THE McKELL INSTITUTE

Funding the infrastructure of tomorrow

MARCH 2022

ABOUT THE MCKELL INSTITUTE

The McKell Institute is an independent, not-for-profit research organisation dedicated to advancing practical policy solutions to contemporary issues.

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ABOUT THE AUTHORS

LARRY McGRATH

is the Managing Director of Rainhill Consulting. Larry was the Head of Policy, then Chief of Staff to the NSW Minister for Transport and later Chief of Staff to the NSW Treasurer. Larry has also worked as an executive at a Tier 1 contractor. Throughout his career Larry has been involved in the development and delivery of some of Australia's largest infrastructure projects.

FELIX ZERBIB

Felix Zerbib is the McKell Institute's Economic Policy Analyst.

MARNINA LEFEBVRE

Marnina Lefebvre is the McKell Institute's Senior Policy Officer.

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FOREWORD

Gone are the days when infrastructure was seen as just roads and rail and assessed purely in economic terms. Infrastructure encapsulates all manner of public works, from the schools in which we learn to the hospitals where we recover.

MICHAEL BUCKLAND
CEO, MCKELL INSTITUTE

Australians' quality of life depends on the ongoing provision of quality infrastructure. It has a social purpose. It is an essential component of the delivery of public services.

Yet access to infrastructure is unequal and strongly reflects the regional and metropolitan divide, household incomes, and historic disadvantage. While access to health services, education, and jobs remains unequal, there is no equality of opportunity.

In 2014, the McKell Institute found that while infrastructure investment was booming, investment growth in projects like schools and hospitals, which cannot repay the cost of capital and which require an ongoing subsidy to meet operational costs, had been declining.[1]

Addressing historic deficits in infrastructure provision will take generations. Thankfully, governments have been responding with substantial investment, driven largely by New South Wales (NSW) and Victoria.

But as we emerge from COVID-19, government budgets are under increasing pressure. Record debt will force leaders to make tough decisions. They must resist the temptation to prioritise short-term budgets over the long-term infrastructure investment that will grow the Australian economy.

Some politicians and think tanks argue that we don't need increased investment in new infrastructure now that so many Australians work from home, or that megaprojects are not worth the costs. However, they have not properly contemplated the alternative.

A failure to adequately invest in new infrastructure overwhelmingly harms new communities and people experiencing forms of disadvantage. These are the people who can least afford it. Scarcity increases competition for limited resources and pushes up prices. It is this scarcity that drives infrastructure inequality and entrenches privilege.

Fiscal constraints need not prevent investment. Australia's world-class superannuation sector is primed to invest in infrastructure, if only more opportunities can be made available. Their long term outlook and member profile make infrastructure an attractive asset. So too does the desire to invest in a productive Australia and support for Environmental, Social, and Governance (ESG) investing.

Governments have a responsibility to guide this investment for the public good.

This report sets out the need to continue to invest in new roads, public transport, schools, and hospitals to address infrastructure inequality. We propose that governments set a stable level of investment and build a long term pipeline of work around these allocations.

And should debt strike fear into the hearts of governments, there is no shortage of ways to finance infrastructure, such as the better utilisation of Australia's $3.3 trillion superannuation sector and other pools of savings.

Governments must resist the temptation to reduce infrastructure investment as a quick budget fix or to appease those who are happy with the status quo. The pandemic exposed the inequality within Australian society. It is more than just income based. Inequality extends to access to jobs and services, quality education and health care, and full participation in our community.

KEY POINTS

- Areas with high historic disadvantage correlate with lower infrastructure provision. This is most clear in the divide between metropolitan areas and regional and remote communities where regional job-market outcomes underperform metropolitan earnings across all Australian jurisdictions (by an average of 20 per cent over the past 20 years).
- Just 26 per cent of jobs and workers are accessible within 30 minutes in Sydney and Melbourne. Brisbane performs only slightly better with 31 per cent of jobs or workers accessible within 30 minutes.
- Public sector and 'private for public' investment has been rising, driven by record growth in NSW and Victoria. Since 2014-15, NSW has increased its infrastructure program by 87 per cent while Victoria has tripled its capital works budget in that time.
- Returning to the long-run level of infrastructure investment would result in significant cuts of $8.25 billion per year in NSW, $7.7 billion in Victoria, and $1.8 billion in Queensland.
- Environment, Social, and Governance investing (ESG) considerations are driving investment decisions by Australia's $3.3 trillion superannuation sector, as 86 per cent of Australians expect their superannuation to be invested responsibly and ethically.
- In 2015, just 11 MySuper products allocated more than 10 per cent of their assets in infrastructure. This number has increased to 92 per cent by 2021 and includes all top 50 funds by asset size.
- The value of PPPs has grown substantially from approximately $15 billion between 2000 and 2005, to more than $30 billion between 2015 and 2020. They represent the best opportunity to attract private capital while maintaining strong public outcomes.

PART ONE: INFRASTRUCTURE IS CRITICAL

Infrastructure has a social purpose

Infrastructure is more than roads, bridges, hospitals, and schools. It underpins Victoria's economic productivity, social equity and connectedness, and ecological impact. It can help reduce social disadvantage.[2]

– VICTORIA'S INFRASTRUCTURE STRATEGY 2021-2051, P6

First used as a specialist term in early twentieth-century railway construction, the definition and use of the word 'infrastructure' has grown and developed in such a way as to now refer to the myriad structures and real assets that enable and maintain modern society.

The benefits of infrastructure are usually measured as a function of economic productivity. Studies exploring the causes for the decline in US productivity in the 1990s found that 40 per cent of the decline could be explained by a fall in public expenditure on infrastructure.[3]

Productivity itself is an important driver of wages growth and improvements in Australians' quality of life. But international studies have established that the benefits extend far further. The deterioration of infrastructure has been found to have adverse effects on the physical quality of life, and general wellbeing of the population, as well as the well-documented negative impacts on per capita GSP and GSP growth.[4]

Evidence also suggests that investment in infrastructure can have a mitigating effect on both poverty and inequality.[5] Infrastructure can aid in the reduction of inequality by opening previously isolated areas (digitally and physically), improving mobility, and enabling increased access to basic services and amenities.[6]

Further, transport infrastructure, specifically, enables access to increased job and education opportunities.[7] A recent study in the UK found that a one per cent increase in accessibility to transport infrastructure leads to a 0.3-0.5 per cent increase in the number of businesses and employment opportunities.[8]

The McKell Institute's 2016 report *Choosing Opportunity: A Blueprint for a Fairer Australia* identified transport disadvantage as one of eight urgent public policy challenges, finding that, "inadequate transport services in specific areas can entrench socio-economic disadvantages."[9]

Australians' quality of life depends on quality infrastructure. The failure to invest in new infrastructure overwhelmingly harms new communities and people already experiencing forms of disadvantage. Scarcity increases competition for limited resources and pushes up the price of access, such as increased housing costs around desirable schools or in places serviced by quality public transport.

Infrastructure addresses disadvantage

Infrastructure supports and delivers essential human capabilities. Most fundamentally, it provides access to vital services such as water and energy, protects people in the face of natural disasters, enables access to services such as healthcare and education, and it fosters participation in the economy by facilitating access to various markets and enabling people to travel to and from work or connect remotely.[10]

Social and economic exclusion are increasingly recognised as core elements that contribute to the multi-dimensional nature of disadvantage.[11] The Productivity Commission describes a "cycle of disadvantage" as including a lack of access to critical resources which results in childhood experiences that lead to poor transitions to school and a lack of development of productive skills.[12] This is then frequently followed by unemployment, low incomes, and an inability to provide those same original resources to future generations.

Socioeconomic disadvantage is a place-based phenomenon, with relatively disadvantaged areas corresponding to a decrease in access to education, employment, public services, amenity, recreation, and safety. Following the cycle of disadvantage model, individuals who have poorer access to these resources are much less likely to engage with them throughout their lives and will not receive the same benefits as those who are able to exploit them.

As such, investment in public infrastructure is a means by which governments can effectively promote economic growth and address various forms and causes of social and economic inequalities.[13]

Recognising the importance of access, an Infrastructure Victoria strategy paper identified potential infrastructure investments that would help address regional disadvantage by:

- Improving access to jobs
- Reducing the cost of living
- Facilitating lifelong learning
- Supporting health and wellbeing
- Allowing participation in culture and governance

The Queensland Plan, a strategy document for the Queensland Government seeks to increase the proportion of Brisbane residents who live within 400 meters of a public transport stop to 90 per cent by 2044.[14] This is an ambitious task building on the 76.2 per cent of resident's who currently satisfy this criterion.[15] While modes, routes and services are diverse, the target represents an increasing focus on addressing infrastructure inequality.

Since the mid-2000s, Victoria has had a target that 95 per cent of residential dwellings are located within 400 meters of a bus stop, 600 meters of a tram stop, or 800 meters of a train station.[16] The NSW Government has previously sought an even more ambitious 100 per cent target for residents to live within 400 meters of a bus stop or 800 meters from a train station.[17] These measures have since given way to more

sophisticated methods of measuring access to public transport.

Improving access to jobs and services is a critical socio-economic outcome. Proximity to public transport, frequency of service, and travel time are all important measures. Factors such as distance to job centres will always have a substantial effect on access, but regardless of the reason, areas without adequate transport infrastructure are skewed to newer or more disadvantaged communities.

BOX 1

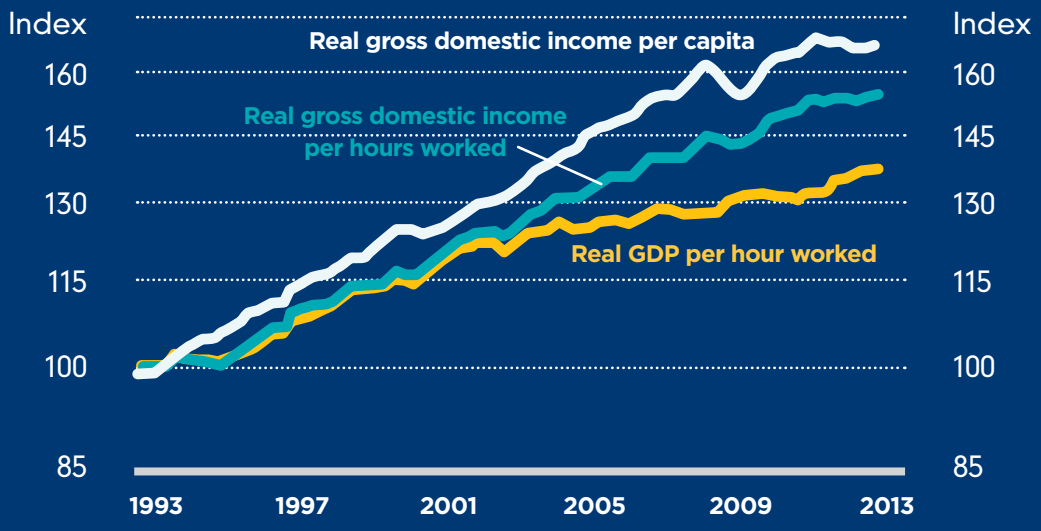
INFRASTRUCTURE INVESTMENT IS A DRIVER OF PRODUCTIVITY

Infrastructure provides essential factors of production, be it energy, water, or access to labour markets, and communication infrastructure broadens product and labour markets while promoting innovation through the exchange of ideas.[18]

Growth in the stock of infrastructure has a positive effect on both labour productivity and total factor productivity.[19] The OECD estimates that increases to public infrastructure investment is associated with an increase in GDP of between 1.1 and 1.3 per cent after two years.[20] Most importantly, infrastructure in general results in positive externalities where the social rate of returns to capital investment exceeds private returns.

Australia's productivity growth was strong until the turn of the millennium. Gains were driven predominantly by a flourishing commodities export sector paired with economic reform.[21] Australia's economic performance, measured as per capita GDP growth, outpaced that of its neighbours and averaged twice the growth rate of the G7.

FIGURE 1 PRODUCTIVITY AND INCOME



Source: ABS; RBA.

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PART TWO: INFRASTRUCTURE ADDRESSES INEQUALITY

Disadvantaged communities often have unequal access to services

Infrastructure is a vital element in providing access to and delivery of social services and economic opportunities. Therefore, unequal access to these services and opportunities can be a contributing factor in the creation of disadvantage, and/or the entrenchment of extant issues.

Differing levels of access to infrastructure may be the result of numerous factors, not necessarily connected to disadvantage. It is likely that public transport will be concentrated among higher density communities while regional areas may have more roads than an urban neighbourhood. Health services differ in regional communities where hospitals are too costly to provide in every town, but smaller facilities may be more appropriate. That said, Australia's large, distant regional communities are where the inequality of infrastructure is most acute.

Yet it would be a mistake to assume that infrastructure is appropriately apportioned. When access to public transport or good schools (read not overcrowded) is scarce, people will compete over said access. It is natural for people to use their resources to guarantee access to a limited service, for instance by purchasing property where services are well provided. People with less resources at their disposal will be forced into communities with lesser services.

Newer communities can often take longer to be provided basic services, and some communities are better able to demand improved access. Regardless of the many causes for this divide, infrastructure inequality may be observed in public transport access, schools, hospitals and more. This inequality is observed in public transport, health care, education and more, and is not limited to any state or political persuasion.

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Regional inequality extends to infrastructure

Areas with high historic disadvantage correlate with lower infrastructure provision. This is most clear in the divide between metropolitan areas and regional and remote communities.

The capital allocated to infrastructure transformations, both in terms of GDP share of investment and per capita measures, is highly variable between regional and city communities. Across every state in Australia, the more rural the area, the lower the presence of infrastructure and essential services according to a score developed by the Regional Australia Institute.[22]

TABLE 1 INFRASTRUCTURE SERVICES SCORE

Region	Infrastructure and essential services score
Metropolitan	0.87
Regional city	0.84
Connected lifestyle area	0.80
Industry and service hub	0.80
Heartland region	0.71

Source: Regional Australia Institute

At the same time, regional job-market outcomes underperform metropolitan earnings across all Australian jurisdictions. The average regional worker throughout Australia earns 20 per cent less than the average metropolitan worker — a gap that has been consistent for the past 20 years.

TABLE 2 REGIONAL VS CAPITAL CITY INCOMES

Area	Median income ($)	Metropolitan income premium (%)
Greater Sydney	52,665	15
Rest of NSW	45,798	-
Greater Melbourne	50,648	13
Rest of Vic.	44,967	-
Greater Brisbane	51,346	11
Rest of Qld	46,385	-
Greater Adelaide	49,556	13
Rest of SA	43,998	-
Greater Perth	53,140	5
Rest of WA	50,559	-
Greater Hobart	47,770	9
Rest of Tas.	43,860	-
Greater Darwin	63,404	17
Rest of NT	54,418	-

Source: Australian Bureau of Statistics[23]

If the level of public infrastructure investment dictates the distribution of positive economic outcomes such as urbanisation and strong growth, then infrastructure inequity will sustain the current levels of geographical inequality.

Poor internet access is a strong indicator of disadvantage

A 2020 study on whether remoteness and affordability affect the concentration of Information and Communications Technology (ICT) infrastructure in Australia, found a link between ICT expenditure inequality and the state of remoteness of the household, where the higher the accessibility of households to city centres, the higher the relative participation in ICT services (where the inverse is also true).[24]

The 2021 "Dropping off the Edge" report rated communities across 37 measures of disadvantage. One criterion was access to internet at home. It found that, regardless of state, the vast majority of communities with the least internet access were also ranked highest for overall disadvantage.[25]

TABLE 3
THE PER CENT OF COMMUNITIES IN THE LOWEST QUINTILE FOR INTERNET ACCESS THAT ARE ALSO IN THE LOWEST QUINTILE FOR DISADVANTAGE

State	Per cent of communities with lowest quintile for internet access that are in the lowest quintile for disadvantage
NSW	79
Victoria	74
Queensland	77
South Australia	76
WA	65
Tasmania	65

Source: Dropping off the Edge 2021[26]

Public transport access is highly unequal

Public transport and roads account for the largest share of public infrastructure spending from Australian Governments. International research has found that a one per cent increase in transport infrastructure can increase the number of businesses and employment opportunities by up to 0.5 per cent.[27]

As noted in Part 1: Infrastructure addresses disadvantage, the three largest Australian cities are all seeking to increase the proportion of the population that live within 200 or 400 meters of a public transport stop. All governments have made some progress since these targets were adopted.

The proximity to public transport is only one measure of access, with the frequency of service and travel time also crucial measures. As governments seek to improve access to jobs and services, they increasingly look to time measures. The Queensland Transport Strategy seeks to increase the proportion of people who can access "essential services" within 30 minutes.[28] Likewise, Sydney transport and land use planning are now based on ensuring people have access to one of three CBDs within 30 minutes.

Yet access to jobs and services is still heavily dependent on the community in which you live. Just 26 per cent of jobs and workers are accessible within 30 minutes in Sydney and Melbourne. Brisbane performs only slightly better with 31 per cent of jobs or workers accessible within 30 minutes.[29]

TABLE 4
JOBS AND WORKERS ACCESSIBLE WITHIN 30 MINUTES

City	Per cent
Melbourne	26
Sydney	26
Brisbane	31
Perth	43
Adelaide	38
Canberra	50
Hobart	51
Darwin	60

Source: Access Across Australia, 2019[30]

"The establishment of the '30 minute city' concept in Greater Sydney, and the hub and spoke network in regional and outer metropolitan NSW, is vital to a socially sustainable network, to connect people to jobs, education and training, health and essential services. Better connected networks enable our customers and communities to connect, strengthen social networks and develop a sense of community and belonging."

— FUTURE TRANSPORT STRATEGY 2056, P161

Transport Accessibility Index

Accessibility in transport is one of the key issues of transport and land use planning. In theory, a reasonable level of fair and equitable access for all is the desired outcome for all transport systems.[31] However, in practice, access to public transport is highly unequal, with each city having its own challenges, infrastructural characteristics, and geographic and income-based dividing lines.

While Australian capital cities are not uniform in their transport inequalities, or their reasons for differing levels of access, overall, they are characterised by a significant level of spatially manifested socioeconomic inequality, exacerbated and entrenched by transport inequality.[32]

The Accessibility and Remoteness Index of Australia (ARIA) is a composite index that includes a measure of "Transport Accessibility". It ranks urban centres on a scale of 1 to 5 for transport accessibility by Statistical Area Level 1 (SA1):

- Very High Accessibility
- High Accessibility
- Moderate Accessibility
- Low Accessibility
- Limited Accessibility

Using the ARIA data, we can compare the likelihood that a person will live in an area with "Very High" public transport accessibility depending on whether they are in the highest or lowest quartile of income earners.

TABLE 5
TRANSPORT INEQUALITY RATINGS ACROSS SYDNEY, MELBOURNE, BRISBANE, AND ADELAIDE

City	P(accessible | Q4 – High Income)	P(accessible | Q1 – Low Income)	Inequity rating
Melbourne	34%	22%	1.54
Brisbane	30%	22%	1.38
Sydney	32%	31%	1.02
Adelaide	25%	35%	0.70

Source: Metro ARIA "Transport Accessibility Index"[33]

We see that Melbourne and Brisbane have a high level of public transport inequality. In Melbourne, higher income earning communities are 1.54 times more likely to live in an area with "Very High Accessibility" than those in the lowest quartile of income earners.

Adelaide is the only city examined that has a higher likelihood of good public transport for the lowest quartile of income earners. Meanwhile, Sydney's distribution between the highest and lowest income earners is almost identical. Interestingly, Sydney's relatively equal access to public transport does not extend to middle income earners.

TABLE 6
PERCENTAGE OF SA1 WITH A HIGHLY ACCESSIBLE TRANSPORT RATING BROKEN DOWN BY INCOME QUARTILE

Income Quartile	Melbourne	Brisbane	Sydney	Adelaide
Q1 – low income	22%	22%	31%	35%
Q2 – lower-middle income	22%	22%	21%	16%
Q3 – higher-middle income	21%	27%	16%	25%
Q4 – high income	34%	30%	32%	25%

Source: Metro ARIA "Transport Accessibility Index"

The ARIA public transport data is limited to greater capital city areas and therefore, the majority of SA1 areas are ranked as either "High" or "Very High" (e.g., 80 per cent of Sydney SA1 fall into these two categories). The concentration means there is less variance to explore.

Fortunately, the NSW Government has followed the example of Transport for London and produced one of the best measures of transport accessibility, known as the Public Transport Accessibility Level (PTAL). The PTAL scores each area based on proximity and frequency of public transport services.[34] Higher scores indicate better public transport.

As expected, most regional areas have low average daily PTAL scores of less than five. Only Newcastle, Wollongong, and the Central Coast exceed this score.

TABLE 7
REGIONAL LOCAL GOVERNMENT AREAS WITH A PTAL SCORE ABOVE FIVE

Regional Local Government Area	24-hour average PTAL score
Newcastle	11
Wollongong	7
Central Coast*	7
Maitland	5
Lake Macquarie	5

Source: Transport for NSW[35]

*The Central Coast is considered part of the ABS Greater Sydney Statistical Area but is treated as a separate region in this paper.

We often expect some differences in public transport services between metropolitan and regional communities to account for population density and geography. Some of the differences in PTAL scores will no doubt be overcome by alternative transport infrastructure such as additional roads. However, within Sydney, access to public transport infrastructure is similarly geographically concentrated and skewed to areas with higher incomes.

Of the 33 Sydney Local Government Areas (LGAs), the third with the best access to public transport are all in the East or North districts as determined by the Greater Sydney Commission.[36] Meanwhile all eight Western Sydney LGAs are located in the bottom third.

TABLE 8 DISTRIBUTION OF ACCESS TO PUBLIC TRANSPORT FOR SYDNEY DISTRICTS

Greater Sydney Districts	Mean income	LGAs in the upper tertile	LGAs in the middle tertile	LGAs in the lower tertile	Total LGAs
Eastern City (Sydney CBD)	$101,621	7	2	0	9
Northern District	$91,657	4	4	1	9
Southern District	$60,869	0	2	1	3
Central City (Parramatta)	$57,804	0	3	1	4
Western City	$57,256	0	0	8	8

Source: Transport for NSW

These differences are not trivial. While the median PTAL score is 15, the lower third of LGAs have a score of between two (Wollondilly) and ten (Liverpool) while the top tertile ranges from 18 (Canada Bay) to 52 (City of Sydney).[37] The full list of PTAL scores by LGA are contained in Appendix 1.

For all LGAs (regional and metropolitan), median household income is strongly correlated to Public Transport Accessibility Level. Regional areas perform considerably worse, with the average regional LGA scoring 12.7 points less than metropolitan areas for all income levels.

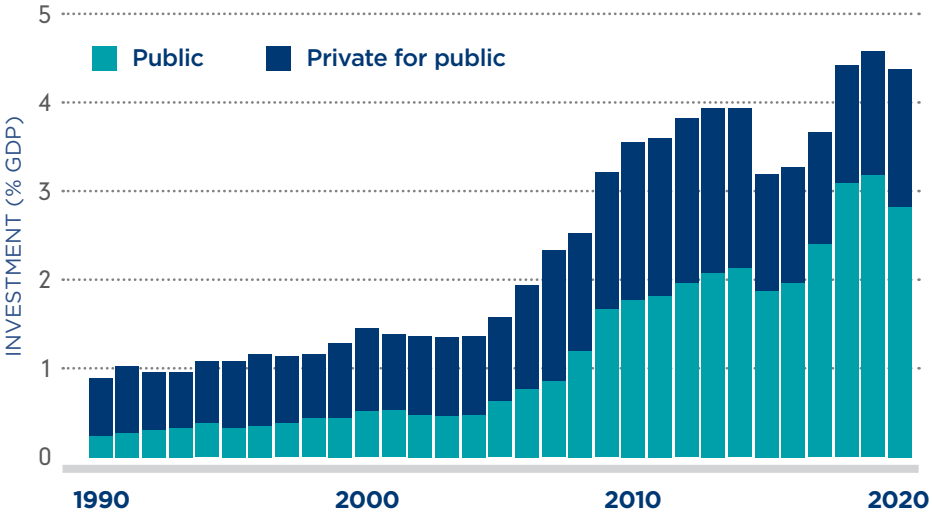
PART THREE: AUSTRALIAN INFRASTRUCTURE INVESTMENT IS AT RISK

Addressing the underinvestment in infrastructure will take generations

Overcoming historic underinvestment in infrastructure cannot be done in a single budget or a single term of government. It will require collective governments to make equal provision of infrastructure a priority. Failing to do so will entrench infrastructure inequality even further.

Historically, Australian public infrastructure investment has been relatively stable, with slow growth until the mid-2000s. Since then, public investment has more than doubled as a percentage of GDP. This increase has helped offset some of the total decline in investment, driven by the private sector.

FIGURE 2 NON-BUILDING INFRASTRUCTURE INVESTMENT



Source: ABS, Engineering Construction Activity

Investment rates began to shift in the late 2000s with particularly strong growth in public-led infrastructure expenditure following the Global Financial Crisis (GFC). Public-led investment as a percentage of GDP has tripled since the early 2000s.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State governments are leading the way

Approximately 80 per cent of taxation revenue is collected by the Commonwealth and just over 16 per cent from state governments.[38] Despite their limited access to revenue, state governments account for the overwhelming majority of infrastructure spending.

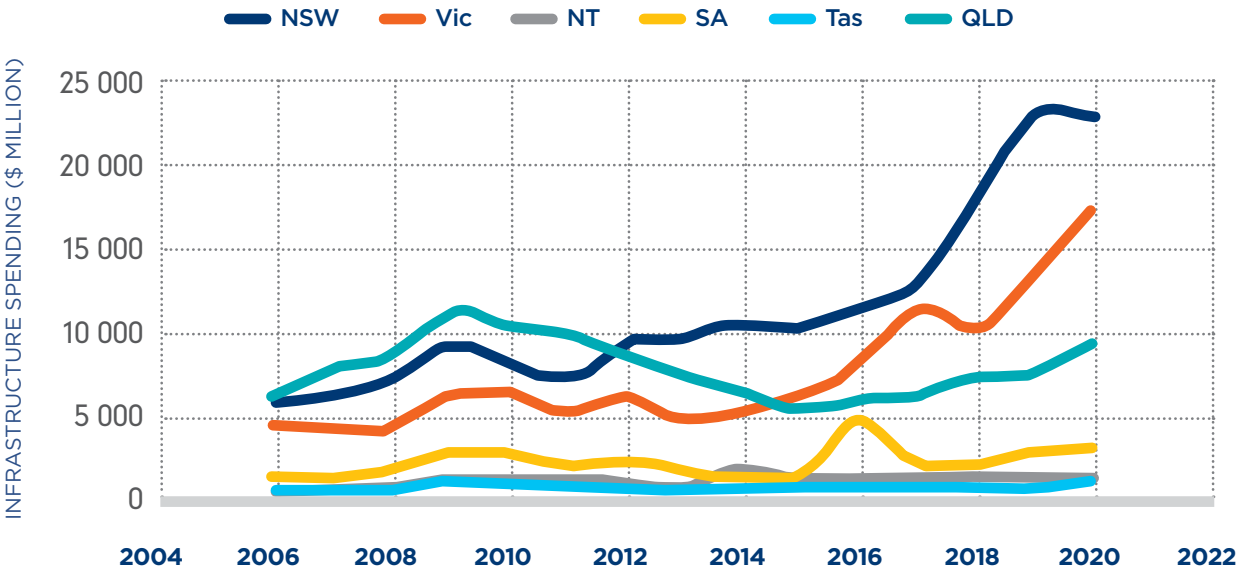
TABLE 9
2020-21 GENERAL GOVERNMENT SECTOR PUBLIC INFRASTRUCTURE INVESTMENT BY JURISDICTION

	NT	VIC	NSW	SA	TAS	QLD	WA	Commonwealth
Output share (% GSP/GDP)	16.82	15.04	13.47	12.46	12.15	9.68	3.76	2.87
Per capita ($)	17,850	10,299	10,268	7,941	7,222	6,769	4,074	1,946
Value ($ billion)	4.4	69.0	84.2	13.5	3.9	35.2	11.0	50.8

Source: Budget Papers NT, VIC, NSW, SA, TAS, QLD, WA and Commonwealth, 2020-21

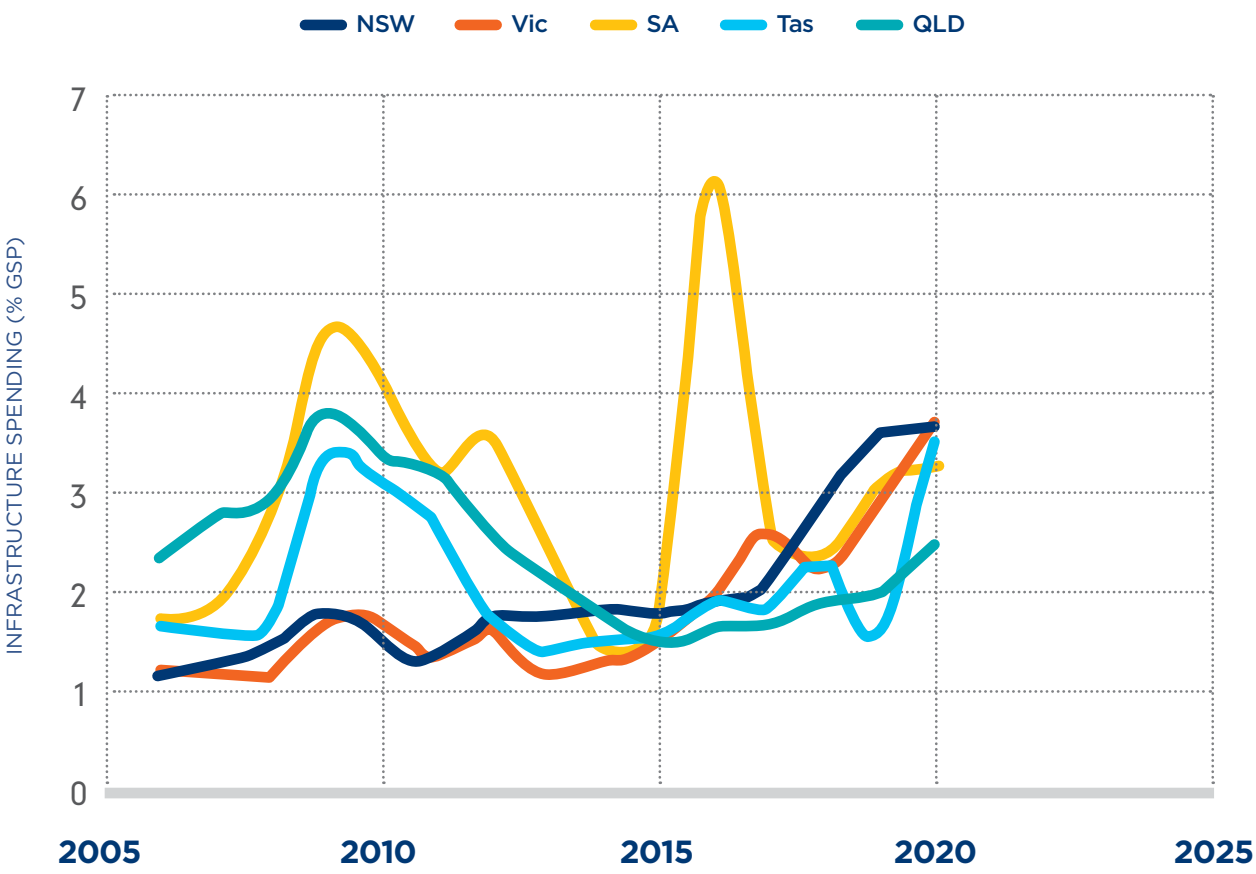
NSW and Victoria are driving the growth in infrastructure investment. NSW has increased its infrastructure program by 87 per cent since 2014-15 while Victoria has tripled its capital works budget in that time. Both have transitioned from the two states with the lowest infrastructure expenditure per GSP to the two highest in the span of 10 years.

FIGURE 3 INFRASTRUCTURE SPENDING BY STATE



Source: Budget Papers, NSW, VIC, SA, TAS, QLD, 2005/6 to 2020/21

FIGURE 4 INFRASTRUCTURE SPENDING AS A PROPORTION OF GROSS STATE PRODUCT (GSP)



Source: Budget Papers, NSW, VIC, SA, TAS, QLD, 2005/6 to 2020/21

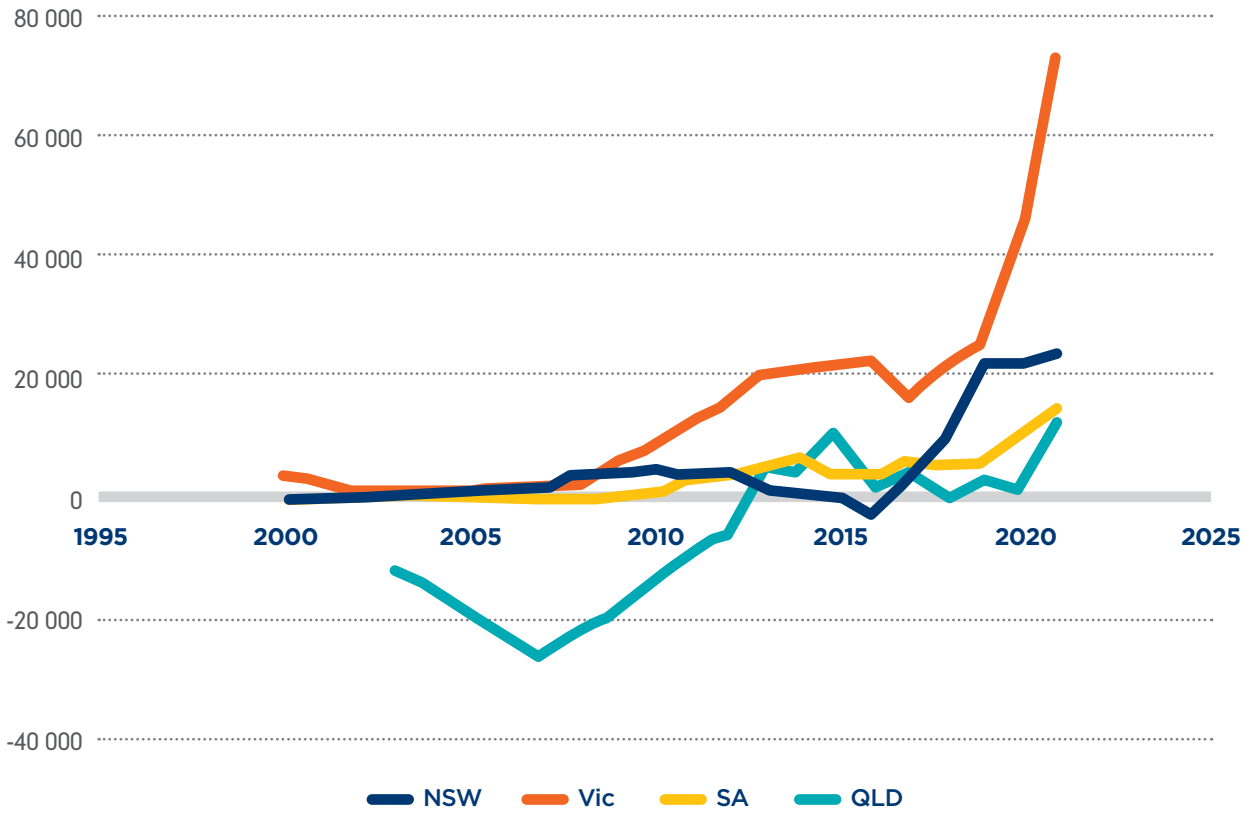
Strong growth in NSW and Victorian infrastructure expenditure has set a new 'normal'. Maintaining the new normal is vital to overcoming historic underinvestment and addressing infrastructure inequality.

Public and political pressure will lead to tightened purse strings

The impacts of COVID-19 and successive lockdowns throughout Australia, combined with financial support and stimulus to underpin the economy, have led to record budget deficits across the nation. The Federal Government deficit is projected to continue declining throughout 2022, at which point it will reach 8 per cent of GDP.

The states, which account for the majority of infrastructure expenditure, will be under additional pressure. They are forecasting substantial increases in net debt over the forward estimates. At the same time, they have less control over revenue with some states relying on Commonwealth grants for more than half their revenue.[39]

FIGURE 5 NET DEBT AMONG THE FOUR LARGEST AUSTRALIAN STATES



Source: Budget Papers, NSW, VIC, SA, TAS, QLD, 2005/6 to 2020/21

This debt was rightly incurred during COVID-19 to shield Australians from the pandemic-induced economic recession. However, it will add to existing long term budget pressures such as those caused by an ageing population.

As governments balance growing costs and proportionally declining revenue, competition for scarce budget dollars will increase and infrastructure investments will be increasingly judged on their long term financial cost to the government.

Yet Australians' quality of life depends on the ongoing provision of quality infrastructure. This is why, while governments may be reluctant to fund new assets requiring ongoing subsidy, they rarely shut down existing schools, hospitals, or train lines.

The failure to invest in new infrastructure overwhelmingly harms new communities and people experiencing forms of disadvantage. Scarcity increases competition for limited resources and pushes up prices. This scarcity is the driver of infrastructure inequality.

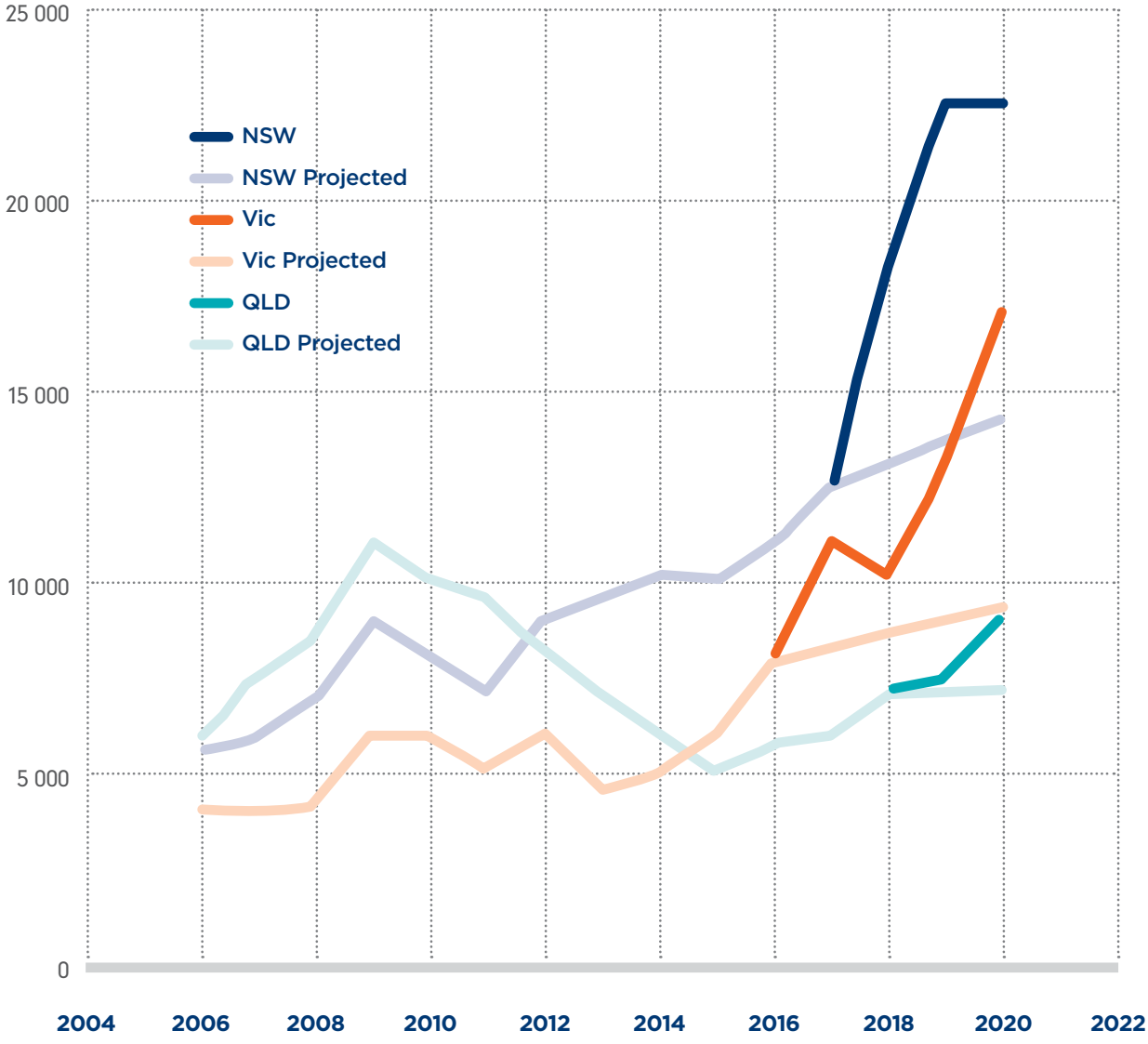
The development of new communities accelerated over the past 10 years with record housing completions in NSW, Victoria and Queensland. The Government did not keep pace with these new communities. There are countless examples of land earmarked for new schools that have not yet been developed, or hospitals that need an upgrade to cope with new demand. The mismatch between developers and government-provided public infrastructure becomes starker at times of rapid population growth or demographic shift. Planning for access to these services must

be done by addressing need, not just the fiscal requirements of government. Flexible options for government to fund these needs will support this endeavour.

The substantial progress made by state governments in recent years is at risk due to increasing budget pressures. The NSW infrastructure spend is forecast to fall by 22 per cent over the forward estimates.[40] It is likely this represents a correction in expenditure from a record high level of investment. However, returning to the long run average levels of investment would represent a substantial decline in infrastructure.

If NSW were to return to its long term infrastructure expenditure, the level of investment would reduce by $8.25 billion per year. This is enough to fund the Metro West, Australia's largest infrastructure project, within one term of government. Victoria returning to historic infrastructure expenditure levels would reduce investment by $7.7 billion, and Queensland by $1.8 billion.

FIGURE 6
ACTUAL INFRASTRUCTURE EXPENDITURE VS PROJECTED INFRASTRUCTURE EXPENDITURE



Source: Budget Papers, NSW, VIC, QLD, 2005/6 to 2020/21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8000kgs
JLG LIFT
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PART FOUR: SUPERANNUATION FUNDS CAN SUSTAIN INFRASTRUCTURE INVESTMENT

Financing options are available

All Australian governments now record the largest debt in their histories. Low interest rates have supported this borrowing which will likely continue to be utilised. The 10-year Australian Bond Yield is now just over 1 per cent.[44] However, these rates cannot be expected to stay low forever and are forecast to begin rising.

While the use of traditional public finance will continue to be a part of the government funding mix, the substantial exposure to debt will increase sensitivity to interest rates. This will be especially true for sub-sovereign governments like the Australian states which account for the majority of infrastructure financing.

FIGURE 7 10-YEAR AUSTRALIAN GOVERNMENT BOND YIELD

Source: RBA; Yieldbroker

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Credit rating agency S&P Global has recently lowered the NSW and Victorian credit rating from AAA to AA+[42] and to AA respectively.[43] Meanwhile, the Queensland treasurer has warned that while the state's credit rating has not been downgraded, it may likely be in the future.[44] Changes in ratings will impact the cost of borrowing.

Fortunately, a substantial pool of private capital, led by Australia's $3.3 trillion superannuation sector is primed to support continued investment in infrastructure. At the same time, demand for long term infrastructure investment is growing, driven by the long term investor outlook of superannuation funds.

Domestic infrastructure is on the radar of fund managers

Notwithstanding the various impacts of COVID-19 on the Australian market, private equity (PE) acquisition activity in Australia increased by 147 per cent.[45] In 2021, the value and number of PE deals completed each year since 2006 was surpassed, with one of the busiest sectors being infrastructure.[46]

Leading the charge in PE investment is Australia's superannuation sector, with the country's largest public offer superannuation fund, AustralianSuper, set to dramatically increase its exposure to PE. According to the Head of Private Equity, Terry Charalambous, the fund plans to double its PE holdings over the next five years.[47]

Additionally, in the wake of the ongoing COVID-19 crisis, the Australian Government has shifted its focus to an infrastructure-led recovery program. In the 2020-2021 Budgets delivered by Australia's Federal, State, and Territory Governments, almost $225 billion was allocated for general government sector infrastructure funding over the four years to FY 2023-2024.[48] To help bring these projects to fruition, superannuation funds are under increasing pressure to invest in domestic infrastructure and could partner with private equity players to do so.[49]

Transport infrastructure is an area where super funds could make a substantial difference, as the sector is woefully underfunded. The Global Infrastructure Hub forecasts investment needs of $1.1 trillion across transport assets including road, rail, airports, and ports from 2016-2040.[50]

Superannuation funds, with their reliable and growing capital base have the capacity to prudently manage and invest in infrastructure assets in the long run, which meets the demand for stable long term returns to fund Australians' retirement.[51]

However, AMP Capital's chief economist, Shane Oliver, has stated that "the main issue for super funds investing more in infrastructure is the absence of opportunities". Likewise, Industry Super Australia CEO, Bernie Dean, has stated that they are "already big investors in Australia, but there's more [they] can do to help pull Australia's economy out of this downturn".[53]

Despite the strong alignment, regulatory requirements are likely to discourage infrastructure investments. The Australian Prudential Regulation Authority (APRA) performance test uses benchmarking of assets against a variety of indexes. This benchmaraking can create incentives for short term returns, that may not meet the best interest of members

Demand for socially beneficial assets is increasing

While demand for public infrastructure from citizens is high, it is also increasing among Australian investors. Low bond rates have increased the value of infrastructure assets with stable returns while changing social expectations are placing pressure to find assets that contribute to the social good.

The rapid increase in private sector asset accumulation is salient evidence of investor demand for infrastructure investment. Over $20 billion in infrastructure acquisitions were announced at the end of the first quarter of 2021, alongside a $24 billion offer for Sydney Airport, led by Australian super funds.[54]

TABLE 10 MAJOR PRIVATE INFRASTRUCTURE ACQUISITIONS AND BIDS, Q1 2021-2022

Value	Asset	Acquirer/bidder	Status
$23.6 billion	Sydney Airport	Private consortium	Complete
$10 billion	AusNet	APA Group	Bid
$1.3 billion	Jandakot Airport	Dexus	Complete
$11.1 billion	WestConnex	Transurban	Complete

The infrastructure demanded by investors also coincides with a desire for socially responsible investing. A 2019 survey of institutional investors revealed that transport infrastructure is the most preferred asset type for investment, followed by social infrastructure, tunnels, and renewable energy generation.

Environment, Social, and Governance investing (ESG) has become mainstream among fund managers, as 86 per cent of Australians expect their superannuation to be invested responsibly and ethically.[55]

A recent study by Rainmaker Information identified 60 superannuation funds, representing 71 per cent of all superannuation assets overseen by APRA, as being ESG funds. They are overwhelmingly led by Industry Super Funds. Socially responsible investing and demand for infrastructure is driving interest in public infrastructure assets.

The latest Australian infrastructure Investment report rated the ten most important factors driving investment in infrastructure in Australia, with the top three being the ESG credentials, climate risk, and social license.[57] These factors are all highly present in the superannuation sector, as its wide membership and compulsory nature impact the nature of public expectations.

Superannuation funds will invest overseas if opportunities in Australia aren't there

As of mid-2019, Australia's current account was in surplus. This means that for the first time in Australian history we are exporting more capital than we import. In large part, this shift has been driven by the increase in the superannuation sector which has been tasked with providing stable returns for the ageing Australian population.

Superannuation funds are seeking opportunities to invest in infrastructure. Without more domestic opportunities, the investment will continue to flow internationally or be directed to other assets. Over the past few years, Australian superannuation funds have amped up their demand for overseas assets, with spending on acquiring foreign equities jumping more than 25 per cent from 2017 to 2019.[58] In other words, super funds have invested over $320 billion on overseas assets from 2017 to 2019.

When US President Biden recently announced a $1.6 trillion infrastructure plan, it included a new Infrastructure Financing Authority to leverage private investment.[59] According to a 2019 survey of institutional investors, 79 per cent stated they

would invest in the US market compared to 49 per cent in Australia.[60]

In part, super funds' choice to invest in foreign assets is prudent. As they look to reduce portfolio risk, international investments help to stabilise their accounts in the event of major currency fluctuations or localised economic slowdowns. However, there is an opportunity to seize improved economic outcomes and better public and social infrastructure here, in Australia.

Australia's own Infrastructure and Project Financing Agency was established in 2017 to provide infrastructure financing advice to the Commonwealth. The Agency represents substantial potential to facilitate an increase in superannuation investment in Australian infrastructure. Its objective in the Budget Statements is as follows:

"To leverage additional private sector investment in infrastructure and secure better returns from the Commonwealth's investment by assisting the Government identify, assess, and broker financing opportunities for infrastructure and projects, including through engagement with Commonwealth entities, State and Territory governments and the private sector."

– PORTFOLIO BUDGET STATEMENTS, 2019-20

To date, the Agency has measured success in terms of advice provided to government and not in terms of direct increased investment in infrastructure. More can be done through external engagement, particularly with a strong stream focused on the superannuation system with its own unique challenges and regulatory framework.[61]

The long term investment horizon of superannuation funds makes them natural investors in less liquid, long term assets such as infrastructure. In the two years prior to June 2021, the share of MySuper funds invested in infrastructure grew 16 per cent, from 5.6 per cent in 2019 to 6.4 per cent in 2021.[62] Despite this growth, total share of investment remains relatively small. The turn to international opportunities is a result of fewer domestic opportunities to invest.

However, on the positive side, the growing number of funds with infrastructure investments indicates an increasing demand, even if opportunities are placing some restrictions on growth. In 2015, just 11 MySuper products allocated more than 10 per cent of their assets in infrastructure. This number has increased to 92 per cent by 2021 and includes all top 50 funds by asset size.[63]

Governments can do more to attract investment

Rather than allow infrastructure investment to decline, governments can utilise all forms of finance, including superannuation funds to support public community assets. There are many ways that government can harness the superannuation system to encourage investment in infrastructure. The Infrastructure and Project Financing Agency and State-based infrastructure agencies and Treasuries are a good place to start.

There are three primary categories of private investment in public infrastructure. They range from full sales, to long term leases, to a wide variety of Public Private Partnerships (PPP).

TABLE 11 CATEGORIES OF PRIVATE INVESTMENT IN PUBLIC INFRASTRUCTURE

Public Private Partnerships (PPP)	Long-term Leases	Sales
Government partners with a private consortium for the delivery, operations and maintenance of the asset. Undertaken for new infrastructure builds. Can be "economic" where the private sector return comes from user charges (e.g. tolls) or "availability" where the revenue comes from government payments to make the asset available to a minimum standard. Improves whole-of-life costs and often provides incentives and penalties for service outcomes. Varying degrees of risk transfer.	Government disposes of either the entirety or a portion of an asset for a fixed period of time. Generally, for existing infrastructure, and usually over a long time horizon. Transfer of commercial risks to the private sector. Often accompanied by efficiency improvements which are easier to achieve in private operation.	Used for assets the government assesses it no longer has an interest in holding. No transfer back to the government. Often used for surplus land.
EXAMPLES: North West Metro, Footscray Hospital, Cross River Rail.	**EXAMPLES:** NSW Electricity transmission and distribution assets, Port of Melbourne.	**EXAMPLES:** Vales Point Coal-fired Power Station.

Outright sales and long term leases have been attractive for governments while asset prices are high. They have been largely used to monetise profit-making assets to re-invest in other public assets that do not generate commercial returns. However, they result in substantial private control of an asset and little or no government involvement.

It is vital that governments ensure that public infrastructure, however it is delivered, still meets its public objectives. While sales and long term leases may be appropriate in some circumstances, they represent a loss of control. This can be problematic when governments hold ultimate responsibility for public outcomes.

The definition of PPPs is broad and constantly evolving. A PPP can be a genuine collaborative joint venture (one that involves government) or it can take the form of a more divided contractual arrangement, whereby payments are made for a fixed set of KPIs.[64]

A recent iteration of PPP includes those with substantial integrated property, precinct, and infrastructure development components. Most commonly, these have been in the form of over-station developments (OSDs) or integrated station developments (ISDs). These involve

the construction of a new rail station and the buildings above or around the station, with the consortium bearing the development risk. These types of PPPs hold significant attraction to governments and the community, as the buildings can often be completed in the same timeframe as the new rail line. These models have been used recently on Melbourne Metro (e.g., CBD North), Sydney Metro (e.g., Waterloo, Martin Place). OSDs and ISDs can be procured alone, or they can be a component of a broader PPP.

Another variation on the PPP is the Building Australia Model, recently proposed by IFM. Instead of the normal situation where equity providers form partnerships with construction firms and operators, the Building Australia Model would see the government bringing on an equity partner earlier, who would then manage the procurement of smaller construction contracts on behalf of the client and manage the interfaces between them. This would allow for smaller construction packages to be given to Tier 2 and Tier 3 contractors, providing greater opportunities for those firms to work on larger projects.

Such a model requires a private partner with the right skills and experience capable of delivering the outcomes, as well as alignment on the outcomes themselves. The early inclusion of this partner is not an excuse for government to leave more to the private partner, but rather requires active collaboration and appropriate division of risk. The importance of genuine partnership is heightened when considering these alternative models of PPP.

The use of PPPs has grown substantially from approximately $15 billion between 2000 and 2005, to more than $30 billion between 2015 and 2020. However, many of these innovative models designed to maximise public outcomes have been under-utilised in favour of more traditional models whereby a private contractor or consortium is engaged to deliver a project. These approaches have become increasingly adversarial when disputes arise. If done correctly, PPPs represent an opportunity to exercise that control in a collaborative way.

Put the ‘public’ back into public private partnerships

A significant number of projects that are routinely brought to market through traditional procurement would likely be well-suited to a PPP model. Where debt or equity financing is considered unsuitable, a PPP model provides the chance to avoid the postponement of the project or outright cancellation.

Recently, the use of PPPs for traditionally government-funded operations has blurred the lines between public and private services. The Northern Beaches Hospital is an example of this blurred approach. This has undermined their use and created a more complicated system of service delivery.

For example, a PPP may be used to build and maintain a school in a growing community. Private capital may accelerate the project and a maintenance contract can spread costs over the lifetime of the asset and guarantee the quality of the building. However, if a PPP were to assign the teaching in the school to a private operator, the fundamental premise of universal public education will have been compromised.

Contractual arrangements can also guarantee funding to a certain asset even when government priorities change. This can be especially important as Governments have a well established bias towards new projects over the maintenance of existing assets. Bipartisan support for honouring contracts can ensure a school or hospital has guaranteed maintenance funding regardless of the political cycle.

The government has an essential role to ensure a PPP is truly collaborative. In most cases, this will mean the continued public operation of public services in schools, hospitals, prisons, and more. In Victoria, hospital PPPs with public operations have become relatively commonplace while they are much less common in NSW and Queensland.

CASE STUDY

DELIVERING SCHOOL INFRASTRUCTURE THROUGH PPPS

According to the Auditor General, over the next 15 years, NSW will need an additional 7,200 classrooms, split approximately evenly between primary schools and high schools, to accommodate a growing student population and increasing share of public schooling.

This does not include upgrading the many existing classrooms to meet current and future demands. It is estimated that in the worst-case scenario, up to 215 new (or substantially upgraded) schools will be needed by 2031.

The cost of a new school will typically range from $35 million to $135 million. Meeting the Auditor General's forecast will cost $18.3 billion over the next 10 years.

While the schools need to be built in the next 10 years, they will be used and maintained over a lifespan of at least 30 years. A PPP could both deliver the schools, ensure they are maintained and spread the cost of the asset over that timeframe.

One example where this approach has been used, such as in suburban Adelaide, savings of up to 24 per cent over 30 years have been identified,[66] significantly reducing the costs for government and freeing up funds that can be invested in improved public services, or additional infrastructure projects.

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BOX 2

THE FUTURE IS IN COLLABORATION

Almost without question, the future for PPPs lies in taking a more collaborative approach between the government and the private sector.

Over time, some PPPs have faced challenges. This is hardly surprising – on all complex projects, there can be unexpected problems. When these problems arise, there can be tension between equity investors seeking to manage risk exposure; construction firms with fixed price, lump sum design and construct contracts, and government expectations for the project being delivered. The government and the private parties can find themselves misaligned when something goes wrong.

The answer lies in seeking out ways to better align the interests of the government and the private parties, to create a win-win situation. While this is not easy, steps are already being taken in this direction.

The North East Link, for example, pursued a hybrid model with the Victorian Government, where the main works package was procured using a PPP model, but with an incentivised target cost regime. This is a step in the direction of a more collaborative approach.

If there is more collaboration around the sharing of risk, the PPP model will continue to evolve and will remain a sound procurement option for many infrastructure projects in Australia.

As well as governments looking to what the future holds, it is incumbent on industry to do so as well. Governments still value long term active owners of infrastructure, however, the path to delivering public value in infrastructure is often complex and challenging. Resolving the pain points that have emerged in some PPPs is essential to ensure they remain a ready tool for Australian investment.

CONCLUSION

As this report has shown, infrastructure inequality is ubiquitous, impacting the lives of Australians in myriad ways. Infrastructure is an essential component of public service delivery, providing access to jobs, education, and health services, as well as enabling citizens to participate in the economy more fully.

Regional disadvantage and inequality are exacerbated, compounded, and entrenched by poor, or absent, infrastructure. This includes transport, ICT, and public services. Even within urban centres, quality is highly variable, and access is unequally distributed across communities. This difference in access and quality is an indicator and driver of income and wealth inequality across Australia. Thus, by investing in infrastructure, the government can promote growth and development, and begin to address numerous forms of economic and social disadvantage.

There are undeniable financial and time risks with investing in infrastructure megaprojects, but the risks of ignoring this type of investment is also significant. While growth of infrastructure investment in Australia has waned over the past several years, it is imperative that Australian governments take steps to reverse this trend and ensure that investment is kept at an acceptable and stable level.

Given the financial support that has been provided during the pandemic, Australian state and federal governments may soon encounter political pressure to engage in fiscal consolidation – pressure that could see essential investment in infrastructure delayed or abandoned. This must not happen.

There are myriad options for governments to pursue when it comes to financing and strategising for infrastructure development and delivery, one of the most promising being a collaboration with Australia's superannuation sector. This sector has a substantial pool of capital that can be poured into infrastructure, and they are waiting to be given the opportunity to do just that.

Finally, there is an increasing demand for socially beneficial assets by major investors, reflecting the proliferation of ESG investment principals through global capital markets. Australian governments are well placed to facilitate responsible private sector investment in essential infrastructure and capitalise on this evolving investor sentiment.

RECOMMENDATIONS

RECOMMENDATION 1

Task Infrastructure Australia and its state counterparts to measure and consider equitable access to infrastructure when making decisions.

RECOMMENDATION 2

Governments should set a long term target infrastructure investment rate that maintains a consistent five-year average similar to current levels.

RECOMMENDATION 3

Infrastructure Australia and its state counterparts should be charged with developing projects that are ready to be funded within the target investment rate.

RECOMMENDATION 4

Sector-specific authorities such as Victoria's Level Crossing Removal Authority and NSW's School Infrastructure NSW should collaborate with established Departments such as Transport and Roads to ensure a consistent pipeline of investment projects are ready to be funded in line with the target investment rate.

RECOMMENDATION 5

Superannuation funds and other pools of savings should be utilised to maintain consistent investment pipelines, rather than accept a decline in investment to reduce sovereign debt.

RECOMMENDATION 6

Governments should be open to and facilitate new and collaborative forms of partnership with the private sector that attracts private capital but allows the greatest level of government control to ensure public outcomes.

RECOMMENDATION 7

Empower the Infrastructure Project Financing Agency (IPFA) to engage and include representatives of superannuation funds, and all Australian governments should focus on attracting superannuation investment in Australian infrastructure.

RECOMMENDATION 8

State jurisdictions should revise their public private partnership (PPP) guidelines to place a greater emphasis on driving collaborative equity models and on attracting superannuation capital to PPP projects.

APPENDIX

The 24-hour average Public Transport Accessibility Level for Greater Sydney Local Government Areas matched with mean earnings.

Greater Sydney Region	Local Government Area	Mean earnings ($)	24 average PTAL
Eastern City (Sydney CBD)	Sydney	76,120	52
Eastern City (Sydney CBD)	Burwood	56,363	30
Eastern City (Sydney CBD)	Waverley	99,953	29
Eastern City (Sydney CBD)	Randwick	83,471	27
Northern District	North Sydney	109,007	27
Northern District	Mosman	161,608	22
Eastern City (Sydney CBD)	Woollahra	156,998	21
Eastern City (Sydney CBD)	Inner West	81,753	21
Northern District	Lane Cove	105,898	18
Eastern City (Sydney CBD)	Canada Bay	79,362	18
Northern District	Willoughby	98,772	17
Southern District	Georges River	60,005	17
Northern District	Ryde	66,517	16
Eastern City (Sydney CBD)	Bayside	58,247	15
Eastern City (Sydney CBD)	Strathfield	64,805	15
Southern District	Canterbury-Bankstown	52,103	15
Northern District	Northern Beaches	86,668	15

Greater Sydney Region	Local Government Area	Mean earnings ($)	24 average PTAL
Central City (Parramatta)	Parramatta	60,564	14
Northern District	Hunters Hill	133,603	13
Central City (Parramatta)	Cumberland	49,159	12
Central City (Parramatta)	The Hills Shire	74,461	11
Northern District	Hornsby	71,709	10
Western City	Liverpool	56,250	10
Western City	Fairfield	48,956	10
Central City (Parramatta)	Blacktown	57,581	10
Northern District	Ku-ring-gai	106,370	9
Western City	Penrith	59,779	8
Southern District	Sutherland Shire	72,645	8
Western City	Campbelltown	54,137	8
Western City	Camden	65,166	6
Western City	Hawkesbury	61,051	4
Western City	Blue Mountains	60,296	3
Western City	Wollondilly	62,916	2

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CONTACT THE MCKELL INSTITUTE

T. (02) 9113 0944 **F.** (02) 9113 0949 **E.** mckell@mckellinstitute.org.au
PO Box 21552, World Square NSW 2002
@McKellInstitute www.facebook.com/mckellinstitute
www.mckellinstitute.org.au