-year infrastructure strategy in May 2020.[346]
- The **Northern Territory** released it's 10-year infrastructure plan in 2019.[347]
- Infrastructure **Tasmania** delivered its first long-term infrastructure strategy draft (30 years) for consultation last year. The draft strategy is yet to be finalised as a result of COVID-19.[348]
- The **Australian Capital Territory** Government delivered the region's long-term infrastructure strategy in 2019 (10 years) with the key aim to deliver $14 billion in infrastructure investments.[349]

Implications for the 2021 Australian Infrastructure Plan

The concept of long-term infrastructure planning is well-embedded with government departments across Australia, however consideration as to commitment to published plans must be made. Transparency as to delivering commitments within published plans is ad hoc in some instances. There does not appear to be a pressing rationale for the 2021 Australian Infrastructure Plan to address this matter.

[344] Infrastructure Victoria, 2021, Victoria's Draft 30-Year Infrastructure Strategy, https://www.infrastructurevictoria.com.au/project/30-year-strategy/
[345] Department of Planning, Lands and Heritage, State Planning Strategy 2050, https://www.dplh.wa.gov.au/getmedia/d698cbff-65c6-4afb-b4b7-9e12e6a3b5dd/FUT-SPS-State_Planning_Strategy_2050
[346] Infrastructure SA, May 2020, 20-year state infrastructure strategy, https://www.infrastructure.sa.gov.au/__data/assets/pdf_file/0006/197511/20-Year-State-Infrastructure-Strategy-Full.pdf
[347] Northern Territory Government, 2019, 10 year infrastructure plan 2019–2028, https://dipl.nt.gov.au/__data/assets/pdf_file/0006/775176/10-year-infrastructure-plan-2019-print.pdf
[348] Infrastructure Tasmania, 30-year infrastructure strategy, https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0011/199019/Our_Infrastructure_Future_-_30_year_Infrastructure_Strategy_Consultation.pdf
[349] ACT Government, October 2019, https://www.act.gov.au/our-canberra/latest-news/2019/october/new-infrastructure-plan-released

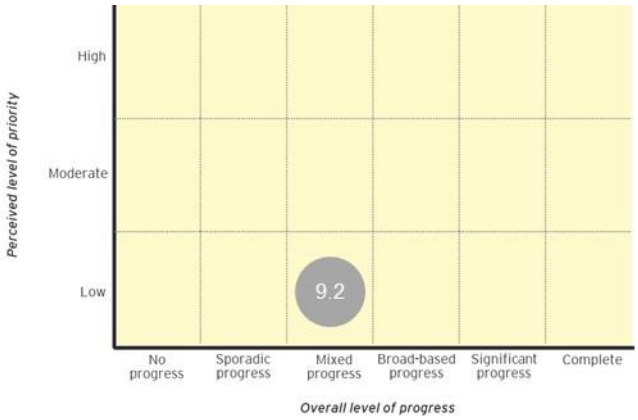
9.2 Infrastructure service standards (both minimum and desired standards) should be used by all governments to guide future planning and project development.

Entity(ies) responsible: Federal, State and Local Government
Sectors subject to assessment: Transport and Planning
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: Low

Rationale from 2016 Plan

Long term planning needs to be informed by clear service standards. Minimum service levels exist for some infrastructure (telecommunications and water), but they are not widely understood. Standards shared between government, industry and community can establish valuable insights that provide future pathways for adoption. Reviewing standards periodically can provide funding certainty and inform project developments by delivering asset information to planning authorities and other key stakeholders.



Approach to assessment

A general assessment has been made taking several examples from various sectors of standards that advertise clear strategic planning objectives. A detailed assessment would require a substantial amount of time and consultation with a large pool of agencies across the country and has not been completed in detail in this instance.

Evidence-based assessment

En masse, it is difficult to ascertain whether significant progress has been made. A few examples of recent infrastructure standards put in place since 2016 are detailed below.

- The Australian Transport Assessment and Planning Guidelines outline best practice for planning and assessing transport systems and initiatives in a consistent and harmonised way across jurisdictions. They have replaced the previous National Guidelines for Transport System Management. The Australian Transport Assessment and Planning Guidelines provide a transport planning and decision-support framework. The Guidelines are structured around a Transport System Management Framework. The Framework is an activity and decision-support system, with a logical, multi-step approach aimed at achieving the high-level goals and transport system objectives of a jurisdiction, or across jurisdictions.[350]
- There is work being completed to improve the interoperability of power systems to improve productivity and reduce market failures that occur as a result of an inability for system components to 'communicate'. Interoperability will enable customers to individualise and optimise their energy services and support grid optimisation.[351]
- **New South Wales** Communities and Justice Department announced the Better Prisons initiative in 2016. The initiative has an objective to deliver an expanded prison system that operates more efficiently, maintains safety and improve inmate rehabilitation. As part of the initiative over 90 per cent of New South Wales correctional centres have benchmarked operations to improve service standards to help inform future planning.[352]
- Transport **Western Australia** delivered guidelines to guide planning and designing for pedestrians in 2016. The planning undertaken was in alignment to the Liveable Neighbourhood's report

[350] Australian Transport Assessment and Planning, https://www.atap.gov.au/

[351] Australian Energy Market Operator, April 2019, Technical Integration of Distributed Energy Resources, https://www.aemo.com.au/-/media/Files/Electricity/NEM/DER/2019/Technical-Integration/Technical-Integration-of-DER-Report.pdf

[352] New South Wales Justice and Communities, Better Prisons, https://www.correctiveservices.justice.nsw.gov.au/better-prisons

suggesting walkable neighbourhoods should be within 400 metres of a neighbourhood centre or 800 metres to railway stations.[353]

Implications for the 2021 Australian Infrastructure Plan

There has been much activity in the development and use of infrastructure planning and development assessment frameworks and hence this recommendation is considered largely complete. Continued assessment and revision of the assessment frameworks to maintain currency and improve over time may be valuable and this could be a concept broached by the 2021 Australian Infrastructure Plan.

[353] Transport WA, December 2016, Planning and designing for pedestrians: guidelines, https://www.transport.wa.gov.au/mediaFiles/active-transport/AT_WALK_P_plan_design_pedestrians_guidelines.pdf

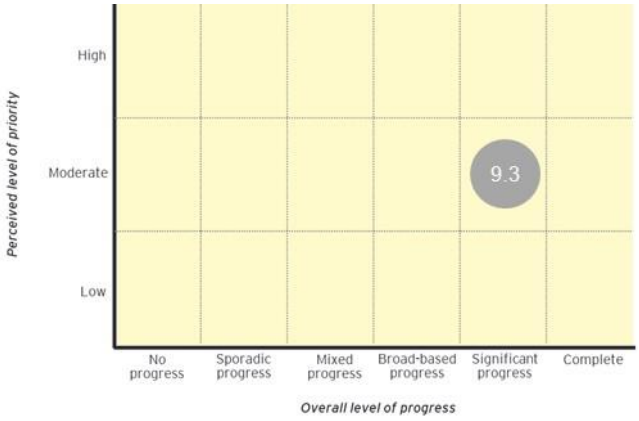
9.3 Alongside the delivery of integrated long-term infrastructure plans, state and territory governments should initiate an ongoing process of community engagement to discuss present and future infrastructure challenges and potential solutions.

Entity(ies) responsible: State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Engaging with community at the strategic stage of infrastructure planning engenders a greater understanding of future challenges and can reduce the likelihood of opposition. Discussions forums can promote transparency between community and stakeholders when delivering long-term infrastructure plans.



Approach to assessment

Desktop research was conducted in each jurisdiction with respect to recent infrastructure strategy plans. Evidence that supports strong public consultation was also gathered to inform the assessment.

Evidence-based assessment

There is evidence of strong community consultation present, in particular in the development of State Infrastructure Strategies by new I-Bodies such as Infrastructure SA and Infrastructure WA. There is also evidence that suggests that updates to strategies have involved community consultation to help with the direction of strategic contents.

- The **Australian Capital Territory** provides a community consultation platform (YourSay) for the local population to share their thoughts and opinions on ACT Government projects, however the Territory's latest Infrastructure Plan does not provide any detail of a formal community consultation process.[354]
- **Infrastructure NSW** requires community consultation in its five-step assessment process for delivering its State strategy which is reviewed every five years. Infrastructure NSW also encourages consulting with community to embed resilience in strategic land use planning.[355]
- **The Northern Territory** recently released its 10-year Infrastructure Plan annual review which provides an insight into the direction of priority areas for Northern Territory infrastructure delivery. During the annual review, the government invites ongoing contributions from local government and private sector and community stakeholders to share information that supports proactive future planning for infrastructure.[356]
- The **Queensland** State Infrastructure Plan provides a framework for planning and prioritising infrastructure investment and delivery to support growth in the State. The plan is reviewed regularly, and new ideas and challenges are explored through formal consultation with industry and the community however the process is not publicly available.[357]

[354] ACT Government, 2019, ACT Infrastructure Plan, https://apps.treasury.act.gov.au/__data/assets/pdf_file/0009/1432449/act-infrastructure-plan.pdf
[355] Infrastructure New South Wales, February 2018, State Infrastructure Strategy 2018-2038, https://insw-sis.visualise.today/documents/INSW_2018SIS_BuildingMomentum.pdf
[356] Northern Territory Government, 2018, 10 Year Infrastructure Plan Annual Review, https://dipl.nt.gov.au/__data/assets/pdf_file/0006/775176/10-year-infrastructure-plan-2019-print.pdf
[357] Queensland Government, 2019, State Infrastructure Plan Part B: Program – 2019 update, https://www.dsdmip.qld.gov.au/resources/plan/sip/sip-part-b-2019.pdf

- **Infrastructure SA** produced its first 20-year Infrastructure Strategy in 2020. The process undertaken to develop the strategy included broad consultation across community and industry and envisages that consultation will be strengthened over time. A Strategy Discussion Paper was released in July 2019 that generated over 100 submissions. The Infrastructure Strategy also encourages the need for communities to be included in the process of understanding value-for-money in infrastructure investment.[358]
- **Tasmania's** 30-year Infrastructure Strategy followed consultation across government and acknowledges that government agencies are regularly reviewing and planning infrastructure approaches to inform future operations. The strategy builds on that collective effort.[359] The strategy does not necessarily mention a formal ongoing process for community engagement other than Tasmania's State Roads Division which published a Stakeholder and Community Engagement Framework in 2018. The framework aims to set out standards for effective stakeholder and community engagement, to assist in building relationships, enhance reputation and to demonstrate accountability in decision-making.[360]
- Consultation was conducted as part of **Infrastructure Victoria's** update of the 30-year infrastructure plan first developed in 2016. Residents from three suburbs of Melbourne were invited to share their views to help inform Infrastructure Victoria as to the success factors of high-density developments. Density as a theme is just one component of the strategy update.[361] Infrastructure Victoria has continued to conduct community engagement for subsequent work, including on transport network pricing, and low and zero emissions vehicles.[362]
- In early 2019 **Infrastructure WA** released a consultation report as one of its first actions since inception. The paper details the consultation process that was undertaken to obtain views as to the proposed model for operation, and the roles and responsibilities that Infrastructure WA would take on.[363] The development of Infrastructure WA involved a highly consultative process, a theme that will continue in the development of future strategies produced by Infrastructure WA. The IWA Act requires Infrastructure WA to undertake public consultation on the development of the draft State Infrastructure Strategy. Updates to the strategy, following a 5-year review cycle, will be required to undertake the full process of acceptance, public consultation and response.[364]

Implications for the 2021 Australian Infrastructure Plan

As per commentary on Recommendation 9.1, the concept of long-term infrastructure planning and community engagement is well-embedded with government departments across Australia. There does not appear to be a pressing rationale for Plan 2021 to address this matter.

[358] Infrastructure SA, May 2020, 20-year state infrastructure strategy, https://www.infrastructure.sa.gov.au/__data/assets/pdf_file/0006/197511/20-Year-State-Infrastructure-Strategy-Full.pdf

[359] Infrastructure Tasmania, 2019, Our Infrastructure Future – 30-year Infrastructure Strategy Consultation, https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0011/199019/Our_Infrastructure_Future_-_30_year_Infrastructure_Strategy_Consultation.pdf

[360] Tasmania State Roads Division, 2018, Stakeholder and Community Engagement Framework, https://www.transport.tas.gov.au/__data/assets/pdf_file/0019/244441/Stakeholder_and_Community_Engagement_Framework.pdf

[361] Infrastructure Victoria, April 2019, Latest News, https://www.infrastructurevictoria.com.au/project/30-year-strategy/

[362] Infrastructure Victoria, March 2019, Transport Network Pricing Community Panel, https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/IV-Transport-Network-Pricing-Community-Panel-Report.pdf; Infrastructure Victoria, April 2021, Tackling transport emissions to encourage uptake of low or zero emissions vehicles sooner, https://www.infrastructurevictoria.com.au/wp-content/uploads/2021/04/Tackling-Transport-Emissions-Community-Panel-Report-April-2021.pdf

[363] Infrastructure WA, February 2019, Consultation Report, https://www.infrastructure.wa.gov.au/sites/default/files/2019-09/IWA_Consultation_Report_Feb2019.pdf

[364] Infrastructure WA, FAQ, https://www.infrastructure.wa.gov.au/sites/default/files/2019-11/IWA-FAQs_November2019.pdf

9.4 The Australian Government, in partnership with state and territory governments, should establish effective corridor protection mechanisms to ensure the timely preservation of surface, subterranean and air corridors, and strategic sites, for future infrastructure priorities.

Entity(ies) responsible: State Government
Sectors subject to assessment: Various
Australian Government response: Supported

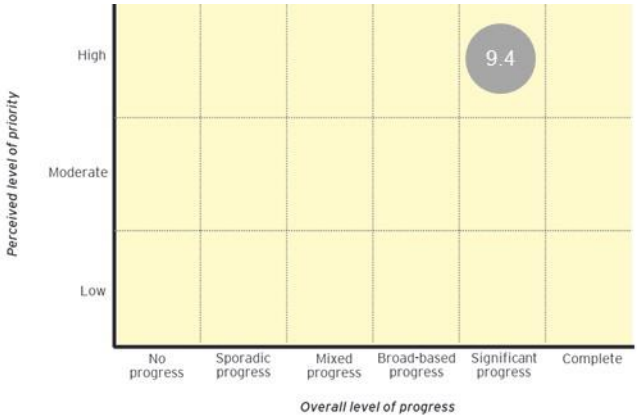
Overall assessment of progress: Significant progress
Perceived level of priority: High

Rationale from 2016 Plan

Effective corridor preservation can deliver benefits to government by lowering land acquisition costs when delivering infrastructure.

Approach to assessment

A review of each jurisdiction's recent infrastructure plan was conducted, and evidence gathered as to whether there were clear actions towards supporting corridor protection, in particular around ports and rail.



Evidence-based assessment

Jurisdictional outlooks highlighted in Infrastructure Australia's *Corridor Protection* report are listed below. Updated corridor protection mechanisms have also been included to demonstrate any recent changes.

- The **Australian Capital Territory** Planning Strategy identifies several key issues for ongoing growth including the protection of strategic transport corridors and the facilitation of appropriate development along and around identified corridors (Monaro and Barton corridors).[365]
- Transport for **New South Wales** is protecting 19 corridors across Sydney as per the 2012 Long-Term Transport Masterplan. As per the 2018 Building Momentum State Infrastructure Strategy, nine corridors have been identified by Infrastructure Australia for national significant projects.[366]
- The **Northern Territory** 10 Year Infrastructure Plan outlines how land should be used and developed now and in the future. As part of the Integrated Strategic Land Use Plan, the Planning Act enables the Planning Commission to identify transport corridors, utility corridors and sites for essential service facilities and other public and social infrastructure sites.[367]
- The **Queensland** State Infrastructure Plan only refers to the potential for co-locating infrastructure in corridors. Specific protected corridors can be found in the Queensland Governments planned transport corridors webpage.[368]
- As suggested by the **South Australian** 2015 Integrated Transport and Land Use Plan, preserve corridors for train network extensions only exist in outer Adelaide. The current mass transit corridors in Adelaide have relatively low population densities in immediate catchments (within 500m). As a result, there is opportunity to revisit policy settings for land use and urban development to leverage the latent capacity.[369]

[365] ACT Government, 2018, ACT Planning Strategy, https://www.planning.act.gov.au/__data/assets/pdf_file/0007/1285972/2018-ACT-Planning-Strategy.pdf
[366] Infrastructure New South Wales, 2018, Building Momentum, https://insw-sis.visualise.today/documents/INSW_2018SIS_BuildingMomentum.pdf
[367] Northern Territory Government, 2018, 10 Year Infrastructure Plan Annual Review, https://dipl.nt.gov.au/__data/assets/pdf_file/0006/775176/10-year-infrastructure-plan-2019-print.pdf
[368] Queensland Government, Department of Transport and Main Roads, Planned transport corridors, https://www.tmr.qld.gov.au/Community-and-environment/Planning-for-the-future/Preserved-transport-corridors
[369] Infrastructure Australia, July 2017, Corridor Protection, https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/CorridorProtection.pdf

- **Tasmania's** Department of State Growth Implementation Plan outlines several action items for the State to ensure freight demand is integrated in transport and land use planning. It aims to align planning, investment and governance between the three levels of government so that there is an agreement for freight planning and corridor protection between governments. Several deals that are currently active and are protecting key strategic corridors include the Launceston City Deal and the Hobart City Deal.[370]
- **Victoria's** Plan Melbourne long term strategy contains recommendations that a number of corridors require further study and, potentially corridor protection. The Victorian infrastructure strategy outlined a 5-year review on corridor protection, specifically in freight precincts for land, sea and air. The corridor protection strategy is still active in alignment to Plan Melbourne.[371]
- The **Western Australia** Government highlighted in its 2014 State Planning Strategy 2050 that the need for the strategic identification of future land areas and precincts, the definition of buffers, the provision of land for infrastructure corridors. As a result of METRONET, key transport corridors will be required to transition into multi-functional corridors to achieve a more compact and diverse urban form.[372]

Implications for the 2021 Australian Infrastructure Plan

The concept of corridor protection appears to be well understood, however limited long-term planning to identify and reserve additional future corridors is underway. Hence, there is a strong need to see continued progress moving from plan to implementation.

[370] Tasmania Government, 2019, Tasmania Implementation Plan - https://www.freightaustralia.gov.au/sites/default/files/documents/tasmania_nfsc_implementation_plan.pdf

[371] Infrastructure Victoria, 2016, 30-year Infrastructure Strategy, https://www.infrastructurevictoria.com.au/project/30-year-strategy/

[372] Infrastructure Australia, July 2017, Corridor Protection, https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/CorridorProtection.pdf

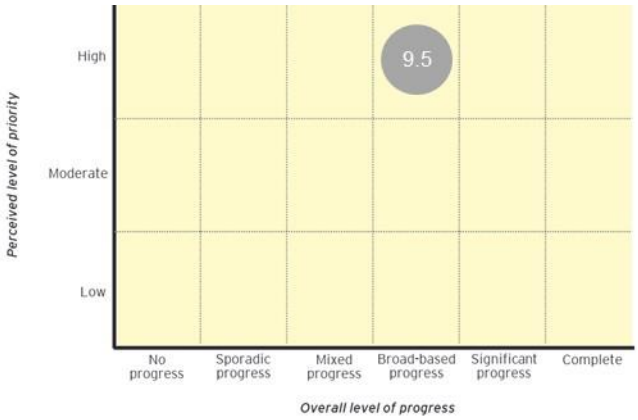
9.5 Prior to deciding to fund an infrastructure investment, governments should undertake project development studies.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported in-principle

Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

Project development studies will increase the quality of decision making around infrastructure. Studies should be produced once problems have been identified, and should include strategic options assessments, feasibility studies and project business cases.



Approach to assessment

An assessment as to the progress of this recommendation was guided by a review of jurisdictional infrastructure frameworks.

Evidence-based assessment

Guidance surrounding problem identification and business case development is heavily utilised across Australia and is bolstered by the *Infrastructure Australia Assessment Framework*. The same progress has not been made at a local government level.

- Infrastructure Australia sets out the assessment framework used to consider initiatives and projects for inclusion on the Infrastructure Priority List (IPL). Guidance for proponents to submit infrastructure proposals through an objective and structured process is provided within the assessment framework. Proponents of potential infrastructure solutions are encouraged to use the Infrastructure Australia checklists and templates in the assessment framework, including all available supporting material such as any related studies and reports.[373]
- The Strategic Asset Management Framework (SAMF) is the Western Australian Government asset management framework. The SAMF suggests the provision of a Strategic Asset Plan (SAP) in the agency's proposal. An SAP looks 10 years ahead to show how an agency intends to deliver practical services to the public using Government infrastructure, buildings, other assets, and related demand management initiatives.[374]

  Similar frameworks exist across all jurisdictions. Examples of project development studies encouraged within the SAMF include:

  - Project Definition Plans (PDP);
  - Procurement Options Analysis (POA); and
  - Strategic Asset Plan (SAP).
- There is little evidence to suggest that similarly rigorous strategic asset frameworks (or similar) or infrastructure assessment framework encourages local governments to undertake robust project development studies. Project definition plans, strategic asset plans and the like do not seem to be apparent. There is however guiding content around asset management and planning, for examples Local Government Victoria's Local Government Asset Management Better Practice Guide.[375]

[373] Infrastructure Australia, March 2018, Assessment Framework, https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/infrastructure_australia_assessment_framework_2018.pdf
[374] Western Australian Department of Treasury, Strategic Asset Management Framework, https://www.wa.gov.au/sites/default/files/2020-02/samf-strategic-asset-plan.pdf
[375] Local Government Victoria, 20115, Local Government Asset Management Better Practice Guide, https://www.localgovernment.vic.gov.au/__data/assets/pdf_file/0035/48599/Local-Government-Asset-Management-Better-Practice-Guide.pdf

Implications for the 2021 Australian Infrastructure Plan

As per the case for recommendation 9.2, there has been much activity in the development and use of infrastructure planning and development assessment frameworks and hence this recommendation is considered largely complete. Targeted content towards local governments where infrastructure development studies are perhaps not as embedded in assessment frameworks, and perhaps not as well-developed may be appropriate for the 2021 Australian Infrastructure Plan.

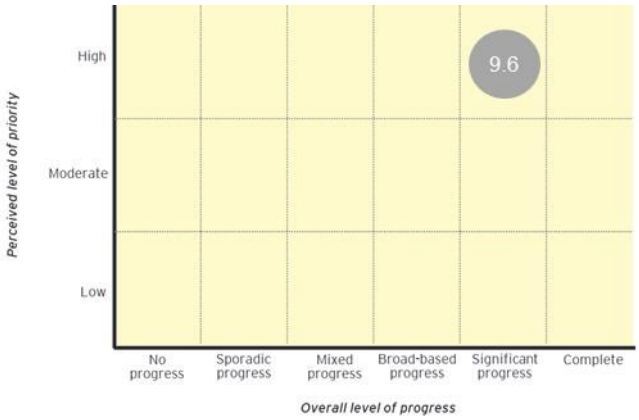
9.6 The Australian Government, and state and territory governments should allocate increased funding for project development work for initiatives identified on the Infrastructure Priority List.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Significant progress
Perceived level of priority: High

Rationale from 2016 Plan

Initiatives listed in the Infrastructure Priority List (IPL) are potential infrastructure problems, opportunities or 'early stage' solutions for which a business case has not yet been completed. Projects listed on the IPL demonstrate an infrastructure solution in which a rigorous business case was provided by proponents and positively assessed by Infrastructure Australia.



Approach to assessment

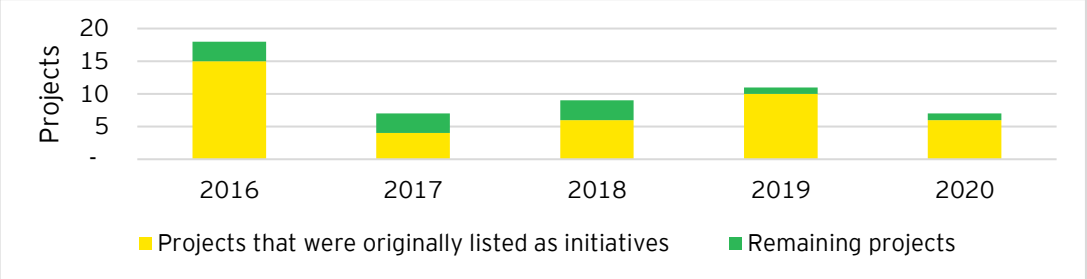
An assessment of how many initiatives have 'graduated' into projects on the IPL, through positive assessment of business cases, as well as other evidence of investment in improving business case development.

Evidence-based assessment

The infrastructure list has been growing since its inception, and the number of positively assessed projects has been increasing.

- Since 2016, 52 projects have been positively assessed as priority projects on the IPL, of which most (41) were originally listed as initiatives on the IPL. A year-on-year breakdown is shown below, grouped by the year in which projects were added to the IPL.

Figure 8: Projects listed on the Infrastructure Priority List, based on year listed as a project on the IPL



Source: Infrastructure Australia annual IPL project summaries

- The Australian Government has invested in improving business case development, such as through its $250 million Major Projects Business Case Fund initiative,[376] or the National Water Grid Authority's National Water Infrastructure Investment Policy Framework.[377]
- The 2018 Prioritising Reform report provided an update as to whether increased funding had been allocated to projects on the IPL. It was reported that the IPL has been successful in guiding investment towards projects with demonstrated economic benefits and that at the time of reporting approximately $25 billion worth of projects moved off the IPL and into the delivery phase. This could infer that governments are prioritising the delivery of significant infrastructure.[378]

[376] Department of Infrastructure, Regional Development and Communications, 2020, Major Projects Business Case Fund, https://investment.infrastructure.gov.au/key_projects/initiatives/funding_major_business_cases.aspx
[377] National Water Grid Authority, 2020, Evidence-based water infrastructure investments, https://www.nationalwatergrid.gov.au/framework
[378] Infrastructure Australia, 2018, Prioritising Reform: Progress on the 2016 Australian Infrastructure Plan

Implications for the 2021 Australian Infrastructure Plan

While never perfect, the adoption of the IPL and its significance in channelling project development and capital funds to projects that are considered worthy has been a success.

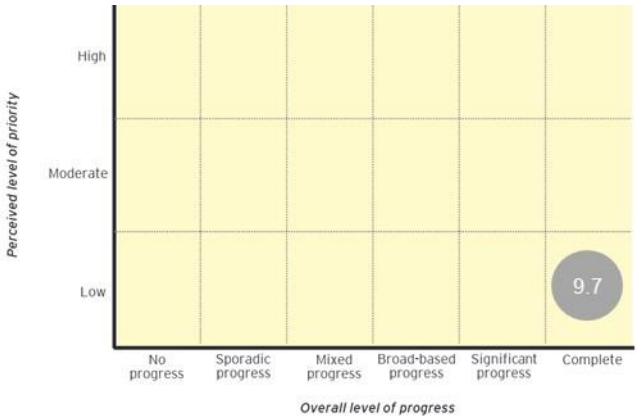
9.7 Infrastructure Australia will develop National Governance Principles in partnership with governments and the private sector to support better project decision making across the public infrastructure sector.

Entity(ies) responsible: Infrastructure Australia
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported in-principle

Overall assessment of progress: Complete
Perceived level of priority: Low

Rationale from 2016 Plan

Infrastructure Australian advocates for increased transparency and rigour in planning, project selection and governance frameworks. The Productivity Commission's 2014 Public Infrastructure Inquiry Report concluded that the governance arrangements for the selection of much of Australia's infrastructure were deficient and hence contributed to unsatisfactory infrastructure outcomes.



Approach to assessment

We undertook an investigation as to whether Infrastructure Australia has developed nation governance principles. Supportive of governance guidelines is the development of long-term, integrated infrastructure plans, the publication of full project business cases, in-depth community engagement and post-completion reviews. Judgement as to whether progress has been made on these additional fronts are addressed in other recommendations.

Evidence-based assessment

The combination of the Infrastructure Australia assessment framework itself, the frameworks developed from the jurisdictional infrastructure bodies and the Decision-making Principles report suggest that this recommendation has been addressed.

- In July 2018, Infrastructure Australia developed its Infrastructure Decision-making Principles report. The Infrastructure Decision-making Principles provide guidelines to drive greater transparency and accountability in infrastructure decision-making.
- Infrastructure Australia recommends that these principles are applied by governments and project proponents across Australia and that these principles be included as part of the National Partnership Agreement negotiations between the Australian Government and the states and territories. Infrastructure Australia also encourages Australian Government funding to be contingent on jurisdictions' agreement to apply these principles as part of the project development and delivery processes.[379]
- As stated in recommendation 9.5, Infrastructure Australia's Assessment Framework is designed to assess projects so as to support better project decision making across the public sector. The assessment framework contains guidance in problem identification and prioritisation, initiative identification and options development amongst other important steps in the development of public infrastructure.[380]
- The majority of the jurisdictional infrastructure bodies, such as Infrastructure New South Wales and Infrastructure Victoria have a number of resources, guidelines and topical analysis to assist in the development of business cases.

[379] Infrastructure Australia, 2018, Decision-making principles, https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/Infrastructure_Decision-Making_Principles.pdf
[380] Infrastructure Australia, March 2018, Assessment Framework, https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/infrastructure_australia_assessment_framework_2018.pdf

Implications for the 2021 Australian Infrastructure Plan

There does not appear to be an overarching need for the 2021 Australian Infrastructure Plan to address this matter given the good level of progress on the matter since 2016.

10 Best practice

10. Best practice

10.1 A national Infrastructure Performance Measurement Framework should be developed to provide routine measurement of the performance and efficiency of Australia's infrastructure projects, networks and systems.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported in-principle

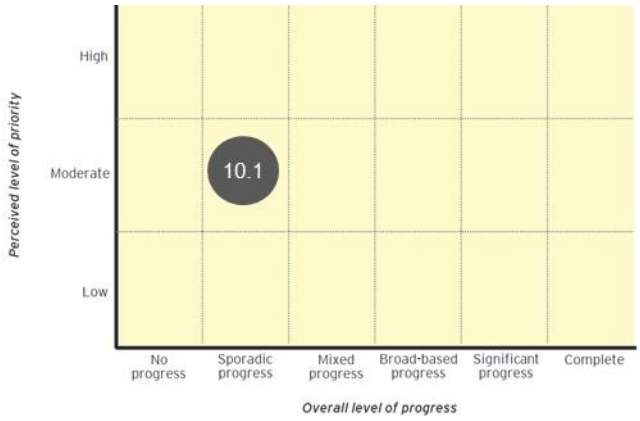
Overall assessment of progress: Sporadic progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

The improved collection of national data sets supports effective measurement of infrastructure projects whereby state and territory governments can better monitor and benchmark progress.

Approach to assessment

An investigation as to whether a National Infrastructure Performance Measurement Framework or similar had been developed was conducted.



Evidence-based assessment

A National Infrastructure Performance Measurement Framework does not exist; however, the National Cities Performance Framework evidences some progress in the area

- The establishment of the National Cities Performance Framework in 2017 enables more effective tracking of infrastructure performance across jurisdictions using collated national data sets (data sets were updated as at July 2019). A key aim of the National Cities Performance Framework is to develop tracking for greenhouse gas emissions per capita, or city-level energy consumption, on which to base an emissions measure. This currently does not exist. Short term reviews (3 years) of the policy framework will be undertaken by Australian Government. The Framework highlighted Australia's agenda supporting data integration to improve measurement of infrastructure projects:
  - The Australian Government established the Data Integration Partnership for Australia (DIPA) in 2017 to better utilise public sector data. The aim of DIPA is to provide effective coordination between government departments by increasing the frequency and review of data collection.
  - The Smart Cities and Suburbs Program supports collaborative projects that implement technology-based solutions to urban challenges. Under this program the Government will provide funding for innovative projects across Australia. Projects will help to address a wide range of urban challenges, such as congestion, environmental management, parking, development planning, public safety and accessibility of information and services.
  - The CSIRO Future Cities Program is developing an Energy Use Data Model to enable new insights into how peak load, daily load shape, demographics, technology and environment all interact to drive energy behaviour. [381]

[381] Smart Cities Plan, 2017, National Cities Performance Framework Final Report, https://www.infrastructure.gov.au/cities/national-cities-performance-framework/files/National_Cities_Performance_Framework_Final_Report.pdf

Implications for the 2021 Australian Infrastructure Plan

Some movement in this area has taken place since 2016 however it is rather sporadic in nature. Examples point to progress as it relates to cities and energy but a relative absence of progress in transport. The topic behind this recommendation could be considered relatively important for the 2021 Australian Infrastructure Plan.

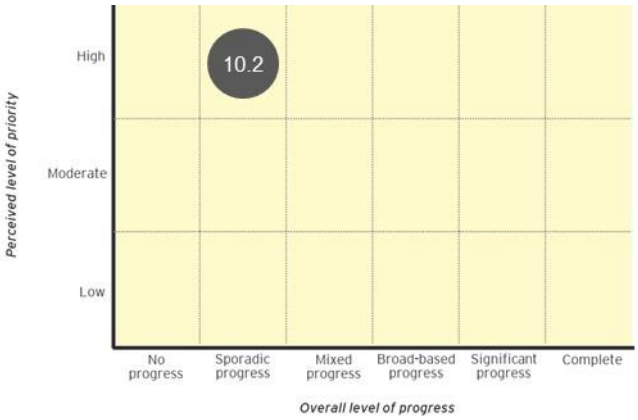
10.2 The Australian Government should make funding for nationally significant projects contingent upon proponents agreeing to post-completion reviews.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Sporadic progress
Perceived level of priority: High

Rationale from 2016 Plan

The objective of this recommendation is to promote better decision making, which should result in more robust business cases and better use of public funds. Post completion reviews should help proponents and the Australian Government review the implemented solution to understand whether benefits have been realised as expected, whether costs estimations were accurate, and what lessons can be learnt.



Approach to assessment

Infrastructure Australia's Assessment Framework and Bureau of Infrastructure, Transport and Regional Economics' (BITRE) ex-ante evaluation of major road investment projects are points of reference in assessing the integration of post-completion reviews in funding decisions.

Evidence-based assessment

The evidence detailed below suggests that there is support for greater post-completion reviews, but they are seldom performed.

- Infrastructure Australia supported the need for post-completion reviews in 2018 by highlighting Government's commitment to developing and releasing post completion reviews in its infrastructure decision-making principles. At the time of writing the infrastructure decision-making principles, it was said that post-completion reviews were rarely undertaken and published.[382]
- The BITRE delivered a research report in 2018 reviewing five national road investment projects. Lessons learnt from this report highlighted:
  - Room for improvement in conducting Cost Benefit Analysis (CBA) reporting quality;
  - The need for accurate traffic assumptions in bypass projects;
  - A consensus on the effects of road condition on road user costs is required to ensure CBAs across road projects are comparable;
  - The ex-ante CBA not featuring any residual value for the project. Residual values should be included in CBAs where asset lives extend well beyond the analysis period; and
  - Projects with traffic not being subject to substantial congestion for initial years are unlikely to provide high enough benefits to pass the first-year rate of return test. [383]
- The Bruce Highway Upgrade was subject to ex-post evaluations of CBAs on national road investment projects by BITRE and the Queensland Department of Transport and Main Roads.
- The performance reporting framework for National Agreements is based on high -level performance indicators which are published with analysis conducted on the extent to which performance supports the objectives of National Agreements. From July 2014, reward payments

[382] Infrastructure Australia, July 2018, Infrastructure Decision-making Principles, https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/Infrastructure_Decision-Making_Principles.pdf
[383] Bureau of Infrastructure, Transport and Regional Economics (BITRE), 2018, Ex-post Economic Evaluation of National Road Investment Projects – Volume 2 Case Studies, Report 145, BITRE, Canberra ACT.

under reform National Partnerships remain contingent on the achievement of pre-determined milestones and performance benchmarks (assessed independently).[384]

- The wider implementation of post-completion reviews is supported by Infrastructure Australia as outlined in its 2018 Assessment Framework and the release of its checklist for post completion reviews.[385]

Implications for the 2021 Australian Infrastructure Plan

While actively promoted, there is limited certainty that post completion reviews are undertaken or common place. If they do occur, public transparency is limited. It would be prudent to continue to encourage proponents to undertake post-completion reviews.

[384] Council on Federal Financial Relations, Performance Reporting, http://www.federalfinancialrelations.gov.au/content/performance_reporting.aspx

[385] Infrastructure Australia, March 2018, Assessment Framework "For initiatives and projects to be included in the Infrastructure Priority List", https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/infrastructure_australia_assessment_framework_2018.pdf

10.3 The COAG Infrastructure Working Group should deliver a national infrastructure skills plan to ensure Australia has the right people with the right skills to deliver our infrastructure to 2031 and beyond.

Entity(ies) responsible: Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported in-principle

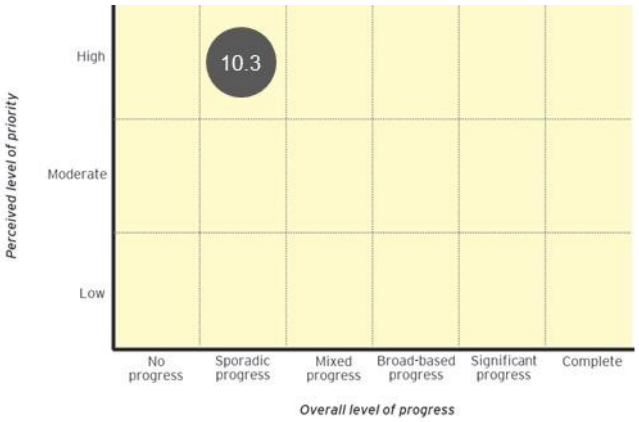
Overall assessment of progress: Sporadic progress
Perceived level of priority: High

Rationale from 2016 Plan

A skills plan would provide information on the likely professional and workforce requirements to deliver planned and forecast infrastructure supply.

Approach to assessment

Desktop research was conducted to determine whether a national infrastructure skills plan has been developed by the COAG Infrastructure Working Group or another body.



Evidence-based assessment

In response to this recommendation the Australian Government asked Infrastructure Partnerships Australia to work with industry to develop a plan to provide advice to industry on the likely professional workforce requirements and the skills deficiencies expected.[386]

In March 2020, a COAG Communique stated that the National Skills Commission will undertake research and analysis of the future skills needs across industry to better align government funding with labour market demands.[387]

In parallel, Infrastructure Australia has since been tasked by COAG (now through the First Secretaries Group of the National Cabinet) to report on the capacity and capability of the market to deliver the forward infrastructure pipeline. Infrastructure Australia has scoped this request in detail with jurisdictions and industry associations to support the development of annual forecasts of supply and demand for infrastructure project labour, materials and risk. Consistent with this request, the first report to First Secretaries Group will be delivered in mid-2021.

State and territory jurisdictions have undertaken various projects to meet either local skills requirements, such as the NSW Government's Infrastructure Skills Legacy Project, or specific skill sets, such as the Victorian Governments' Australian Major Project Leadership Academy.

Implications for the 2021 Australian Infrastructure Plan

Given the limited progress and ongoing relevance of this recommendation, the topic of a national infrastructure skills plan is considered a priority for the 2021 Australian Infrastructure Plan.

[386] Federal Department of Infrastructure and Regional Development, November 2016, The Australia Government's Response to Infrastructure Australia's Australian Infrastructure Plan, https://www.infrastructure.gov.au/infrastructure/publications/files/Australian-Government-Response-to-Australian-Infrastructure-Plan_Nov-2016.pdf

[387] Council of Australian Governments, March 13 2020, COAG Meeting Communique, 13 March 2020, https://www.coag.gov.au/sites/default/files/communique/communique-13-march2020.pdf

10.4 Governments should make the use of Building Information Modelling (BIM) mandatory for the design of large-scale complex infrastructure projects. The Australian Government should commission the Australian Procurement and Construction Council to develop appropriate guidance for the use of BIM and common protocol to be applied when using BIM.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

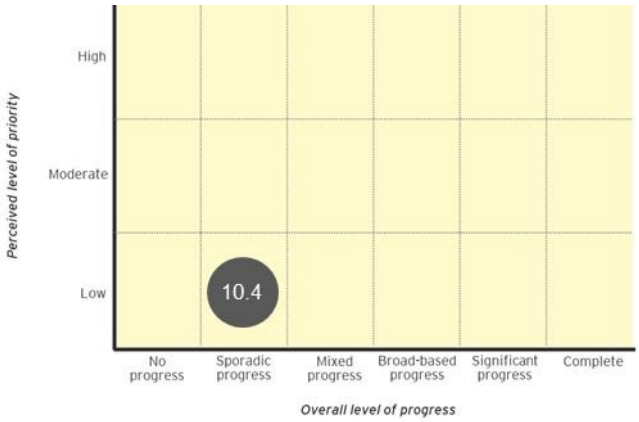
Overall assessment of progress: Sporadic progress
Perceived level of priority: Low

Rationale from 2016 Plan

Greater use of technology in planning and designing infrastructure can deliver substantial benefits during construction and operation. BIM uses collaborative processes and sophisticated software to generate, manage and share detailed multi-dimensional models of buildings, infrastructure and places.

Approach to assessment

Research was conducted to evidence the use of BIM across Australian governments.



Evidence-based assessment

As at 2016, the Institute of Public Works Engineering Australia (IPWEA) suggested that the Australian Government and various state government departments were intensifying their efforts to adopt BIM however the Australian Government has not made it mandatory to use BIM. The Australian Government supported this recommendation in its response to the 2016 Australian Infrastructure Plan, but suggested that it should be mandated on a project-by-project basis only.[388]

- The IPWEA stated that as at August 2016, the following projects had used BIM:
  - Royal Adelaide Hospital Project;
  - Moorebank Intermodal Terminal Project;
  - Barangaroo development, including Wynyard Walk;
  - North West Rail Link;
  - Southern Freight Link; Figure 1: BIM and its participants
  - Regional Rail Link Victoria;
  - South West Rail Link;
  - Auburn Stabling Yard;
  - New Generation Rolling Stock Stabling, Ipswich;
  - Sydney CBD light rail early works;
  - Perth Children's Hospital;
  - Perth Stadium; and
  - Perth Museum.[389]

[388] Department of Infrastructure, Transport, Cities and Regional Development, November 2016, The Australian Government's Response to Infrastructure Australia's Australian Infrastructure Plan, https://www.infrastructure.gov.au/infrastructure/publications/files/Australian-Government-Response-to-Australian-Infrastructure-Plan_Nov-2016.pdf

[389] Institute of Public Works Engineering Australia, August 2016, The BIM Revolution – where is the Australian Government up to? https://www.ipwea.org/blogs/intouch/2016/08/01/what-you-need-to-know-about-bim-in-australia

- In late 2019 Queensland noted as leading the way in mandating the use of BIM for all Queensland Government Construction projects with a value of $50 million or more.[390]
- There are no state policies in place for the Australian Capital Territory, New South Wales, Northern Territory, South Australia, Tasmania, Victoria or Western Australia. Victoria has however produced a Digital Asset Strategy which contains detail to encourage consistency surrounding BIM across agencies.[391]
- There are examples of other jurisdictions mandating the use of BIM for particularly large bespoke projects.

Implications for the 2021 Australian Infrastructure Plan

BIM is embedded in infrastructure sector and has been taken up by the private sector (planners, designers, constructors) as almost a commercial necessity, given its many advantages over paper-based systems. The topic of BIM uptake is considered a low priority for the 2021 Australian Infrastructure Plan.

[390] Queensland Department of State Development, Tourism and Innovation, October 2019, https://www.statedevelopment.qld.gov.au/infrastructure/infrastructure-planning-and-policy/building-information-modelling.html

[391] Office of Projects Victoria, 2020, Victoria Digital Asset Strategy, http://www.opv.vic.gov.au/Victorian-Chief-Engineer/Victorian-Digital-Asset-Strategy

10.5 Federal, state and territory governments should adopt international standards by default unless there is a compelling rationale for the development of a non-conforming Australian and jurisdictional standard.

Entity(ies) responsible: Australian and State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

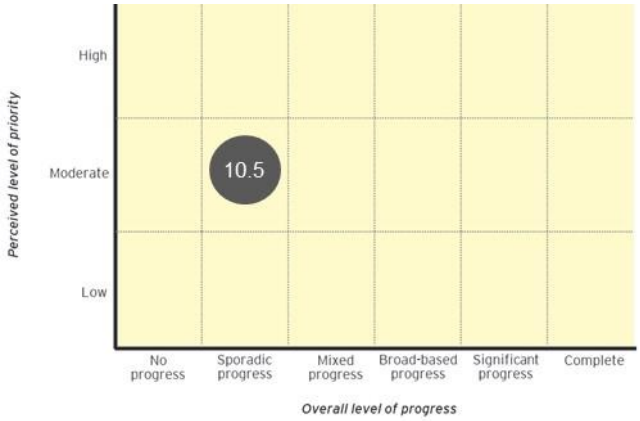
Overall assessment of progress: Sporadic progress
Perceived level of priority: Moderate

Rationale from 2016 Plan

Differing processes and standards for infrastructure planning, procurement, construction, operation and maintenance across Australia can have significant negative impacts on industry efficiency.

Approach to assessment

A search of strategic asset management frameworks was conducted across states and territories to find references to international standards. International standards can apply to engineering and project management standards, as well as asset management.



Evidence-based assessment

The majority of jurisdictions have infrastructure frameworks that refer to international asset management standards. Although there is evidence to suggest asset management frameworks do refer to international standards, it is difficult to ascertain whether these standards are consistently adopted in practice.

- The **Australian Capital Territory** Government's Strategic Asset Management Framework is not publicly available so alignment with international standards is difficult to determine. However, there is evidence of alignment and compliance with international standards in the Territory's electricity network owner and provider, Evoenergy. Evoenergy has adopted the ISO55001 International standards to achieve effective asset management outcomes and were also awarded certification to the ISO 55000 series of international standards for asset management. [392]
- **New South Wales** uses the Asset Management Policy for the New South Wales Public Sector. The Asset Management Policy seeks to align agency core asset management practices with internationally recognised practices contained within the International Asset Management Standards (ISO 55001).[393]
- The **Northern Territory** capital Darwin has an Asset Management policy which provides guidelines for implementing consistent asset management processes for the city. The policy does not refer to international standards. [394]
- **Queensland** has a Strategic Asset Management Framework to provide best practice guidelines for managing Queensland Government buildings and has an array of supporting documentation providing guidance on asset planning, asset disposal, building management, maintenance management and more. No such documentation refers to international standards.[395]

[392] Evoenergy, 2018, Asset management and governance: Regulatory proposal for the ACT electricity distribution network 2019-24, https://www.aer.gov.au/system/files/Evoenergy-Attachment%201%20Asset%20Management%20and%20Governance-January%202018_Public.pdf
[393] New South Wales, October 2019, Asset Management Policy, https://www.treasury.nsw.gov.au/sites/default/files/2019-11/TTIP19-07%20NSW%20Asset%20Management%20Policy%20-%20Master%20Approved_31%20October%202019.pdf
[394] Northern Territory Government, 2019, Asset Management Policy 055: City of Darwin, https://www.darwin.nt.gov.au/sites/default/files/publications/attachments/policy_055_-_asset_management_-_adopted_12_march_2019.pdf
[395] Queensland Government, Strategic Asset Management Framework, https://www.forgov.qld.gov.au/strategic-asset-management-framework

- In **South Australian** the Strategic Asset Management Framework dictates that asset management practices are to align with the principles of the international standard ISO 55000 Asset Management Series.[396]
- In **Tasmania,** the TasNetworks asset management system framework has been developed with close alignment to ISO55001 and in particular the relationship between the key elements of an ISO55000 AM system. The ISO compliant framework aims to ensure that the systematic approach to asset management delivers prudent and efficient outcomes that meet both the Corporate objectives and the Asset Management Objectives.[397]
- In **Victoria** the Asset Management Accountability Framework (AMAF) is the strategic asset management equivalent of the state's guidelines. The AMAF is aligned to ISO 55000, the international standard for asset management, but has some additional and different requirements to meet the specific needs of the Victorian Government.[398]
- In **Western Australia** the Strategic Asset Management Framework and related documents do not refer to ISO standards.[399] A large array of guidance documentation has been produced that guides maintenance management, maintenance planning and program models, asset retention and disposal and more.[400]

More broadly, thinking about the harmonisation of engineering and project management standards across Australian jurisdictions, and consistent classification systems, schemas, road stands, environmental protection standards etc, each jurisdiction often has its own standards as adopted by state agencies.

Implications for the 2021 Australian Infrastructure Plan

This recommendation has been largely addressed at a state level, bar some jurisdictions. Unless there are specific instances of non-compliance causing problems, there may not be a strong need to address this matter as part of the 2021 Australian Infrastructure Plan.

[396] South Australian Department of Planning, Transport and Infrastructure, Strategic Asset Management Framework, https://www.dpti.sa.gov.au/__data/assets/pdf_file/0004/292477/Strategic_Asset_Management_Framework.pdf
[397] Tasmania Government, TasNetworks, 2015, Strategic Asset Management Plan, https://www.aer.gov.au/system/files/TasNetworks%20-%20TN023%20-%20TasNetworks%20Strategic%20Asset%20Management%20Plan%202015%20-%20January%202016.pdf
[398] Victoria Treasury and Finance, March 2017, Asset Management Accountability Framework, https://www.dtf.vic.gov.au/infrastructure-investment/asset-management-accountability-framework
[399] Western Australian Department of Treasury, Strategic Asset Management Framework, https://www.wa.gov.au/sites/default/files/2020-02/samf-strategic-asset-plan.pdf
[400] Western Australian Department of Treasury, Strategic Asset Management Framework – related documents, https://www.wa.gov.au/government/document-collections/strategic-asset-management-framework

10.6 Australia needs strong and dependable commitments to proceed with planned projects and reforms to establish confidence in infrastructure markets.

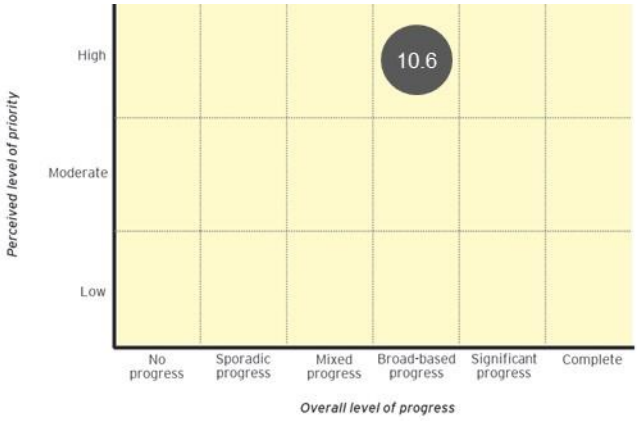
Entity(ies) responsible: Local, State and Australian Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported in-principle
Overall assessment of progress: Broad-based progress
Perceived level of priority: High

Rationale from 2016 Plan

Substantial upfront costs and long construction times mean infrastructure can have a unique risks profile for investors. A long-term infrastructure agenda can reduce risks for investors and constructors.

Approach to assessment

A reflection of the current mechanisms in place that support a long-term infrastructure outlook was considered to determine whether this recommendation has been addressed.



Evidence-based assessment

The collection of a number of funding mechanisms and frameworks culminate in a strong narrative towards Australia's priority infrastructure projects and future planning. A list of the mechanisms in place that communicate Australia's infrastructure commitments is provided below.

- Infrastructure Australia's Infrastructure Priority List (IPL) is a list of infrastructure projects positively evaluated by Infrastructure Australia. The projects listed on the IPL demonstrate an infrastructure solution to some of Australia's largest problem or opportunity areas.
- Infrastructure Australia publishes evaluations of business cases for significant infrastructure. Evaluations outline Infrastructure Australia's assessment of the strategic fit of projects, the costs and benefits of projects, and project deliverability.
- Australian and State Governments announce medium and large-scale infrastructure projects, and often provide updates and communique through various media channels.
- All state and territory governments have delivered long-term infrastructure plans, within which infrastructure implications are analysed and infrastructure is planned.
- In late 2016 the Australia and New Zealand Infrastructure Pipeline was established to provide a forward view of public infrastructure activity. The pipeline aims to provide certainty of the future works program to investors, constructors, governments and other agencies.[401]

Implications for the 2021 Australian Infrastructure Plan

Significant progress has been made towards this recommendation. The 2021 Australian Infrastructure Plan may be used to encourage continued uptake of greater transparency around infrastructure commitments.

[401] ANZIP, 2020, Australia and New Zealand Infrastructure Pipeline, https://infrastructurepipeline.org/

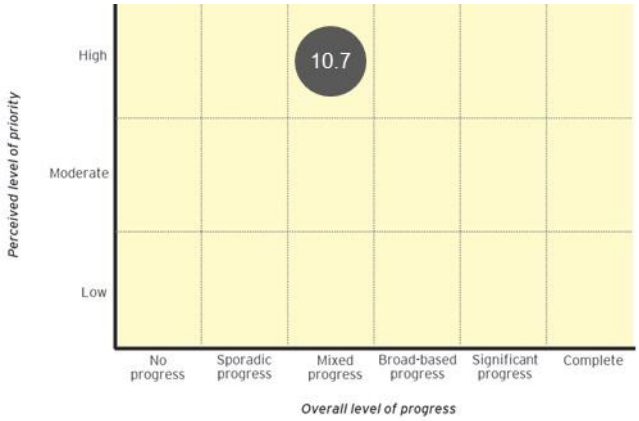
10.7 Project proponents should routinely develop strategies to ensure the full benefits of infrastructure investments are realised.

Entity(ies) responsible: State Government
Sectors subject to assessment: Sector agnostic
Australian Government response: Supported

Overall assessment of progress: Mixed progress
Perceived level of priority: High

Rationale from 2016 Plan

Benefits associated with given projects should be actively managed to maximise return on investment and monitored through post-completion review processes. Project proponents should develop strategies to ensure benchmarking of project costs and procurement can drive value for money in project delivery.



Approach to assessment

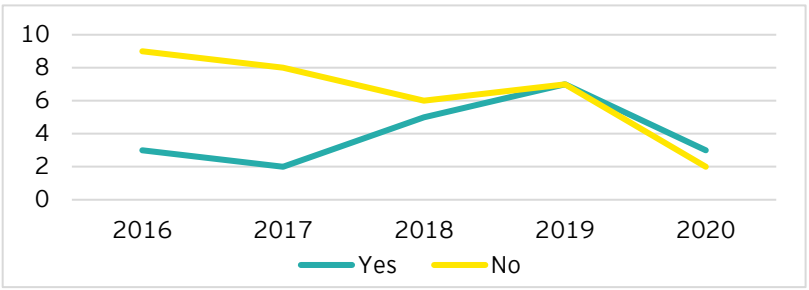
A review of public business case evaluations was conducted. The review looked at business case evaluations originating from various sectors and jurisdictions, and identified where benefits realisation plans were considered, where they were not and why.

Evidence-based assessment

There has been mixed progress across jurisdictions in incorporating benefits realisation plans within all future public infrastructure investments. The evidence is as follows.

- Within the Infrastructure Australia guidelines and assessment framework for Stage 3 and 4 (Business Case Development and Business Case Assessment), the concept of a benefits realisation plan is encouraged as part of post-completion reviews.
- Of 52 project evaluations conducted by Infrastructure Australia since July 2016, 20 project business cases were found to include a benefits realisation plan. The figure below demonstrates an increasing trend in project business cases containing benefits realisation plans.[402]

Figure 9: Trend of benefits realisation plans included in business cases since 2016



Source: Infrastructure Australia past evaluations archive

- Since July 2016 when Infrastructure Australia commenced business case evaluations, Tasmania, Victoria and Western Australia have had the highest proportion of business cases containing benefits realisation plans. The table below records the proportion of business cases within which a benefits realisation plan is contained. Note that there may be outliers, for example Queensland's Bruce Highway has a number of business cases associated with it yet none include a benefits realisation plan.

[402] Infrastructure Australia, 2020, https://www.infrastructureaustralia.gov.au/project-evaluations/past-evaluations?page=1

Table 7: Estimated proportion of business cases evaluated comprising a benefits realisation plan

State	NSW	QLD		SA	TAS	VIC	WA
%	43%	29%		20%	67%	50%	50%

Source: Infrastructure Australia past evaluations archive

Implications for the 2021 Australian Infrastructure Plan

Good progress has been made but the rates of inclusion of benefits realisation plans in business case work remain relatively low. It may be prudent for the 2021 Australian Infrastructure Plan to address this by focussing on constraints and capability as potential barriers to overcome to achieve greater alignment with the objective.

Appendix A

The tables below detail recommendations categorised in groups two to four.

Table 8: Group 2, Somewhat important for the 2021 Australian Infrastructure Plan

Recommendation		Level of progress
High priority		
1.2	Governments should make greater use of well-regulated market-based solutions to improve the efficiency of Australia's infrastructure and support productivity growth.	Broad-based
1.8	Infrastructure operators should generate, collect and use data to drive greater productivity in infrastructure service delivery.	Broad-based
2.5	Governments should aim to grow the population of our smaller capital cities, in particular Adelaide, Hobart and Darwin beyond their current projections.	Broad-based
2.6	The cities of Newcastle, Wollongong, Geelong, the Sunshine Coast and the Gold Coast should be supported by governments, businesses and local communities to grow their populations and economies.	Broad-based
3.1	Governments should upgrade legacy capital city passenger transport infrastructure to deliver higher capacity, high-frequency services across all modes.	Significant
3.3	Governments should increase funding to address gaps in access to passenger transport on the outskirts of Australian cities.	Significant
3.5	All governments should establish targeted investment programs focused on removing first and last mile constraints across the national freight network.	Broad-based
4.3	Regional infrastructure investment should respond to each community's particular needs, its changing demographics, and what is affordable.	Broad-based
4.6	Governments should commit to increasing information on the feasibility, economic viability and sustainability of new water resource developments and infrastructure in priority catchments.	Broad-based
5.5	Federal, state and territory governments should also commit to the full implementation of a light vehicle road charging structure in the next 10 years.	Significant
6.8	Governments and regulators should evaluate the likely impacts of emerging and disruptive technologies on the national electricity market and recommend specific reforms to address potential regulatory failure and technology disruption.	Significant
7.1	Australia's energy and transport sectors should deliver emissions reductions in line with international commitments.	Broad-based
9.4	The Australian Government, in partnership with state and territory governments, should establish effective corridor protection mechanisms to ensure the timely preservation of surface, subterranean and air corridors, and strategic sites, for future infrastructure priorities.	Significant
9.5	Prior to deciding to fund an infrastructure investment, governments should undertake project development studies.	Broad-based
9.6	The Australian Government, and state and territory governments should allocate increased funding for project development work for initiatives identified on the Infrastructure Priority List.	Significant
10.6	Australia needs strong and dependable commitments to proceed with planned projects and reforms to establish confidence in infrastructure markets.	Broad-based

Recommendation		Level of progress
Moderate priority		
1.7	Governments should increase funding for investments in projects and technologies that make better use of existing infrastructure.	Broad-based
2.1	The Australian Government should drive change in the planning and operation of Australia's cities through the use of Infrastructure Reform Incentives.	Significant
3.2	Data regarding the real-time operation, use and performance of Australia's transport networks should be made publicly available to enable the private sector to develop customer-focused mobile applications.	Significant
3.6	The Australian Government should work with communities and businesses to maximise opportunities created by the National Broadband Network.	Significant
4.5	The development of the proposed National Freight and Supply Chain Strategy should be informed by CSIRO's Transport Network Strategic Investment Tool (TRANSIT).	Complete
5.4	Federal, state and territory governments should commit to the full implementation of a heavy vehicle road charging structure in the next five years.	Significant
6.2	Where commercially viable monopoly infrastructure remains in public ownership, governments should define an appropriate independent regulatory framework which protects consumers and taxpayers, before divesting those assets into a well-functioning, well-regulated market.	Significant
6.7	Australia's electricity and gas markets should move to full retail price deregulation as soon as practically possible.	Significant
6.14	Governments should adopt a default option of exposing public transport services to contestable supply through franchising.	Significant
7.2	Building on the Energy White Paper, governments should work with the private sector to develop a cohesive strategy for supporting a transition to a lower emissions electricity generation sector at lowest cost to users and taxpayers.	Significant
8.1	To improve planning, coordination and delivery of infrastructure investments in remote and very remote regions, governments should: Commit to the ongoing integration of essential service delivery via existing local government frameworks; Draw on best practice principles for delivering remote infrastructure by working with communities; and Consider tendering the provision of economic infrastructure services and assess the merits of pooling investments across communities to establish scale and attract more private sector interest and innovation.	Broad-based
8.2	Renewable energy should replace diesel generation in remote communities wherever it is affordable and efficient to do so.	Significant
8.3	Governments should develop coordinated strategies with remote communities to remove barriers and maximise the benefits of the National Broadband Network and the opportunities it enables for households and businesses.	Broad-based
9.3	Alongside the delivery of integrated long-term infrastructure plans, state and territory governments should initiate an ongoing process of community engagement to discuss present and future infrastructure challenges and potential solutions.	Significant

Table 9: Group 3, Somewhat unimportant for the 2021 Australian Infrastructure Plan

Recommendation		Level of progress
Low priority		
1.5	Given current expenditure levels are unlikely to be sufficient to provide the infrastructure Australia needs over coming decades, a material increase in funding for infrastructure from both public and private sources is required to meet our infrastructure challenges and boost productivity.	Mixed
1.6	The Australian Government should consolidate its existing fragmented funding pools into an integrated and transparent Infrastructure Fund.	Mixed
5.10	Governments should routinely consider value capture opportunities in all future public infrastructure investments.	Mixed
6.1	Where a competitive market for supply of infrastructure services exists, or could exist, governments should efficiently exit direct service provision, allowing the market to allocate supply to meet demand.	Mixed
6.4	All governments should transfer their remaining publicly owned electricity generation, network and retail businesses to private ownership.	Mixed
6.10	Governments should define a pathway to transfer state-owned metropolitan water utility businesses to private ownership to deliver more cost-effective, customer-responsive services.	None
6.12	The Australian Government should work with state and territory governments to establish an independent national body to deliver a National Water Reform Plan and drive market reforms across the metropolitan and regional water sectors.	Mixed
9.2	Infrastructure service standards (both minimum and desired standards) should be used by all governments to guide future planning and project development.	Mixed

Recommendation		Level of progress
Low priority		
10.4	Governments should make the use of Building Information Modelling (BIM) mandatory for the design of large-scale complex infrastructure projects. The Australian Government should commission the Australian Procurement and Construction Council to develop appropriate guidance for the use of BIM and common protocol to be applied when using BIM.	Sporadic

Table 10: Group 4, Unimportant for the 2021 Australian Infrastructure Plan

Recommendation		Level of progress
Low priority		
2.2	The Australian Government should deliver a National Population Policy to identify Australia's population pathway over the next 50 years and outline the Australian Government's options to shape that growth.	Complete
2.8	Each state and territory government should deliver and consistently update long-term land-use plans for all Australian cities.	Significant
3.4	Australia needs a National Freight and Supply Chain Strategy. Infrastructure Australia, in partnership with governments and the private sector, should lead the development of the Strategy.	Complete
5.1	The Australian Government should require all project proponents seeking Australian Government funding to consider whole-of-life maintenance costs in their business case, and where possible they should be captured within the proposed contract structure.	Significant
5.2	Australia's public infrastructure asset owners should routinely use fixed-term maintenance contracts to deliver funding certainty for providers and better asset condition for users.	Significant
5.3	The Australian Government should initiate a public inquiry, to be led by a body like the Productivity Commission or Infrastructure Australia, into the existing funding framework for roads and development of a road user charging reform pathway.	Complete
5.8	The Australian Government should undertake a review of its capacity to use increased public borrowing to support an expanded economic infrastructure investment program.	Broad-based
5.9	The Australian Treasury should evaluate the viability of reporting debt under a more transparent structure, at all levels of government, to allow for greater clarity and support increased investment in productive infrastructure.	Broad-based
6.9	NBN Co should be privatised into an appropriately regulated market in the medium term.	Broad-based
6.11	The Murray-Darling Basin Authority should undertake a comprehensive investigation into issues inhibiting the efficient functioning of water markets in the Murray-Darling Basin including information and transparency, trade processing times and register compatibility.	Broad-based
6.13	Australia should seek to transition the revenue and funding framework for roads to be consistent with other utility networks by establishing a corporatised delivery model.	Broad-based
7.4	Where this has not already begun, state, territory and local governments should demonstrate integration of active transport strategies through transport and land-use planning.	Significant
9.1	All state and territory governments should deliver long-term infrastructure plans.	Complete
9.7	Infrastructure Australia will develop National Governance Principles in partnership with governments and the private sector to support better project decision making across the public infrastructure sector.	Complete

1 Productivity
2 Population
3 Connectivity
4 Regional
5 Funding
6 Competitive Markets
7 Sustainability and Resilience
8 Remote and Indigenous Communities
9 Governance
10 Best Practice

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