Productivity Commission Green Paper

Continuing the productivity conversation

NSW GOVERNMENT

Commissioner's Message

In October 2019, I released the Commission's first Discussion Paper, *Kickstarting the Productivity Conversation*. That was our first step in shaping a clearer productivity agenda for New South Wales. Since we consulted on the Discussion Paper, COVID-19 has created a global health and economic crisis.

The people of New South Wales are pulling together and adapting to meet this latest challenge. For many of us (including Commission staff) our homes are now our offices, and the Internet is our meeting room. The pandemic has pushed much of New South Wales into this huge new experiment in personal productivity.

These events have put State productivity back in the spotlight too.

- First, consensus is growing that we will need new productivity strategies if we are to return to our previous levels of productivity and economic growth.
- Second, we need productivity if we are to repair the State Government's finances. All Australian governments have borrowed heavily to fight COVID-19. We can pay off that debt least painfully through productivity-driven growth.
- Third, the pandemic has demonstrated that when the need is there, we can quickly change how we do things. And such change is the way to lasting improvement.

It is in this context that I present the Productivity Green Paper. I thank everyone who contributed their ideas. The feedback on our Discussion Paper revealed potential for positive changes that can drive productivity growth in this State.

- Our physical assets can drive productivity–through better planning, better use of water and energy, and better use of our infrastructure.
- Our human assets can deliver greater productivity–through better skills, improved mental health, and labour market reforms.
- And our intangible assets, our knowledge and technology, can drive greater productivity–by improving the systems, rules and regulations that run our businesses and govern our State.

One successful change to the system has been our pandemic-driven experiment in relaxing regulations on supermarket trading and deliveries. Another successful change has been our national decision—again, driven by the pandemic—to bring telehealth into Medicare, letting us all talk with a doctor without leaving our homes.

This is what productivity growth looks like. COVID-19 has shown us we have more opportunities for productive change than we realised and we can respond quickly.

The NSW Productivity Commission's task is to keep finding these new opportunities, and to encourage their acceptance.

I invite the New South Wales community to join the conversation and help me refine my draft recommendations to the NSW Government. Together we can achieve a more productive and sustainable economy that delivers lasting prosperity for the people of our State.

Peter Achterstraat AM
NSW Productivity Commissioner

Secretary's Message

This Productivity Green Paper comes at a pivotal moment for our State. Across New South Wales, families, businesses and policymakers are all grappling with a once-in-a-generation pandemic. But if we are creative and decisive and we work together, we can overcome this challenge.

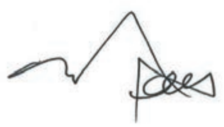
Prepared by NSW Productivity Commissioner Peter Achterstraat, this Green Paper sets out the challenges and the opportunities now before us. Its draft recommendations lay out a clear agenda for a more prosperous, resilient and diverse economy that serves the whole community's needs.

The Commissioner developed his draft recommendations in consultation with a wide variety of stakeholders. There is an opportunity to provide feedback on these draft recommendations. I look forward to this feedback that will be reviewed by the Commission prior to finalising recommendations supporting a productivity reform agenda for Government consideration.

This Green Paper joins a suite of work designed to ensure that New South Wales continues to drive Australia's economy. That work already includes the NSW 2040 Economic Blueprint and Global NSW Strategy. Together they provide an overarching vision for the State's economy and position and New South Wales as Australia's global hub, with Sydney as its gateway.

The Green Paper also supports the Federal Financial Relations Review. The Review proposes reforms to the tax mix that would deliver secure and reliable funding for essential services and infrastructure into the future. The Review also looks at how the federation can be refreshed with greater cooperation, clearer lines of responsibility and proper accountability.

I thank the Commissioner for his work and know that his ongoing efforts will help ensure New South Wales continues to be the best place to live, work, start a business, and raise a family.



Michael Pratt AM
NSW Treasury Secretary

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Glossary

Acronym	Definition
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACECQA	Australian Children's Education & Care Quality Authority
ACER	Australian Council for Educational Research
ACNC	Australian Charities & Not-for-profits Commission
ADG	Apartment Design Guide
AFR	Australian Financial Review
AHURI	Australian Housing and Urban Research Institute
AMR	Automatic Mutual Recognition
AMSI	Australian Mathematical Sciences Institute
AO	Order of Australia
AQF	Australian Qualifications Framework
ARTC	Australian Rail Track Corporation
ATAR	Australian Tertiary Admission Ranking
ATSE	Australian Academy of Technology and Engineering
B5	Business Development
B6	Enterprise Corridor
B7	Business Park
BANANAism	Build Absolutely Nothing Anywhere Near Anything
BASIX	Building Sustainability Index
BCA	Business Council of Australia
BCG	Boston Consulting Group
BCR	Benefit Cost Ratio
BITRE	Bureau of Infrastructure, Transport and Regional Economics
BSX	Barangaroo Skills Exchange
CASA	Commonwealth Civil Aviation Safety Authority
CBA	Cost Benefit Analysis
CBD	Central Business District

Acronym	Definition
CCTV	Closed Circuit Television
CCZ	Congestion Charging Zone
CENTROC	Central NSW Regional Organisation of Councils
CESE	NSW Centre of Education Statistics and Evaluation
CIE	Centre for International Economics
COAG	Council of Australian Governments
COVID-19	Coronavirus Disease 2019
CPD	Continuing Professional Development
CPI	Consumer Price Index
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSO	Community Service Obligation
CSP	Community Strategic Plans
DA	Development Application
DCS	NSW Department of Customer Service
DDL	Digital Drivers Licence
DELWP	Department of Environment, Land, Water and Planning
DoE	NSW Department of Education
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment
ELN	Electronic Lodgment Network
ELNO	Electronic Lodgment Network Operators
EP&A	Environmental Planning and Assessment
EPA	Environment Protection Authority, NSW
ERP	Electronic Road Pricing
FACS	Family & Community Services
FFR	NSW Review of Federal Financial Relations
FTE	Full-Time Equivalent

Acronym	Definition
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GM	Genetically Modified
GNP	Gross National Product
GP	General Practitioner
GPOP	Greater Parramatta/Olympic Park
GSC	Greater Sydney Commission
GSP	Gross State Product
GSRP	Greater Sydney Regional Plan
GST	Goods and Services Tax
HFE	Horizontal fiscal equalisation
HILDA	Household, Income and Labour Dynamics in Australia Survey
HPPP	Health Professionals Prescribing Pathway
HSC	High School Certificate
HVAU	Hunter Valley Access Undertaking
ICT	Information Communications & Technology
IIAF	Infrastructure Investment Assurance Framework
IMF	International Monetary Fund
IN1	Light Industrial
IN2	General Industrial
INSW	Infrastructure New South Wales
IP	Intellectual Property
IPART	Independent Pricing and Regulatory Tribunal, New South Wales
IT&C	Information Technology & Communications
ITE	Initial Teacher Education
IUWM	Integrated Urban Water Management
IWCM	Integrated Water Cycle Management
KPC	Kickstarting the Productivity Conversation

Acronym	Definition
KPI	Key Performance Indicator
LAHC	Land and Housing Corporation
LEP	Local Environment Plan
LGA	Local Government Area
LGNSW	Local Government NSW
LIGS	Local Infrastructure Growth Scheme
LPP	Local Planning Panel
LRMC	Long-Run Marginal Cost
LSPS	Local Strategic Planning Statements
LSPS	Local Strategic Planning Statement
LWU	Local Water Utilities
MBE	Making Business Easier
MEB	Marginal Excess Burden
MET	Measures of Effective Teaching
NAPLAN	National Assessment Program – Literacy and Numeracy
NCVER	National Centre for Vocational Education Research
NESA	NSW Education Standards Authority
NIMBY	Not In My Backyard
NPV	Net Present Value
NQF	National Quality Framework
NSC	National Skills Commission
NSROC	Northern Sydney Regional Organisation of Councils
NSWIC	New South Wales Irrigators' Council
NTC	National Transport Commission
NWI	National Water Initiative
OECD	Organisation for Economic Co-operation and Development
OGTR	Office of the Gene Technology Regulator
OPC	Office of the Productivity Commissioner

Acronym	Definition
OTC	Over-the-counter
PBS	Pharmaceutical Benefits Scheme
PC	Productivity Commission
PDF	Performance and Development Framework
PEXA	Property Exchange Australia Limited
PIA	Planning Institute of Australia
PISA	Programme of International Student Assessment
PMD	Personal Mobility Devices
R&D	Research and Development
RBA	Reserve Bank of Australia
REDS	Regional Economic Development Strategies
RIS	Regulatory Impact Statement
RMS	Roads & Maritime Services
RPL	Recognition of Prior Learning
RPP	Regional Planning Panel
RTO	Registered Training Organisation
SEF	School Excellence Framework
SEPP	State Environmental Planning Policy
SIC	Special Infrastructure Contribution
SIS	State Infrastructure Strategy
STEM	Science, Technology, Engineering & Mathematics
TALIS	Teaching and Learning International Survey
TCorp	NSW Treasury Corporation
TfNSW	Transport for New South Wales
TGA	Commonwealth Therapeutic Goods Administration
TIMSS	Trends in International Mathematics and Science Study
TPA	Teaching Performance Assessments
TSRC	Training and Skills Recognition Centre

Acronym	Definition
TVAAS	Tennessee Value-Added Assessment System
UDIA	Urban Development Institute of Australia
US	United States of America
VET	Vocational Education & Training
VMS	Variable Message Signs
VPA	Voluntary Planning Agreement
VPP	Victorian Planning Provisions
WCAA	Western City & Aerotropolis Authority
WPC	Greater Sydney’s Western Parkland City

We're continuing the productivity conversation and would like your feedback

In October 2019, we kickstarted a productivity conversation with the release of a Discussion Paper. Since then, New South Wales has experienced an unprecedented series of events. Bushfires and drought have left regions across the state devastated. And like the rest of the world, New South Wales continues to deal with the impacts of COVID-19.

In the face of these challenges, continuing this productivity conversation and seeking the best for our State has never been more important.

Since the release of the Discussion Paper, the Commission has consulted widely with stakeholders. Stakeholder engagement was strong and insightful. These insights have informed the draft recommendations presented in the Green Paper.

There is an opportunity to provide comments and feedback on specific draft recommendations of the Green Paper at **Productivity.nsw.gov.au/green-paper**

All feedback will be reviewed by the Commission prior to finalising recommendations supporting a productivity reform agenda for consideration by the NSW Government.

Executive Summary

Productivity is the most powerful tool we have for improving our economic wellbeing. It represents the organisation, capital and technology we apply in the production of the things we need and want.

Our productivity grows as we learn how to produce more (and better) goods and services, using less effort and other resources. From antibiotics to the smartphone, we can use goods and services today that the wealthiest people of a century ago could not imagine, let alone buy. This progress flows from rising productivity.

Productivity growth should not be taken for granted, though. Looking back at history, it tends to come in cycles. The invention of new technologies—such as the computer—makes it easier and cheaper to produce things and drives waves of strong growth.

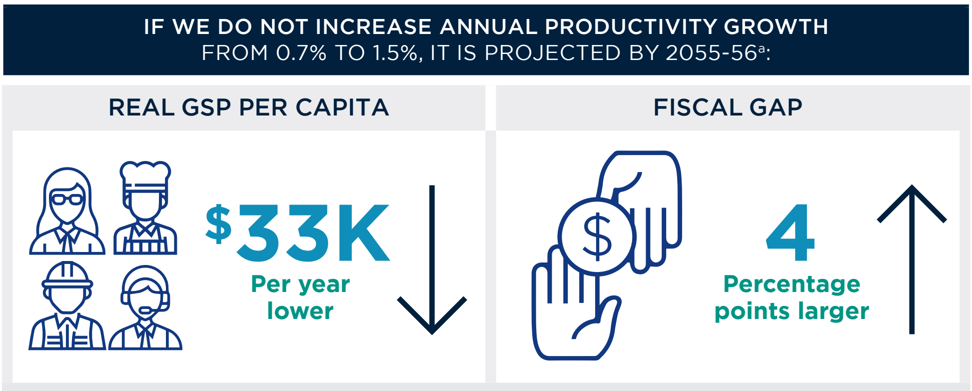
The strong productivity growth in the 80s and 90s also followed a period where governments made some tough decisions, reducing barriers to trade and freeing financial markets, reforming industrial relations, allowing the Australian dollar to move with market forces, and changes to competition policy.

In contrast, the past two decades have seen a slowdown in productivity growth. Labour productivity—the measure of what we produce each hour that we work—has gone backwards in recent years. And the new challenge of the COVID-19 pandemic has in many ways made it harder to work and do business. That will damage productivity, at least in the short run.

The consequences of weak productivity growth are serious. The 2016 NSW Intergenerational Report assumed that labour productivity growth would lift back up to a long-run average rate of 1.5 per cent per year. If, instead, it continues to grow at the rate it has for the past decade—0.7 per cent—the NSW economy would be $33,000 per person each year worse-off by 2056 (Figure ES). To see the impact more clearly, think of how an extra $33,000 per person per year would improve the living standards of your family.

To put productivity back on the right track, New South Wales will need to adapt. We have already seen how much change we can make in the face of crisis. Now it is time to look to how the choices we make today can have long-lived benefits for the people of our State.

FIGURE ES: PRODUCTIVITY'S LONG-TERM POWER



Source: NSW Treasury. Note that 0.7 per cent is the annual average growth rate from 2011-12 to 2018-19; 1.5 per cent is the long-run annual growth rate assumed in the 2016 Intergenerational Report.

Where does this paper fit in?

Although Australia is a federation with a powerful central government, state governments control many of the levers most crucial for raising our productivity.

The Commission has focused on practical recommendations that meet four criteria:

- They provide the **greatest productivity gains** at the lowest social cost.
- It is **feasible** to identify and address the problem.
- New South Wales can **implement reforms directly**, without complex and lengthy negotiations with the Commonwealth, or other States and Territories.
- They **align with other NSW Government priorities**—particularly the Premier's Priorities for enhancing quality of life, the NSW 2040 Economic Blueprint, the Treasurer's goals for the Commission, and the Government's 3R (Respond, Recover, Reform) response to COVID-19.

The Commission invites readers to comment on our draft recommendations. We will use this feedback to refine them before we present them to the NSW Government.

Key findings and opportunities for reform

Best-practice teaching will lift school results

Despite higher funding and recent reforms, NSW student outcomes are getting worse. Students are now more than a year behind their counterparts of twenty years ago. Throwing money at the problem does not work. School reform must stop tinkering at the edges, and focus on a single, evidence-based goal: best practice teaching in every classroom.

Key findings

To drive better education outcomes, the NSW Government must put a laser-like focus on improving teaching and learning in every classroom across the State.

The quality of teaching is the single most important factor for student learning. To lift the quality of day-to-day teaching, reform must focus on embedding best-practice teaching across all classrooms, using data to track student progress and teacher effectiveness.

Lifting teaching quality will also require attracting, developing and supporting highly effective teachers. Fast-tracking high-quality entrants into teaching works, especially in shortage areas like maths. Reform must strengthen evaluation practices for all teachers, especially classroom observations.

NSW needs new career paths that reward our best teachers and keep them in the classroom, teaching students and training teachers.

Summary of draft recommendations

Design and implement faster and more flexible pathways into teaching to broaden the supply of quality teachers and address workforce gaps (Recommendation 2.1).

Improve the ways we evaluate teachers so school leaders can better identify and address teachers' development needs (Recommendation 2.2).

Develop an 'instructional lead' career pathway for highly effective teachers as an alternative to an administrative career (Recommendation 2.3).

Create a culture of continuous improvement that drives best-practice teaching in every classroom. Embed strategies, resources and support that are tailored to individual school needs. Make schools accountable in implementing evidence-based best practice (Recommendation 2.4).

A modern VET system to deliver the skills we need

The State's vocational education and training (VET) system must reform to deliver the skills we need in a post-COVID economy. Chronic skills shortages show the system is unresponsive to industry and unattractive to students. Reform should focus on introducing more modern, flexible training pathways and addressing poorly-aligned incentives.

Key findings

The NSW Government controls key VET levers such as the delivery of training, the running of TAFE NSW, and the targeting of course subsidies.

Despite many reviews of VET in the past decade, few reforms have modernised learning modes, career pathways, or VET's relationship with industry. Bias against VET is still strong, with universities seen as the default pathway, especially for HSC graduates.

COVID-19 has displaced thousands of workers and accelerated structural changes to the economy. Many jobs will not return, requiring workers to reskill or upskill.

Chronic skills shortages in trades are the result of unsuitable and limited training pathways beyond apprenticeships. Low wages and a lengthy, inflexible training structure deter potential trades workers.

Poorly targeted subsidies have encouraged many students to enrol in courses of low value to employers and students. The mismatch between skills delivered by VET and industry needs has further contributed to poor employment outcomes.

There is growing interest in micro-credentials from industry, students and government. Micro-credentials are a highly targeted and efficient method of skills delivery and are well-suited to life-long learning.

Summary of draft recommendations

Respond to the COVID-19 skills challenge with an 'earn or learn' strategy, focusing on the skills needed for the post-pandemic economy (Recommendations 3.1).

Introduce new pathways to trade qualifications aimed at HSC graduates and mature-aged workers. New pathways should allow students to complete the institutional requirements of a qualification before gaining on-the-job experience (Recommendation 3.2).

Target Smart and Skilled subsidies more effectively by refining the NSW Skills List. Funding should be targeted at skills shortages and emerging business needs (Recommendation 3.3).

Promote the development and recognition of micro-credentials. Prioritise their funding in line with business needs (Recommendation 3.4).

Forward-looking regulation supports innovation and competition

Regulations can help us adapt to economic change, or they can slow us down. Overly complex and burdensome regulations stifle innovation and slow down productivity growth. New South Wales needs smarter, more flexible regulations that support innovation, competition and economic growth.

Key findings

Temporary changes introduced by the NSW Government in response to COVID-19 have demonstrated the benefits to consumers and businesses of adaptable regulation.

Flexible, outcomes-focused regulation will speed up the recovery from COVID-19.

We have identified sixteen opportunities to modernise NSW regulations.

New South Wales, like many other jurisdictions, faces the ongoing challenge of adapting regulations to keep pace with change.

Approaches to containing regulation such as red tape reduction targets and staged repeals have not been effective.

Summary of draft recommendations

Extend the operation of some COVID-19 regulatory changes, such as more flexible trading hours and digital solutions for legal and administrative processes (Recommendations 4.1-4.2).

Review existing regulatory regimes in fields such as pharmacies, packaged alcohol sales, drones, genetically modified technology, and childcare (Recommendations 4.5-4.7, 4.9, 4.16, 4.11, 4.18).

Pursue automatic mutual recognition, or if that is not possible, unilaterally recognise licenced occupations so that workers can move to New South Wales from other Australian jurisdictions (Recommendation 4.3).

Implement or reform regulation to support new technologies and competition in fields such as personal mobility devices, mandatory professional development, retail trading, rice marketing, rail access, and e-conveyancing (Recommendations 4.14, 4.4, 4.8, 4.10, 4.12, 4.17).

Update competitive neutrality policy to, among other things, remove outdated arrangements and improve complaints processes (Recommendation 4.13).

Create a best-practice regulatory policy framework underpinned by rigorous evidence, and new tools to improve regulator performance, including local government regulation (Recommendations 4.19, 4.15).

Meet the challenge of sustainable, well-priced water and energy

Water

Population growth and rainfall variability will continue to challenge the water sector. Better water management can ensure households and businesses continue to have access to safe, reliable and affordable water services.

Key findings

The water sector's functions are spread across a number of agencies and corporations. That makes coordinated long-term decision-making harder.

Integrated water cycle management can achieve better economic, social and environmental outcomes—but some barriers still remain to its uptake in New South Wales.

Many regional water utilities face operational challenges because they are small and remote, and cover large areas.

Managing demand for water can ease supply pressures, but it can also have social and economic costs.

Summary of draft recommendations

Improve governance by setting a vision and a plan for the sector, clarifying roles and responsibilities, and improving collaboration and cooperation (Recommendations 5.1-5.3).

Remove unjustified barriers to water recycling to 'keep all options on the table' for safe, affordable and reliable water services (Recommendations 5.4-5.5).

Improve the way regional utilities are funded, to target those that need it most and encourage efficient operation (Recommendation 5.6).

Ensure the way we manage water demand maximises benefits for the community (Recommendations 5.7-5.8).

Energy

The energy sector is going through a major technological transition. The growing role of renewable generation presents both opportunities and challenges. Energy policy must evolve to maximise the benefits of the transition, create an environment that attracts investment, and ensure the sector operates efficiently.

Key findings

Reliability of electricity generation and transmission networks is important—but improvements can come at a disproportionate cost to customers.

Ongoing uncertainty around carbon dioxide reduction policy is acting as a brake on investment in new generation. That risks pushing wholesale prices higher over time.

Demand management has a role in optimising the electricity system, but inadequate metering technology holds it back.

Energy sector regulation is fragmented and dispersed across several overlapping agencies. This both raises its cost and reduces its effectiveness.

New South Wales will face gas shortages as early as 2024. Despite significant domestic resources we produce little of our own gas. Land-use restrictions in particular have impeded development of gas fields.

Energy subsidy programs are numerous and complex.

Summary of draft recommendations

Make sure government energy reliability policy is consistent with consumer willingness to pay (Recommendation 5.9).

Adopt an integrated market-oriented climate change and energy policy that is technology-neutral and prices carbon dioxide emissions (Recommendation 5.10).

Investigate how technology can improve electricity pricing (Recommendation 5.11).

Improve energy governance by bringing regulation responsibilities under one roof (Recommendation 5.12).

Make sure regulation on land use manages multiple land uses to the benefit of the community (Recommendation 5.13).

Streamline energy subsidies (Recommendation 5.14).

Smarter infrastructure will support jobs and communities

Infrastructure underpins the bulk of economic activity in modern societies. It helps people get to work, makes it easier for businesses to get products to customers, and provides access to critical services such as electricity, education and healthcare. Investing in the right infrastructure is powerful lever by which the Government can raise productivity.

Key findings

Poorly coordinated land and infrastructure planning can create community resistance to change and costs the Government more.

Infrastructure investments are among of the most expensive and impactful decisions governments make. Identifying and prioritising the right projects can have long-lived benefits. Choosing badly can impose substantial costs on society.

Infrastructure congestion is a drag on productivity. Traffic and public transport crowding cost individuals and businesses valuable time and makes New South Wales a less attractive place to live and work.

Summary of draft recommendations

Plan for greater housing and business activity in areas where there is spare infrastructure capacity (Recommendation 6.1).

Improve transparency to create the right incentives for good infrastructure investment (Recommendation 6.2).

Ensure that agencies' business cases align with Government guidelines, and that funding is given to properly evaluate projects (Recommendation 6.3).

Investigate new ways of easing road congestion, such as reducing problematic driver behaviours and charging for congestion (Recommendation 6.4).

Assess how Opal fares and concessions can be used more effectively to ease demand in peak times, encourage greater use at other times, and support those that need it the most (Recommendation 6.5).

Plan for the housing we want and the jobs we need

Planning systems are enablers of productivity. In cities, they pool together talent, capital, and suppliers of goods and services. At the same time, they must manage the many costs of this process, such as congestion, pollution, noise, reduced personal space and increased pandemic risk. Overly prescriptive and complex planning regulations can stifle business competition and reduce housing supply. Changes to support the economy during the pandemic have helped—and they show how our planning system can be more responsive.

Key findings

Housing supply has failed to keep up with demand. That has led to an undersupply of housing, increasing the cost of living for households and making New South Wales a less attractive place to live.

Regulations on apartment design and car parking requirements add to the cost of housing and are out of step with the needs of the community.

Prescriptive rules on land use by businesses are inflexible and cannot accommodate innovative businesses and the evolving needs of the economy.

Development applications are taking taking longer to assess, restricting housing supply and reducing affordability.

As our population grows and our backyards shrink, access to open and green space is important for our productivity. It keeps people healthier, connects communities, and helps make cities more resilient to the impacts of climate change.

Infrastructure contributions are an important funding source to deliver infrastructure required to accompany growth. Over time the system has become more complex and is perceived as opaque and inefficient.

Summary of draft recommendations

Ensure planning instruments keep up with housing needs, while taking into account community interests (Recommendation 7.1).

Review apartment design and car parking regulations to accommodate consumer choice while maintaining minimum basic quality. (Recommendation 7.2).

Rationalise zones and restrictions on permissible business activities and produce strategies to use commercial and industrial land more productively (Recommendations 7.3-7.5).

Continue to cut red tape to make the planning system more effective and deliver on the Government's goal of reducing assessment times (Recommendation 7.6).

Develop a consistent way to measure the benefits of open and green space, and incorporate it into land use planning (Recommendation 7.7).

Use the Review of Infrastructure Contributions to find ways to deliver a principles-based, transparent and certain system (Recommendation 7.8).

A better mix of state and local taxes can encourage growth

The Government funds vital public services and infrastructure for a growing population. Yet some of our taxes are disproportionately distorting the economy and cutting productivity growth. Some notably discourage work or investment; others disguise the real cost of goods and services. New South Wales will be more productive and better able to fund services and infrastructure if we switch the tax mix towards taxes that cost our economy less.

Key findings

New South Wales is overly reliant on inefficient taxes. Property transfer taxes are the most costly and unreliable.

The existing rates mechanism does not sufficiently compensate councils for population growth. This leaves local governments with insufficient revenue to meet demand, and with an incentive to resist development.

Summary of draft recommendations

Replace inefficient taxes with more efficient ones. Start by replacing stamp duty with a broad-based land tax on unimproved land values. Coordinate payroll tax administration across states and territories (Recommendation 8.1).

Use the Review of Infrastructure Contributions to pursue reforms to deliver a more sustainable way to fund the infrastructure we need.

Evaluate reforms within three years and if reforms do not provide sufficient funds to deliver services, councils should hold a plebiscite of ratepayers to test support for abolishing of the rate peg (Recommendation 8.2).

Productivity drives prosperity

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1.1 'Productivity' measures how well we do with what we have

Productivity is the most important tool we have for improving our economic wellbeing. Our productivity grows as we learn how to produce more and better goods and services, using less effort and resources. It is the main driver in improvements in welfare and overall living standards.

From decade to decade, productivity growth arguably matters more than any other number in an economy. As Nobel Prize-winning economist Paul Krugman famously wrote of economic growth: 'Productivity isn't everything, but, in the long run, it is almost everything.' (Krugman, 1997)

Growth in productivity is the very essence of economic progress. It has given us the rich-world living standards we so enjoy.

- **Medicine:** The French king Louis XV was perhaps the world's richest human being in 1774—yet the healthcare of the day could not save him from smallpox. Today's healthcare saves some of us from far worse conditions every day at affordable cost.
- **Manufacturing:** 300 years ago a weaver's daily output was a few squares of hand-woven cloth. Today a technician with modern industrial looms can churn out huge bolts of cloth in the same time.
- **Farming:** In 1789 former burglar James Ruse produced NSW's first successful grain harvest on a 12-hectare farm at Rose Hill. Today the average NSW broadacre property is 2,700 hectares and produces far more on every hectare, often with no more people.

- **Travel:** 67 years after the invention of powered flight, in 1970, a Sydney-to-London return flight cost A$4,600, equivalent to more than $50,000 in today's terms. Today, we can purchase that flight for less than $1,400 – less than one-thirtieth of its 1970 price.
- **Communications:** Australia's first hand-held mobile call was made at the Sydney Opera House in February 1987 on a brick-like device costing $4,000 ($10,000 in today's terms). Today we can buy a new smartphone for just $150, and it has capabilities barely dreamt of a third of a century ago.

Productivity growth is still driving increases in our prosperity.

Productivity growth itself is driven by increases in our stock of knowledge and expertise (or 'human capital stock') and by investment in physical capital ('physical capital stock'). But by far the biggest long-term driver of productivity growth is the stock of advances known as 'technological innovation'—a term that covers everything from new medicines to industrial machinery to global positioning systems.[1]

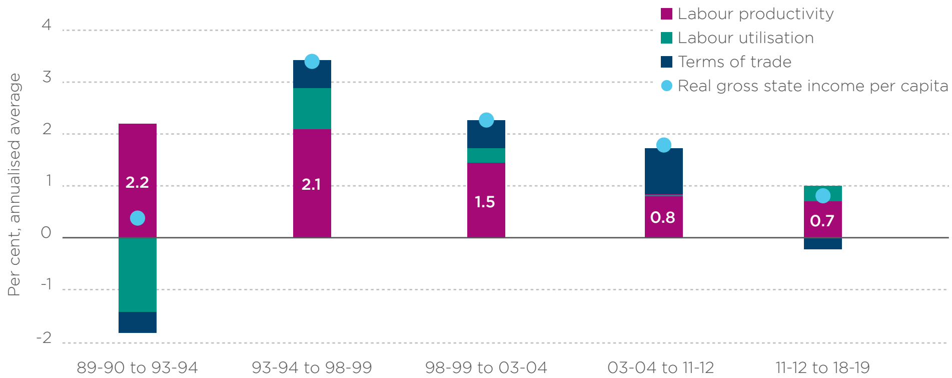
Our future prosperity depends upon how well we do at growing more productive—how smart we are in organising ourselves, investing in people and technology, getting more out of both our physical and human potential. Just raising NSW productivity to that of the United States (US) would lift our incomes by around 20 per cent. As the Commonwealth Productivity Commission recently pointed out, 'on average it takes five days for an Australian worker to produce what a US worker can produce in four.' (Commonwealth Productivity Commission, 2020a)

[1] Technology's contribution to overall productivity growth has been estimated at 80 per cent. See (Jones, 2015).

1.2 Productivity growth is now more urgent

Measured labour productivity growth has been declining for a number of years.[2] New South Wales' productivity growth averaged 2.8 per cent per year for the period from 1994-95 to 1998-99, but slowed to 0.8 per cent between 2003-04 and 2011-12, and has averaged just 0.7 per cent since 2011-12 (see Figure 1.1).

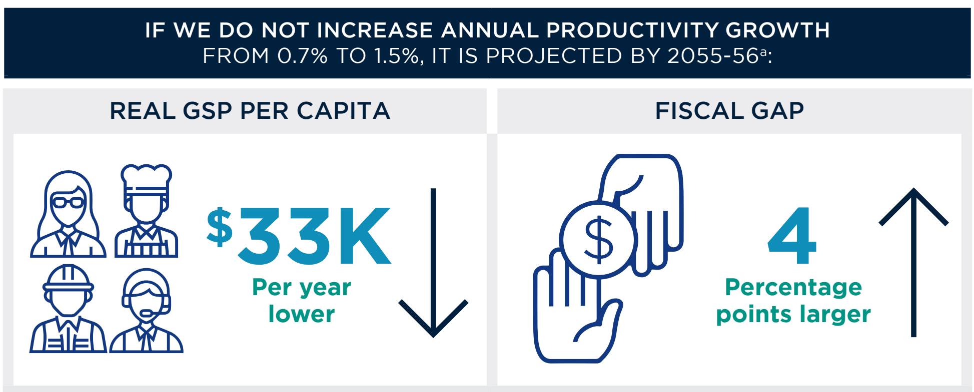
FIGURE 1.1: HOW NSW ECONOMIC GROWTH HAS SLOWED



Source: ABS 5220.0, 6202.0.

The Commission's 2019 Discussion Paper identified how our deteriorating productivity performance is impacting the State's economy and fiscal position (NSW Productivity Commission, 2019).[3] The 2016 Intergenerational Report projected a slowdown in the growth of our living standards and increasing gaps between budget revenues and expenditures arising from an ageing population, resulting in a fiscal gap of 3.6 per cent of gross state product (GSP) by 2056 (NSW Treasury, 2016b). These projections were estimated assuming a productivity performance of 1.5 per cent growth per year, which was consistent with long-term productivity growth. If recent softer productivity growth is sustained, the long-run economic results will be even worse, as Figure 1.2 shows.

FIGURE 1.2: PRODUCTIVITY'S LONG-TERM POWER



Source: NSW Treasury. Note that 0.7 per cent is the annual average growth rate from 2011-12 to 2018-19; 1.5 per cent is the long-run annual growth rate assumed in the 2016 Intergenerational Report.

[2] Measured productivity is estimated by subtracting the growth in inputs from the growth in output—it is the residual (Gordon, Zhao, and Gretton 2015).

[3] The same productivity slowdown is affecting the wider Australian economy, and the economies of most other advanced nations.

Specifically, if productivity growth stays at its current 0.7 per cent a year, rather than returning to its previous long-term average of 1.5 per cent, then we can estimate that by 2056:

- real GSP per person[4] will be $33,000 per year lower
- the gap between NSW government revenue and spending will be four percentage points larger, at 6.6 per cent.

Since the release of the Discussion Paper, the decline in estimated productivity growth has continued (Australian Bureau of Statistics, 2019b). In 2018-19 NSW labour productivity fell by 0.7 per cent.

This fall in productivity has occurred across rich economies. Economists have several theories but no clear conclusion on why it has happened. We do know, however, that it is worth trying to fix.[5]

1.3 Productivity growth relies on people's ability to change

Lifting the state's productive capacity is about achieving useful change.

Unwelcome as it has been, the COVID-19 episode has shown that when we need to, we can change more rapidly than we thought. There is no reason we can't do the same to achieve greater productivity and raise our future incomes.

The remainder of this Green Paper sets out how we can adapt across the NSW economy.

Technological innovation can help

The biggest source of long-run productivity growth is technological innovation—the process of creating something valuable through a new idea. All through history, it has been a huge source of new jobs, from medical technology to web design to solar panel installation (Jones, 2015). And as these new roles are created and filled, they in turn create new spending power that boosts demand for everything from buildings to home-delivered food.

As innovation happens, some businesses that do not adopt new techniques fall behind, and eventually go out of business. That can be bad for individual business owners and workers, and for this reason among others, governments provide a safety net for those put out of work. Yet innovation is good for the people of New South Wales. During consultations, many stakeholders raised the important role that innovation plays in raising productivity and improving the NSW economy. Innovation and the adoption of innovations from elsewhere will play a big role in lifting our productivity.

Over the decades governments around the world have attempted a plethora of ambitious pro innovation strategies, including tax incentives, government procurement policies and measures to boost industry clusters. It is difficult to discern a clear recipe for success from these efforts; it is clear, however, that where innovation spurs improvements in productivity, it supports economic growth.

[4] Gross state product is often referred to as GSP. It is the state version of gross national product, or GNP, a useful (though imperfect) attempt to estimate the value of a region's products and services over a given timespan.

[5] Economists are focusing on a number of possible drivers of the decline. These include: a slowdown in global technology; reduction in innovation caused by falls in wages; lack of investment in research and development; mining boom overhang; an overreliance on housing markets to drive wealth creation and activity; overreliance on population growth and participation to fuel economic growth; and the existence of 'zombie firms', companies that are otherwise non-viable but have been kept afloat by low interest rates.

This paper recommends pragmatic pro-innovation policies focused on:

- **Human capital** – ensuring all the State's people can get vitally important skills through effective schools, vocational training and research. This should be government's single biggest contribution to innovation and productivity growth.
- **Regulation** – providing the institutional infrastructure that is crucial for innovation.
- **Taxation** – raising the money needed for government activities in ways that do as little as possible to deter innovation.

Box 1.1: Bringing Big Ideas to Life

The NSW Government's current innovation strategy, Bringing Big Ideas to Life, released in 2016, concentrated on four areas where clearer evidence exists of potential for gains:

•Making the NSW Government a leader in innovation areas such as the delivery of **government services.**

•Capitalising on NSW **research and development** to drive social and economic value.

•Ensuring the right **skills** are developed, attracted and retained in New South Wales, to meet technological advances and changing business and workplace models.

•Making New South Wales a globally recognised centre of **entrepreneurship**, attracting businesses and individuals to New South Wales.

The pandemic illustrates the state's adaptability

Since the release of the Productivity Commission's Discussion Paper (NSW Productivity Commission, 2019), the economy has faced new challenges: drought, bushfire and, most notable of all, pandemic. Although unwelcome, the COVID-19 pandemic has shown our ability to change. Things that weren't thought possible prior to February this year have been done. For instance, in response to brief panic buying, the State Government overrode local government restrictions so that supermarkets and pharmacies could restock 24 hours a day.

Among the economy-wide changes made during the pandemic:

- Many retailers shifted more of their business online.
- Restaurants switched to takeaway and home delivery.
- Businesses deployed communications technology to let far more people work remotely.
- Schools and universities implemented much more online learning.

Once these changes were clearly needed, they happened at a faster rate than most people would have thought possible just a few months earlier. Our ability to change and adapt during this episode illustrates the possibilities of future productivity-enhancing adaptation.

1.4 The Commission aims to help restore productivity growth

Each time humans have boosted our productivity, we have had to change, adapting to an altered world.

The Office of the New South Wales Productivity Commissioner (the Commission) was founded in 2018 to identify a new productivity agenda for the state. Its 2019 Discussion Paper aimed to start a new conversation about how New South Wales can become more productive (NSW Productivity Commission, 2019).

Box 1.2: Engaging the community

Stakeholder engagement is one of the NSW Productivity Commission's foundational principles. Since the Discussion Paper's release, the Commission has consulted with stakeholders to hear what they have to say about change, holding roundtables and meetings. Community members and interest groups sent the Commission 110 submissions.

In these interactions, stakeholders have stressed the need for community involvement in the development of reforms. They have also shown a willingness to change and adapt. We'll continue to consult as we move towards finalising recommendations supporting a productivity reform agenda for consideration by NSW Government.

This Green Paper proposes the reforms that the Commission has identified as most promising since hearing that stakeholder feedback. Figure 1.3 shows the breakdown of submissions by stakeholder type.

FIGURE 1.3: GREEN PAPER SUBMISSIONS RECEIVED, BY STAKEHOLDER TYPE

Source: NSW Treasury.

The Commission has sought and prioritised reform priorities which meet the following four criteria:

- The potential productivity benefits are **material**.
- The NSW Government can **directly influence** the issue (rather than relying on intergovernmental negotiations).
- It is **feasible** to identify and address the problems.
- Those **reform priorities align** with other NSW Government priorities—particularly the Premier's Priorities to enhance NSW's quality of life, the NSW 2040 Economic Blueprint, the Treasurer's goals for the Commission, and the Government's 3R (Respond, Recover and Reform) approach response to the COVID-19 pandemic.

The Premier's Priorities

The Commission's productivity reform agenda closely aligns with the five key policy priorities set by the NSW Government for this term: a strong economy, high-quality education, well-connected communities, customer-centric services and breaking the cycle of disadvantage.

The Treasurer's goals

The Commission has been tasked by the NSW Treasurer to focus on four targets: making it easier to do business, making it easier to move to New South Wales, making housing more affordable and lowering the cost of living.

Making housing more affordable

Lowering the cost of living

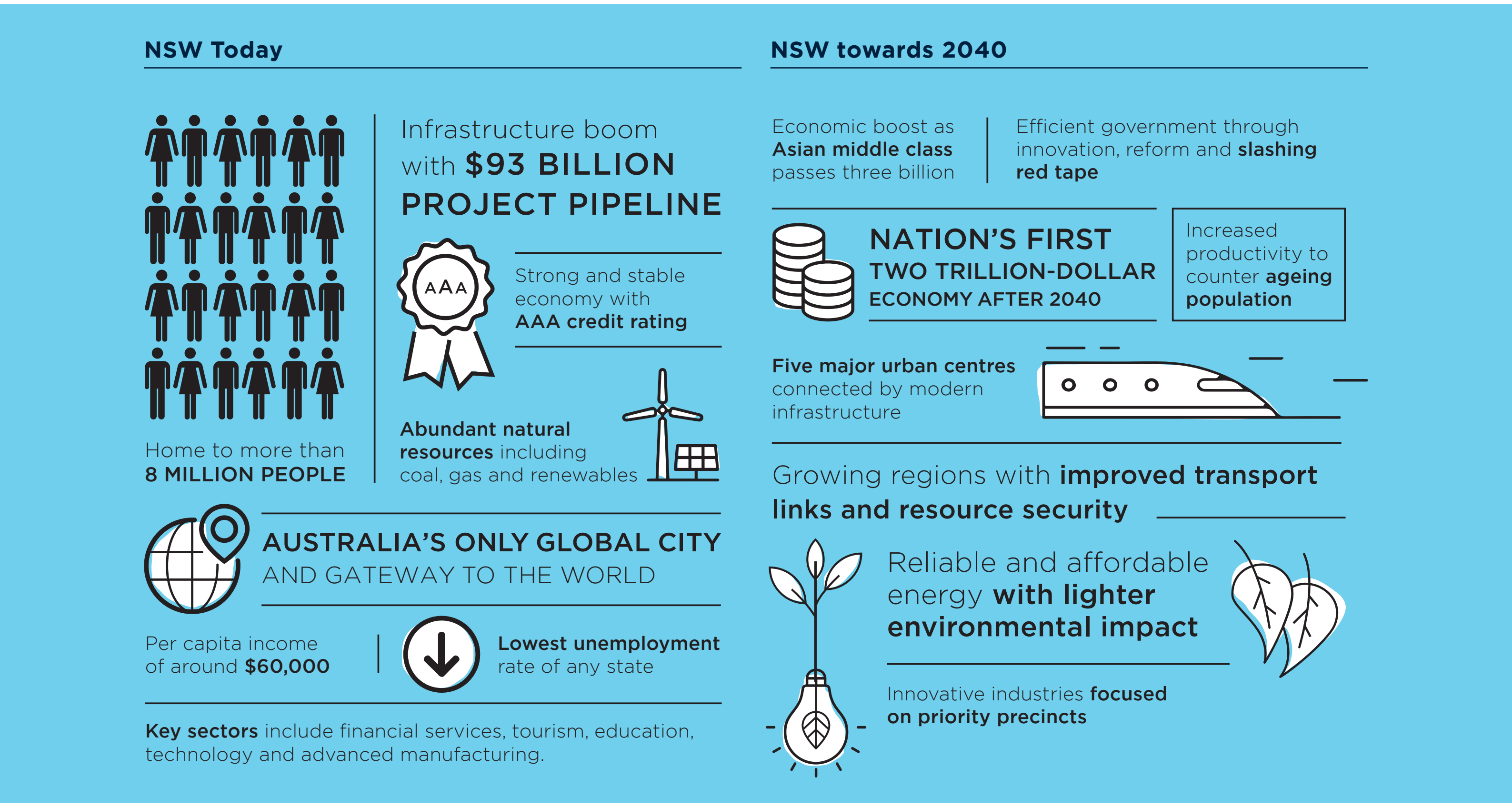
Making it easier to do business

Making it easier to move to NSW

The NSW 2040 Economic Blueprint

The Blueprint, released in late 2019, spells out not just the importance of the conversation about productivity, but the urgency of the Commission's task. While New South Wales boasts high productivity by global standards, the growth of productivity slowed well before the pandemic, along with similar falls in other advanced economies.

FIGURE 1.4: THE BLUEPRINT'S VISION FOR THE 2040 ECONOMY



Source: NSW 2040 Economic Blueprint.

The 3R approach to COVID-19—Respond, Recover and Reform

The NSW Government takes a 3R approach to addressing COVID-19's economic disruption—Respond, Recover and Reform.

1. The government response aims to manage the crisis with the lowest possible economic impact.
2. As the pandemic's direct economic effects recede, the State is assisting in the recovery, supporting a return to full economic capacity as soon as possible.
3. And as that happens, the Government is engaging in reforms to lift the productive capacity beyond its current limits.

That third set of changes is the primary focus of this paper.

1.5 The agenda for change

When we have to, New South Wales can change its behaviours and rules dramatically in a small amount of time. The pandemic has reminded us of that.

The community has embraced this spirit of responsiveness. That has shown, for instance, in the rapid embrace of remote working—a change that in some places will outlast the pandemic.

In the same spirit, government should trial various temporary measures for a period beyond the pandemic, and systematically re-evaluate their impact on the community.

Rules and regulations can quickly become outdated. When the world has changed around them, and they no longer address any clear need, government should be willing to experiment with altering them.

The Commission's recommendations

This Green Paper argues for changes in seven key areas:

1. Improve our **schools'** ability to provide the education that the people of New South Wales need to reach their potential (Chapter 2).
2. Ensure we invest in the right workplace **skills** for a globally competitive and adaptive workforce (Chapter 3).
3. **Regulate** in ways that support innovation and competition (Chapter 4).
4. Ensure reliable, sustainable and productive supply and use of our **water and energy** resources (Chapter 5).
5. Gain more from our **infrastructure** (Chapter 6).
6. **Plan** for the housing we want and the jobs we need (Chapter 7).
7. Modernise our **tax system** to help our economy grow (Chapter 8).

The paper's recommendations are not NSW Government policy, nor are they binding on the NSW Government.

But they do aim to continue the conversation with the community and business about the opportunities to improve productivity in the NSW economy. That is ultimately a conversation about our long-term prosperity.

The Premier's Priorities

The Commission's productivity reform agenda closely aligns with the five key policy priorities set by the NSW Government for this term: a strong economy, high-quality education, well-connected communities, customer-centric services and breaking the cycle of disadvantage.

The Treasurer's goals

The Commission has been tasked by the NSW Treasurer to focus on changes that will improve four outcomes: making it easier to do business, making it easier to move to New South Wales, making housing more affordable and lowering the cost of living.

Best-practice teaching to lift school results

02.

Draft Recommendations

Draft recommendation 2.1

Design and implement accelerated pathways into teaching to broaden the supply of quality teachers and address workforce gaps:

- Pilot an employment-based pathway to target urgent teacher shortages in Science, Technology, Engineering and Mathematics by 2021.
- Review the costs and benefits of the requirement for a two-year masters program for teaching by 2021, compared to shorter accreditation pathways.
- Following the review, design and implement alternative accelerated pathways within two years.

Draft recommendation 2.2

By 2022, revise teacher appraisal and evaluation so school leaders can better identify and address teachers' development needs:

- As a priority, embed mandatory classroom observation by supervisors and principals in the Performance and Development Framework and build the teacher assessment capabilities of school leadership.
- Develop a suite of measures of teacher effectiveness including: 360-degree feedback from students, parents, school-leaders and peers; in-class observation; and individual teacher 'value-added'.
- Embed the consistent use of these measures, with monitoring by the NSW Department of Education to inform support it provides to schools.

Draft recommendation 2.3

Develop an ‘instructional lead’ career pathway for highly effective teachers as an alternative to an administrative career progression. Highly effective teachers should be identified using a suite of robust measures, as outlined in draft recommendation 2.2.

Draft recommendation 2.4

Create a culture of continuous improvement that actively fosters best-practice teaching. Embed strategies, interventions, resources and support tailored to individual school and teacher needs, including guidelines on best-practice by learning area.

Require schools to regularly report their progress implementing evidence-based best-practice teaching to the NSW Department of Education and explain departures from best-practice methods.

Develop further state-wide assessment resources to support all schools to more effectively use data to monitor student progress, and to inform and target teaching practices.

2.1 Human capital is the foundation of productivity

The contribution we make to society through work and other activities, is at the centre of productivity and economic growth. Building our stock of knowledge and skills – our 'human capital' – builds lifetime income and overall wellbeing. It helps improve social mobility and participation in our democracy. Most importantly, it helps us to understand, navigate and thrive in the world.

Supporting investment in our human capital and improving its use are the most important ways that governments can drive productivity growth and lift economic prosperity. More education tends to improve our progress in the labour market: it makes us more likely to work and more likely to earn good incomes (Forbes, Barker, and Turner, 2010).

The importance of human capital has increased with the greater value being placed on skills in the global economy. Increasing the potential value that citizens can add to the global economy, 'by enhancing their skills and capacities and by improving their means of linking those skills and capacities to the world market', is the major productivity challenge for governments (Reich, 1991).

One of New South Wales' greatest strengths has always been our highly educated and skilled workforce. Our people's skills and abilities draw business and industry to the state. As service activities increasingly dominate the economy and new industries emerge, success and prosperity will depend on maintaining the quality of our human capital.

The NSW economy has recently suffered dramatic disruptions – not only the health and economic crisis of the COVID-19 pandemic, but also the devastation caused by the 2019-20 bushfires. These disruptions will see a need for the re-skilling of significant segments of the labour force. We need our workforce to be agile to allow our economy to adapt and innovate to meet future challenges.

All stages of the education system play critical and complementary roles in developing human capital – from early childhood education, primary and secondary schooling, and vocational and higher education. This chapter discusses ways that school education can better support productivity growth; Chapter 3 discusses reforms to the vocational education and training (VET) system.

Schools demand focus

Improving productivity by building human capital demands a well-functioning and flexible school system that equips individuals to thrive in a rapidly changing world.

In consultations for this paper, stakeholders highlighted the importance of reforming schools to improve productivity. The NSW Government bears primary responsibility for the school system. Long-term trends suggest that policy measures focused on increased school funding have not addressed the underlying issues behind declining performance. Submissions to the Commission called for urgent change in focus for reform, as did stakeholders during consultations and roundtables.

Government must focus more consciously and consistently on building the foundational skills and higher-order capabilities that many young people currently lack. Improving outcomes will require bold reforms that put a laser-like focus on improving teaching and learning in every classroom across the state. Results since 2000 suggest that keeping things as they are will not improve outcomes.

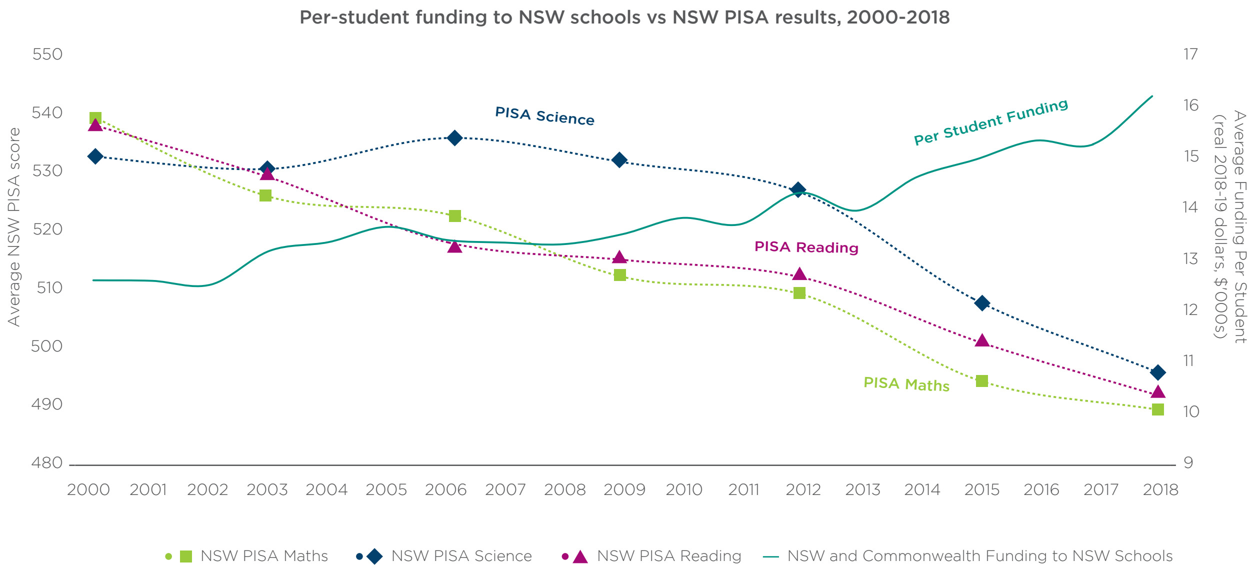
The COVID-19 pandemic has disrupted schools across the state. It has also shown how quickly schools, teachers and students can successfully innovate and adapt to new ways of teaching and learning. Schools have had to use technology to deliver lessons remotely. Although face-to-face interactions remain crucial for students' development and education, lessons from these innovations should be considered and shared, and the impetus for reform maintained.

Achieving reform in this area will be very difficult; if it was easy then it would have been done already. But if outcomes are to be improved, then the whole community must understand how poor our recent performance has been—and how significant the economic benefits can be if we can improve things.

2.2 School results have fallen

On many measures, NSW's school results have been falling right throughout this century (see Figure 2.1 and Figure 2.2).[1] In particular, a number of stakeholders pointed to disappointing results from the Organisation for Economic Cooperation and Development's (OECD) Programme for International Student Assessment (PISA).[2]

FIGURE 2.1: STUDENT PERFORMANCE HAS DECLINED DESPITE HIGHER FUNDING



Source: Report on Government Services 2020 (Commonwealth Productivity Commission, 2020c).

[1] New South Wales results have fallen in Australia's National Assessment Program in Literacy and Numeracy (NAPLAN) assessments and in the global Trends in International Mathematics and Science Study (TIMSS) assessments as well as in PISA.

[2] PISA measures 15-year-olds' reading, maths and science understanding; it is perhaps the most influential world-wide standard for comparing educational attainment.

The latest 2018 PISA results show absolute and relative falls in scores across all three domains of reading, mathematical and scientific literacy. For the first time, mathematics results fell to the OECD average (see Figure 2.1).

While Australia's performance has declined in comparison to the rest of the world, NSW's performance has also declined in comparison to other states and territories. Some of the largest declines in PISA results were for New South Wales (see Figure 2.2). Our state now ranks in the bottom half of jurisdictions across all three domains. Victoria showed the strongest results since 2000, reporting no decline in average reading and science literacy. These differences in performance across the nation show there is ample room to improve state policy settings to lift student achievement.

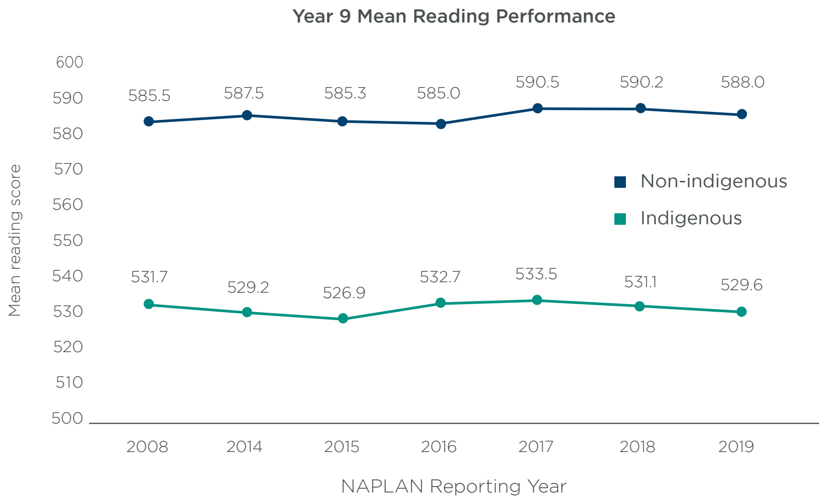
FIGURE 2.2: NSW STUDENTS' PERFORMANCE HAS FALLEN FASTER THAN MOST OTHER JURISDICTIONS

Source: Australian Council for Educational Research (ACER).

Both PISA and the National Assessment Program in Literacy and Numeracy (NAPLAN) highlight the lack of progress made in closing gaps in educational attainment for disadvantaged groups. The gap in performance between students in the highest and lowest quartile by socioeconomic status remains around three years.

Large gaps also remain between indigenous and non-indigenous students. Results suggest that by age 15 indigenous students are, on average, around two-and-a-half years behind their peers in reading skills (see Figure 2.3).

FIGURE 2.3: WIDE GAPS REMAIN BETWEEN INDIGENOUS AND NON-INDIGENOUS STUDENTS



Source: Australian Curriculum, Assessment and Reporting Authority.

More generally, results have declined across the entire distribution of students. All socioeconomic groups, school sectors, and both high- and low-performing groups experienced a slide in academic performance. Differences in performance between school sectors were almost entirely explained by their students' different socioeconomic backgrounds. This suggests there was no significant difference in the effectiveness of different school sectors.

The sustained decline in outcomes is at odds with the level of skills and knowledge that young people need to thrive in an increasingly competitive and global economy. The proportion of NSW students failing to achieve minimum standards across the three PISA domains has increased from 32 per cent in 2006, to 42 per cent in 2018. That has happened over a period of steadily increasing funding. A growing group of young people lacks the knowledge they need to participate in society as productive citizens (Thomson et al. 2016).

2.3 To improve results, focus on teaching quality

Increasing funding has failed to stem the decline in NSW student performance. Commonwealth and NSW Government expenditure on NSW public schools rose from $16,019 in 2009 to $18,965 per student in 2018 (in real terms), an 18 per cent increase (Commonwealth Productivity Commission, 2020c). At the same time, other Australian states, like Victoria, have consistently lower school funding levels but higher average student performance.

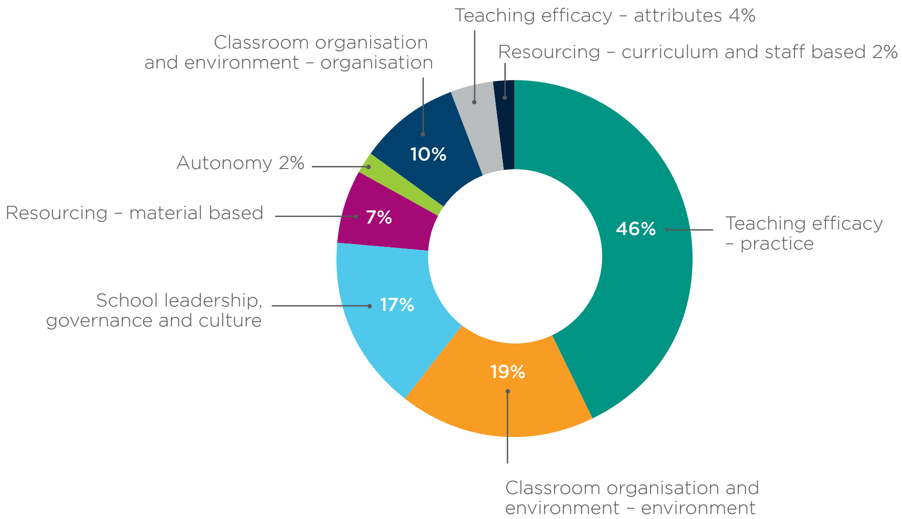
This demonstrates that policymakers need to look beyond funding to lift student performance; including getting better value from the significant funding we already commit to school education. School education reform needs to focus on what we know works – starting with teaching quality.

Teacher quality is the biggest influence on student performance

The quality of our schooling system ultimately rests on the quality of classroom instruction by our teachers and school leaders. Teachers and school leaders directly affect learning by determining how teaching is delivered in classrooms and how the curriculum is conveyed to students.

This is supported by strong evidence. Multiple independent studies have consistently found that the quality of teachers and their teaching is the single most important factor in improving student learning (see Figure 2.4) (Hattie, 2005; Hanushek, 2011; Chetty, Friedman, and Rockoff 2014).

FIGURE 2.4: TEACHING QUALITY HAS THE BIGGEST INFLUENCE ON STUDENT OUTCOMES



Source: Deloitte Access Economics.

Any sustained lift in student performance will depend on improving the quality of day-to-day teaching. This requires us to embed in the school system those teaching approaches most likely to work—those with the strongest evidence that they improve learning.

Teaching quality, in turn, depends on policies that develop and support the capabilities of teachers and school leaders. Improved teaching quality will also support other important aspects of school reform, including the review and redesign of the curriculum by the NSW Education Standards Authority (NESA, see Box 2.1).

Box 2.1: The NSW Curriculum Review

In June 2020, the NSW Government released the NSW Curriculum Review (the Review). This is the first comprehensive review of the NSW primary and secondary curriculum since 1989. It aims to ensure the education system is preparing students to meet the challenges and opportunities of the 21st century.

The Review proposes major changes to the content and structure of the school curriculum, based on state-wide consultation and more than 2,000 submissions. The NSW Government has considered the recommendations of the review and supports the overall principles of changes proposed. Reforms include:

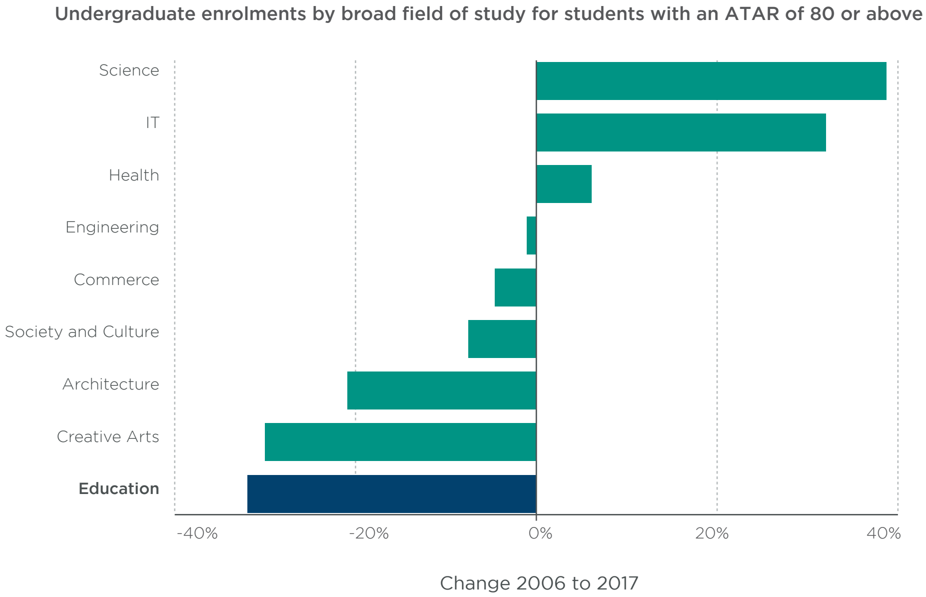
- **Building strong foundations** for future learning by 2022, with new English and Mathematics syllabuses for Kindergarten to Year 2.
- **Freeing up more time for teaching** by 2022 by reducing the hours teachers spend on extra curricular topics and issues and compliance requirements.
- **Strengthening post school pathways** by 2022 with new learning areas for Years 11 and 12 that clearly link learning to future employment and study options.
- **Introducing a new curriculum** from 2024 with new syllabuses focused on what is essential to know and do in early and middle years of schooling, and key learning areas in the senior years.

Attract, develop and retain high quality teachers

Quality teaching depends on a high-quality teacher workforce. As the largest employer of teachers in Australia, the NSW Government can foster a high-performing teaching workforce through policies to attract, develop and retain the best teachers.

The teaching workforce faces many well-known challenges. They include a more complex and demanding teaching environment, strong growth in student numbers, and a forthcoming surge in retirements as the workforce ages. Moreover, there is evidence that the academic quality of teaching entrants, measured by average literacy and numeracy skills, has weakened over the years (Commonwealth Productivity Commission, 2012c; Leigh and Ryan, 2008). Research by the Grattan Institute indicates that fewer high achievers are pursuing teaching, with the average level of academic achievement of students entering teaching degrees appearing to have fallen over the past decade across Australia (see Figure 2.5) (Goss and Sonnemann, 2019).

FIGURE 2.5: TEACHING HAS FAILED TO ATTRACT MORE HIGH ACHIEVERS



Notes: Agriculture and hospitality excluded due to low volume. 'Education' includes curriculum studies and teacher education. Includes domestic onshore commencing bachelor-degree students' enrolments for all students with a known ATAR 80 or above and aged 20 or younger, regardless of the basis of admission.

Source: Grattan Institute (2019).

As part of a national push to improve teaching quality, New South Wales has seen a wave of reform. Initiatives have concentrated on standards for new teachers, imposing new requirements for teacher accreditation and accreditation of initial teacher education (ITE) programs, and restricting entry into these programs.

These initiatives have been tied to the introduction of the Australian Professional Standards for Teachers in 2013 (the Teaching Standards). Teachers are required to be accredited against the Teaching Standards to be employed in NSW schools. Teacher remuneration structures are based on progression through the Teaching Standards (graduate, proficient, highly accomplished and lead). New teachers must now meet increased academic requirements to enter ITE programs, including achievement of a Band 5 HSC result in a minimum of three subjects. Band 5 sits between 'average' performance (Band 4) and the highest performance (Band 6). Aspirants must also sit a test to demonstrate they are in the top 30 per cent of the adult population for literacy and numeracy.

Yet these reforms have had little impact on the overall teaching workforce so far and have not embedded systems that improve teaching practices across the board. Accreditation processes were introduced to ensure minimum levels of teaching quality. But they have been hampered by weak implementation and are only loosely linked to teaching effectiveness (Audit Office of New South Wales, 2019a). These initiatives have had little impact on day-to-day teaching and professional development for the bulk of the teaching workforce, given their focus on new entrants. While failing to improve outcomes, these measures have increased the barriers to enter teaching careers, exacerbated workforce shortages and deterred high performers and mid-career professionals from seeking to enter teaching. These attempts to improve teacher standards have conflated accreditation with quality.

These challenges and structural issues remain a barrier to attracting high-performing teaching candidates. In roundtables and submissions, stakeholders underlined the need for a renewed focus on policies to support a high-quality teaching workforce. While stakeholders recognised the passion and dedication of teachers and school leaders, they highlighted the need for a stronger workforce. Business NSW, for instance, expressed a desire to 'attract some of the best and brightest to become the next generation of educators'.

Sustained improvements in teaching quality will require reforms spanning the entire teaching career cycle. To attract high-quality entrants into teaching, more flexible pathways should be developed, particularly in areas of persistent shortages. To drive ongoing professional growth for all teachers, professional development and appraisal practices must be strengthened to reflect the evidence base on teaching quality. Teacher career progression structures must be designed to recognise, develop and reward the most effective teachers. Better leveraging and recognising our best teachers will help spread best-practice teaching and make teaching a more attractive profession.

2.4 Use flexible teaching pathways to boost teacher quality

To meet the expected growth in student numbers and ongoing demand for quality teaching, teacher supply policies need to be more responsive and flexible. For a decade or more, the teacher quality reform agenda has focused narrowly on selecting new teachers more carefully. Higher credential requirements and more onerous and longer qualifications for new teachers have unintentionally raised new barriers for talented people entering the profession.

The attractiveness of teaching as a career has clearly declined relative to other professions, particularly for higher achievers Goss and Sonnemann, 2019). Increased competition from other sectors, in terms of better remuneration, progression opportunities, and flexibility, has exacerbated long-term imbalances in teacher supply and demand, particularly in areas of science, technology, engineering and mathematics (STEM), see Box 2.2.

Box 2.2: The critical shortage in STEM teachers

The growing shortage of qualified teachers in STEM subjects is well documented (Shah, Richardson, and Watt, 2020; Commonwealth Productivity Commission, 2012c; Timms et al, 2018). The shortage is particularly serious for maths teachers, with around one in five teaching 'out of-field'—that is, lacking a suitable qualification to teach mathematics (Prince and O'Connor, 2018; Timms et al, 2018). Schools in disadvantaged and remote areas suffer the most.

Addressing these persistent areas of teacher shortages is now an urgent policy challenge. Maths and other STEM skills are crucial for improving Australia's productivity growth and capacity for innovation. Yet 'out-of-field' teaching is widely considered to impair student learning and maths literacy in New South Wales continues to decline. Moreover, research shows that teacher subject knowledge in maths and science matters for student academic achievement in those subject areas (Metzler and Woessmann, 2010; Hanushek, 1986; Hanushek and Rivkin, 2006).

Current initiatives, including scholarships and financial incentives, are not overcoming persistent shortages of STEM teachers (Audit Office of New South Wales, 2019b). The recently-announced initiative to make maths compulsory for senior students, combined with fewer teaching graduates specialising in STEM subjects, will likely exacerbate the issue, with ramifications for teaching quality.

Faced with this challenge, we need to cast the net as wide as possible and lower the barriers to bringing more people with the potential to be great teachers into the system.

Value teacher ability above time spent training

A major cause of the teacher shortage is the length of time it takes to train as a teacher. Under current requirements, you must complete either an undergraduate or postgraduate teaching degree before you teach in NSW schools. The undergraduate pathway takes a minimum of four years. Postgraduates need a minimum of two years' teacher education, meaning you will take a minimum of five years to enter the classroom.

In principle, studying for longer can increase the skills and knowledge of graduates, improving graduate teacher outcomes. In practice, however, the evidence suggests that gains from longer teaching pathways are minimal or even nil.

Australian and international evidence on higher accreditation requirements, including teacher certification, shows a mixed to weak relationship to improved student outcomes (Commonwealth Productivity Commission, 2012c).[3] The bulk of empirical evidence, including randomised controlled trials, finds teacher certification bears little relationship to teacher effectiveness, as measured by impacts on student achievement (Gordon, Kane, and Staiger, 2006; Kane, Rockoff, and Staiger, 2006; Decker, Mayer, and Glazerman, 2004).

Several studies cite higher and longer qualification requirements in high PISA-ranking countries like Finland as evidence for increasing teacher credentials (Darling-Hammond, 2017). But as noted by the Commonwealth Productivity Commission, it is difficult to unpick the influence of this from broader reform that occurred over the same period (Commonwealth Productivity Commission, 2012c). Finland's PISA performance, like Australia's, has been declining since at least 2006. Finland is now outperformed by China, Singapore, Hong Kong, South Korea, Macao and Estonia.

In fact Singapore – the second ranked country in PISA – offers a one-year graduate teaching qualification alongside an employment-based pathway for those with no teaching qualification.

Research suggests that rather than focussing on pre-service training time, the quest for teacher effectiveness should prioritise two stronger indicators: training quality and candidate attributes.

The NSW Centre of Education Statistics and Evaluation (CESE) suggests that the cognitive, verbal, literacy and academic abilities of teachers have the greatest impact on student learning outcomes (CESE, 2013). International research also points to the importance of subject matter knowledge for teaching effectiveness, particularly for subjects like maths (Goldhaber and Brewer, 1997).

A series of gold-standard randomised controlled experiments confirm that qualified teachers are equalled or outperformed by unqualified teachers who have stronger academic backgrounds:

- Decker, Mayer & Glazerman found that for students in Years 1 to 5, the unqualified group produced similar results in reading and better results in maths by 0.15 standard deviations (Decker, Mayer, and Glazerman, 2004). That is the equivalent of one month of additional instruction over a school year.

[3] One United States study by Darling-Hammond et al. found traditional certification did improve student outcomes (Darling-Hammond et al, 2005). However, the study's methodology was strongly criticised, particularly for failing to appropriately control for differences in students' socioeconomic status; see (Podgursky, n.d.)

- Clark et al looked at middle and high school maths teachers, similarly finding the unqualified group produced better results (0.07 standard deviations) (M. A. Clark et al, 2013). In another study, Clark et al focused on elementary grades, finding the unqualified group outperformed qualified teachers in reading instruction, achieving the equivalent of 1.3 months extra instruction over a year (0.12 standard deviations) (M. A. Clark et al, 2017).

There is no evidence that more onerous accreditation requirements have improved teacher effectiveness. But they have certainly raised the barriers for entry into the teaching profession, worsening teacher shortages in critical areas such as maths.

A longer pathway increases the cost—and the risk—of becoming a teacher. Not only is there a higher direct financial cost with longer university courses, the time spent in university is time that could have been spent in the workforce. For high-performing graduates or mid-career professionals, this cost could be substantial.

Meanwhile student outcomes have continued to decline in the state. There is an urgent need to review these measures and focus on the most effective strategies for attracting the best and brightest into the teaching profession.

Open up new pathways to attract high achievers

To expand the potential pool of high-performing teachers, opening the profession to individuals with relevant experience outside education is now recognised as an important policy option (OECD, 2012).

For example, the system could enable high-performers with qualifications in a high school subject area to start working and earning as teachers while they are still completing teaching qualifications. That could make teaching more attractive by reducing the opportunity cost of a mid-career switch.

International and Australian examples show how alternative pathways can work alongside more traditional routes, without diluting teaching quality.

Singapore has a highly successful competitive program to attract into teaching mid-career professionals who do not have an education-related qualification. The application process includes a rigorous screening process. If candidates successfully complete initial screening, they spend time in schools as untrained contract teachers for up to a year. They are then assessed on suitability for teaching and may progress to obtaining a teaching diploma while continuing their work in the classroom.

The Teach for Australia program is another example of an employment-based teacher training pathway to address teaching shortages. Since 2008 the program has placed high-achieving teacher candidates into hard-to-fill positions in disadvantaged schools across Victoria, the Northern Territory, Western Australia and Tasmania. Following a fast-tracked course in teaching and a two-year placement, participants obtain a Master of Teaching degree and are fully qualified to teach. The program has been successful in attracting high quality graduates, with participants outperforming other graduate teachers by the end of the program (Dandolo Partners, 2017).[4]

[4] For instance, school principals reported that Teach for Australia associates 'outperform their peers on all Australian Professional Standards for Teachers measures surveyed by Dandolo after both have spent two years in the classroom'.

Concerns about cost-effectiveness have halted the program's uptake in New South Wales. But in light of the growing shortage of qualified STEM teachers, particularly in disadvantaged schools, the NSW Government should develop, pilot and evaluate employment-based programs that target STEM graduates. In the face of increased competition for high-achieving candidates, approaches to teacher training must allow for innovation (OECD, 2008). Removing unnecessary barriers to entry and allowing more flexible pathways into teaching can help to expand the supply of high-quality teaching candidates. The increasing length of teacher training is a clear example where higher requirements discourage quality teaching entrants, leading to poorer student outcomes.

Draft recommendation 2.1:
Broaden the supply of quality teachers

Design and implement accelerated pathways into teaching to broaden the supply of quality teachers and address workforce gaps:

- Pilot an employment-based pathway to target urgent teacher shortages in Science, Technology, Engineering and Mathematics by 2021.
- Review the costs and benefits of the requirement for a two-year masters program for teaching by 2021, compared to shorter accreditation pathways.
- Following the review, design and implement alternative accelerated pathways within two years.

2.5 Help schools to evaluate teachers

Teacher evaluation can be a powerful tool to increase teacher effectiveness and improve student outcomes. The most powerful method is directly linking teacher appraisal and feedback to the quality of classroom teaching and student performance. Studies suggest such teacher evaluation can make teachers as much as 20 to 30 per cent more effective (Jensen and Reichl, 2011).

The NSW Department of Education provides guidelines on teacher evaluation in the form of the Performance and Development Framework (PDF). This framework outlines the yearly process of planning, goal setting, professional learning, self-assessment and review for teachers. Individual schools and principals then review teachers' performance development.

But reviews of the PDF have found significant weaknesses in the current arrangements for teacher performance evaluation and appraisal (Audit Office of New South Wales, 2019a; Clinton et al, 2019). The Audit Office of New South Wales found variable quality in applying the PDF, including in goal setting, supervisor feedback and documentation. The framework uses the Teaching Standards as a basis for appraisals, but in practice goal-setting and feedback are often not strongly linked to the Standards. The Commonwealth Productivity Commission has observed that appraisal processes are often of poor quality, with teachers not receiving the feedback or support they need to improve (Commonwealth Productivity Commission, 2012c).

Surveys indicate many teachers find that the existing process is bureaucratic and does not help them improve their teaching practice (OECD, 2018a). A lack of meaningful recommendation and feedback not only impedes teachers in identifying and addressing areas of development, but also stymies efforts to recognise, reward and progress teachers throughout their careers (Jensen and Reichl, 2011).

These reports highlight a large gap between policy and in-school practices of teacher evaluation. The Standards do not support effective performance evaluation. They describe teacher competencies but provide little guidance on practical and valid measures of performance and teaching quality. Adopting the most effective teacher evaluation practices and clear and measurable performance outcomes could substantially improve the value teachers get from feedback and appraisal.

Clearly a one-size-fits-all model of teacher evaluation is inappropriate, based on the diversity in school communities and education needs. But given the many potential ways to gather evidence and the growing body of research on indicators of teaching effectiveness, schools should be given clearer guidance on the best measures for teacher feedback and evaluation. These include student performance and achievement, classroom observation, and 360-degree feedback from students, parents, school-leaders (see Box 2.3) and peers.

Box 2.3: Effective school leadership lifts educational outcomes

Principals have the second largest in-school impact on student outcomes, after classroom teaching. Studies indicate highly effective principals can make a considerable difference to student outcomes, raising achievement of a typical student by between two and seven months of learning in a school year (Branch, Hanushek, and Rivkin, 2013).

The most effective school leaders focus strongly on instruction to drive better student outcomes, and get directly involved in teachers' learning and development. In a 2009 meta-study, John Hattie found instructional leadership can have three to four times greater impact on student outcomes than approaches that focus on teacher autonomy (Hattie, 2009).

A study of five NSW government schools with a culture of excellence revealed the ingredients of strong educational leadership (CESE, 2018). The schools' principals modelled instructional leadership within and beyond their schools. They shared a common desire to build leadership capacity among their staff, and often allowed staff to play key roles in the making and enactment of school decisions.

Taree West Public School, located on the Mid North Coast of New South Wales provides an example of excellent school leadership. In 2016, external validation found the school was excelling in 12 of 14 elements in the School Excellence Framework. School leadership produced a culture of excellence by focusing on getting teachers to proactively and continually self-evaluate their practice and stay informed of current research on effective teaching. A culture of self-reflection and continuous improvement is now a core aspect of teaching at the school.

Rooty Hill High School, a comprehensive secondary school located in western Sydney provides another example of leadership excellence. The school was named as one of the 40 most innovative schools in Australia by The Educator magazine in 2016 and 2017. School leadership embedded and sustained a culture of excellence within the school through a strong focus on refining the skills of teachers and delivering quality lessons.

Make classroom observation easier

When combined with student performance data, classroom observations are an important source of evidence for evaluating and improving teacher performance. Classroom observations typically involve a senior colleague, school leader or peer observing a lesson given by the teacher in their classroom. The Measures of Effective Teaching (MET) project involved approximately 3,000 teachers from across the United States over seven years. It found that teachers could be given a suite of useful feedback through multiple classroom observations combined with data on student improvement and from student perception surveys (see Figure 2.6).

The PDF requires NSW teachers to have at least two lesson observations as part of each performance appraisal cycle. But the evidence indicates teacher observations are not operating effectively. NSW Department of Education guidelines place severe restrictions on supervisors' ability to observe teachers and give them feedback (NSW Department of Education and Communities, 2015):

- Guidelines require the time and place of any classroom observation to be negotiated in advance.
- Supervisors have no right to observe a teacher spontaneously, or indeed at all, unless the teacher agrees.
- The guidelines also state that observations may be 'peer to peer, supervisor to teacher, or teacher to supervisor'. This demonstrates that it is not mandatory for supervisors to undertake observations of classroom teaching practice at all, and teachers can elect for observation by an 'agreed colleague' instead of their supervisor.[5]

Guidelines that deny supervisors the right or responsibility to observe those they supervise are at odds with modern standards of management and accountability, especially for a profession that works with children. The NSW guidelines also seem redundant given the shift to online platforms – accelerated by COVID-19—where parents and carers can readily observe their children learning.

Given the current restrictive arrangements, it is unsurprising that classroom observations seem rare in New South Wales. A 2019 Audit Office of NSW Report found that only 10 of 130 records examined included evidence that the teacher had undertaken their two mandatory observations (Audit Office of New South Wales, 2019a).

To drive improvement in teaching practice and student outcomes, New South Wales should implement a much more rigorous and consistent system of classroom observation. This should include:

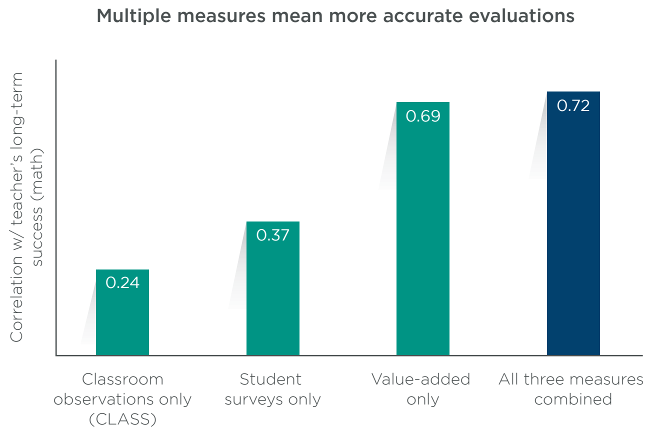
- strong departmental oversight and school accountability for conducting classroom observations
- an obligation on school leadership to support teachers with effective feedback on their impact on student learning and with strategies to improve (see Box 2.3 for examples of this)
- an obligation for school leaders and supervisors to conduct classroom observations, and an absolute right to do so, and at times they determine.

[5] See also New South Wales Teachers Federation, 2018.

Beyond the fact that observations are simply not happening, there is also no system to ensure school leaders conduct them effectively. The 2019 Audit Office of NSW Report called for classroom observation systems to be improved (Audit Office of New South Wales, 2019a). It found a lack of guidance on effective methods of observing teaching and providing feedback. This led to large differences in the methods and quality of lesson observations.

A better system would build the capabilities of observers by training them and providing a standardised assessment tool to improve the quality of observation and reduce bias.

FIGURE 2.6: CLASSROOM OBSERVATION, VALUED ADDED AND STUDENT SURVEYS GIVE USEFUL FEEDBACK ON TEACHER EFFECTIVENESS

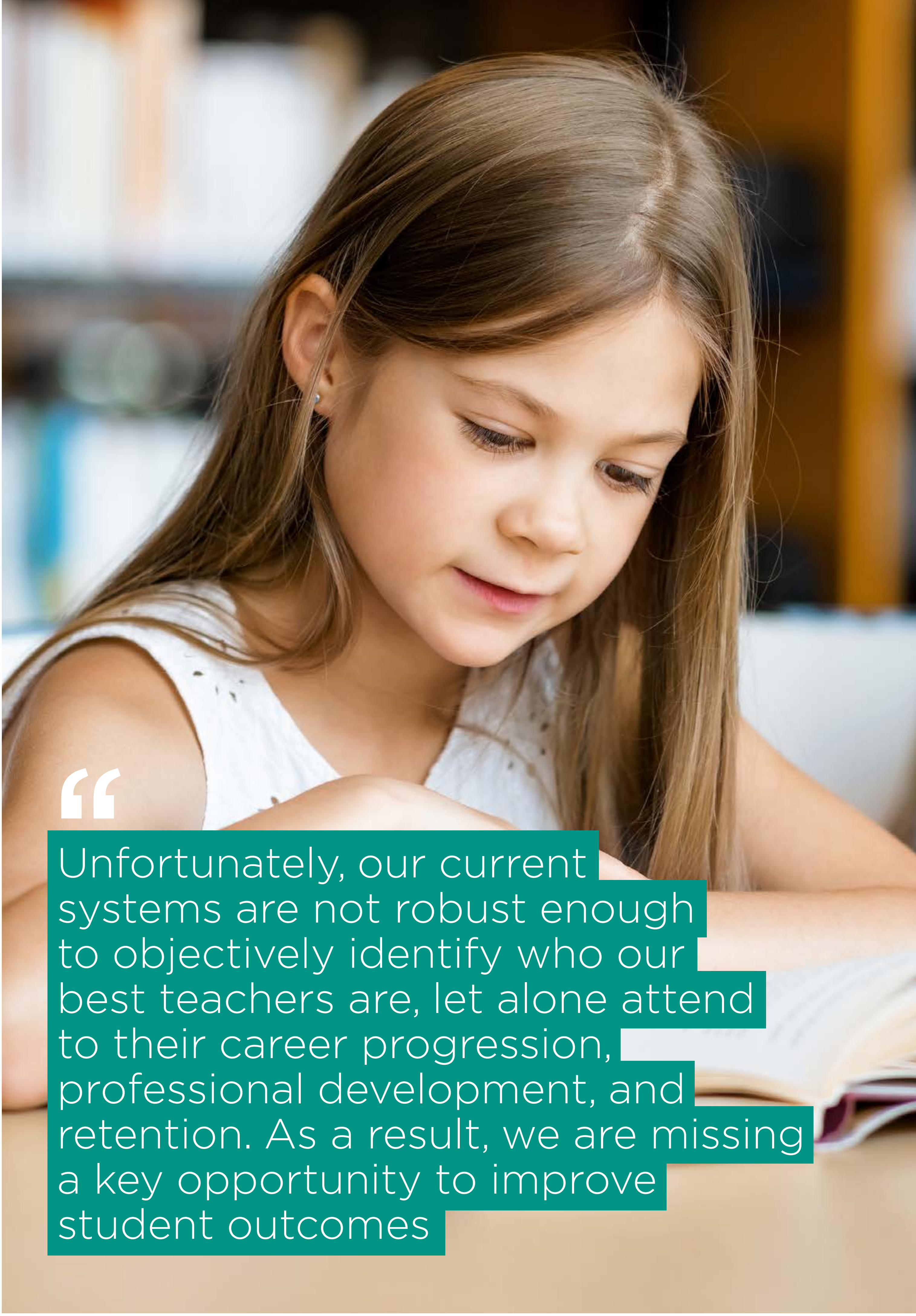


Source: Kane and Staiger (2012).

Adjust for influences outside the classroom

A teacher with relatively low-performing students may be driving strong improvements, while a teacher with high-performing students may not be contributing much to their performance. Around the world, high-performing education systems are supplementing standardised testing with indicators that help to show what teachers and schools are contributing to student learning growth. These measures can be designed to avoid biases by influences outside the classroom, like students' socio-economic backgrounds and previous learning experiences.

In terms of data driven measures of teacher performance, such 'value-added' models are the best way to estimate teachers' contributions to students' progress over time, adjusting for their initial performance and characteristics. Assessments of value-added help to identify the teachers who make larger than average contributions to learning growth, and so allow different teachers' true performance to be compared. A range of school-level value-added measures are already being used in New South Wales to identify the schools that make the largest contributions to students' learning growth (CESE, 2014).



“Unfortunately, our current systems are not robust enough to objectively identify who our best teachers are, let alone attend to their career progression, professional development, and retention. As a result, we are missing a key opportunity to improve student outcomes

Box 2.4: How other countries use value-added measures

A growing number of international educational systems measure the value added by schools and teachers as part of their routine evaluation processes. These include the United Kingdom, Hong Kong and most US states and districts.

In Australia, Victoria and the NSW Catholic education system have incorporated value-added measures into their evaluation processes. The value-added information is used by these systems for a range of purposes, from relatively low-stakes uses (like school and teacher improvement, school self-evaluation, and monitoring policy initiatives) to high-stakes uses such as boosting accountability.

In 2011, Tennessee elevated its statistical growth model, called the Tennessee Value-Added Assessment System (TVAAS), from an informational tool to a higher-stakes evaluation system. Tennessee uses the TVAAS to rate the performance of teachers, schools, and districts. While controversial at the time, the transition coincided with gains on national tests that earned Tennessee the title of America's fastest-improving state in math and reading in 2013.

Source: Lu and Rickard (Lu and Rickard, 2014)

Overseas, value-added models are increasingly used to measure teachers' contributions to students' learning progress. One example is the Tennessee Value-added Assessment system (see Box 2.4), which led to dramatic improvements in mathematics and reading. Value-added measures should be combined with other measures, like classroom observations by supervisors, as part of a more robust approach to teacher evaluation that drives better student outcomes.

Draft recommendation 2.2:
Improve teacher performance evaluation

By 2022, revise teacher appraisal and evaluation so school leaders can better identify and address teachers' development needs:

- As a priority, embed mandatory classroom observation by supervisors and principals in the Performance and Development Framework and build the teacher assessment capabilities of school leadership.
- Develop a suite of measures of teacher effectiveness including: 360-degree feedback from students, parents, school-leaders and peers; in-class observation; and individual teacher 'value-added'.
- Embed the consistent use of these measures in the Performance Development Framework, with monitoring by the NSW Department of Education to inform support it provides to schools.

2.6 Keep the best teachers in the classroom

A key theme of this chapter is that in the long term, highly effective teachers can make a huge difference to the State's productivity and prosperity. Evidence shows that exposing students to highly effective teachers is the most powerful way to lift educational results.

And better educational results may give our prosperity a more powerful boost than anything else we can do over the decades ahead.

To make it happen, however, we will need to make teaching careers much more attractive to the people most likely to do high-quality teaching. That in turn means creating career pathways that will recognise and reward the most effective teachers.

By attracting and retaining such teachers, we will give the education system an opportunity to leverage their insights—and thus lift teaching quality right across the profession.

Unfortunately, our current systems are not robust enough to objectively identify who our best teachers are, let alone attend to their career progression, professional development, and retention. As a result, we are missing a key opportunity to improve student outcomes.

Reward and leverage high performing teachers

Numerous reports have highlighted how the current teaching career structures are inefficient and discourage retention of the most effective teachers. The Commonwealth Productivity Commission found in 2012 that teaching progression provides little recognition for differences in performance: the most effective teachers are paid at the same rate as low performers (Commonwealth Productivity Commission, 2012c).

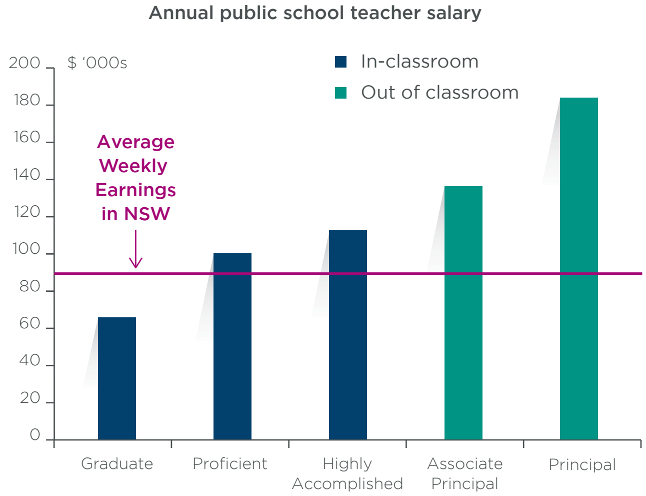
Progression is notionally based on performance, yet in practice, higher pay is linked to years of service. Opportunities to advance peak relatively early, with teachers reaching the highest level within 10 years of starting their career (Goss and Sonnemann, 2019). This means high-performing teachers seeking further advancement must either leave the classroom for school leadership positions (which are mainly administrative) or else leave the profession entirely. International comparisons show that while Australia's new graduate teacher salaries are relatively competitive, a teacher's salary peaks early and flattens out quickly relative to most OECD countries.

> ***The distribution of salaries is comparatively flat in Australia, both over the course of teachers' careers and across educational levels. For example, it only takes seven years for lower secondary teachers to progress … to the top of the scale […], compared to 25 years on average across OECD countries. At the top of the scale, statutory salaries are only 48% more than starting salaries at all levels of education taught, compared to 61-67% on average across OECD countries.***
>
> ***OECD, Education at a Glance 2019***

The move towards a system of teacher accreditation in New South Wales, based on national Teacher Standards, has had minimal impact on the teaching workforce's ability to educate students, as demonstrated by the continuing decline in student outcomes.

The Teacher Standards include options to obtain higher levels of accreditation, notionally based on performance. But very few teachers successfully attain these higher levels—only 102 in New South Wales in 2018 (Audit Office of NSW, 2019a). The Audit Office has noted the low uptake was due to lengthy, complex and onerous accreditation processes. The lack of sufficient reward for higher accreditation, particularly relative to the remuneration of principals and other school leaders, also probably discouraged uptake (Figure 2.7). And due to weak evaluation systems, it is not clear whether higher accreditation requirements successfully identify high performing teachers or improve student outcomes.

FIGURE 2.7: OUR HIGHEST-PERFORMING TEACHERS MUST LEAVE THE CLASSROOM TO PROGRESS



Source: Crown Employees (Teachers in Schools and Related Employees) Salaries and Conditions Award 2014; ABS 6302.0.

The NSW Department of Education has said it is exploring ways to improve recognition and effective use of higher-accredited teachers through the Mastery of Teaching program. This program aims to increase the uptake of higher accreditation by using school leaders to identify teachers demonstrating expert practice and providing mentors to support them through accreditation. The Department has also announced a 'Best in Class' initiative of 50 high-performing teachers to support other teachers in underperforming schools.

But neither of these relatively small-scale initiatives address the problems of the teaching career structure or our inability to measure the effects of accreditation. If New South Wales is to achieve continuous improvement in teachers' capacities and capabilities, we clearly need deeper changes.

Develop new teaching career pathways

Early in their careers, teachers' performance may be affected by the length of their service. But over a career, teaching performance has little correlation to tenure and accreditation; different methods are needed to effectively recognise and reward teachers (Hanushek, Kain, and Rivkin, 1999). Several Australian reviews and reports have called for teachers to have better-designed career pathways (Gonski et al, 2018; Murtough and Woods, 2013; Goss and Sonnemann, 2019; Gordon, Kane & Staiger, 2006).

Rather than progressing through their careers on the basis of tenure and accreditation, teachers should progress on the basis of evidence that they are effective and are improving student outcomes, with a rigorous assessment process (Gordon, Kane, and Staiger, 2006).

It is critical that teacher career progression is based on a rigorous assessment process and is directly linked to impact on learning and student outcomes. Research shows that progression to higher positions and remuneration does not improve teaching quality and student outcomes, if advancement is not linked to any measure of teacher skill, development or effectiveness (Hanushek, Kain, and Rivkin, 1999). Basing progression on the measures of teaching quality discussed in section 2.5 is a good starting point.

International examples of career pathways in high performing education systems, such as Shanghai and Singapore, offer insight into effective teacher career structures.

In Singapore three career tracks are available to teachers: teaching, leadership and senior specialist. Progression is closely tied to the appraisal process and professional learning. The teaching track is designed for teachers who aspire to become pedagogical experts and remain within classrooms. Those on the leadership track become principals, while the specialist track is geared towards curriculum research and instructional design. Teachers must meet specific competency-based criteria to advance within their career track, with greater responsibilities, professional development opportunities and remuneration as they advance. These types of professional pathways, with clear and transparent criteria for entry, promote high quality teaching and allow the best teachers to remain in the classroom.

New models for teacher career pathways, like an expert teacher pathway, could better leverage our best teachers, allowing them to remain in the classroom and foster more effective teaching. Any new model should include dedicated 'instructional lead' responsibilities – supporting other teachers to improve their teaching practices – with commensurate increases in remuneration.

Draft recommendation 2.3:
Help good teachers keep teaching

Develop an 'instructional lead' career pathway for highly effective teachers as an alternative to an administrative career progression. Highly effective teachers should be identified using a suite of robust measures, as outlined in draft recommendation 2.2.

2.7 Enable continuous improvement by teachers

Teacher quality is the most important in-school factor in determining student outcomes. In particular, Australian research shows that high quality teachers drive student achievement most directly through effective teaching practices (Deloitte Access Economics, 2017). The particular teaching methods and strategies used in a classroom make a difference.

Systematic studies of classroom teaching practices reveal strong consistency in what highly effective teachers do. While there is no one-size-fits-all approach, the evidence shows clear principles and foundations for highly effective teaching. According to CESE, these strategies include:

- **Feedback:** Information given to the learner or teachers about the learner's performance against learning goals. Teachers or students use feedback to redirect their efforts to achieve better outcomes. Effective feedback is one of the most powerful influences on learning. It has the greatest impact when it focuses on improving tasks, processes, student self-regulation and effort.
- **Explicit teaching or direct instruction:** This approach involves teachers clearly showing students what to do and how to do it, rather than having students discover or construct information for themselves.
- **Using data to inform practice:** Effective analysis of student data helps teachers to better understand and meet students' learning needs, and to understand how students are responding to different teaching approaches.

The NSW Government is taking initiatives to improve teaching effectiveness:

- The **NSW Bump it Up** strategy supports schools to lift the proportion of students in the top two NAPLAN bands. The strategy is being rolled out across all NSW public schools.
- The **Early Actions for Success** program targets K-2 literacy and numeracy by providing instructional leaders in schools, as part of the NSW Literacy and Numeracy Strategy.

Both programs lift student achievement using targeted classroom interventions and have shown early success. They embed highly effective pedagogical strategies like explicit instruction and using assessment data to improve teaching.

The NSW Department of Education has committed to build on these strategies with more support, tailored to schools' differing needs. The Department has also recently updated the process and resources for schools to assess, plan, monitor and evaluate their improvement in learning, teaching and leading.

These changes are a step in the right direction. But only systemic reform will improve student outcomes across the board. Wide-scale improvement will depend on promoting evidence based teaching methods in all schools (G. Masters, 2016).

Support and monitor continuous improvement in teaching practice

We know what works when it comes to teaching. The challenges now are to ensure that:

- teachers consistently use these best practice teaching methods in all classrooms
- school leaders implement effective systems for continuously improving teaching practices in their schools.

There is growing concern that the current system fails to properly monitor school practices, including use of evidence-based methods and strategies for teaching. School autonomy is important because it ensures schools can respond to local student and community needs. But it must be accompanied by strong performance evaluation and accountability for results (OECD, 2011). Evaluation and accountability should mean more than just ensuring that schools comply with laws, regulations, policies, procedures and administrative requirements. The system should assess how well schools and teachers are teaching, and build the evidence on how to improve outcomes.

There are also concerns that the current 'devolved' framework for improving teaching practices is ineffective. Currently, standards for evidence-based teaching are set by the NSW Department of Education and NESA. Teachers, schools and school authorities are then responsible for developing programs and structures to implement evidence-based teaching and improve teaching practices. Public schools, for example, annually self-assess their practices against the Department's School Excellence Framework (SEF). Schools use these self assessments to develop school plans, and report on progress against these plans in their annual reports. School plans are externally validated by a panel of peers every five years.

The framework has, however, failed to ensure schools have the strategies and oversight they need to consistently improve teaching practices. A 2019 Parliamentary Inquiry found schools were 'rarely meeting the accountability requirements of the School Excellence Framework' (NSW Legislative Council Portfolio Committee No. 3, 2020). This finding was based on the scant information in annual school reports. The Inquiry also found that oversight by the NSW Department of Education in areas like classroom teaching methods and classroom content were minimal to non-existent. This is likely because supervisors are rarely undertaking classroom observations (see section 2.5 above).

In response to these concerns, the NSW Department of Education has announced all schools will be required to develop a new Strategic Improvement Plan, to be reviewed and approved by the Department, by 2024. The new plans will include improvement measures and annual academic targets set out by the Department. Progress against the plan must then be assessed every year and reported through the school's annual report. These changes, which include increased focus on student growth and performance, new resources and tools, are a step in the right direction. Previous experience, however, shows their impact on in-school practices and teaching quality will depend on strong monitoring, evaluation and accountability systems.

To further embed highly effective teaching across all classrooms, the NSW Government should require schools to report transparently on their teaching practices and their progress towards implementation of proven approaches as part of their annual report. While avoiding a one-size-fits-all approach, schools should be required to:

- spell out why they have not adopted proven best practice
- demonstrate that alternative approaches are evidence-based.

Clearly defined guidelines on highly effective classroom practices by learning area would further support uptake of evidence-based teaching practices. Excellent teachers generate evidence about effective teaching practices every day. This should be systematically captured and used to support implementation of best practice. Teachers are time-poor and face growing administrative and teaching pressures. They need accessible and practical resources to keep up with a growing professional knowledge base (G. Masters, 2016). There is scope for NSW CESE to do further work in this area.

But the toughest issue is not the lack of information. The toughest issue is that the current education system gives teachers and schools neither strong incentives nor support for embedding best practice. Embedding best-practice teaching in every classroom will require a comprehensive cultural transition. It will need interventions, resources and support tailored to the needs of individual schools and teachers. It will mean using best-practice teaching as a key measure of school and teacher performance.

Help teachers to learn more about their students

The foundation of highly effective teaching is assessing how the student is learning, and using that data to inform teaching practices. Data on student learning helps teachers evaluate the effectiveness of their instructional methods and adapt their strategies to ensure they are meeting students' learning needs.

Data is also critical for providing students with feedback. Research shows that feedback is 'among the most powerful influences on achievement' for students (Hattie, 2009). That feedback should be specific and timely, and based on a skilful evaluation of the student's performance against learning goals.

Assessment is 'a tool to establish where learners are in their long-term progress within a domain of learning' (Masters, 2014). Teachers' use of assessment is strongly linked to student outcomes (CESE, 2013). When teachers use high-quality assessment, gains in student achievement accelerate at twice the expected rate, with greater gains for the lowest-performing students (Timperley, 2009).

Help schools to improve formative assessment

Alongside traditional 'summative assessment' like exams done at the end of a course, research shows that 'formative assessment' can greatly improve student learning outcomes (Hattie, 2005). Formative assessment tells students how well they are progressing towards a learning goal. It aims to guide their future learning. It is more frequent and timely, less formal, and often ungraded and low-stakes (CESE, 2020).

Summative assessment is assessment of learning, whereas formative assessment is assessment for learning. Best-practice teaching employs both kinds of assessment.

Effective classroom assessment depends heavily on school strategies for collecting and using assessment data. Unfortunately, schools vary widely in how well this is done, and reports consistently say that schools need to improve in this area (Audit Office of NSW, 2019a).

To drive improvement in student learning outcomes, the NSW Government should require all schools to implement formative assessment alongside more traditional summative assessment methods. Through rigorous, best practice assessment practices, schools can create a culture of high expectations that drives student achievement. Reddam House, explored in Case study 2.1, is one example. It shows how strong results can be gained by a sustained focus on formative assessment.

Case Study 2.1: Integrated assessment to drive student learning at Reddam House

Reddam House is an independent co-educational school with campuses in Woollahra (pre school to Year 9) and Bondi (Years 10 to 12). Reddam House has received media attention for being the only non-selective school to achieve a top 10 ranking in the HSC for 2013, 2016, 2018 and 2019.

Reddam uses assessment strategies extensively as part of its teaching and learning. It rigorously monitors student learning progress through weekly, 50-minute 'cycle tests', for all students from year three. The tests, in a different subject each week, are designed so that students achieve around 60 per cent if they do the required work but can score higher with extra effort. For teachers, the tests ensure students understand the material, have done their work, and are trying. For students, it creates familiarity with exam conditions, and sets clear expectations of high academic achievement.

If a student does not achieve 60 per cent, interventions like parental involvement, a discussion with the student and remediation are automatically instigated to identify and solve the problem.

Source: Sydney Morning Herald (Baker, 2020)

The NSW Literacy and Numeracy Action Plan (the Plan) is another example of how better assessment and data practices can improve teaching effectiveness. The Plan targeted Kindergarten to Year 2 students in disadvantaged and low performing schools. It included support, guidance and professional learning in instructional leadership, diagnostic assessment, differentiated teaching and targeted interventions.

The Plan required target schools to formally assess each student's learning needs against the NSW literacy and numeracy continuums and track each individual's progress, with evidence, every five weeks. With additional funding, instructional leaders were appointed to help establish processes for monitoring and reporting on student data, as well as providing professional learning and feedback for teachers.

An evaluation found the Plan substantially improved the proportion of students reaching the expected level of learning achievement (Erebus International, 2017). The Plan also had a wider impact on the quality of teaching and learning. It helped integrate formative assessment and data analysis into teaching practice, and embedded evidence-based teaching as the norm.

All schools in New South Wales should be required to implement formative assessment, and to regularly report to the NSW Department of Education on their progress as part of their Strategic Improvement Plan.

Equip teachers with high quality data and assessment tools

Common benchmarks and assessment tools enhance learning outcomes. They help teachers collect reliable data and analyse student achievement, allowing teachers to adjust their teaching to better meet each student's needs. They also build teachers' capacities for data collection and analysis.

Schools across New South Wales already use a wide variety of assessment strategies, tools and resources. The NSW Department of Education is rolling out on-demand diagnostic and formative assessment tools through the national literacy and numeracy learning progressions.[6] Tools such as 'data walls' are simple and effective ways for teachers to generate and use assessment data in their teaching.

National online and on-demand formative assessment resources and tools are being developed under the National School Reform Agreement. These may also substantially assist teachers to track and improve student learning outcomes.

To better leverage existing resources, the NSW Government should identify, develop and share best practice assessment tools with all schools in New South Wales.

Draft recommendation 2.4:
Support best practice teaching

Create a culture of continuous improvement that actively fosters best-practice teaching. Embed strategies, interventions, resources and support tailored to individual school and teacher needs, including guidelines on best-practice by learning area.

Require schools to regularly report their progress implementing evidence-based best-practice teaching to the NSW Department of Education and explain departures from best-practice methods.

Develop further state-wide assessment resources to support all schools to more effectively use data to monitor student progress, and to inform and target teaching practices.

[6] These include the Best Start Kindergarten and Best Start Year 7 assessment tools. Another tool, the PLAN2 platform, tracks learning progress and guides teachers on next steps in learning progressions.

A modern VET system to deliver the skills we need

03.

Draft Recommendations

Draft recommendation 3.1

By the 2020-21 Budget, develop a medium-term ‘earn or learn’ skills strategy that guides and supports skills transitions for workers displaced by COVID-19.

Draft recommendation 3.2

Introduce two new and more flexible pathways to trades qualifications: one for HSC-holders (two years or less) and one for mature-aged workers (18 months or less).

- Incentivise registered training organisations to develop more flexible modes of course delivery, including after-hours learning and short intensive periods of full-time study.
- Establish a Training and Skills Recognition Centre to implement the new training pathways, starting in the construction sector.
- Regulate to allow employment of unqualified juniors (those below 21 years of age) in a recognised trade vocation outside an apprenticeship, provided they have completed, or are enrolled in the relevant trades qualification.
- Endorse a marketing campaign to raise the profile and awareness of new trades pathways.

Draft recommendation 3.3

Target *Smart and Skilled* funding more effectively by refining the NSW Skills List. Prioritise funding to courses that demonstrate value to industry, or represent skill shortage areas.

Draft recommendation 3.4

Extend *Smart and Skilled* subsidies to targeted short courses and micro-credentials that provide discrete skills employers recognise and value.

- Use economic and industry data to identify high value micro-credentials to fund.
- Prioritise courses that have better evidence of employer trust and recognition, high quality assessment, and alignment with the Australian Qualifications Framework (AQF).
- Use a risk-management approach to funding, with the capacity to quickly freeze or withdraw funding if problems are identified.

Support the development of voluntary systems of trust and recognition for micro credentials, for example alignment to AQF levels or the adoption of 'credit points' standards.

3.1 VET builds human capital

Talk of 'human capital' often focuses on people who work with concepts: scientists, engineers, creators of software and entertainment. The practical expertise of machinists, childcare workers, midwives and server technicians is often discounted in the economy. But a huge number of people rely on our vocational education and training (VET) system to convert their potential into just this sort of practical expertise.

As technology advances, it drives rapid changes in the skills the economy values. Many low and middle-skill jobs have become automated. As this happens, we need to open pathways for workers to move up the skill chain. Higher skilled jobs do not just pay better, they are also more resilient to disruption and tend to give higher job satisfaction.

To continue moving up the skill ladder, individuals must upgrade their skills throughout their working lives. An effective education and training system provides people with opportunities to do just that—and to provide the skills of most value to the economy.

The distinguishing feature of the VET system is its emphasis on practical skills. Typically, these skills have direct application to a particular line of work. Universities, by contrast, focus on broader inquiry and learning, equipping people with critical thinking skills needed for more general, knowledge-intensive tasks and problem solving.

Today's society, led overwhelmingly by university graduates, frequently sends out a message that almost everyone should aspire to a university education. But the employment forecasts tell a different story. According to projections, more than half of employment growth over the coming years will rely on VET qualifications (Department of Employment Skills Small and Family Business, 2019).

Today's Australia has a bias to university education which will not be easily removed. But the NSW Government can help to offset it by implementing policies that make VET pathways more accessible and attractive.

The VET system must move into the 21st century

In consultations, stakeholders including registered training organisations (RTOs)[1], industry and community groups engaged strongly on VET issues. They noted that technology and innovation are disrupting markets more frequently, and that workers increasingly have multiple careers. The Australian Industry Group submission, among others, made the point that technological change meant existing workers would need to adopt different skills and new practices throughout their working lives.

The VET system must become more flexible to support the increasingly dynamic labour market of the 21st century. It must transform from being a narrow pathway for early secondary school-leavers into a hub for lifelong learning. As stakeholders affirmed, it must build flexibility and develop transferable skills.

The Productivity Discussion Paper highlighted skills as an area where change could sharply lift productivity. In consultations, stakeholders agreed; many said reform was well overdue. And many supported the Commonwealth Productivity Commission's position: "If we had to pick just one thing to improve...it must be skills formation" (Commonwealth Productivity Commission 2017c).

[1] Registered training organisations in New South Wales include TAFE NSW—which is the public provider—and a large number of private providers.

Despite many reviews in the past decade, few VET reforms have improved either skills delivery or better aligned the VET system with the needs of industry or the economy. As a result, the system has not kept up with changes in the ways we live, work and learn. Parts of it are no longer fit for purpose:

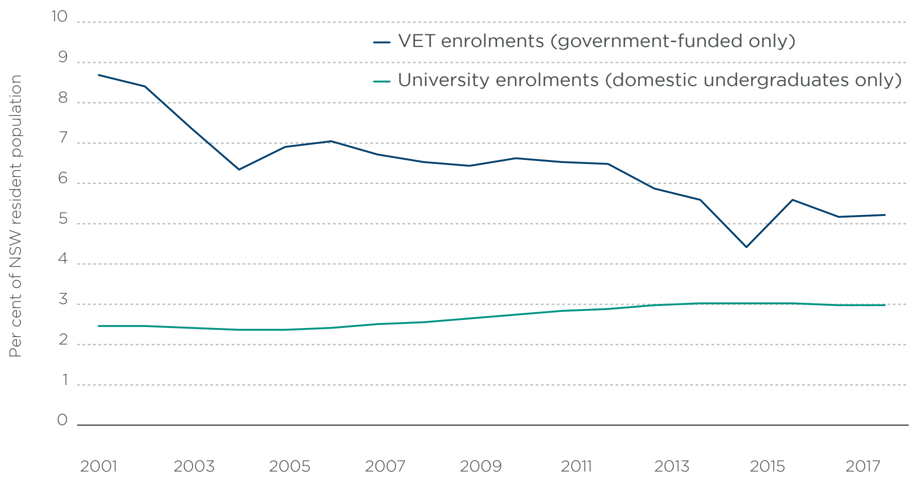
- The structure of the VET system is under pressure from broad social changes over the past half century, from the rise of the female workforce to the emerging need for lifelong learning and higher rates of year 12 completion.
- Inflexible and outdated training pathways have led to chronic skills shortages, particularly in the trades. These shortages hold back the economy through slower business growth, delays in infrastructure delivery, unmet demand and higher costs for businesses, households and government.
- Poorly targeted subsidies have contributed to skills mismatch between what the VET system delivers and what the economy needs. Students also lack the information needed to make more informed training decisions that lead to good employment outcomes.
- The value of some VET qualifications is questionable, largely because course content is too shallow, outdated or of low value to industry. This is particularly the case for certain traineeship courses, where students develop and apply skills in a work setting.

Enrolment in VET is dropping

Enrolment data shows participation in VET is in long-term decline. Figure 3.1 plots the proportion of the population enrolled in government-funded VET, against the proportion enrolled as domestic undergraduate students in higher education.

For the past 20 years at least, the proportion of the NSW population pursuing VET has steadily declined, while university enrolments have increased. VET enrolments declined even as the VET dominated industries —such as construction, health and aged care—grew. So why has the VET system declined so dramatically, despite it being seemly so well supported by industry and government?

FIGURE 3.1: VET IS LOSING GROUND TO UNIVERSITIES



Source: National Centre for Vocational Education and Research, Department of Education, Skills and Employment (Higher Education Statistics) and Australian Bureau of Statistics Cat. 3101.0

Figure 3.1 reflects an issue raised consistently during consultations: universities are increasingly dominating the tertiary education sector enrolments while there is systemic bias against VET. According to Joyce et al, '[v]ocational education has been steadily losing the battle for hearts and minds with the university sector' (Joyce, 2019). This is particularly so among secondary school students considering their options after completing the Higher School Certificate (HSC).

Two factors are often cited as creating this bias:

- Students and job seekers lack adequate information on VET pathways and understand university pathways better.
- Poor behaviour by some private providers has damaged the reputation of VET. Trust in the VET system was severely shaken by a small number of providers who fraudulently exploited the Commonwealth Government's VET FEE-HELP scheme, leading to its termination in 2016.

While these two factors are relevant, the decline of VET relative to university also reflects economic incentives. The main issue (discussed in the sections below) is that key VET programs, like apprenticeships and traineeships, have not adapted to the needs of the modern workforce. Access to these courses is also often not clear to school leavers, whereas universities tend to offer more direct pathways from education to employment. These factors discourage or exclude many prospective learners who would be strong candidates for VET careers.

Policy settings at both the New South Wales and national levels have contributed to unbalanced incentives. Over the past decade, the uncapping of domestic undergraduate places combined with no upfront tuition fees and income-contingent student loans (through the FEE-HELP scheme) have supported dramatic expansion of the university system. The university sector's growth has also been driven by international demand for Australian education. Higher education now ranks among Australia's most valuable exports.

With VET pathways becoming increasingly inaccessible, the demand-driven university model has recruited many students better suited to VET. The result is much poorer employment outcomes for those individuals (see Box 3.1), and chronic skills shortages that hinder economic growth.

Box 3.1: Some university students would do better in VET

The economy's best-paid workers still tend to be university graduates. Not everyone, however, is better off going to university. Data on education choices and employment outcomes show that upon leaving school, some students who are encouraged to go to university would do better by pursuing a career through VET (Andrew Norton, 2019).

The Grattan Institute found that prior to 2012, less than 20 per cent of students with Australian Tertiary Admissions Ranks (ATARs) below 50, received university offers. In 2018, this figure had increased to more than 50 per cent.

The change was largely due to the demand-driven university system which operated between 2009 and 2017, uncapping the number of government-funded undergraduate places in public universities. Some universities even admit school leavers without an ATAR.

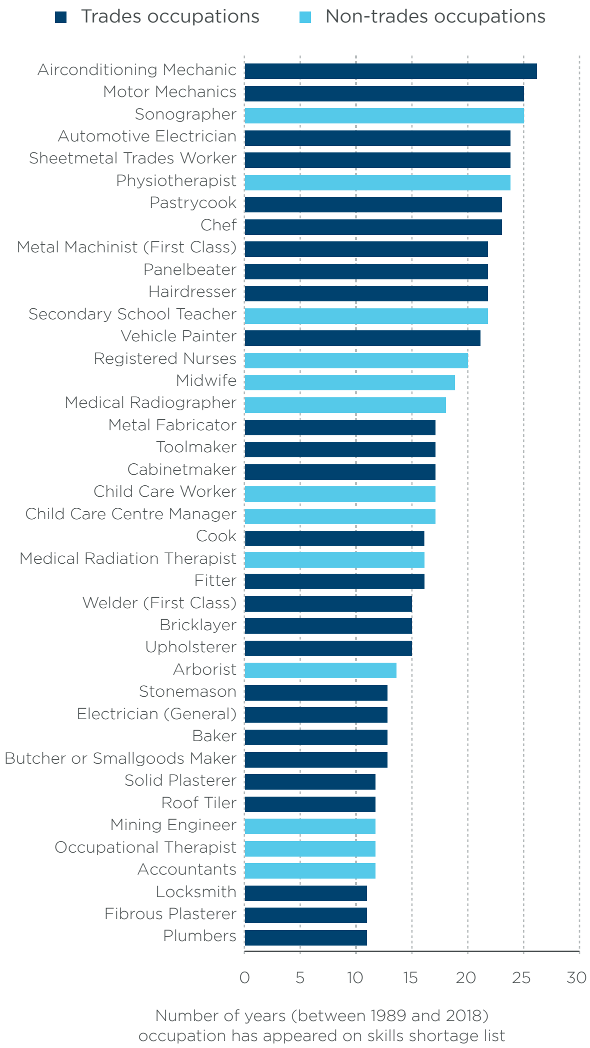
The Commonwealth Productivity Commission has found that the student cohort who entered university because of the demand-driven system generally had lower academic ability. They also had poorer outcomes, with a drop-out rate of 22 per cent, compared with 12 per cent for students who would have gone to university in any case (Commonwealth Productivity Commission, 2019).

Some low-ATAR students also stand to earn higher lifetime incomes by pursuing a VET qualification instead of university. This is particularly the case with males. University enrolment data shows that humanities degrees are the second most popular choice for low ATAR males. Yet these men can expect lifetime earnings of just over $2 million if they complete an engineering VET qualification, compared with $1.8 million if they pursue university degrees in humanities.

Many trades shortages have run for years

Labour market research reinforces the VET system is underperforming. The Commonwealth Government's skill shortages research identifies occupations where long lead times for training mean labour market shortages cannot be quickly addressed (Department of Employment, 2017). Figure 3.2 shows how many years out of 30 that various occupations appeared on the skills shortage list between 1989 and 2018. Most of the longest standing shortages are in occupations the VET system is supposed to supply, especially the trades. This suggests the VET system is consistently and chronically failing to provide skills the economy needs.

FIGURE 3.2: TRADES HAVE DOMINATED NATIONAL SKILLS SHORTAGES FOR DECADES



Note: The horizontal axis measures the number of years in which an occupation has been on the skills shortage list. For instance, air-conditioning mechanics represent the most persistent skills shortage in Australia, having appeared on the skills shortage list for 26 of the 30 years between 1989 and 2018.

Source: Department of Education, Skills and Employment (2019).

In recent years, record public infrastructure investment and robust private development activity have intensified cost pressures in the construction sector and are stretching the skills base. A recent global study of construction costs found Sydney to be the most expensive Australian capital city, ranking 30th in an assessment of 100 cities around the world (Arcadis, 2020).

Stakeholder submissions confirmed this situation, and highlighted the difficulties employers encounter when attempting to recruit trades workers:

The Chamber's 2019 Workforce Skills Survey suggests that over half of businesses (55.4 per cent) are currently experiencing a skills shortage. Trade skills in construction and manufacturing/engineering were the most prominent skills in shortage …

Businesses reported that these shortages resulted in reductions in productivity and output. Over 20 per cent of businesses reported that these shortages directly resulted in them losing customers or missing opportunities …

Business NSW (formerly NSW Business Chamber) submission

COVID-19 strengthens the case for change

The longstanding challenges of VET reform have been compounded by the economic shock of COVID-19. ABS data shows that between March and July 2020, New South Wales lost 132,000 jobs (Australian Bureau of Statistics, 2020c). Especially hard-hit are workers who rely on tourism and large events – like those in food and accommodation, retail trade, and arts and recreation sectors. Medium-term social distancing restrictions will likely further reduce the number of jobs in these industries. There has also been a severe impact on workers in professional and other services, construction, and education.

The pandemic poses a huge skills challenge. COVID-19 has triggered and accelerated structural shifts in the NSW economy. This will lead to a mismatch between the skills many workers have and those that employers will need in the future. Many displaced workers will never return to their old occupations, and risk facing unemployment over the next few years. Analysis by the Boston Consulting Group (BCG) for the NSW Department of Education estimates that without the Commonwealth Government's JobKeeper Program, around 65,000 workers in New South Wales are at risk of long-term unemployment.

Such long-term unemployment will damage the whole NSW community. It erodes the skills that make NSW workers productive and prosperous. And it threatens long-term investment in human capital by individuals, business and government.

At the same time, COVID-19 has accelerated the shift to a digital economy. These changes will create greater demand for digital skills, and new jobs in emerging areas like cybersecurity, telehealth, and online education.

To address these problems and seize new opportunities, many thousands of workers will require further training or retraining for long-term career transitions. Urgently tackling the VET sector's structural problems will go a long way to meeting the challenges posed by COVID 19 and ensuring workers are job-ready as the economy recovers.

Box 3.2: COVID-19 will worsen youth unemployment

In one sense, COVID-19 is hitting young people particularly hard: history suggests that young displaced workers are around 50 per cent more likely to stay unemployed for more than 12 months. COVID-19 has also disrupted the usual pathways by which young people transition from education to work. In the coming years, many school and tertiary education leavers will face a shortage of entry-level positions as they enter the job market blocking their paths to careers and work experience.

That will have severe effects, some lasting for many years. Prolonged periods of disengagement from the labour market have particularly adverse effects on young workers and compromise their future employability. United States studies suggest that in some cases these breaks may depress young workers' earnings not just while they are out of work, but for up to 10 years after they begin looking for work (Dhillon and Cassidy, 2018).

Unemployment due to COVID-19 is likely worse in certain parts of New South Wales. BCG analysis suggests that in regions most reliant on tourism, up to 15 per cent of all jobs may be lost. In some regions, like the Southern Highlands and Shoalhaven, the impacts of COVID-19 have compounded economic damage caused by the recent drought and bushfires.

COVID-19 has also highlighted how the apprenticeship model makes the skills pipeline vulnerable to economic downturns. Apprentices cannot train unless they are employed (see Section 3.4). As COVID-19 causes businesses' demand for workers to weaken and new hiring to slow, many prospective apprentices will struggle to find employment. Many employers have already laid-off their apprentices.

Modelling from the National Australian Apprenticeship Association indicates COVID-19 will cause a loss of 80,000 to 150,000 apprenticeships by the end of 2020, depending on the shape of the recovery (National Australian Apprenticeship Association, 2020). Longer-term modelling by the Mitchell Institute estimates the loss of apprenticeships will worsen all the way to 2023 before numbers start to recover (Hurley, 2020). In that time, apprenticeship commencements will fall by 30 per cent and existing apprenticeships by 20 per cent.

Unless we quickly find alternative pathways for displaced apprentices, industry will lose them. Qualifications will remain incomplete. Individuals, employers and taxpayers will not recoup their training investments.

Furthermore, when industries do begin to recover, they will not find the skills to satisfy their needs, because the training pipeline will have been disrupted. Given the long lead time required for apprentices to qualify, skills shortages and cost escalations will hinder the state's economic recovery.

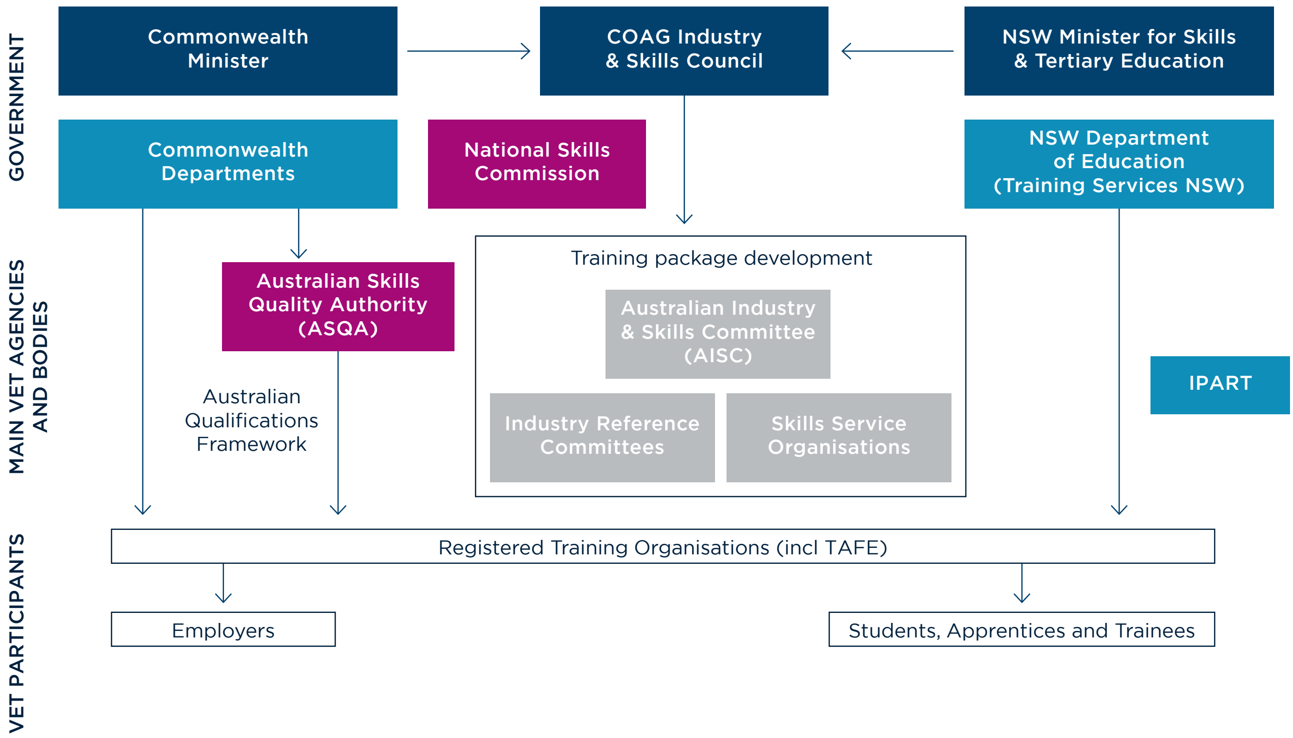
New South Wales can advance key VET reforms

In recent years, governments across Australia have shown encouraging signs of renewed interest in skills reform. In 2019, the Commonwealth Government announced a $585 million skills package to address issues identified in the Joyce Review. A key stream of work is the development of a national VET Reform Roadmap by Skills Ministers from all jurisdictions (including the Commonwealth). The Commonwealth Productivity Commission is also currently reviewing the National Agreement for Skills and Workforce Development (NASWD), with the Final report due for release in late 2020.

Many meaningful VET reforms require cooperation between jurisdictions and governments. This is because responsibility for VET is shared between different levels of government, and the integrity of the national VET system should be preserved.

Some of the VET system's problems stem precisely from its overly complicated governance structure, and a lack of clarity over roles and responsibilities. Figure 3.3 outlines the complex governance of the national VET system, and the key players in New South Wales.

FIGURE 3.3: KEY PLAYERS IN THE NATIONAL AND NSW VET SYSTEM



Source: Adapted from Joyce (2019).

The NSW Government is progressing an important stream of VET reform. In March 2020, the NSW Government commissioned a review of the State's VET system led by David Gonski and Professor Peter Shergold. The review will make recommendations on how to make VET more desirable for school-leavers and boost the state's national and international competitiveness.[2]

Acknowledging this concurrent work, this chapter focuses on productivity-boosting reforms New South Wales can pursue by itself. The NSW Government retains control over key VET policy levers and can pursue reforms complementing those being pursued by other Australian governments. Key levers controlled by the NSW Government include:

- **VET delivery,** including VET in schools and operation of TAFE NSW, the state's largest VET provider
- **defining career pathways** through the VET system (for instance, Vocational Training Orders for apprenticeships and traineeships) and influencing the flexibility of training delivery
- **targeting funding** such as course subsidies to meet local economic priorities.

These levers give the NSW Government significant scope to improve the VET system, to better meet the economy's skills needs, and provide pathways towards meaningful and sustainable employment.

Government is already taking steps in the right direction. But the range, scale and ambition of measures should continue to expand to meet the challenge.

[2] The Final report of the Gonski and Shergold review is expected to be released in 2021, after being paused during the COVID-19 period.

3.2 Respond to COVID-19 with an 'earn or learn' strategy

The NSW Government's medium-term response to the skills and unemployment challenge created by the COVID-19 pandemic should include an 'earn or learn' skills strategy. This would present individuals with a clear and positive alternative if they find their immediate employment prospects are limited. It will help divert vulnerable people, especially the young, from falling into long-term unemployment and social disengagement.

From a macroeconomic perspective, an 'earn or learn' skills strategy kills two birds with one stone. It would both help reduce medium-term unemployment and stabilise a weak labour market by temporarily diverting some workers from the workforce into further education. If the strategy can target long-term skills shortages, it will also set up New South Wales for a stronger recovery, lifting productivity and overcoming capacity constraints.

This skills strategy would also provide the Government with a framework for supporting and guiding people going through skills transitions in response to COVID-19. It should focus on the medium term—say, the next five years. This is the timeframe in which COVID-19's permanent impacts on the labour market will manifest, and within which workers can retrain or upskill for longer-term career transitions.

As well as centring on COVID-19, a skills strategy could also respond to other medium-term skills challenges. The strategy should differentiate between the needs of different groups—for example school leavers, tertiary education leavers, and mid-career workers.

To meet the COVID-19 skills challenge most effectively, a skills strategy should include the reforms outlined in this chapter. The Government should:

- Provide targeted guidance on careers and qualification pathways to help COVID-19-displaced workers make wise investments in retraining and building their skills (see section 3.4).
- Use labour market and industry data to target NSW Government VET expenditure towards the highest-value career transitions for displaced workers (see section 3.4).
- Create accelerated pathways for displaced workers to enter skills-shortage occupations, especially in the trades (see section 3.3). Crucially, these training pathways should be free from the immediate work requirements that will be especially difficult to meet when unemployment is high. This will also allow laid-off apprentices to rapidly shift to full-time institutional learning, to keep building their skills while unemployed.
- Offer skills assessments for all laid-off apprentices and other workers as they resume or commence VET training (see section 3.3). Skills transitions can be smoothed and accelerated by maximising recognition of workers' prior learning.
- Fund short courses and micro-credentials to keep unemployed workers engaged where there is evidence that the skills are in demand (see section 3.4).

The strategy also should include other measures to keep young people and other vulnerable groups working or learning, for example:

- Targeting and redeploying unemployed groups with transferrable skills.
- Supporting employers to provide unpaid work experience for laid-off trainees and apprentices.

Draft recommendation 3.1:
In the pandemic and after, help workers rebuild skills

By the 2020-21 Budget, develop a medium-term 'earn or learn' skills strategy that guides and supports skills transitions for workers displaced by COVID-19.

3.3 Complement apprenticeships with new pathways to the trades

Trades work should be attractive to many people. Salaries often equal or even exceed those for white-collar professionals and other university graduates. For example, average weekly earnings are around $1,705 for workers in the electricity, gas, water and waste services industry who hold a Certificate III qualification. This is higher than the median earnings for all professionals, and almost on par with the earnings of managers (Australian Bureau of Statistics, 2019c).

Despite the attractive wages, shortages in many trades areas have persisted for decades. This is the result of structural barriers in the VET system preventing wider uptake of these careers. The main entry pathway to the trades is an apprenticeship. The *Apprenticeship and Traineeship Act 2001* (NSW) prevents the employment of anyone below 21 years of age in trades unless they are an apprentice, even under the supervision of a fully qualified tradesperson. And even for older people, there are few pathways towards attaining a trades qualification outside the apprenticeship model.

Largely for historical reasons, apprenticeships are designed around the needs of teenage boys. The training model has not adapted to a rapidly changing world, locking many people out of the trades, especially HSC graduates, women and older people. As a result, many miss out on the jobs they are best suited for, while skills shortages persist.

Key reasons why apprenticeships are insufficient to meet the needs of our modern economy include the uncompetitive pay, inflexible training delivery, and the long time needed to complete. Apprenticeships, however, will remain well-suited to certain cohorts and should remain in place. But we need new pathways to trades to complement apprenticeships to broaden access to the trades.

Box 3.3: What is an apprenticeship?

An apprenticeship is a three to four-year program leading to a trades qualification. It combines paid on-the-job training with a suitable employer, with formal institutional learning. Trades qualifications are mostly Certificate III—Level 3 qualifications under the Australian Qualifications Framework (AQF). The qualification is awarded when the learner demonstrates competency in the skills outlined in the relevant training package.

The current system has not fixed skills shortages

The apprenticeship system in combination with the occupational licensing regime has contributed to skills shortages. For many trades in New South Wales, acquiring a licence requires a VET qualification, which can only be gained through an apprenticeship. The main alternative pathway is the recognition of a licence acquired in another jurisdiction. As apprenticeships have become increasingly difficult to secure, and attrition rates remain high due to factors including long apprentice tenure and low wages, chronic trades shortages have inevitably emerged (see Figure 3.4 and 3.2). The 'job for life' era is over, and people with trades skills often transition into other careers.

Under the right conditions, those exiting the trades could be replenished by new mid-career entrants. But the three or four-year apprenticeship model, combined with low wages, inflexible training delivery and the requirement to already work in the industry, impose high barriers to entry.

FIGURE 3.4: TRADE APPRENTICESHIP ATTRITION REMAINS VERY HIGH, DESPITE A GROWING NEED

Source: National Centre for Vocational Education Research

An example is air-conditioning mechanics, which is Australia's most long-standing skill shortage. The occupation has appeared on the skills shortage list for 26 of the 30 years between 1989 and 2018 (see Figure 3.2). Box 3.4 illustrates how licensing and apprenticeship requirements together limit pathways into this trade.

Box 3.4: How air-conditioning mechanics get a licence

Air-conditioning mechanics must be licensed in New South Wales. Getting an air-conditioning and refrigeration licence from Fair Trading NSW requires completion of a Certificate III in Air-Conditioning and Refrigeration.

Nearly all air-conditioning mechanics complete their Certificate III through an apprenticeship. In 2019, 86 per cent of new enrolments pursued the apprenticeship pathway. People below the age of 21 cannot work in the industry unless they are an apprentice. Subsidies provided under the NSW Government's Fee Free Apprenticeship Initiative also strongly encourage this pathway for eligible students.

There are significant barriers to training as an air-conditioning mechanic for the 14 per cent of new enrolments that are outside an apprenticeship. Enrolment is contingent on being employed in the air-conditioning and refrigeration industry. Course fees total around $3,300 for off-the-job training and must be paid up-front, because Certificate III courses are ineligible for the Commonwealth Government's VET Student Loan scheme.

The normal pathway for most types of work is to spend a period in full-time education or training, and then to get a job in industry. No such pathway exists for air-conditioning mechanics. Moreover, the requirement to be employed in the industry before training can begin presents as a 'closed shop' to outsiders.

Source: MySkills.gov.au; TAFE NSW; Training Services NSW data.

Current pathways to trades are limited and unattractive

Besides an apprenticeship, there are negligible pathways towards attaining a trades qualification. The apprenticeship model dates to an era when apprentices were predominantly young males who left school at the end of Year 10 (Knight, 2012). Over the decades, however, the proportion of young people who complete Year 12 has risen dramatically, from 45 per cent in 1984, to 84 per cent in 2019. Changing preferences have been reinforced by policy, with the NSW Government raising the minimum school leaving age from 15 to 17 years of age in 2010. As the maturity, education and experience of school leavers have increased, the apprenticeship model has become less attractive.

As explained in this section, the three least attractive features of apprenticeships are:

- low wages
- a lengthy and rigid training model
- the requirement to have relevant employment during training.

These factors deter not only school leavers but also mature-aged workers seeking a career change. The workforce is ageing, with longer working lives and career changes becoming increasingly common. Yet mature learners (over the age of 25) make up less than a quarter of apprenticeship entrants (National Centre for Vocational Education Research, 2020).

Low wages make apprenticeships less attractive

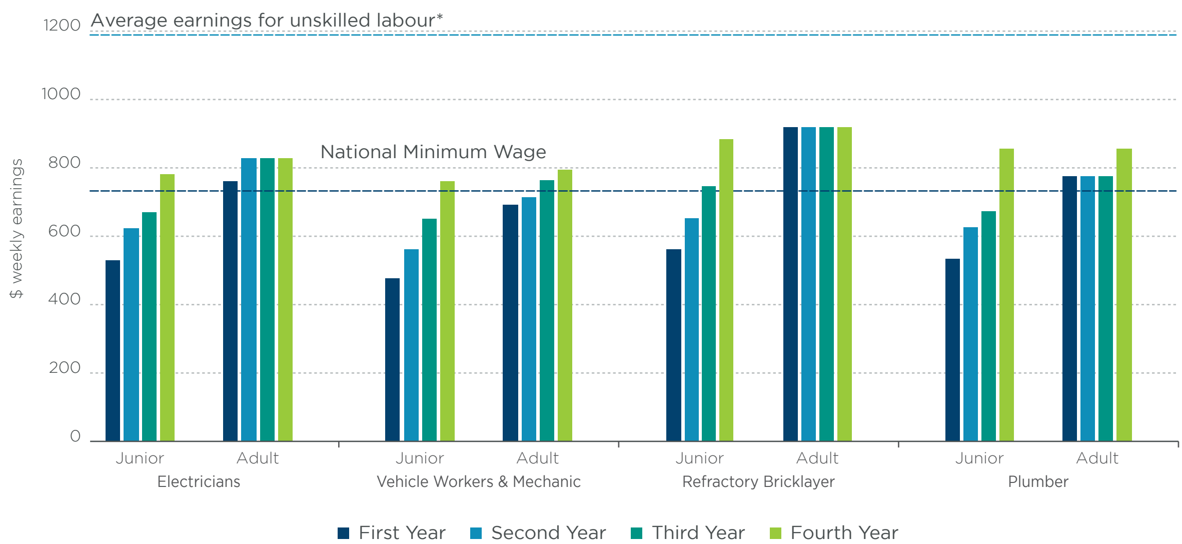
Former Commonwealth Productivity Commissioner Peter Harris has noted the link between low apprentice wages and the declining uptake of apprenticeships, calling it a 'serious structural issue' (Eryk Bagshaw, 2020). Former New Zealand Skills Minister Steven Joyce made similar comments in his 2018-19 review of the Australian VET system.

Minimum wages for apprentices are specified by modern awards, registered with the Australian Fair Work Commission. Each industry typically has their own modern award. Most include separate wage scales for junior apprentices, who are under 21 years old, and adult apprentices, who are 21 years or older. Wage scales are typically calculated by applying a discount to the base rate of a qualified tradesperson. The typical four-year wage structure of a junior apprentice who has finished Year 12 is 55 per cent of the trades base rate in the first year, 65 per cent in the second, 75 per cent in the third, and then 88 per cent in the fourth (Fair Work Commission, 2013).

There are also significant barriers to apprentices working part-time in other jobs. Part-time apprenticeships generally require a minimum commitment of three days a week (Training Services NSW, 2012). Apprentices have little or no capacity to work full-time in another occupation and undertake trade training outside standard business hours.

These arrangements mean apprentices earn relatively low wages compared with unskilled workers. Despite increases as they progress, apprentices generally earn very low wages over their entire apprenticeship (see Figure 3.5). While reduced wages partially reflect lower productivity and compensate employers for the time and resources allocated to training, they are also a legacy of an era when most apprentices began at 15 or 16 years old.

FIGURE 3.5: APPRENTICESHIP WAGES ARE LOW ACROSS INDUSTRIES



Note: Average weekly earnings statistics reported by the Australian Bureau of Statistics are average gross pre-tax earnings of employees. 'Junior' is defined as below 21 years of age. 'Unskilled' refers to Accommodation and Food Services.

Source: Fair Work Commission (Various Modern Awards, and National Minimum Wage Order 2020), and Australian Bureau of Statistics Cat. 6302.0 (Table 10G).

These low wages make apprenticeships unattractive to many school leavers. Twenty-first century school leavers are typically older, more experienced and more mature than their twentieth century forebears. The rigours of extra schooling and the HSC build greater knowledge and productive capacity. Yet apprentice wages do not reflect this reality and for many school leavers those wages cannot compete with other options. As Figure 3.5 shows, workers in accommodation and food services earn an average of around $1,200 per week. That is more than double many junior apprentice rates. In some cases, apprentice wages may simply be too low to meet living expenses, precluding a trades career.

Mature-aged workers seeking a career change are similarly put-off trades by low apprentice wages. While most modern awards provide higher wages for apprentices of 21 years or older, Figure 3.5 shows 'adult apprentice' wages are still mostly around or below the national minimum wage. An apprenticeship requires many mature-aged workers to take a large pay cuts to pursue a trade, with low wages for up to four years, and no options for flexible learning. This is unrealistic for many, especially those supporting dependents or with financial obligations.

Apprenticeships are too long and rigid

The length of time needed to complete a qualification is another major barrier to the wider uptake of apprenticeships. Most trades qualifications are Level 3 qualifications (Certificate III) under the Australian Qualifications Framework (AQF) and have a nominal length of three to four years. Yet, in the same time, HSC-holders could complete a Bachelors or Honours University Degree, at AQF Level 7 or 8. The length of trades qualification is also out of step with other Certificate III courses. Under the AQF, the volume of learning for a Certificate III is 'typically 1-2 years' (AQF, 2013). Some Certificate III courses have a nominal length of just 18 weeks, for example Beauty Services at TAFE NSW.

The length of an apprenticeship is partly the result of a rigid training structure. The weekly cycle of an apprenticeship typically consists of four days of on-the-job training and one day of formal learning with a training provider. There are few deviations from this structure. The inflexibility of training delivery makes the nominal length of trades qualifications far longer than other Certificate IIIs. By contrast, other tertiary education pathways often offer online and after-hours learning, and block learning with short intensive periods of full-time study. Apprenticeships, with their fixed structure, lack the flexibility to meet the diverse needs of prospective students. It makes trades careers inaccessible to many otherwise excellent candidates, particularly mature-aged learners who must juggle training with other life commitments.

Moreover, all VET qualifications are supposed to be 'competency-based'. This means that students should be able to progress towards completion according to how fast they acquire competency. For apprenticeships, however, completion appears to be based more on time served than competency. During consultations, some industry stakeholders estimated that most apprentices acquire skills comparable to a qualified tradesperson after just two years of training. In practice, however, most apprenticeships take at least three years or four years to complete, suggesting that competency-based progression is not the norm.

There are probably some industries where four years is … an accident of history

TAFE Directors Australia (Michael Atkin, 2020)

Similarly, apprentices in New South Wales are supposed to have access to recognition of prior learning (RPL). RPL allows experienced prospective apprentices to demonstrate relevant skills already gained through work or study, reducing the time required to complete their qualification.

However, RPL appears to be onerous and underutilised. To achieve RPL, an apprentice must apply to a training provider for a skills assessment. If assessed as satisfactory, both the apprentice and training provider must apply in writing to Training Services NSW to amend the training contract to shorten training period (Training Services NSW, 2015). All requests for RPL must be personally authorised by the NSW Commissioner for Vocational Education.

Apprenticeships require concurrent training and employment

Before training can begin, prospective apprentices must find a suitable employer. Under the apprenticeship model, the employer enters a training contract with the training provider and the apprentice. As well as providing relevant work experience, the employer has a role in skills development and overseeing progress towards meeting standards required by the qualification.

As discussed in Section 3.2 above, the recession caused by COVID-19 highlights how the requirement to be employed makes apprentices vulnerable to economic downturns. Even during normal times the construction industry, which employs many apprentices, cycles more frequently than the economy at large. In downturns, apprentices are laid off or cannot continue their training for want of employment; most will exit the industry. This both harms individual learners and disrupts the trades training pipeline, likely leading to future skills shortages and cost pressures that impede economic recovery.

More generally, the requirement to be employed locks many well-suited candidates out of apprenticeships and the trades. Young people in regional and rural New South Wales, for example, face higher levels of unemployment compared to Sydney, and have greater difficulty finding employment as apprentices. Since regional New South Wales also tends to have worse skills shortages (NSW Legislative Assembly Committee on Economic Development, 2014), the employment requirement to enter the industry means that shortages become self-reinforcing.

The employment requirement also contributes to the severe gender imbalance in most trades. ABS data show that women only make up around two per cent of the workforce in key trades including construction, electrotechnology and automotive industries (Australian Bureau of Statistics, 2018b).

Aspiring female apprentices are likely to have more difficulty finding an employer than males, because most licensed tradespeople are men, who expect apprentices to be male. Similarly, aspiring female tradespeople may be reluctant to become apprentices out of concern that gender bias and a male-dominated work culture will limit their career opportunities and job satisfaction.

Given persistent skills shortages in New South Wales, barriers to women entering the trades are a serious economic issue (Box 3.5).

Besides trades, no other sector requires entrants to be first employed before training can begin. In other occupations, entrants enrol in training in order to signal to employers their commitment and interest, and secure employment based on their up-front effort.

This requirement is a significant barrier for women, those in regional or high unemployment areas, and mature workers. Employment-related problems are the most commonly cited for ending apprenticeships, contributing to the worst non-completion rates of any educational pathway—at around 50 per cent (Bednarz, 2014).

Box 3.5: Underrepresentation of women in trades is due to the training system

The trades are male-dominated. Women make up only 16 per cent of all trades and technician workers (ABS, 2018). Gender distribution is heavily skewed between trades. Women are mostly employed in food trades and 'other technicians and workers' (including hairdressers), representing 36 per cent and 48 per cent respectively. By contrast, in key industries with major skills shortages like construction, electrotechnology and automotive industries, women make up around only 2 per cent of the workforce. VET data show similar patterns. Females made up around 10 per cent of apprentices in 2020 but were largely concentrated in traditionally female-dominated industries like hairdressing and hospitality.

While reform and social change have greatly improved the gender balance in many occupations, the trades have been stagnant for decades. Institutional practices and workplace culture remain key barriers to women entering trades (Family & Community Services Women NSW, 2013). These are exacerbated by the rigid three to four-year apprenticeship model, targeted at a single entry point very early in a person's working life. Women face difficulties securing the necessary employment for an apprenticeship. Many report employers are reluctant to take on female apprentices because they lack confidence in women's aptitude, physical strength or suitability (Oxenbridge et al., 2019).

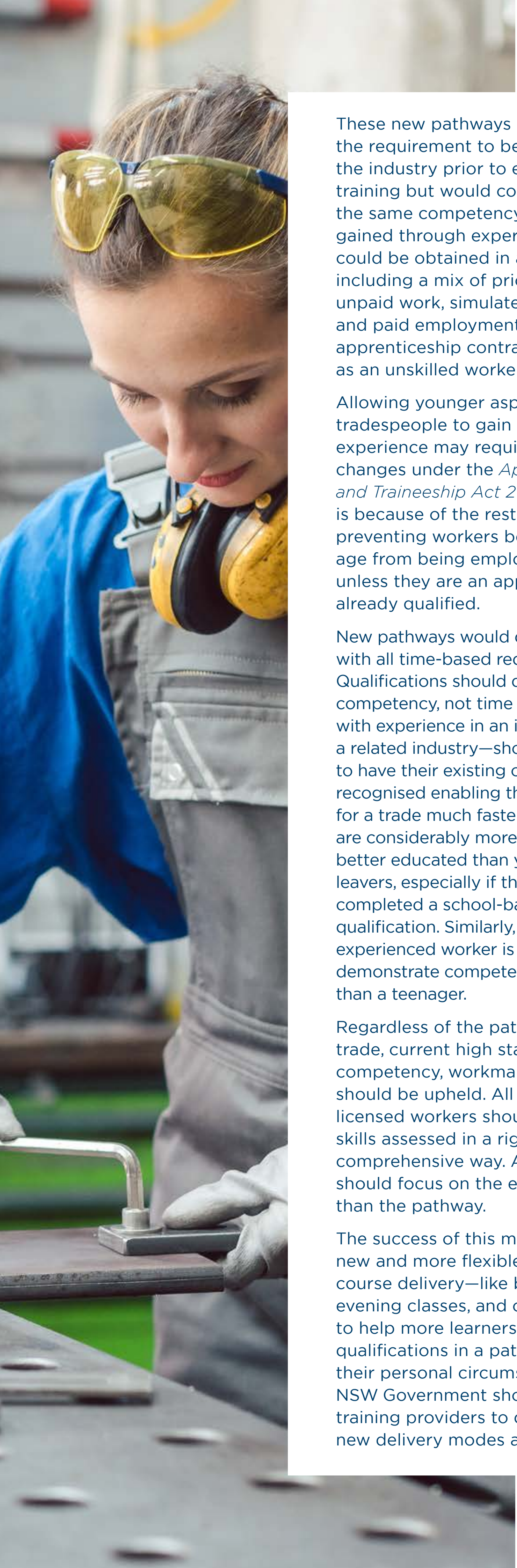
Enrolment data suggest apprenticeships disproportionately lock out younger women. A snapshot of the apprentice workforce in 2020 shows that around 38 per were under 20 years old. Among female apprentices, however, only 24 per cent are under 20. This suggests mature-aged women may be more interested in entering trades than their younger counterparts. Unfortunately, mature-aged women encounter unique challenges in pursuing trades. They are viewed as a greater 'risk' to employers because of the higher wages that adults must be paid, and perceptions they may have commitments outside work, like families or children, that make them less committed or productive.

Create new pathways into trades

To address chronic skill shortages and make the trades more accessible to a broader range of entrants, the NSW Government should amend the Vocational Training Orders to allow introduction of two new, more flexible, pathways into trades to sit alongside the apprenticeship model:[3]

- HSC-holders should be able to complete the institutional component of training within 2 years, making it competitive with alternative post-secondary school pathways.
- Mature-aged workers should be able to complete institutional training requirements within 18 months by ensuring formal recognition of previous skills and experience.

[3] A Vocational Training Order (VTO) is the legal instrument that establishes apprenticeships and traineeships in New South Wales. The VTO specifies the qualification, length of apprenticeship or traineeship and probationary period.



These new pathways would remove the requirement to be employed in the industry prior to enrolment in training but would continue to require the same competency standards, gained through experience. This could be obtained in a variety of ways including a mix of prior experience, unpaid work, simulated work and paid employment outside an apprenticeship contract—for instance, as an unskilled worker.

Allowing younger aspiring tradespeople to gain on-the-job experience may require regulatory changes under the *Apprenticeship and Traineeship Act 2001* (NSW). This is because of the restrictions in place preventing workers below 21 years of age from being employed in trades unless they are an apprentice or already qualified.

New pathways would dispense with all time-based requirements. Qualifications should depend on competency, not time served. A learner with experience in an industry—or a related industry—should be able to have their existing competencies recognised enabling them to qualify for a trade much faster. HSC holders are considerably more mature and better educated than year-10 school leavers, especially if they have already completed a school-based VET qualification. Similarly, a mature and experienced worker is more likely to demonstrate competency in less time than a teenager.

Regardless of the pathway into a trade, current high standards of competency, workmanship and safety should be upheld. All qualified and licensed workers should have their skills assessed in a rigorous and comprehensive way. Assessment should focus on the endpoint, rather than the pathway.

The success of this model will require new and more flexible modes of course delivery—like block courses, evening classes, and online learning—to help more learners complete their qualifications in a pattern that suits their personal circumstances. The NSW Government should support training providers to develop these new delivery modes and provide incentives. And it should tailor these new modes to support greater entry by non-traditional groups such as women and mature entrants, as well as regional workers.

New pathways to trades careers will bring them in line with other occupations that have benefitted from broader and more accessible pathways over the last few decades. In other industries, the introduction of more flexible modes of training delivery has supported lifelong learning, facilitated mid-life career changes and encouraged entry of non-traditional groups. This is a key part of the success that has brought about a more adaptive and flexible labour force in Australia.

Making trades careers more attractive to a broader range of entrants will help address chronic skills shortages and create new opportunities and more interesting careers. And it will help to lower costs giving households and businesses access to more competitively priced and higher quality goods and services. This will underpin a more open, productive and smarter economy.

Set up a new body to promote trade careers

A potential first step towards broader roll out of new trades training pathways is a new Training and Skills Recognition Centre (TSRC). The TSRC would draw on the success of the National Apprenticeship Program (NAP), which was piloted in Queensland in 2011 with Commonwealth Government funding. NAP allows trades qualifications to be completed within 18 months by targeting workers demonstrating at least 40 per cent of competencies as recognised prior learning. The expedited apprenticeship is facilitated by intensive block courses, developed with RTOs and industry partnerships.

The TSRC could have similar functions, promoting trades careers by targeting promising workers who currently lack a VET qualification. For an individual worker, it would:

- Perform an **initial skills assessment** to recognise existing skills and identify the 'gap' needed to fulfil the competency requirements of a trade qualification.
- Negotiate a **training plan** to put the learner on the path to qualifying.
- Perform additional **skills assessments** on demand, enabling progress through any VET qualification as fast as the individual can acquire and demonstrate relevant competencies.

The TSRC would develop training plans based on the individual's needs. Mature or experienced workers who lack the theoretical or formal competencies of a trade could pursue institutional learning through a training provider. Their training would not suffer the limitation of requiring simultaneous employment under an apprenticeship contract. Young people, or those with limited work experience, could still purse an apprenticeship path, but with access to genuine competency-based progression.

Training Services NSW would be best placed to run a TSRC, under the authority of the *Apprenticeship and Traineeship Act 2001 (NSW)*. A TSRC would collaborate with training providers to develop more flexible modes of course delivery, tailored to more mature or experienced workers, like online or intensive 'block' courses. The TSRC would also have a role linking students with industry to provide opportunities for on-the-job learning.

Construction is an ideal industry to pilot the TSRC. Unqualified but experienced workers (such as trades assistants and apprenticeship non-completers) make good candidates for the TSRC, and many are employed in construction. The construction industry is expected to face some of the most pressing skills shortages over the next decade. The TSRC could also provide pathways into related trades such as carpentry and joinery.

Draft recommendation 3.2:

Build more pathways to the trades

Introduce two new and more flexible pathways to trades qualifications: one for HSC-holders (two years or less) and one for mature-aged workers (18 months or less).

- Incentivise registered training organisations to develop more flexible modes of course delivery, including after-hours learning and short intensive periods of full-time study.
- Establish a Training and Skills Recognition Centre to implement the new training pathways, starting in the construction sector.
- Regulate to allow employment of unqualified juniors (those below 21 years of age) in a recognised trade vocation outside an apprenticeship, provided they have completed, or are enrolled in the relevant trades qualification.
- Endorse a marketing campaign to raise the profile and awareness of the new trades pathways.

3.4 Match the VET system to the economy's real skills needs

Despite the clear and longstanding shortage of trades workers, the VET system in New South Wales has been unable to deliver these skills in adequate quantities. A review of the most highly enrolled courses in New South Wales reveals a mismatch between the VET sector's outputs and the economy's needs.

Although it is the student who enrols in a VET program, many factors shape the training decision. Businesses often require staff to undertake particular VET qualifications, as part of induction. The NSW Government also plays a role in influencing students' training choices to address economic needs such as meeting skills shortages. Key policy instruments include course subsidies and employer incentives.

Table 3.1 displays the 10 most highly enrolled VET courses in 2018.

TABLE 3.1: TOP 10 MOST POPULAR VET COURSES IN NEW SOUTH WALES IN 2018, BY ENROLMENT

VET Courses	No of enrolments	Share of enrolments (%)
Certificate III in Early Childhood Education and Care	22,800	2.9
Certificate III in Individual Support	22,600	2.9
Diploma of Early Childhood Education and Care	17,700	2.3
Diploma of Leadership and Management	16,200	2.1
Certificate II in Hospitality	12,600	1.6
Certificate I in Construction	12,100	1.5
Work-Zone Traffic Control (Traffic-Control Guidance Plan Skill-Set)	11,800	1.5
Certificate III in Retail	11,100	1.4
Certificate III in Electrotechnology	10,600	1.4
Certificate IV in Property Services (Real Estate)	10,400	1.4

Source: National Centre for Vocational Education Research (Total VET students and courses 2018: data-slicer)

Many popular courses attract high enrolment volumes because government regulations require them as a precondition for employment, or they support high-growth sectors. For instance, the National Quality Framework for Early Childhood and Care sets minimum qualifications for staff working in children's education and care services.

Other popular courses, however, have little demonstrable value to industry, raising questions about their high enrolment volumes. These are mostly non-trade qualifications at or below the Certificate III level. Examples in Table 3.1 include the Certificate II in Hospitality and Certificate III in Retail. Employers are unlikely to value these qualifications because they largely teach basic skills that most learners easily acquire on the job without formal instruction.

Because of their rudimentary course content, these qualifications do not significantly improve most learners' employment prospects. They are rarely or never specified as 'required' or 'desirable' in job advertisements. Moreover, no regulations require them as a prerequisite to employment. Box 3.6 explains further how little value businesses place on certain basic VET qualifications. It is concerning that many such courses, including those outlined in Box 3.6, are on the NSW Skills List. This sends a misleading signal that they are in high demand and provides for them to be subsidised by the NSW Government under *Smart and Skilled.*

Box 3.6: Some popular qualifications teach basic skills, easily acquired on the job

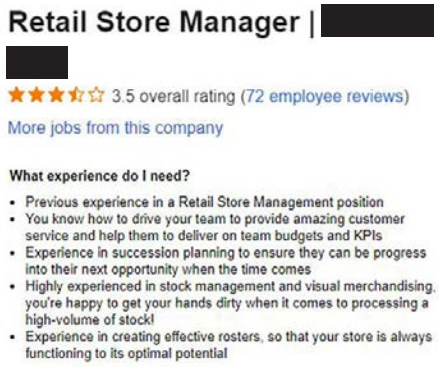
Some popular VET courses appear of little or no value to employers. Examples shown in Table 3.1 include Certificate II in Hospitality and Certificate III in Retail, the fifth and eighth most popular courses in 2018, respectively. Most enrolments in these courses receive government funding—76 per cent and 89 per cent, respectively (National Centre for Vocational Education Research, 2019a). Most are completed as traineeships, provide for a discounted wage to the employee, and many students pay no fees under the NSW Government's Fee-Free Traineeship Initiative.

The contents of these courses comprise basic skills that most people can acquire through experience on the job, without formal instruction or expert assessment. For example, the core competencies of the Certificate II in Hospitality are:

- work effectively with others
- source and use information on the hospitality industry
- use hospitality skills effectively
- interact with customers
- show social and cultural sensitivity
- participate in safe work practices.

Businesses do not value this qualification. A broad review of job advertisements found few stating it was required or desirable for jobs in the industry. Only 50.4 per cent of students across Australia reported the qualification improved their employability ("Certificate II in Hospitality - SIT20316" n.d.).

This is similarly the case for qualifications in retail. The following is a typical advertisement for a high-level position in the retail industry:



As this example shows, even for managerial positions, retail employers do not see VET qualifications as 'essential' or 'desirable'. Employers prefer work experience and practical demonstration of proficiency.

Smart and Skilled

Smart and Skilled is the NSW Government's flagship VET policy. It was launched in 2015 as a response to the National Partnership Agreement on Skills Reform. The Agreement includes incentive payments from the Commonwealth to state and territory governments to move towards a demand-driven model and contestable VET market.

Under *Smart and Skilled*, eligible students are entitled to government-subsidised training up to and including Certificate III, and government funding for higher-level courses (Certificate IV and above) in targeted priority areas. On average, students contribute 10 to 45 per cent of total course costs. More generous subsidies are available to certain cohorts.

Since its introduction, the NSW Government has gradually expanded the scope of *Smart and Skilled*. For example, in the 2018-19 Budget an additional $285 million for the Fee Free Apprenticeship initiative covered the student training costs for up to 100,000 new apprentices in any program. A similar Budget initiative allocating $54.3 million for traineeships was announced in 2019-20, paying course costs for 70,000 new trainees.

The NSW Skills List outlines the qualifications eligible for subsidy under *Smart and Skilled.* According to the NSW Department of Education, the List is 'developed through extensive industry and community consultation and labour market research' and 'includes a wide range of qualifications to support the diverse skills needs of NSW employers' (Training Services NSW, 2020).

The NSW Skills List is reviewed annually to meet the changing skills needs of the economy. At present, the List comprises more than 800 courses delivered by over 300 RTOs. The length of the NSW Skills List suggests the allocation of subsidies under Smart and Skilled is not well targeted or robust. A demand-driven model, combined with poorly targeted funding under *Smart and Skilled*, is likely contributing to a mismatch between the outputs of the VET system and the needs of industry.

Subsidies should incentivise students to enrol in courses that improve their employment prospects, meeting the genuine skills needs in the economy. As Box 3.6 illustrates, this is often not the case.

For example, *Smart and Skilled* currently allows eligible students to enrol in both a Certificate III in Retail (as a traineeship) or a Certificate III in Electrotechnology (as an apprenticeship) without paying upfront fees. The latter reflects an economic need—the trades have chronic skills shortages. But the former does not. There appears to be negligible demand for retail workers with VET qualifications.

The NSW Audit Office has also questioned the Government's method for distributing *Smart and Skilled* subsidies (NSW Audit Office, 2018). The Office concluded that the Department of Industry 'does not always use available data to inform decisions about which skills to add or remove from the list'.[4] It also found that the Department lacked a robust process to remove qualifications from the list. Since establishment of the NSW Skills List, it said, new additions to the list had outnumbered those removed by five to one.

The Audit Office recommended that the Department use data more effectively and consistently to ensure the NSW Skills List only includes high-priority qualifications. It also said the Department should evaluate *Smart and Skilled* funding strategies to determine whether they are achieving their goals.

During Roundtable discussions, stakeholders agreed that VET expenditure is not as targeted as it could be and pointed to adverse economic impacts. In addition to providing low value to taxpayers, untargeted subsidies lead to:

[4] The former NSW Department of Industry was responsible for VET policy and implementation of *Smart and Skilled* at the time of the Audit Office's report. These responsibilities were transferred to the NSW Department of Education in 2019.

- **Continued skills-shortages.** The extensive list of subsidised courses gives prospective students little direction about skills shortage or which courses genuinely address them. Ongoing skills shortages, especially in the trades, impede business growth and result in higher consumer prices and unmet demand (Senate Employment Workplace Relations And Education References Committee, 2003).
- **Trainees earning discounted wages without commensurate training outcomes.** Awards allow employers to pay significantly discounted wages to VET students compared with regular employees. This creates an incentive for employers to hire new employees as trainees, even if a qualification offers little value beyond on-the-job learning. Box 3.7 provides a case-study.

Box 3.7: Traineeships in the fast food industry

Grill'd is a prominent Australian fast food chain, operating in over 100 locations nationally. The company website states that 'all new Team Members undertake the same first 12-month training to ensure consistency across all our restaurants', and that '...training we provide at Grill'd, including our qualifications, are an essential part of developing our people' ("Grill'd Traineeship", 2020). Staff members in New South Wales work towards completion of a Certificate II in Hospitality.

The value of across-the-board traineeships in fast food services is questionable, for two reasons:

- Skills in this sector have long been acquired through informal on-the-job learning, even in large and respected franchises with strict and uniform service standards.
- Many new employees in the industry already have transferrable skills and experience. And unlike apprenticeships, traineeships generally do not lead to qualifications that are a pre-condition for employment in certain roles.

The remuneration structure of the Grill'd Enterprise Agreement, approved by the Australian Fair Work Commission, allows it to pay its trainees wages that are significantly lower than those for regular staff (Fair Work Commission, 2015). Employers can pay lower rates to trainees as an incentive to take them on and teach them valuable skills. Employees and unions have alleged that Grill'd requires new staff to become trainees to cut labour costs, and that its training program is of little value to many trainees ("Grill'd Burger Chain Accused of Keeping Young Workers in Underpaid Roles through Traineeships", 2019).

Businesses operating within the law should not be blamed for responding to incentives created by government policy. This case study highlights that the current VET system does not adequately target employer incentives—such as subsidies and lower trainee wages—to ensure traineeships lead to qualifications that deliver value to industry, trainees and taxpayers.

Use labour market and industry data to better target VET expenditure

There is clear scope for more effective use of the NSW VET budget. The basis for allocating subsidies under *Smart and Skilled* is not robust and is leading to significant sums being funnelled into courses that are not generating value to industry.

The NSW Skills List should be reviewed to ensure that it focuses on courses that deliver value to industry or address skills shortages in the economy. Similarly, the List needs processes to remove skills that no longer warrant subsidies. The focus on such courses will make the VET system more responsive to the economy and help students to choose training that will help them find and keep a job.

In July 2020, the Commonwealth Government established the National Skills Commission (NSC). The NSC provides a better-resourced skills forecasting capability. The NSW Government should leverage insights from the NSC's skills forecasting to help refine and target the NSW Skills List.

Draft recommendation 3.3:
Improve the Smart and Skilled program

Target *Smart and Skilled* funding more effectively by refining the NSW Skills List. Prioritise funding to courses with demonstrated value to industry, in skills shortage areas.

Fund VET micro-credentials to promote lifelong learning

Businesses, students and governments are showing a growing interest in micro-credentials. They promise to become prominent in training and employment markets as a preferred method of delivering, assessing and certifying skills and training.

The definition and regulation of micro-credentials is yet to be formalised in Australia, and various definitions are in use. But the term 'micro-credentials' generally refers to certifications of assessed learning that are additional, alternative, complementary to, or a component part of a formal qualification (Expert Panel for the Review of the Australian Qualifications Framework, 2019). While traditional qualifications usually represent a suite of skills, micro-credentials represent specific and usually quite narrow skillsets.

Among their benefits:

- They can provide more efficient and targeted delivery of skills.
- They often provide skills that traditional VET qualification pathways do not.

TAFE NSW currently offers micro-credentials to certify industry-specific skills that meet workplace and career progression needs. It also offers free short courses as part of the Government's COVID 19 response. Both the Joyce Review and the recent review of the AQF supported a greater use of micro-credentials (Joyce, 2019).

At present the VET and university systems operate largely independently of each other. Traditional qualifications are generally delivered by a single VET or higher education provider, with or without a workplace learning component. Many stakeholders have stated that the tertiary education system is overly 'siloed'.

Micro-credentials are an ideal step towards better integration of VET, higher education and workplace learning. A qualification can be compiled from a combination of VET, higher education and workplace-learning-based micro-credentials, potentially from multiple providers, to build the precise skillset an employer needs.

The Western City & Aerotropolis Authority (WCAA) is currently investigating the potential of micro-credentials that span vocational, higher education and on-the-job learning, as part of an innovative approach to education and skills for the Western Parkland City (Box 3.8). The closer integration of VET and higher education is a response to the increasing demand from key industries (such as advanced manufacturing) for workers with technical skills, knowledge, and job-readiness.

Box 3.8: The potential of micro-credentials in the new Western Parkland City

Micro-credentials could help unlock the potential of the Western Parkland City (WPC) as a centre for knowledge-intensive jobs, advanced careers and innovative new education pathways. The WPC's population has been projected to grow from 740,000 in 2016 to 1.1 million by 2036 (Greater Sydney Commission, 2018). By then, an estimated 200,000 jobs would be created across the WPC. The targeted focus and accessibility of micro-credentials gives them the potential to be an efficient mode of skills delivery, and to encourage lifelong learning in the WPC.

The WPC will be centred on the new international Western Sydney Airport and Badgerys Creek Aerotropolis (the Aerotropolis). Built around the 24/7 Western Sydney International Airport, the Aerotropolis will feature a hub for advanced manufacturing (like 3D printing, robotics and AI); aerospace and defence; an agribusiness precinct for high-tech food production; global freight and logistics; and accessible training and education.

The Aerotropolis provides an opportunity for a collaborative approach across education and industry to create a new education and training model to support the existing workforce and ensure a pipeline of skilled workers into the future. If this approach is successful, it may provide an exemplar for wider reforms across the Australian education sector.

Micro-credentials are one of several priorities that have been identified to support this industry-led education and training ecosystem for the WPC and Aerotropolis. The WCAA states that these priorities include:

- a strong focus on science, technology, engineering and mathematics (STEM)-based primary and secondary education
- capacity for blended qualifications delivered in a partnership between industry, education institutions and government
- a focus on training and skills for advanced manufacturing
- fast-tracked micro-credentialing and fit-for-purpose industry qualifications.

The WCAA is currently undertaking detailed development of these reform priorities, and in particular the potential for micro-credentials in advanced manufacturing and related fields. WCAA is working in close conjunction with industry and partners such Western Sydney University, and the NUW Alliance, which unites the universities of Newcastle, New South Wales and Wollongong.

Micro-credentials suit changing career patterns

Micro-credentials are likely well suited to lifelong learning. Workers seeking skills education in New South Wales increasingly already have baseline qualifications. As mid-life career changes and market disruption caused by new technology become more common, workers are increasingly seeking to supplement established skills and qualifications. Traditional offerings require learners to undertake a full qualification or are designed primarily for learners at the beginning of their working lives. They do not always serve mid-life learners well.

Micro-credentials may offer an effective new way to invest in the skills of an ageing workforce. As the Commonwealth Productivity Commission (Commonwealth Productivity Commission, 2017d) has observed, the opportunity cost of education and training tends to rise as workers get older. Older workers often have financial and family commitments that make it more costly to devote a lot of time and money to training. They also have fewer working years in which to recoup training investments. Through short, focused training opportunities, micro-credentials can allow older workers and their employers to make low-cost investments in upskilling. And older workers can focus those investments on modules of learning that offer the greatest productivity gains.

Given the strengths of micro-credentials, the Commission believes the NSW Government should systematically extend *Smart and Skilled* funding to micro-credentials, where economic and industry data indicate they will effectively fill a skills need.

Manage micro-credentials' risks

Micro-credentials do, however, come with risks that need to be managed.

The Commonwealth Productivity Commission has argued that new forms of learning like micro credentials need better systems for recognition and trust (Commonwealth Productivity Commission, 2017d). Systems for validating micro-credentials are 'in their infancy, subject to proliferation (hence lacking the credibility provided by large-scale uptake) and are yet to be understood sufficiently to serve as a signalling tool in the labour market'.

Recognition and trust of micro-credentials could be improved in several ways. Micro-credentials could be mapped to AQF levels. The AQF review suggested this could be done by an existing agency or one established for this purpose. It also recommended the development of guidelines under the AQF; this would allow micro-credentials to be recognised for specific credit towards AQF qualifications. Professor Beverly Oliver has similarly suggested a voluntary national credit points system (Oliver, 2019).

Any approach to improving recognition would need to be designed and implemented carefully in consultation with industry and providers, with an emphasis on voluntary standards, to avoid impeding innovation.

The past decade of VET reform has shown that extensions of government subsidies into new areas can attract unscrupulous providers. This risk must be proactively managed in the case of micro credentials.

A pilot program, extending *Smart and Skilled* funding to further selected micro-credentials, would be an appropriate starting point. Priority should be given to courses that have evidence of employer trust and recognition, high-quality assessment, and, where possible, alignment with the AQF. A place based pilot, in a setting like the WPC, would be an ideal environment in which to test the further development of micro-credentials across both vocational and higher education sectors.

Draft recommendation 3.4:
Encourage micro-credentials

Extend *Smart and Skilled* subsidies to targeted short courses and micro-credentials that provide discrete skills employers recognise and value.

- Use economic and industry data to identify high value micro-credentials to fund.
- Prioritise courses that have better evidence of employer trust and recognition, high quality assessment, and alignment with the AQF.
- Use a risk-management approach to funding, with the capacity to quickly freeze or withdraw funding if problems are identified.

Support the development of voluntary systems of trust and recognition for micro credentials, for example alignment to AQF levels or the adoption of 'credit points' standards.

Forward-looking regulation supports competition and innovation

04.

Draft Recommendations

Draft recommendation 4.1

Extend the operation of temporary COVID-19 regulatory changes for 12 months while we evaluate their success. Keep them in place where we see a net public benefit.

Draft recommendation 4.2

Retain the temporary adjustments to regulatory and legal formalities, including digital solutions to replace paper-based reporting, physical witnessing and attestation of documents and various other in-person requirements for compliance. Explore opportunities to similarly update other outdated regulatory requirements.

Draft recommendation 4.3

Pursue automatic mutual recognition, or if that is not possible, unilaterally recognise occupational licences from other jurisdictions to help overcome skills shortages in New South Wales.

Draft recommendation 4.4

Reform mandatory Continuing Professional Development by removing requirements where costs exceed benefits.

Draft recommendation 4.5

Remove pharmacy ownership and location restrictions, with licence requirements targeted at pharmacist control of quality systems and practices. Allow pharmacies to co-locate with supermarkets.

Draft recommendation 4.6

Work with the Commonwealth Government to evaluate the costs and benefits of the current restrictions applying to over-the-counter medicines, including Schedule 2 (pharmacy-only) and Schedule 3 (pharmacists-only) medicines. Explore opportunities to abolish or relax the regulation, where the costs outweigh the benefits.

Draft recommendation 4.7

Evaluate the costs and benefits of reforms to make better use of pharmacists' skills, including letting pharmacists more often prescribe medicines and provide more vaccinations with fewer restrictions.

Draft recommendation 4.8

Build on retail trading measures introduced during the COVID-19 pandemic and allow all retailers to trade on restricted trading days, on the condition that staff freely elect to work.

Draft recommendation 4.9

Review the restrictions on supermarkets, general stores and other retailers selling packaged alcohol, particularly low-alcohol beverages, for off-premises consumption to promote competition and opportunities for small business.

Draft recommendation 4.10

Allow the single-desk export arrangement for rice grown in New South Wales to expire on 30 June 2022, unless it can be shown that it delivers a net economic benefit to the community.

Draft recommendation 4.11

Allow the Gene Technology *(GM Crop Moratorium) Act 2003* (NSW) to expire on 1 July 2021.

Draft recommendation 4.12

Have the Independent Pricing Regulatory Tribunal of New South Wales review the NSW Rail Access undertaking, including its interaction with the national rail access regime.

Draft recommendation 4.13

Have the Independent Pricing Regulatory Tribunal update the NSW Government's competitive neutrality policy and processes.

Draft recommendation 4.14

Revise laws to encourage Personal Mobility Device innovation and use.

Draft recommendation 4.15

Improve regulatory practices in local government by expanding the scope of the 'Your Council' website. Encourage greater regulatory collaboration between state regulators and local councils.

Draft recommendation 4.16

Work with the Commonwealth regulator to support greater take-up of drones in industry, beginning with the agricultural sector.

Draft recommendation 4.17

Support the implementation of interoperability in the NSW e-conveyancing market as a matter of urgency.

Draft recommendation 4.18

Ease childcare costs by bringing NSW requirements into line with national requirements for additional early childhood teachers.

Draft recommendation 4.19

Create a best-practice regulatory policy framework, with Regulatory Stewardship as the cornerstone, that promotes rigorous and transparent impact assessments and improves regulator performance.

4.1 Regulate for adaptation

The COVID-19 pandemic has highlighted a central theme of this report: the shape of NSW regulations helps determine how quickly and how well we can adapt as the world changes.

Good regulation helps to protect the health and safety of the NSW community, make our economy work better and create the society we want. For example, good planning frameworks ensure sustainable natural resource use while providing certainty for business investment. In the current pandemic, regulatory settings are helping to maintain essential services, keep products available to fight disease, and make sure food is produced and delivered.

At the same time, overly burdensome regulation can stifle innovation, unnecessarily raise costs, and slow productivity growth. Estimates of the annual cost of compliance in New South Wales range up to $87 billion per annum (Deloitte Australia 2014).[1]

The NSW Government responded to the onset of COVID-19 with temporary regulatory changes to protect citizens while allowing businesses to provide consumers with critical products and services by overriding existing regulatory hurdles. Often a key to this was greater flexibility.

Such regulation will help the state with its recovery from COVID-19 too. Many stakeholders agreed that smart, flexible regulations help the economy to support innovation, competition and economic growth over years and decades. The COVID-19 crisis is a reminder that flexibility matters.

Learn lessons from our COVID-19 experiments

In response to COVID-19, the NSW Government:

- overrode local government restrictions to help supermarkets and pharmacies restock 24 hours a day
- allowed licensed venues to sell takeaway liquor, including takeaway cocktails, and to deliver liquor to people's homes
- permitted supermarkets to open on restricted trading days to help people buy essential items
- allowed pharmacists to dispense Schedule 4 medications without a prescription, where the patient had previously been prescribed the medication
- permitted weekday construction sites to operate on weekends and public holidays to keep more people in jobs and keep productivity up
- overrode local government development approvals for food trucks to enable their operation on any land at any time and let restaurants and other commercial kitchens operate as 'dark kitchens' that prepare food for delivery
- allowed home businesses to run 24 hours per day and to employ staff
- permitted activities to be undertaken digitally such as document display requirements, compulsory meetings and the signing and witnessing of documents.

As the economy returns to more normal operation, we should look at these changes as experiments, assess their results, and keep the ones that work. That will allow businesses to build their changed business patterns, adapt to changes in consumer preferences, and recover faster.

In particular, the Commission suggests keeping the changes around licensed venues, retail trading hours, food businesses, home businesses and the digital mechanisms for meetings and documents.

[1] New South Wales' share of GDP has been taken to proxy New South Wales' share of the cost of compliance in Australia. The estimate has been inflated to reflect 2020 prices based on CPI.

Draft recommendation 4.1:
Test our COVID-19 regulatory experiments

Extend the operation of temporary COVID-19 regulatory changes for 12 months while we evaluate their success. Keep them in place where we see a net public benefit.

Modernise our regulatory compliance and legal formalities

COVID-19 prompted the NSW Government to let people use digital solutions to meet regulatory compliance and legal formalities. It temporarily relaxed several rules in recognition of the extraordinary circumstances of the pandemic.

- People can use audio-visual links for legal functions such as
  - witnessing of signatures
  - attestation of legal documents
  - taking or making an oath, declaration or affidavit (Electronic Transactions Regulation 2017 (NSW), n.d.).[2]
- Planning decision-makers (such as councils) do not have to display physical copies of documents. Instead, the documents are available online via the NSW Planning Portal and council websites.
- Community associations and corporations can meet and vote electronically. They can use alternative means to validly execute documents in the absence of the common seal being affixed and witnessed in person.
- People seeking a Working-With-Children clearance check don't need to provide proof of identity in person.
- Compulsory interviews and recordings of investigations can be conducted by telephone or video conferencing.

These adjustments cut the time and costs involved in compliance, administrative and legal activities. There is an argument that they should stay when the pandemic recedes.

The NSW Government should identify other updates to regulatory or legal formalities that can cut costs and improve services for people and businesses. As Case Study 4.1 shows, data analytics can help with this task.

Case Study 4.1: Post notices solely on the web

The world-wide web is the most appropriate medium for legally-required public notices. It is easily searched, can trigger alerts and is available on most phones and at libraries.

RegData analytics indicate that NSW regulation contains 85 sections with requirements for written notices to be published in print newspapers. Newspapers' reduced circulations and increased cost compared to government websites suggests these requirements should be abolished (Roy Morgan Research 2018).[3]

[2] The amendments are time-limited.

[3] Approximately 25 per cent of Australians source their news from traditional print newspapers, down from 31 per cent in 2018. More Australians obtain their news from newspaper-based apps (29 per cent), or social media (38 per cent) than from newspapers (Roy Morgan Research 2020).

Draft recommendation 4.2:

Retain recent regulatory and legal relaxations

Retain the temporary adjustments to regulatory and legal formalities, including digital solutions to replace paper-based reporting, physical witnessing and attestation of documents and various other in-person requirements for compliance. Explore opportunities to similarly update other outdated regulatory requirements.

4.2 Sixteen specific regulatory reforms

Several temporary regulatory changes introduced in response to COVID-19 have demonstrated the benefits to consumers from more flexible regulation. Further changes should be evaluated in the same way—on the sale of alcohol, on the operations of pharmacies, on retail trading days and in many other areas.

Occupational regulation: Recognise more outside licences

To work in some occupations, Australia's states and territories require you to hold a licence and/or a registration (*Mutual Recognition Act 1992* (Cwlth), n.d.). For example, you need a licence to work as an electrician in New South Wales. Each state and territory runs its own occupational licensing schemes.

Mutual recognition

On their own, such systems can deter people from taking on interstate jobs or moving between states to find work, since re-qualifying in a new state or territory might take months or years. So, in 1992 the Commonwealth Government established a national 'mutual recognition scheme'. In this scheme, people licensed or registered in one state or territory can apply to be licensed or registered in another state or territory for the equivalent occupation (*Mutual Recognition Act 1992* (Cwlth), n.d.).

Mutual recognition has eased the free flow of labour, goods and services between participating states and territories. Australia's mutual recognition scheme also now extends to most occupational licences issued in New Zealand.[4]

Mutual recognition brings many benefits, even though they are hard to measure (Commonwealth Productivity Commission 2015b). Workers and business pay less to comply with the law. Consumers get more choice and more parties competing for their business. Regulators come under more pressure to co-operate with each other and align their rules.

But mutual recognition only achieves its potential if the scheme has good schedules—lists that specify licences in each jurisdiction and the conditions to achieve equivalence between them. Australia's nationally-agreed schedules are complex, cumbersome, and have not been updated fully since 2009, leaving them well behind today's qualifications and licences.[5] That robs the current mutual recognition scheme of substantial power.

[4] The *Trans-Tasman Mutual Recognition Act 1997* (Cth) and the 1998 Trans-Tasman Mutual Recognition Arrangement set out this scheme.

[5] The Commonwealth Productivity Commission (2015b) concluded: '[T]he effectiveness of the declarations has been constrained by a failure to keep them up to date.'

Automatic mutual recognition could replace the current scheme that relies on Ministerial Declarations and outdated nationally-agreed Schedules under the *Mutual Recognition Act 1992* (NSW). This is discussed further below.

Automatic mutual recognition or unilateral recognition

An alternative to the existing system with its outdated schedules is automatic mutual recognition.

In 2013, Australian governments agreed to develop new ways for people in licensed occupations to work when they moved from place to place.[6] In 2014, the NSW Government passed the *Mutual Recognition (Automatic Licensed Occupations Recognition) Act 2014*. It is based on the model for Australian drivers' licences, in which a driver's licence is automatically recognised in all states and territories.

This Act provides two options:

- **Automatic Mutual Recognition** (AMR) is where the NSW Government agrees with other jurisdictions to recognise one another's occupational licences. AMR gives NSW licence holders reciprocal rights to work in other jurisdictions, or
- **Unilateral recognition**, where the NSW Government independently recognises selected interstate or New Zealand issued occupational licences. Tradespeople licensed in other jurisdictions can work in New South Wales, but NSW licence holders do not gain reciprocal rights to work in other jurisdictions.

Pursuing these options would help address New South Wales' acute short-term need for tradespersons to assist with recovery from natural disasters (e.g. bushfires, flood, drought). AMR is the preferred option as it would ensure the free flow of labour, goods and services between all states and territories. If this cannot be achieved, then unilateral recognition should be pursued.

Either option could start with building and construction occupations. These are crucial to helping bushfire-affected communities rebuild and repair homes and businesses. And they are likely to be in high demand throughout New South Wales: data collected by the Department of Education, Skills and Employment (2019). shows longstanding national skills shortages in licensed building occupations including air-conditioning mechanics (for 26 years), bricklayers (15 years), electricians (13 years), and plumbers (11 years).

The following licensed trades in Victoria and Queensland meet NSW requirements right now:

- wall and floor tiling
- roof tiling
- painting and decorating
- glazing
- dry/wet plastering
- waterproofing
- carpentry.

The list of trades considered under the AMR legislation could then be expanded consistent with areas of greatest NSW demand.

[6] This was run through COAG which agreed not to continue with the National Occupational Licencing System in December 2013.

Draft recommendation 4.3:

Recognise outside occupational licences from other jurisdictions

Pursue automatic mutual recognition, or if that is not possible, unilaterally recognise occupational licences from other jurisdictions to help overcome skills shortages in New South Wales.

Occupational regulation: Review Continuing Professional Development requirements

In many licensed occupations, licensees must satisfy Continuing Professional Development (CPD) requirements in order to renew their occupational licences. These rules aim to ensure that licensees stay up to date with the business practices, technologies and compliance obligations of their profession.

Case Study 4.2: Mandatory CPD for conveyancers

A person who wishes to carry on business as a conveyancer must hold a conveyancer's licence. Licences expire on 30 June each year.

To renew the licence, a conveyancer must complete CPD each year– five points of professional development activity, as approved by NSW Fair Trading (NSW Fair Trading, 2006). A licensee typically receives one point of CPD for each hour they spend in a training course that is 'significant intellectual or practical content and … relevant to conveyancing work'.

The need for all today's mandatory CPD requirements is far from clear.

CPD questioned

In many cases, mandatory CPD requirements have been found to be unnecessary, out of date, and not directly related to the reasons that occupation was licensed in the first place. The Independent Pricing and Regulatory Tribunal (IPART) has found that:

- CPD is not a guarantee that learning takes place—or, if it does, that the learning will actually improve practice.
- When CPD is mandatory, the focus can become course attendance, rather than the individuals' learning needs.
- Allowing CPD to be voluntary encourages licence holders to take initiative and direct their own learning. And voluntary initiatives enable the market participants to differentiate themselves from others (Independent Pricing and Regulatory Tribunal 2014b).

Public consultation for the NSW Government's Better Business Reform in 2018 found the same issue. Industry stakeholders suggested that business practices and compliance obligations change little from year to year. Licence holders advised that they generally undertake the same courses each year to comply with annual CPD requirements. This takes time away from more productive activities, imposes a cost on businesses and offers little community benefit.[7]

[7] In its submission to the Productivity Discussion Paper, the Housing Industry Association notes: 'There is no evidence that mandatory CPD raises on-site building standards or delivers a significant net public benefit with those states operating mandatory CPD schemes still encountering a similar level of building disputes and defects'.

CPD praised

On the other hand, some stakeholders have said that mandatory CPD requirements are an important element of licensing schemes for achieving quality assurance and consumer protection.[8] The Building Designers Association of Australia, for instance, argued in its submission that embedding mandatory compliance 'supports an ongoing process of learning and upskilling'.

A 2018 report also recommended imposing compulsory CPD requirements on building practitioners to ensure a sufficient understanding of the National Construction Code (Shergold and Weir 2018).

The Government should reform mandatory CPD based on previous reviews of its costs and benefits. The reforms should ensure that CPD continues to remain relevant, provides the intended benefits and is consistently applied across different licence categories. CPD requirements should be changed or abolished where the cost of compliance outweighs the benefits.

Draft recommendation 4.4:
Reform mandatory CPD

Reform mandatory Continuing Professional Development by removing requirements where costs exceed benefits.

Pharmacy regulation: Open up ownership and location

Pharmacies play an integral role in the delivery of high quality, affordable and accessible healthcare. There is scope, however, for the regulation of pharmacies to be improved to drive greater efficiencies, and competition in pharmacy services. This in turn can lead to lower prices, greater convenience and better health outcomes for consumers.

With few exceptions, NSW law lets just three types of entity own a pharmacy business:

- a registered pharmacist
- a partnership of registered pharmacists
- a pharmacist's body corporate.

These entities can hold a financial interest in no more than five pharmacies in New South Wales, although they can own pharmacies outside the state.

NSW law also stops supermarkets having co-located pharmacies, while federal laws restrict the location of pharmacies that dispense medicines subsidised under the Pharmaceutical Benefits Scheme (PBS). Federal laws also set out the PBS remuneration arrangements for pharmacies (based on average rather than best-practice costs).

Existing regulations lack good justification

These location and ownership regulations restrict people's ability to buy the medicines and other pharmacy supplies they need easily and at the best prices.

Existing regulations make pharmacies an oddity in Australia's healthcare sector. General practitioner (GP) medical clinics have no such rules, and 2015's Harper Review found no evidence that this was harming 'high professional standards of care and accountability' (Harper et al.

[8] A submission from the Building Designers Association of Australia states: 'Best practice arrangement for CPD is simple. Mandatory compliance. With this approach incorporated into the labour market, its embedding supports an ongoing process of learning and upskilling'.

2015). The National Competition Policy reforms of the 1990s unwound other ownership restrictions on medical professions. Rules limiting ownership of an optometry practice to optometrists were removed after a review by NSW Health found those rules generated no net public benefit (NSW Health 1999).

The ownership and location of pharmacies are highly contested issues.

On one hand, the Pharmacy Guild and Pharmaceutical Society of Australia argue that the current system makes pharmacies more professional and prevents concentration in the supply of dispensing services.

> ***When a pharmacy is owned by pharmacists, it is grounded in its owners' obligation as registered health professionals and highly trained medicines experts to put their patients' interests first***
>
> ***Pharmacy Guild*** **(Pharmacy Guild of Australia 2018)**

On the other hand, the rules restrict competition, prevent investment from flowing into pharmacy, and restrict incentives to innovate and improve efficiency. Chemist Warehouse has claimed that the restrictions may create financial instability, and that they threaten the industry's medium term ability to provide equitable access to medicine (Chemist Warehouse 2014).

The Grattan Institute considers that

> ***'Red tape controls who can own pharmacies. These rules are more effective in protecting the commercial interests of pharmacy owners than in serving the public interest. They lock pharmacists into inefficient business models which contribute to high dispensing costs.'***
>
> ***Grattan Institute*** **(Duckett 2017)**

The Commonwealth Government has recently considered this issue in two reviews, 2014's National Commission of Audit (National Commission of Audit 2014) and 2015's Harper Review (Harper et al. 2015). Both reviews recommended the removal of state rules on pharmacy ownership and supermarket co-location and federal location restrictions. They noted that restrictions on where pharmacies can be located (including the prohibition on locating a pharmacy in a supermarket) limit the ability of consumers to choose where to buy pharmacy products and services.

Other jurisdictions are opening up ownership and location rules

More flexible ownership and location models exist in other jurisdictions. The New Zealand Government currently permits joint ownership between pharmacists and non-pharmacists and it is considering a model that would permit open ownership. In this new model, licence requirements would enforce appropriate systems and practices within the pharmacy.

In the United Kingdom (UK), other retailers, including supermarkets, have been involved in retail pharmacy since 1991. Qualified pharmacists there still supervise the dispensing of prescription-only medicines. In 2003 the UK Office of Fair Trading found that allowing supermarkets to sell over-the-counter (OTC) medicines had contributed to price falls of 30 per cent (Office of Fair Trading, 2003).

Likewise, in 2014 the Organisation for Economic Co-operation and Development (OECD) found that in several European countries, urban consumers had better access to medicines because pharmacies had been allowed to set up and stay open longer (Vogler 2014). Competition laws in these places still addressed concerns about market dominance and inappropriate market conduct.

The best shape of reform

To secure maximum benefits for consumers, any reform to pharmacy ownership and the prohibition on locating a pharmacy in a supermarket would ideally occur alongside other pharmacy regulation reform, notably location rules. An agreement between the Commonwealth Government and Pharmacy Guild of Australia requires pharmacists to obtain Commonwealth Government approval to open a new pharmacy or to move or expand an existing pharmacy (Pharmacy Guild of Australia n.d.). Like the ownership rules, this once-common restriction on competition is now unique to pharmacies.

As noted in the Harper Review, revisions to state laws on pharmacy ownership and co-location should take account of:

- the emergence of different business models, including specialist and online pharmacy models, and discount groups that operate under loose 'partnership' arrangements, such as Chemist Warehouse
- how other primary healthcare providers such as GPs and optometrists operate without ownership restrictions
- experiences in other jurisdictions (Harper et al. 2015).

Two key options to reform pharmacy ownership regulation are:

1. mixed ownership modelled on New Zealand's regulation
2. outcomes-focused regulation that permits open ownership with licence requirements targeted at pharmacist control of quality systems and practices within the pharmacy.

The NSW Government's Guide to Better Regulation promotes the adoption of outcomes-focused regulation, noting the benefits for efficiency and innovation (NSW Treasury 2019b). And as the ownership restrictions and supermarket location prohibitions exist across all states and territories, consistent reform across jurisdictions could be pursed through inter-governmental forums such as National Cabinet.

Draft recommendation 4.5:
Open up pharmacy ownership and location

Remove pharmacy ownership and location restrictions, with licence requirements targeted at pharmacist control of quality systems and practices. Allow pharmacies to co-locate with supermarkets.

Pharmacy regulation: Simplify access to basic treatments

Consumers can buy OTC medicines for self-treatment without needing a prescription from a doctor. Examples of OTC medicines include cough and cold remedies, anti-fungal treatments, sunscreens, and non-prescription painkillers such as aspirin and paracetamol.

The Commonwealth Therapeutic Goods Administration (TGA) regulates these OTC medicines. It requires all OTC medicines to be registered or listed on the Australian Register of Therapeutic Goods. Registered OTC medicines are treated as carrying lower risk than prescription medicines, but they still require appropriate scrutiny. OTC medicines can be supplied as:

- 'pharmacy medicines', included in Schedule 2 to the Poisons Standard administered by the TGA
- 'pharmacist-only medicines', included in Schedule 3
- 'open-seller medicines' or 'general sales medicines' that are not included in any of the schedules.

OTC medicines play an important role in the Australian healthcare system. It is estimated that over 80 per cent of adult consumers and 40 per cent of children use an OTC medicine in any given month (Koslow et al. 2014). Consumers' self-treatment through OTC medicines saves the Australian economy $12.5 billion per annum by reducing visits to doctors, saving Medicare and health insurance payments and avoiding indirect costs of delayed treatment and lost productivity in the healthcare sector (Koslow et al. 2014). Faced with unavailability of OTC medicines, approximately 50 to 72 per cent of the current self-treating consumers would visit doctors instead, adding to the burden on our healthcare system.

Given its substantial benefits, it makes sense for us to ensure that OTC medicine regulation is fit for purpose and maximises its intended benefits—improving consumers' access to low-risk medicines and driving down healthcare costs by enabling self-treatment.

One area of potential reform is the scheduling of medicines, which restricts where consumers can purchase different types of OTC medicines. Schedule 2 (pharmacy-only) and Schedule 3 (pharmacist only) medicines can only be purchased from pharmacies, while open-seller medicines are also available in supermarkets, health food stores and other retail outlets. That said, Schedule 2 and Schedule 3 create two intermediate classes of drugs between prescription only (Schedule 4) and general sale status. We could consider abolishing or relaxing restrictions applying to Schedule 2 and Schedule 3 medicines. This would allow consumers to buy a greater variety of medicines at local supermarkets and other shops.

The current restrictions for Schedule 2 and Schedule 3 medicines were introduced on the basis that pharmacists would give professional advice and counselling. The Pharmacy Guild, a body representing pharmacy owners and employers, conducted a cost-benefit analysis of these rules in 2005. It evaluated the social, health and economic impacts of restrictions for Schedule 2 and Schedule 3 medicines, and professional advice and counselling from pharmacists. This analysis stated that for the two additional schedules:

> ***[O]ur epidemiological model suggests a central estimate of some $2.75 billion in benefit annually ... This is the benefit derived from preventing cases of temporary disability and death. This outweighs the costs required to deliver these benefits.***
>
> ***Professor S.I. Benrimoj*** **(Benrimoj 2005)**

On the other hand, there is a body of research suggesting that the current restrictions:

- hinder consumers' choices as to where they buy their OTC medicines
- reduce retail competition that can deliver cost savings for consumers.

> ***The costs of maintaining OTC schedules for consumers relate to the limitations on accessibility – that is, these products can only be obtained from pharmacies and it may be inconvenient, particularly in rural locations for consumers to visit a pharmacy. Consumers may also pay higher prices as a result of the lack of competition that non-pharmacy retail outlets could be expected to provide if there were no restrictions on access to OTC products.***
>
> ***2001 COAG Review*** **(Galbally 2001)**

> ***Pharmacies claim that as this service is not offered by other outlets, they should be entitled to recoup its cost. Since not all consumers may value this advice, not all of them may be willing to pay for it … Furthermore, there is doubt as to whether professional intervention and guidance are always needed… It is reported that many pharmacists simply 'do not get involved in OTC medication sales.***
>
> ***The Centre for Independent Studies, 2008*** **(Gadiel 2008)**

Given the potential savings to consumers, and greater convenience of access, it is time to reconsider the costs and benefits of the current scheduling restrictions. A new evaluation will be consistent with best practice regulation principles of both the Commonwealth and NSW governments, which require regular reviews of regulations to ensure they remain fit for purpose and in the public interest.

In undertaking the evaluation of the scheduling restrictions, consideration could also be given to other regulatory requirements applying to Schedule 2 and Schedule 3 medicines. For example, it is currently illegal for any retailer other than a pharmacy to sell paracetamol packs containing more than twenty 500 milligram tablets. While this restriction was introduced in 2013 to reduce potential harm arising from overdose, its effectiveness has yet to be evaluated. In the UK, evidence suggests that paracetamol pack size limitation was not effective in reducing paracetamol-related harm (Bateman 2009).

Draft recommendation 4.6:
Improve access to over-the-counter medicines

Work with the Commonwealth Government to evaluate the costs and benefits of the current restrictions applying to over-the-counter medicines, including Schedule 2 (pharmacy-only) and Schedule 3 (pharmacists-only) medicines. Explore opportunities to abolish or relax the regulation, where the costs outweigh the benefits.

Pharmacy regulation: Make better use of pharmacists' skills

Pharmacists play a vital role in achieving public health outcomes. They are highly trained, well trusted (Roy Morgan Research 2016) and easily accessible in communities throughout New South Wales. For rural and remote areas, in particular, community pharmacies often act as a primary health care destination, with the highest patient contact rate (Sheshtyn Paola 2019).

While pharmacists are recognised as valued members of the healthcare workforce, there are suggestions that their skills and expertise are underutilised. The Pharmacy Guild of Australia and Pharmaceutical Society of Australia suggested that the role of pharmacists should be enhanced to have a greater level of responsibility and services to deliver benefits to patients and the community:

> ***[A]llowing pharmacists to work to their full scope of practice is fundamental to improving health outcomes... pharmacists can administer basic healthcare services to drive down costs to patients and the health budget, reduce waiting times, and increase accessibility.***
>
> ***Pharmacy Guild*** **(Pharmacy Guild of Australia 2019)**

Capitalising on the untapped potential of the pharmacy workforce can also deliver substantial benefits to rural and remote communities, where there are shortages of GPs. The number of GP services per person in the lowest-access rural areas is less than half that of the major cities (Duckett and Breadon 2013). People in rural, regional and remote communities generally have worse health than people living in cities. They have higher rates of many diseases, more health risks, and higher death rates in every age group (Australian Institute of Health and Welfare 2008). The Grattan Institute suggested that expanding the role of pharmacists can help improve health outcomes in rural and remote communities:

> ***With additional training, we estimate that pharmacists could take on five per cent of the workload of GPs in the lowest-access rural and remote areas... Many rural pharmacies have scope to provide more services. Industry statistics show that rural pharmacies dispense 150 fewer prescriptions a week compared to metropolitan pharmacies.***
>
> ***Grattan Institute*** **(Duckett and Breadon 2013)**

The NSW Government has seen first-hand from past initiatives the potential benefits of making better use of pharmacists' skills. For example, the NSW Government invested $7.4 million over four years (2011-12—2014-15) to support 1,700 community pharmacies to participate in the Pharmacy Health Check Program. The program offered free health checks at pharmacies to help identify customers at risk of developing a chronic disease. Depending on the level of health risks, pharmacists referred their customers to GPs for further advice, healthy lifestyle programs and/or provided risk modification advice on topics including weight loss, diet and exercise (NSW Health, n.d.).

The evaluation of the program found that allowing pharmacists to undertake health checks provided useful pathways for customers at risk of a chronic disease to be identified and referred to their GP for appropriate follow-up care and advice (NSW Pharmacy Health Check Program 2017). The program operated as a complement (i.e. not an alternative) to comprehensive and robust health checks by GPs. The program identified more than 70,000 customers at high risk. Most of these high-risk customers were then referred to GPs. The program reached many customers living in disadvantaged or rural and remote areas, where there are relatively fewer GPs available. The evaluation found:

- 28 per cent of health checks occurred in the most disadvantaged areas
- 40 per cent of checks occurred outside of major cities
- 17 per cent of checks occurred in outer regional, remote and very remote areas.

On the other hand, there are concerns among doctors' groups regarding the expansion of the role of pharmacists due to the potential public health and safety risks and the quality of healthcare services provided to patients:

The RACGP does not support the expansion of pharmacists' scope of practice beyond their core function … The provision of medical services by health professionals lacking the necessary medical training or registration is an inappropriate and unsustainable solution to address the health needs of Australians …

The Royal Australian College of General Practitioners **(RACGP Board 2013)**

We need to find the appropriate balance between these two considerations—maximising the use of pharmacists' skills and providing more services to the community, and managing public health and safety risks.

Potential reforms for consideration include allowing pharmacists to prescribe Schedule 4 (prescription-only) and Schedule 8 (controlled drug) medicines. Under the current NSW laws, pharmacists are unable to prescribe or supply Schedule 4 and Schedule 8 medicines without a prescription (New South Wales Parliament 2018). Medical practitioners (such as GPs) generally write prescriptions for up to six months' supply of medicines. After this time, patients are usually required to return to obtain a new script, even if their needs have not changed. For patients with long-term needs that are being successfully controlled by medication, these visits may not require the advanced skills of a GP. It is estimated that at least four million visits per annum to GPs across Australia involve repeat prescriptions (Duckett 2019).

Allowing pharmacists to prescribe can deliver benefits to patients and improve the productivity and efficiency of the healthcare sector. It also enables GPs to focus their efforts on more complex cases in primary care, where their expertise in diagnosing and treating illness is most needed:

> ***Using pharmacists' skills better – by allowing suitably prepared pharmacists to prescribe – will improve people's access to health care, facilitate better medication management, reduce costs, and ease the burden on general practice ... Evidence shows that pharmacists can safely provide repeat prescriptions to people with simple, stable conditions, and work with GPs to help patients manage chronic conditions.***
>
> *Grattan Institute* (Duckett 2019)

Many international jurisdictions already allow pharmacists to prescribe or dispense medicines without a prescription. They include the UK, Canada and the US. Evidence suggests a properly-implemented expansion of pharmacists' roles into prescribing can be safe, convenient and cost-effective. In the UK, for example, around three per cent of the pharmacist workforce is qualified to prescribe medicines independently. A review of pharmacist prescribing in the UK suggests that it is safe and clinically appropriate, with 98 per cent of pharmacists identifying and prescribing effective medication for the patients' conditions (Latter et al. 2010).

Reform could also build on previous reviews of non-medical prescribing in Australia and available options for implementation. As part of the 2013 Health Professionals Prescribing Pathway project (HPPP), non-medical prescribing was extended to dentists, nurse practitioners, midwives, podiatrists and optometrists applying different prescribing models. The HPPP project identified three options for non-medical prescribing:

- prescribing under a structured prescribing arrangement (under certain conditions, guidelines or limited authorisation)
- prescribing under the supervision of other authorised health professionals
- autonomous prescribing within a specific area of clinical practice (education and training requirements apply for specific practice areas) (Cormack 2013).

These three options formed the basis for the Pharmacy Board of Australia's public consultation on options to implement pharmacist prescribing in March 2019 (Pharmacy Board of Australia 2019).

As noted earlier in this chapter, the NSW Government relaxed requirements as a temporary measure in response to COVID-19, allowing pharmacists to dispense Schedule 4 medications without a prescription under certain conditions. Consideration could be given to extending its operation for a further 12 months to allow the benefits to be evaluated, and to also assess the potential costs and benefits of options for implementing pharmacist prescribing.

As part of the post-implementation evaluation, further reform opportunities could also be identified, such as allowing pharmacists to provide additional vaccinations—for instance, by lowering age limits (News South Wales Parliament 2008).

Draft recommendation 4.7:
Better use pharmacists' skills to improve consumer choice and convenience

Evaluate the costs and benefits of reforms to make better use of pharmacists' skills, including letting pharmacists more often prescribe medicines and provide more vaccinations with fewer restrictions.

Retail regulation: Lift restrictions on trading days

Existing NSW retail trading regulations are confusing and piecemeal. They restrict trading hours based on factors including the number of employees, goods sold and geographical location. These restrictions impose costs on businesses and consumers. They hamper the response of retail businesses to changes in demand, such as presented by the COVID-19 crisis. And their selective application creates significant disparities across businesses and regions (see Table 4.2).

The *Retail Trading Act 2008* (NSW) declares some days as 'restricted trading days'. On these days, shops must stay closed unless they have an exemption:

- Good Friday
- Easter Sunday
- ANZAC Day (before 1pm)
- Christmas Day
- Boxing Day (a conditional exemption applies).

The COVID-19 pandemic showed where these rules fall short. A special amendment to the *Retail Trading Act 2008* was needed to let supermarkets in the most populated areas of Sydney, Newcastle and Wollongong open to service consumer demand on some of these days.

Otherwise only 'exempt' shops can open on a restricted trading day–and identifying exemptions is complex and confusing. Exemptions apply to:

- small shops that employ four or less staff (in total) and have no more than two owners who share in the shop's profits
- businesses located within 45 exempted Local Government Areas, all outside Sydney, Newcastle and Wollongong[9]
- businesses that hold a hotel licence or small bar licence and meet certain conditions
- businesses wishing to open on Boxing Day. A conditional exemption applies so that a shop is not required to be kept closed on Boxing Day if the shop is staffed only by employees who have freely elected to work on that day
- businesses that apply for and are granted an exemption to trade by NSW Fair Trading, for up to three years
- retailer categories that are listed in Schedule 1 of the Act (see Table 4.1).

[9] These exemptions are unclear in some areas after council amalgamations.

TABLE 4.1: EXEMPT RETAILER CATEGORIES

- Bazaars, fairs or markets if conducted for charitable or public fundraising purposes
- Book shops
- Cake and pastry shops
- Chemists shops
- Cooked provision shops
- Florists shops
- Fruit and vegetable shops
- Newsagencies
- Nurseries
- Pet shops
- Recorded music, video or DVD shops
- Restaurants, cafes or kiosks
- Seafood shops
- Shops ancillary to venues for playing sport or physical recreation
- Souvenir shops
- Take-away food and drink shops
- Tobacconists shops
- Vehicle shops, vehicle service centres or petrol stations

Source: *Retail Trading Act (2008)*

TABLE 4.2: THE IMPACT OF EXEMPTIONS BASED ON GOODS SOLD, EMPLOYEE NUMBERS AND GEOGRAPHIC LOCATION

Retailer	Trade permitted on restricted trading day[1]
A seafood shop in Wollongong	Yes
A butcher shop in Wollongong that employs 5 people	No
A butcher shop in the Shoalhaven area that employs any number of people[2]	Yes
A butcher shop in the Shoalhaven area	Yes
A large hardware store in Wyong[3]	Yes
A large hardware store in Newcastle	No
A pet shop in Sydney	Yes
A pet supplies shop in Sydney	No
An online pet supplies shop	Yes

[1] Excluding Boxing Day

[2] Permitted to trade from the Saturday before Easter Saturday until the Sunday after Easter Sunday and 13-31 December.

[3] Permitted to trade from the Thursday before Good Friday until the Sunday after Easter Sunday and 2-31 December.

Source: *Retail Trading Act (2008)*; NSW Treasury

The process for applying to Fair Trading for an exemption is complicated. It applies to retailers that do not have another type of exemption. Applicants must provide supporting information for each individual location. Exemptions are only granted in 'exceptional circumstances' and when NSW Fair Trading is satisfied that it would be in the public interest. In practice, exemptions are rarely granted. In addition, the application of geographical exemptions is unclear following council amalgamations.

Boxing Day trade has been permitted under a conditional exemption introduced under the *Retail Trading Amendment (Boxing Day) Act 2017.* The key condition is that the shop is staffed only by employees who have freely elected to work on that day. The legislation followed a two-year trial and a comprehensive review, which found strong support for Boxing Day trade among retailers, consumers and employees.

There remains scope for further reform. As identified by the 2015 Harper Review, remaining restrictions are an impediment to competition, raising barriers to expansion and distorting market signals. The review found that:

- The current legislation that restricts trading by factors including the number of employees, physical shop size and geographical location, has led to highly localised and firm-specific trading arrangements.
- Arbitrary boundaries and exemptions across jurisdictions disadvantage businesses, imposing additional costs from lost revenue and the diversion of resources to compliance.
- As competition within the retail industry continues to intensify with the rapid emergence of online retailing, the existing restrictions have constrained the industry's ability to adapt and compete with online competitors.
- Where restrictions have been applied to particular sectors or type of business, it has resulted in consumers having less flexibility and choice.

The removal of restrictions would allow retailers to open when it is profitable and in line with consumer demand. Retailers would operate on a level playing field, at a time when the bricks and mortar retail model is under significant pressure from the disruptive impact of online sales. Stakeholders noted that consumers would be able to shop at times that best suit their work, leisure and family commitments.[10]

Retail worker unions and some religious organisations do not support further expanding trading days. The Returned and Services League does not support trade on ANZAC Day morning. But strong support for further deregulation of retail trading hours has come from retail and business groups, such as the Australian National Retailers Association and the Business Council of Australia.

Draft recommendation 4.8:
Further open up retail trading

Build on retail trading measures introduced during the COVID-19 pandemic and allow all retailers to trade on restricted trading days, on the condition that staff freely elect to work.

[10] From the Harper Review: 'Relaxing retail trading restrictions capitalises on latent consumer demand and allows consumers to shop according to their preferences as determined by their work, leisure and family commitments.' (Harper et al. 2015).

Retail regulation: Revisit packaged alcohol laws

In New South Wales, liquor retailing is a highly regulated sector, with regulations designed to minimise the risks to consumers and society associated with harmful use of alcohol. Such regulation has its place in promoting a productive society. Excessive alcohol consumption may erode productivity by affecting factors such as workplace absenteeism.[11] It can contribute to chronic health conditions, road traffic injuries and social harm that affects families, bystanders and the broader community.

Research shows that regulating alcohol outlet density in a geographic area (i.e. where alcohol is available for purchase) may be an effective strategy for reducing excessive alcohol consumption and related harms (Hahn et al. 2010). Such regulation also reduces convenience for consumers and restricts competition for small businesses and independent traders.

It is worth considering potential benefits from an expanded range of retailers, particularly for the sale of low-alcohol beverages, while maintaining the protections against harmful use of alcohol.

A packaged liquor licence allows licensed premises such as bottle shops, supermarkets and home delivery services to sell alcohol to the public, to be consumed off-premises. The current laws in New South Wales prevent small general stores and other retailers from obtaining a packaged liquor licence.[12]

Restrictions also apply to licensed supermarkets; they must keep the alcohol sales area and a designated cash register separate from the main part of the supermarket (Liquor & Gaming NSW n.d.). Many developed markets in Europe, North America and the Asia-Pacific give licensed retail businesses greater flexibility to sell packaged alcohol within their premises. See Table 4.3 for an international comparison.

Opportunities for deregulation

The major supermarket chains dominate Australian alcohol retailing, with 73 per cent of the total market in 2018 (Roy Morgan Research 2019). Competition is further restricted by regulation that prevents general stores, such as convenience stores and milk bars, from participating in the packaged alcohol market. One retail body estimates that this regulation costs the Australian convenience store industry more than $500 million in annual sales (Australasian Association of Convenience Stores Limited 2017).

Allowing general stores to sell packaged alcohol for off-premises consumption could increase competition in the market, by enabling small businesses to participate, creating new jobs and promoting consumer choice. The restrictions preventing supermarkets from displaying and selling alcohol in their main grocery aisles could also be reviewed. These changes could create a level playing field by letting retail businesses offer consumers the same products, under the same regulatory framework.

[11] Australian estimates of the extent of absenteeism attributable to alcohol use run as high as 7,402,341 work days lost and $1.2 billion (Pidd et al. 2006).

[12] These laws apply to stores with a floor area of 240 square metres or less that are used primarily for the sale of groceries.

TABLE 4.3: SELLING ALCOHOL IN SMALLER STORES

Jurisdiction	General stores	Service stations	Supermarkets
Japan	Permitted	Permitted	Permitted
South Korea	Permitted	Permitted	Permitted
United Kingdom	Permitted	Permitted	Permitted
Germany	Permitted	Permitted	Permitted
California (US)	Permitted	Permitted	Permitted
France	Permitted	Not permitted	Permitted
Italy	Permitted	Partially permitted Allowed to sell low-alcohol beverages only	Permitted
New York (US)	Partially permitted Allowed to sell beer and cider only	Partially permitted Allowed to sell beer and cider only	Partially permitted Allowed to sell beer and cider only
Ontario (CA)	Partially permitted Allowed to sell low-alcohol beverages only	Not permitted	Partially permitted Allowed to sell low-alcohol beverages only
New Zealand	Not permitted	Not permitted	Partially permitted Allowed to sell low-alcohol beverages only

Note: Low-alcohol beverages include beer, cider and wine. Australian jurisdictions are more restrictive than these international jurisdictions, though some are marginally less restrictive than New South Wales.

Source: NSW Treasury.

While many developed markets in Europe, North America and Asia permit the sale of packaged alcohol in general stores, service stations and supermarkets, some jurisdictions limit general retailers to the sale of low-alcohol beverages such as beer, cider and wine. This approach offers greater consumer convenience and business opportunities, while minimising the risks of harmful alcohol consumption.

Case Study 4.3: Ontario expands alcohol sales for low-alcohol beverages

In 2019, the Canadian province of Ontario introduced new laws to expand beer and wine sales to convenience stores and additional grocery stores. Prior to the move, Ontario had an average of 2.4 retail alcohol outlets per 10,000 people compared to the national average of 5.9 outlets per 10,000. The Retail Council of Canada estimated that moving closer to the national average would add an additional 4,028 locations and create 9,100 new jobs and a $3.5 billion dollar increase in annual GDP (Retail Council of Canada 2019).

NSW regulation should be reviewed to determine whether the productivity and social benefits of limiting alcohol availability outweigh the benefits of deregulation.

Draft recommendation 4.9:

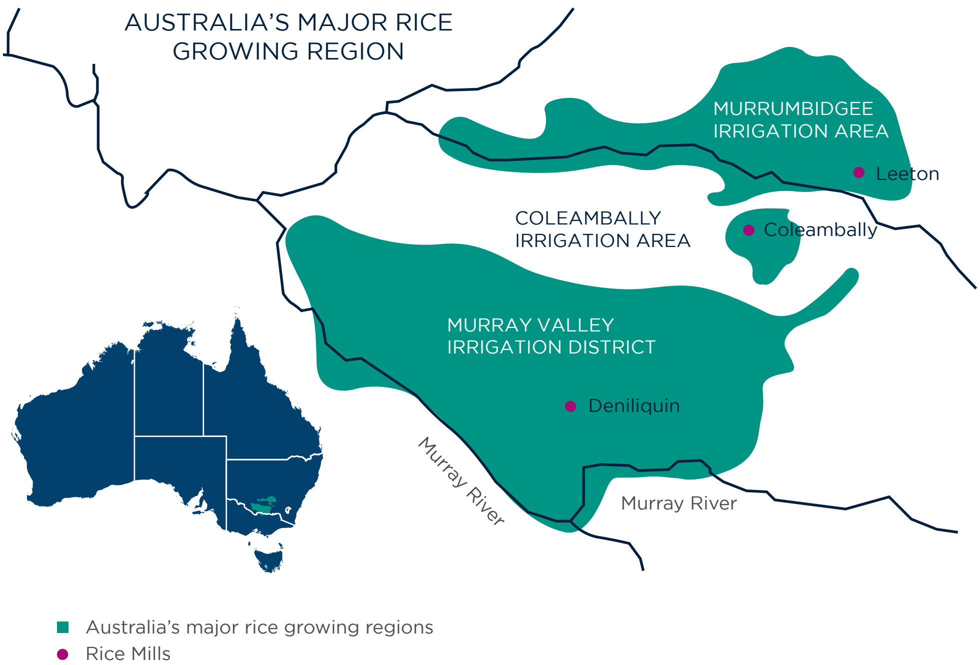
Review current restrictions on the retail sale of packaged alcohol

Review the restrictions on supermarkets, general stores and other retailers selling packaged alcohol, particularly low-alcohol beverages, for off-premises consumption to promote competition and opportunities for small business.

Agricultural regulation: Review export rice marketing

The rice industry matters to the NSW economy. We produce almost all of Australia's rice, mostly in the Murray and Riverina regions[13], and export up to 80 per cent.[14]

FIGURE 4.1: AUSTRALIA'S MAJOR RICE GROWING REGIONS



Source: Ricegrowers' Association of Australia Inc. (2020).

[13] A small amount (less than one per cent) is also grown in non-traditional areas such as in the Northern Rivers (Rice Marketing Board 2020).
[14] 2017-18 figures record that that 98.9 per cent of Australian rice was produced in New South Wales (Australian Bureau of Statistics 2019a).

By law all rice produced for export in New South Wales is the legal property of the NSW Rice Marketing Board (*Rice Marketing Act 1983* (NSW), n.d.). It decides who can deal in NSW rice. At present, the Board issues one sole and exclusive export licence. It was initially granted to SunRice in 2006 and renewed in 2011, 2015 and 2016; it is due to expire on 30 June 2022.

The Board is Australia's only remaining example of a statutory single-desk marketing board[15], an organisation that pools the output of many producers, markets it as a single product, and gives growers a single pool price. The Board aims for the best possible price by marketing the premium qualities of Australian-grown rice.

A single desk can be economically efficient if the Board has market power in international markets—which it might in limited circumstances, for instance, where transport costs and seasonal factors create barriers to competition.

But even if export premiums exist, it does not automatically follow that a single desk is required to capture them. And even if a single desk works for some types of rice, it may not work for others.

A 2016 review recommended that single-desk marketing arrangements continue (NSW Department of Primary Industries 2016) because:

- single desk marketing lets New South Wales extract price premiums for our rice exports
- the benefits are highly likely to outweigh the costs.

But that same review warned that the vesting arrangements now in place are discouraging the growth of the rice industry in northern New South Wales. It estimated those arrangements were costing northern NSW rice growers around $0.25 per tonne in lost export earnings (NSW Department of Primary Industries 2016).

At the same time, the Commonwealth Productivity Commission found that deregulating the marketing of Australian rice exports would bring significant benefits (Commonwealth Productivity Commission 2016):

- marketing costs would fall
- incentives to innovate would rise
- competing companies would have an incentive to retain grower loyalty by maximising price premiums
- growers would be likely to receive higher returns.

The NSW Government needs to make sure that rice marketing regulation continues to deliver a net public benefit. In 2016, the Department of Primary Industries' (DPI) recommended a review of rice vesting arrangements in 2020, two years before the single-desk arrangements expire. A review, to be undertaken by DPI, is planned for this year. The NSW Productivity Commission supports this review and recommends that the review should consider, among other things:

- Does New South Wales possess market power in international rice markets?[16]
- If export premiums exist, is a single desk required to capture them, or do other options exist?
- If there are benefits to single-desk powers for some types of rice, do those benefits extend to all the types of rice produced in New South Wales?

Draft recommendation 4.10:
Remove single-desk rice marketing

Allow the single-desk export arrangement for rice grown in New South Wales to expire on 30 June 2022, unless it can be shown that it delivers a net economic benefit to the community.

[15] Western Australia deregulated its potato industry marketing in September 2016.
[16] Note that a single desk can be a mechanism to exploit market power in international markets if such potential power exists.

Agricultural regulation: Genetically Modified Crops

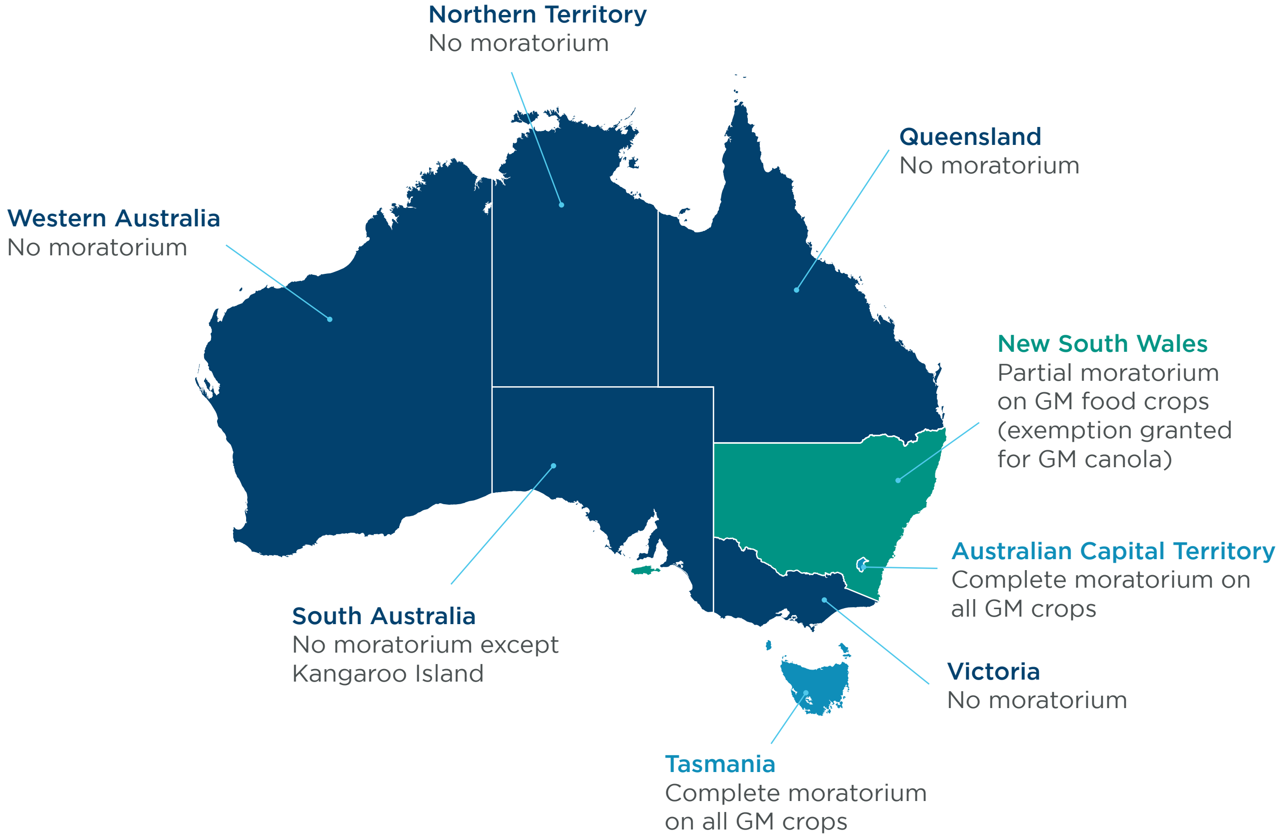
Genetically modified (GM) technology can help to create more pest resistant crops, maximise yields and cut the water a crop needs. This makes agriculture more productive with less environmental damage. These benefits can also drive innovation and productivity growth in the agricultural sector—particularly pertinent when current drought conditions and longer-term climate change threaten NSW agriculture. GM food can also have more nutrition and stay fresh longer.

Australia has already approved the use of GM varieties of canola and cotton.

The country regulates use of GM crops through the federal Office of the Gene Technology Regulator (OGTR). The OGTR identifies the risks posed by GM technology and manages them so as to protect the health and safety of people and the environment.

States and territory governments can still legislate to address market and trade issues arising from the GM crops. For the moment, NSW farmers can cultivate a licensed GM food plant only if the government approves or exempts it. This law is due to expire on 1 July 2021.

FIGURE 4.2: AUSTRALIAN LAWS ON GENETICALLY MODIFIED CROPS



Source: NSW Treasury.

The NSW restrictions cover even GM crops that the OGTR has declared safe—a restriction that no other mainland state has. That disadvantages NSW farmers. The NSW moratoria should be allowed to expire.

Draft recommendation 4.11:
End separate state restrictions on genetically modified crops

Allow the Gene Technology *(GM Crop Moratorium) Act 2003* (NSW) to expire on 1 July 2021.

Competition regulation: Improve rail access

'Access regimes' regulate outsiders' access to monopoly infrastructure such as rail lines. They are designed to boost productivity by delivering the most efficient use of the infrastructure and lower prices for consumers. At the same time, they prevent a monopoly owner from using its monopoly power to shut a competitor out of a service or charge too high a price. They usually ensure the owner imposes reasonable terms and pricing.

A better NSW rail access regime would help both the state's rail infrastructure owners and access seekers. It would help businesses like mine operators who rely on rail access to export their products make better investment decisions.

Both national and state regimes now govern NSW rail access.[17] Each calculates prices and decides access terms differently.

The NSW regime should operate better and interact better with its national counterpart. IPART heard from stakeholders in 2019 (Independent Pricing and Regulatory Tribunal 2019a) that:

- Where two access regimes govern one infrastructure network, as they do in the Hunter Valley, access seekers pay more, and taxpayers pay more for regulation.
- Rail infrastructure owners can often pick the regime they prefer and exploit the regulatory uncertainty to make tougher deals with access-seekers.
- Compliance and enforcement of the NSW regime is inadequate. IPART found some access charges were above the full economic cost of providing access, but it lacked the power to address this: applicants had to initiate legal proceedings.
- The NSW rules have not been substantively reviewed since 1999, despite significant changes in the rail industry since then.

In addition, the NSW regime may not meet all the needs of access-seekers. Notably, a group of access seekers obtained authorisation from the Australian Competition and Consumer Commission (ACCC) to collectively negotiate non-price terms of access with RailCorp in New South Wales, as individual negotiations had failed (Australian Competition and Consumer Commission 2018a).

[17] These are the NSW Rail Access Undertaking and the national rail access regime overseen by the Australian Competition and Consumer Commission (ACCC).

Case Study 4.4: Regulatory overlap in the Hunter Valley

The ACCC-administered Hunter Valley Access Undertaking (‘the ACCC Undertaking’) was due to expire in 2011. Had it expired with no replacement, the NSW Undertaking would have applied to the Hunter Valley Coal Network that is operated by the Australian Rail Track Corporation (ARTC).

The ARTC submitted its proposed variation to the 2011 ACCC Undertaking less than one month prior to its expiry date. It proposed a rate of return that was higher than that recommended by the ACCC in its draft decision.

The industry was concerned that if the ACCC Undertaking lapsed, and the NSW Undertaking applied, they would lose provisions that promoted efficiency across the Hunter Valley coal supply chain by aligning operations and contracts between coal mines, track managers, train operators and port terminals.

In these circumstances, the industry accepted the ARTC’s variation despite concerns that it had been inadequately consulted and that the ARTC’s rate of return was too high.

Source: ACCC submission to IPART’s 2019 Review of the rate of return and remaining mine life for the Hunter Valley Coal Network.

Draft recommendation 4.12:
Review NSW’s rail access regime

Have the Independent Pricing and Regulatory Tribunal review the NSW Rail Access undertaking, including its interaction with the national rail access regime.

Competition regulation: Update competitive neutrality guidelines and processes

Where government businesses compete in the market with non-government businesses, they should not gain competitive advantages from their public sector ownership. That way, the most productive businesses will flourish and attract resources.[18] This idea is at the core of the principle called ‘competitive neutrality’.

Without an effective competitive neutrality regime, government actions might put private firms out of business. For instance, if governments were to use their large balance sheets to run caravan parks, car parking, childcare or printing businesses at below cost, private sector operators would not be able to compete.

The main way that government businesses can offset the advantages of government ownership is by pricing goods and services to reflect all the costs incurred by a private business in the same market.[19] Many NSW government businesses follow this principle. For instance, when the Forestry Corporation of NSW sells timber in competition with private businesses, it must make tax payments, pay dividends and cover its full costs of production and capital, just like private rivals. This fair competition gives business confidence to compete with government businesses where appropriate. That creates more competitive markets and allocates the state’s resources most productively.

[18] 2015’s Harper Review said: ‘The principle of competitive neutrality is an important mechanism for strengthening competition in sectors where government is a major provider of services.’ (Harper et al. 2015).

[19] In a small number of circumstances there may be a clear public interest reason not to do so.

New changes would make this process even better:

- Update the Government's Policy Statement on the Application of Competitive Neutrality, which contains outdated arrangements for dealing with complaints (NSW Treasury 2002). For example, the Policy Statement refers to the handling of tender-related complaints by the State Contracts Control Board. That entity no longer exists.
- Improve complaints processes. Potential complainants may not know where to start; worse, the process can eat up business resources, in extreme cases discouraging people from even lodging a complaint.[20]
- Resolve if and how competitive neutrality should apply when the government takes a minority ownership stake in a business.
- Address outstanding stakeholder concerns about how competitive neutrality applies.[21]

The Harper Review recommended that all Australian governments review their competitive neutrality policies. All governments agreed in 2016 to do it (Council Of Australian Governments 2016). The Commonwealth and Western Australian governments are undertaking work on this. New South Wales should have IPART do the same.

The review should answer questions such as:

- Is the operation of the current NSW competitive neutrality policies best practice? The review should assess the scope and coverage of the policy, complaint mechanisms, and oversight and administration arrangements.
- What improvements can be made to the delivery of the policies? The review's examination should cover local government, government procurement and the start-up stages of government businesses.
- What are the costs and benefits of expanding the scope of the policies to a broader range of government activities? The review should focus on circumstances where government service providers operate in the same market as private and not-for-profit providers.[22]

Draft recommendation 4.13:
Update competitive neutrality policy

Have the Independent Pricing and Regulatory Tribunal update the NSW Government's competitive neutrality policy and processes.

[20] Submissions to the Harper Review raised concerns about the transparency and effectiveness of the competitive neutrality complaints process across all jurisdictions, including New South Wales.

[21] For example, the Small Business Development Corporation noted in its submission to the Harper Review in 2015 that local governments can operate childcare centres, aged care facilities and gyms in competition with local providers. It advocated improved application of competitive neutrality to local governments, including the adoption of effective complaints handling mechanisms.

[22] For instance, the government provides non-emergency patient transport services to NSW Health in competition with the private sector.

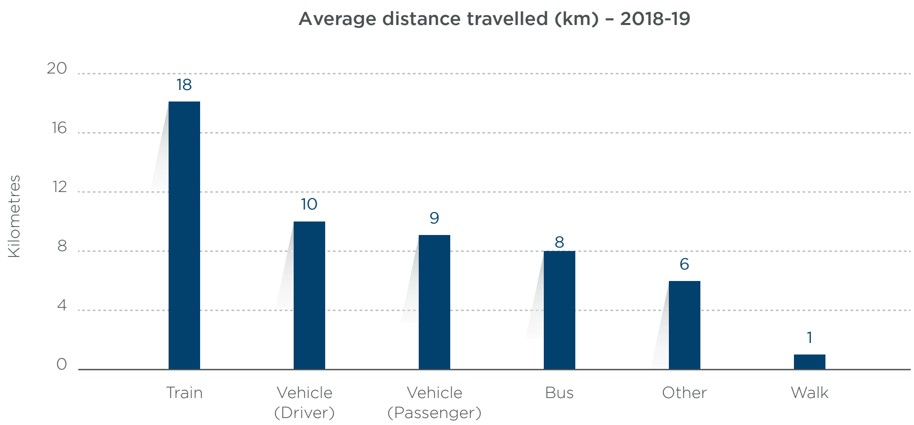
Transport regulation: Make micro-mobility work better

Battery-powered Personal Mobility Devices (PMDs) such as e-scooters, motorised cycles and Segways are growing rapidly in popularity. Travelling at typical bicycle speeds, they are available on demand, and private. They are cheaper and less polluting than cars, and like cars they take people from point of origin all the way to their point of destination. They thus hold the potential to make many short trips easier, while reducing congestion and infrastructure costs. These trips include not just commutes of up to 10 kilometres, but also the first portion (the so-called 'first mile') of longer journeys such as a rail commute.

FIGURE 4.3: FIRST AND LAST MILE

- PMDs can help ease the peak burden on roads public transport by helping commuters. An estimated 30 per cent of trips from home to work in capital cities are 2-10km long (Australian Bureau of Statistics 2016). In Sydney, 67 per cent of those trips involved the use of private vehicles, and 27 per cent involved public transport.[23]
- PMDs can cut travel times. Transport for NSW found in 2013 that 'riding a bike can be quicker than a car for trips up to five kilometres, and faster than public transport for trips up to eight kilometres' (Transport for NSW 2013c).
- PMDs can replace cars for some users who find bikes unsuitable. A 2019 Transport for NSW survey found that just 15 per cent of NSW respondents had used a bicycle for commuting to work in the past year (Munro and Arnold 2019). Those who had not used a bicycle cited reasons including long distances, physical danger and the need to carry items. PMDs could overcome some of these barriers: people using them can travel faster and further with less physical effort.

FIGURE 4.4: AVERAGE DISTANCE TRAVELLED PER DAY IN SYDNEY, BY TRANSPORT MODE, 2018-19



Source: Transport for NSW Household Travel Survey (Transport for NSW Open Data Team 2020).

[23] Similarly, the NSW Household Travel Survey shows that in 2018-19, 61 per cent of trips in Sydney involved the use of private vehicle, with the average distance travelled of 10km (Transport for NSW 2013a).

Better laws can encourage PMD innovation and more effective use. NSW Road Rules now forbid people to use certain PMDs (such as e-scooters) on public roads, cycling paths or footpaths. Some jurisdictions allow them. A better regulatory framework for PMDs can help them to fulfil their potential while still addressing important safety concerns.

The Australian Road Rules have not kept pace with the growth of PMDs either. The national Ministerial Council meeting will consider national law reform options.[24]

The NSW Government should develop a new regulatory framework for PMDs, based on the findings of the National Transport Commission's (NTC) Regulation Impact Statement.

Better infrastructure support will also help people take up PMDs. Based on the 2019 Cycling Survey findings, this infrastructure would include more cycling/PMD lanes, better connections between cycling/PMD paths and cycle/PMD parking.[25]

Draft recommendation 4.14:

Regulate to let Personal Mobility Devices fulfil their potential

Revise laws to encourage Personal Mobility Device innovation and use.

Local government regulations and fees

Local council regulations are an integral part of the NSW regulatory framework. Councils regulate everything from planning to fire safety, animal control to waste management and public health. They administer local rules and other quasi-regulatory instruments, such as permits, development approvals, licences and registrations. Increasingly, they implement and enforce state laws as well (Independent Pricing and Regulatory Tribunal 2016c).

This activity can have major impacts on business and the community more generally. IPART has estimated that better local government regulatory practices could cut the compliance burden on business and the community by $177 million per year (Independent Pricing And Regulatory Tribunal 2016c).

Ineffective local government regulation, on the other hand, can stifle business growth and productivity. The Commonwealth Productivity Commission has identified examples where regulation imposes delays, complex rules and processes, uncertain approval timeframes and inconsistent fees and charges (Commonwealth Productivity Commission 2012a). It listed business suggestions for better local government regulation including more transparent information, consistent application of rules and processes, and faster timeliness. These suggestions remain valid.

[24] To address these issues, the NTC has commenced the work to develop options to address regulatory barriers to the safe and legal use of PMDs. The NTC acknowledged in 2019 that PMDs largely operate in an undefined regulatory environment that varies from state to state (National Transport Commission 2019).

[25] Respondents to the 2019 Cycling Survey identified infrastructure that could encourage bicycle riding, and much of this would also apply to PMDs (Munro and Arnold 2019).

The NSW Government has taken steps to improve the administration of local government regulation, including the Food Regulation Partnership between NSW Food Authority and local councils (see Case Study 4.5). The 'Your Council' website (see Figure 4.5) launched by the government in 2019 provides information such as:

- council spending in areas including roads, bridges, footpaths, libraries, recreation and culture, community services, and the environment
- community facilities including the number of swimming pools, public halls, and libraries as well as the length of roads and the amount of open space
- figures on council operations such as councils' staffing levels and their average rates and charges
- demographic information about the local population
- economic statistics, including the unemployment rate, average income, and number of businesses.

The 'Your Council' website could also give citizens information about specific regulatory arrangements, fees and charges across local councils. This would provide businesses and the community with greater certainty about regulatory practices and save time and effort in finding information about compliance requirements and processes.

FIGURE 4.5: YOUR COUNCIL WEBSITE

Source: https://yourcouncil.nsw.gov.au

More effective interaction between the two levels of government

Several past reviews have identified that state and local governments need to work together more effectively. The Commonwealth Productivity Commission in 2012 found three key gaps in states' support to local governments (Commonwealth Productivity Commission 2012a):

- They do not think enough about local governments' capacity to administer and enforce regulation before delegating new regulatory roles to them.
- They give limited guidance and training on how to administer and enforce regulations.
- They give no clear indication and ranking of state regulatory priorities.

Two years later, IPART also pushed for more effective interaction. It said a 'partnership model' would cut costs to the community, and make regulation work better, especially in more complex, high-risk and/or high-cost fields (Independent Pricing And Regulatory Tribunal 2014a).[26]

NSW Government agencies should identify regulations that involve responsibilities for local government.

The government and councils should then agree on objectives for the regulatory functions that councils have the capacity to reach, with adequate cost-recovery mechanisms to help achieve this. The government should prepare guidelines for councils to implement a consistent regulatory approach. It should also identify collaboration opportunities to reduce duplication and improve efficiency.

Case Study 4.5: The NSW Food Authority's regulatory partnership with councils

The NSW Food Authority (the Authority) shares with local councils the responsibility for ensuring that retail and food service businesses comply with the food safety regulations. To fulfil this responsibility, the Authority partners with councils. The Food Regulation Partnership sets out each group's regulatory roles and responsibilities and provides:

- clear guidance and assistance from the NSW Government, including specific regulatory tools and resources
- a two-way exchange of information, which allows the Authority to better monitor, assess and provide feedback on councils' regulatory performance
- a dedicated forum for strategic consultation with councils and other key stakeholders.

The Partnership has improved co-operation between the levels of government and improved:

- consistency in surveillance and enforcement
- compliance rates
- duplication of regulatory services
- councils' regulatory effectiveness and efficiency.

The regulation partnership approach pursued by the NSW Food Authority (Case Study 4.5) could also operate in other regulatory areas, such as planning, building and the environment (Independent Pricing And Regulatory Tribunal 2014a). The partnership model might also work better with new mechanisms to consider how much capacity and capability local government has to administer these regulatory responsibilities.

Draft recommendation 4.15:
Local government information and collaboration

Improve regulatory practices in local government by expanding the scope of the 'Your Council' website. Encourage greater regulatory collaboration between state regulators and local councils.

[26] A Government response to this IPART report is currently in development.

Aviation regulation: Realise economic benefits from drones

Drones—small remotely-piloted aircraft—are now important tools in various industries. In agriculture they do everything from weed detection and pesticide treatment to land surveying and fire monitoring to stock monitoring and management. These activities help to increase yields and lower costs. Stakeholders confirmed that drones can provide farmers with valuable data to better and more quickly monitor farm conditions.[27]

SafeWork NSW aims to reduce fatalities and serious injuries from quad bike accidents and promotes the use of drones as a safe alternative. In pursuit of that aim, it helps farmers buy drones to monitor conditions and stock. The Quad Bike Safety Improvement Program offers rebates of up to $500 to support the purchase of one drone per eligible farm business.

FIGURE 4.6: PREDICTED GLOBAL VALUE OF DRONE POWERED SOLUTIONS BY INDUSTRY

Infrastructure
Investment monitoring, maintenance, asset inventory
$45.2 bn

Agriculture
Analysis of soils and drainage, crop health assessment
$32.4 bn

Transport
Delivery of goods, medical logistics
$13 bn

Security
Monitoring lines and sales
$10.5 bn

Entertainment & Media
Advertising, entertainment, aerial photography, shows and special effects
$8.8 bn

Insurance
Support in claims, settlement process, fraud detection
$6.8 bn

Telecommunication
Tower maintenance, signal broadcasting
$6.3 bn

Mining
Planning, exploration, environmental impact assessment
$4.3 bn

Source: PricewaterhouseCoopers (Mazur, Wiśniewski, and McMillan 2016)

The use of drones is regulated by the Commonwealth Civil Aviation Safety Authority (CASA). It administers national rules[28] containing:

- a range of safety rules, including height and distance limits and weather conditions for flight
- a requirement for drones weighing more than 250 grams to be registered with CASA and renewed annually
- a requirement for people flying drones to either hold a remote pilot licence or complete an online training course to achieve accreditation.[29]

[27] From the National Farmers' Federation (2017) submission: 'These sophisticated tools will enable farmers to manage ever larger areas of land and assist them with decision-making … In turn, farmers will spend less time driving through paddocks as they will be able to manage larger areas of land by analysing data.'

[28] The Civil Aviation Safety Regulations 1998.

[29] Accreditation must be renewed every three years.

FIGURE 4.7: CAUTION: DRONE RULES APPLY SIGN

Source: CASA.

In September 2016, CASA simplified the regulatory requirements around recreational and commercial applications of drones. Some stakeholders have said further reforms should be considered. AgriFutures Australia stated that certain regulatory requirements may be 'excessive' or 'not appropriate' in the agricultural context. For example, it notes that developing an operations manual with processes for training, compliance, maintenance and route designation 'appears to be excessive' for farm use (ACIL Allen Consulting 2018).[30]

But drone use has also prompted safety, privacy and noise concerns. The Commonwealth government is now reviewing drone noise rules. The NSW Farmers' Association has also raised concerns around the trespass and nuisance issues arising from the use of drones in rural areas.[31]

Appropriate regulation of technology will let its benefits flow while minimising its risks to the community. While regulatory responsibility for drones sits with CASA and the Commonwealth government, the design and implementation of drone regulation has wide implications for NSW businesses and community.

The NSW Government should work with the Commonwealth Government (as the regulator) to revise regulatory controls or provide a targeted exemption to let NSW farmers use drones more easily. CASA could then help put that in place as it has done with drone delivery systems in Canberra and Queensland.

[30] From the AgriFutures Australia submission: '[T]he requirements for a commercial operators' certificate include a requirement to develop an operations manual and an operations library. The operations manual must set out how the commercial operator (in this case, the farmer) plans to safely manage the risks inherent in operating a remotely piloted aircraft. It includes training, compliance, maintenance, route designation and other key obligations. For operations on farmland, all this appears to be excessive. A standard operational manual should be developed by the Department of Agriculture and Water, in consultation with CASA, for use in agriculture'.

[31] From the NSW Farmers Association submission: 'Our Farmers' members have recounted stories of narrowly escaping serious injury to their cattle and themselves when drones have flown above paddocks and hovered over a herd of cattle. Due to the noise, the cattle become distressed, running away from the drone they head towards hazards such as electric wire fences and in some cases, towards the farmer if they are among the cattle at the time. This situation can cause serious injury and can lead to fatalities for both the livestock and farmer' (NSW Farmers' Association 2018).

Draft recommendation 4.16:
Promote more flexible rules for the use of drones

Work with the Commonwealth regulator to support greater take-up of drones in industry, beginning with the agricultural sector.

E-conveyancing: Establish interoperability

E-conveyancing allows parties in a property transaction to electronically prepare and lodge their property dealings with title registries, transmit settlement funds and pay relevant taxes and duties.[32] It saves time and reduces the potential for errors and fraud (Independent Pricing and Regulatory Tribunal 2019b). Property recorded in the Torrens Register in New South Wales is worth more than $1.7 trillion. E-conveyancing has been mandatory for dealings in this property since 2019.

But one function of the current e-conveyancing market needs an urgent fix. New South Wales has two systems. And the data used by one cannot be used by the other. In short, they are not 'interoperable'.

We call an information system 'interoperable' when it works with—and particularly, exchanges information electronically with—other systems.

E-conveyancing transactions are conducted on systems called electronic lodgement networks (ELNs) run by electronic lodgement network operators (ELNOs). New South Wales' ELNOs are:

- Property Exchange Australia Limited (PEXA), a formerly government-owned body that developed the first online platform for e-conveyancing in 2012
- new entrant Sympli, which entered the market in 2019.

Solicitors, conveyancers and mortgage providers must subscribe to these ELNs. And under the current market structure, conveyancing professionals and financial institutions must all use the same ELNO to complete a property transaction (see Figure 4.8).

But because the systems do not interoperate, the first ELNO—PEXA—benefits from an enduring 'network effect'. PEXA remains the first choice for most people entering the market, not necessarily because it is better but because so many more people are already using it.

As multiple reviews have acknowledged, this has cut down competition. The national competition regulator, the ACCC, has warned that new entrants will not be able to sustain a presence in the market and that the market is at risk of becoming an entrenched monopoly that is difficult to regulate, and with less innovation, higher costs, poorer services (Australian Competition and Consumer Commission 2019).[33]

Likewise, an IPART review found that NSW e-conveyancing is now highly concentrated and likely to stay that way for a while (Independent Pricing and Regulatory Tribunal 2019b).

This problem needs fixing quickly: the longer the problem lasts, the greater the risk of entrenching a near-monopoly.

[32] The process was facilitated by Commonwealth and state governments. (Federal state and territory governments 2012).

[33] The ACCC submission observes: 'Should policy makers not undertake the necessary steps to implement a pro-competition market model, then it is unlikely that new entrants will be able to sustain a presence in the market … The alternative to competition in this market is an entrenched monopoly, likely with forgone opportunities for innovation, lower costs, and improved quality of service. Further, the regulation of a monopoly is a complex, timely and costly process, and is a sub-optimal solution.'

“Good regulation can advance innovation in new technologies and industries

Interoperability makes competition work

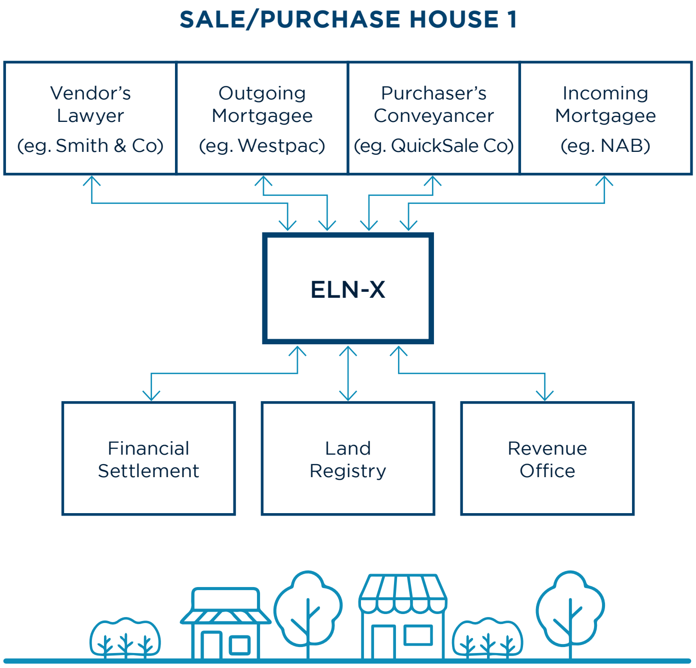
The solution to this problem is interoperability—demanding that data in the system works with any ELN that conforms to specified rules. In such a system, a user who subscribes to only one ELNO can still transact with the user of another ELNO without having to subscribe to both ELNs.

Interoperable systems are common in other industries. For example, an Optus user can take a phone call from a Telstra user.

In 2019 the ACCC declared interoperability its preferred approach to the e-conveyancing problem. IPART has also backed interoperability on the grounds that it would encourage new players into the industry and improve competition. Stakeholders such as Sympli, the Law Society of NSW, Australian Banking Association and the NSW Registrar-General also support interoperability.

A 2019 review identified financial, technical and security risks that would need addressing, as well as issues with sharing costs between stakeholders (Larkins et al. 2019). NSW Government-sponsored industry working groups have now identified potential approaches and solutions. And the government is working with industry stakeholders and its state and territory counterparts on a possible technical model and regulatory changes.

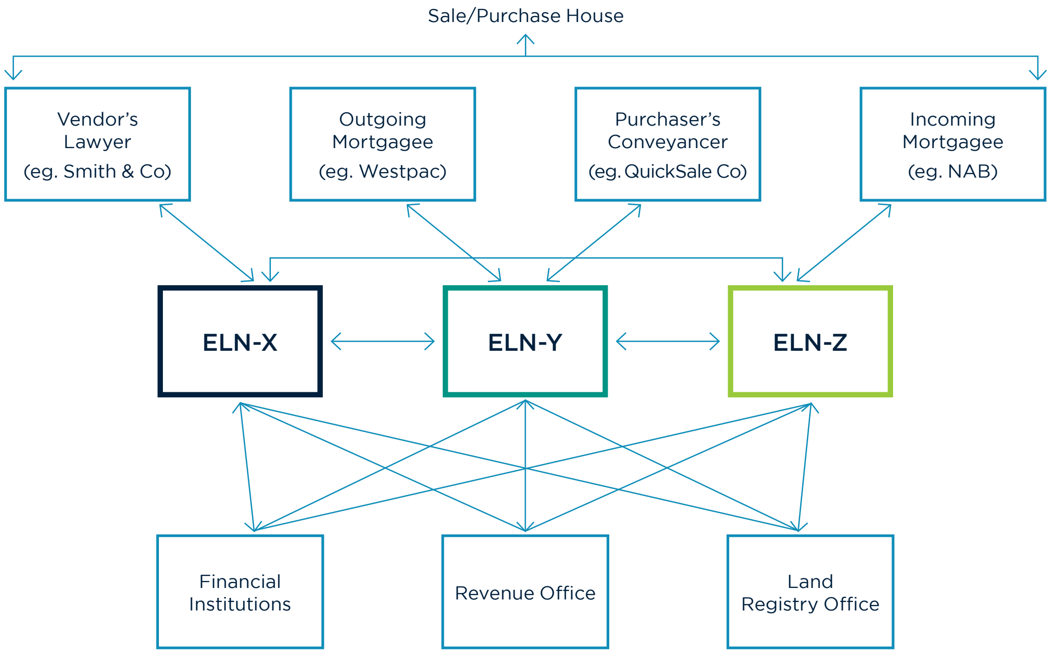
FIGURE 4.8: E-CONVEYANCING WITHOUT INTEROPERABILITY



Source: NSW Registrar-General (2019).

Figure 4.9 depicts competition with direct interoperability, the form of interoperability recommended by IPART given that two ELNOs are already in the market.[34]

FIGURE 4.9: COMPETITION WITH INTEROPERABILITY



Source: NSW Registrar General (2019).

To support competition, the NSW Government should urgently require interoperability in e-conveyancing, subject to addressing concerns regarding risk and costs.

Most stakeholders want a nationally consistent approach to interoperability (Independent Pricing and Regulatory Tribunal 2019b). But the need for urgency and the work done in New South Wales suggest that if jurisdictions can't quickly agree an approach, the NSW Government should implement interoperability on its own.

Draft recommendation 4.17:
Make e-conveyancing interoperable

Support the implementation of interoperability in the NSW e-conveyancing market as a matter of urgency.

[34] IPART (2019b) recommended that future ELNO entrants be given the option of:

- connecting via an access regime to existing infrastructure
- if it is more cost efficient, building their own infrastructure.

Childcare sector regulation: Cut prices by adopting national standards

Access to affordable childcare helps parents to work. But half of Australian parents with children under five struggle with the cost of childcare (Grattan Institute 2020). This affects workforce participation, particularly for women. Around a quarter of women who would otherwise seek work or more hours do not do so because they are caring for children (Australian Bureau of Statistics 2017). Cost and lack of available childcare in their locality are key reasons for one-third of cases.

Greater female workforce participation has many benefits. It gives individuals greater wages and superannuation, facilitates career progression and can provide personal satisfaction. Society gets higher measured economic output and tax revenues, and lower government spending on social welfare. The continued employment of skilled and educated individuals improves workforce productivity.

The NSW Government can encourage greater workforce participation by addressing regulatory costs for childcare providers, while maintaining high-quality early childhood education and care.

NSW regulation of the childcare sector operates in the context of the National Quality Framework for Early Childhood Education and Care. A strong body of research confirms the benefits of high-quality education and care for children's outcomes, particularly for disadvantaged children. The National Quality Framework aims to deliver harmonised standards to ensure the quality of long day care, family day care, preschool and kindergarten and outside school hours care services across Australia. It sets compulsory national benchmarks for regulation and licensing of early childhood education and care.

The National Quality Framework mandates minimum staff ratios (see Figure 4.10) and qualification requirements. It requires anyone seeking to work at an approved early childhood education and care service to be at least 'working towards' relevant qualifications.[35]

FIGURE 4.10: CENTRE-BASED STAFF TO CHILD RATIO REQUIREMENTS

Age of children	Staff to child ratio
Birth to 24 months	1:4
Over 24 months, less than 36	1:5
Over 36 months and including preschool age	1:11
Over preschool age	1:15

Source: Education and Care Services National Regulations 2011. Australian Children's Education and Care Quality Authority.

NSW regulations specify staffing requirements for centre-based services that differ from the National Quality Framework (NSW Government 2011). Under these requirements, providers must employ up to four early childhood teachers for a maximum of 80 children.[36] In contrast, the national regulations require one early childhood teacher and an additional early childhood teacher or suitably qualified person for a maximum of 80 children.

[35] The relevant qualification is a minimum of a Certificate III level or diploma level qualification, depending on the service type.

[36] According to the Education and Care Services National Regulations, an 'early childhood teacher' means a person with an approved early childhood teaching qualification.

FIGURE 4.11: CENTRE-BASED REQUIREMENTS FOR EARLY CHILDHOOD TEACHERS COMPARED

Approved places	National regulations	NSW specific provisions
25-29	1 early childhood teacher for at least 6 hours per day if the service operates for 50 or more hours a week, OR for 60 percent of operating hours for less than 50 hours a week. AND	1 early childhood teacher in attendance for at least 6 hours per day if the service operates for 50 or more hours a week, OR for 60 percent of operating hours for less than 50 hours a week
30-39	1 early childhood teacher or other suitably qualified person for at least 3 hours per day if the service operates for 50 or more hours a week, OR for 30 percent of operating hours for less than 50 hours a week.	1 early childhood teacher in attendance at all times
40-59		2 early childhood teachers in attendance at all times
60-79	Services with 60 or more children preschool age or under in attendance must either have access to or attendance of either two early childhood teachers, or an early childhood teacher and a 'suitably qualified person'. The number of hours this second ECT or SQP is required to be in attendance at the service increases if there are 80 or more children preschool age of under in attendance.	3 early childhood teachers in attendance at all times
80+		4 early childhood teachers in attendance at all times

Source: NSW Treasury.

NSW-specific requirements exacerbate the challenge facing childcare centres to attract and retain appropriately qualified staff. New South Wales has an undersupply of early childhood teachers in rural and remote areas. The number of students completing teaching qualifications in the state has decreased, while the number of early childhood education and care enrolments has increased (Commonwealth Productivity Commission 2014a).

The flexibility to use 'suitably qualified persons' may address current workforce shortages and cut costs. Interjurisdictional work is underway to align state government staffing requirements to a minimum of two early childhood teachers for centre-based services. The NSW Government should amend its regulation to require a minimum of two early childhood teachers. A suitably qualified person should be allowed to attend as an alternative to a third or fourth early childhood teacher.[37]

Draft recommendation 4.18:
Align New South Wales requirements with national childcare requirements

Ease childcare costs by bringing NSW requirements into line with national requirements for additional early childhood teachers.

[37] According to the Education and Care Services National Regulations, a 'suitably qualified person' means an individual who is:

- 'actively working towards' (see Regulation 10 of the National Regulations) an approved early childhood teaching qualification and has either completed at least 50 per cent of the qualification or holds an approved early childhood education and care diploma, or
- registered (accredited in New South Wales) as a primary or secondary school teacher in Australia and holds an ACECQA approved early childhood education and care diploma (or higher approved qualification).

4.3 Build a higher-performance regulatory framework

Create a modern, best-practice approach to regulatory management

Like jurisdictions worldwide, New South Wales faces an ongoing challenge to keep regulations appropriate in an era of exponential technological change. Regulation must keep adapting to change.

Previous approaches to managing the stock of regulation have included a 'one-in-two-out' policy (where new regulation can only be introduced if two existing regulations are removed) and a red tape reduction target. The Audit Office of New South Wales found that such efforts were largely ineffective in long-term red tape reduction, with legislative complexity increasing over the life of the initiative (Audit Office of New South Wales 2016).

Additionally, subordinate legislation is automatically repealed every five years unless remade. The process applies indiscriminately to all subordinate legislation, without regard to the size, importance or magnitude of regulatory impact. Stakeholders may be contacted multiple times on changes to regulations and Acts. This time-bound model of review is an inefficient use of taxpayer funds and does not deliver effective community engagement. While the *Subordinate Legislation Act 1989* (NSW) delivered gains in the 1990s by encouraging review of long-standing regulations, a more strategic approach to regulatory review is required.

Regulatory stewardship, on the other hand, is an 'asset management' approach to regulation, with regulation as the stock to be managed. It is founded on the idea that good regulation requires ongoing attention to ensure it maximises public wellbeing. There is consensus among stakeholders that an active stewardship approach will improve the current regulatory framework (Greiner, McCluskey, and Stewart-Weeks 2017). A favourable regulatory environment has been shown to lead to greater foreign direct investment (Zhang 2012), boost productivity (Papaioannou 2017), and increase our innovation capabilities (Organisation for Economic Co-Operation and Development 1996).

Under regulatory stewardship, the custodians of regulation (government agencies) take responsibility for the ongoing 'health' of regulations over the regulatory lifecycle. Good stewardship has three cornerstones:

- Monitor the regulatory stock and its performance effectively and strategically. Assume the responsibility to reduce red tape by amending or removing regulations that do not meet the public interest test because they are duplicative, ineffective or unnecessarily burdensome.

- Robustly analyse changes to regulatory systems. Effective impact assessment early in the policy process; with the level of analysis tailored to the significance of the proposal and an independent assessment of the quality of regulatory impact analysis.
- Encourage high-performance regulator behaviour to improve the administration of regulation. Incorporate a regulator performance framework into agencies' stewardship strategies. Adopt new tools such as virtual assistants to reduce the administrative burden on business.

Unlike automatic repeal processes, regulatory stewardship promotes a strategic approach to regulation review. It lets agencies focus on reviewing the regulatory settings of greatest concern to businesses and community, and on the reforms with the greatest potential to deliver economic benefits. This approach is consistent with international best-practice (see Case Study 4.6).

Case Study 4.6: Regulatory stewardship in Canada

Since 2007, Canada has adopted a 'lifecycle' approach to managing regulations as part of strategic regulatory planning. This recognises that regulatory development and analysis is only one part of the regulatory lifecycle. Agencies must also consider the implementation and evaluation of regulations.

Canadian agencies publish annual 'Forward Regulatory Plans'. These set out their plans to review the stock of regulations they manage, and amendments they plan to make. Agencies are responsible for establishing timelines to undertake a regular review of regulatory stock. A number of agencies have implemented regulatory modernisation agendas as part of this process.

Canada rates strongly in international comparisons of regulatory policy and governance. It scores well above the OECD average on engaging with the community, completing regulatory impact assessments and evaluating regulations after their implementation, all important metrics of stewardship (Organisation for Economic Co-operation and Development 2018b). In fact, Canada's performance improved off a high base between 2015 and 2018.

Strengthen the evidence underpinning the policy process

Regulatory impact analysis is an important aspect of policy development and one of the cornerstones of regulatory stewardship. There is significant evidence that it requires improvement in New South Wales.

The Audit Office of New South Wales has previously found that regulatory proposals put to Cabinet did not consistently justify the additional regulatory burden or consider viable alternatives. It said regulatory impact statements (RIS) could be a last-minute, 'tick-the-box' exercise. There was a lack of accountability for high quality regulation by Government due to poor transparency and an absence of compliance oversight (Audit Office of New South Wales 2016).

FIGURE 4.1: NUMBER OF CABINET PROPOSALS THAT MET BETTER REGULATION PRINCIPLES IN 2016

Principle	Number (out of 11 reviewed)
The need for government action was established	11
The objective of government action was clear	10
The impact of government action was understood and costs and benefits were considered	
• Viable options were developed	6
• Those affected were identified	10
• Cost and benefits were identified	6
• Costs and benefits were evaluated	0
• Monitoring and reporting of performance was considered	2
The effectiveness and proportionality of action was considered	1
Consultation with business and the community informed regulatory development[1]	8
The simplification, repeal, reform or consolidation of existing regulation was considered[2]	6
Regulation was periodically reviewed and, if necessary, reformed to ensure its continued efficient and effectiveness[3]	1

[1] Out of nine proposals as information on two proposals was not available.

[2] Out of ten proposals – information was not available for one proposal.

[3] Out of one proposal as only one proposal was a result of a periodic review.

Source: Audit Office of New South Wales (2016).

The Commonwealth Productivity Commission has also concluded there is substantial scope for improvement in RIS cost benefit analysis, and that public transparency is a 'glaring weakness' in Australian regulatory impact analysis (Commonwealth Productivity Commission 2012b).

This sentiment is echoed in stakeholder submissions, with several noting an inadequate assessment of costs and benefits:

Regulatory agencies often do not appropriately consider the costs and benefits of regulation. This is particularly the case when determining the costs associated with any reform. A Regulatory Impact Statement (RIS) will often be drafted in generalised terms and claim an inability to capture appropriate data in order to provide useful, reliable and accurate information about cost impacts.

Housing Industry Association submission

A properly functioning regulatory impact analysis process will deliver significant benefits, particularly as the regulatory burden of shortcomings mounts over time. NSW Treasury analysis, drawing upon IPART's Review of Local Government Compliance and Enforcement (Independent Pricing and Regulatory Tribunal, 2014a), suggests that the cost to New South Wales of weaknesses in the regulatory impact analysis process could be in the order of $500 million per year, made up of administrative costs, substantive compliance costs, fees and charges, and delay costs.[38]

The NSW Government presently incorporates regulatory impact analysis into policy development processes, applying its Guide to Better Regulation and the requirements of the *Subordinate Legislation Act 1989* (NSW Treasury 2019b). There is scope to strengthen the practical effectiveness of regulatory impact analysis by adopting four guidelines:

1. **Assess regulatory proposals early and rigorously.** Agencies should be required to engage early with Treasury, for guidance on the level of evidence and analysis required for a regulatory proposal, consistent with Australian best practice. This includes rigorous assessment of the costs of regulation and evaluation of alternatives.
2. **Have an independent body transparently review RISs.** Regular public reporting is an important mechanism to improve agency accountability and engagement with affected stakeholders. The Commonwealth Office of Best Practice Regulation, the Victorian Commissioner for Better Regulation and the Queensland Productivity Commission publish certifications or letters of adequacy regarding RISs to enhance the quality of analysis and promote transparency.
3. **Apply a common and proportionate standard to regulatory impact analysis**, based on the significance of the anticipated impact rather than the specific regulatory instrument that may be adopted. At present different requirements govern primary legislation, subordinate legislation and mandatory guidelines (Greiner, McCluskey, and Stewart-Weeks 2017).

The Commonwealth's process is the gold standard for Australia: it is the most robust because the Office of Best Practice Regulation engages early in the policy process.

***NSW Business Chamber* (NSW Business Chamber 2016)**

[38] This estimate is based on an average net cost to New South Wales per year over 10 years, from inconsistent application of regulatory impact analysis requirements on significant amendments to primary legislation (i.e. Acts). This estimate does not include the cost arising from subordinate legislation (i.e. Regulation) or other non-statutory instruments (e.g. Environmental Planning Instruments).

4. **Make the best use of stakeholder engagement** as a key component of regulatory impact analysis. Stakeholders have raised concerns that current processes fall short. For example, the Housing Industry Association has expressed the view that:

> ***There needs to be a cultural shift within the Government itself to the point that a RIS [Regulatory Impact Statement] is viewed as a useful and positive tool and an integral part of the consultation process that Government should be having with industry participants.***
>
> ***Housing Industry Association submission***

Improve the administration of regulation

Poor administration of regulation can impose costs on individuals and businesses. The Commonwealth Government has a Regulator Performance Framework (Australian Government 2014), largely based on recommendations from the Commonwealth Productivity Commission's 2014 report (Commonwealth Productivity Commission 2014c). The Commonwealth Productivity Commission noted:

> ***... many instances of regulators providing incorrect and inconsistent guidance and advice. This poor advice results in businesses having to pay costly fees for consultants or accountants to navigate the maze of regulation. At times, this has also resulted in businesses or individuals finding themselves subject to legal proceedings or penalties for actions, which they took in good faith, based on advice about regulatory requirements.***

New South Wales could incorporate a regulator performance framework into agencies' annual Regulatory Stewardship Strategies, as the Commonwealth Government has done. This would enable agencies to report publicly on:

- their operational effectiveness and efficiency in achieving intended policy outcomes
- performance feedback from stakeholders and other regulators
- targets to encourage improved data practices and digital adoption
- benchmarking of agencies' performance
- opportunities to reduce the administrative burdens on agencies and regulated entities.

Other states have implemented similar performance frameworks as shown in Case Study 4.7.

Case Study 4.7: Regulator Performance Frameworks in other jurisdictions.

Victoria

Better Regulation Victoria surveys regulators every two years as part of the 'Victorian Regulatory System' report. This report provides a snapshot of the activities of Victoria's regulators and notes whether regulators have publicly reported against key performance indicators.

Better Regulation Victoria also plays a role in the ongoing monitoring of regulator performance against the 'statement of expectations for regulators' provided to each regulator by its Minister.

Queensland

The Queensland Government has implemented a Regulator Performance Framework, which requires regulators to publicly report their operational performance against five model practices each year. The model practices are designed to support regulatory objectives, while reducing unnecessary regulatory burden through better stakeholder engagement, risk-based regulation, continuous improvement, transparency and tailored information provision.

A performance framework, as a component of Regulatory Stewardship, would build on NSW regulators' existing commitments. For example, the NSW Environment Protection Authority (EPA) prepares an annual Regulatory Assurance Statement that assesses its strengths and weaknesses as a regulator using the Modern Regulator's Improvement Tool. The assessment of its performance includes benchmarking against environmental regulators in other jurisdictions.

New tools to improve regulator performance and reduce administrative burdens

Clear public reporting requirements can also motivate regulators to improve operational performance and seek out innovative approaches to reduce administrative burden.

The need for greater innovation in regulatory practices was raised by stakeholders. For example, the Housing Industry Association expressed a view to the Commission that government is 'slow in embracing technological change' and 'virtually myopic' in its use of technology.

A regulator performance framework would motivate the adoption of new regulatory tools. Some examples:

- Machine-learning algorithms can identify complex patterns, anomalies and regulatory breaches in real-time. For example, the Las Vegas health department analysed food poisoning-related tweets to identify likely food poisoning hotspots two-thirds more often than random inspections (National Science Foundation 2016).
- Virtual assistants and apps, powered by digital rules, can help regulated entities and citizens navigate complex regulatory requirements. For example, the New Zealand Government uses a digital 'life event service' to help new parents determine their eligibility for financial support.

- Recycling information gained through regulation can shed light on the market being regulated. For example, the Australian Tax Office provides small business benchmarks on key financial ratios based on information provided from Business Activity Statements and tax returns. This may result in more timely compliance, behaviour changes arising from benchmarking and a lower perception of regulatory burden.
- Writing rules as code—that is, converting regulations into digital code—allows it to be read by programs. This allows private parties to design software to interpret and comply with regulation. When the rules change, the system can update automatically, simplifying compliance and lowering costs for business. It also helps government agencies and private providers in designing web portals and software to support compliance.

Case Study 4.8: Rules as code in New South Wales

The Department for Customer Service is developing a rules-as-code component of the NSW Digital Strategy. This aims to provide guidance for developing regulations in a way that can be converted into machine-readable code.

The Department plans to code parts of the new Community Gaming Regulation. It will then build a tool that uses that code to help charities, not-for-profits and other users understand how the regulation applies to them and make the rules available for reuse.

Draft recommendation 4.19:
Introduce an adaptable and forward-looking regulatory framework

Create a best-practice regulatory policy framework, with Regulatory Stewardship as the cornerstone, that promotes rigorous and transparent impact assessments and improves regulator performance.

Meet the challenge of reliable, well-priced water and energy

05.

Draft Recommendations

Draft recommendation 5.1

Outline the long-term vision for the whole water sector (including rural water, wastewater, stormwater, flood management) and develop a plan to meet the challenges facing the sector.

Draft recommendation 5.2

Issue Statements of Expectations to state-owned water corporations to provide clear guidance on the Government's plans and direction.

Draft recommendation 5.3

Bring together leaders from all key NSW water sector organisations to coordinate and deliver the vision outlined in the planned state water strategy.

Identify governance measures to solve the fragmentation of water responsibilities across New South Wales.

Draw on the experience of the INSW South Creek Sector Review to identify other areas in New South Wales that would benefit from integrated land use and water planning.

Draft recommendation 5.4

Sydney Water should continue to work with the Independent Pricing and Regulatory Tribunal of New South Wales to estimate long-run marginal costs for its wastewater catchment areas and consider implications for pricing.

Draft recommendation 5.5

Coordinate with state-owned water corporations to develop and implement a public engagement program for recycled water. Explore the establishment of a Demonstration Plant in Sydney to help people understand the water cycle.

Draft recommendation 5.6

Identify and assess alternative models to help local water utilities meet quality and reliability standards.

Draft recommendation 5.7

Monitor the effectiveness and efficiency of the new Sydney Water scarcity pricing model in managing demand and use this to guide water demand management policy.

Draft recommendation 5.8

Review NSW's Building Sustainability Index scheme to ensure it meets both environmental and economic objectives.

Draft recommendation 5.9

Revisit the NSW Energy Security Target in the context of reliability standards endorsed by the Council of Australian Government (COAG) Energy Council:

- If it imposes greater reliability requirements, demonstrate that this is consistent with consumers' willingness to pay.
- Otherwise, adopt the COAG Energy Council standards in its place.

Draft recommendation 5.10

Commit to a contestable private energy market based on technology-neutral, competitive neutrality principles.

Create a NSW-specific emissions intensity scheme to help optimise investment in electricity, having regard to climate change mitigation objectives and the pace of innovation.

Draft recommendation 5.11

Evaluate options for rolling out smart meters to all consumers and for time-of-use, cost-reflective electricity pricing.

Draft recommendation 5.12

Establish a single NSW Energy Regulator and remove the Independent Pricing and Regulatory Tribunal's responsibility for regular monitoring of the retail electricity market.

Draft recommendation 5.13

Review the Strategic Regional Land Use Policy and Strategic Release Framework to ensure they maximise the balance of costs and benefits to industry and the community.

Draft recommendation 5.14

Improve efficiency and accessibility of administering energy rebates and support programs by incorporating them into the *Government Made Easy: Tell Us Once* initiative.

Review the suite of rebate and assistance measures with a view to consolidating their number and better aligning them to the needs of vulnerable and low-income households.

5.1 Water and energy are essential to a productive economy

Reliable and affordable water and water services, electricity and gas play a vital role in household activity and almost all production processes.

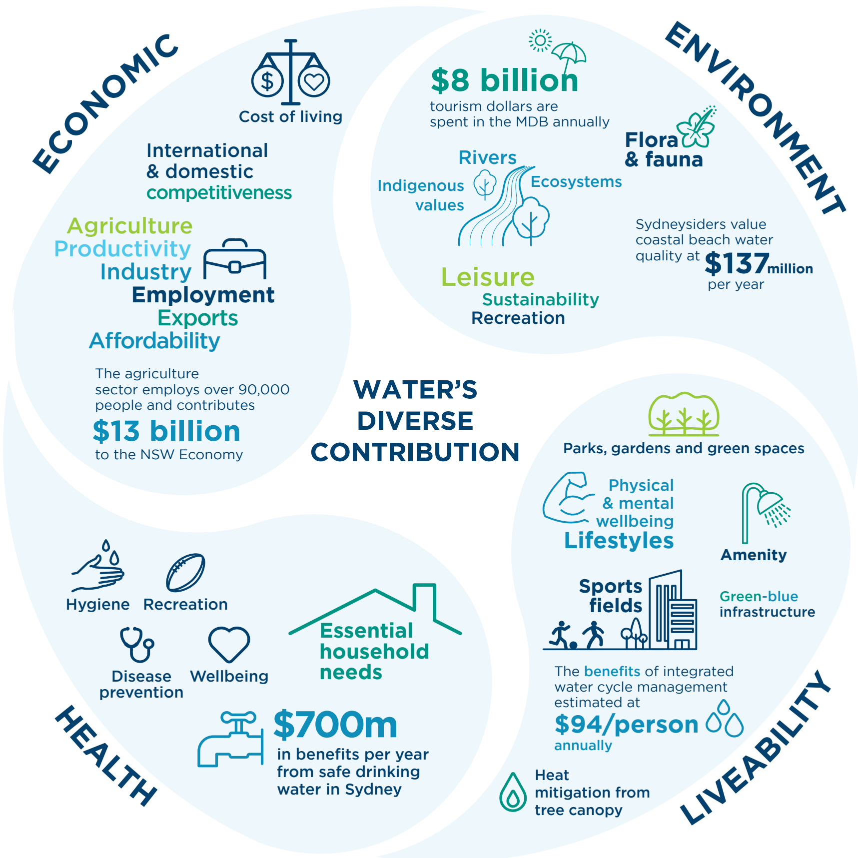
Even mere threats to the availability of these inputs or volatility in pricing can generate significant uncertainty. For instance, firms facing gas shortages may need to change their operations and delay or reconsider productivity-enhancing capital investment.

Historically, the water and energy sectors have involved substantial government intervention. They often depend on the state's land, waterways, mineral deposits and other resources. Their monopoly characteristics dictate a larger than usual role for government, whether the state acts as owner and manager or as regulator and co-ordinator.

5.2 Population and climate will challenge the water sector

Over the past two decades New South Wales' population has grown from 7.1 million to 8.1 million. By 2060, the state will need to accommodate perhaps another four million people, mostly in the Greater Sydney region. Population will grow most in the relatively hot Western Sydney, which in combination with global warming may add to per capita demand for water. At the same time, water must continue to flow to the environment to allow it to thrive (Figure 5.1).

FIGURE 5.1: THE FOUR DIMENSIONS OF WATER'S VALUE

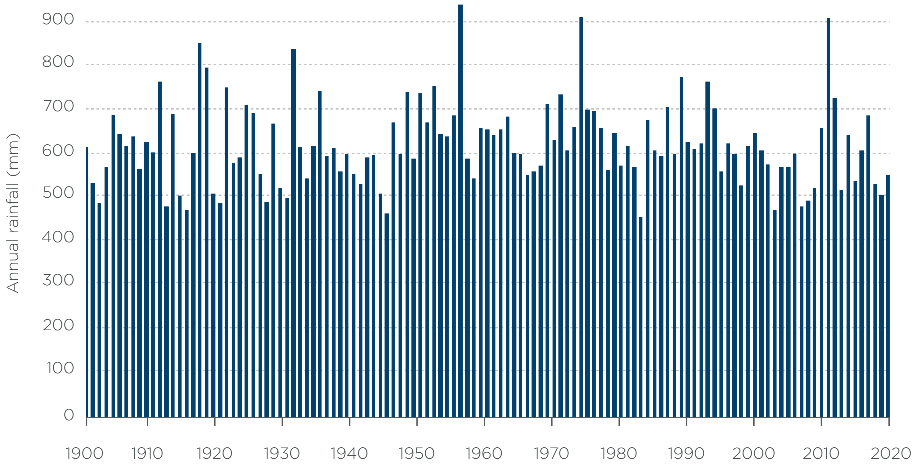


Source: NSW Treasury, Water Services Association Australia (2019), Murray-Darling Basin (2018), Australian Bureau of Statistics.

To keep up with this demand, the water sector will need to make significant investments.

As demand pressures grow, there is a risk that traditional rainfall-dependant water supply will become less reliable.

FIGURE 5.2: ANNUAL RAINFALL IN SOUTH-EASTERN AUSTRALIA, FINANCIAL YEARS



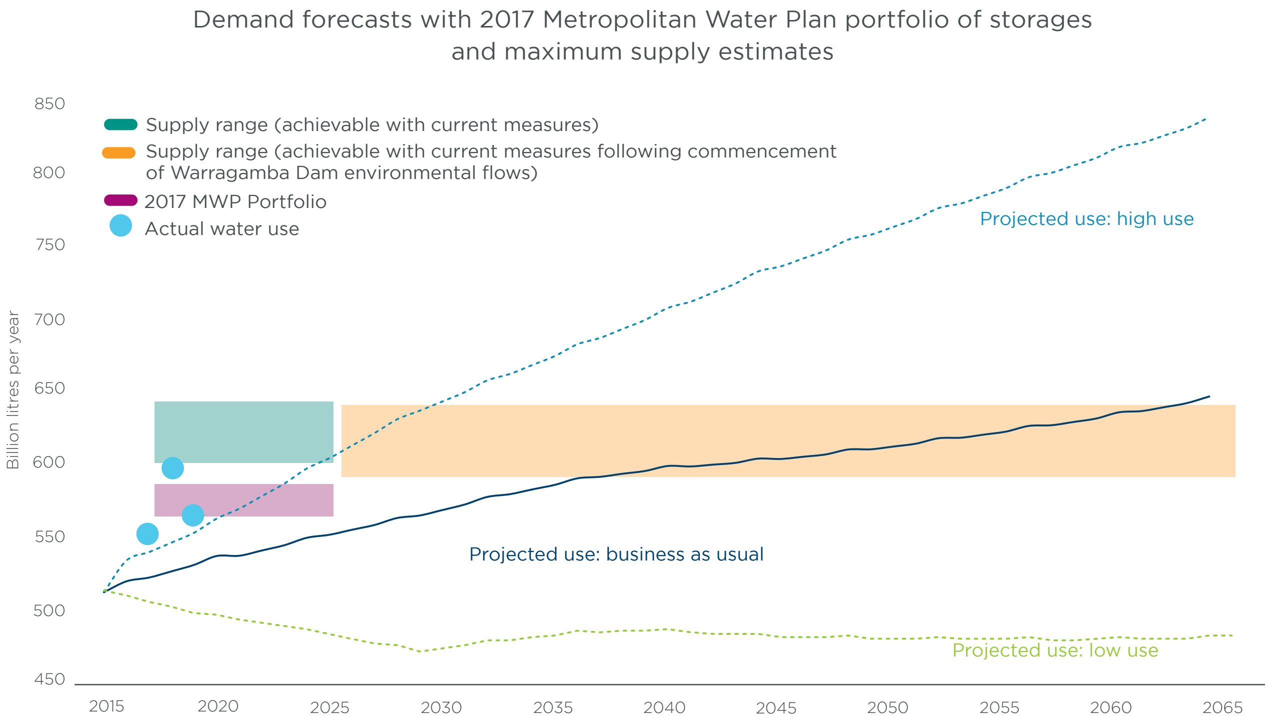
Source: Bureau of Meteorology 2020b.

New South Wales is a big state whose rain patterns vary from place to place and year to year. But as the climate warms, our corner of Australia is receiving less rain (Figure 5.2). Average rainfall in south-eastern Australia over the past twenty years has been six per cent lower than the average rainfall over the twentieth century. This drying is the most sustained large-scale change in rainfall since national records began in 1900 (Bureau of Meteorology, 2020b). Continued warming will likely disrupt the state's rainfall patterns.

The exact implications of this disruption for key NSW water catchments over the next 50 years are unclear (NSW Department of Planning Industry and Environment, 2020b). But unless action is taken, the combination of growing water demand and natural rainfall variability makes water shortages increasingly likely.

Recent Sydney water consumption has exceeded what was projected even under a high use scenario at the time of the 2017 Metropolitan Water Plan. If we continue with these water consumption patterns, use will exceed supply far earlier than implied by the 'business as usual' scenario in the 2017 Metropolitan Water Plan (Figure 5.3).

FIGURE 5.3: SYDNEY RISKS RUNNING OUT OF WATER



Source: Adapted from the 2017 Metropolitan Water Plan, NSW Department of Planning, Industry and Environment (2017).

For these reasons, Infrastructure Australia's 2020 Priority Infrastructure Report identified water security as a top priority (Infrastructure Australia, 2020).

An expected increase in the frequency and magnitude of extreme weather events is also likely to heighten risks for other aspects of water management. More frequent storms will present a challenge for stormwater and flood management. Bushfires too, when combined with heavy rain, can threaten the quality of drinking water in our catchments, as experienced in Bega Valley Shire in February 2020. Stakeholders identified many such potential challenges for water supply and management.[1]

While we deal with population and climate challenges, we will also need to deal with our existing infrastructure. Parts of the state's water infrastructure are very old and will require major investment (City of Sydney, 2012).

This combination of fast-growing population, changing climate and ageing infrastructure will test the water sector's ability to meet the evolving water needs of New South Wales. Policymakers need to respond to these challenges to ensure our water services continue to support the State's productivity growth and that New South Wales continues to be an attractive place to live and do business.

This paper considers five opportunities for government to act, as identified by stakeholders:

- Improve water governance and planning (section 5.3).
- Unlock efficiencies and opportunities through coordination and collaboration (section 5.4).
- Address the barriers to using new water sources (section 5.5).
- Improve the performance of local water utilities (section 5.6).
- Keep improving efficiency in our day-to-day water usage (section 5.7).

[1] Sydney Water said in its submission: 'In the context of climate change, new public health (and productivity) threats are emerging. They include increasing urban heat, heightened flood risk and water quality impacts.'

5.3 Improve water governance and planning

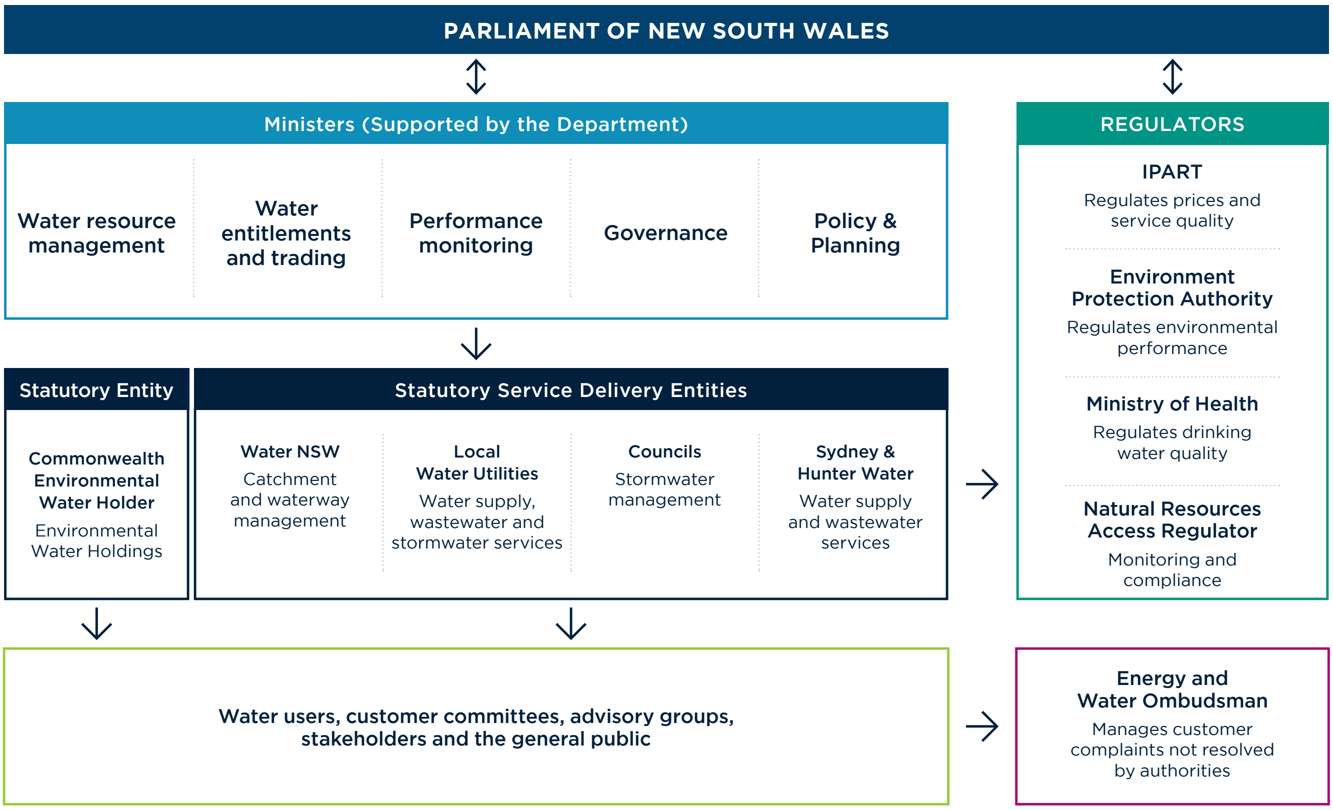
Decisions that the water sector makes today will shape the provision of NSW water services for decades into the future. The sector relies on a vast infrastructure network, some of it very old. And the whole system is challenged by population growth and the rising variability of supply. Good long-term infrastructure decisions are critical to service and financial outcomes.

The characteristics of the water sector make long-run decision-making particularly challenging.

The water sector is expected to deliver an array of social, environmental, and economic outcomes that in many cases can conflict with each other. Its functions are spread across many agencies and corporations in all three levels of government, creating coordination challenges (Figure 5.4).

The NSW Productivity Commission Discussion Paper *Kickstarting the productivity conversation* said New South Wales needed strong planning and governance to meet the State's future water needs. Stakeholders echoed this theme in submissions and consultations.

FIGURE 5.4: THE NSW WATER SECTOR



Source: Adapted from Water for Victoria - Water Plan (Victorian Government, 2016).

> “A fast-growing population, changing climate and ageing infrastructure will test the water sector’s ability to meet our needs into the future

The NSW water sector needs a clear plan to meet the coming challenges

The NSW Government's water plans have served the sector well over the years and been responsive to challenges as they have arisen. Sydney Water's submission noted that the Government's Metropolitan Water Plans have provided a good foundation for supply and demand planning and drought response since the Millennium Drought of 1997 to 2009. But a range of submissions, including those from the Independent Pricing and Regulatory Tribunal (IPART) and OneWater, argued that strategic planning can be improved.

Stakeholders emphasised the need for a state-wide vision that clearly articulates the Government's long-term economic, environmental and social objectives for the water sector. There was general support for the Government's existing commitments to produce a state water strategy and regional water strategies for all catchments, made in response to the Infrastructure NSW (INSW) 2018 State Infrastructure Strategy (Infrastructure NSW, 2018).[2]

Stakeholders also highlighted other characteristics that would improve efficiency and enable long term planning and investment in the water sector:

1. **Water planning would benefit from a broader scope.** While previous planning has focused on ensuring a reliable and high-quality supply of water through periods of drought, stakeholders including Sydney Water noted the importance of considering wastewater, stormwater, water supply and general waterway health together.
2. **Water planning can be more consultative and collaborative.** While central water planners are in a good place to make high level decisions, these decisions need to be informed by the expertise and on-the ground knowledge of utilities, regulators, and the community.[3] Collaboration helps to produce productive policy and avoid conflicts in outcomes—for example, between economic and environmental outcomes.
3. Objectives for the water sector and the plan for achieving them should be **aligned and consistent with related government objectives**, such as the state's land use planning objectives. Land use and water planning are interdependent.[4] For example, the objectives of a land use plan for green spaces depend on water. The Victorian Government's 'how to guide' to assist cities and towns in planning for green-blue infrastructure illustrates these interdependencies (Figure 5.5).

[2] An example was the Local Government New South Wales submission, which voiced the hope that a state water strategy 'will drive action to overcome a number of barriers, especially prescriptive and conflicting regulatory requirements and unclear roles and responsibilities for water management'.

[3] For an example, see the Sydney Water submission: 'We strongly support a whole-of-government approach that can bring together organisations with the appropriate expertise required for effective planning.'

[4] This was recognised by Sydney Water's submission: 'Governments and utilities can also realise more benefits from integrating infrastructure and land use planning by collaborating more deeply with Councils and working with planners to see place objectives embedded into land use planning instruments.'

FIGURE 5.5: LAND AND WATER USED PLANNING ARE INTERTWINED

Green-Blue Infrastructure Planning	
Landscape Planning	Water Planning
Open Space Strategy	Sustainable Water Use Plan
Urban Forest Strategy	Integrated Water Management Strategy
Biodiversity Strategy	Flood Studies
Environmental Strategy	Stormwater Management Plan

Source: Victorian Department of Environment, Land, Water and Planning (2017).

4. Plans should **consider a range of scenarios,** informed by supply and demand estimates. Some stakeholders referred to the Victorian Government's partnership with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in modelling long-term hydroclimate projections as a good step in this respect (Potter et al., 2016).
5. Planning should **factor in ongoing monitoring against objectives and be adaptable** so that the organisations and agencies involved are accountable and the sector can respond to changes in circumstances, new information and take advantage of new technologies.
6. Finally, stakeholders including IPART and Local Government NSW recommended that the NSW Government set out an **improved process for infrastructure investment decision-making** that is transparent and does not preclude any options. Chapter 6 highlights the need for improved infrastructure decision-making more broadly.

Victoria, for instance, has a clear strategic state-wide plan, Water for Victoria. Stakeholders commend that plan for its long-term vision, whole-of-government approach, inclusivity (for example, of the Aboriginal community's traditional relationship with water), and its monitoring of progress in subsequent reports.

Draft recommendation 5.1:
Set a vision and a plan for water

Outline the long-term vision for the whole water sector (including rural water, wastewater, stormwater, flood management) and develop a plan to meet the challenges facing the sector.

Set out clearer roles and responsibilities for water

For the water sector to be able to deliver the objectives laid out in strategic plans as efficiently as possible, the function of each institution should be clear. Clear roles and responsibilities make it easier for each to ensure its own operations meet higher-level strategic objectives and make it possible to hold institutions accountable for meeting their objectives.

One challenge for the water sector is that objectives can evolve over time in line with government priorities and in some cases these priorities can conflict with the formal responsibilities (see Case Study 5.2 for an example). IPART's submission stressed the need to clearly define and fund the non-commercial objectives or requirements that the Government imposes on state-owned water utilities.

Changes to the structure of the sector over recent years have also led to confusion about responsibilities. For instance, stakeholders noted that the creation of Water NSW left an unclear division of licensing responsibility between the new corporation and the water functions of the Department of Planning, Industry and Environment (DPIE).

Stakeholders also argued that more clearly specified responsibilities and priorities would drive efficiency improvements. For example, Water NSW's many statutory responsibilities include the very broad and vague duty of 'ensuring that declared catchment areas ... are managed and protected'. When governments struggle to define or measure responsibilities, as in this case, they often struggle to drive efficiency and performance.

IPART has also argued for Government to be 'more active in driving performance and efficiency gains, as shareholders are in privately-owned firms'.

With any change to roles and responsibilities is likely to come changes to funding needs. The Commonwealth Productivity Commission has highlighted the challenge of funding 'integrated water cycle management' projects that deliver multiple outcomes (Commonwealth Productivity Commission, 2020b). For example, it may not be appropriate to charge Sydney Water's broader customer base to fund projects that do not directly relate to provision of water and wastewater services to households and businesses. Any change in roles and responsibilities should be accompanied by clearly defined sources of funding.

'Statements of Expectations', issued by the Minister for Water, would be one way to transparently communicate a formal set of priorities to state-owned corporations, including those that are not legislated. While this statement would not override legislated responsibilities or allocate additional funding, it would make it easier for the state-owned corporations to plan strategically and determine what additional funding might be required through the Budget. Victoria's Minister for Water has used this method to outline the priorities for Victoria's water corporations (Department of Environment Land Water and Planning, 2017).

Draft recommendation 5.2
Issue Statements of Expectations

Issue Statements of Expectations to state-owned water corporations to provide clear guidance on the Government's plans and direction.

5.4 Unlock efficiencies and opportunities through coordination and collaboration

In the somewhat fragmented water sector, all players must work together more closely—water corporations, catchment management authorities, water policy agencies and local government.

The separation of responsibilities can avoid conflicts of interest in fields such as regulation and drive efficiency benefits (for example, when water utilities specialise geographically by covering different catchment areas).

But the same division of responsibilities can also create challenges, especially because many water responsibilities are interrelated. For example, the Audit Office of New South Wales recently highlighted that water conservation responsibilities are unclearly distributed between DPIE and Sydney Water; and this restricted the planning and implementation of water conservation (Audit Office of New South Wales, 2020b). Stormwater management and wastewater treatment are divided across multiple institutions, meaning that no individual body or person can be held fully accountable for waterways' health. Fragmented governance makes the health of our waterways more difficult to maintain as the stresses on them grow (see Case Study 5.1).

Case Study 5.1: Sydney's stormwater

Stakeholders highlighted fragmentation as a constraint on water management in Greater Sydney.

The way stormwater is captured and managed has implications for a range of broader water sector objectives, including waterway health and flood management. With appropriate treatment, stormwater can also be a valuable water resource.

Currently, however, while stormwater responsibilities are divided between councils, the other objectives are the responsibility of government agencies and state-owned corporations. This makes it harder to coordinate the various parts of the water sector to achieve the best outcomes for the community more broadly. The benefits of stormwater capture, for example, may accrue to downstream communities (for example, by reducing pollution or flood risk), but the costs are incurred by councils upstream, reducing the likelihood of beneficial investments going ahead.

In its submission, Sydney Water describes 'an absence of strong governance and integrated management of stormwater and waterways.' Better coordination would address these issues.

Better coordinated governance would also help the water sector identify and realise economies of scope. While there can be economic benefits from specialisation, a siloed approach tends to miss or fail to fully achieve efficiencies relying on co-operation between multiple organisations. Regional water utilities benefit from the vertical integration of water supply, wastewater and stormwater but are fragmented geographically by local government borders.

Recent changes within the NSW Government have reduced fragmentation and improved coordination by bringing all policymaking and water-related planning teams into DPIE. DPIE has also recognised the need for greater coordination and initiated an informal coordinating body, led by the Chief Executive Officer for water in DPIE, to help resolve gaps and overlaps in the governance of the sector and achieve economies of scope.

The informal coordinating body will rely on the goodwill of the participants. It sets the direction for future water governance changes that may work better as priorities change over time.

One proposal raised during the consultation process was that catchment managers be established and given responsibility for the health of entire waterways, both within Greater Sydney and elsewhere in the State.

Case Study 5.2: Solving Western Parkland City's water challenges

The growing role of water in promoting the liveability of communities such as the Western Parkland City exemplifies the tension between Government priorities and formal responsibilities. It also points to a possible solution.

Sydney Water has a statutory responsibility to protect public health by supplying safe drinking water, to protect the environment, and to be a 'successful business'. It is answerable to shareholder Ministers (the Treasurer and the Minister for Finance) on these objectives.

At the same time, there are expectations that Sydney Water will contribute to other policy priorities of the Minister for Water. One is that it will supply recycled water to support significant green spaces envisaged for the Western Parkland City in the *Metropolis of Three Cities* – the Greater Sydney Region Plan (Greater Sydney Commission, 2018).

The Government has sought to solve this coordination problem by creating a business case for integrated land use and water planning across the South Creek catchment. It is now also investigating coordination and co-location of infrastructure for utilities including electricity, water, gas and telecommunications.

This integrated approach is being adopted in other cities around the world and may prove useful in other parts of Sydney and the state.

A shift to catchment level management, perhaps through a formalised collaboration arrangement or joint organisation, could generate efficiencies and improve environmental outcomes. In Greater Sydney, Sydney Water's oversight of stormwater management could be increased, either by subsuming councils' responsibilities for stormwater (and associated funding) completely, or in a coordinating role.

Catchment level responsibility for water planning, management, investment, land-use and service provision would … provide a consistent platform for greater economies of scale and enable more efficient resource sharing and investment.

Public Interest Advocacy Centre submission

Draft recommendation 5.3:
Address fragmentation in NSW water services

Bring together leaders from all key NSW water sector organisations to coordinate and deliver the vision outlined in the planned state water strategy.

Identify more permanent governance measures to solve the fragmentation of water responsibilities across New South Wales.

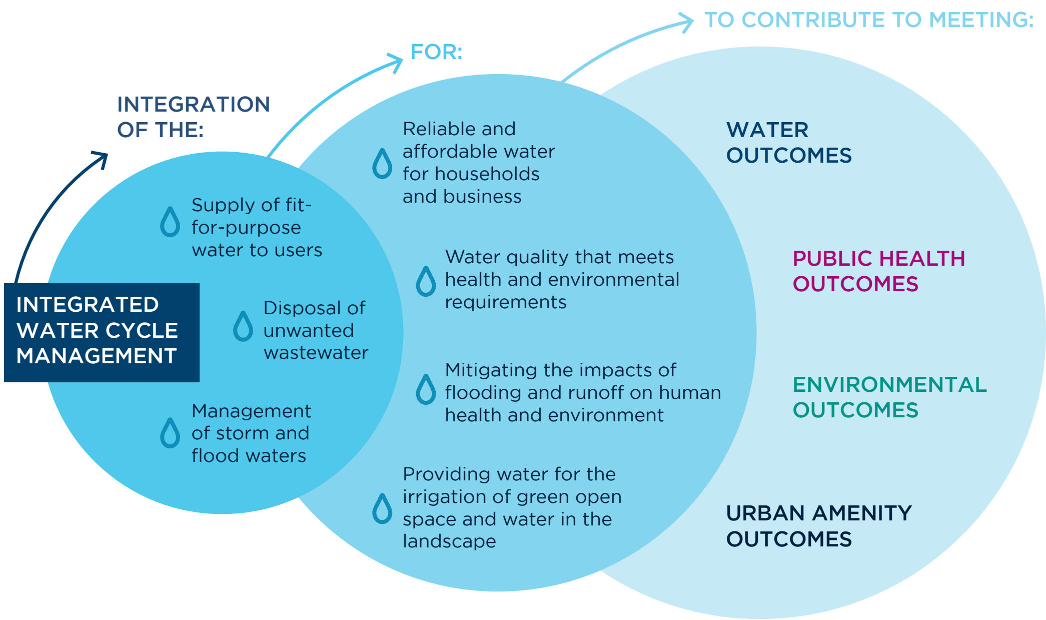
Draw on the experience of the INSW South Creek Sector Review to identify other areas in New South Wales that would benefit from integrated land use and water planning.

5.5 Address the barriers to using new water sources

As water management grows more challenging, water policymakers and service providers broadly agree we should take a more integrated approach to water management. In other words, we should treat water supply, wastewater and stormwater services as interrelated tasks.

Under this approach, known as Integrated Water Cycle Management (IWCM), wastewater and stormwater become resources that we can reuse (Figure 5.6).

FIGURE 5.6: INTEGRATED WATER CYCLE MANAGEMENT AIMS FOR SEVERAL OUTCOMES



Source: Commonwealth Productivity Commission (Commonwealth Productivity Commission, 2020b).

Benefits of this approach include:

- delaying or avoiding expensive infrastructure upgrades and network expansions, cutting costs and customer prices
- improving environmental outcomes by discharging less wastewater
- increasing resilience to dips in rainfall
- providing access to rainfall-independent water where sea water desalination is technically challenging.

Many of these benefits were recognised in submissions by stakeholders such as Sydney Water and Western Sydney's councils.[5]

Water recycling has grown more affordable and feasible

Several NSW communities—including Greater Sydney—will need new water sources and significant upgrades to wastewater networks if they are to meet the needs of growing populations and the 'greening' priorities of local governments, the Greater Sydney Commission and the State Government.[6]

Advances in treatment and purification technology have made recycling water a more affordable, technically feasible and safe solution. New South Wales already takes advantage of this. Several communities—including Greater Sydney— indirectly reuse water (see Box 5.1). It would be prohibitively expensive to pump treated wastewater from the Southern Highlands to the ocean, for example. Instead, this wastewater is purified and discharged back into the Wingecarribee River. It then flows into Warragamba Dam, both saving the cost of transporting the water and contributing to Sydney's water supply.

As Greater Sydney grows, it can reap significant benefits from more water recycling. The city will need new sources of water and significant upgrades to the wastewater network to meet the needs of its growing population. The high costs of expanding surface water or desalination capacity to meet demand will likely make water recycling a more important part of the portfolio.

An early review suggests an IWCM approach to delivering the Western Parkland City has the potential to deliver greater benefits than a traditional approach for a similar cost (Commonwealth Productivity Commission, 2020b). Some of these benefits include reducing the cost of providing public open space, creating greater density, unlocking new ways to manage stormwater and floodwater, and delaying the need for major water supply infrastructure upgrades.

Remove barriers to unlock the benefits of integrated water management

Stakeholders noted that uptake of water reuse has slowed in recent years, despite widespread recognition of its benefits. Sydney actually produced less recycled water in 2018-19 than in 2012-13, while Melbourne's production has risen by more than 50 per cent (Bureau of Meteorology, 2020b).

[5] Sydney Water reported in its submission: 'Emerging capacity constraints in Sydney's key wastewater assets provide a strong planning and financial incentive to consider recycling as a wastewater management tool, as well as a water supply solution.'

[6] 'Greening' refers to increasing the vegetation in an urban environment; for example, increasing the number of trees on city streets or allowing for parks and reserves in new suburbs.

Box 5.1: Types of water recycling

Non-potable reuse schemes involve treating and distributing water for purposes, such as flushing the toilet or watering the garden, where it is not safe to drink—that is, not potable. This requires a separate pipe network.

Direct potable reuse involves purifying stormwater or wastewater to drinking quality and redistributing it through the water network.

Indirect potable reuse involves releasing treated water into an 'environmental buffer', such as a river or underground aquifer, before re-extracting and treating the water for drinking. Currently there are no intentional indirect potable schemes in the state. Indirect potable reuse does occur when treated wastewater is released into river systems that feed other water supplies.[7]

Water can be recycled through **centralised** infrastructure (large scale treatment and filtration plants), or through **decentralised** infrastructure to service a smaller community such as a large apartment building.

Some reuse of water for drinking purposes does occur (see Box 5.1). But most recycled water in New South Wales is used for non-drinking purposes. In 2018-19 Sydney Water provided customers with 44 billion litres of recycled water for non-drinking purposes, around 10 per cent of wastewater collected. Private operators, such as golf courses and commercial building operators, supplied around 1 billion litres for non-potable purposes (Sydney Water, 2019).

Following a report commissioned by INSW into barriers to recycling, some of the impediments to the uptake of cost-effective water recycling have been addressed (Frontier Economics, 2019). But as set out in Table 5.1, several barriers remain.

TABLE 5.1: PROGRESS IN REMOVING BARRIERS TO INTEGRATED WATER MANAGEMENT

Barrier	Progress
Negative public perception	There has not been any large-scale public engagement on the water cycle.
Fragmented responsibilities across the water cycle	Coordination in early stages of planning the South Creek catchment area (covering the bulk of the planned 'Western Parkland City').
Unclear objectives for state-owned corporations	Increased coordination between land use planning and water planning in the South Creek catchment could be used as a model for other parts of the state.
Zero developer charges favour traditional infrastructure solutions	The Minister for Planning and Public Spaces has commissioned a review into developer contributions, led by the NSW Productivity Commission.
Wastewater pricing not reflecting long-run capacity constraints	IPART's *Review of Prices for Sydney Water – Draft Report* estimated long-run marginal costs for several Sydney Water wastewater catchments.

Source: NSW Treasury.

[7] For example, towns in the Southern Highlands and Blue Mountains release purified wastewater into the river systems that feed into Sydney's water supply and Penrith releases treated water into the Hawkesbury-Nepean river system that is then used to supply North Richmond.

Wastewater services pricing

One barrier to greater reuse is the way we price wastewater services. Water reuse can postpone the need to upgrade wastewater infrastructure—for example, by reducing the amount of wastewater that needs to be transported to the coast. As Greater Sydney grows, a traditional approach to water management would require that some of Sydney Water's twenty-seven wastewater networks be upgraded at significant cost to manage the increased demand.

But unlike potable water pricing, wastewater user charges do not reflect the cost of such upgrades, or other long-run capital costs. Prices are based on the estimated short-run marginal cost of transporting and treating the sewage.

IPART has encouraged Sydney Water to estimate long-run marginal costs for each of its wastewater catchments, incorporating long-term capital costs as it does for potable water. This would help to value the benefits of water reuse schemes and improve their viability (Independent Pricing and Regulatory Tribunal, 2020b).

Draft recommendation 5.4:
Improve wastewater pricing

Sydney Water should continue to work with the Independent Pricing and Regulatory Tribunal of New South Wales to estimate long-run marginal costs for its wastewater catchment areas and consider implications for pricing.

Developer charges

Developers are often levied for recycled water schemes but not levied for traditional water and wastewater servicing. The Public Interest Advocacy Centre submission argued that this cuts developers' incentive to invest in 'decentralised' integrated water management infrastructure. IPART said both efficiency and equity arguments favoured cost-reflective developer charges.

Since releasing the Discussion Paper, the NSW Productivity Commission has been commissioned by the Government to undertake a comprehensive review into the current infrastructure contributions system and report back in late 2020. The review will examine the performance of existing arrangements for developer charges, consult with key stakeholders and provide recommendations for reform.

Will the community accept this alternative water source?

Perhaps the most significant barrier identified by stakeholders is the public perception of drinking recycled water.

This is commonly referred to as the 'yuck factor'. People are generally comfortable with using recycled water for watering their gardens and cleaning their cars, but can initially be far less accepting of drinking or bathing in recycled wastewater.[8] This is notwithstanding the fact most children learn in school, that water is, ultimately, endlessly recycled by nature.

[8] Australian Academy of Technology and Engineering submission: 'Public acceptance of wastewater reuse is generally low and perceptions of low purity of such water will need to be overcome through public information and education.'

Among different types of recycling, there is a trade-off between the degree of public acceptance and the cost. Non-potable or 'third pipe' recycling (see Box 5.1), for example, circumvents community concerns by creating separate supplies for drinking water and non-drinking water. While this option has been used in new developments such as Rouse Hill, it is more costly and not practical in established areas.

Distributing purified recycled water through the existing water infrastructure for drinking as well as other uses is a more efficient option than third pipe recycling. It presents no additional health risks and avoids the cost of a whole new reticulation system to deal with what is fundamentally an image problem.[9] Recycled water is accepted and used for drinking in many jurisdictions. And as noted above, many NSW water users drink recycled water already, though they may not be aware of doing so.

The challenge is to win community support for purified recycled water. That is best done by engaging with the community to gather feedback on how to encourage social acceptance and inform them on the facts. Winning that support brings significant long-run payoffs.

Case Study 5.3: How Toowoomba got engagement wrong

Toowoomba is Australia's best-known example of how a public engagement campaign on recycled water can go astray.

Faced with a critical water supply shortage, Toowoomba City Council held a rushed public engagement. A referendum on introducing a wastewater recycling system quickly followed. Residents voted convincingly against the system, requiring the construction of a pipeline with a capital cost $100 million more than the estimated cost of the proposed recycling scheme (Commonwealth Productivity Commission, 2011).

A subsequent study suggested that the rushed nature of the referendum played a major role in the rejection of the recycled water scheme (Dolnicar & Hurlimann, 2010).

The key lesson from Toowoomba is that governments should not wait until the onset of a water security crisis to start engaging with the public. If they do, they can undermine the case for recycling as a cost-effective water supply option.

Stakeholders argued that resistance to recycled water will diminish as people engage with decision-makers and learn more about recycling.[10] Box 5.2 provides more information about what we can learn from recycling journeys elsewhere.

[9] Health regulations are not an explicit barrier in this respect as NSW Health advises that recycled water is currently permitted as long it is found to meet the Australian Drinking Water Guidelines.

[10] A Water Services Association survey found that 68 per cent of Sydney respondents wanted to know more about water recycling.

Box 5.2: Six things we can learn from other places

- **Large cities can do this.** Today more than 35 cities around the world rely on recycled drinking water, including Perth, Singapore, London and Los Angeles.
- **It needs trust and understanding.** Public knowledge of the urban water cycle and of the challenges of resilience and sustainability are important. Trust in institutions and a belief in the technology that will deliver the reuse service is critical. International experience shows that demonstration and experience centres encourage public participation and education and help determine success.
- **It takes time.** Perth's current indirect potable scheme took 13 years to plan and deliver. That contrasts with Toowoomba, which rushed its decision making and limited its engagement program and public debate to just three months.
- **Language can have an impact.** The term 'wastewater' is acceptable, while any reference to 'sewage' will be very off-putting. Damaging media headlines such as 'toilet to tap' can undermine a proposal.
- **Political leadership makes a difference.** Engagement across the full political spectrum, to gain and keep support, is critical.
- **Regulators play a powerful role.** Regulators, as the risk managers, can lead government and community perception and have the authority to determine that purified recycled water can safely proceed.

Draft recommendation 5.5:
Engage on water recycling

Coordinate with state-owned water corporations to develop and implement a public engagement program for recycled water. Explore the establishment of a Demonstration Plant in Sydney to help people understand the water cycle.

5.6 Improve the performance of local water utilities in the regions

Local water utilities (LWUs) provide water services to regional New South Wales. Some 92 LWUs serve more than 1.8 million people. Local councils run the majority of them.

Unlike metropolitan utilities, these LWUs have a wide-ranging set of responsibilities, including planning, bulk water supply, infrastructure delivery and maintenance and the provision of water, wastewater and stormwater services. This business model brings both benefits, including the ability to take an 'integrated' approach to water management (see section 5.5), and challenges.

Operational scale poses a problem to many LWUs. They often provide water services to small populations spread out across vast and often dry stretches of New South Wales; more than half have fewer than 5,000 connections. A lack of scale can add significant costs for each customer.

Compounding these challenges, many LWUs struggle to attract and retain the skilled staff they need, due to their relatively remote locations. Several government and consumer groups highlighted issues around the capabilities of LWUs to adequately manage water supply security, drinking water quality and environmental risks.

Many of the local councils in regional NSW have the responsibility, but not the expertise, financial resources or capability to undertake the assessments, planning, investment and management that is required to facilitate sustainable and secure access to water.

Public Interest Advocacy Centre submission

The current drought has exacerbated the challenge for LWUs, some of which have recently experienced serious water security and quality issues. Recent community-wide 'boil water' alerts in regional areas demonstrate these deficiencies.

Many LWUs also serve low-income communities. This, combined with significant operating challenges, means that utilities can struggle to independently fund services that meet health, environmental, and social objectives. For this reason, the NSW Government provides some funding through infrastructure grants to help utilities meet these objectives. We next discuss issues with this funding model.

Fund LWUs more sustainably and efficiently

LWUs receive grant funding from the NSW Government through the Safe and Secure Water Program. This program, managed by DPIE, provides grants for infrastructure projects prioritised based on risks to water safety and security.

This funding model may discourage utilities from operating efficiently. Risk-based funding gives LWUs incentives to avoid charging for the costs of infrastructure maintenance and replacement—and possibly even to hold off on replacing infrastructure, in the hope of securing grant subsidies (Commonwealth Productivity Commission, 2017a).

There is evidence of under-pricing, consistent with these incentives. The National Water Initiative (NWI) agreement requires that utilities charge for 'lower bound' full-cost recovery, allowing for future asset refurbishment and replacement. The Commonwealth Productivity Commission found in 2017 that some LWUs in New South Wales have been persistently pricing below this minimum level (Commonwealth Productivity Commission, 2017a).

The Commonwealth Productivity Commission also found that where grant funding is tied to infrastructure projects and not necessarily directed to subsidise communities with the least ability to pay, it does not conform to the NWI's concept of Community Service Obligations (CSOs).

A system of transparent and needs-based CSOs would be a more efficient and fair way to allocate state funding. Some parts of the state will always have higher costs, even if their water services are run very efficiently. Some communities will have lower capacity to pay due to socioeconomic factors. A CSO payment on this basis would bridge the gap between the assessed cost of running the utility and the community's ability to pay.

A needs-based CSO funding model would have broader benefits to LWUs. For example, it would:

- account for operational and capital expenditure needs, including the cost of attracting and retaining skilled personnel
- provide a more stable and predictable level of government support from year to year.

Local Government NSW's submission supported the introduction of a CSO-based funding model.

If all NSW communities are to have equitable access to town water of suitable quality, it must be acknowledged and accepted that, for some communities, delivering these services on a full cost recovery basis is not feasible (nor equitable). And in these instances, a transparent operating subsidy arrangement, or Community Service Obligation, is required, as recommended by the Productivity Commission.

Local Government NSW submission

The transition to a model of self-funded capital expenditure is likely to be challenging for some councils, especially given the backlog of regional water infrastructure projects. To aid a transition to debt-financed infrastructure, the State Government could subsidise interest on loans with a scheme akin to the existing Low-Cost Loans Initiative. LWUs could then move to independent debt financing once financially and operationally sound. For infrastructure that has a positive environmental impact, sustainability bonds—issued in cooperation with the Treasury Corporation—may present an opportunity to access new funding markets.

Finding economies of scale in water

Stakeholders suggested that reform to the structure of the regional urban water sector could also deliver significant improvements in operating and financial performance, as achieved by Victoria's amalgamations to 13 LWUs in the 1990s. The feasibility and benefits of this kind of structural reform have been longstanding issues within government. The 2008 Armstrong-Gellatly report recommended restructuring to achieve economies of scale and improve service delivery efficiency (Armstrong & Gellatly, 2008). Specifically, LWUs should be aggregated into regional groups that could take the form of a binding alliance or a council-owned regional water corporation.

One challenge highlighted by Local Government NSW is that the geography and hydrology in New South Wales are very different to Victoria's, so that the costs of operating water utilities in many areas will be high regardless of operational structure. Further, the amalgamation of some water functions but not others could create a barrier to integrated water cycle management.

There may be alternatives to amalgamation that capture some of the benefits from increased scale. Collaboration between councils can achieve some of the same benefits as amalgamation, while addressing some of the related concerns raised by councils (Table 5.2). Given around half of smaller LWUs (with fewer than 10,000 connections) continue to operate independently, there is potential to gain the benefits of size with further collaboration. The Central NSW Regional Organisation of Councils (CENTROC) Water Utilities Alliance is one example of a successful collaboration (Box 5.3).

Box 5.3: CENTROC Water Utilities Alliance

CENTROC Water Utilities Alliance is a voluntary regional collaboration of 11 council water utilities in central New South Wales. The Alliance represents over 157,000 people in an area of more than 47,000 square kilometres.

Services are delivered independently, with joint operations undertaken cooperatively, reducing operational costs for member councils and building technical capacity. These collaborative arrangements allow the local governments to deliver services more efficiently. For example, shared procurement of operation and maintenance services is estimated to have saved the CENTROC alliance over $700,000 since its inception (CENTROC, 2017).

TABLE 5.2: POSSIBLE MODELS FOR LOCAL WATER UTILITIES

Model	Ownership	Governance	Pros	Cons
Independent local government provision (status quo)	Councils	Utilities controlled by local government	Economies of scope	Small scale increases individual user charges Capability gaps
Bilateral collaboration	Councils	Services delivered independently, with collaboration on a 'fee-for-service' basis	Economies of scope maintained Improved economies of scale from skill sharing	Limited degree of integration may mean some barriers remain to achieving scale economies
Alliance	Councils	Services delivered independently, but joint operations undertaken cooperatively	Economies of scope maintained and potentially improved through whole-of-catchment coordination Improved economies of scale, efficiency and capability from knowledge sharing, joint planning, joint procurement and shared services	Maintaining separate operations may mean some barriers remain to achieving scale economies
Joint organisation	Councils, through a common legal entity	Services delivered independently, but with joint operational support	Economies of scope maintained and potentially improved through whole-of catchment management Improved economies of scale, efficiency & capability from integrated operations (knowledge sharing, joint planning, joint procurement and shared services)	Maintaining council ownership may mean some barriers remain to achieving scale economies

Draft recommendation 5.6:
Assess alternatives for local water utilities

Identify and assess alternative models to help local water utilities meet quality and reliability standards.

5.7 Keep improving efficiency in our day-to-day water usage

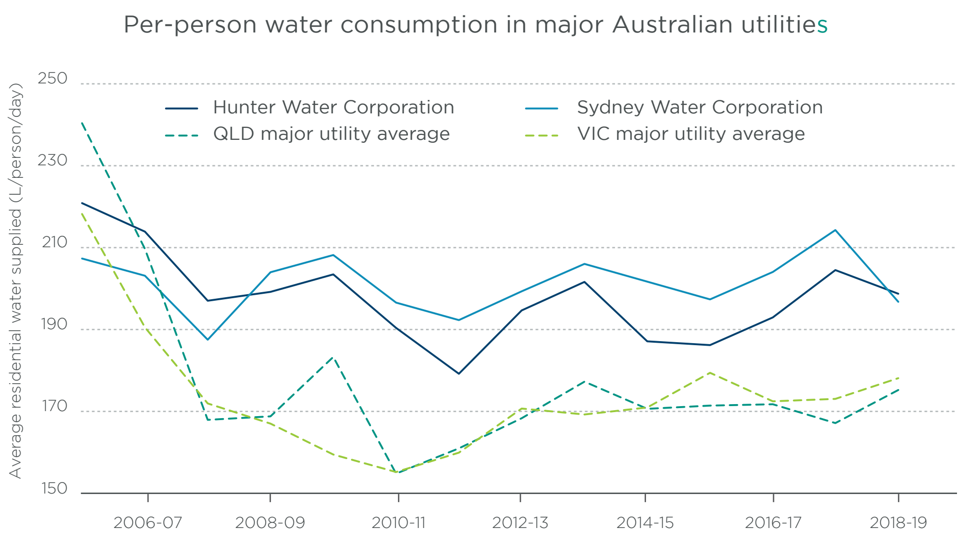
Demand management and water efficiency campaigns help to ensure water remains available for its most productive uses, such as for drinking and to delay or prevent costly supply augmentations. New South Wales currently uses:

- mandatory water restrictions limiting the permitted uses of water when supply levels fall below certain thresholds
- campaigns to influence consumer behaviour, such as promoting '4-minute showers'
- subsidies to fix leaks or install water-saving fittings
- schemes that provide monetary incentives to install water-efficient technologies and systems, such as the Building Sustainability Index (BASIX)
- policies to minimise network leakage, including investigating new technologies that may reduce the cost of detecting and repairing leaks
- from July this year, Sydney Water will use high user charges to reduce demand during times of low water supply.

After the peak of the Millennium Drought, a combination of these measures continued driving long-term behavioural changes in Greater Sydney, reducing per-person water use by a quarter between 2003 and 2010. Even so, NSW households reduced their usage less than other east coast cities over this period and usage remains comparatively high (Figure 5.7).[11]

One likely factor in this high usage is that usage charges in New South Wales are on average lower than in Victoria and Queensland. When water is plentiful, these lower water prices help households and businesses. But when rainfall naturally drops, these same lower prices increase the risk of water shortages (Ian Wright, 2019).

FIGURE 5.7: SYDNEY AND HUNTER RESIDENTS USE MORE WATER THAN THEIR INTERSTATE COUNTERPARTS



Source: Bureau of Meteorology (2020a).

[11] Sydney Water submission: 'During the Millennium drought, many jurisdictions ran highly effective water conservation and efficiency campaigns. While some water saving behaviours and technologies have been maintained by customers, new approaches to efficiency are now needed.'

Innovative pricing approaches may help our economy

Authorities often use water restrictions to control water use during drought. But this technique costs the community more than other methods.

Many studies have shown that there are economic costs when governments step in to dictate how water should be used during short-term shortages. For example, two leading Australian resource economists have estimated that mandatory water restrictions in 2004-05 cost Sydney residents about $150 per household compared to a 'dynamic pricing' technique (Grafton & Ward, 2008).

IPART has recently taken steps towards more dynamic pricing to reduce our reliance on such restrictions. In its decision on Sydney Water's pricing from July 2020, IPART incorporated scarcity pricing into Sydney Water's allowed water usage charge model (Independent Pricing and Regulatory Tribunal, 2020b). A 36 per cent higher rate will now apply to water usage when water storage levels fall below 60 per cent.[12] This 'price signal' is expected to reduce demand by 4.7 per cent, but not entirely remove the need for restrictions.

This change in pricing is an opportunity to increase our understanding of the effects of water prices on household and business behaviour and guide future policy development. A common objection to flexible water pricing is that consumers tend to be fairly insensitive to changes in price. This means that very large charges could be needed to reduce consumption to the point that restrictions would no longer required (Grafton & Kompas, 2007). It will also be important to understand equity impacts, as lower-income households may be worse affected by high water prices. IPART notes that pricing could be made more flexible in future, particularly if the water industry shifts to 'smart' digital metering.

Draft recommendation 5.7:
Monitor and refine scarcity pricing

Monitor the effectiveness and efficiency of the new Sydney Water scarcity pricing model in managing demand and use this to guide water demand management policy.

Continue the drive for greater efficiency

New technologies and water systems, such as water-efficient shower heads and toilets, allow household and business to undertake the same activities with less water. In New South Wales, the BASIX scheme sets water (and energy) efficiency targets to incentivise the adoption of these technologies.

BASIX overall has been beneficial for the NSW economy. A post-implementation cost-benefit analysis in 2010 estimated that the net benefit to the State was $255 million to $1.1 billion (Kemp et al., 2010). Most of the benefits accrue through reduced energy and water bills, although the energy measures are estimated to have additional broader network and environmental benefits.

[12] The base price would then not be reapplied until water storage levels reached 70 per cent again.

To ensure that BASIX remains fit-for-purpose, it should be comprehensively reviewed. Some stakeholders suggested that there is scope to increase the BASIX water efficiency targets as a way of reducing water demand.[13] While this could be considered, a review should also identify inefficiencies in the regulation and the availability of other alternative measures.

First, while BASIX overall has been assessed as beneficial, there is evidence that some elements of the scheme are inefficient. The Commonwealth Productivity Commission has been particularly critical of water efficiency measures. Rainwater tanks, which contribute significantly to the BASIX water efficiency rating, have been shown to be a very expensive and ineffective way of reducing usage and achieving stormwater run-off objectives (Commonwealth Productivity Commission, 2020b). Likewise, the effective cost of water savings from other fittings and appliances is generally higher than the value of the water saved (Commonwealth Productivity Commission, 2011).

Second, we are now 16 years on from the introduction of BASIX and thinking about how to best manage water has progressed. For example, an integrated approach to managing water may meet some of the policy objectives of the BASIX water efficiency targets at lower cost to the community.

A more granular review of BASIX would:

- separately assess the water and energy components of BASIX, as well as the key technologies used to meet targets
- identify where BASIX can be made more responsive to new water and energy-saving technologies
- survey the range of alternative policy measures available to meet the same objectives to ensure that BASIX is still the most appropriate.

Draft recommendation 5.8:

Review and redesign NSW's Building Sustainability Index

Review NSW's Building Sustainability Index scheme to ensure it meets both environmental and economic objectives.

[13] City of Sydney submission: 'Because all the architecture (legislation, web-tool, online certificate generation etc.) that activates BASIX is in place, there is certainly good reason to consider using an existing framework to achieve additional productivity gains.'

5.8 The energy sector must evolve to remain cost-effective

Energy underpins economic activity and social welfare as an essential input to production and consumption. Australia has long enjoyed a competitive advantage in almost all sources of energy. The continent is endowed with substantial deposits of fossil fuels. Black and brown coal deposits have traditionally dominated domestic electricity generation and black coal has also been a major export. Onshore and offshore oil and natural gas reserves have also been substantially exploited, particularly since the Second World War.

Australia and the rest of the global community are recognising the need to mitigate climate impacts arising from the burning of fossil fuels. At the same time, the cost of renewable generation has fallen worldwide. This has buttressed Australia's existing competitive advantage in these energy sources; the nation has an abundance of sunshine, favourable wind conditions, and relatively cheap land outside its cities.

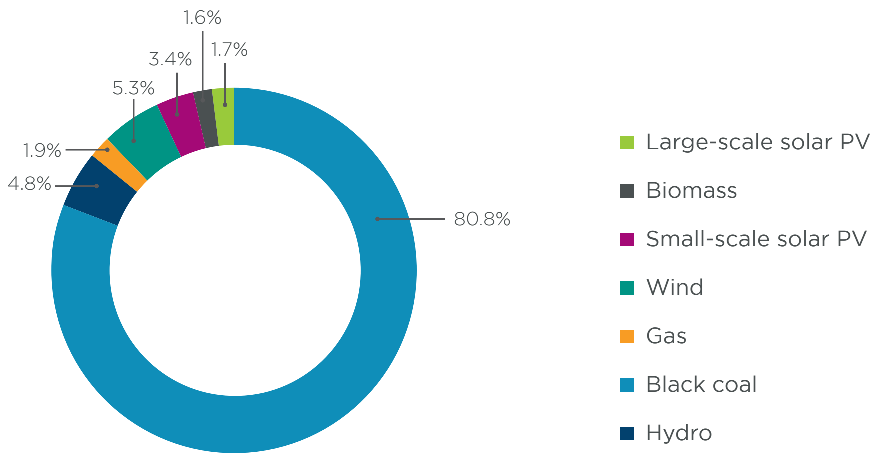
Electricity's new challenges

Electricity generation is NSW's largest energy sector. Coal power dominates, accounting for 80 per cent of electricity generated within our borders (Figure 5.8) (NSW Government, 2019).

While the state has substantial gas reserves, it relies heavily on natural gas and coal seam gas imported from Victoria, South Australia, and Queensland. These low-cost fossil fuels have also supported high living standards.

New South Wales is, however, also well positioned to transition to a low-carbon economy in line with the Government's commitment to net zero emissions by 2050.

FIGURE 5.8: NSW CURRENTLY RELIES ON COAL GENERATION



Source: NSW Electricity Strategy (NSW Government, 2019).

All this power is generated and sold to retailers and other wholesale electricity customers through the National Electricity Market (NEM; see Box 5.4).

Box 5.4: The National Electricity Market

The NEM is a wholesale market made up of Queensland, Victoria, South Australia, Tasmania, and the Australian Capital Territory (ACT). The NEM is governed by rules agreed by its members. It aims to promote efficient investment in electricity services and their efficient operation and use in the interests of consumers of electricity, with respect to:

- price, quality, safety and reliability and security of supply of electricity
- the reliability, safety and security of the national electricity system.

When the states and the ACT agreed to create the NEM in 1990, they also agreed to separate their generation, retail, transmission, and distribution elements. They also created:

- the **Australian Energy Market Commission** (AEMC), to make the rules and advise government on policy
- the **Australian Energy Market Operator** (AEMO), to operate the NEM
- the **Australian Energy Regulator** (AER), to regulate and enforce rules affecting the NEM.

The **Australian Competition and Consumer Commission** (ACCC) and **National Competition Council** (NCC) oversee a system that gives third parties access to the network.

Finally, in New South Wales **IPART** duplicates some of the functions of the national bodies, monitoring the retail market and network businesses, and enforcing standards for network businesses.

The injection into this market of renewable energy brings a new requirement—firming capacity—to ensure sufficient dispatchable energy when the sun does not shine and the wind does not blow.[14]

The State's most cost-effective source of generation going forward is a combination of renewables, battery technology, pumped hydro, and gas peaking capacity (NSW Government, 2019). Hydrogen is also a prospective form of storage for electrical energy, as highlighted by Case Study 5.4.

[14] Firming up supply means guaranteeing supply from other sources in the event of poor sun or wind generation or renewable energy.

Case Study 5.4: Hydrogen's potential

There is increasing global momentum for green hydrogen as a renewable fuel, particularly to power vehicles.[15] Australia has the energy resources, expertise, knowledge and infrastructure to create a green hydrogen industry that will boost fuel security, reduce emissions and generate export income. New South Wales, with its significant research and innovation capability and an established hydrogen-based industry, can play a leading global role in hydrogen storage, energy and transportation solutions.

An example of this innovation capability is H2Store, a hydrogen storage start-up developed in partnership with UNSW, Merlin (Materials Energy Research Laboratory in Nanoscale), and Efficacy Advisors. H2Store aims to commercialise a safe hydrogen hydride storage product for energy storage within two years.

Storing hydrogen as a hydride increases the density of hydrogen. That lets it be transported cost-effectively to customers and export markets—and used as vehicle fuel.

Supported by a $3.5 million investment from Providence Asset Group, H2Store is developing a hydrogen battery to store renewable energy for residential and commercial use. One such use is a large-scale hydrogen storage system for solar and wind farms that will help grid stability. The hydrogen storage system stores energy more effectively, takes up less space and has a longer lifespan—30 years—compared with less than 10 for other systems. The hydrogen battery takes energy generated through solar panels and stores it as hydrogen in a very dense form. Hydrogen batteries have a much higher storage capacity than many existing forms of energy storage, such as other battery technologies and pumped hydro.

A modular H2Store hydrogen energy storage system will first be utilised as a 1MW pilot storage solution at the 103 MW AC Yarranlea Solar Farm in the Darling Downs region of Queensland. The large-scale hybrid energy storage system, which includes lithium batteries and hydrogen fuel cells, will be Australia's first large scale hybrid storage system.

A H2Store system will also be installed as part of the Manilla Community Solar Farm in Manilla NSW. The Manilla Community Solar Farm received a $3.5 million grant from the NSW Government's Regional Community Energy Fund.

New generation technologies pose an additional challenge for the existing electricity grid (that is, the network of transmission towers and distribution 'poles and wires'). This grid is mostly a product of investments made in the latter half of the twentieth century, including infrastructure delivered to support commencement of the NEM in 1998. Even at this stage, the sector was dominated by a limited number of large coal and hydro generators. This structure is not necessarily suitable either for future generation sources or for the advent of 'off the-grid solutions', such as rooftop solar.

In short, the overarching objective of electricity generation remains cost-effective power for the NSW economy—but the system needs to resolve new and growing challenges:

- mitigating environmental impacts of generation including, but not limited to, carbon dioxide emissions
- updating the grid to reflect rapid innovation in electricity supply, impacts on electricity demand, and the geographic decentralisation this is driving.

[15] Green hydrogen is produced using zero-emission sources, e.g. electrolysis of water using solar power.

5.9 Controlling electricity prices

Electricity prices have risen significantly in recent years. The AEMC has found that over the ten years to 2018 the average residential retail electricity bill has risen from less than 20 cents, to 30 cents per kilowatt hour. (Australian Energy Market Commission, 2018). Both network and wholesale costs have contributed to this increase.

Reliability improvements have driven network costs upward over the past decade.

Power outages in 2004 led the NSW Government to impose significant new reliability standards in 2005. This required substantial additional investment by transmission and distribution companies in the years that followed. These costs are recovered from consumers, subject to AER approval.

Many stakeholders—including a number responding to the Discussion Paper—doubted the high cost of the stringent new standards was justified by the actual value consumers place on the incremental reliability improvement. The Commonwealth Productivity Commission found rising network costs added $654 to the average annual NSW residential electricity bill between 2008 and 2013 and criticised the investment as excessive (Commomwealth Productivity Commission, 2013). This view has been supported subsequently by IPART (Independent Pricing and Regulatory Tribunal, 2016a), the ACCC (Australian Competition and Consumer Commission, 2018c), and the Grattan Institute (Wood et al., 2018).

Significant wholesale electricity price increases have been sustained more recently, largely for two reasons.

The first is the decommissioning of significant coal-fired capacity—South Australia's Northern Power Station in 2016 and Victoria's Hazelwood in 2017. The loss of these generators was not complemented by significant new capacity because of the uncertain investment environment. The result was for gas to become the marginal, price setting generation source in the NEM more often.

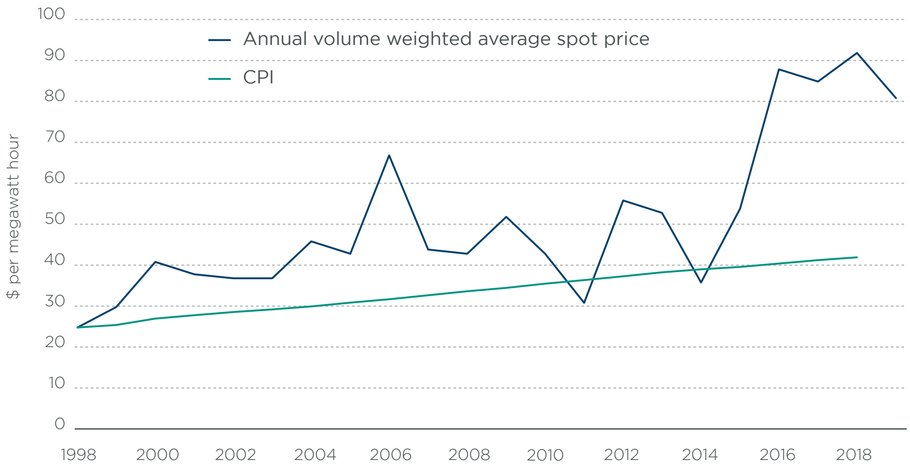
The uncertainty will continue deterring investment until either the Commonwealth or the State make clearer to investors a policy framework and transition path for emissions reduction.

The second reason for higher wholesale prices has been the rising price of coal and gas. Thermal black coal, which cost an average of $71 per tonne in 2015-16, rose to about $160 per tonne in mid-2018, though has since fallen back under $100. Domestic gas prices rose from an average of $4 per gigajoule at the start of 2015 to between $8 and $10 per gigajoule by 2017 as liquefied natural gas export projects opened up domestic gas supplies to international demand (Wood & Blowers, 2018).

The trend in wholesale prices for the NSW NEM region is shown in Figure 5.9. As recently as 2014-15, the annual average wholesale price was $36 per megawatt hour; in 2018–19 it reached a high of $92 per megawatt hour.

FIGURE 5.9: ELECTRICITY COSTS HAVE RISEN SUBSTANTIALLY IN RECENT YEARS

Annual volume-weighted average spot electricity price in $ per megawatt hour



Source: Australian Energy Regulator; NSW Treasury

5.10 Recent steps to enhance reliability and sustainability

The NSW Government's Electricity Strategy, released in November 2019, sets objectives for securing 'a reliable, affordable, and sustainable electricity future' (NSW Government, 2019). Specific initiatives in the Strategy include:

- renewable Energy Zones, to be piloted in the central west for an area capable of accommodating 3,000 MW of capacity
- incentives for households and businesses to save energy, especially at times of peak demand
- a regulatory framework to promote delivery of new generators ahead of the closure of existing power stations
- an Energy Security Target to ensure sufficient capacity to cope with unexpected generator outages during peak periods, such as heatwaves.

On 31 January 2020, the NSW Government signed a memorandum of understanding with the Commonwealth Government for a range of initiatives:

- improving transmission interconnection and network access, including accelerating and delivering:
  - Renewable Energy Zones, where new generation capacity can be connected to the transmission grid at relatively low cost
  - the Hume Link project to unlock existing and future generation from Snowy Hydro
  - upgrades to the Queensland-NSW interconnector
- keeping electricity generation plants available and reliable until their scheduled close
- a target for an additional 70 petajoules of gas per year in the NSW market and agreeing to a gas market review if this target is not met by 2022
- support for new generation investment in New South Wales, including $2 billion toward emissions reduction initiatives.

These recent initiatives are additional to related existing policy:

- In October 2016, the NSW Government adopted a Climate Change Policy Framework, including a commitment to economy-wide net zero emissions by 2050. New South Wales is, however, yet to commit to policy mechanisms that ensure a transition path to deliver on these objectives.
- In July 2019, the Council of Australian Governments (COAG) Energy Council endorsed implementation of the reliability component of the National Energy Guarantee.

5.11 Security and reliability standards should be met as efficiently as possible

The South Australian power outage of September 2016 focused attention on NEM reliability. The outage prompted the COAG Energy Council to constitute the Independent Review into the Future Security of the National Electricity Market ('the Finkel Review'). This was followed by the Energy Security Board's (ESB's) National Energy Guarantee (NEG) in 2018 (Pierce et al., 2018).

Reliability within the NEM requires the system to have adequate capacity to withstand:

- disconnection of multiple generators (generation reliability) and/or
- failure of multiple transmission and distribution assets (network reliability).

This was not the case in September 2016, when the failure of transmission assets led to a loss of system stability that required generators to shut down and cause outages. The power outages in Queensland and New South Wales in 2004, referred to above, were also due to network failures.

The NEG reliability component, by contrast, addresses only generation reliability. Its components include the following:

- AEMO will forecast annually whether each NEM region is likely to meet the reliability standard over a 10-year period. Where gaps are identified, the market will have an opportunity to invest to resolve it.
- In the event of a gap continuing, AEMO can apply to AER to trigger the so-called Retailer Reliability Obligation, where retailers must demonstrate they have contracted for enough generating capacity to cover demand.[16]
- Should a gap persist, AEMO can use its own powers to close it.[17]
- AEMO will publish a register of intended generator closures to provide adequate timing signals for new generation to come online.

The NSW Energy Security Target somewhat duplicates the COAG reliability provisions. Where a capacity shortage is forecast and there is a risk it will go unaddressed, the NSW Government will intervene to mitigate that risk. Determining whether the Target is more stringent than the COAG provisions requires that it be defined on a like basis (such as maximum unserved energy).[18]

The Grattan Institute argued that focusing on generation reliability alone (rather than also examining network reliability) 'is likely to lead to expensive and unjustified measures.' It added that 'despite the expected closure of the Liddell power station the reliability outlook for NSW remains benign.'

[16] Retailers would be required to demonstrate future compliance by entering sufficient qualifying contracts for dispatchable capacity, including demand response. This would cover their share of system peak demand at the time the gap emerges.

[17] This would occur through AEMO's Procurer of Last Resort function.

[18] Unserved energy is the expected amount of end-customer demand that cannot be supplied.


“
The energy sector must evolve to stay cost-effective

The COAG Energy Council has, however, agreed on further improvements to generation reliability. In March 2020, Ministers accepted ESB advice for keeping unserved energy demand to no more than 0.0006 per cent in any region in any year.[19] This is more stringent than the current 0.002 per cent standard, and will be implemented by:

- AEMO procuring additional reserve capacity
- lowering the trigger for the Retailer Reliability Obligation (COAG Energy Council, 2020).

The ESB will now consult on draft law and rule changes as a next step.

We should not pay more to achieve greater reliability

Policymakers will continually apply standards for reliability, and these standards will determine the investment in capacity that is required to ensure compliance. The question becomes: to what reliability standard? Network standards implemented in New South Wales following the 2005 outages were criticised by the Commonwealth Productivity Commission and ACCC as being in excess of what consumers were willing to pay. The implication was consumers would have been better off with reduced reliability but lower electricity bills.

All submissions agreed that consumer willingness to pay was the appropriate benchmark for reliability regulation. Particularly noteworthy was the number of submissions arguing the system may have gone too far in demanding reliability at the expense of affordability.

Reliability comes at a cost and should always be set and evaluated based on consumers' preferences, particularly their expressed willingness to pay. Recent estimations of the value consumers place on reliability have shown current levels of reliability are largely satisfactory and many consumers would be unwilling to pay more for increases.

Public Interest Advocacy Centre submission

As a market-driving regulatory concept, 'reliability' does not mean providing 100% certainty of always meeting customer demand and should be seen as a two-way system that encourages and incentivises customers to manage consumption in line with available supply. Unwarranted reliability standards have been directly responsible for so-called 'gold plating' of the grid which has made Australia less competitive for business and caused affordability issues for businesses and households.

Australian Alliance for Energy Productivity submission

[19] In August 2017, the ESB was established by the COAG Energy Council. The Board's role is to coordinate the implementation of the reform blueprint produced by Australia's Chief Scientist, Dr Alan Finkel AO. The ESB will also provide whole of system oversight for energy security and reliability to drive better outcomes for consumers.

Caution is also needed in the application of reliability standards. When implemented without reference to cost, marginal improvements to reliability in an already reliable system can be very expensive and may cost more than consumers would be willing to pay had they been offered the choice.

In recent years energy consumers – including business energy consumers – have paid significant sums for energy network upgrades, to the extent that 'systemic' energy reliability is arguably already overprovided (i.e. customers, including business customers, might be prepared to make a trade-off for lower bills). Policymakers should be cautious that investments, justified by claims of improved reliability, are delivering reliability that customers actually value, and for a price that they think reasonable.

Business NSW submission

Research for Energy Consumers Australia indicates that more customers are concerned about the price they pay for electricity than about its reliability (Essential Research, 2018). In 2018 about 70 per cent of customers were happy with the reliability of their electricity, but only about 40 per cent were happy with overall value for money.

With already high standards for network reliability, and with the NEG reliability component for generation implemented, the justification for further improvements in this area is unclear. The Australian Energy Council's submission suggested this explicitly:

Generation reliability is a very small contributor to overall system reliability…network reliability is more responsible for system outages…the Energy Council does not believe that any improvement to reliability is necessary, since doing so will impose additional costs on consumers.

Australian Energy Council submission

In 2018, the ACCC advocated the repeal of existing state reliability standards not determined according to consumer valuation, with reliability settings transferred to the AER (Australian Competition and Consumer Commission, 2018c). In December 2019, AER produced its final report on consumer willingness to pay for reliability, described in Box 5.5.

Box 5.5: AER valuations on customer reliability estimates

The AER estimated valuations on customer reliability (VCRs) for unplanned electricity outages of up to 12 hours in duration (roughly standard outages) within the NEM.[20]

The 2019 review found:

- consistent with the 2014 study, VCRs are higher for business than for residential customers
- residential customers continue to value reliability and have a preference to avoid longer outages and outages at peak times (defined as 7-10 am and 5-8 pm).

Box 5.6: The future grid

- In 2018, AEMO released the Integrated System Plan. This is a 20-year blueprint for the electricity system as it transitions from domination by coal-fired generators towards a mix of renewables, gas, batteries, and pumped hydro. The plan calls for new transmission infrastructure, including interconnectors, and for Renewable Energy Zones to be developed. This will allow the cheapest electricity to be generated and transported to where it is needed.
- COAG Energy Council has asked the AEMC to regularly review the drivers that impact future generation and transmission investment. The Commission's Coordination of Generation and Transmission Investment review is considering reforms to how generators access the grid and how network businesses recover costs for constructing and maintaining it. It is considering an approach where the cost of new transmission capacity is born by generators directly rather than consumers to provide more effective locational price signals. AEMC is aiming to have these reforms in place by June 2022.

Assurance is needed so jurisdictions are not duplicating reliability and security efforts

The NEM bodies are required by law to support the long-term interest of consumers with respect to price, quality, safety, reliability, and security of supply of electricity. Over the past 15 years, the following measures have been implemented:

- substantial investment from 2007-08 to meet network reliability standards mandated by the NSW Government in 2005
- AEMO rolling forecasts on 10-year generation capacity
- the Retailer Reliability Obligation monitored by AER
- the Procurer of Last Resort function for AEMO
- the NSW Electricity Strategy and Energy Security Target
- the Integrated System Plan
- coordination of generation and transmission investment
- tighter unserved energy standards agreed at COAG in March 2020.

The above list of measures is long and there appears to be duplication and overlap.

The new NSW Government's Energy Security Target now sits on top of the nationwide rules agreed by COAG in 2019 and 2020. But the NSW Electricity Strategy also commits the NSW Government to working with COAG Energy Council and the ESB 'to review the National Electricity Law (NEL) and Rules to identify national regulatory burdens that could be removed, streamlined or clarified'. The imposition of an additional NSW Energy Security Target appears inconsistent with this commitment. If New South Wales desires a lower reliability standard than that recently agreed to by the COAG Energy

[20] VCRs seek to reflect the value different types of customers place on a reliable electricity supply under different conditions and are usually expressed in dollars per kilowatt hour ($/kWh). AER's estimates updated earlier work performed by AEMO in 2014.

Council, the NSW Target is redundant. But if the Target imposes an even more stringent standard, this will increase costs for NSW consumers. Before implementation it should be established that NSW consumers really are willing to incur a higher cost than the rest of the NEM.

The commitment to streamline regulation is a sound one. Combined with AER's recent work on consumer valuation of reliability, it suggests the Target should be revisited. New South Wales should not be creating additional investment risk and pushing up electricity costs by adding extra reliability measures to the ones the NEM already has. Revisiting the Target would address stakeholders' concerns about an excessive emphasis on reliability.

Draft recommendation 5.9:
Develop a reliability system that reflects consumer needs

Revisit the NSW Energy Security Target in the context of reliability standards endorsed by the Council of Australian Governments (COAG) Energy Council:

If it imposes greater reliability requirements, demonstrate that this is consistent with consumers' willingness to pay.

Otherwise, adopt the COAG Energy Council standards in its place.

5.12 Private investment requires certainty in climate change mitigation policy

Another factor endangering the reliability and affordability of NSW power supply is the ongoing lack of a carbon dioxide emissions reduction mechanism.

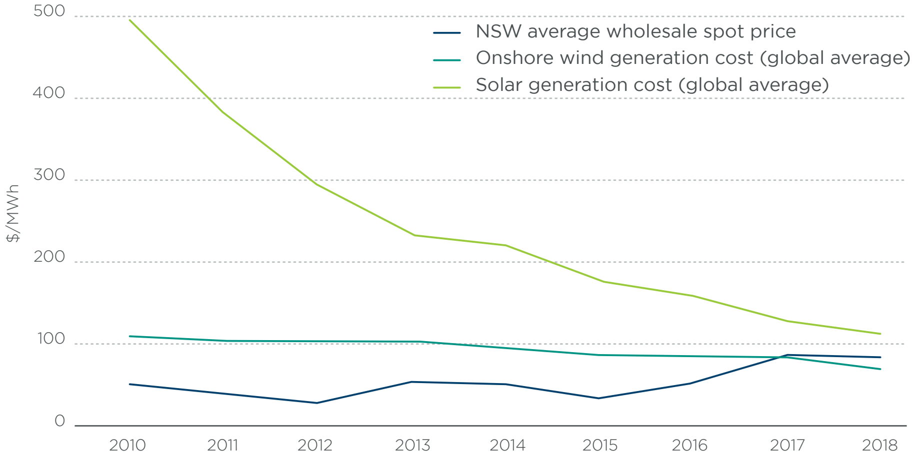
Investment is required to maintain existing and supplement generation capacity. This will only occur if investors are confident of how current and future governments will meet emissions reduction commitments under the Paris Climate Agreement and the Climate Change Policy Framework so that investors can adequately account for future possible cost structures. The Discussion Paper noted that this policy uncertainty was already a cause of deferral of private investment in the stationary energy sector.

The lack of a carbon dioxide reduction mechanism deters investment

Efforts to impose a greenhouse gas emissions reduction mechanism on the NEM at the national level in 2009, in 2012, and again in 2018 were all ultimately unsuccessful. Each was damaged by concerns about the explicit costs that emissions reduction mechanisms would impose on the economy. That cost was real in the 2009-12 period because renewable energy cost more—in the case of solar photovoltaic (PV), much more—than energy from fossil fuels.

But since the abolition of the Commonwealth carbon price in 2014, innovation in renewables has reduced the costs of both solar and wind generation, coupled with firming capacity and storage technologies. Now, this combination can compete much more effectively in the NSW wholesale market.

FIGURE 5.10: THE COST OF RENEWABLES HAS PLUMMETED



Source: AER, RBA, International Renewable Energy Agency, NSW Treasury.

Today, black coal accounts for about 80 per cent of the State's generated electricity (NSW Government, 2019). But as coal generators reach the end of their technical lives and are retired, new coal generation is unlikely to replace it due to emissions concerns.[21] Projections from AEMO's 2018 Integrated System Plan found the optimal replacement of existing coal baseload generators is a portfolio of renewable generation, batteries and flexible 'peaking' thermal capacity from gas generation. Combining this with energy efficiency improvements and demand response is the lowest-cost strategy to support future system reliability while containing costs to consumers (Australian Electricity Market Operator, 2018c).

The substantial increase in wholesale electricity prices in the period 2015-17 has not induced the new supply response that would otherwise be expected. This is because the private sector will only invest in long lived assets if it is confident these investments are viable under a range of conditions. As one adviser to energy investors has explained:

> ***Investors will only commit to generation investments if it is viable both with and without a carbon price, or more precisely a carbon price sufficient to achieve Australia's Paris commitments. And every investor I know expects that some form of carbon pricing is highly likely to apply at some point over the life of an investment. Presently, there is no conventional generation investment that is viable with and without a Paris-consistent carbon price. This does not bode well for efficient investment in new generation.***
>
> ***Danny Price, 2018, The Future of Australian Energy, Speech to the Australian Agriculture and Resource Economics Society***[22]

[21] This likelihood is acknowledged in the NSW Government's recent Strategic Statement on Coal Exploration and Mining in NSW.

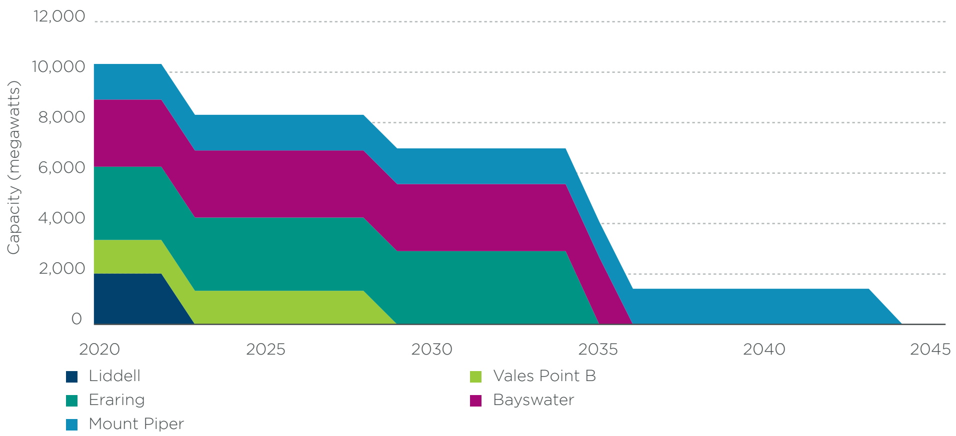
[22] Price was previously a principal economist at the New South Wales Electricity Commission and helped to design the Australian NEM rules and industry structure.

In other words, the absence of a price on carbon is holding back investment in new capacity.[23] And this lack of new capacity will ensure wholesale prices remain higher than otherwise for years to come.

Presently, New South Wales has five remaining operational coal generators, all but one of which may be decommissioned by 2035.

FIGURE 5.11: NEW ENERGY SOURCES WILL BE NEEDED AS COAL GENERATION DWINDLES

Projected NSW coal power generation capacity



Source: Australian Energy Market Operator.

One option is for governments to intervene to expand the capacity of existing coal assets or extend their lives using non-market mechanisms. This approach, however, risks further distorting the competitive landscape, requiring higher returns for the private sector and dissuading investment in cost-effective new generation assets.[24]

Meanwhile, submissions on the Discussion Paper demonstrate that the private sector stands ready to make the necessary investment. As Danny Price from Frontier Economics has noted, investors are simply waiting for a resolution on carbon pricing 'that allows the NEM to work as designed'.

The Government should instead maintain a technology-neutral level playing field in generation. Doing so would let the market determine, with confidence, which investments would meet generation and environmental objectives. This could include, for example, emerging technologies such as small-scale nuclear reactors and green hydrogen-fired power plants, which may prove to be viable options (see Box 5.7).

[23] This carbon price could either be an explicitly set or could be a 'shadow price' generated through a carbon trading scheme.

[24] The AIGroup said in its submission: 'In an understandable response to high prices and technological change, government are making or considering major changes to market rules or intervening outside the market to bring on new assets or affect the usage of existing assets. While many of these steps may ultimately be wise and necessary (and some may miscarry), they can substantially change the competitive landscape and the economics of individual projects. These reforms and interventions can thus delay and dissuade private investment, at least until their nature and ramifications become clear.'

Box 5.7: Small-scale nuclear generation

Australia has foregone nuclear power for a range of reasons, including operational safety and concerns over disposal of spent but highly radioactive nuclear fuel.[25]

While large-scale nuclear energy continues to be a significant energy generation source across Europe and Asia, its commercial use poses problems.

The biggest issues arise with large-scale nuclear reactors. High fixed costs and long build times mean such reactors tend not to be viable for private investors. Existing nuclear reactors have been delivered either by state-owned or regulated monopolies, with at least some risks shifted onto either taxpayers, consumers, or both. Low-cost renewables now pose an additional threat to the economics of such reactors.

Prospects are better, however, for small-scale nuclear generators. These take advantage of long-existing nuclear technology that has powered, for example, submarines. Proponents say that:

- their modularity generates economies of scale, with pre-fabrication of individual components at specialist facilities
- they can incorporate contemporary fail-safe mechanisms that largely eliminate the risk of catastrophic failure
- they are less risky in the face of earthquakes and floods
- their reduced consumption of water for cooling avoids the requirement to build near large water sources, which can flood.

A South Australian Royal Commission into the Nuclear Fuel Cycle reported in 2016 that small modular reactors could be feasible in the future. It also flagged a risk of cost blowouts associated with unproven technologies.

Options for an integrated climate change mitigation and energy policy

A wide range of stakeholder submissions supported integration of climate change mitigation with energy policy. Several schemes have been proposed at both state and national level to drive down emissions. Those implemented include the NSW Greenhouse Gas Abatement Scheme (2003-2012), the national carbon price (2012-14), and the still active national Renewable Energy Target.

This stop-start approach is an impediment to investment. Australian Industry Group (Ai Group) said in its submission that policy uncertainty was adversely affecting the sector and identified a long-lasting integrated climate change and energy policy as the best solution.
It also noted that if such a policy is to endure, 'broad political consent is vital'.

Additional to the Electricity Strategy, the NSW Government has tasked the Chief Scientist and Engineer with assessing the challenges and opportunities to meet the net-zero emission target by 2050. The Public Interest Advocacy Centre noted that NSW's target for zero net emissions by 2050 is not yet accompanied by mechanisms for reaching the target or a trajectory for the intervening years.

The Grattan Institute's submission identifies three options for an integrated climate change mitigation and energy policy.

- **Option 1: A state-based scheme** such as the former NSW Greenhouse Gas Reduction Scheme (GGAS) or a renewable energy target.
- **Option 2** (preferred option of the Grattan institute): **An emissions reduction scheme** for the NEM implemented jointly with other participating states and possibly similar to the emissions component of the NEG.

[25] The country's one nuclear reactor, at Lucas Heights, is used only for research and production of medical isotopes. Nationally, nuclear power generation is prohibited by law.

- **Option 3: A national, economy-wide emissions policy** developed jointly with other Australian states and territories.

AI Group also flagged support for the emissions reduction component of the NEG.[26]

Victoria and Queensland have implemented state-based renewable energy targets in the absence of Commonwealth Government support for the NEG emissions component. These approaches, however, tend to be more costly than better-targeted approaches. Based on the NSW Government's ongoing commitment to the principles embodied in the NEG emissions component, a state-based scheme should be pursued. Implementation could be progressed by New South Wales with other participating states within the NEM through changes to the National Electricity Law, even without Commonwealth Government support.

Implementation of a state-based scheme is considered a viable alternative to the NEG's emissions component implemented in partnership with other states. IPART holds substantial information and expertise on the earlier GGAS and this could inform a new scheme, should it come to that. If interstate cooperation is not successful or is expected to take too long, the benefits of a state-based emissions intensity scheme are expected to exceed costs. Such a scheme would require broad political support in New South Wales.

Draft recommendation 5.10:
Adopt an integrated market-oriented climate change and energy policy

Commit to a contestable private energy market based on technology-neutral, competitive neutrality principles.

Create a NSW-specific emissions intensity scheme to help optimise investment in electricity, having regard to climate change mitigation objectives and the pace of innovation.

5.13 Better asset use can drive down costs

Demand management can reduce the need for new investment

Consumers can pay lower prices if New South Wales can find ways to limit future spending on the electricity system while still getting the power it needs. Reducing the demand for electricity at peak periods may be beneficial as it is a significant driver of investment. The best way to do this would be by reducing prices outside peak periods, relative to the peaks.

This would move some usage away from the peaks. It would use the same mechanism we use for fresh produce such as tomatoes and bananas: lower prices for customers when suppliers have more to sell.

[26] The NEG had two components: an emissions component and a reliability component. Under the emissions component, an obligation would be placed on retailers to ensure the average emissions intensity of the generation that is meeting their customers' load is at or below the prescribed 'electricity emissions intensity target'. Compliance with the obligation would be monitored over a five-year window. An emissions registry within AEMO would be established to support compliance. It would be assessed annually by the AER.

Consumers with more modern meters already have the option of electing into paying different tariffs based on the time of day they use electricity. Off-peak rates between 10pm and 7am already encourage consumers to run appliances like dishwashers at a time when the system can easily supply electricity. Some consumers are willing to cut their electricity use at peak times in exchange for a lower bill—for example, by setting the timer on their dishwasher. The benefits are spread across all consumers, regardless of their time of consumption and their capacity to pay.

This technique can be taken further by using of digital 'smart meters', which not only can record the time of use of electricity, but also:

- manage variable prices including times of high peak load such as the early evening, on hot and humid summer days, or when the system is close to its peak power generation ability due to an unplanned outage
- let consumers give a third-party direct load control of their discretionary appliances
- enable demand response engagement with the wholesale market.

These approaches would both limit the depreciation of existing assets and economise on expensive new investment. As the Australian Alliance for Energy Productivity submission noted, 'the state must be careful to … ensure that demand measures are implemented FIRST i.e. before new investment in supply infrastructure.'

Moving to 'full cost-reflective pricing' would also help renewable generation to better handle the most challenging peaks, such as hot, partially cloudy days with low winds.

In New South Wales all new and replacement meters are now required to be smart meters. But many businesses and households continue to use older meters that cannot record the time of use and therefore cannot opt for time-of-use pricing. Consumers can request a meter upgrade—which may be free of charge—but may not opt to do so. The slow rollout of smart meters is an obstacle to the wider application of cost-reflective pricing.

The Grattan Institute recommended the State collaborate with energy businesses on a strategy that could expedite the rollout of smart meters. This approach could offer significant benefits. But New South Wales should learn lessons from other jurisdictions and avoid unintended consequences:

- In Victoria, mandatory rollouts began in 2006. But this proved controversial and problematic. Consumers were required to cover the full cost without sufficient regard to the distribution of benefits between stakeholders or the impacts on low income households.
- There is a risk of adverse selection if, coupled with mandatory rollout, time-of-use pricing is not also mandated for all customers:
  - Were it to remain voluntary, time-of-use pricing would be most attractive to customers with relatively high off-peak use, particularly businesses.
  - But if standard tariffs remain available, time-of-use tariffs would not be attractive to customers who cannot shift their demand from peak into off-peak.
  - This could continue the need for system investment to meet unmitigated peak usage, with associated costs for consumers.

Draft recommendation 5.11:
Price electricity to reflect costs

Evaluate options for rolling out smart meters to all consumers and for time-of-use, cost-reflective electricity pricing.

5.14 Better governance arrangements can improve NSW energy policy

As previously noted, governance of the energy sector in New South Wales is dispersed across a wide range of national and state agencies, some with overlapping responsibilities. Besides those agency responsibilities noted in section 5.8, other state agencies also play a regulatory role:

- Department of Planning, Industry and Environment:
  - conducts licensing for 'contestable service' providers (electricians permitted to provide various network connection services)
  - is responsible for the oversight of safety and licensing of gas pipelines (although part of the licensing role is administered by IPART).
- NSW Fair Trading:
  - conducts licence accreditation for electricians and gas installers
  - enforces compliance with distributed energy resource product standards (for items such as rooftop solar panels) and consumer law
  - conducts community education and awareness campaigns.

IPART's submission strongly supported consolidating several state-based functions into a single regulatory agency, including:

- licensing/accreditation of operators and service providers of both electricity and gas networks
- monitoring and reporting on compliance with technical and reliability standards for electricity and gas networks
- monitoring and reporting on compliance with applicable safety regulations and standards, with SafeWork NSW retaining worker safety responsibilities.

This proposal could provide the following benefits:

- a specialised agency for administrative decisions and reporting to the Government
- clear lines of responsibility and accountability
- cost savings through economies of scale and reduced duplication
- consistency in regulation, compliance, and enforcement for the entire sector.

The case is also strong to relieve IPART of its responsibility for regular monitoring of the retail electricity market. Presently, IPART is one of four agencies performing this function; the other three being AEMC, AER, and ACCC. This duplication comes at a cost to taxpayers, retailers, and, ultimately, consumers. The benefits are questionable, given the other agencies are better positioned, informed, and resourced. Relieving IPART from this role would allow IPART to perform other functions, such as investigations into NSW-specific matters and potential implementation of a state-based emissions policy.

Draft recommendation 5.12:
Rationalise energy regulation

Establish a single NSW Energy Regulator and remove IPART's responsibility for regular monitoring of the retail electricity market.

[27] IPART notes in its submission that consumer protection responsibilities should remain with NSW Fair Trading.

5.15 Prevent New South Wales from running out of gas

The NSW Government has identified gas—combined with pumped hydro and batteries—as an essential source of energy during the transition from coal-fired to renewable generation over the coming decades (NSW Government, 2019).[28]

Our economy also depends on natural gas as a source of energy for households and businesses and feedstock for chemical manufacturers, such as fertilisers, plastics, and explosives.

New South Wales has significant contingent gas resources—quantities of gas that are potentially recoverable. Most of these resources are in coal seams. But actual NSW production and exploration activity is negligible right now. Instead, we pipe most of our domestic gas supply from South Australia, Queensland, and Victoria, and the supply lacks long-term reliability.

Indeed, the lack of NSW gas production has contributed to a gap in supply across south-eastern Australia. This supply gap will widen as current sources are depleted.

AEMO forecasts suggest that gas-fired generation or gas usage may need to be restricted from as early as 2024, unless additional sources can be accessed (Australian Energy Market Operator, 2020). And by constraining development of new flexible gas-fired generation, this uncertainty endangers the NSW Government's goal of net zero emissions by 2050.

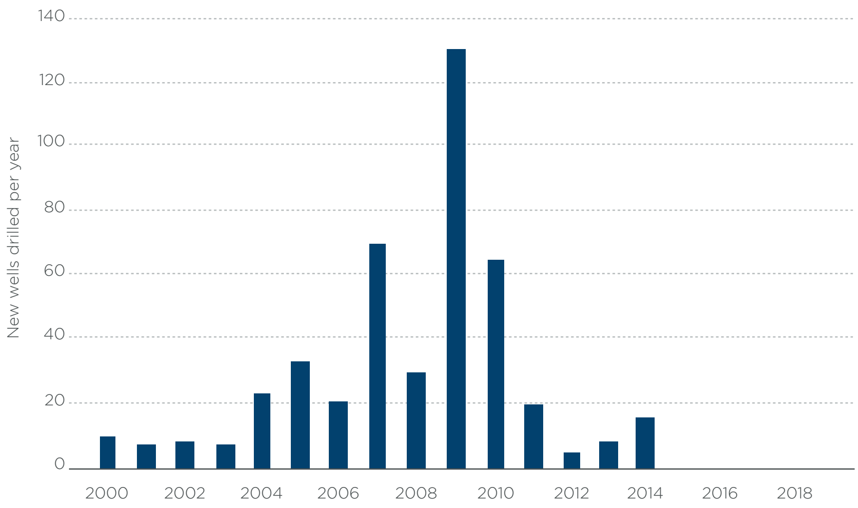
In short, New South Wales is running out of gas.

The road to NSW's gas challenge

The development of NSW's gas problem began some years ago. In the years before 2010, improved technology and rising gas prices fed a rapid expansion in exploration and extraction of gas trapped in coal seams, in Queensland in particular. At the same time, exploitation of shale gas boomed, particularly in the US.

FIGURE 5.12: NEW NSW COAL SEAM GAS EXPLORATION PEAKED IN 2010

Wells drilled per year, 2000-2018



Source: CSIRO Gas Industry Social and Environmental Research Alliance (GISERA); NSW Treasury.

[28] The bulk of this energy is 'firming capacity', the additional power output required to ensure that electricity is always available when needed.

The growth of this ‘unconventional gas’ activity in Queensland and the US, and the granting of a large number of exploration licences in New South Wales, brought the sector into the spotlight. Debates over perceived environmental and social impacts grew (Mitchell and Angus, 2014).

Water security and pollution were central to the environmental concerns. Hydraulic fracture stimulation (‘fracking’)—which requires large quantities of water—is needed in some cases to extract gas from the shale or coal seams. This may compete with other water uses, such as agriculture. There are also concerns that water removed from coal seams—which may have higher concentrations of naturally occurring chemicals—could leak into aquifers or surface water. There are also broader environmental concerns, including fugitive greenhouse gas emissions and use of gas itself as a fossil fuel. Finally, there is a perceived incompatibility with agriculture and other existing land uses.

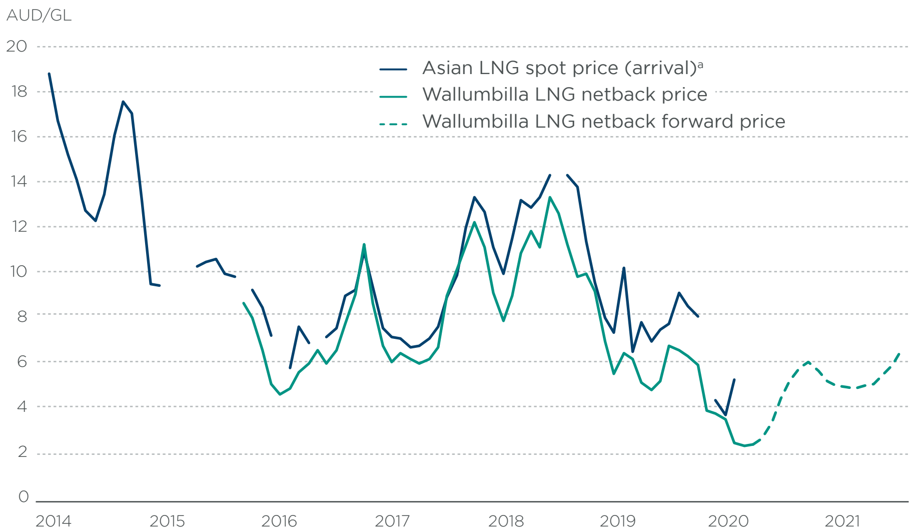
In response to these community concerns, between 2010 and 2015 the NSW Government took a number of actions (See Table 5.3). These included two moratoriums—one on fracking and one on new exploration, two reviews by the Chief Scientist and Engineer, two major land use policies and a reduction in the coverage of the existing gas exploration licences.

TABLE 5.3: MAJOR NSW GOVERNMENT ACTIONS ON FRACKING

Date	Major NSW Government actions on CSG
Apr-11	Moratorium on hydraulic fracturing imposed in response to growing community concerns; pending an investigation by NSW Chief Scientist and Engineer, Professor Mary O’Kane.
Mar-12	Use of benzene, toluene, ethylbenzene and xylenes (BTEX) additives in CSG drilling and fracking activities banned.
Sep-12	Strategic Regional Land Use Policy is introduced, including designation of strategic agricultural land in New England Northwest and the Upper Hunter; Aquifer Interference Policy introduced; fracking moratorium lifted and Codes of Practice for CSG activities introduced.
Feb-13	The Government requests Professor O’Kane to undertake a comprehensive review of CSG-related activities, focusing on human health and environmental impacts; exclusion zones added to the Strategic Regional Land Use Policy.
Mar-14	Coal seam gas exploration banned for six months pending the O’Kane review.
Sep-14	Professor O’Kane’s final report released, finding that the risks and challenges posed by the CSG industry can in general be managed, along with recommendations for measures to manage them; gas exploration ban extended by 12 months.
Nov-14	NSW Gas Plan released, broadly accepting all 16 of Professor O’Kane’s recommendations; buy-backs of existing licences begin.
Dec-15	Strategic Release Framework introduced to replace the blanket ban on CSG exploration. Final report of IPART Landowner Compensation Review released.

The cost, delay, and uncertainty associated with the community opposition and strong regulatory response had a substantial effect on the industry. In 2013 Metgasco halted exploration in the Northern Rivers region, citing regulatory uncertainty (Metgasco Ltd, 2013), and DART Energy soon after abandoned its Australian projects for similar reasons (Dart Energy Board, 2013). Gas prices then fell sharply between 2014 and 2016 (see Figure 5.13) and no more new exploration wells were drilled in New South Wales.

FIGURE 5.13: GAS PRICES FELL SUBSTANTIALLY OVER THE PAST FIVE YEARS



[a] Spot prices are not published by METI where there are less than two price reporters; the price for June 2020 has not yet been finalised.

Sources: ACCC; Japanese Ministry of Economy, Trade and Industry.

New South Wales now has just one prospective domestic source of gas, Santos's Narrabri Gas Project (NGP; see Box 5.8). Pending an approval of that project, the industry may lack the confidence to make any further investment in New South Wales projects. Low gas prices are also likely to deter investment in the short term.

The other two options to address imminent shortages involve importing gas from interstate or potentially overseas:

- Upgrading or constructing new pipeline infrastructure would allow New South Wales to access a greater volume of Queensland and Northern Territory gas. The Queensland-Hunter gas pipeline (via NGP) was approved in 2009 but is yet to be constructed.
- LNG import terminals would allow access to international gas markets and store gas. The Port Kembla terminal project was approved in 2019 but is yet to commit to construction. Newcastle GasDock has been designated as State Significant Infrastructure but is not yet approved.

In January, the NSW Government committed to a target of injecting 70 petajoules of gas per year into the Australian market by 2022.[29] This commitment would involve fast tracking NGP or either of the LNG import terminals, subject to appropriate approvals. A failure to secure supply could increase delivered prices for gas users in New South Wales.

[29] The State signed a Memorandum of Understanding with the Australian Government. A gas market review will take place if this target is not met by 2022.

Box 5.8: The Narrabri Gas Project

The Narrabri Gas Project is a State Significant Development involving the progressive development of a coal seam gas field over 20 years.[30] This project is being determined by the Independent Planning Commission, which is scheduled to make a decision by 30 September 2020. The Narrabri gas field represents a significant component of the State's untapped gas resources.

If approved, the project will support energy security and reliability by:

- supplying up to 50 per cent of New South Wales gas demand and addressing forecast shortfalls from 2024
- further supporting the diversity of New South Wales gas supplies by facilitating access to additional gas supplies from Queensland and the Northern Territory, through expansion of the existing gas pipeline network
- supporting development of the dispatchable gas fired generation capacity that is required to complement growing reliance on renewable energy sources.

The project is expected to deliver significant economic benefits to New South Wales and the Narrabri region:

- with a capital investment value of $3.6 billion and a contribution of $12 billion to New South Wales' economic output
- creating 1,300 jobs during construction and 200 jobs during operations
- providing up to $14.5 million to Narrabri Shire Council for community projects and infrastructure
- paying for a $120 million Community Benefit Fund, to share the project benefits with the local community
- supporting the development of a new industrial estate in Narrabri
- generating more than $3 billion from royalties and taxes (including Commonwealth taxes).

According to DPIE's assessment of the project, the NGP will not result in any significant impacts on people and the environment.

Unacceptable residual impacts of the project will be avoided by capping total water extraction over the life of the project and requiring compliance with strict standards including site rehabilitation and biodiversity offsets.

Source: DPIE Assessment Report (2020e).

Environmental risks and social challenges can be managed

The Chief Scientist's 2014 review found that the risks and challenges associated with coal seam gas (CSG) resources such as Narrabri can generally be managed with proper practices and well-targeted regulation (Box 5.9). An independent inquiry into fracking in Western Australia in 2018 came to similar conclusions (Hatton et al., 2018).

Sectors of the community remain strongly opposed to CSG development. Measures introduced by the NSW Government address the environmental risks and social impacts.[31] Even so, some projects appear to have failed to establish a 'social licence to operate'—in particular the Gloucester and Northern Rivers projects.

[30] A project can be classified as a State Significant Development under the Environmental Planning & Assessment Act 1979 for economic, environmental or social reasons.

[31] Environmental measures include the banning of BTEX additives and evaporation basins; social measures include land access negotiation templates and IPART benchmarking of compensation.

Attitudes towards CSG may be improved by effective communication, including communication on monitoring and publication of performance data. The apparent success of the Queensland GasFields Commission also highlights the importance of managing relationships between landholders, industry and the government. Building community confidence was the aim of several of the Chief Scientist's recommendations.

Concerns about changes to the landscape from CSG production may also be overcome. Similar concerns having evidently been managed in the past for building other, more visible infrastructure—electricity transmission pylons, as pipelines, and mining operations that required subsequent remediation of land. It will likely be impossible, however, to convince all sectors of society that the benefits outweigh the costs, given some strongly held beliefs relating to CSG.

Box 5.9: Findings and Recommendations of the O'Kane Report

In September 2014, The Chief Scientist and Engineer, Prof. Mary O'Kane released the final report of a 19-month *Inquiry into Coal Seam Gas Activities in New South Wales* (O'Kane, 2014). The report drew on consultation with academic and technical experts, industry, Government agencies and the community.

The review found that stakeholders had significant concerns and lacked trust in the industry and the Government's response. It identified that a range of land and water-related issues were central to stakeholder concerns. It also noted that the 2010 release of the movie Gasland deepened these sentiments.

The Chief Scientist concluded that although 'the CSG industry has several aspects that need careful attention, as do almost all industries, it is not significantly more likely to be more damaging or dangerous than other extractive industries'. Though (as with any industry) there were no guarantees that risks could be fully mitigated, it concluded that the risks could be managed.

The review also highlighted that the technologies were mature, and that Australia is well equipped to manage their application. And the review found that there could be benefits to individuals, industries and communities.

The Government's response supported all 16 recommendations and outlined its plan for addressing each of them (NSW Government, 2015).

Source: Inquiry into Coal Seam Gas Activities in New South Wales (O'Kane, 2014)

Better regulation is in the community's interest

Regulatory barriers have impeded New South Wales' development of gas resources. Some regulations have been targeted at specific risks to gas industry activities. Others—particularly land use restrictions—have increased the cost of prospective gas projects and added to policy uncertainty while failing to deliver on defined objectives. It is possible that these increased costs have prevented projects from proceeding that could otherwise have had significant net benefits.

Regulatory improvement would have longer-term benefits for the State if it allows economically viable, well managed projects to proceed. Natural gas and other resources belong to the State. Some of the benefits from their extraction accrue to the broader community through royalty revenues and additional employment and income in the gas and gas-dependent sectors. Gas-dependent manufacturers reportedly favour increased domestic gas supply, citing concerns about the likely cost of imported LNG.

Although essential, if not done well regulation can impose substantial unnecessary costs. Poorly designed or administered regulation can impose burdens on industry for negligible community benefit, deterring companies from investing in projects that would have been worthwhile from a national perspective. Ineffective regulation can fail to adequately protect environmental, cultural and heritage assets, the safety of workers and the health of local communities.

Commonwealth Productivity Commission
Resources Sector Regulation Draft Report

If the NSW community is to benefit from a larger gas industry in future, action should be taken now. Exploration and approvals have long lead times; when poorly designed or implemented regulation deters planning and investment, gas production can be affected for years to come.

Land use regulation is the best opportunity for reform

Strategic planning should maximise the effective use of land and benefits to the New South Wales community, accounting for all social, economic, and environmental impacts.

The Government's Strategic Regional Land Use Policy (SRLUP) and the Strategic Release Framework (SRF) may reduce land use conflicts. But by restricting the possible uses of the land, they preclude those that could generate net benefits for the community (Commonwealth Productivity Commission, 2015).[32] Some land use conflict is unavoidable and not all opposition to change of use is reasonable. The Commonwealth Productivity Commission (Commonwealth Productivity Commission, 2020d) highlights the COAG Energy Council's Multiple Land Use Framework (MLUF) as good practice (Standing Council on Energy and Resources, 2013).

New South Wales has had mixed success with implementing these policies. The SRLUP aligns with some of the guiding principles of the MLUF, such as by not entirely excluding gas on agricultural land. But the Commonwealth Productivity Commission reinforces that the policy should focus on overcoming issues with mixed land use, not just adding barriers to gas activities competing with agricultural uses. The NSW Minerals Council, for example, argues gateway panel assessment creates duplication in the development assessment process (NSW Minerals Council, 2019). Likewise, industry

[32] Technically land use is restricted by the continued ban on exploration in most of the state. As discussed below, however, the design of the Strategic Release Framework has ensured indefinite delay in the assessment of areas for release. The resulting continuation of restrictions on other land uses is therefore considered to be a characteristic of the policy, for the purposes of this paper.

[33] The assessment process has only once been triggered, for conventional gas exploration only (not CSG) in Far-West NSW, but the PRIA appears to never have been completed (NSW Government, 2017).

has raised questions regarding the evidence base justifying two-kilometre exclusion zones, especially given AGL Camden's operation in suburban Sydney for the past 20 years (Metgasco Limited, 2013).

The SRF likewise introduces impediments to gas activities. The SRF was developed to create a transparent and controlled way of releasing exploration areas, to help prioritise areas that are most prospective and to balance the interests of competing land uses. In the nearly five years since its commencement, however, no new areas have either been re-released for gas exploration or even been assessed for potential release for unconventional gas.[33] One reason for this may be the absence of a coherent process to initiate the assessment of a potential release area. As a result, the SRF in its current form has failed to manage multiple land uses and has effected a de facto moratorium on gas development in most of the state.

Both the SRLUP and SRF should be reviewed to ensure the regulations:

- are effective at their goal of managing multiple land uses and do not favour one land use over another
- are based on evidence, including quantification of the costs and benefits
- impose the minimum burden required to achieve the desired outcomes.

As with any regulatory review, the regulations should comply with the NSW Government Better Regulation Principles, as set out in the Guide to Better Regulation. The review should also draw on the final findings of the Commonwealth Productivity Commission's Resources Sector Regulation study.

Draft recommendation 5.13:
Better manage multiple land uses

Review the Strategic Regional Land Use Policy and Strategic Release Framework to ensure they maximise the balance of costs and benefits to industry and the community.

5.16 Target energy rebates better

The NSW Government currently invests $325 million a year into six rebates to assist low income and vulnerable households pay their energy bills:

- Low Income Household Rebate
- Gas Rebate
- Medical Energy Rebate
- Life Support Rebate
- Family Energy Rebate
- Seniors Energy Rebate.

In addition to these, other support programs for low income and vulnerable households are:

- the Energy Account Payment Assistance financial crisis support scheme
- trialling of the Solar for Low Income Households program for customers who agree not to receive the Low-Income Household Rebate
- the Empowering Homes program to support rollout of up to 300,000 solar-battery systems over the next 10 years.

The rebates and support programs are known collectively as the Energy Social Programs. Around 900,000 unique customers benefited from these programs in 2018-19, with the majority receiving an average 17.5 per cent reduction in their energy bills.

Currently, eligibility requirements for each rebate generally reflect Australian Department of Human Services and Department of Veterans Affairs criteria for low income and vulnerable status. However, there are areas for improvement and reform. For example:

- These programs could be included in the Premier's Government Made Easy: Tell Us Once initiative to improve customer experience.
- Eligibility could be extended to ensure accessibility for customers connected to certain 'embedded' networks, such as some apartment buildings and retirement villages.
- Fixed rebates could be made variable to reflect energy use across households, for example, because of household size.

More broadly, a stocktake of all programs could reduce overlap and complexity by consolidating their number, where possible.

Draft recommendation 5.14:
Improve and rationalise energy rebates

Improve efficiency and accessibility of administering energy rebates and support programs by incorporating them into the *Government Made Easy: Tell Us Once* initiative.

Review the suite of rebate and assistance measures with a view to consolidating their number and better aligning them to the needs of vulnerable and low-income households.

06. Smarter infrastructure will support jobs and communities

Draft Recommendations

Draft recommendation 6.1

Change planning controls to enable more housing and business activity within reasonable walking distance of transport hubs on underutilised corridors.

Draft recommendation 6.2

Require Infrastructure NSW to publish, within one week of an announcement for all Tier 1 and Tier 2 projects:

- Gate 1 strategic business case and Gate 2 final business case documents
- a simple 'social value for money' rating based on the project Benefit Cost Ratio
- a risk report, drawing on historical experience, with probabilities where feasible.

To further increase the transparency of spending priorities:

- Have Infrastructure NSW publish its five-yearly infrastructure plan (and annual updates), along with underlying analysis, at the time of the Budget.
- Provide additional justification in the Budget where investments are prioritised that do not align with the Infrastructure NSW priorities.

Draft recommendation 6.3

Ensure that agency project business cases comply with the NSW Government Business Case Guidelines, including planning for monitoring and evaluation at the detailed business case stage.

Ensure that post-evaluation costs are included in funding requests.

Draft recommendation 6.4

Explore options to reduce driver behaviours that increase road congestion, focusing on trip timing, merging, intersection etiquette and driver distractions.

Develop a strategic options (Gate 1) business case for cordon charging in the Sydney Central Business District and at other congestion hot spots.

Draft recommendation 6.5

Ask the Independent Pricing and Regulatory Tribunal to review the Opal fare structure to reflect the costs of travel and encourage a more even distribution of demand throughout the day.

Simplify and retarget the concession system. Make fares more efficient and reflective of need:

- reduce the number of concession classes
- increase incentives for off-peak travel
- ensure that discounted fares target those who most need them.

6.1 Infrastructure underpins productive economies

Infrastructure underpins the bulk of economic activity in modern societies. When governments choose the right infrastructure to build, it can act as a powerful lever to raise the productivity of their economies.

- Roads, ports, and rail freight services support the efficient movement of goods to markets, allowing firms to access broader markets more cheaply.
- Public transport lets large numbers of people access high-productivity employment opportunities at business centres.
- Energy and water are key inputs into almost all economic activity, and their efficient supply and delivery via wires and pipes promotes business certainty and investment.
- A healthy and highly-skilled workforce depends on social infrastructure, such as schools, TAFEs and hospitals.
- Well-located housing allows people to enjoy a good lifestyle within reasonable commute of their jobs.

As energy, water, human capital and housing are discussed in other chapters of this paper, this chapter focuses on transport infrastructure. Transport accounts for most of the Government's direct infrastructure spending.

New South Wales is investing in new infrastructure to meet projected growth

More than anything else, **population growth** drives the need for new infrastructure and the services it provides. Population projections made before the COVID-19 pandemic suggested the NSW population could reach 10.6 million by 2041. Of those, 7.1 million will live in Greater Sydney (NSW Department of Planning Industry and Environment, 2019).

While population growth is expected to ease over the next few years, largely driven by a decline in migration, the need to maintain workforce participation in the context of an ageing population is likely to see growth rates return to previous levels, over the longer term. This is therefore a one-off opportunity to get ahead of demand and build the infrastructure we need to serve a growing and ageing population and address projected infrastructure pressures including:

- Demand for **rail** travel increasing as trips double in the years to 2038 (Infrastructure NSW, 2018).
- The **road** network suffering increased strain, with car trips forecast to rise by a third within the next 20 years (Infrastructure NSW, 2018).
- New South Wales needing 7,200 additional **school classrooms** within the next 30 years. (NSW Department of Education, 2017).

With needs growing, New South Wales has the largest investment program of all the states—at time of writing, a pipeline of $100 billion.[1] Several major projects have been or are currently being delivered, including:

- The Sydney Metro Northwest, City and Southwest, West and Western Sydney Airport rail projects
- Light rail in Sydney, Newcastle and Parramatta
- New and redeveloped hospitals at Northern Beaches, Rouse Hill, Kuring-Gai, Blacktown and Mount Druitt, Westmead, Campbelltown, Wagga Wagga, Dubbo and Gosford
- The WestConnex and NorthConnex road projects.

[1] This record investment has been enhanced by 'asset recycling'—the sale or lease of existing government assets to fund new infrastructure.

The existing State Infrastructure Strategy provides a pathway

The current 20-year State Infrastructure Strategy (SIS) identifies six goals for the whole of government infrastructure program.[2] Each is aimed at ensuring New South Wales continues to enjoy high standards of living (Table 6.1).

TABLE 6.1: GOALS OF THE STATE INFRASTRUCTURE STRATEGY

SIS 2018-2038 strategic goal	Connection to productivity growth
Continuously improve the integration of land use and infrastructure planning.	Effective linkages between land use, infrastructure, and planning bring workers closer to jobs and reduce the frictions associated with employment growth. Improved integration contributes to reduced costs through better coordination, staging and sequencing.
Deliver infrastructure to maximise value for money.	Selecting the right projects and improving procurement maximises the overall benefits of public investment – including productivity, liveability, and sustainability.
Optimise the management, use, and performance of existing assets.	Building new assets to meet demand is not always feasible. New South Wales should make the most of existing assets to help alleviate infrastructure pressures.
Ensure existing and future infrastructure is resilient to natural hazards and human-related threats.	Natural disasters and other economic shocks can reduce services and production and increase costs to government of repairing and replacing assets.
Improve state-wide connectivity and realise the benefits of technology.	Digital connectivity and innovation can improve service quality and efficiency.
Provide high-quality consumer centric services with innovative service delivery models.	Effective regulation, a focus on customer needs and consideration of the alternative ways of meeting these needs can drive competition, innovation and productivity.

The NSW Government is already working towards implementing the SIS recommendations. It has already developed:

- A new whole of government asset management policy to support better management and use of existing assets.
- A 10-point commitment to the construction sector to support value for money procurement and major project delivery (NSW Government Construction Leadership Group, 2018).
- New guidelines to ensure infrastructure is resilient to climate change and natural disasters (NSW Treasury, 2019a).

[2] The current SIS was endorsed by the NSW Government in March 2018.

Infrastructure poses a budgetary challenge

The cost of providing infrastructure is rising:

- Strong property price growth has **increased land acquisition costs**
- Chronic supply constraints have increased costs in the construction sector – in particular **skills shortages.**

While costs are rising, the Government's capacity for capital spending is falling. Measures needed to support the economy through the COVID-19 pandemic have pushed up government debt and raised interest costs. These additional outlays are widening the possible gap between revenue capacity and spending in coming decades.[3]

To meet this challenge, the Government will need to plan and prioritise new projects as efficiently as possible and promote the best use of existing infrastructure.

Post-pandemic infrastructure needs may change the picture

The COVID-19 pandemic has the potential to change the State beyond just its budgetary impact. Border closures have prevented immigration. And periods of uncertainty have historically delayed decisions to have children, temporarily lowering fertility rates. While there are uncertainties about the long run effects of the pandemic, this temporary shock to demographic and economic growth will have implications for infrastructure needs.

The pandemic has already changed the way we live and work. Our movements and our interactions with others are temporarily restricted. So we have sharply increased our use of technology—for work, socialising, shopping, and even medical appointments. This episode has shown how digital infrastructure has the potential to reduce our reliance on physical infrastructure. It has encouraged cultural and behavioural changes that may not otherwise have happened.

As restrictions are lifted, people are likely to incorporate some of these changes into their post pandemic life. This presents the Government with new opportunities to use technology to deliver better community outcomes. For example:

- In the regions, distance often compromises service quality. COVID-19 has shown us that more government services can be provided at least partly online. Tele-health and online classrooms are notable examples, but there are opportunities in many fields.
- In cities, some public transport and road use patterns will be changed permanently, even after the pandemic recedes. This may lessen the demand on transport infrastructure and even let us defer or redirect some infrastructure spending to where it will deliver greater benefits. That would take some pressure off the Government's fiscal position.
- The pandemic may spur increased acceptance of technology to improve the quality and efficiency of services such as drivers licence provision (see Box 6.1).

[3] The pre-COVID-19 potential for a gap between revenue and spending is set out in the NSW Intergenerational Report. (NSW Treasury 2016a).

Box 6.1: Digital Drivers Licences

The Digital Drivers Licence (DDL) is a NSW Government initiative to make life easier for NSW drivers and those they deal with. The Government aims to conduct at least 70 per cent of drivers licence transactions digitally.

The DDL provides proof of authority and identity through the Service NSW mobile app. 6.5 million NSW citizens are potential DDL 'holders'. 'Checkers' include NSW Police, government agencies, licensed venues, Australia Post and banks.

The DDL is a multi-agency initiative, involving delivery teams from Service NSW, NSW Police, Roads and Maritime Services, and Liquor and Gaming NSW. These teams developed a 'beta' product and ran a pilot in the Dubbo region with 1,400 participants. Police, pubs, and liquor stores accepted the digital licence from the start. Registered clubs, Service NSW service centres, and car rental companies in the Dubbo region then joined the pilot.

DDL rolled out across the State in October 2019. Some 1.3 million users adopted it in the first three months.

But despite the impact of COVID-19, and the growing role of technology, demand for new physical infrastructure will remain, over the long term. The strategic plan for Sydney, for example, sets out the vision for a Sydney where residents live within 30 minutes of jobs, education, health facilities, services and leisure spaces (Greater Sydney Commission, 2018a). Making this a reality will require significant new infrastructure, particularly around Parramatta and the planned Western Sydney Aerotropolis.

The remainder of this chapter explores additional opportunities to improve productivity in alignment to the themes identified in the SIS.

6.2 Better integrating land use and infrastructure

Greater Sydney faces a major transport infrastructure challenge. The Metropolis of Three Cities – the Greater Sydney Region Plan envisions the Sydney Central Business District (CBD) being supplemented by two other centres: Parramatta –already a substantial business centre – and the planned Western Sydney Aerotropolis. To realise this vision, land and infrastructure planning will need to work together to support expansion of business activity and housing in and around the new centres. They should also support the transport corridors required to move people and goods to them and between the three centres.

The planning system must support the natural tendency for productive areas to expand. This can be achieved by:

- increasing housing within reasonable commuting distance of the 'Global Economic Corridor'[4]
- maximising the use of existing infrastructure.

[4] The Global Economic Corridor is a concentration of knowledge-intensive industries running in an arc from Macquarie Park through the Sydney CBD to Kingsford Smith airport.

“Land and infrastructure planning will need to work together to support expansion of business activity and housing

Good planning can reduce resistance to growth

Communities often resist growth because they lack confidence that it will be properly managed. Infrastructure Australia found that communities are 'increasingly disappointed by their experience of growth' (Infrastructure Australia, 2018c). A central driver for this has been a lack of alignment of development and infrastructure provision. The public and the councils that represent them want adequate investment in infrastructure to maintain standards of transport, health, education and other services. When infrastructure investment does not meet new demand, the public and councils are unlikely to support new development.

Coordination of strategic planning and infrastructure can, by the same token, boost community confidence and reduce resistance to growth. By focusing on desired outcomes for an area, planners can identify infrastructure (and other) needs of a community and deliver them in a way that is properly sequenced with growth.

Coordinated planning can also allow the Government to achieve its desired outcomes more cost effectively. For example, if land is rezoned for growth before infrastructure is planned, higher property prices will make infrastructure delivery more expensive, because the land will cost more. But with better coordination, the Government can acquire the necessary land before rezoning.

Strategic land use planning – seen in the *Metropolis of Three Cities* Greater Sydney regional plan – is already improving coordination of the planning system and infrastructure delivery. For instance, to deliver this vision, the Government is using 'infrastructure compacts' to bring the relevant State agencies and local councils together in the planning of the Greater Parramatta and the Olympic Peninsula (GPOP) and the Western Sydney Aerotropolis areas.[5] Integrated planning has also been used and is in use for communities along the new Sydney Metro lines (Northwest, West, City and Southwest).

[5] The Government has piloted a 'Place-based Infrastructure Compact' approach to planning in the GPOP —an area encompassing 26 precincts in the centre of Greater Sydney. An 'Infrastructure Compact' brings together service delivery agencies from across government to align the staging and sequencing of infrastructure and other service delivery with future housing and employment growth. The GPOP Strategic Business Case is currently going through Gate 1 assurance, and the project is expected to be presented to Government for an investment decision in late 2020.

Using existing and planned infrastructure to ‘bring homes to jobs’

The Government should draw on learnings from the GPOP Infrastructure Compact pilot and other integrated planning exercises. It should identify new areas where growth and investment are most likely to lift the productivity of the city.

The existing transport network holds opportunities to foster growth near the Global Economic Corridor. The Eastern Suburbs Line, opened in 1979, is the one rail corridor in Sydney that has had spare capacity in the morning peak, with 40 per cent of seats available on average. This area also has high development potential as an attractive location close to the many jobs and amenities in the Sydney CBD. Planning controls, however, are estimated as the costliest in Australia, largely due to height restrictions. (Jenner and Tulip, 2020).

Other opportunities may arise along the North Shore line and Sydney Metro North-West project, once complete. To date, growth in housing along the new Metro line has fallen short of expectations. Developers have attributed this lack of activity to restrictions on housing density, which make some potential sites unviable (Razaghi, 2019).

Greater development along existing transport corridors would have substantial benefits. Building more housing close to high-productivity jobs increases the labour supply for businesses. For households it would mean shorter commutes and congestion relief, both on roads and in the public transport system. These contribute to the city’s liveability and reduce the cost of living. At the same time, the Government saves on, or delays the substantial cost of building new roads and transport infrastructure. That allows greater spending on other important public services and infrastructure.

To realise these benefits, the Government should identify spare capacity along existing and planned corridors and ensure that land use planning responds to this capacity.[6] This could be achieved, for example by increasing housing targets, or by the Minister for Planning and Public Spaces issuing a ‘Section 9.1 Direction’ to a local government. For rail corridors such as the Eastern Suburbs Line the focus should be on allowing growth within 800 metres of stations, the widely accepted ‘reasonable walking distance’ for rail commuters.

Increased development will inevitably face some opposition, but as highlighted above, well planned growth can maximise the benefits to the NSW community while retaining the confidence of existing residents.

Draft recommendation 6.1
Build up transport hubs

Change planning controls to enable more housing and business activity within reasonable walking distance of transport hubs on underutilised corridors.

[6] This distance is cited in existing Transport for NSW literature (Transport for NSW, 2013a).

6.3 Delivering infrastructure to maximise value for money

Rigorous and transparent decision-making yields better value for the community

Infrastructure investment decisions are among the most expensive and impactful decisions governments make. Yet this area has significant scope for improvement:

- The Commonwealth Productivity Commission's 2014 Public Infrastructure Inquiry found that governments are 'sometimes weak at determining what, where and when infrastructure projects should be scoped and constructed'. It cited poor processes for both assessing and developing infrastructure (Commonwealth Productivity Commission, 2014b).
- Improving infrastructure decision-making was also identified as a priority in the Commonwealth Productivity Commission's five-year productivity review Shifting the Dial (Commonwealth Productivity Commission, 2017c).
- Infrastructure Australia found that 'improvements in long-term planning, project appraisal and project selection are necessary if Australians' infrastructure expectations are to be realised' (Infrastructure Australia, 2016).
- It also continues to motivate a program of work at the Grattan Institute.

Institutional and governance arrangements for the provision of much of Australia's public infrastructure are deficient and are a major contributor to unsatisfactory outcomes.

Commonwealth Productivity Commission[7]

There is no substitute for rigorous and transparent cost-benefit analysis.

Philip Lowe, Governor, Reserve Bank of Australia (Lowe, 2013)

Selecting the right projects is fundamental to getting the most out of infrastructure investment. But instances of weak governance and poor project selection still occur (Infrastructure Australia, 2016).

An important component of project selection is ensuring that benefits to the community are maximised. Policymakers use an economic framework called cost-benefit analysis (CBA) to quantify all the effects of a project—economic, social and environmental.[8] Like any tool, CBA can be misused. The Commonwealth Productivity Commission highlights three common challenges:

- Countering optimism bias—where benefits tend to be overestimated and costs underestimated.
- Treatment of risk and uncertainty.
- Use of 'wider economic benefits' that can be hard to quantify.

Despite its limitations, though, CBA provides a good indication of the overall benefit of projects to the community and therefore a point of comparison for the prioritisation of projects. There may be other reasons for choosing projects (for example, equity), but robust CBA should be the starting point.

[7] See Finding 7.1 in the Commonwealth Productivity Commission's final report.

[8] This analysis produces a value representing the project's net benefit, expressed as a dollar 'net present value' (NPV), or a benefit-cost ratio (BCR).

An example of where other priorities may take precedent over maximum community benefit is a perceived bias towards pursuing large, high-risk new projects.[9] While large projects are necessary, it is important that smaller and potentially more cost-effective investments are not overlooked. Some illustrative examples:

- Upgrade 'pinch points' to ease congestion in the road network, rather than building new roads.
- Improve signalling to increase the capacity of the rail network rather than building new train lines.
- Intervene earlier to combat chronic disease and reduce the load on the health system, rather than building new hospitals.

Some of the reasons cited for this bias are that large projects might be more likely to capture the imagination and attention of the public (the 'ribbon cutting' appeal), and that Commonwealth Government funding might be biased towards supporting large projects (Bowditch, 2016).

In submissions, some stakeholders welcomed the NSW Government's move to 'outcome budgeting' as a way of shifting the focus towards community benefit and away from large-scale and costly projects.[10]

A focus on non-financial metrics puts emphasis on practical changes which can improve the user experience. Indeed, some of the most practical improvements do not necessarily come with significant costs. For example, changes in road rules (such as lane filtering) can support greater flow of traffic.

Business NSW submission

Resisting premature announcements

Another common criticism of government decision-making is that projects are sometimes announced before adequate planning or consideration of other options.

Governments in Australia and overseas have generally shifted over time towards more rigorous planning processes. These processes involve:

- substantiating a **need** for the infrastructure or spending
- identifying the **most suitable option**
- ensuring that project **costs are proportionate** to project benefits
- managing the **risks**.

For example, in New South Wales infrastructure projects are required to pass through a series of 'Gateway reviews', depending on their size and the risk involved (see Table 6.2).[11] This independent assurance is an important input into Government decision-making, but notably does not constrain investment decisions or announcements.

[9] A number of submissions to the Commonwealth Productivity Commission's 2014 Public Infrastructure Review raised this point: the Bus Industry Confederation (Bus Industry Confederation, 2013), Henry Ergas (Ergas, 2014), Association of Superannuation Funds of Australia (Association of Superannuation Funds of Australia, 2014).

[10] Outcome budgeting recognises that the allocation of public resources should be based on the outcome achieved for people, not the amount spent or the volume of services delivered, and budget decisions should be made on that basis (NSW Treasury, 2018b).

[11] For capital projects, the NSW Gateway Policy is administered by Infrastructure NSW through the Infrastructure Investor Assurance Framework. The Framework aims to provide Government, as the investor, with confidence that the State's infrastructure program is being effectively developed, monitored and delivered.

TABLE 6.2: SUBJECTING INFRASTRUCTURE PROPOSALS TO SCRUTINY

Gate	Gateway review	Key question
0	Go / No Go (Justification)	Does the project proposal appropriately define the service need/problem and provide appropriate evidence?
1	Strategic options	How well has the project analysed a range of options to meet the service need and maximise benefits at optimal cost?
2	Business case	How well has the project proven that the preferred option best meets the service need and maximises benefits at optimal cost?
3	Readiness for market	How well has the project developed a procurement and delivery approach to realise the benefits outlined in the final business case?
4	Tender evaluation	Is a scope being procured that will deliver the benefits outlined in the final business case and is the project ready to proceed to delivery?
5	Readiness for service	How well has the project delivery team and asset owner and/or operator planned a handover that will ensure the benefits outlined in the final business case are achieved?
6	Benefits realisation	How well have the benefits outlined in the final business case been realised and what lessons can be learnt from this?

Source: Infrastructure NSW

Despite improved planning processes, governments sometimes announce projects before planning and prioritisation. This may damage the public interest, because it risks committing governments to lower value or higher-risk projects. In a study of cost overruns in transport projects, the Grattan Institute found that of the projects surveyed, a third had been announced before a budget commitment – but this minority of projects accounted for three-quarters of total cost overruns (Terrill, 2016).

A related problem is that premature announcements create a powerful incentive to ensure that business cases completed after the announcement provide support for the announced project.

Desirably, there would be more independent analysis to carefully scrutinise projected costs and benefits. In our experience, reports commissioned by government have a strong tendency to support these prior announcements.

Applied Economics submission

Stronger processes for infrastructure investment will build community confidence

The NSW Government has made significant improvements to its project selection processes in recent years:

- The Infrastructure Investor Assurance Framework applies risk-based project assurance to capital projects valued at more than $10 million, including the Gateway Process.
- The Department of Customer Service administers an ICT Investor Assurance Framework.
- Infrastructure NSW publishes business case summaries for large projects
- A new asset management policy helps agencies to realise value from their existing and planned assets.
- New governance arrangements have been imposed for projects funded through Restart NSW (see Box 6.2).

Box 6.2: Restart NSW

The Restart NSW Fund was established under the Restart NSW Fund Act 2011 with the purpose of promoting economic growth and productivity.

One innovative aspect of Restart NSW is its governance arrangements. The Act requires a formal recommendation from Infrastructure NSW to the Treasurer before funds may be released for any infrastructure project. Three criteria must be met before Infrastructure NSW makes its recommendation:

- strategic fit, the project's consistency with Restart NSW objectives and themes and NSW Government policy
- completed investor assurance processes including, for projects of sufficient size, Gate 2 Business Case Review by a qualified and independent review panel
- economic merit demonstrated by a benefit-cost ratio (BCR) ≥ 1.0.

There are opportunities to improve project planning and capital prioritisation further. The additional scrutiny applied through Restart NSW, however, moves New South Wales closer to evidence-based and transparent decision-making.

Likewise, a commitment to outcome budgeting represents one significant step forward in building community confidence in government resource allocation decisions. This is even more important now that New South Wales faces a more constrained post-pandemic fiscal environment. Another significant step is the creation of an 'Evidence Bank' to assist in the evaluation of past infrastructure spending and assessment of new projects.

Transparency gives the Government important incentives

There are, however, further steps that could be taken to improve governance. Several submissions noted the need for greater transparency in infrastructure decision-making:

When NSW Treasury business cases are prepared in isolation, by separate agencies competing for funds, they do not promote coordination and prioritisation. As business cases are not publicly available, and cost and benefit logic cannot be scrutinised by community, they do not have the necessary transparency and accountability.

City of Sydney submission

Infrastructure Australia and the Commonwealth Productivity Commission have also argued for a more transparent approach to decision-making (Infrastructure Australia, 2018b; Commonwealth Productivity Commission, 2014b). They recommend:

- public release of the analysis supporting infrastructure decisions
- processes to ensure all available options – including better use of current infrastructure – are considered before decisions are taken.

Increased transparency can address some of the common weaknesses with infrastructure decision making. It strengthens the incentive for governments to choose projects that are expected to realise higher benefits for the community. It also creates the incentive to go through the proper planning processes, including identifying alternative solutions, and to prepare strong business cases before committing to undertaking projects. There are further benefits, in that opening the analysis up to public scrutiny can bring taxpayers in on the decision-making process.

The NSW Government has improved the transparency of decision-making for large projects in recent years. For projects over $100 million, Infrastructure NSW releases business case summaries that provide:

- high level information on the range of options considered in making an investment decision
- the BCRs for each
- the types of benefits and costs considered in the cost benefit analysis
- an assessment by Infrastructure NSW.

These are provided within 120 days of a project announcement.

Transparency can improve decision making

The Government can further improve the transparency of infrastructure decision-making. The high level information in the Infrastructure NSW business case summaries is very useful for communication purposes. But it does not provide sufficient information for a third party to assess the quality of the analysis or the merits of the project.

The benefits of public infrastructure projects, for example, are generally broader and harder to quantify than the costs. So different assumptions about benefits can lead to marked differences in the assessment of net social value. Currently, business case summaries list the high-level benefits and the estimated total value of those benefits to society, but do not detail the assumptions required to derive those estimates. That makes it difficult to judge how likely they are to be realised.

Further, the delay of up to four months after a project announcement is substantial enough to remove the public from the discussion.

A common reason given for not releasing information from business cases is that publishing cost estimates might 'set a floor' when negotiating construction costs with contractors. The Commonwealth Productivity Commission found that this concern was unlikely to affect contractor bids if the process had enough competition. It also found that any risk of reduced bargaining power was likely outweighed by the benefits (Commonwealth Productivity Commission, 2014b). Further, it identified that greater disclosure might in fact be beneficial to the tendering process:

- Disclosure would reduce bidding costs, which would reduce barriers to entry.
- Increased accuracy of bids would make it easier to select the best proponent.

Other jurisdictions have successfully transitioned to more transparent decision-making. The New Zealand Government, for example, routinely publishes project business cases, along with other New Zealand Cabinet documents, redacting sensitive information where this is in the public interest.

Infrastructure NSW is the agency best positioned to manage transparent release of information on capital projects, because it is responsible for infrastructure investment assurance. Infrastructure NSW should be permitted and required to publish the Gate 1 strategic business case and Gate 2 final business case for larger and higher risk projects ('Tier 1' and 'Tier 2').[1] These business cases should be made public within one week of a project's announcement, and where possible before final investment decisions are made.

To make these disclosures as accessible as possible to the general public, the publication should be accompanied by a simple rating of 'social value for money' based on the BCR. This should be similar to the value for money rating used for transport projects in the United Kingdom, detailed in Table 6.3 (UK Department for Transport, 2013). Other considerations may influence what is considered to be 'value for money'—for example, 'wider economic benefits' or achieving equity outcomes—but the BCR provides an anchor for discussion of these harder-to-quantify impacts.

[12] Tiers are Infrastructure NSW ratings based on risk profile and project size. Tier 1 captures the largest and highest risk projects. Tier 2 includes lower-risk projects over $1 billion, but also higher-risk projects as small as $10 million. Gate 1 and 2 reviews are not required for projects below Tier 2.

TABLE 6.3: TRANSLATING BCRS INTO RATINGS

Core BCR	BCR rating
0-1.0	Poor. The benefits of this project are not expected to outweigh the costs.
1-1.5	Low. The benefits of this project are estimated to be marginally higher than the costs, especially once the excess burden of raising the taxes is accounted for. Higher-value alternatives should be considered where possible.
1.5-2.0	Moderate
2.0-4.0	High
>4.0	Very high

Source: NSW Treasury, UK Government (UK Department for Transport, 2013).

Further, to leverage the risk assessment undertaken as part of the Gate 2 business case, a report should be published for each project, outlining the key risks to achieving the anticipated net community benefit.

Another complementary step would be to improve transparency in coordinating project prioritisation across the Government. The Government has established processes for prioritising infrastructure investment. In preparation for the 2018-19 Budget, the Government conducted a new formal prioritisation process to assess and rank all projects over $10 million that are likely to be considered in the next ten years. Infrastructure NSW is also required by law to advise the Government each year on the specific major infrastructure projects to be undertaken as a priority in the next five years.

Greater transparency would substantially improve the value of the prioritisation process. Infrastructure NSW's priority assessments are currently only produced for internal use in building the Budget. Publicly releasing these detailed plans alongside its priorities would further strengthen the incentives to make good evidence-based infrastructure investment decisions.

Draft recommendation 6.2
Publicly justify infrastructure spending

Require Infrastructure NSW to publish, within one week of an announcement for all Tier 1 and Tier 2 projects:

- Gate 1 strategic business case and Gate 2 final business case documents
- a simple 'social value for money' rating based on the project Benefit Cost Ratio
- a risk report, drawing on historical experience, with probabilities where feasible.

To further increase the transparency of spending priorities:

- Have Infrastructure NSW publish its five-yearly infrastructure plan (and annual updates), along with underlying analysis, at the time of the Budget.
- Provide additional justification in the Budget where investments are prioritised that do not align with the Infrastructure NSW priorities.

Finding value in evaluations

Good infrastructure investment does not finish with the delivery of a project. Projects need to be evaluated with the benefit of hindsight—known as post-implementation evaluation—to:

- assess whether the anticipated benefits were realised
- identify lessons to be learned from the project, both positive and negative
- communicate these lessons in a way that improves the efficiency of future infrastructure delivery across Government.

More systematic evaluation would create ongoing improvement in infrastructure planning and delivery. Costs and benefits associated with projects are always uncertain at the outset, because forecasting is difficult. Monitoring and evaluation provide important information on, and analysis of, variations in project implementation, costs, outcomes and benefits. This evidence can be used to identify consistent biases and improve forecasts of costs and benefits in future projects, as well as in investment practices more broadly.

The Government has put performance monitoring at the centre of its move to outcome budgeting (NSW Treasury, 2018b). The Government should similarly strengthen its focus on the cost effectiveness of Government programs and projects in delivering outcomes. Evaluating specific infrastructure projects would help achieve this aim.

The Government has recently taken steps to ensure that monitoring and evaluation are considered in the planning of new projects. Specifically, Treasury guidelines require that business cases for capital projects and recurrent programs must include a benefits realisation plan and a post-implementation evaluation plan (NSW Treasury, 2018a).

Evaluation is still maturing and needs to be more widely embedded in the project planning and delivery process. There is some evidence that monitoring is insufficient even for Tier 1 (high profile/high-risk) projects. For example, the Audit Office of New South Wales' follow-up performance audit of the CBD-South East Light Rail project, found that although Transport for NSW intends to monitor the benefits of the project, it had not consistently and accurately updated the costs (Audit Office of New South Wales, 2020a). When costs and benefits are not known, comprehensive and effective evaluation becomes impossible.

If post-implementation evaluation is not planned or budgeted for, it is unlikely to be considered a priority. It is important therefore that planning for evaluation starts at the business case stage, and that funding be explicitly requested and potentially 'ring-fenced' for post-implementation evaluation.

Draft recommendation 6.3
Make evaluation a priority

Ensure that agency project business cases comply with the NSW Government Business Case Guidelines, including planning for monitoring and evaluation at the detailed business case stage.

Ensure that post-evaluation costs are included in funding requests.

6.4 Smarter use of existing infrastructure can ease congestion on roads and public transport

Small incremental upgrades and better demand management can cost-effectively maximise the productivity of existing assets such as roads and public transport infrastructure. In some cases, these investments can be more effective than expensive new projects.

We cannot build our way out of road congestion

Road congestion drags down productivity and hurts the economy. Left unaddressed, congestion in Sydney is expected to cost the state economy $13.1 billion per year by 2031 (Infrastructure Australia, 2019a).[13] Most of this is the cost of time that motorists lose in traffic delays. Other costs of congestion include the increasing travel time uncertainty, and higher fuel consumption. Air and noise pollution are also major environmental costs. Worsening congestion and the resulting negative impacts will compromise Sydney's liveability and make it harder to do business, reducing incentives for businesses and households to relocate and invest here.

A number of major road projects have recently been delivered or are currently underway. These projects support growth of the city and the associated freight and commuting task. They will also provide congestion relief at major bottlenecks. Examples include:

- WestConnex Stages 1, 2 and 3
- NorthConnex
- Pacific Highway upgrades.

New roads can generate substantial benefits but also have downsides: they cost a lot and disrupt communities while being built. Physical constraints and increasing land values limit the extent Sydney's road network can be expanded and upgraded. For these reasons, recent major road projects in Sydney have involved substantial and expensive tunnelling, such as the WestConnex Motorway.

Looking beyond new road projects

In coming years the Government will need to look beyond new road projects to address congestion. Section 6.2 above outlines how better coordination of land use planning and infrastructure delivery allows people to live closer to their jobs, or at least to public transport, reducing traffic volumes.

Improved planning can be combined with other cost-effective measures to improve our use of existing infrastructure and reduce the need for new roads. This can be achieved by a number of strategies that better manage demand for roads and stave off excessive pressure at peak times.

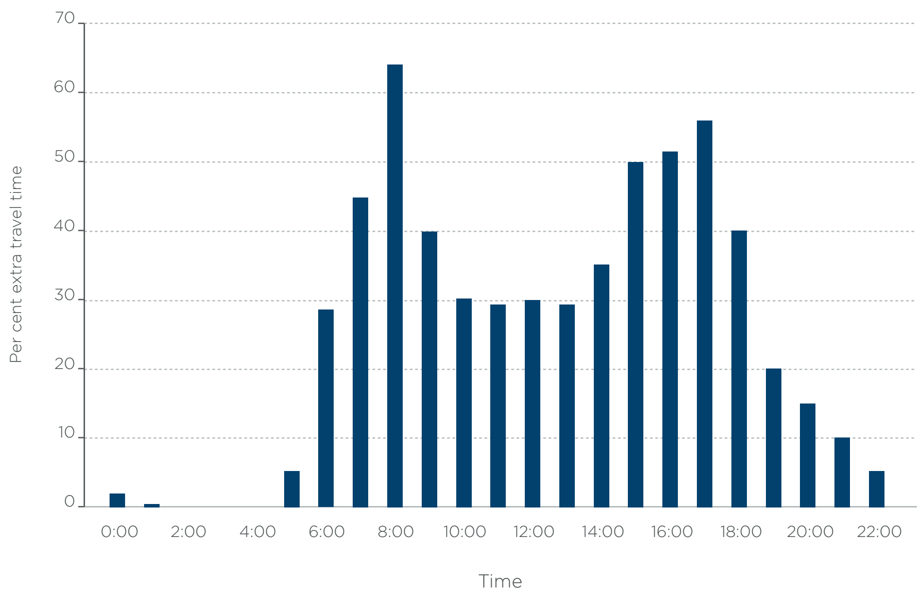
A substantial amount of congestion is due to the standard work and school day. This is evident in two clear peak periods in typical weekday traffic:

- the **morning peak** between 7am and 10 am
- the **afternoon peak** between 3pm and 7 pm.

Traffic generally flows more freely between peaks, although some bottlenecks arise where, for example, there is insufficient road capacity or construction work. Figure 6.2 shows Sydney's average 2019 weekday level of congestion (TomTom, 2020). Mild congestion also tends to occur on Saturdays, as many people run errands or take part in leisure activities.

[13] Upper estimate for the 'avoidable' social cost of congestion.

FIGURE 6.2: WEEKDAY DEMAND FOR ROADS SHOW TWO CLEAR PEAKS



Note: Data reflects the average extra travel time required owing to congestion on weekdays, relative to travel times in free flowing conditions.

Source: TomTom traffic index for Sydney.

Congestion is also highly location-specific. Some roads are never congested. Others are regularly at or above capacity during peak hours.

Congestion in Sydney causes particular problems:

- in and around **employment precincts**, which attract high commuter volumes owing to the concentration of jobs (e.g. Sydney CBD)
- in and around **freight precincts**, which attract large commercial vehicles (e.g. Sydney Airport and Port Botany)
- where **natural barriers** reduce capacity (e.g. The Spit Bridge, Gladesville Bridge, and the Georges River crossings).

These contributing factors collide in the Global Economic Corridor, with particular impacts for the CBD. Infrastructure Australia analysis shows that roads in and leading to the Sydney CBD rank among the most congested roads nationwide (Infrastructure Australia, 2019b). Around 8,000 drivers per square kilometre converge on the CBD every day, compared with fewer than 3,000 for precincts such as Macquarie Park and Parramatta (Terrill, Moran, and Ha, 2019). The 2019 TomTom Traffic Index for Sydney reported that for every 30 minutes on the road, motorists lost 19 minutes in the morning rush hour period, and 17 minutes in the evening (TomTom, 2020).

Influencing driver behaviour to improve traffic flow

Individual motorists influence the road network far more significantly in peak hours. When car volumes are high, even minor disruptions to traffic flow can trigger delays across the entire length of the road. A single driver braking, slowing down at merge points, or distracted by children or mobile phones can slow traffic for surprising distances.

Changing motorists' behaviour can therefore improve traffic speed substantially at much lower cost than new infrastructure. Enforcing road rules (such as restrictions on mobile phones) has a high pay off. In other jurisdictions, some public awareness campaigns have focused on educating drivers on good habits, particularly during peak times. Such campaigns have shown they can improve traffic speeds without any infrastructure spending.

For instance, the US State of Minnesota took action after seeing road congestion as drivers hesitated around merging points. The Minnesota Department of Transportation was the first US state to publicly promote the 'zipper merge', a merging technique that reduced traffic slowdowns.[14] Minnesota's promotion of the zipper merge has seen reductions in the length of traffic backup of up to 40 per cent.

Targeted upgrades at problem locations have substantial payoffs

Solutions that target specific areas of congestion offer high overall economic benefits compared to new road projects. By directly addressing problematic sites, targeted solutions are able to achieve significant congestion relief with fewer resources.

Examples of such approaches are being rolled out under the 'Easing Sydney's Congestion' program by Transport for NSW (Box 6.3).

[14] Promotional material chanelled through the mass media showed that merging at the last possible moment (known as the 'zipper merge') was the best way to approach a merge point in heavy traffic. This is counter to the conventional wisdom of merging in free flowing conditions, where merging as early as possible is the norm (Minnesota Department of Transportation n.d.).

Box 6.3: Easing Sydney’s Congestion

The Easing Sydney’s Congestion program run by Transport for NSW uses a range of congestion solutions:

- **Smart motorways** deploy active traffic management techniques such as variable speed limits and deployment of hard shoulder lanes during busy periods. This has first been applied on the M4 Motorway and has included additional lanes and widening ramps.
- **Pinch point** projects address particular sections of road that are prone to congestion. Initiatives include road widenings, lengthening turn bays or installing traffic lights at busy roundabouts. They also include closed circuit television (CCTV) cameras and electronic message signs to help manage traffic and provide real-time information to inform motorists travel decisions. In 2019, TfNSW measured benefits of $1.1 billion from $466 million spent on the 197 pinch point projects completed since 2012 (Transport for NSW, 2020c).
- **Clearways** reduce congestion by making use of all available lanes. These roads prohibit stopping or parking during busy periods. Roadsides free of parked vehicles also promote safety. Since the 2013 launch of the Clearways Strategy, more than 700 kilometres of clearways have been installed across Sydney’s busiest corridors.
- **Bus priority infrastructure** makes bus services faster and more reliable. Examples include dedicated bus lanes, bus priority at intersections, and more strategic bus stop placement.

‘Active transport’ infrastructure has benefits beyond reducing congestion

Cars and public transport are not the only way to get to work, especially for those living closer to the workplace. Because it takes up little space, non-motorised or ‘active’ transport—walking, cycling and so on—effectively creates space on roads and reduces the load on public transport. Five per cent of NSW workers cycled or walked the whole way to their workplaces on Census day in 2016.

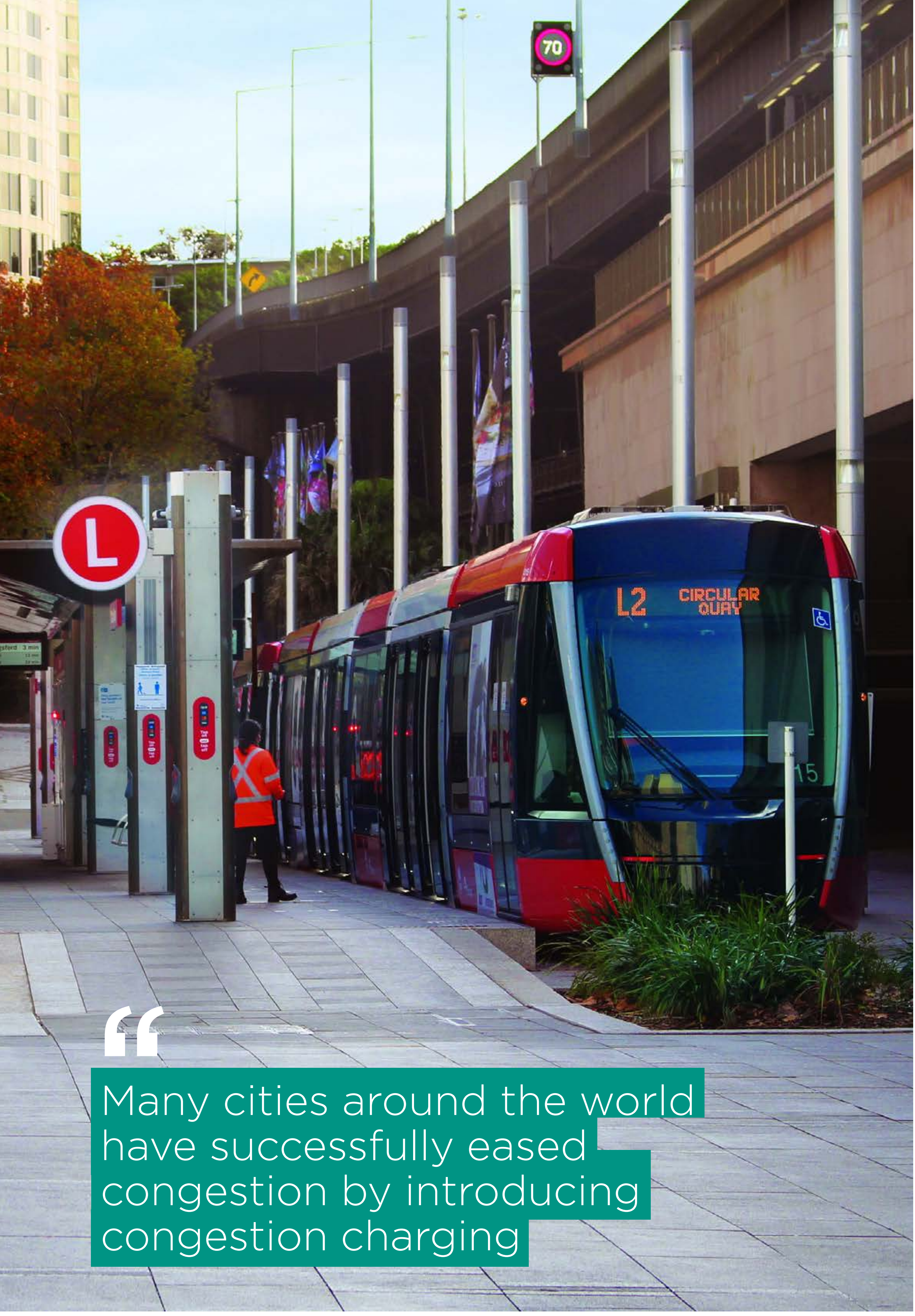
Active transport modes have other benefits too:

- Cycling can take less time than driving or catching public transport (Transport for NSW, 2013c).
- A healthy amount of exercise can reduce sickness and increase longevity, with associated economic benefits such as fewer sick days (Litman, 2016).
- Cycling and walking from place to place are considered by many to be more enjoyable than other forms of commuting (AECOM Australia, 2010).

By encouraging more people to cycle and walk, investment in cycling and pedestrian infrastructure may have substantial payoffs. A proposed project to increase cycling access to inner Sydney, for example, has been estimated to generate benefits two to three times its cost and has been included on Infrastructure Australia’s priority list (City of Sydney, 2018).

New technologies such as electric scooters have become far more popular and may make some of these benefits more widely accessible. Currently, however, outdated regulation and a lack of appropriate infrastructure are a barrier to the use of these ‘personal mobility devices’ (see Chapter 4).

Active transport has taken a higher profile in recent NSW Government strategic planning. The Future Transport 2056 plan, for example, recognised the benefits of active transport and highlighted the need to provide safe, well connected infrastructure to increase the number of people taking advantage of its benefits.



"Many cities around the world have successfully eased congestion by introducing congestion charging

Pricing based on the true costs of congestion will improve road use

The NSW Government should comprehensively explore approaches to meeting road transport service demand. It is also important, however, to pursue solutions that reduce the demand for roads in acceptable ways.

Congestion occurs because too many of us decide to use the roads at the same time. The result is the distinct peaky pattern of demand for roads observed in Figure 6.2. By driving at peak times, drivers contribute to congestion. But we are not exposed to the full cost we impose on other drivers and the road network.

Motorists incur many costs of car use, including petrol, tolls, vehicle wear and tear, and their own time. But when motorists drive on congested roads, we also impose direct costs on other motorists and indirect costs on broader society. These include:

- time delays to other motorists
- vehicles' impacts on the natural environment, such as air and water pollution.

Economists and policy experts have long recommended Australian governments consider introducing congestion charging (or some other pricing mechanism) to better manage road demand. Areas with limited capacity at certain times—such as CBDs during peak hour—stand to benefit most. Calls for such an approach have been made in:

- *Australia's Future Tax System* (Henry et al., 2009)
- *Competition Policy Review* (Harper et al., 2015)
- *Shifting the Dial: 5 year productivity review* (Commonwealth Productivity Commission, 2017c)
- *Future Cities: Planning for our Growing Population* (Infrastructure Australia, 2018a)
- *State Infrastructure Strategy 2018* (Infrastructure NSW, 2018)
- *Right time, right place, right price: a practical plan for congestion charging in Sydney and Melbourne* (Terrill, Moran, and Ha, 2019)
- *NSW Review of Federal Financial Relations Draft Report* (NSW Treasury, 2020b).

Congestion charging provides a price signal much like an optional tollway. In both cases, motorists need to weigh up the cost of taking the road with the benefits (such as the time it will save). Charging for road use at certain locations during peak hours similarly encourages motorists with flexibility to choose other options: travel off-peak, use public transport or active transport, or reconsider the need to travel at all.

The location and timing of congestion should ultimately inform the design of a congestion charging scheme. Other factors to consider include:

- impacts on demand for other routes, public transport, and parking
- use of the revenue raised by the scheme
- distributional impacts.

Many cities around the world have successfully eased congestion by introducing congestion charging. Their experiences provide useful lessons for New South Wales, both in assessing the benefits of congestion pricing and in the design of a scheme here. Box 6.4 outlines some examples and their features.

Understandably, congestion charging may be met with public resistance. It requires people to pay for something that was previously ‘free’. The experience worldwide, however, is after it demonstrates its effectiveness in improving traffic flow, congestion charging gains public support.

Another concern relates to collection of personal data. The Grattan Institute notes several important steps government should take to protect citizen privacy. These include storing data in decentralised systems, and strictly controlling the length of time for which personal data can be kept.

Congestion charging could take different forms:

- **cordon** charging, where users pay when they pass a boundary line around a city centre
- **corridor** charging, where drivers pay to drive on a particular road
- **distance-based** charging, where drivers pay per kilometre to drive within a designated road network or area.

The Grattan Institute has outlined a three-phase implementation approach that starts with cordon charging, then progresses to corridor charging and eventually network-wide distance-based pricing (Terrill, Moran, and Ha, 2019).

The first step towards more efficient use of NSW roads would be to analyse options for revenue-neutral cordon charging in NSW congestion hotspots, such as the Sydney CBD. This analysis should consider a range of complementary and alternative measures for resolving congestion in these areas. It should also consider the interdependencies with other modes of public transport, impacts on road use, and parking.

Box 6.4: Sydney can learn from successful congestion charging schemes

In **Singapore** the Electronic Road Pricing (ERP) scheme uses more than 90 gantries, mostly in a cordon around the city centre. Staff monitor traffic conditions in real time. Traffic flow is influenced by charges that vary by route, time of day, direction and vehicle type. The system operates from 7am to 8pm from Monday to Saturday, charging up to $S4 (around $A3.90) for every gantry crossing[15] (Land Transport Authority of Singapore n.d.).

London's Congestion Charging Zone (CCZ) is a congestion charging scheme covering 22 square kilometres in central London. Private vehicles are charged a daily flat rate of £11.50 (around $22 AUD) to drive within the CCZ between 7:00am to 6:30pm on weekdays.

Stockholm has operated a cordon scheme around its city centre since 2007. The scheme takes advantage of the few bridges motorists must cross to access the city centre. The charge varies during the day to account for fluctuating levels of congestion. For instance, the morning peak comprises five time periods with different charges, the highest applying from 7:30am to 8:29am.

Many economists and policymakers recognise the need for more comprehensive transport pricing reforms in the long run as a response to changing transport behaviour, advances in vehicle technology and limits on road capacity. Most recently, the Draft Report of the NSW Review of Federal Financial Relations recommended moving towards more cost-reflective road pricing (NSW Treasury, 2020b). A recent report by Infrastructure Victoria similarly highlights the importance of network-wide changes in the pricing of public transport, road usage, and parking (Infrastructure Victoria, 2020).

> ***Our work also shows that network wide change to the pricing of roads, public transport and parking is required to motivate the community to change their behaviour to get the most out of our current transport system, as well as investment in new infrastructure projects.***
>
> ***Infrastructure Victoria, Good Move: Fixing Transport Congestion***

Congestion relief should remain a key consideration in any reforms to transport pricing. The recently published Draft Report of the Federal Financial Relations review recommended a pilot of a cordon charge around the Sydney CBD. This will provide useful data insights on how motorists respond to time-based price signals. In the long term, the Government should also take advantage of advances in geo-spatial technology to more precisely capture the costs of congestion, better manage the flow of traffic, and make evidence-based infrastructure investment.

The public is unlikely to strongly support congestion charging before it is put in place. Stockholm, for instance, implemented its congestion charging scheme despite initial public opposition. But charging gained majority support during a seven-month trial, by showing it effectively reduced congestion. A referendum on the scheme after the trial period resulted in permanent implementation (Eliasson, 2014).

[15] Singapore has also explored techniques including use of enhanced satellite navigation and automatic number plate recognition (Janice Heng, 2017).

Draft recommendation 6.4

Improve use of existing infrastructure

Explore options to reduce driver behaviours that increase road congestion, focusing on trip timing, merging, intersection etiquette and driver distractions.

Develop a strategic options (Gate 1) business case for cordon charging in the Sydney Central Business District and at other congestion hot spots.

Better use of the public transport network

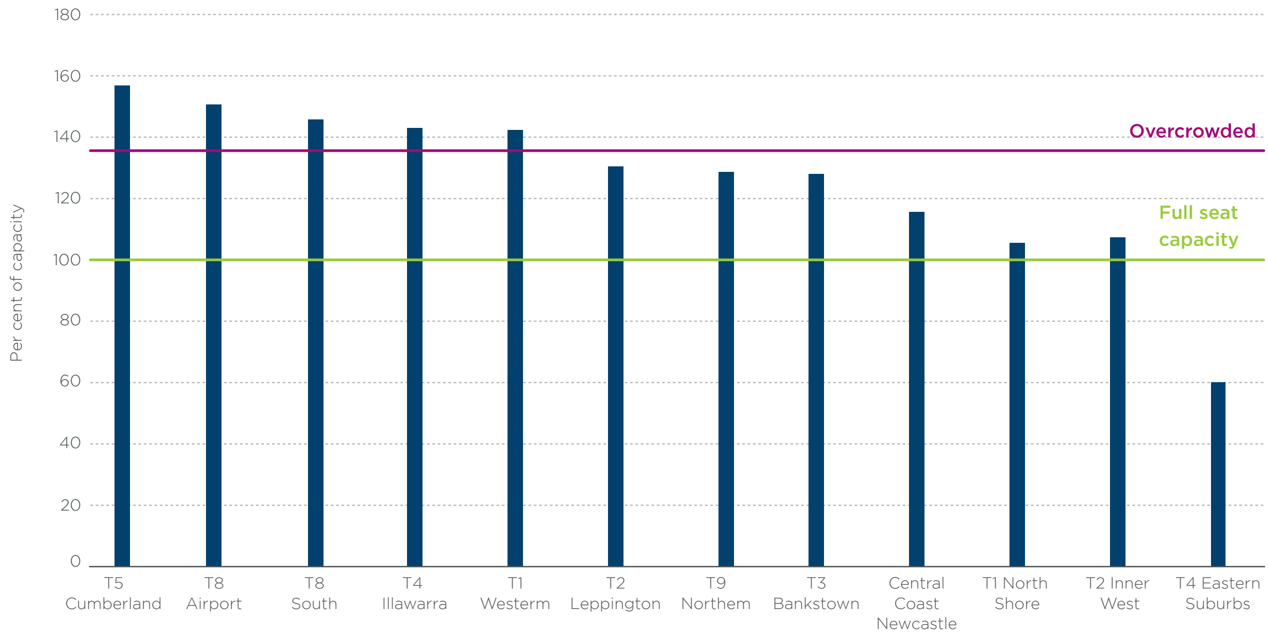
A well-functioning public transport system allows high volumes of people to efficiently move around our cities. It supports productivity, whether people need to get to work, to place of study, or elsewhere. Public transport can move passengers with far greater efficiency than private motor vehicles, particularly during peak hour when fully utilised. The single average car typically carries fewer than two passengers and occupies nine square metres of road space. By contrast:[16]

- a typical city bus can carry up to 80 passengers
- light rail vehicles can carry up to 450 people
- an eight-carriage Waratah train can carry up to 1,200 passengers.

In recent years, the public transport network has come under pressure from strong demand growth, driving increasing peak-hour overcrowding in recent years. Between 2014-15 and 2018-19, total patronage on the Sydney network (excluding the Sydney Metro) increased by an annual average of 7 per cent. The network now provides around 700 million trips each year (Transport for NSW, 2020a). Some parts of the network already operate well above their intended capacity; see Figure 6.3 for Sydney rail lines by capacity.

[16] Public transport capacity has been temporarily been reduced by social distancing requirements.

FIGURE 6.3: A SYSTEM AT CAPACITY



Note: Average load factor (morning peak) for September 2019 quarter data. Load factor is equal to the number of passengers as a proportion of the number of available seats. A load factor of 100 per cent indicates every seat filled with no passengers standing. A load factor above 135 per cent indicates an overcrowded service, with an excessive number of standing passengers.

Source: Transport for NSW.

Persistent crowding makes public transport a less attractive option compared with driving. For instance, passengers must often stand for long periods of time with very limited personal space. Service crowding is therefore not only a safety hazard, but a major cause of discomfort for passengers (particularly during warm weather) and of airborne disease transmission.

Network performance and efficiency are also compromised when services are crowded. For instance, trains and buses take more time at stops or stations to allow passengers to board and alight. This increases travel times and causes services to run behind schedule.

As highlighted in section 6.1, social restrictions imposed due to the COVID-19 pandemic have changed the way people work. Many people are choosing to work from home rather than commuting to the workplace, at least for part of the week—and some prefer it. Although long-term changes in work patterns are uncertain, any reductions in peak time commuter volumes will deliver crowding relief on public transport.

Incremental network improvements cut crowding cost-effectively

Ongoing projects like the Sydney Metro and Light Rail will further increase system capacity and provide crowding relief. But these projects are costly and take many years to complete. Sometimes incremental investments can be more cost effective than major projects. These more cost effective options could reduce or defer the need for major capital expenditure. Increasing the rigour and transparency of infrastructure decision-making processes goes some way to ensuring that these high-value investments are prioritised (see section 6.3).

The NSW Government is already investing in several incremental upgrades to improve rail network performance under the 'More Trains, More Services' program. These include digitised signalling, power supply upgrades, new trains, and other infrastructure. These will allow the network to run more trains, more frequently, more reliably, and with better connections to other services, alleviating crowding and improving convenience.

Public transport crowding is time and location-specific

As with road use, public transport crowding varies significantly throughout the day and between routes or lines.

- Public transport tends to be at or above capacity during morning and afternoon peak periods, but well below capacity at other times. For example, around half of weekday rail trips occur in the 4.5 hours that make up the weekday peak
- Some bus routes and train lines have spare capacity throughout the day, even during peak hours (for instance, the T4 Eastern Suburbs Line).

Spare capacity during off-peak hours presents an opportunity to reduce crowding during peak hour, by spreading demand more evenly throughout the day. Changes to the planning system to make better use of public transport are discussed in section 6.2.

Well-designed price structures would improve network efficiency

Public transport crowding partly reflects poor price incentives

One reason many people use public transport at the same time is because fares do not reflect the full cost of their decision to travel at those times. Passengers travelling in peak hours impose additional costs on the network, which exceed the fare paid. These costs largely relate to the need to maintain a larger network in the present to maintain capacity (with more trains and buses), and the need to undertake network expansions or upgrades to continue to meet peak demand into the future. The NSW Government is responsible for setting Opal fares but cannot exceed maximums periodically determined by IPART.

The current Opal fare structure partially accounts for the different costs of travelling in peak and off-peak periods. The Sydney rail network has for some time offered a 30 per cent discount for travel outside peak times.[17] This relatively small financial incentive may have encouraged some to travel during off-peak. The persistence of overcrowding, however, reflects that it has been insufficient to change the behaviour of most.

From July 2020, bus and light rail travel has also attracted off-peak discounts. For an initial three months, the off-peak discount will be lifted to 50 per cent for all transport modes to more strongly encourage off-peak travel while COVID19 related social distancing measures are in place (Transport for NSW, 2020b). Discounts will then return to 30 per cent. While these changes reduce the cost of off-peak travel, discounts are somewhat offset by the widening of the morning peak period, a change that was not considered in IPART's latest fare review (Independent Pricing and Regulatory Tribunal, 2020a).[18]

IPART's 2016 fare review included estimates of 'socially optimal fares', which aim to capture the true costs (and benefits) to society of using public transport.[19] This analysis demonstrates that actual fares generally fall well below cost and do not adequately encourage travel at times when the cost is lower. For example, the cost of transporting an additional train passenger outside peak times is very small, so a 15 to 25 kilometre off-peak train trip would ideally be priced at $1.71, rather than $3.40 currently.[20] Conversely, the train passenger only pays $4.80 during peak times, accounting for only half the estimated cost (see Table 6.4). In effect, off-peak train travellers in this example pay a large tax as part of their fare while other travellers receive large subsidies.

[17] Until recently, these peak times have been weekday mornings from 7am to 9am on metropolitan routes, 6am to 8am on intercity routes, and 4pm to 6:30pm in the afternoons.

[18] The morning peak now runs from 6:30am to 10am (metropolitan) and 6pm to 10am (intercity).

[19] IPART describes socially optimal fares as the fares that encourage people to use the Opal system in the way that leads to the highest net benefit to society. See also IPART's 2016 Information Papers (Independent Pricing and Regulatory Tribunal, 2016b).

[20] The current fares are calculated as the average of the 10-20km and 20-35km adult fares to align with the fare structure in the 2016 IPART report.

TABLE 6.4: ILLUSTRATIVE TRAIN FARE SUBSIDIES BY TIME OF TRAVEL

	Current price	Estimated socially optimal price	Subsidy*
Peak	$4.82	$8.37-$14.37	42 to 77%
Off-peak	$3.37	$1.71	-97%

*Subsidy on the socially optimal price, not the marginal financial cost of travel.

Source: (Independent Pricing and Regulatory Tribunal, 2016b); NSW Treasury; Transport for NSW.

One challenge in reconfiguring fares is that there is relatively little evidence about the induced change in travel behaviour. For instance, large increases in peak fares risk encouraging commuters to drive, rather than moving their public transport travel to off-peak times.

COVID-19 presents an opportunity to innovate with price signals

In the short term, social distancing restrictions will significantly reduce the capacity of all public transport services, meaning that the volume of commuters usually concentrated at peak times will need to be dispersed more evenly throughout the day. This has prompted the increased discount for off-peak travel.

This period presents an opportunity to understand how people respond to a greater price differential, taking into consideration though the offsetting effect of widening of the morning peak period and the extraordinary effect of the pandemic on overall demand for public transport travel.

Based on this experience, the Government should consider permanently incorporating higher discounts into the fare structure for off-peak travel on transport modes, as recommended by IPART (2016). Consistent with this, peak fares across all modes should be increased to make the fares more reflective of the higher costs of travelling during these times.

The incentive from off-peak discounts is greatest for those who only need to slightly change their routine to benefit from the lower fare—that is, those who would otherwise travel at the start or end of the peak period (e.g. just after 6:30am or before 10am, from 6 July 2020). This risks leaving an even more pronounced peak for travellers around the middle of the peak period.[21] A third, 'shoulder' pricing tier could be used to encourage passengers to spread their travel more evenly (Smith, 2009).

IPART is best placed to undertake analysis on the best approach to spreading demand, which could also involve other solutions such as an unlimited 'off-peak' monthly travel package proposed by IPART (Independent Pricing and Regulatory Tribunal, 2020a).

[21] In the morning, for instance, the middle of the peak occurs at around 8am.

Making concessions work for the network and for those who most need them

Concession fares for public transport are an important tool for ensuring that those less able to pay can still participate in society. For the most part, they allow government to meaningfully reduce the cost of living for disadvantaged groups (e.g. asylum seekers or those with disabilities), without increasing pressure on the network.

Concessions on Sydney transport could, however, be more efficiently designed to meet equity and demand management objectives. The current system of concessions is complex, with separate fare schedules for children, school students, tertiary students, and Gold Opal holders.

Gold Opal card holders are the second-largest group of peak period transport service users, after full fare users. Gold Opal holders account for around 7 per cent of all peak time trips, and for some modes almost 10 per cent. There are a few likely reasons for this. First, the eligibility criteria are not very stringent, with no means test required for people 60 and over. Second, as well as being the most generous, the low daily fare cap means the Gold Opal effectively does not differentiate between peak and off-peak fares, making it the least cost-reflective fare class. As a result, professionals over 60 years of age working part-time in the Sydney CBD pay no more than $2.50 for a daily peak hour train trip, while university students pay $3.60 to $8.86 for the same travel, depending on distance.

A more efficient system would allow more cost-reflective fares for those able to pay, while increasing support for those that need it. The concession system could be simplified to a single set of percentage-based discounts, as in some other states. Substantially higher discounts—or, potentially, free travel—could be offered during off-peak periods. The discounts would reflect the lower cost of providing the service and compensate for smaller discounts during peak periods. This would also provide some peak-time crowding relief. A review of the system would also be an opportunity to review the eligibility criteria for the full range of concessions to ensure they better target those in need.

Draft recommendation 6.5

Review Opal fares

Ask the Independent Pricing and Regulatory Tribunal of New South Wales to review the Opal fare structure to reflect the costs of travel and encourage a more even distribution of demand throughout the day.

Simplify and retarget the concession system. Make fares more efficient and reflective of need:

- reduce the number of concession classes
- increase incentives for off-peak travel
- ensure that discounted fares target those who most need them.

Planning for the housing we want and the jobs we need

07.

Draft Recommendations

Draft recommendation 7.1

Require councils to analyse housing supply capacity and show that planning controls are consistent with the dwelling needs identified by Greater Sydney's 20-year strategic plans for 5-year, 10-year and 20-year windows.

Where a lack of capacity is identified, ensure councils revise their Local Housing Strategies and Local Strategic Planning Statements to reflect the objectives identified in the Greater Sydney strategic plans.

Ensure councils immediately update relevant planning instruments to meet 6-to-10-year housing targets and report housing completions by Local Government Areas every six months.

Publish annual 10-year forecasts for State-led/partnered precincts.

Monitor housing forecasts and projections on a six-monthly basis. Where housing shortfalls arise, require councils to revise housing strategies and Local Strategic Planning Statements to indicate how the shortfalls will be remedied.

Draft recommendation 7.2

Review and revise SEPP 65, aiming to minimise prescriptions so as to ensure maximum flexibility for housing that matches consumer choice while maintaining minimum basic quality.

Review the Guide to Traffic Generating Developments by the end of 2021 to ensure it reflects current travel behaviour and the best approach to traffic management.

Review parking controls within strategic centres and areas with good public transport accessibility. Reduce car parking requirements within 800 metres of public transport nodes by the end of 2021.

Draft recommendation 7.3

Rationalise existing business and industrial zones in the Standard Instrument LEP to reduce the number of zones.

Broaden the range of permissible activities to ensure prescriptions are reserved for genuinely incompatible land uses.

Expand application of the complying development assessment pathway to the newly consolidated employment zones.

Draft recommendation 7.4

Require councils to prepare economic strategies (including commercial centre strategies) with the aim of increasing employment and productivity outcomes when updating Local Environmental Plans.

Draft recommendation 7.5

Better manage the retain-and-manage category of industrial and urban services lands in Greater Sydney to optimise employment and productivity outcomes.

Draft recommendation 7.6

Continue to implement measures to reduce red tape and complexity in the planning system. Bring NSW approval assessment times into line with other jurisdictions’ times by the end of 2023.

Draft recommendation 7.7

Develop a consistent approach to measuring benefits to community welfare from the provision of open and green space to help inform government business cases involving development.

Develop better options for taking into account green infrastructure and public space in strategic land use planning.

Draft recommendation 7.8

Progress reforms to the infrastructure contributions system after the Productivity Commissioner’s current review, to deliver a principles-based, transparent and certain system.

7.1 The role of planning in productivity growth

New South Wales land use planning creates a better NSW society, environment and economy, by regulating what individuals and businesses can do with land. Dealing with these complex issues requires a balancing act. That balancing act is demonstrated by the many objectives of the *Environmental Planning and Assessment Act 1979:*

- promoting the social and economic welfare of the community
- improving the environment through development and management of land and natural resources
- protecting our environmental and cultural heritage
- encouraging affordable housing
- establishing good design and construction
- attracting community participation.

All these objectives relate to well-established roles of government in overcoming 'market failures'.

The planning task matters to productivity, perhaps more than people often realise. Pooling together talent and capital, suppliers and customers in cities contributes to productivity growth and higher standards of living. It does this by creating deep and dynamic markets for consumers, producers and labour, by creating economies of scale in infrastructure and service delivery, and by creating greater opportunities for people to learn (Moretti, 2004).

Planning systems manage the many costs of this process—congestion, pollution, noise, reduced personal space, increased pandemic risk, and more. They also have the potential to support growth and great places that benefit all stakeholders.

Planning uses a range of policy instruments to do this. For example:

- Urban land use plans can give businesses the certainty they need to invest in new areas (overcoming **coordination failure**).
- These land use plans can also ensure that households get the amenities and infrastructure—such as parks and schools—which they need to live productive fulfilling lives (providing **public goods**).
- Building codes can give purchasers and users of buildings the confidence that they are built to certain construction standards (reducing **information asymmetry**).
- Assessment processes can ensure that developments don't impose undue costs on neighbours and the environment (reducing **negative externalities**).

And outside of cities and towns, land use planning helps to balance competing land uses—such as mining and agriculture—to maximise the benefits to society, while balancing these uses with environmental considerations.

Juggling these potentially conflicting objectives presents a challenge. New South Wales' planning system needs to be able to look through vested interests of individuals and groups to determine what is best for society. For example, rezoning inner suburban land to allow the construction of large units will provide significant benefits to potential new residents to an area. But it will also change the character of the area for existing residents.

This chapter focuses on how to meet these planning challenges—and meet them in ways that increase the productivity of the NSW economy.

7.2 The existing planning system is not delivering for New South Wales

The NSW planning system is currently failing to deliver economic outcomes in several areas. Submissions from business, councils, community groups and individuals noted that the existing system is:

- overly complex, prescriptive, and slow
- inflexible to the changing needs of business and residents
- a driver of the continued lack of housing supply and poor housing affordability.

A number of micro- and macro-economic factors influence house prices. But inevitably, when demand for housing outstrips supply, prices and rents rise. Higher housing costs disproportionately affect low-income households who experience 'rental stress'.[1] The increased cost of housing has contributed to more unequal wealth distribution over time, as those households that own a house have accumulated wealth through higher house values (NSW Treasury, 2016b).

Increased housing costs also impose broader economic costs. For instance, higher housing costs can contribute to poorer educational outcomes because insecure rentals force families to move frequently, disrupting children's education.

To improve the affordability of housing, we need more development, not less. And we need a planning system that will deliver it. Some of that housing development will need to be, metaphorically, 'in our backyard'. This is where people want to live: where they have better access to jobs, infrastructure, and other amenities. Collectively, we will be better off with a planning system that is better able to balance the benefits of development to prospective residents and businesses, as well as the views of opponents of change.

The Commission appreciates that the task facing the planning system is a difficult one. But a better planning system can make New South Wales a more affordable place for everyone to live.

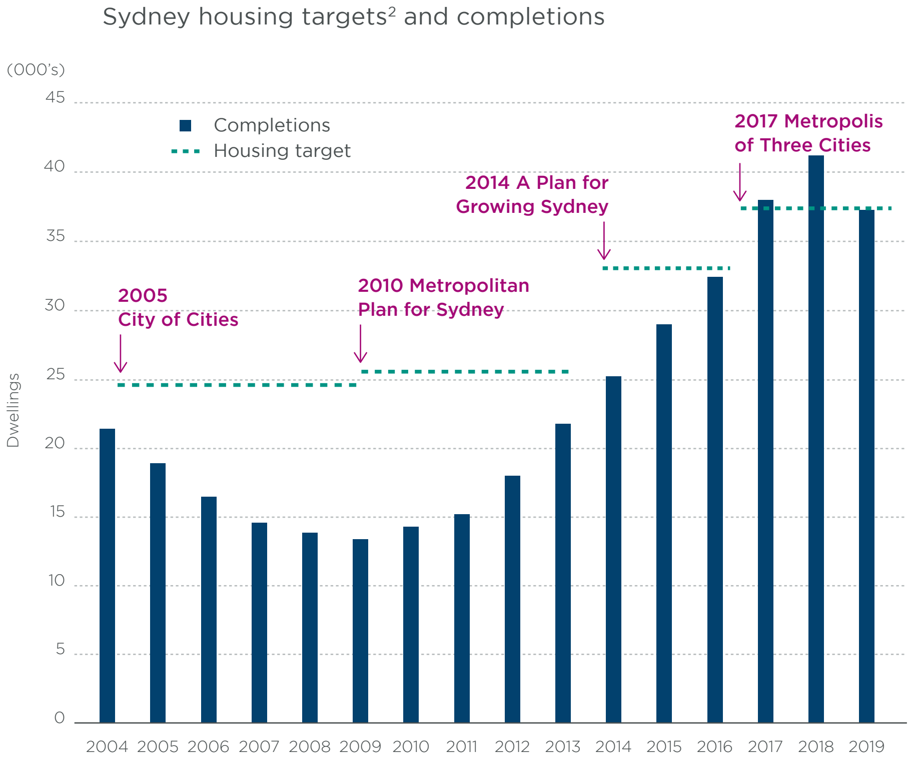
The planning system does not let housing supply respond quickly

Much evidence suggests Sydney has failed to deliver enough housing over many years. Of many possible contributing factors, two stand out:

- Population growth has exceeded expectations. Forecasts made in 2005 predicted that Sydney's population would reach 5.2 million by 2031. More recent projections are for a population of around 6.2 million (NSW Department of Planning Industry and Environment, 2019).
- Housing construction has persistently fallen short of projected need (see Figure 7.1). Even during periods of peak construction activity, the number of dwellings completed has not been sufficient to alleviate the accumulated undersupply.

[1] Rental stress occurs where a household pays more than 30 per cent of its disposable income to the landlord.

FIGURE 7.1: HOUSING SUPPLY IS NOT KEEPING UP WITH OUR NEEDS



Source: NSW Treasury; NSW Department of Planning, Industry & Environment (and past NSW planning departments)

The housing market responds to an increase in demand for homes (largely from population growth) through prices. A population boom, for example should increase rents and housing prices, which would have a range of effects:

- increasing the incentive for developers to build more housing ('supply response')
- encouraging some residents and prospective migrants to reconsider where they would like to live and move to other cities ('demand response')
- forcing compromises in living arrangements, by sharing their accommodation with a greater number of people, delaying moving out of home, or opting to live in a less convenient location ('demand response').

Restrictive planning changes the way the market works. Planning controls—such as zoning or limits on the height of buildings, minimum standards for apartment sizes or numbers of car parks or drawn out and uncertain assessment processes—make it more expensive to build more dwellings (Aastveit et al., 2020). Compared to a world without these restrictions, fewer new dwellings will be built, and prices will remain higher. As a result, more people will need to move elsewhere or compromise on their living arrangements.

Some evidence suggests that Sydney planning controls are more restrictive than other comparable cities. Assessment of a development application takes longer in New South Wales than in other states. In some cases, assessments take more than double the time of the next slowest state (Mecone, 2019). And assessment times have increased over recent years.

Housing supply in the State responds little to changes in house prices (that is, housing supply is 'price inelastic'). Recent research by the Australian Housing and Urban Research Institute (AHURI) suggests that, in Australia, a 1 per cent increase in the level of real housing prices produces only a

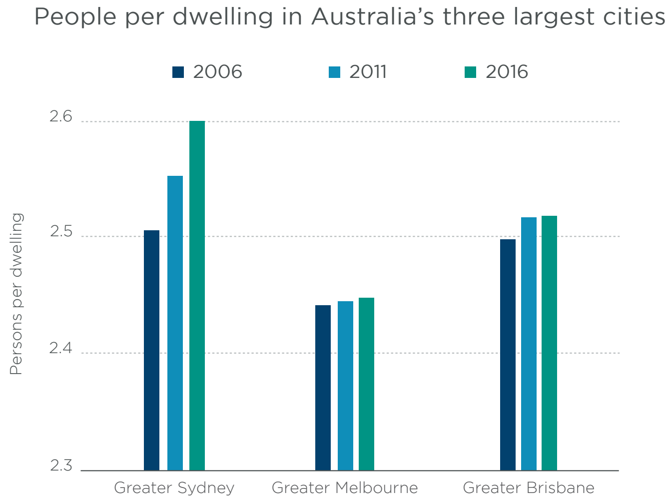
[2] Number of dwellings required per year, on average, to accommodate long-run projected population growth.

small expansion in housing stock, of between only 0.05 and 0.09 per cent (Ong et al., 2017). There is evidence both that supply in Sydney responds less to demand than in other capital city markets, and that it has become less elastic over time (Gitelman & Otto, 2010; NSW Treasury, 2016b). Declining housing-supply elasticity is consistent with land use regulations that make it harder for the housing market to respond to rising house prices by delivering more dwellings (The Economist, 2020).

With a relatively unresponsive planning system, New South Wales completed 212 dwellings for every 1,000 extra people over the ten years to 2018. This compares to Victoria and Queensland that have each completed around 295 dwellings for every 1,000 extra people over the same period.

Another concerning trend seen in Sydney is the increase in the number of people per dwelling, which rose from 2.5 to 2.6 between 2006 and 2016, interrupting its decline. In Melbourne and Brisbane average household size stayed relatively stable over the same period (Figure 7.2), even though those two cities' populations grew faster than Sydney's.

FIGURE 7.2: SYDNEY'S' HOMES ARE ACCOMMODATING MORE PEOPLE PER DWELLING



Source: ABS Census.

Housing is not going where it is most wanted

The strategic direction for Sydney is set by the Greater Sydney Region Plan and the District Plans. Housing targets set by the Greater Sydney Commission inform the direction of planning for housing supply. Councils have recently prepared local strategic planning statements and are in the process of preparing local environmental plans which will mean a move to strategic planning across three levels of the planning system.

Yet there is evidence that, to date, the planning system has failed to deliver enough housing, and failed to deliver housing where demand is highest. The planning system influences a city's urban spatial form. Restrictions on the height and density of housing built close to the Sydney Central Business District (CBD) force more of Sydney's people into the middle and outer rings (Kulish et al., 2011).

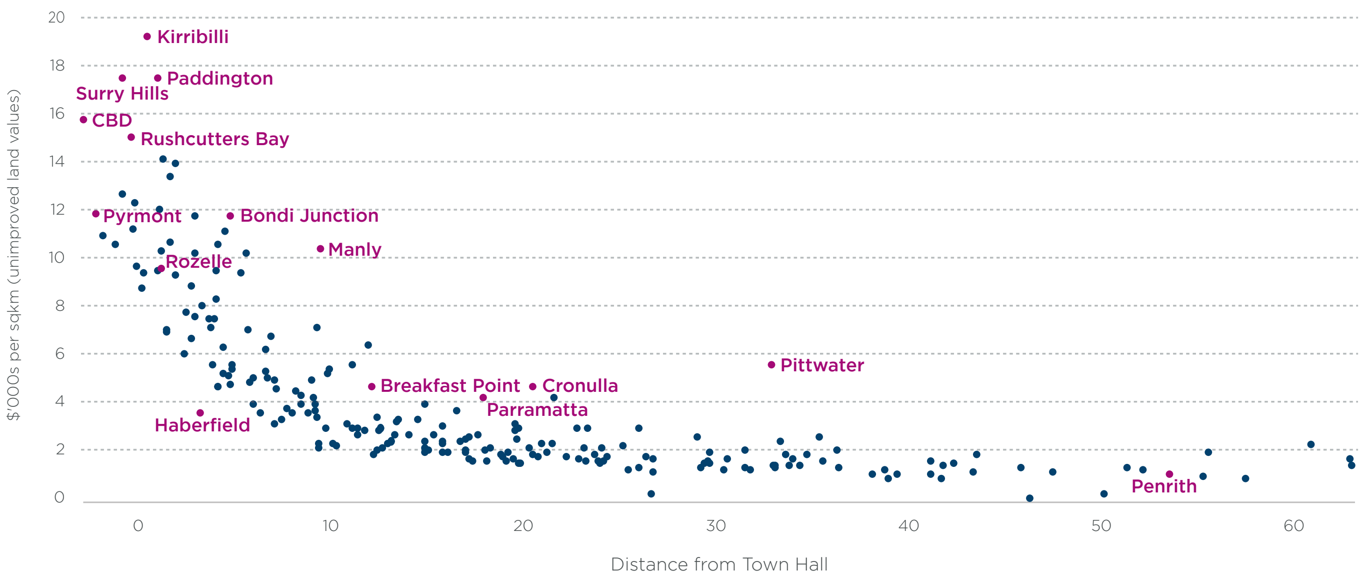
If we engage with these issues now, our findings can inform the next iteration of strategic plans to ensure that they are delivering good growth for our city.

High housing prices in inner Sydney reflect people's desire to live in these areas, but also the restricted supply of housing (Figure 7.3). In a market with less restricted supply, high prices would attract a greater amount of development and lead to higher dwelling density, allowing more NSW citizens to enjoy the convenience and amenities they offer.

In reality, Sydney's wealthy innermost suburbs have extremely low population density. The City of Sydney has 9,212 people per km2, North Sydney Local Government Area (LGA) 6,207 per km2, and Woollahra LGA just 4,520 people per km2. This contrasts with Manhattan (27,300 persons per km2), the City of Paris (20,300 persons per km2) and inner boroughs of London (10,000—16,000 persons per km2). Parts of inner Sydney are barely more dense than middle-outer suburbs such as Ashfield (4,977 persons per km2), Burwood (4,549 persons per km2), and Canterbury (4,095 person per km2).

FIGURE 7.3: THE LOCATION PREMIUM

Sydney home prices per square metre of land



Source: NSW Treasury analysis of NSW Valuer-General 2018-19 data.

As pointed out by Harvard economist Edward Glaeser: 'The city that doesn't build up must build out' (Gourney, 2011). Height and density restrictions prevent developers from providing the amount of housing close to the CBD that households would prefer.

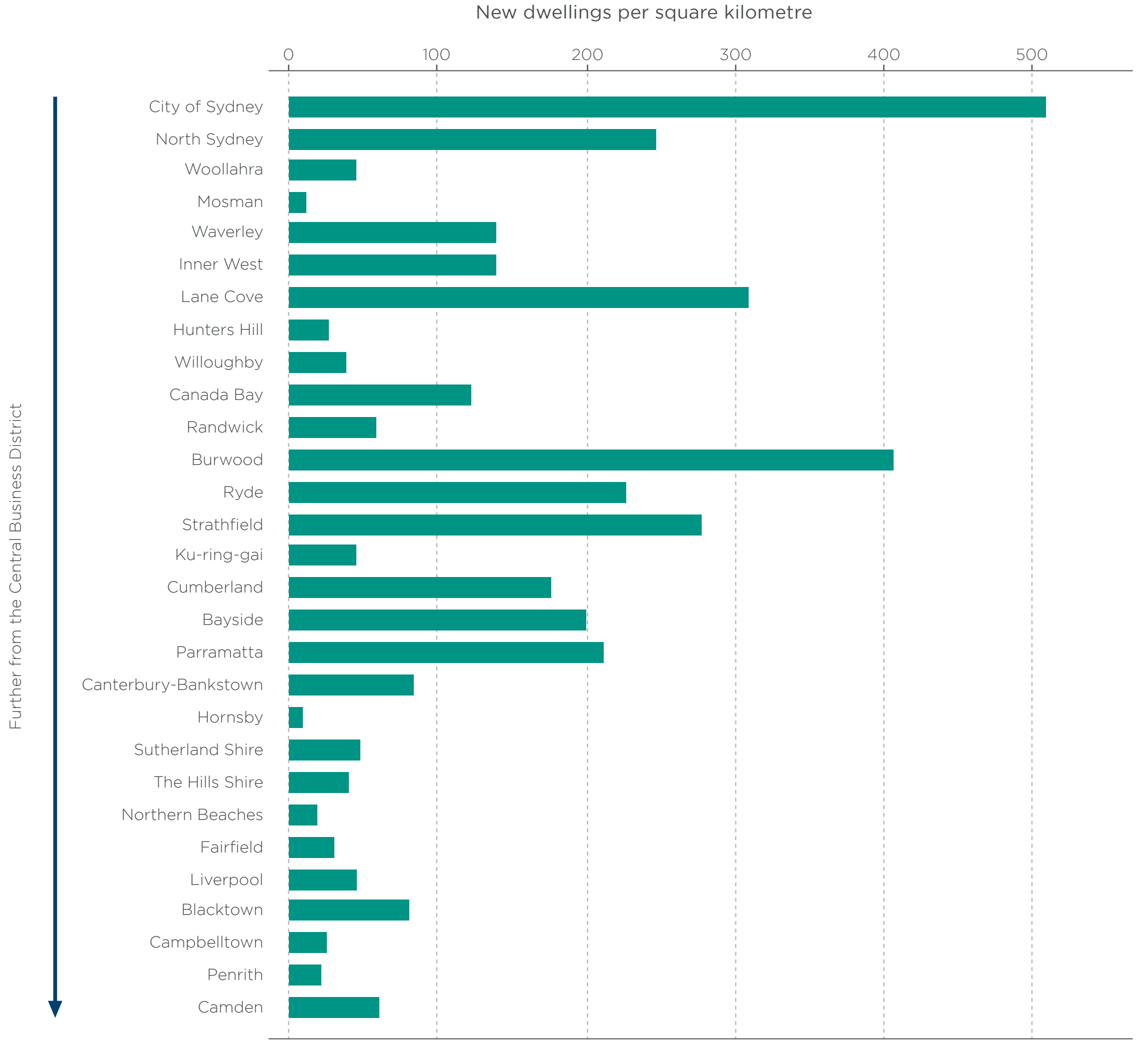
Under such restrictions, Sydney spreads wider than it would otherwise. As the city spreads, households need to commute further, reducing their time for work (contribution to gross state product), leisure (contribution to economic welfare), or both. Conversely, the dispersion reduces the size of the 'labour pool' available to businesses when hiring, as some people will not be willing to devote such a long time to travel.

Sprawling cities are also more expensive to service with transport and other infrastructure. Expansive road and rail networks are required to move people from place to place, increasing costs to Government.

Housing supply forecasts for Sydney suggest a larger pipeline of housing supply is needed in established areas and that the 'building out' trend will continue without planning reform. Housing supply forecasts project that only around 20 per cent of new dwellings will be built in local government areas within 10 kilometres of the CBD (See Figure 7.4; NSW Department of Planning Industry and Environment, 2020c).[3]

FIGURE 7.4: WHERE SYDNEY IS SET TO GROW

Projected distribution of new dwellings per square kilometre over the five years to 2023-24



Note: Dwellings per km^2 are calculated using total local government area (LGA) land size minus the size of protected land for that LGA, including national parks, nature reserves, indigenous protected areas and other protected areas not available for housing.

Source: NSW Department of Planning Industry and Environment; NSW Treasury

[3] LGA distances are calculated 'as the crow flies' and using the average straight-line distance from each LGA's post office to Sydney Town Hall.

The planning system must account for the interests of possible future residents

Community opposition to development is a major challenge for the planning system. This is often referred to by critics as NIMBYism (Not In My Back Yard), or in the extreme, BANANAism (Build Absolutely Nothing Anywhere Near Anything).

Communities and individuals oppose development for several reasons:

- Aspects of the change may objectively make them worse off—for example, by overshadowing their property or blocking a view.
- They may fear resulting changes to their community and its character. A common concern with developments that increase the population in an area is that local infrastructure such as roads, train lines, and public spaces will struggle to cope, leading to crowding and traffic. Benefits, on the other hand, may be hard to fully imagine or appreciate.
- They may fear that increased housing supply—or other changes to the nature of a suburb—will reduce the value of existing properties.
- They have had poor experiences with developers in the past—for example, where the developer does not deliver on promises, or develops a site in a way that significantly and adversely affects the community. This can breed scepticism about developers' commitments and fear about impacts on valued places.

Community opposition is a powerful force in planning decision-making, as it is both local and immediate. The beneficiaries of development, including prospective future residents both in the short term and in future generations, are, on the other hand, without a voice in the system. The case for development therefore tends to fall on developers, whose interests may be perceived as not aligned with those of the community.

It is the responsibility of the planning system to help us to manage change, and balance development's costs and benefits. A more flexible and responsive planning system would to some extent achieve this. Chapter 6 discusses the benefits of integrated land use and infrastructure planning and highlights areas in Sydney where this is already occurring (such as the Greater Parramatta Olympic Peninsula compact). Well-planned development, serviced by the appropriate infrastructure (including open space), can give communities greater confidence that service standards will be maintained or improved. It can also reduce costs to Government, for example, in land acquisition.

The costs of failing to fulfil this responsibility are immense. Planning controls in place due to a fear of change raise the cost of living for current and future generations to live in Sydney and make it harder and more expensive for businesses to access the labour they need. Ultimately a failure to accommodate growth will see our population age and our economy stagnate.

Undersupply drives up housing prices

The persistent undersupply of housing imposes significant costs. Many factors have contributed to strong housing price growth over recent decades, most notably the substantial decline in mortgage interest rates. But undersupply has both increased the sensitivity of house prices to interest rates and made a significant and potentially avoidable contribution on its own, particularly in Sydney.

Box 7.1: Comparing Sydney to the rest

The financial cost of housing is greater for Sydneysiders than Melburnians, for both renters and homeowners. In Sydney in 2016 some 14.2 per cent of renting households spent more than 30 per cent of their household income to do so, while these figures were 11.0 and 12.9 per cent for Melbourne and Brisbane respectively (Australian Bureau of Statistics, 2017).

Sydney homeowners also directed a greater share of their incomes towards mortgage repayments than their counterparts in other cities. In Sydney, 8.4 per cent of households spent more than 30 per cent of their household incomes on mortgage repayments.

The home ownership rate in New South Wales is below the national average. It has fallen from 70.3 per cent in 1999-00 to 64.3 per cent in 2019-20. The decline in home ownership rate is most notable in the 25-34 age group, where it fell from above 50 per cent in the 1980s to around 36 per cent—a decline of more than a third (NSW Department of Planning Industry and Environment, 2020a). Declining home ownership is a key driver of rising wealth inequality.

The shortfall in housing construction—and associated higher cost of housing—is changing the way Sydneysiders live. As set out in Box 7.1, higher housing costs affect different people in different ways. Some individuals leave the state because they cannot afford housing. Others cut back spending on other goods and services in order to afford housing, reducing the size of the non-housing economy.

The size of households gives perhaps the clearest indication that the housing market is having an impact on people's lives. Following a century-long trend where Australians opted to live in smaller households, household size in New South Wales abruptly increased from 2006.

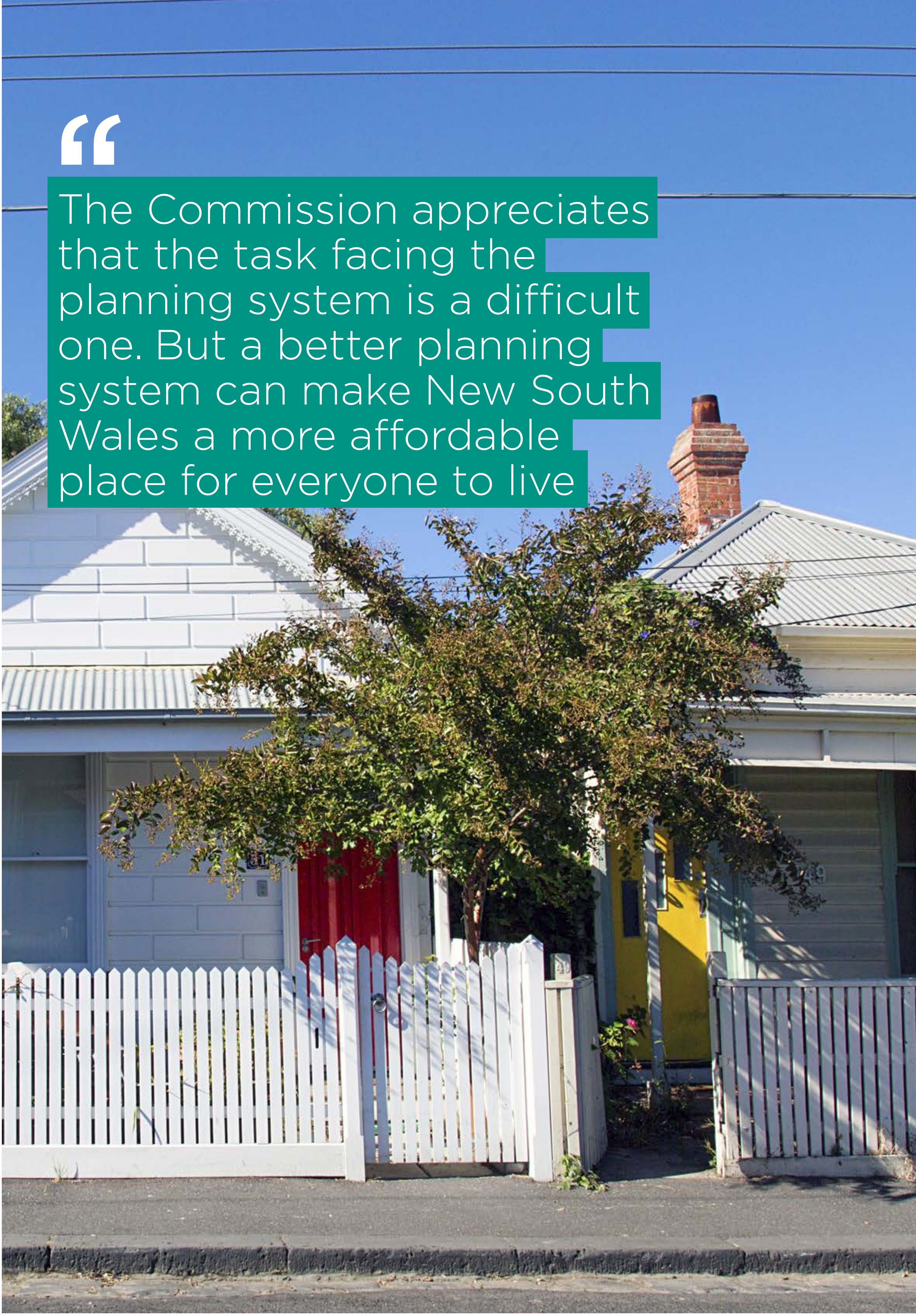
Today, New South Wales has the most crowded housing (in terms of people per dwelling) of all states (Australian Bureau of Statistics, 2020a; Australian Bureau of Statistics, 2020b). The number of residents living in severe overcrowding—considered a form of homelessness—has increased dramatically, and far more in Sydney than other places.[4] It rose by 74 per cent between 2011 and 2016 (Australian Bureau of Statistics, 2018).

A growing share of young adults (18–29 year olds) are living with their parents, and unaffordable housing has been found to be a key reason for doing so (Wilkins et al., 2016). Additionally, couples are postponing having their children in order to save for a house (BankWest, 2020). This constraint on housing and living arrangements has likely contributed to the decline in the fertility rate from over 1.9 in 2006 to currently under 1.7.

An undersupplied housing market burdens NSW households with more than just higher costs. By making the State a less attractive place to live and work, housing undersupply reduces inward migration and increases outward migration. That reduces the economy's access to high-quality labour and reduces its productivity.

On top of these issues, NSW's 2016 Intergenerational Report highlighted how lower housing supply can cause faster population ageing, lower workforce participation, and a greater gap between government receipts and spending (NSW Treasury, 2016a).

[4] The Australian Bureau of Statistics define a severely overcrowded dwelling as where four or more additional bedrooms would be required to meet the Canadian National Occupancy Standard.



> “The Commission appreciates that the task facing the planning system is a difficult one. But a better planning system can make New South Wales a more affordable place for everyone to live

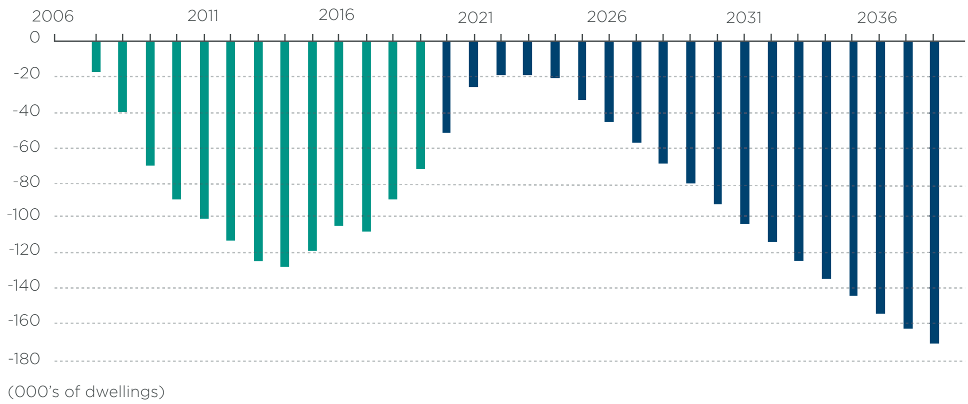
Undersupply of housing will persist without action

Without a change in the way we plan for future housing, the housing shortfall is likely to worsen in the long run. Since 2006, the failure of NSW housing supply to keep pace with demand is estimated to have resulted in an underlying shortage of around 70,000 dwellings in 2019 (Figure 7.5).[5]

Undersupply has declined from around 100,000 since the 2016 NSW Intergenerational Report, and is expected to decline further in coming years, driven by two main factors. First has been the record amount of new housing constructed from 2016–2020, which has outstripped the increase in demand. Second, and less positively, the COVID-19 pandemic and associated travel restrictions have significantly reduced immigration and delayed population growth—and therefore demand for housing.

FIGURE 7.5: HOUSING UNDERSUPPLY WILL CONTINUE WITHOUT CHANGES TO THE PLANNING SYSTEM

Cumulative difference since 2006 between actual and projected underlying demand and supply of housing



Technical note

Underlying demand is derived from population growth and pre-2006 longer-run household formation trends.

Future population projections are based on projections underlying the Treasurer's June 2020 Economic and Fiscal Update.

Projected supply is based on Treasury estimates of post-pandemic housing construction for the next two years, and GSC housing targets and DPIE projected dwelling need in the longer run.

The scenario presented assumes new housing supply falls short of targets by 14 per cent, based on historical experience.

Sources: Australian Bureau of Statistics, 2018; Department of Planning, Industry and Environment (and past planning departments); Greater Sydney Commission; NSW Treasury

The anticipated reduction in housing demand due to COVID-19 is expected to reduce the pressure on the housing market. But undersupply is expected to continue and increase without a change in the way we plan for housing. Over the past 15 years, new housing constructed in Sydney has fallen short of housing targets. If it is assumed to fall short of targets over the coming two decades, to the same extent as in the past, undersupply is projected to gradually build again to 170,000 dwellings by 2038 (Figure 7.5).[6]

[5] The housing under/over supply is calculated as the cumulative difference between the underlying demand and supply of housing. Underlying demand is derived from NSW Treasury modelling of living arrangement and household size trends, and population growth projections. Housing supply projections are sourced from DPIE. Projections take into account COVID-19 supply and demand impacts.

[6] Both demand and supply projections were adjusted to account for the impacts of COVID-19.

The planning system also moves too slowly

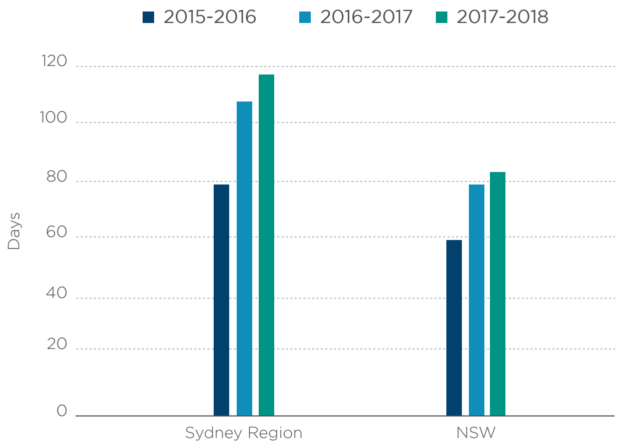
Planning works best when it signals where and how people can or cannot build, in a timely and certain way. In contrast, long and uncertain development assessment periods add to developers' costs and risks. Such assessment periods will deter them from undertaking some new projects.

And the time taken to determine NSW development applications has grown substantially in recent years (Figure 7.6). They are longest in Sydney:

- Between 2015-16 and 2017-18, the mean gross days for a development application determination increased from 79 to 114 days (44 per cent increase) in the Sydney metropolitan area.
- Between 2015-16 and 2017-18, the State's mean gross days for a development application determination increased from 59 to 84 days (42 per cent increase).
- In 2017-18 determinations in Sydney typically took 30 days longer than the state average.

FIGURE 7.6: DEVELOPMENT APPLICATIONS ARE TAKING LONGER

Mean gross days for development application determination



Source: Mecone using DPIE data.

Compared to other Australian jurisdictions, development applications in New South Wales take significantly longer than average. In some cases, they are more than double the time of the next slowest state—a substantial 'assessment gap' (Mecone, 2019):

- For medium-density housing developments, development application determinations take an average of 200 days in New South Wales compared to 70 days to 105 days for other jurisdictions.[7]
- For high-density housing developments (assessed by councils) development application determinations take significantly longer than in other jurisdictions—an average of 190 business days compared to other jurisdictions' average of 105 business days.
- For greenfield sub-divisions they take 130 days on average in New South Wales, 23 per cent longer than in the next slowest state, Queensland.

Where longer assessment times are delivering better outcomes, long development application times may be acceptable. But there is little evidence that this is occurring: assessment times have increased and are substantially longer than in other jurisdictions.

[7] Since the release of the Productivity Discussion Paper, the NSW Government has announced the roll-out of the Medium Density Code to all local councils from 1 July 2020.

7.3 Reform the planning system to aid recovery

Despite the challenges of reform, the Government has already introduced significant reforms to improve the planning system's flexibility and responsiveness. Many of these were introduced temporarily in response to COVID-19:

- Retail premises, home-based industries and businesses can operate 24 hours a day.
- Food trucks and dark kitchens can operate with fewer restrictions.
- Supermarkets and other NSW retail outlets can receive deliveries 24 hours a day.

The Commission welcomes all these developments and encourages the Government to retain the temporary relaxation of regulations where the benefits outweigh the costs.

The NSW Government has also announced other reforms. Some were in progress prior to the pandemic while other changes were designed as rapid responses to COVID-19's impact (see Box 7.2).

Box 7.2: How the planning system is helping the economy to recover

To sustain the economy throughout the COVID-19 crisis, the NSW Government introduced a Planning System Acceleration Program. The Acceleration Program:

- creates opportunities for more than 30,000 construction jobs
- fast-tracks assessments of State Significant Developments, re-zonings and development applications (DAs), with more decisions to be made by the Minister, if required
- supports councils and planning panels to fast-track local and regionally significant DAs
- introduces a Planning Delivery Unit for industry to progress projects that may be 'stuck in the system'
- clears the current Land and Environment Court case backlog with additional acting Commissioners
- invests $70 million to co-fund vital new community infrastructure in North West Sydney including roads, drainage and public parks to unlock plans for the construction of thousands of new dwellings.

Source: NSW Department of Planning Industry and Environment (2020c).

These reforms boost the timeliness, certainty and transparency of the planning system by cutting red-tape and reducing assessment times. Multiple agencies interact in the planning framework, and the establishment of a Planning Delivery Unit to coordinate with agencies is fundamental to delivering these reforms.

Drawing upon data from New South Wales' ePlanning program, the Planning Delivery Unit team will intervene in:

- regionally significant development applications
- priority projects, including key planning proposals and precincts
- planning amendments that have been identified as a priority and are being delayed due to critical unresolved issues.

7.4 Build dwellings to better match our needs

The planning system needs to find a balance while housing a growing population and accommodating the needs of the economy. This is a challenge, with New South Wales projected to have a shortfall of 170,000 dwellings by 2038. The changes proposed in this section are designed to reduce the time and costs that the housing industry faces in navigating the planning system. These changes will help the industry to deliver adequate development supply—particularly housing—to meet the demands of a growing population. They will also allow the system to continue meeting the needs of communities.

Improve strategic land use planning

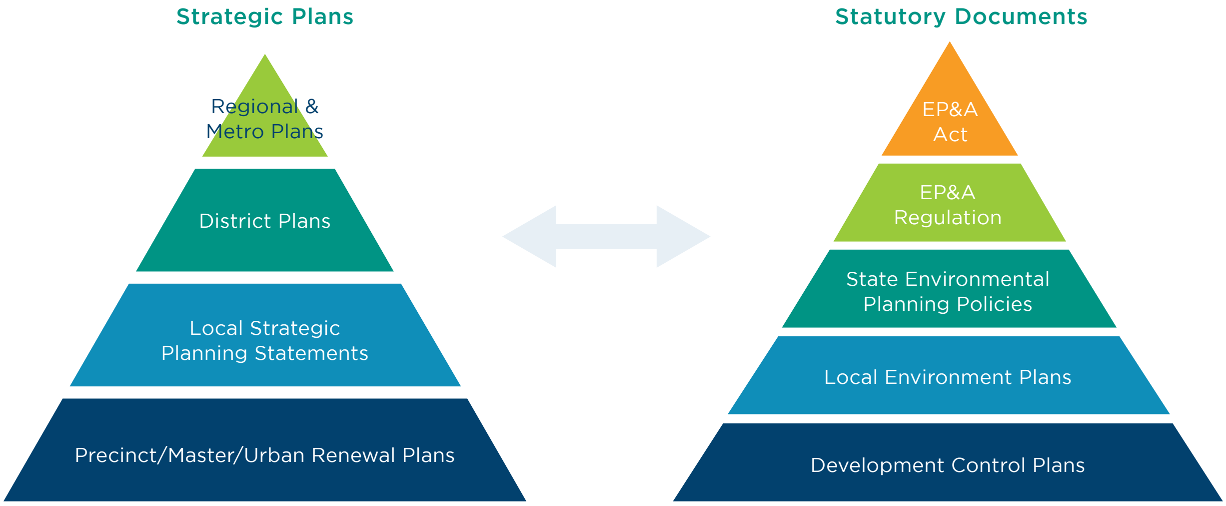
Strategic planning sets the foundational framework for the delivery of housing, jobs and infrastructure. The 2018 Greater Sydney Region Plan, *A Metropolis of Three Cities*, sets out a five-year vision and establishes five districts to manage growth and change (Greater Sydney Commission, 2018a):

- Eastern City District
- North District
- Central City District
- Western City District
- South District.

The current planning process creates a hierarchy of strategic plans. These are revised every five years, and are backed up by several statutory documents (Local Environmental Plans, Development Control Plans) which are established to realise those strategic planning goals (Box 7.3 outlines how the strategic plans and statutory planning documents relate to each other in New South Wales).

Box 7.3: How the planning system uses strategic plans supported by statutory planning controls to deliver outcomes

In New South Wales, the Environmental Planning and Assessment Act 1979 (EP&A Act) and the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) provide the legislative framework for assessing and determining development.



Policies for growth are outlined in the Metropolitan and Regional strategic plans; e.g. Greater Sydney Region Plan, Hunter Region Plan, Illawarra Plan. These are updated by the Greater Sydney Commission and the Department of Planning, Industry and Environment every 5 years.

District Plans cover the five sub-regions of Greater Sydney and detail how demographic, housing, and employment growth will be accommodated across Sydney.

A vision for each Local Government Area is outlined in Local Strategic Planning Statements, which then inform the regulatory constraints within the Local Environmental Plans, e.g. zoning and design restrictions.

Development Control Plans provide detailed planning and design guidelines to support the planning controls in the Local Environmental Plan. These are developed by councils.

Other legislation affecting developments include Biodiversity Conservation Act 2016, Water Management Act 2000.

Source: NSW Department of Planning Industry and Environment.

Currently the directions set out in the Greater Sydney Regional Plan are implemented through the 20 year District Plans. Housing targets are identified by district and local government area. They indicate to councils what additional development capacity they will need to provide to support the broader needs of Sydney. They distinguish housing targets in three windows extending from 2016: 0–5 years (that is, 2016-2021), 6-10 years and 10-20 years.

When endorsed in 2018, the Greater Sydney Regional Plan identified the need for an additional 725,000 new dwellings over 20 years. District Plans only included housing targets by local government area for the 0-5 year window, but with an action for the Greater Sydney Commission to develop 6-10 year targets in collaboration with councils.

Implementation of the Greater Sydney Regional Plan's vision for Sydney is now being incorporated in updated Local Strategic Planning Statements and in councils' Local Housing Strategies.

- Councils have completed or are finalising their Local Strategic Planning Statements. These each set out:
  - the vision for their local area
  - character that is to be preserved
  - how change will be managed.
- Councils' Local Housing Strategies, presently in varying stages of preparation, will detail how and where housing will be provided. They will consider:
  - demography
  - local housing supply and demand
  - opportunities for land use change
  - any constraints.

These documents:

- enable councils to proactively manage the projected increase in the local population
- ensure the provision of suitable housing numbers and types at appropriate locations
- set out a framework to accommodate new homes in a considered manner
- protect the valued local character and amenity of the areas involved.

Once strategic plans are finalised, councils will revise Local Environmental Plans to bring planning controls into alignment with the hierarchy. This will require councils to exhibit amendments prior to adoption and gazettal.

It is a challenging task to:

- ensure that these documents reflect the goals set by the overarching five-year strategic plans
- accommodate new and emerging challenges
- maintain an adequate pipeline of feasible capacity
- deliver infrastructure to accompany development in the right sequence.

With strategic plans set to begin a refresh in 2022, six to ten year housing targets—and the assurance of some capacity beyond that window—become one of the most critical elements of current plans.

To date, councils have made varying degrees of progress in preparing their Local Strategic Planning Statements and Local Housing Strategies and refreshing Local Environmental Plans. Also, Local Environmental Plans—existing and draft updates—diverge in the amount of development capacity that is available beyond the 6-10 years window. Lack of development capacity from 2027 to 2036 is an emerging issue in the Eastern Harbour City and North District in particular, where demand for housing and commercial space is the highest.

Ideally, strategic plans would include housing targets and development capacity far into the future. This would provide certainty to communities and industry about the future path of growth and ensure the planning system meets the needs of the broader economy.

Three factors limit this:

- uncertainty about the future and the need for flexibility
- difficulty in envisioning the spatial distribution of service provision over a 20-year horizon
- inflexibility because the viability needed to deliver housing can often require transformative rather than incremental change, which can be challenging for communities.

The continuing undersupply of housing in New South Wales—in the eastern areas of Greater Sydney in particular—is nonetheless a challenge that strategic planning must address (see Figure 7.5). Stakeholder submissions to the Commission highlighted this as one of the State's main productivity challenges.

But the benefits of housing supply in the right places are not limited to merely applying direct, downward pressure on prices. As outlined in Chapter 6, enabling housing supply along transport—particularly rail—corridors with spare capacity is an immediate opportunity to:

- **contain commuting times** for residents, with flow-on effects for the broader transport network in reduced service crowding and road congestion
- increase the pool of **highly productive workers** available to business
- enable **best use of existing infrastructure**, containing costs to government in the long run by limiting the need for additional large investments
- open up opportunities for **renewal of existing communities**, updating their services and amenities to best meet the needs of current and future residents.

The State has gone part-way in delivering more housing close to infrastructure. It has created Planned Precincts where it encourages development and has committed to integrated transport and land use projects, primarily the Sydney Metro program. To fully address the undersupply of housing depicted in Figure 7.5, it will need to commit to unlocking substantial development capacity, especially in housing. It should accommodate this after identifying supporting infrastructure, particularly transport, schools and community services.

While housing forecasts and projections may change, the overall magnitude of demand is largely established in strategic plans—the Greater Sydney Region Plan and District Plans. Having visibility of the programs and Local Environmental Plans in place to address demand means that the Government will need to ensure those local government areas that have identified only limited development capacity out to 2027-36 can make changes to their strategic planning documents to deliver the additional capacity required. This should be ensured before Local Environmental Plans are updated. These updates should account for uncertainty around future economic, demographic, and environmental trends.

Several councils in Sydney have significant new housing supply identified in State-led or partnered precincts. The role of precincts is therefore critical to a council's delivery of targets. Programs to deliver precincts are typically presented on a project basis but not linked to council housing targets.

This raises the profile of local strategies as the necessary link between targets specified in District Plans and their translation to development capacity within Local Environmental Plans. The NSW Government should:

- Require councils to commit resources to maintaining the evidence base underpinning Local Strategic Planning Statements and Local Housing Strategies and ensuring these documents are reviewed and, if necessary, updated regularly—at most, every two years.
- Ensure local strategies have regard to current demographic and economic projections and demonstrate sufficient capacity over 20 years to support needs identified in Greater Sydney's strategic plans.
- Update the pipeline of State-led and partnered precincts every year.

Maintenance of local strategies as 'living planning documents' will help ensure five-yearly updated strategic plans can be progressed quickly and cheaply. It will also help ensure Local Environmental Plans provide for sufficient development capacity at all times.

Draft recommendation 7.1

Update planning documents regularly to show housing requirements

Require councils to analyse housing supply capacity and show that planning controls are consistent with the dwelling needs identified by Greater Sydney's 20-year strategic plans for 5-year, 10-year and 20-year windows.

Where a lack of capacity is identified, ensure councils revise their Local Housing Strategies and Local Strategic Planning Statements to reflect the objectives identified in the Greater Sydney strategic plans.

Ensure councils immediately update relevant planning instruments to meet 6-to-10-year housing targets and report housing completions by LGAs every six months.

Publish annual 10-year forecasts for State-led/partnered precincts.

Monitor housing forecasts and projections on a six-monthly basis. Where housing shortfalls arise, require councils to revise housing strategies and Local Strategic Planning Statements to indicate how the shortfalls will be remedied.

The role of planning and building regulations on housing supply

The level and type of housing the development industry delivers is impacted by planning controls that govern land use mix and design considerations. The Discussion Paper identified the role played by State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development (SEPP 65) in regulating overshadowing, privacy and similar building issues. Stakeholders acknowledged regulation is needed to efficiently address market failures in developers' activities, namely information asymmetry and negative externalities affecting residents and prospective purchasers. These include privacy issues, overshadowing, and building integrity.

SEPP 65's Apartment Design Guide (ADG), however, goes beyond managing the impacts of new development on the wider community by targeting market failures. Dwelling size and parking availability are known to prospective purchasers at the outset. Some purchasers will be willing to trade off savings on space in return for more affordable living in their preferred location. Similarly, some purchasers will prefer active and public transport and ride sharing. There is therefore a strong case for these issues to be left primarily as matters of consumer choice.

Minimum apartment sizes

Presently, the ADG imposes economic costs by unnecessarily restricting the number and diversity of developments that may be built. Moreover, since they were developed, new models of dwellings have been created (particularly micro-apartments), but these are not yet acknowledged in the ADG.

In their submissions, many industry groups highlighted the impacts of the ADG minimum unit size provisions on development viability and affordability. The need for more diverse housing was emphasised:

> ***Improving housing diversity will create more choice in the marketplace, which will, in the long term, improve the affordability of housing and will make high density living a more attractive housing option for a broader range of household types and budgets.***
>
> ***The Hills Shire Council submission***

SEPP 65 should be reviewed with a view to minimising obligations and prescriptions to ensure maximum flexibility for housing consumer choice while maintaining a minimum basic quality. In conducting a review, the Department of Planning, Industry & Environment should consider the ability for planning instruments to offset the impacts of smaller apartments, such as:

- outdoor space
- storage
- impact of outlook and ceiling height on perceived space
- developments' proximity to open space
- the desire to accommodate innovative solutions.

Amendments to SEPP 65 should give consent authorities flexibility to vary design guidelines where alternative measures can result in similar or better outcomes to existing minimum sizes. This will enable delivery of innovative dwelling types that can be produced at more affordable prices.

Car parking requirements

The Austroads Guide to Traffic Management estimates that land and construction costs on Australian parking spaces can vary between $50,000 and $80,000, depending on building design and location (Austroads, 2020). While parking brings benefits—such as reduced need for on-street parking—regulation needs to reflect an appropriate balance between these costs and benefits.

The Apartment Design Guide stipulates parking requirements should be determined by the availability, frequency, and convenience of public transport or, in regional areas, proximity to a town or city centre. For development within centres or within walking catchments of rail stations, the ADG requires a minimum number of car parking spaces, or parking requirements prescribed by the relevant council—whichever is fewer. The minimums are set out in the Guide to Traffic Generating Developments, a document last updated in 2002 (Roads and Traffic Authority, 2002).[8]

Several councils—including City of Sydney, Parramatta City and North Sydney—limit the number of cars that can be parked at buildings within city or town centres. But many local governments keep minimum parking requirements relatively high, even in areas where citizens have good access to public transport. These minimum parking requirements undermine incentives for people to use active transport (such as bicycles), public transport, and ridesharing instead of private vehicles. By raising private vehicle use, these rules in turn raise the costs to the community from additional traffic. Notably, they raise congestion.

The Government should review the Guide to Traffic Generating Developments to ensure it reflects current travel behaviour and the best approach to traffic management. This review should be progressed as a priority for delivery before the end of 2021. It should pay attention to parking controls in metropolitan areas, particularly around public transport nodes. Subject to the review's outcomes, councils should ensure controls balance the costs and benefits associated with minimum parking requirements.

[8] This potential difference arises as the ADG is old and uses terminology that is inconsistent with the current strategic planning documentation in terms of metropolitan areas.

Draft recommendation 7.2

Allow more flexibility

Review and revise SEPP 65, aiming to minimise prescriptions so as to ensure maximum flexibility for housing to match choice while maintaining minimum basic quality.

Review the Guide to Traffic Generating Developments by the end of 2021 to ensure it reflects current travel behaviour and the best approach to traffic management.

Review parking controls within strategic centres and areas with good public transport accessibility. Reduce car parking requirements within 800 metres of public transport nodes by the end of 2021.

7.5 Unlock the potential of our employment and industrial zones

The evolving nature of business models and activities

The growth of the knowledge economy has made business proximity and human interactions in many ways more important to productivity growth. This has happened even as digitisation has exerted pressure to reduce the importance of proximity and human interaction (Withers, 2007).

Innovative, creative, and knowledge-intensive businesses are essential to New South Wales' future national and international competitiveness. They particularly seek locations in dense urban centres with easy access to a wide range of specialised firms and a large, skilled workforce. The planning system needs to change to better reflect this. Urbis noted in its submission that 'increased flexibility in employment zones would be beneficial to not only the economy but also to the vibrancy of a local area.'

More jobs and housing through less prescriptive zoning

Zoning regulations are a powerful tool for shaping our cities. By constraining activities on certain land they create both costs and benefits. To enhance productivity, zoning must:

- maximise the benefits from using land
- manage potential land use conflicts
- protect communities from negative impacts of land use on public health, safety and amenity
- minimise economic damage by not unduly limiting consumer choice and business decisions.

Presently, however, the State's overly prescriptive zoning is inflexible, limiting competition and innovation. This discourages business investment and hampers employment growth.[9]

The standard NSW zoning framework includes eight categories of business zones and four categories of industrial zones. These are set out in Table 7.1.[10]

[9] This was highlighted by the Commonwealth Productivity Commission when it noted that excessively restrictive zoning 'results in higher prices and/or poorer quality and ranges of goods and services for the community'. (Commonwealth Productivity Commission, 2017)

[10] The zoning framework is set by the Standard Instrument—Principal Local Environmental Plan.

TABLE 7.1: BUSINESS AND INDUSTRIAL ZONES IN THE STANDARD INSTRUMENT LOCAL ENVIRONMENTAL PLAN

Zone	Name	Description
B1	Neighbourhood Centre	• Small-scale retail, business and community use to service neighbourhood
B2	Local Centre	• Business, entertainment and community use for neighbourhood and visitors • Employment • Maximise public and active transport usage
B3	Commercial Core	• Retail, business, office, entertainment and community use for local and wider community • Employment • Maximise public and active transport usage
B4	Mixed Use	• Business, office, residential and retail • Maximise public and active transport usage
B5	Business Development	• Business, warehouse and large format retail
B6	Enterprise Corridor	• Businesses along main roads • Employment • Maintain economic strength of centres
B7	Business Park	• Office and light industrial • Employment • Service needs of local workers
B8	Metropolitan Centre	• Business, office, retail, entertainment and tourism for participation in global economy • Intensive land use • Diversity of uses characteristic of global status
IN1	General Industrial	• Industrial and warehouse • Employment • Minimise adverse industry impact on other land uses • Protect industrial land
IN2	Light Industrial	• Light industrial, warehouse and related use • Employment • Minimise adverse industry impact on other land uses • Enable other uses to meet needs of local workers • Protect industrial land
IN3	Heavy Industrial	• Land for industries that need to be separate • Employment • Minimise adverse industry impact on other land uses • Protect industrial land
IN4	Working Waterfront	• Maritime-specific activities • Complementary industries that require direct waterfront access

Source: Discussion Paper (NSW Productivity Commission, 2019)

Local Environmental Plans add to the complexity for land users by applying the standard categories differently across LGAs. This unnecessarily restricts where businesses can locate and how land can be used.

Stakeholders confirmed this prescriptive structure has several weaknesses:

- There are too many rules, many of them unclear or inconsistent.
- Zones overlap confusingly and rules dictating permissible land use are not applied consistently.
- Low-impact uses are not allowed 'as a right' but instead require resource-intensive action by regulators.

An example of this last problem is highlighted in Box 7.4

Box 7.4: How zoning can limit development opportunities

A retail company seeks to develop a supermarket in a vacant hardware warehouse building, located within a B6 Enterprise Corridor in Sydney. The project is fully funded, would address an undersupply of supermarket floor space for the existing population, and would generate jobs on a currently vacant site.

The project is shovel-ready and the proponent intends to submit a DA as soon as the Local Environment Plan amendment is made.

The proponent cannot immediately submit a development application for their proposal, as 'commercial premises' are not permitted in a B6 Zone. They must first submit a planning proposal for an 'additional permitted use'.

This change in use adds 12 to 18 months to the development process. Even if fast-tracked, it is likely to take at least a year.

Amending the local environmental plan definition of 'supermarket' to specifically permit this activity in business zones would add flexibility to the system. It would allow development to generate both temporary and permanent jobs and cater to the needs of an existing population.

Reviewing and rationalising the standard business and industrial zones and broadening permissible uses within each zone will better accommodate the changing needs of businesses and households. These changes do not necessarily erode barriers between incompatible commercial and industrial activities.

Victoria reduced the number of business zones from five to two and reformed its industrial zones in recognition of the new and emerging needs of industry.[11] Case study 7.1 details these reforms.

[11] Implementation in Victoria was relatively simple because the Victorian Government controlled all land uses within the zones. This contrasts with New South Wales where the councils set the permissibility. Implementation of similar changes in New South Wales would need to address this additional complexity.

Case Study 7.1: How Victoria opened up zoning

In 2013, Victoria reformed its zoning system after a process of public consultation. It consolidated its commercial and business zones from five into two and redefined mixed-use zones as residential (Department of Transport Planning and Local Infrastructure, 2013).

- Business 1, Business 2 and Business 5 zones were consolidated into one new zone called a Commercial 1 zone. Land in this zone can now be used for a broader range of activities without a permit. Floor area restrictions were removed.
- Business 3 and Business 4 zones were consolidated into a second zone called a Commercial 2 zone. This new zone provided more opportunities for office, commercial business, trade supplies and some retail while prohibiting residential accommodation. Floor area restrictions for some office and retail uses were removed.

The reforms also included changes to industrial zones, such as removing the default floor space area restrictions and allowing small-scale supermarkets in Industrial Zone 3.

In 2018, an additional commercial zone (Commercial 3) was added to accommodate mixed-use employment to facilitate the establishment and growth of creative industries, small manufacturers and start-up businesses.

Victoria's new commercial zones:

- better balance planning and land use aims with business flexibility
- respond to new and emerging trends
- allow businesses to co-locate.

Victoria introduced these changes quickly. They were announced in May 2013 and came into effect 1 July 2013.

Source: Victorian Government (Department of Transport Planning and Local Infrastructure, 2013)

There is a strong case to consolidate existing zones to better suit the future of work and the way our cities function. This should be done by establishing a contemporary strategic intent for employment zones and broadening the range of permissible activities. New zones could consider land uses grouped along the following lines:

- **B1 (Neighbourhood Centre)** and **B2 (Local Centre):** councils should set out a hierarchy of local centres,[12] with the vision for each individual local centre considered through merit assessment of development applications without the need for overly prescriptive controls.
- **B5 (Business Development), B6 (Enterprise Corridor), B7 (Business Park)** and **IN1 (General Industrial):** there is potential to merge uses within these zones into a single zone that allows a mix of business, light industrial, creative industrial, and retail activities.
- **Industrial (IN) Zones:** the **IN2 (Light Industrial)** and **IN1 (General Industrial)** zones could be merged, and permissible uses broadened. The distinction between IN3 and IN4 should be maintained for genuinely incompatible heavy industrial and waterfront uses.

In addition, the complying development assessment track should be expanded for development applications within these (consolidated) zones. These reforms will give businesses more flexibility, certainty, and opportunities to invest without lengthy approval processes.

[12] This is done through councils' Local Strategic Planning Statements. The hierarchy should be informed by an evidence-based assessment of local and district-wide housing, employment, retail commercial services and infrastructure demand.

Draft recommendation 7.3
Consolidate employment zones

Rationalise existing business and industrial zones in the Standard Instrument LEP to reduce the number of zones.

Broaden the range of permissible activities to ensure prescriptions are reserved for genuinely incompatible land uses.

Expand application of the complying development assessment pathway to the newly consolidated employment zones.

Using economic development strategies to inform land use controls

The Greater Sydney Region Plan, *A Metropolis of Three Cities*, envisions all residents being able to commute to an employment centre within 30 minutes. Greater Sydney's District Plans provide a range of employment targets for each strategic centre.

Delivering these outcomes requires robust economic development strategies that consider local assets, opportunities, and barriers to growth. Development strategies provide a framework to let local government enable economic growth. The NSW Government has assisted regional local councils with doing this by developing Regional Economic Development Strategies (REDS).[13]

It is recommended that councils be required to undertake economic assessments based on a standard framework set by the NSW Government when updating Local Environmental Plans. Economic development strategies should identify commercial centres, with pathways for delivery of targeted employment outcomes.

Draft recommendation 7.4
Generate economic strategies

Require councils to prepare economic strategies (including commercial centre strategies) with the aim of increasing employment and productivity outcomes when updating Local Environmental Plans.

Foster economic growth on industrial and urban services land

Across Greater Sydney, 28 per cent of all jobs are on industrial and urban services land.[14] Of these jobs:

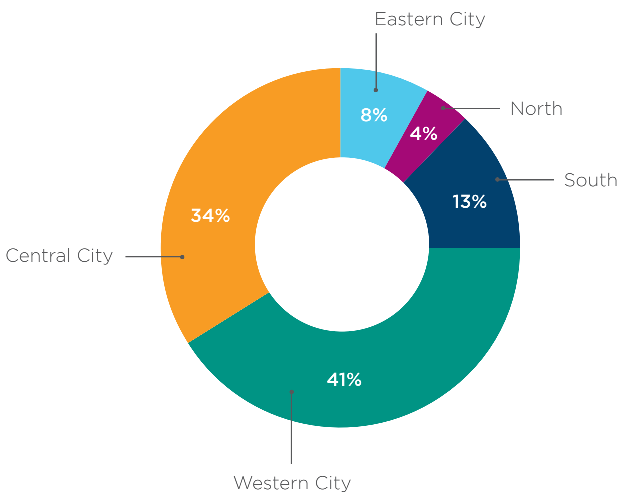
- 40 per cent are in heavy industry.
- 33 per cent are activities ranging from light industrial, warehousing and urban services to manufacturing and creative uses.
- 17 per cent are knowledge and professional services jobs.
- 10 per cent are in health and education (Greater Sydney Commission, 2018b).

Most industrial land in Sydney is in the Western City District (41 per cent) and Central City District (34 per cent). The remaining 25 per cent land is split across Eastern City, South and North districts (Figure 7.7).

[13] REDS can be accessed from https://www.dpc.nsw.gov.au/programs-and-services/centre-for-economic-and-regional-development/projects/regional-economic-development-strategies/.

[14] Industrial and urban services land is land identified in the NSW Department of Planning and Environment's Employment Lands Development Monitor. It includes industrial zoned land, as well as some business zoned land which permits a number of industrial uses.

FIGURE 7.7: GEOGRAPHIC DISTRIBUTION OF INDUSTRIAL LAND IN GREATER SYDNEY



Source: NSW Department of Planning and Environment, 2017. *Employment Lands Development Monitor 2017*, June 2017.

Industrial and urban services play a role in supporting the city and the activities of its businesses and residents.[15] These services are, however, relatively low-density in land use and direct employment (Greater Sydney Commission, 2018a). Over time, this industrial land has been subject to increasing pressure from encroachment of other uses. These include residential use, particularly in the North and Eastern City districts. The appropriate solution to this problem will divide industrial and urban services land into three categories. These are set out in the Greater Sydney Regional Plan and mapped in Figure 7.8:[16]

1. **Retain and manage**

Safeguard all existing industrial and urban services land from competing pressures, especially residential and mixed-use zones.

This principle applies in the Eastern City, North and South Districts, the North West Growth Area, and the established areas of the Western City.

2. **Review and manage**

Review all industrial and urban services land to either confirm its retention or manage uses to allow sites to transition to higher-order employment activities (such as business parks). Seek appropriate controls to maximise business and employment outcomes.

This principle is applied to industrial land in the established areas of Central City District, Hornsby, Liverpool and Fairfield.

3. **Plan and manage**

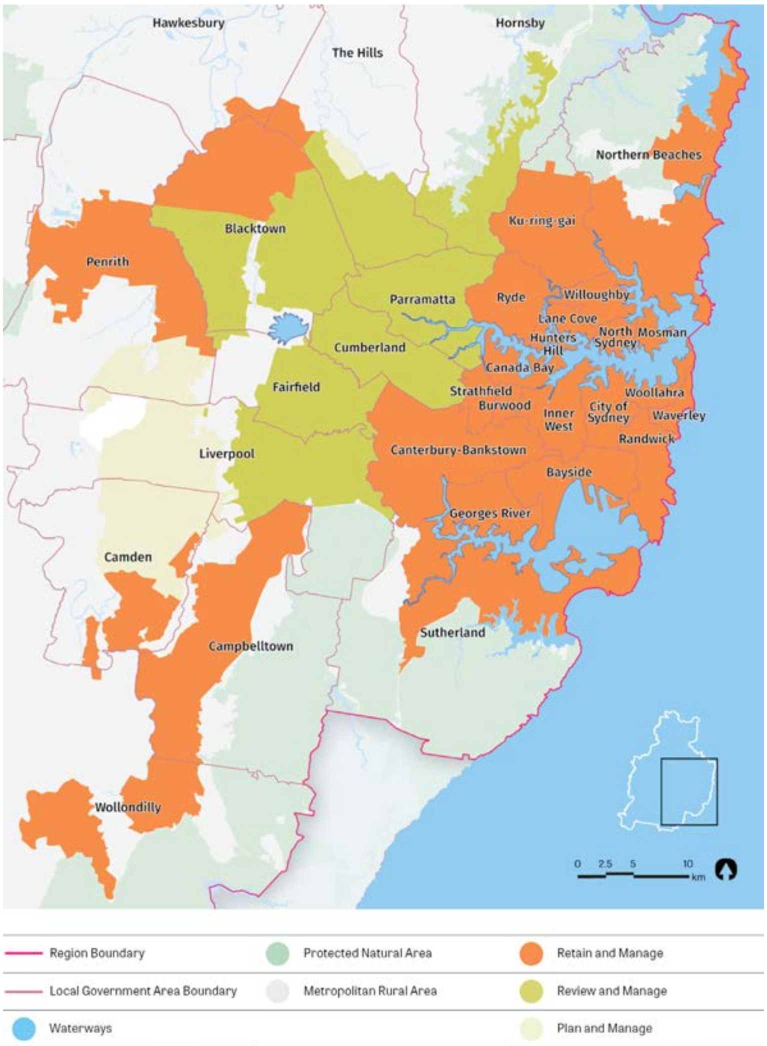
In land release areas, there is a need for additional industrial and urban services land to support projected population growth and economic development.

This principle applies across the South West and Western Sydney Airport Growth Areas.

[15] This is highlighted in the Greater Sydney Regional Plan, A Metropolis of Three Cities.

[16] There are also a range of significant industrial land which are subject to specific State Environmental Planning Policies.

FIGURE 7.8 APPROACHES TO INDUSTRIAL AND URBAN SERVICES LAND ACROSS SYDNEY



Source: Greater Sydney Commission

The retain-and-manage approach effectively restricts change to existing industrial land uses within 26 local government areas in Greater Sydney.

Private sector stakeholders have criticised this as an inflexible approach, with significant costs in foregone productivity and liveability.

> ***The Greater Sydney Commission should reverse its 'review and manage' or 'protect and manage' approach to industrial and urban services land and instead adopt a site-by-site approach to the proposed rezoning of industrial land to higher order uses such as residential and mixed-use development (particularly where job numbers can be enhanced).***
>
> ***Urban Taskforce submission***

> “Reviewing and rationalising the standard business and industrial zones and broadening permissible uses within each zone will better accommodate the changing needs of businesses and households

Land can and must change its uses over time, as the city and community needs change over time a logic that the NSW planning system has always been flexible enough in the past to embrace and is the approach of most best-practice planning systems. The consequence of not being flexible is sterilisation and places which get trapped in time and function - then fail to deliver that function in practice while acting to block different futures and suppress new value.

Property Council of Australia submission

The Greater Sydney Commission argues that zoned industrial and urban services land is essential for the proper functioning of the city and that, without it, these land uses would be overwhelmed by highest and best competing uses (that is, residential use). In most circumstances, heavy industrial uses are not compatible with other land use types and operate only within heavy industrial zones. There is evidence, however, that industrial land is not always being effectively optimised (Centre for International Economics, 2018). For example:

- Many non-industrial uses (such as retail, health, and sport and recreational facilities) are operating in industrial areas.
- General and light industrial uses (such as automotive services and concrete batching) operate in both industrial zones and non-industrial zones.
- There is no clear delineation between light industrial, general industrial, and commercial uses, as the compatibility between these uses has increased over time.

Moreover, there is increasing potential for newer built forms to accommodate more intensive use of industrial land and enable industrial uses to co-locate with other employment activities.[17]

Local Strategic Planning Statements prepared by councils point to the need to review the range of employment uses allowed in industrial and urban services lands. There is an opportunity to rationalise employment zones to increase flexibility in activities while maintaining floor area for industrial and urban services uses. There is an immediate opportunity to optimise productivity and employment outcomes of the retain-and-manage approach to industrial lands. This supports the Greater Sydney Commission's position:

The management of these lands should accommodate evolving business practices and changes in needs for urban services from the surrounding community and businesses. There will be a need, from time to time, to review the list of appropriate activities within any precinct in consideration of evolving business practices and how they can be supported through permitted uses in local environmental plans.

Metropolis of Three Cities (Greater Sydney Commission, 2018a)

[17] For example, a concrete batching plant in Artarmon is designed so that the externalities from being located beside or near the plant are minimised compared to the historical built form of such plants.

The retain-and-manage policy should continue to respond to the evolving nature of industrial and urban services and the broader needs of business. To optimise management of these lands, the Department—in partnership with the Greater Sydney Commission and the NSW Productivity Commission—should undertake a review over the next twelve months. The review should answer the following questions:

- What are the existing uses of industrial lands subject to the retain-and-manage policy?
- How much vacant, undeveloped, and underdeveloped industrial land exists?
- What are the barriers to, and opportunities for, delivery of essential urban services?
- Can existing industrial and urban services lands accommodate the changing spatial requirements of new and evolving employment uses—for example, increased demand for data warehouses. If not, how can the management of industrial and urban services lands accommodate them?
- Are their opportunities for greater flexibility in industrial zones to allow for alternative employment uses while maintaining essential industrial and urban services activities?

Draft recommendation 7.5
Optimise industrial land use

Better manage the retain-and-manage category of industrial and urban services lands in Greater Sydney to optimise employment and productivity outcomes.

7.6 Minimise red tape and complexity

The NSW planning system has become too complex and inefficient. It is evident in approval times, which have increased over time and now significantly exceed those of other Australian jurisdictions (see section 7.2). This point was made in several submissions.[18]

Over the past decade several reviews of the NSW planning system have tried to find ways to speed up assessment, simplify existing regulatory processes and improve transparency in decision-making processes. Since release of the Discussion Paper, the NSW Government has announced significant changes aimed at reducing red tape and improving approval assessment times (see section 7.3). Nevertheless, more is needed if NSW assessment times are to align more closely with those of other states.

[18] See for example the submission from the Planning Institute of Australia.

The NSW ePlanning system provides a welcome opportunity to streamline the lodgement of applications and improve access to information. It provides an online environment where people, industry and government can work together and can access planning services and information from anywhere at any time. It includes a digital mapping service, application lodgement and tracking, and certifications.

It is envisaged that services will be further integrated, and the functionality of the online platforms expanded to produce greater efficiencies across multiple aspects of the planning system, including the collection of contribution payments. There are early indications that the system is already reducing assessment times by up to several weeks.

Stakeholders confirmed support for expanding the ePlanning system. And the Government recently announced that from 1 July 2020, it is expanding. All 42 councils in Sydney, Illawarra, Newcastle and the Central Coast must now use ePlanning to accept and process development applications, complying development certificates and post-consent certificates. A single state-wide portal will simplify the lodgement process, promote consistency and assist in expediting assessments.

During consultations stakeholders agreed that the planning system is too prescriptive, slow and cumbersome. But there was no clear consensus on what path to take to address these issues.

The NSW Government should continue implementing measures to reduce red tape and complexity in the planning system to cut approval assessment times significantly by 2023. Encouraging signs of progress include the Planning Reform Action Plan. This is designed to streamline the planning process and significantly reduce assessment times for planning proposals, regionally significant development applications and major projects.[19]

The Government's recently announced Planning Delivery Unit and rollout of ePlanning to councils across New South Wales will assist in realising progress.

Stakeholder submissions raised additional possible initiatives to reduce red tape and cut approval times (see Appendix 3 for detailed initiatives). The Department of Planning, Industry and Environment should consider progressing these initiatives as suggested by stakeholders during the Discussion Paper consultation process.

Some of these proposals have already been announced by the NSW Government. A particularly beneficial reform is the broadening of the NSW Land and Environment Court's role to include the establishment of a new class of appeals to help unblock the planning system and exploring opportunities to expand complying development approval pathways for revised business and industrial zones. Further proposals for reform include:

- Improve timeliness of development approvals by increasing the scope of the EP&A Regulation and incorporating stricter procedural times that align with those prescribed by the Development Assessment Best Practice Process Map.
- Improve certainty of the assessment period for some development types by introducing to the EP&A Regulation a 'deemed approval' provision comparable to clause 64 of the *Queensland Planning Act 2016.*
- Improve assessment times by minimising reliance on stop-the-clock provisions and develop procedures to ensure appropriate information is provided prior to lodgement of an application.

[19] Accessible from: https://www.planning.nsw.gov.au/Policy-and-Legislation/Planning-reforms/Planning-Reform-Action-Plan.

- Once issues are addressed, introduce target times for concurrences and referrals. Consistent with the approach in Queensland, a deemed approval would be issued when a referral authority fails to respond within 28 days to provide an agency with the incentives to progress a review of a proposal. These requirements could be integrated into the EP&A Regulation alongside the assessment times set out in Clause 106.
- Evaluate Local Planning Panels (LPPs), identifying issues needing to be addressed to improve their effectiveness and time taken to consider development applications. The evaluation should also consider opportunities to reduce scope of LPPs (e.g. need to evaluate modifications).

Draft recommendation 7.6
Cut NSW planning assessment gap

Continue to implement measures to reduce red tape and complexity in the planning system. Bring NSW approval assessment times into line with other jurisdictions' times by the end of 2023.

7.7 Make the most of our open and green spaces

Open and green spaces help make our communities better places to live. These spaces are a place for exercise, leisure, and community gathering. As our population grows and backyards become smaller, access to open and green spaces helps keep our homes pleasant and desirable.

The benefits of public and green space to communities are well established. But green space also has direct links to productivity:

- Healthier people are more likely to participate and be more productive in the labour market.
- Open space encompasses land used for transportation and connecting communities with one another and the outside world, which helps to increase productivity growth.
- By helping to mitigate air pollution and the effects of climate change, green space helps to create resilient cities.

In submissions to the Commission, stakeholders unanimously highlighted the increasing importance of green and open space to the amenity and liveability of our spaces, as well as to the productivity of the economy.

The Infrastructure Australia Audit found Australians rate access to parks and open space more highly than telecommunications and public transport when choosing where to live (Infrastructure Australia, 2019b). The timely delivery of new and upgraded social infrastructure is integral to the success of Australia's cities as they grow. High-quality public environments and green infrastructure can have a significant impact on the economic life of urban centres big or small. Such amenity can attract new residents, businesses, investment and support for local business.

The Greater Sydney Region Plan, *A Metropolis of Three Cities*, identifies the need to expand the Greater Sydney Green Grid (Greater Sydney Commission, 2018a). It calls for a regional network of high-quality green spaces that support community access to open space and assist with the cooling of neighbourhoods. A range of initiatives is being implemented to increase the supply of high quality, publicly accessible green spaces within ten minutes' walk of homes in urban areas across New South Wales:

- The Department of Planning, Industry and Environment is sponsoring the Premier's Priority to increase walkable access to quality green public space. It is engaging in a range of policy work as well as the delivery of inclusive play spaces and eight new significant parks across Sydney.
- The launch of the Greater Sydney open space and parkland vision will lead to open space guidelines for Sydney.
- The Department of Planning, Industry and Environment is working with local councils to improve access to open space in regional Sydney through the introduction of the Metropolitan Greenspace Program and intends on implementing 'green grid projects'.
- The Office of Sport is working with councils and a range of partners to develop a sport and recreation participation strategy and a sport and recreation facility plan for each district.

While there is clearly strong community support for quality open space, what is not clear is how much open space is the right amount, and what the benefits of open space are compared with the costs. A consistent approach should therefore be developed to quantify the benefits of open and green space. This would assist with making the case for the need to ensure its provision in government business cases involving development.

Draft recommendation 7.7

Make the most of our open and green space

Develop a consistent approach to measuring benefits to community welfare from the provision of open and green space to help inform government business cases involving development.

Develop better options for taking into account green infrastructure and public space in strategic land use planning.

7.8 A pathway for infrastructure contributions reform

One of the biggest challenges facing New South Wales and its councils is to keep funding, delivering and maintaining infrastructure.

Asset recycling has provided New South Wales a once in a generation opportunity to lift the productive capacity of the economy through infrastructure investment. If this momentum is to be maintained in a post-asset transactions environment, while maintaining a competitive tax burden, the Government will need to identify new ways to fund infrastructure.

Infrastructure contributions can ensure developers are charged appropriately for the additional demand their projects place on the community. At the same time, if we are to improve living standards, we must maintain adequate housing supply to accommodate a growing population. This means infrastructure contributions cannot place an undue burden on new development, at least in cases where service improvements are more appropriately paid for by users and the wider community. Addressing these twin challenges is a fine balance and the role of the recently announced Review of Infrastructure Contributions.

Since the release of the Discussion Paper, we have heard increasing claims that the current infrastructure contributions system is uncertain, opaque and unfair. In response to these increasing calls for reform, the Minister for Planning and Public Spaces has asked the Commission to review the system. The Commissioner will provide advice on keeping the system transparent, certain and efficient, while delivering the public infrastructure required to support development. The Commission has released an issues paper on contributions to support consultation on ways to improve the system and will report to government in late 2020.

The Green Paper does not pre-empt the review. Instead it summarises key issues raised by stakeholders with the Commission thus far. This feedback will be considered by the Commission during the review.

The existing infrastructure contributions system is complex and fragmented

The EP&A Act enables various infrastructure contributions to be levied by consent authorities as a condition of development approval (see Box 7.5).

There is consensus across different stakeholders—property developers, local government, social housing providers, planners, economists—that the infrastructure contributions system needs reform.

> ***Infrastructure contributions paid by developers to state and local governments are not applied on a consistent basis. Contributions are often unclear, which can adversely affect decisions by property owners and developers.***
>
> ***Southern Sydney Regional Organisation of Councils submission***

The infrastructure funding system is broken, it is inefficient, not transparent, lacks accountability, it is unpredictable, and inequitable. It is currently impossible to price in the cost of the infrastructure contributions, which means the industry cannot deliver development, particularly housing supply.

Urban Development Institute of Australia submission

The absence of other council funding sources increases expectations that infrastructure will be funded by development contributions to councils or from the State Government. The contributions system is inherently constrained, as contributions are a charge levied only on new development; the system is not intended to cover the cost of infrastructure needed as the population grows.

The contributions system is also generally limited to covering some of the capital cost of new infrastructure provision. It does not cover ongoing maintenance costs.

As a result, state and local governments must find other funding sources to maintain growing infrastructure assets.

Box 7.5: Infrastructure contributions in New South Wales

Contributions towards provision or improvement of amenities or services (popularly known as 'section 7.11 contributions') are levied by councils to fund additional services or amenities arising from a development. Two principles ensure that developers pay for the additional demand generated from new development:

- 'nexus'—a clear connection with the development
- 'apportionment'—making developers responsible for the proportion of expenses they create.

Developers can meet their obligation either via monetary contributions, dedication of land free of cost, or a combination of both.

Fixed development consent levies (or 'section 7.12 contributions') were introduced as an alternative to section 7.11 contributions where it could be difficult to establish a 'nexus' and 'apportionment' to the development. It was particularly intended for areas where development rates are difficult to predict. A maximum rate of 1 per cent applies to the estimated development cost, unless otherwise stated. This rate requires monetary payment.

Planning agreements (or 'voluntary planning agreements'—VPAs) are negotiated with developers at the state or local government level. These are designed to deliver improvements such as transport infrastructure, affordable housing, and environmental and conservation initiatives. While the principles of 'nexus' and 'apportionment' are not fundamental in these agreements, contributions raised through VPAs should not be unrelated to the development.

Special infrastructure contributions (or 'SICs') are collected by the State Government to fund the provision of key infrastructure (i.e. State and regional roads, public transport, education, emergency and health facilities, and biodiversity conservation) in the growing areas of Sydney and regional NSW.

Where we go from here

The Commissioner's Review of Infrastructure Contributions will deliver a final report in late 2020 outlining recommendations to make the infrastructure contributions system more transparent and certain.

The Green Paper will not pre-empt the Review of Infrastructure Contributions. But it is useful to identify legitimate issues with the contribution system raised by stakeholders over an extended period of time, which resulted in the Review. The most notable of these include the following:

- The **Local Infrastructure Growth Scheme (LIGS)** reduces the efficiency and equity of the system where it has been applied. The 'caps' on contributions are inequitable because they shift costs onto the taxpayer that are more suitably borne by developers. This means housing can be delivered where it does not necessarily offer overall benefit to the State. The cap ensures the amount of subsidy is higher the more costly the infrastructure, which compounds the inefficiency.

Costs are also shifted onto developers where they are more suitably borne by either users or the taxpayer. By limiting councils' own-source revenue, the system of l**ocal government rate pegging** gives councils incentives to find other funding sources to meet community service expectations. The Minister for Local Government announced on 18 June 2020 changes to the rates system to align income growth with population growth. This will complement an efficient and reformed infrastructure contributions system.

- **Planning agreements** are used as a more flexible alternative to s. 7.11 contributions. But three issues arise:
  - the time and resources involved in negotiation
  - lack of nexus between the infrastructure delivered and the development application for which it is negotiated
  - a general lack of transparency.
- Contributions funds are sometimes held back for longer than is desirable, rather than being spent as service needs arise. This mismatch between service demand and delivery undermines community confidence in the planning system. Councils are often reluctant to borrow funds to forward-fund the delivery of infrastructure.

Draft recommendation 7.8
Reform infrastructure contributions

Progress reforms to the infrastructure contributions system after the Productivity Commissioner's current review, to deliver a principles-based, transparent and certain system.

A better mix of state and local taxes can encourage growth

08.

Draft Recommendations

Draft recommendation 8.1

Replace inefficient taxes with more efficient ones. Start by replacing transfer duty with a broad-based land tax. Before proceeding, identify how various designs will improve the economy and the state budget, and how adverse impacts on various groups can be minimised.

Propose, for consideration by the Board of Treasurers, the establishment of a single interjurisdictional body to coordinate the adoption of a consistent approach to the administration of payroll tax systems in all states and territories.

Draft recommendation 8.2

Use the Review of Infrastructure Contributions to find ways to deliver a more sustainable system of rates and infrastructure contributions, so that councils can provide the infrastructure and services required to accompany development and growth.

Evaluate reforms within three years and if reforms do not provide sufficient funds to deliver services, councils should hold a plebiscite of ratepayers to test support for abolishing the rate peg.


3,781
1,877
3,434
1,735
1,705
6,290
3,214
3,062
41,521
21,129
213
110
3,445
1,679
2,819
5,583
211

8.1 The right tax mix will raise productivity growth

New South Wales must fund and deliver services for a growing population. Throughout history this task has challenged governments, from Louis XIV of France to the heads of today's superpowers.

Our taxation system aims to fund the provision of vital services and infrastructure such as hospitals, schools, transport and police as equitably and efficiently as possible. These services benefit the whole community. Government delivers them, because it is efficient to do so (for example, transport, hospitals and police), or to ensure everyone can access them (for example, schools, hospitals, courts).

NSW taxes include not just state taxes but rates imposed by local governments.[1]

To support an effective economy, the tax system that collects this money must:

- be fair
- be easy to administer
- be able to be understood enough for people to deal with it and trust it
- collect money with as little adverse impact as possible on behaviour, i.e. is efficient.

The last point is significant. Some taxes seriously distort the signals sent in the economy, by making work or investment seem much less attractive, by making some goods and services cheaper or more expensive, or by making beneficial exchanges too costly.

The new costs imposed on the economy by COVID-19 make the task of improving state taxes much more urgent.

In its October 2019 Discussion Paper, the NSW Review of Federal Financial Relations (FFR) summarises the state's taxing problem as follows (NSW Treasury, 2019):

> *As the State of New South Wales grows and evolves, it will be necessary to review the State's revenue arrangements to ensure it is capable of meeting the needs of citizens now and into the future. With limited revenue-raising powers, states depend on revenue streams that can be volatile, unpredictable and damaging to productivity.*
>
> *NSW Review of Federal Financial Relations, 2019*

[1] Rates are a type of property tax that local government collects from households to pay for local services such as parks, road maintenance and rubbish collection. In this report, except where noted, the term 'taxes' is used in its most general sense, and includes duties, rates and levies.

Since the FFR Discussion Paper, governments and the economy have faced two catastrophic disasters—bushfires and COVID-19—reinforcing the FFR Review's call for productivity-enhancing tax reform in its July 2020 Draft Report (NSW Treasury, 2020b):

With economic recovery now a priority, the question facing the Review is how state governments can provide taxpayers with reliable, quality government services, while keeping the taxes they pay as low as possible. To do this, we need to identify practical ways to maximise the value we get per dollar of tax raised. We need to make taxes as simple as possible, and limit the impact they have upon citizens' lives, such as the decision about when to move house and whether to insure.

NSW Review of Federal Financial Relations, 2020

Rather than focusing on narrow reforms to individual taxes, this chapter outlines the case for delivering broader reforms to deliver a new tax system. That system would be fairer, more competitive, more effective and less complex. It would better foster the productivity of the NSW economy by encouraging, investment and creating new jobs.

8.2 New South Wales relies on high-cost taxes

Some taxes work better than others

Most taxes reduce economic growth because they change the behaviour of households and firms.[2] For example:

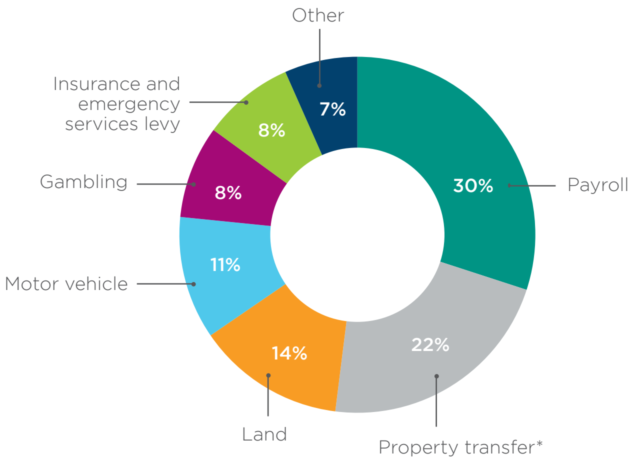
- Income and payroll tax can reduce the after-tax return on labour, causing people to work less.
- Profit-based taxes can reduce after-tax returns on capital, discouraging investment and incentivising profit-shifting.
- Consumption taxes can change the relative prices of goods and services, causing consumers to switch their pattern of demand.
- Transaction taxes can deter market exchanges that would otherwise be mutually beneficial.

Figure 8.1 shows the different taxes New South Wales collected in 2018-19. Notably, it shows that just two taxes—property transfer duties and payroll taxes—currently raise more than 50 per cent of all our tax revenues. Figure 8.2 shows that our reliance on a relatively volatile tax—property transfer taxes—brings its own budget management challenges.

[2] The exception is so-called 'sin taxes' such as those applied to gambling and tobacco.

FIGURE 8.1: PAYROLL AND PROPERTY TRANSFER TAXES DOMINATE NSW TAX

Composition of NSW tax revenue, 2018-19, $billion[3]

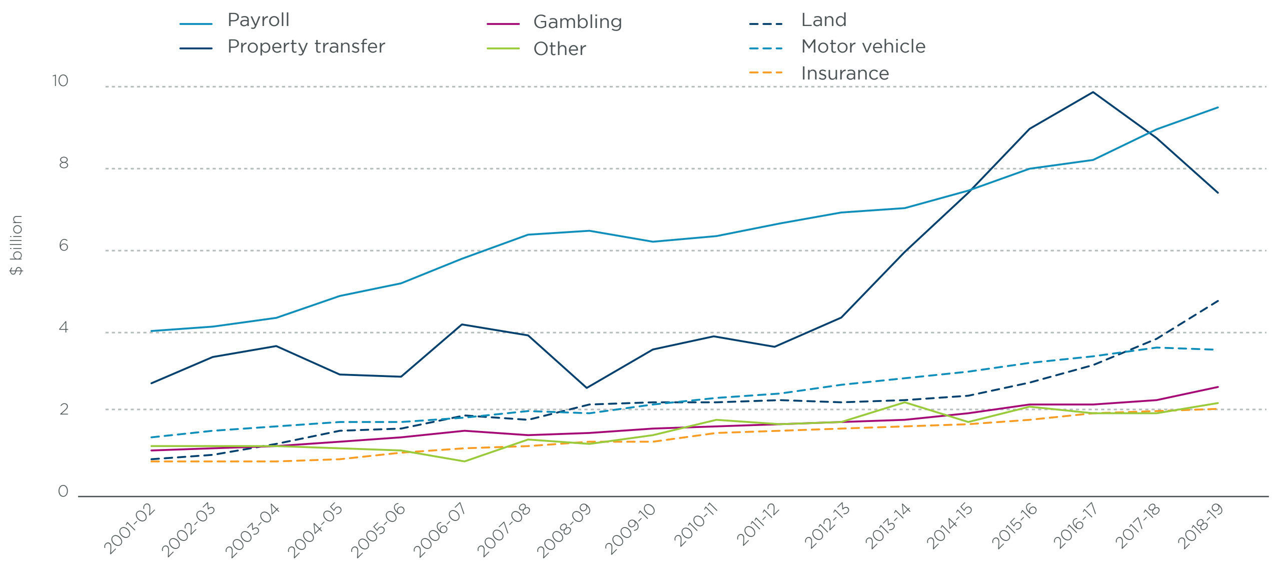


Note: Property transfer taxes are mostly stamp duty on residential and non-residential property but also include revenue from the transfer of other property, such as motor vehicles, and business assets such as equipment, computers and leases.

Source: NSW Budget 2019-20

FIGURE 8.2: PROPERTY TRANSFER TAXES ARE VOLATILE

NSW tax revenue, 2001-2002 to 2018-19, $billion



Note: Property transfer taxes are mostly stamp duty on residential and non-residential property but also include revenue from the transfer of other property, such as motor vehicles, and business assets such as equipment, computers and leases.

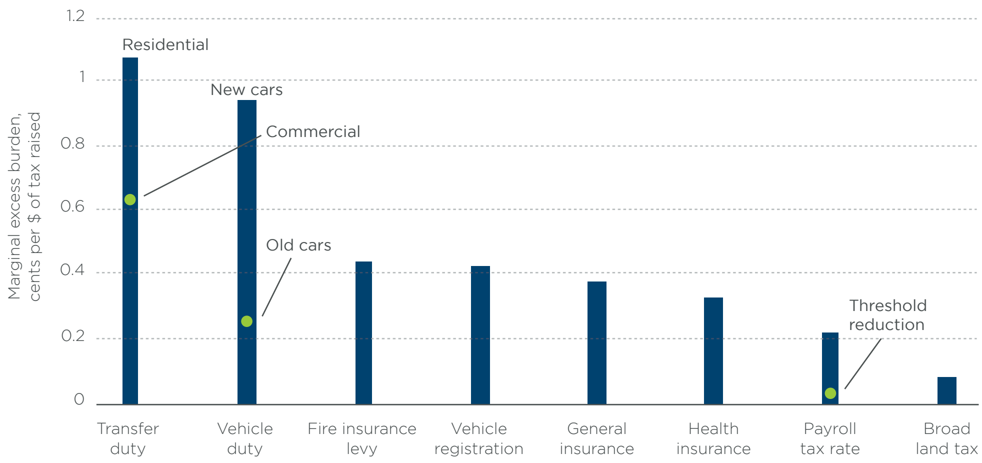
Source: NSW Budget Papers (various years), ABS 5220.0 – Australian National Accounts: State Accounts, 2018-19.

[3] In this report, except where noted, 'insurance taxes' include the Emergency Services Levy.

Figure 8.3 shows the estimated loss of economic activity from each extra dollar of tax revenue raised, illustrating which taxes are least efficient.[4]

FIGURE 8.3: PROPERTY TRANSFER TAXES COST THE MOST

Estimates of economic costs of NSW taxes



Note: Marginal excess burden refers to the economic value destroyed for every additional dollar raised, resulting from individuals and businesses making less than ideal choices. Property transfer taxes are mostly stamp duty.

Source: Centre of Policy Studies (Nassios et al., 2019)

8.3 We can have a lower-cost tax mix

The NSW tax system will be more efficient if we:

- switch the tax mix towards taxes that cost our economy less
- reform these lower-cost taxes to widen their base.

Payroll tax

Payroll tax is a stable and reliable form of revenue which is relatively efficient compared to other state taxes. Its efficiency could be improved. Specifically, the $1 million tax threshold imposes an economic cost, because it tends to discourage small firms from employing additional staff if that takes them above the threshold, bringing them into the payroll tax net. Reducing the threshold would remove this distortion and would enable the payroll tax rate to be reduced while collecting the same revenue prior to any change.

Interstate competition, with firms being encouraged to relocate operations to more favourable payroll tax jurisdictions, can also be a source of inefficiency that wastes resources. This arises from differences between jurisdictions in thresholds and administration.

Employers operating in more than one state or territory expressed a desire for a common set of rules around payroll tax administration to simplify the tax and reduce compliance costs. A national, harmonised payroll tax system would bring considerable efficiency improvements.

[4] Technically this is the marginal excess burden of taxation.

New South Wales has progressed on this front, with the NSW Government having committed to implementing the recommendations of the Commission's Review of Payroll Tax Administration. Broader adoption by other states is before the Board of Treasurers. If implemented nationally, a harmonised tax system could boost the economy.

A single inter-jurisdictional body to coordinate the adoption of a consistent approach to the administration of the payroll tax system in different jurisdictions would build upon these reforms. Such a body would ensure the application of identical procedures and definitions (such as the definition of employee) uniformly across the country.[5]

Stamp duty and other property transfer taxes

Property transfer taxes are worryingly inefficient. They are unreliable, with revenue raised varying between years by up to 40 per cent. They effectively restrict people's ability to move home. Former Commonwealth Treasury Secretary Ken Henry, who led the 2009-10 national tax system review known as the Henry Review (Henry et al., 2009), has described them as 'diabolical' and 'indefensible' (Janda, 2019). Various stakeholders have expressed versions of this view.

Transfer duty on residential property purchases is by far the least efficient NSW tax, with studies estimating it to carry an economic cost of between 34 cents and 107 cents per dollar for every additional dollar of tax collected.

While all sources of state revenue are expected to decline as a result of the COVID-19 pandemic, property transfer taxes are likely to prove particularly vulnerable due to falls in the value and volume of house sales.

Insurance duties

Insurance duties also carry high economic costs. Insurance helps protect people from losses that arise following adverse events. The Henry Review noted not only that a dollar of insurance duty carried a high economic loss to society, but that low-income people are the least able to bear the losses typically insured against (Henry et al., 2009).

Land tax

While tax on a property's transfer is highly inefficient, the tax on a property's ownership is by far New South Wales' most efficient: every dollar collected is estimated to carry an economic cost of between eight and 24 cents. This cost would be lower still if not for the exemptions provided and the high tax-free threshold.

Gains from changing property taxes

The Commission heard repeatedly during consultations that existing property transfer taxes distort decisions and prevent property from being allocated to its most valued uses and users:

NSW has one of the least efficient tax bases of any state or territory. Replacing stamp duties with general property taxes would produce a big economic payoff…

Grattan Institute submission

[5] This change would not preclude different payroll tax thresholds and tax rates from being administered by various jurisdictions.

[Current property taxes] involve relatively high costs of foregone productivity in the use of property relatively to a world with a comprehensive base and flat rate land tax collecting the same revenue.

Professor John Freebairn submission

These conclusions also fit with two widely accepted economic principles:

1. The **mobility principle** recognises that the higher the mobility of the tax base, the higher the economic cost of the tax. Land is an immobile base which cannot be shifted to another jurisdiction.

Other tax targets can move away more easily. Labour is semi-mobile, while capital is a highly mobile base that will shift away relatively quickly to where returns are higher—the ultimate in unproductive behaviour for a taxing government.

2. The **narrowness principle** recognises that a narrower tax base is generally less efficient, because it broadens the opportunity for people affected by such a tax to change their behaviour to favour lower taxed substitutes.

Reforms that increase the state's use of less damaging taxes will improve productivity by reducing the incentive for unproductive behaviour. This can be direct—by reducing disincentives to work—or less direct, such as by helping individuals to live closer to their place of work and reducing the time needed to commute. Stakeholders highlighted people's greater freedom to move when the tax mix moves away from property transfer taxes.

This is more than a technical economic point: the right housing makes a big difference to people's lives. People want to live in appropriate housing, adjusting as their life circumstances change, but stamp duty constrains this, causing broader detriment:

- 'Empty nesters' may want to downsize, which would free up housing for younger families living in a unit. But transfer duty imposes a significant acquisition cost on the empty nester from buying a unit of their own and selling their house to a younger family with kids. Both families may end up staying put, even though each is in a home that would suit the other better.
- People who are considering a new and better job may not relocate because of the tax costs of buying or selling their house.

Over time, tax reforms can pay for themselves by promoting higher economic growth and therefore increasing the size of the tax base. The Centre of Policy Studies (CoPS) estimates that replacing stamp duty with land tax could boost the NSW economy by more than 2 per cent in the long run (Nassios et al., 2019).

The majority of submissions called for stamp duty to be replaced, while others suggested that the tax threshold be increased:

[6] This higher mobility of capital is the main reason that many economists favour lowering taxes on capital generally, a policy view that many non-economists view as unfair to the less well-off.

NSW Government advocacy for an overhaul of property transfer duties and a move towards a broad-based land tax is strongly supported as a means of placing the state's property tax settings on a more efficient and equitable footing for future generations.

Western Sydney Leadership Dialogue submission

Independently of the Commission's consultations, economic commentators have increasingly called for a move to a broad-based land tax. It is more and more clear that existing property transfer taxes hold back economic growth by distorting business decisions, locking families out of housing choices and making the right housing less affordable:

[G]ood ideas are like air bubbles in water: it's hard to keep them down. Abolishing stamp duty in favour of land tax is a good idea whose time has well and truly come.

Jessica Irvine, Sydney Morning Herald senior economics writer (Irvine, 2020)

Gains from changing other taxes

Other stakeholders expressed the need to transition away from insurance duties:

Taxes on insurance act as an incentive for individuals and businesses to underinsure or not insure. The burden of these taxes falls on those who prudently take out insurance, while the uninsured who do not contribute often receive public assistance.

Insurance Council of Australia submission

The Australian Competition and Consumer Commission (ACCC) has highlighted the benefits of transitioning away from insurance duties in its First Interim Report on Northern Australia insurance, which is examining the supply of residential building (home), contents and strata insurance. The ACCC estimated that removing all insurance-based stamp duties across Australia, including the Emergency Services Levy in nsw, and replacing them with commensurate increases in municipal land rates, would lead to a 'net increase in real private consumption across Australia of $5.52 billion, and a net increase in tax revenue collected by state and local governments of 0.69 per cent' (Australian Competition and Consumer Commission, 2018).

Stakeholders also mentioned the need to broaden the payroll tax base or levy it on a comprehensive national tax base. Current thresholds lead to disproportionate employment by businesses exempt from payroll tax. The Grattan Institute submission argued that this distorts labour away from its highest-value use and lowers wages for all workers. The Financial Services Council argued for a coordinated approach with other states.

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8.4 The transition is the biggest obstacle

Australia now has many credible proposals for change, most notably the comprehensive and integrated agenda set out in 2009 by the Henry Review (Henry et al., 2009). The problem is getting from here to there—'the transition'.

The transition may be long

Despite the range of transition options to move the tax mix towards more efficient taxes, stakeholders acknowledge the difficulties. The Property Council of Australia noted that the path to abolition of property transfer duties had been 'elusive' because stamp duty brings in significant revenue, and replacements involve a significant funding gap for a period of time, requiring other broad-based efficient revenue sources to be part of the reform process.

In addition, the existing horizontal fiscal equalisation (HFE) system is discouraging the states and territories from progressing major tax reform.[7] The existing system does not systematically ensure that a state will retain any revenue dividends from reform efforts to be put towards any funding shortfalls (Commonwealth Productivity Commission, 2018). To support state tax reform, the Commonwealth should ensure that states are not penalised with a lower Goods and Services Tax (GST) share as a result of undertaking productivity-enhancing tax reforms.

This proposition is supported by the NSW FFR Review in its July 2020 Draft Report (NSW Treasury, 2020b).

The property tax experience of the Australian Capital Territory (ACT) is instructive. After the Henry Review, it was the one jurisdiction to start shifting its tax mix away from narrowly-based transaction taxes towards a broad land tax base, levied through general rates. The ACT aims to gradually replace stamp duty and insurance taxes with rates over two decades from 2012-13. However, halfway through its reform program, it is at the point where the increase in rates is becoming noticeable for households, resulting in push-back of the change.

Despite the transition issues, stakeholders were positive about the potential for the right tax design to overcome the obstacles:

[7] Horizontal fiscal equalisation is the transfer of fiscal resources between jurisdictions with the aim of offsetting differences in revenue raising capacity and the cost of delivering services. Its principle aim is to allow sub-national governments to provide similar standards of public services at a similar tax burden.

The right design for a property tax to replace stamp duty can help overcome the political difficulties.

A low-rate, broad-based property levy in NSW using the council rates base could raise $9 billion a year through an annual levy of just $5 for every $1,000 of unimproved land value – enough to fund the abolition of stamp duties in the medium term. Alternatively, replacing stamp duties with a progressive property levy calculated separately for each individual land plot – as the ACT has done – could minimise the windfall gains to larger home-owners from the swap.

Grattan Institute submission

The Insurance Council of Australia submission argues that states including Victoria, South Australia and Western Australia have successfully shifted from funding their emergency services through an insurance levy to a broad-based property levy, and that New South Wales should take a similar approach.

There is a consensus that the tax system in New South Wales could be more efficient if the system was moved toward taxes that carry a lower economic cost. The NSW Government should explore, model and assess the various options, their impacts, and the trade-offs that can be made to ease the transition to a better tax system.

Draft recommendation 8.1:
Set out a program to move to efficient state taxes

Replace inefficient taxes with more efficient ones. Start by replacing transfer duty with a broad-based land tax. Before proceeding, identify how various designs will improve the economy and the state Budget, and how adverse impacts on various groups can be minimised.

Propose, for consideration by the Board of Treasurers, the establishment of a single interjurisdictional body to coordinate the adoption of a consistent approach to the administration of payroll tax systems in all states and territories.

8.5 Local government funding deters growth

Since the release of the Productivity Discussion Paper, the Minister for Planning and Public Spaces has asked the Commission to undertake a comprehensive review of the current infrastructure contributions system. He has asked for recommendations to make the system more transparent, certain and efficient while delivering the public infrastructure that the state needs in order to support development. Given the interrelationship between developer contributions and local council rates, the Review will also examine the relationship with local government funding and service provision. The NSW Productivity Commissioner will deliver a Final Report to NSW Government by the end of 2020 (NSW Productivity Commission, 2020).

The Green Paper will not pre-empt the Review but does outline key issues raised by stakeholders in relation to local government and the current government rates system in New South Wales. This feedback will be considered during the Review.

Councils' roles are expanding

Councils play an important role in our economy and provide a range of infrastructure and services to ratepayers in their local government area:

> ***Local councils typically provide over 100 different types of services including management of local public land and property, transport infrastructure, various social and cultural services, local planning, community health and recreation, environmental protection, waste removal and disposal, and in some cases industry and tourism development.***
>
> ***Applied Economics submission***

Councils have been subject to increasing demand for better quality and more services. This is because:

- as the local community grows, councils are required to provide services to new residents and businesses
- community expectations as to the level and types of services to be provided have grown
- costs previously shared by other levels of government have been shifted onto councils.[8]

Rates are an efficient tax

To fund their costs, councils:

- levy rates on property owners in their local government area
- charge fees for the use of specific services
- receive grants from the State and Commonwealth governments
- generate other revenues such as developer charges
- raise funds through borrowings.

The Henry Review described local rates as one of the most efficient of all current taxes levied by any level of government: because land can't be moved, land taxes change people's behaviour relatively little. The Review found rates to be 'an appropriate tax base for local governments to use to fund local public goods and services'.

Despite this relative efficiency, NSW rates are much lower compared to other jurisdictions. The Urban Development Institute of Australia submission said research by GLN Planning had found that 'New South Wales has failed to keep up in the growth of rate revenue per capita compared to Victoria and Queensland', which do not have NSW's rate peg approach.[9]

The Institute's submission pointed to a GLN Planning estimate that in this century New South Wales had foregone approximately $15 billion in rates compared to Victoria.

[8] The Local Government NSW submission highlighted cost shifting from the Commonwealth, noting that Commonwealth Financial Assistance Grants to councils had declined from around 1 per cent of Commonwealth tax revenue in 1996 to 0.5 per cent presently.

[9] In 2015, a system to cap rates was introduced in Victoria to limit the amount of revenue increases a council can levy through rates.

Councils lack autonomy on rates

The Henry Review said states should allow local governments ‘a substantial degree of autonomy to set the tax rate applicable to property within their municipality’. In practice, however, New South Wales has not provided this autonomy.

The *Local Government Act 1993* sets down the calculation of NSW rates. Assessments are based on a proportion of the unimproved land value of the rateable property, as measured by the NSW Valuer General.[10]

The rate peg controls revenue

Councils’ particular problem is the controls placed on their ability to raise revenue, through the Essential Works List for infrastructure contributions and, most notably, the rate peg and the ‘special variation process’ for that peg.

The rate peg exists because the Minister for Local Government has declared annual limits to increases in councils’ general rate income. IPART sets the limit each year. It approximates the change in the costs councils face to deliver services, as given by the past year’s change in the price of a notional ‘basket’ of goods, materials, and labour used by an average council.[11] IPART deducts a productivity factor to ensure ratepayers share in council efficiency gains. The resulting increase, called the ‘rate peg’, was set at 1.5 per cent in 2017-18, 2.3 per cent in 2018-19, and 2.7 per cent for 2019-20.

A council can apply to IPART for an additional increase to the rate peg, known as a special variation. Applications are considered against NSW Office of Local Government guidelines.[12]

The Hills Shire Council, for example, emphasised in its submission on the Discussion Paper that rate pegging made council’s task more difficult. The special variation process is not an adequate back-stop and it wants greater flexibility to reflect changes in its costs and respond to residents’ demands for services.

Population growth worsens the rate peg problem

Population growth is driving demand for new infrastructure (such as roads, parks, sewerage and street lighting) and services (such as waste collection and recycling and use of community facilities). As the rate peg system does not currently compensate councils for having to service a larger pool of ratepayers, this leaves local governments with insufficient revenue to meet demand and an incentive to avoid housing growth.

IPART in its 2016 review of local government rates noted over the period 2001-02 to 2010-11, growth in total revenue of NSW councils was 5.7 per cent per annum (Independent Pricing and Regulatory Tribunal, 2016d). This compared to an average 8.0 per cent for the other mainland states. IPART said that ’the current system undermines council incentives to pursue growth and urban renewal, because they do not receive a commensurate increase in rates revenue to service new developments.’ (Independent Pricing and Regulatory Tribunal, 2016d)

The strength of this disincentive was also highlighted in submissions:

[10] The amount is calculated as a three-year rolling average. It may be adjusted by an additional fixed charge.

[11] The index value of this ‘basket’ is called the Local Government Cost Index (LGCI).

[12] The factors considered include the level of community awareness and how efficiently the council has been managing its finances. IPART can grant a general income variation for a single year or up to seven years. Over that time the council can set its own rates and fees as long as its total general income from those sources stays within the agreed increase.

Rate pegging should be abolished. This will incentivise councils to accept additional growth and density and allow local government the ability to respond to increasing expectations for its role as a community service provider.

Urban Taskforce submission

Alternative funding sources are limited

The system of infrastructure contributions for new developments (discussed in detail in Chapter 7) can assist in providing funding to support additional capital expenditure for an existing population.

Except for charging higher user charges, councils do not have an alternative funding source to service a larger population, or to maintain and operate a larger capital stock. This leaves councils in a position where they may need to lower the services to their existing ratepayers in order to service the needs of new residents.

That, in turn, explains why councils, having collected infrastructure contributions, may be unwilling to invest them: the operation and maintenance of new infrastructure will impose additional costs, for which there is no funding source.

Where councils cannot meet the service requirements of a growing population from their own rates, they require supplementary income, such as additional Commonwealth or state grants or other own-source revenues. These revenues are likely to be sourced from state and Commonwealth tax bases that are less efficient than the rates base.

There is also evidence that councils have used the development approvals process to extract contributions for service improvements from new developments—for example, through levies—that would be more appropriately funded from other sources:

Levies are an unfair burden on new home buyers to provide infrastructure for current residents that should otherwise be paid out of rates. It is fair and reasonable that a development mitigates the effects on its local community. Including by providing local infrastructure such as parks, etc. However, it should not be up to new development to solve infrastructure backlogs for entire LGAs or across Sydney.

Commercial and Economic Planning Association submission

Rate pegging in NSW ... has led to a greater dependence on raising income from development contributions. The result of this is that development levies have spiralled and this is impacting the affordability of new homes for consumers.

Housing Institute of Australia submission

The future of rate pegging and council performance

Submissions expressed broad—but, in some cases, cautious—support for reform to rate pegging arrangements. The NSW Business Chamber indicated that it 'supported mechanisms allowing the residential rates base to grow in line with the cost of maintaining population serving infrastructure and services in an efficient manner'. But it also offered caution against creating 'circumstances where revenue expands to fund wasteful and inefficient spending'.

On 18 June 2020, the Minister for Local Government announced the Government's response to IPART's Review of the Local Government Rating System (Independent Pricing and Regulatory Tribunal, 2016d). The Office of Local Government will change the rate peg to account for population growth. The Commission welcomes this development as a necessary complement to an efficient, reformed infrastructure contributions system.

Where we go from here

On top of the change to the rate peg, the Productivity Commission Review of Infrastructure Contributions will provide recommendations to the Minister for Planning and Public Spaces on how to improve the infrastructure contributions system. These recommendations will have implications for the provision of local infrastructure to accompany new development.

Once these two changes have been implemented, an evaluation of these reforms should be undertaken within the next three years to determine whether councils have the funding they need to provide the required services and infrastructure. If these reforms do not provide councils with sufficient funds to deliver services for existing and potential ratepayers, councils should hold a plebiscite of their communities as to whether they support the abolition of the rate peg. Where ratepayers support abolition, this will allow their local government substantial autonomy over the tax rate applied to property within their municipality.

Draft recommendation 8.2:
Reform systems for rate setting and infrastructure contributions

Use the Review of Infrastructure Contributions to find ways to deliver a more sustainable system of rates and infrastructure contributions, so that councils can provide the infrastructure and services required to accompany development and growth.

Evaluate reforms within three years and if reforms do not provide sufficient funds to deliver services, councils should hold a plebiscite of ratepayers to test support for abolishing the rate peg.

Appendix 1: Submissions to the Discussion Paper

The *Kickstarting the Productivity Conversation* Discussion Paper received 110 submissions, 95 of which were published on the Productivity Commission website:

Applied Economics Pty Ltd

Australasian College of Dermatologists

Australian Academy of Technology and Engineering

Australian Alliance for Energy Productivity

Australian Energy Council

Australian Industry Group

Australian Institute of Architects

Australian Passive House Association

Better Planning Network

Bridge Housing

Building Designers Association of Australia

Carers NSW

Central NSW Joint Organisation

Centre for Independent Studies

Centre for International Economics

Centre for Universal Design Australia

Chesterfield Projects

City Futures Research Centre, University of New South Wales

City of Newcastle

City of Sydney

City West Housing Pty Ltd Submission

Combined Development Group Pty Ltd

Commercial and Economic Planning Association

Community Housing Industry Association

Contract Governance International Group 1

Contract Governance International Group 2

Department of Communities and Justice

Department of Education

Energy Inspection Pty Ltd

Federation of Hunting Clubs

Financial Services Council

Grattan Institute

Green Building Council of Australia

Hills Shire Council

Housing Industry Association

Independent Pricing and Regulatory Tribunal

Individual 1

Individual 2

Individual 5

Individual 6

Individual 9

Infrastructure Partnerships Australia

Insurance Australia Group

Insurance Council of Australia

John Freebairn, University of Melbourne

KPMG

Laing O'Rourke

Lake Macquarie City

Large Format Retailers Association 1

Large Format Retailers Association 2

Local Government NSW

Medtronic Australasia

New South Wales Firearm Dealers Association

Northern Sydney Regional Organisation of Councils

NSW Aboriginal Land Council

NSW Business Chamber

NSW Council of Social Service

NSW Irrigators' Council

NSW Land Registry Services

NSW Minerals Council

OneWater Advocates

Pharmacy Guild of Australia NSW Branch

Planning Institute Australia

Principal Advice

Prof Hans Coster, University of Sydney

Prof Rico Merkert, University of Sydney

Property Council of Australia

Prosper Australia

Public Interest Advocacy Centre

Public Service Commission

Rojz Boutique

Rolfe Constructions

School Efficiency Metrics Australasia

Shelter NSW

Southern Sydney Regional Organisation of Councils

Sydney Airport

Sydney Water

TAFE Community Alliance

Tenants Union of NSW

Tom Tsihilis

TCorp 1

TCorp 2

Transport and Logistics Centre 1

Transport and Logistics Centre 2

University of New South Wales

Urban Development Institute of Australia

Urban Taskforce

Urbanised Pty Ltd

Urbis

Water Services Association of Australia

Waverley Council

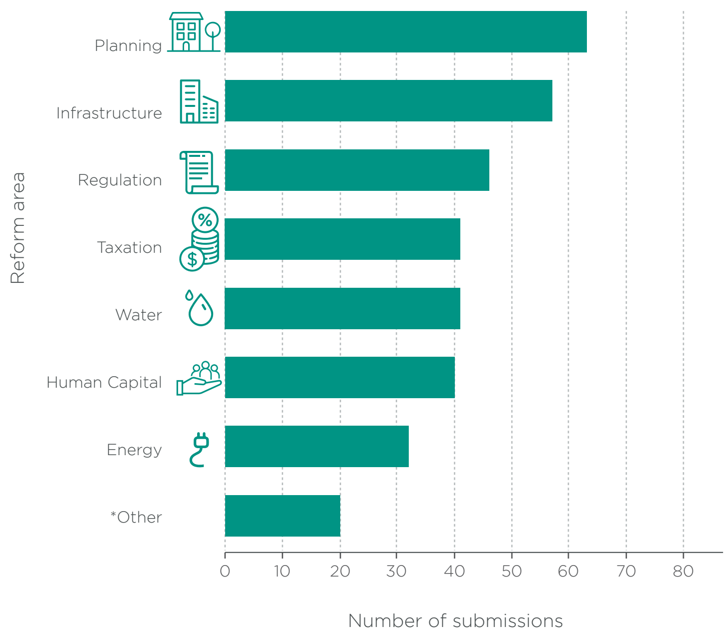
Western Sydney Leadership Dialogue

Western Sydney Regional Organisation of Councils 1

Western Sydney Regional Organisation of Councils 2

Willoughby City Council

BREAKDOWN OF SUBMISSIONS BY THEME:



*Other includes: health, universal design, the circular economy, firearms, the policymaking process, Indigenous issues.

Source: NSW Treasury.

Appendix 2: Roundtable participants

The following are the list of organisations that participated in roundtable discussions for the Productivity Discussion Paper organised by roundtable theme.

Human Capital

Ai Group

Association of Independent Schools

Australian Academy of Technology & Engineering ATSE

Centre for Independent Studies

Centre for Workforce Futures, Macquarie University

Council of Small Business Organisations Australia (COSBOA)

NSW Business Chamber

NSW Council of Social Service (NCOSS)

Sydney Catholic Schools

NSW Department of Education

Western Sydney

Ai Group - NSW

Blacktown Council

Canterbury-Bankstown Business Chamber

Department of Industry, Innovation and Science (AusIndustry Office)

Industry Capability Network (NSW) Ltd.

NSW Aboriginal Land Council - Yarpa Indigenous Business & Employment Hub

RDA Sydney

Settlement Services International

University of Wollongong

Western Sydney Business Connection

Western Sydney University

Western Sydney Regional Organisation of Councils

Energy

Australian Energy Council

Energy Networks Australia

Green Building Council of Australia

Institute for Sustainable Futures

Institution of Chemical Engineers

NSW Business Chamber

NSW Council of Social Service (NCOSS)

Public Interest Advocacy Centre PIAC

University of Sydney

University of Wollongong

Planning

Ai Group

Australian Chamber of Commerce and Industry

Better Planning Network

Committee for Sydney

Community Housing Industry Association

iAccelerate

Landcom

Local Government NSW

Multiplex

NSW Business Chamber

NSW Council of Social Service (NCOSS)

NSW Minerals Council

Planning Institute of Australia

Property Council of Australia (NSW)

Stockland

University of New South Wales - City Futures Research Centre

Transport

Committee for Sydney

Industry Capability Network NS

NSW Business Chamber

PSG Holdings

Road Freight NSW

Transport and Logistics Centre

Tourism & Transport Forum Australia

University of Sydney Business School

Regulation

NSW Business Chamber

PWC

Social

Better Planning Network

Community Housing Industry Association (CHIA) NSW

Homelessness NSW

Local Government NSW

NSW Council of Social Service

Property Council of Australia (NSW)

Realise Business

Shelter NSW

Water

Australian Academy of Technology & Engineering ATSE

CSIRO

Local Government NSW

NSW Council of Social Service (NCOSS)

NSW Irrigators' Council

NSW Water Directorate

Office of the Chief Scientist & Engineer (OCSE)

Sydney Water

University of New South Wales

Water Services Association of Australia

Water NSW

Individual

Business Council of Australia

Regional Australia Institute

Appendix 3: NSW initiatives to streamline approval assessment times

Drawing on stakeholder submissions, the Commission has identified additional possible initiatives to reduce red tape and cut approval times.

Initiative	Issues raised by stakeholders	Action
Establish a new class of appeals for planning proposals	Assessments of rezonings block up the planning system	Currently, councils have no obligation to progress a planning proposal once commenced and the Department of Planning, Industry and Environment has limited power or resources to ‘call in’ development applications. Establishing a new class of appeals in the Land and Environment Court would let the court step in and order arbitration to assess and progress planning proposals. Increased review opportunities for the assessment of planning proposals will incentivise councils to better manage rezonings to avoid losing control over the process. **To remove current obstacles in the planning assessment process, develop a new class of appeals in the Land and Environment Court for planning proposals.**

Initiative	Issues raised by stakeholders	Action
Rationalise statutory times	Stop-the-clock provisions and ongoing requests for increased information are a source of significant assessment delays and confusion. They are considered to be an unnecessary layer of complexity.	Timeframes for development application assessment are contained within deemed refusal provisions in clause 113 of the Environmental Planning and Assessment Regulation (2000) (EP&A). A development application is taken to be refused if a consent authority has not determined the application within the specified period. These timeframes are complemented by non-statutory timeframes set out in the Development Assessment Best Practice Guide (2017) that produce significantly faster results. **To improve statutory timelines for approving development applications, the EP&A Regulation should be increased in scope and incorporate shorter procedural timeframes that align with those prescribed by the Development Assessment Best Practice Process Map.**
Deemed approval provisions	Introduce deemed approval provisions comparable to those in other jurisdictions, such as Queensland, to improve assessment timeframes. Such a mechanism provides an incentive for the consent authority to make a decision, rather than sit on an application. This would provide certainty in the assessment period.	In Queensland, deemed approval provisions are provided for under clause 64 of the Planning Act 2016 for certain code-assessable applications. Clause 64 prescribes that if the consent authority does not determine the application within the decision-making period, an applicant may submit a deemed approval notice to the authority that the application should be deemed to have been approved. **To improve certainty of the assessment period for certain development types, a deemed approval provision comparable to clause 64 of the Queensland Planning Act 2016 should be introduced to the EP&A Regulation.**
Minimise reliance on 'stop the clock' provisions	Requests for further information under the EP&A Regulation can trigger the stop-the-clock provisions, resulting in an assessment period significantly longer than the timeframes set out in the EP&A Regulation.	The stop-the-clock provisions are provided for under clause 110 of the EP&A Regulation. Under this clause, a concurrence authority may request additional information within 25 days from the date on which a development application is received. Clause 110(20) says that time taken to address the request for additional information is not included in the calculation of the days taken to determine a development application. **To minimise reliance on stop-the-clock provisions, develop procedures to ensure appropriate information is provided prior to lodgement of an application. This would assist with addressing inconsistencies in the existing processes by which councils receive development applications and determine the necessary lodgement requirements.**

Initiative	Issues raised by stakeholders	Action
Improving the concurrence and referral process	Waiting for approvals from various state government agencies adds considerable time for a DA assessment.	An estimated 15 per cent of development applications need to be referred to various state agencies for concurrence, often adding significantly to the amount of time taken to process an application. Recent amendments to the EP&A Regulation provide new measures aimed at minimising delays to the concurrence and referral process. Specifically, Clause 106 of the EP&A Regulation nominates assessment times for development applications requiring concurrence. Under clause 70AA to 70AC of the EP&A Regulation, the Secretary of the Department of Planning, Industry and Environment has the power to act in place of an approval body to provide the terms of approval to the relevant consent authority for the purpose of preventing delays to the assessment of a DA. Use of this power is an option but an option likely to be used only occasionally. Despite these improvements, there are no deemed approval mechanisms in place to provide agencies with the incentive to complete their assessment of a development application within a specified time. The announced Planning Delivery Unit will assist with improving the concurrence and referral process by identifying any systemic blockages and processing issues. **Once issues are addressed, Government should consider introducing target times for concurrences and referrals. Consistent with the approach in Queensland, a deemed approval could be issued when a referral authority fails to respond within 28 days to provide the agency with the incentive to progress a review of a proposal. These requirements could be integrated into the EP&A Regulations alongside the assessment times set out in Clause 106.**

Initiative	Issues raised by stakeholders	Action
Streamline approval processes for certain development types	Stakeholders noted the shorter time for approving complying development. Stakeholders also expressed frustration with deferral of the Low-Rise Medium Density Code for Sydney councils (which has been rolled out to all councils from 1 July).	In 1988 the NSW Government introduced complying development, a simpler and faster development approval pathway. The Discussion Paper noted that for low-density residential development, approval is typically twice as fast for those that qualify for complying development. Despite this progress, there are opportunities to increase complying development approval pathways: • Expand scope of complying development approval pathways within broader business and industrial zones. • Explore other possible additional residential development types that may be appropriate to expand complying development approval pathways. • Review the list of State and Regionally Significant developments to be assessed and determined by Department of Planning, Industry & Environment or the Independent Planning Commission. **Explore opportunities to expand complying development approval pathways, commencing within new and broader business and industrial zones.**
Evaluate the impacts of Local Planning and Regional Planning Panels	Local Planning Panels (LPPs) have delayed development applications. Regional Planning Panels (RPPs) have not reduced assessment times. The dollar threshold for RPP consideration in Sydney is too low. Stakeholders claim that the introduction of these panels has eroded the Council's ability to promote good development outcomes.	LPPs were introduced in 2018. Their purpose was to strengthen decision making on significant development assessments and certain planning matters. Before this, Sydney and Regional Planning Panels were introduced in 2009 to strengthen decision making on regionally significant development. Given LPPs are relatively new, the Commission expects any delays are due to their infancy. **An evaluation of LPPs would provide the opportunity to identify issues needing to be addressed to improve their effectiveness and reduce time taken to consider development approvals.**

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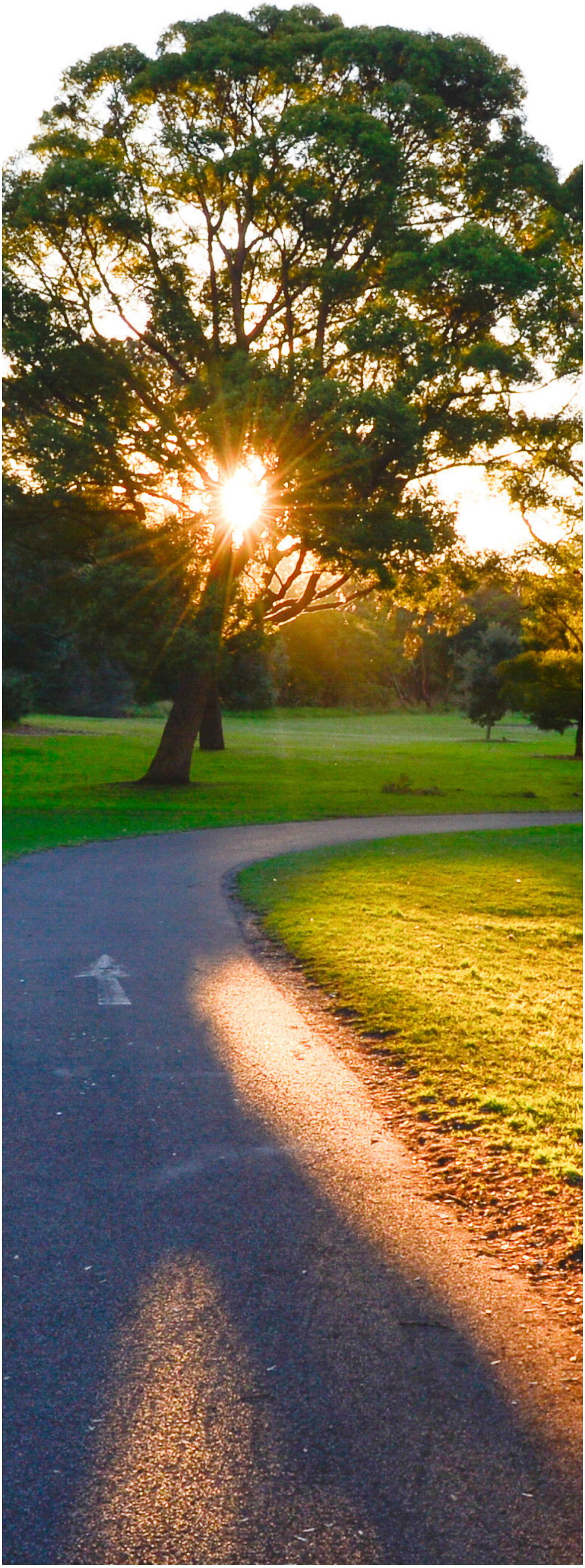

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