

# 3. Infrastructure planning, prioritisation and delivery

**STRATEGIC OBJECTIVE** Plan, prioritise and deliver an infrastructure program that represents the best possible investment and use of public funds

## SNAPSHOT

- There are limits to the NSW Government’s ability to sustain its current record level of infrastructure investment while continuing to meet fiscal targets. NSW needs to optimise its use of existing assets and, where new investment is warranted, select the right projects so that available funding is used as productively as possible.
- The large number of projects, and the increasing number of mega-projects, will place pressure on the planning system to assess projects efficiently. The construction industry will face resourcing constraints in key areas and the NSW Government will face challenges in building and sustaining its own capability to manage the growing complexity and volume of work.

## RESPONSE

### Summary of key recommendations

#### Continue major project approval reforms

Pursue further reforms to improve major project planning approval processes.

#### Explore further asset recycling

Explore the potential for further asset recycling initiatives.

#### Ensure construction sector capability and capacity

Establish a whole-of-government process, led by Infrastructure NSW and in partnership with industry, to identify and deliver major project procurement reforms by mid-2019.

## 3.1 Recent progress

In May 2015, the NSW Audit Office reviewed the effectiveness of the NSW Government’s assurance processes for major construction projects. The review found that while independent assurance processes had evolved, they were not as effective as they could be. It concluded that assurance needed to be more independent and compliance needed to be more consistent.<sup>9</sup>

In June 2016, the NSW Government adopted the Infrastructure Investor Assurance Framework (IIAF), a tiered, risk-based external assurance framework for projects with a capital value above \$10 million. The IIAF, which builds on the Major Projects Assurance process detailed in the *State Infrastructure Strategy 2012*, identifies whether the State’s capital projects are being effectively developed and delivered. It incorporates project monitoring, regular project reporting and expert and independent Gateway

Reviews and health checks to ensure that projects are on-track.

Infrastructure NSW, which oversees the IIAF, completed 255 assurance reviews across 131 projects between May 2015 and December 2017. Evaluation of the IIAF by Infrastructure NSW shows that the assurance process is improving the planning and delivery of projects. In many cases, projects that have been subjected to reviews and health checks have shown signs of significant improvement. Infrastructure

<sup>9</sup> Audit Office of NSW 2015

NSW is undertaking regular six-monthly performance reviews of the IIAF to identify areas for ongoing improvement.

In addition to the IIAF, NSW Government agencies are improving their capability to develop and deliver major capital programs. Some agencies, such as Transport for NSW and the Ministry for Health – through Health Infrastructure – are well advanced. Other agencies, such as the NSW Department of Justice and the NSW Department of Education, are bringing a new focus and capability to infrastructure delivery, having recently established Justice Infrastructure and School Infrastructure NSW respectively.

## 3.2 Challenges and opportunities

There are limits to the NSW Government's ability to sustain its record level of infrastructure investment while continuing to meet fiscal targets. The State needs to ensure that it is getting the most out of existing assets and, where new investment is warranted, that it is selecting the right projects so that available funding is used as productively as possible.

In a constrained fiscal environment, business cases must demonstrate that proposed projects address an identified need and that a full range of options, including non-build solutions, have been considered and thoroughly evaluated. Project planning must allow for rapid societal changes, including the impacts of climate change, and enable the NSW Government to make informed investment decisions as areas of uncertainty become clearer.

The number of infrastructure projects, and the increasing number of mega-projects, will place pressure on the planning system to assess these projects in a streamlined and timely manner.

The NSW construction industry will face resourcing constraints in key areas, and NSW will need to focus on attracting and retaining these scarce resources to support its infrastructure pipeline in the face of competition from other jurisdictions. Similarly, the NSW Government will face challenges in building and maintaining its own capability to manage the growing complexity and volume of work.

## 3.3 Response

### 3.3.1 Improving project identification, options development and evaluation

Infrastructure projects must be subject to thorough investigation and evaluation before being funded or announced. Premature project announcements can put at risk service delivery outcomes and can lead to project delays and higher costs to government.

A range of project options must be considered and evaluated so that the best option is selected on appropriately justified grounds. Too often in the past, agencies sought to respond to an identified need by building new, expensive infrastructure. In many cases, that infrastructure was selected without adequate consideration of alternatives. NSW Treasury's *Business Case Guidelines* require infrastructure agencies to fully assess a range of options in completing strategic business cases.

Alternative strategies that may reduce or delay the need for new infrastructure include asset utilisation measures, such as contra flow lanes on existing roads, initiatives to reduce demand or change customer behaviour, such as user pricing, and procuring services competitively from the private sector. For further discussion on asset utilisation see Chapter 4. Discussion of new service delivery models appears in Chapter 7.

To support stronger options development and evaluation, the NSW Government has adopted *Common Planning Assumptions* and is updating its *Business Case Guidelines*. The updated Guidelines will reinforce the need for project proponents to consider alternatives to new or upgraded infrastructure, including non-build solutions. The NSW Government is also exploring the development of an Infrastructure Data Management Framework to capture and share new sources of data.

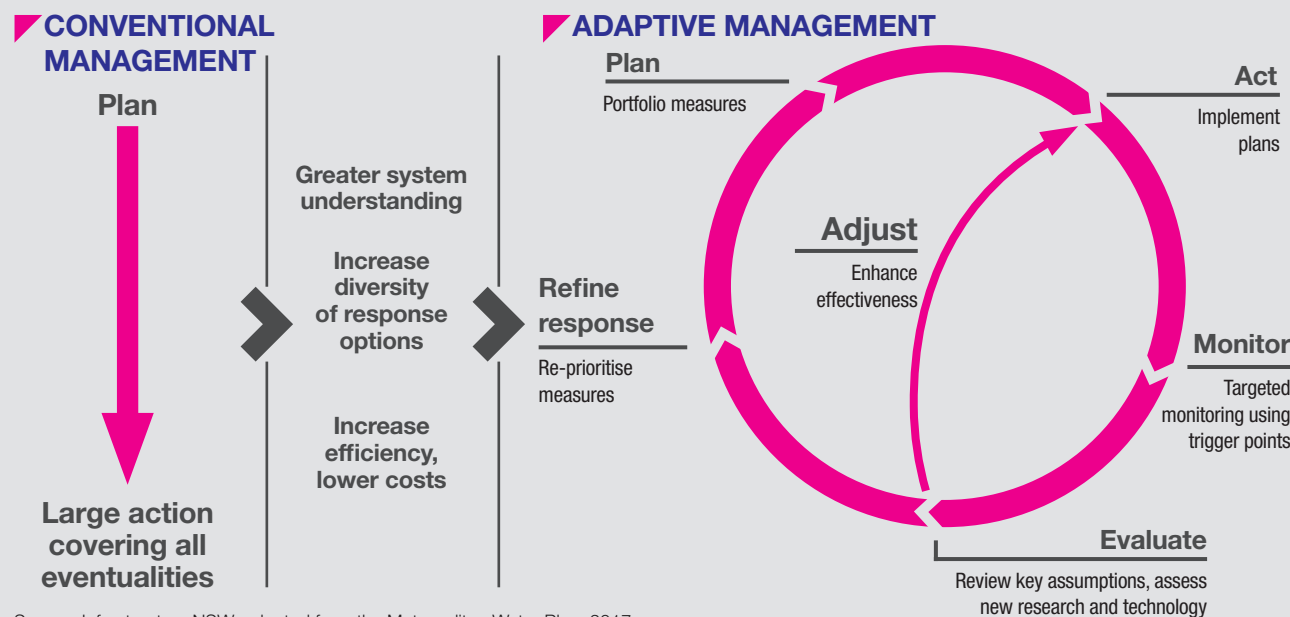
### Broadening cost-benefit analysis

The ability of cost-benefit analysis to capture the full range of social, economic and environmental impacts of projects is still developing. In 2017, NSW Treasury updated the NSW Government's *Guide to Cost-Benefit Analysis*<sup>10</sup> to better integrate social, economic and environmental impacts, reflecting developments in analytical tools that strengthen the estimation of economic, social and environmental costs and benefits.

Other jurisdictions are also looking to broaden cost-benefit analysis. Infrastructure Victoria released updated guidance for project appraisal as part of its ongoing work on how to better value economic, social

<sup>10</sup> NSW Treasury 2017

Figure 10 – Conventional vs adaptive management



Source: Infrastructure NSW, adapted from the Metropolitan Water Plan, 2017

## Dealing with uncertainty

Adaptive management is an increasingly mainstream approach to managing the environmental and economic costs and risks associated with change. Tools such as scenario planning and real options analysis allow exploration of a range of options or pathways for future action. They allow demand and supply options to be explored, identifying trigger points that can be used to determine when future actions are taken.

As an example, lower than expected rainfall may constrain water availability. Using an adaptive management approach, trigger points can be used to identify when response measures should be

implemented. Interventions, from lowest to highest cost, might include:

- reducing demand through low flow devices, such as shower heads and taps
- a water restrictions regime
- extracting water from ground sources to provide additional capacity
- recycling initiatives
- capital investment in a desalination facility.

Greater use should be made of adaptive management techniques in long-term land use and infrastructure planning to better manage significant uncertainties.

and environmental impacts.<sup>11</sup> New Zealand Treasury has developed a cost-benefit analysis tool called CBAX, which contains a common database to help agencies monetise impacts and undertake ‘return on investment’ analysis.

Separate to quantifying benefits, there are behavioural influences on the application of cost-benefit analysis tools that may affect the rigour of project appraisals. In 2015, the United Kingdom’s HM Treasury updated its guidance for appraising and evaluating public projects – The Green Book – to better account for ‘optimism bias’: a tendency for project appraisers to be overly optimistic regarding the performance of the project. This guidance suggests explicit, empirical adjustments should be made to mitigate the effects of optimism bias in evaluating a project’s benefits.

Infrastructure NSW considers that NSW Treasury should continue to explore options to improve the quantification of social and environmental factors in cost-benefit analysis and manage optimism bias, consistent with best practice in other jurisdictions.

### 3.3.2 Prioritising projects

In December 2016, the NSW Government endorsed an enhanced process for prioritising capital infrastructure. Under this process, Infrastructure NSW, in consultation with the Department of Premier and Cabinet and NSW Treasury, prioritises all emerging projects as an input to the NSW Government’s Budget deliberations. The process promotes transparency around the State’s fiscal capacity, promotes informed decision-making and allows priorities to be assessed consistently between sectors.

11 Infrastructure Victoria 2016, p. 2

### 3.3.3 Improving major project planning approvals

Assessing major projects through the statutory planning system can take too long, be too costly and result in unpredictable outcomes. The Productivity Commission has estimated that the cost of a one-year delay in approvals for an average major project is up to \$59 million and for a large project, up to \$2 billion.<sup>12</sup> In 2016, the Business Council of Australia recommended reforms to improve the global competitiveness of Australia's major project planning approvals process.<sup>13</sup>

In 2017, the NSW Government consulted on reforms to improve major project approval processes and timeframes. Proposed reforms included:

- earlier and better engagement with affected communities
- improving the quality and consistency of Environmental Impact Assessment (EIA) documents
- developing a standard approach for applying conditions to projects
- providing greater certainty and efficiency around decision-making, including assessment timeframes
- strengthening monitoring and reporting on project compliance
- improving the accountability of EIA professionals
- improving concurrence and referrals for local development through new reserve powers for the Secretary of the Department of Planning and Environment to prevent delays and resolve conflicts.

These reforms align with the recommendations made by the Business Council of Australia and the Productivity Commission and move the State to a best practice model. Notwithstanding these improvements, there is merit in continuously reviewing and improving the competitiveness of major project planning approval processes to support decisions for investment in NSW. Key prospective areas for reform are outlined below.

#### Strengthening major projects assessment through strategic planning

District Plans, which support the *Greater Sydney Region Plan*, integrate land use with future major projects, such as major transport projects and health and education precincts. Regional Plans and District Plans should include associated environmental targets for key corridors so that the cumulative impacts of all development in the area can be considered. This upfront recognition of place-based environmental goals will help with subsequent planning for major infrastructure projects.

#### Performance-based major project approval

Since 2005, NSW has had the most integrated major project assessment in Australia, removing the need to obtain many separate approvals for each project and providing a streamlined and consistent approach to approvals.

The NSW Government has also implemented reforms to address delays in its own processes. This led to reductions in processing timelines from 298 days in 2014 to 163 days in 2016-17. However, there is an opportunity to assist project proponents by providing

more upfront information for key industry sectors and on key environmental impacts. While the Department of Planning and Environment has established this practice for some industry sectors, such as windfarms, it is not applied across the board.

Key improvements to the existing process for determining major projects could include:

- a separate, dedicated assessment pathway for major projects
- standardised risk-based performance requirements by industry sector
- providing key environmental information – including species information, government and private sector monitoring, environmental studies and approvals, and scientific research – on a spatially enabled open data system (leveraging systems such as the NSW Environmental Data Portal or the NSW Planning Portal).

## Recommendation 12

Infrastructure NSW recommends that the Department of Planning and Environment pursue further reforms to improve major project planning approval processes. Initial reforms should include:

- providing key environmental information – including species information, government and private sector monitoring, environmental studies and approvals, and scientific research
- preparing standardised risk-based performance requirements for each industry sector.

<sup>12</sup> Productivity Commission 2014, p. 8

<sup>13</sup> Business Council of Australia 2016, p. 6

### 3.3.4 Exploring funding and financing options

'Infrastructure financing' is the supply of capital, such as debt and equity, used to meet the upfront cost of an infrastructure project. 'Infrastructure funding' is the cash used to pay back the money raised through the initial financing.<sup>14</sup> In recent years, the NSW Government has unlocked significant funding for infrastructure projects through:

- a tighter focus on core budget discipline
- the retirement of debt
- securing Commonwealth funding for infrastructure investment
- dedicating proceeds from asset sales to new infrastructure.

Not all these funding streams are enduring. Proceeds from asset sales are one-off. If the property market was to cool, there would likely be a reduction in government revenues from housing transactions. In addition, the Commonwealth Government has stated that it will no longer 'act as an ATM' for the States' infrastructure programs.

In this context, the NSW Government needs to get the most out of existing assets and, where new investment is warranted, select and prioritise the right projects so that available funding is used as productively as possible. The Government also needs to explore opportunities to unlock new or improved sources of infrastructure funding over the medium and long term. However, many potential new sources of funding are likely to prove complex and often politically unattractive. Some of these funding sources are discussed below.

<sup>14</sup> Infrastructure Partnerships Australia 2017

### Value capture

Value capture seeks to recover the economic productivity and land value benefits created from government planning decisions and infrastructure investments.

Views on value capture vary across Australian jurisdictions, with differing opinions on what mechanisms constitute value capture and how they should be applied. There are also differing views on the extent to which value capture can make a meaningful contribution to addressing infrastructure funding gaps. For instance, the Victorian Government's *Value Creation and Value Capture Framework* makes it clear that its focus is on creating value, rather than taxing beneficiaries. It argues that the role of government is to invest in better communities without charging those communities for it.<sup>15</sup>

In NSW, opportunities for value capture are routinely examined as part of the development of project business cases. In undertaking value capture assessments for major infrastructure projects, it has become apparent that, while value sharing may provide a useful contribution to project funding, in most cases it will not have a transformational impact on the funding equation.

In most cases, the value created for businesses and households directly affected by a project is unlikely to cover the full costs of that project. Even if a government sought to capture all the value created by taxing households and businesses, the size of the funding contribution, in real terms, would be eroded if captured over time – for instance, as property is brought to market and value crystallised.

<sup>15</sup> Victoria State Government 2017, p. 49

Although value capture is not a panacea for infrastructure, it should continue to be assessed as an option in the development of major infrastructure projects.

### Asset recycling

Asset recycling is the lease or sale of government assets to free-up capital to invest in new assets or revitalise existing assets. It involves government reinvesting the proceeds of asset sales into new, economically productive assets. As noted by the Productivity Commission, in considering asset recycling, governments must ensure that the decision to divest and the decision to invest are assessed separately within a transparent decision-making environment where a robust cost-benefit analysis is undertaken.<sup>16</sup> The two decisions must be justifiable on a stand-alone basis. Infrastructure NSW agrees with this assessment.

The priority for the sale of government-owned assets is to ensure that:

- economic efficiency is achieved
- the risks to consumers and other public interests are managed
- the market structure is amenable to asset recycling
- the sale is conducted efficiently, ethically and transparently.<sup>17</sup>

Having justified the asset sale on its merits in accordance with these criteria, governments then face separate decisions about the optimal use of the resulting proceeds.

<sup>16</sup> Productivity Commission 2014, p. 262

<sup>17</sup> Ibid, p. 18



The significant increase in infrastructure investment in NSW in recent years would not have been possible without the asset recycling initiatives pursued by the NSW Government. Asset divestments have included Port Botany, Port Kembla, the Port of Newcastle, a share of the State's electricity networks (see breakout box at right), public housing assets and the Land and Property Information Service.

Asset recycling funds have been directed to the Restart NSW Fund which was established by legislation in 2011. Infrastructure NSW is statutorily responsible for making recommendations to the Government for use of the Restart NSW Fund. By convention, 30 per cent of Restart funds must be directed to regional NSW.

As at June 2017, an estimated \$24.8 billion in proceeds from asset recycling had been directed to Restart NSW, providing funds to invest in new public transport, new roads, new schools, new health facilities, upgraded cultural attractions and water security. The successful completion of the electricity network transactions also allowed the NSW Government to accelerate delivery of major infrastructure projects. The Sydney Metro City & South West project was accelerated by up to seven years; the Pinch Point and Clearways program by up to five years; and Northern Beaches B-Line by up to five years.

### Electricity network transactions

The NSW Government leased 49 per cent of the NSW network businesses. The transaction included the leases of:

- 100 per cent of TransGrid, the statewide transmission business. Completed in December 2015, the transaction netted proceeds of \$6.6 billion
- 50.4 per cent of Ausgrid. Completed in December 2016, the transaction netted proceeds of \$5.6 billion
- 50.4 per cent of Endeavour Energy. Completed in June 2017, this transaction netted proceeds of \$2.8 billion.

These proceeds will be augmented by an estimated \$2.2 billion in Commonwealth Government Asset Recycling Initiative incentive payments and accrued investment earnings.

On completion of the initial Sydney Motorway Corporation sale, Infrastructure NSW recommends that, where possible, the NSW Government explore further asset recycling initiatives. Subject to a review of feasibility, candidates for asset recycling include the NSW Government's remaining share in Sydney Motorway Corporation and its shareholding in Snowy Hydro Ltd.

If the NSW Government wishes to maximise its investment options over the term of the 2018 SIS, it should consider the suitability of recycling these and other assets. Conversely, if the Government is unwilling or unable to recycle assets, it will face real choices as to which of these investments it can afford over the next 10-20 years.

### Recommendation 13

Infrastructure NSW recommends that the NSW Government, where possible, explore the potential for further asset recycling initiatives.

#### 3.3.5 Ensuring construction sector capability and capacity

In 2016, Infrastructure NSW undertook research to assess the capability and capacity of the NSW construction sector and identify any issues that could impact the timely and cost-effective delivery of the NSW Government's infrastructure program.<sup>18</sup> The key capacity and capability challenges identified revolve around securing access to quality skills and construction materials, boosting construction industry productivity and meeting the transport and logistical challenges associated with an increasing construction task. Some of the critical issues identified, and proposed responses, are detailed below.

#### Developing and communicating an infrastructure pipeline

There will be many opportunities for the private sector to engage in NSW's large infrastructure program, including in the design, financing, development, operations and maintenance of projects, as well as in advisory roles throughout asset lifecycles. As NSW is in a national market, it is competing with other jurisdictions to get the best people to fulfil these roles.

To give industry the best chance of responding to these opportunities, the NSW Government needs to

<sup>18</sup> BIS Oxford Economics 2017

provide a clear and coherent whole-of-government long-term project pipeline. A visible pipeline facilitates forward planning – by industry and government – and enables industry to plan the physical and human capital to meet projected demand.<sup>19</sup>

To this end, Infrastructure NSW has produced the *NSW Infrastructure Pipeline*. The NSW Infrastructure Pipeline details proposals with a minimum capital value of \$100 million that are expected to come to market over the next three to five years. Proposals in the *NSW Infrastructure Pipeline* are in various stages of development, with some of the projects yet to be approved by the NSW Government. The document will be reviewed every six months, giving industry the most up-to-date information on NSW opportunities. Insight into the planned infrastructure program beyond the next five years is provided in the 2018 SIS.

Infrastructure NSW will continue to examine project and program sequencing on a whole-of-government basis. It will work with other jurisdictions to ensure that the *NSW Infrastructure Pipeline* is informed by developments across the national infrastructure sector.

### Optimising project procurement

Projects can be procured using a variety of different approaches related to choices of contracting model, the tender process and the criteria used to select the winning bids. Decisions on the right procurement method for a project can affect value for money, risks, costs and time.<sup>20</sup>

Various assessments of the NSW Government's major project procurement processes have identified that further improvements are required to avoid increasing project risk and cost.<sup>21</sup> The NSW Government's ability to deliver on its pipeline is dependent upon reforms to its procurement methodology.

Several key initiatives have been implemented to improve the approach to Public Private Partnership (PPP) procurement, including:

- development of the NSW Procurement Policy Framework
- establishment of the NSW Procurement Board's Construction Leadership Group
- release of updated PPP Guidelines, most recently in 2017<sup>22</sup>
- a new PPP contracting model to be used across all NSW PPP projects.

While these PPP reforms are positive, reform is needed in relation to all forms of contracting models. There is a need to bring about long-term, embedded behavioural change across all NSW Government agencies that will lead to best practice, world class procurement.

A whole-of-government approach to procurement reform is required to ensure that the NSW Government takes a consistent and efficient approach to procurement across projects, agencies and sectors. A broad procurement reform initiative should be undertaken in partnership with industry to simplify procurement processes, reduce bid costs and

encourage and reward innovation. This initiative should also aim to improve capabilities in procurement agencies and provide a consistent and efficient interface with industry across government.

### Construction Industry Leadership Forum

The Construction Industry Leadership Forum has been established to promote collaboration between the public and private sectors and improve infrastructure procurement and delivery. Held every six months, the Forum is attended by representatives from the construction industry and the NSW and Victorian public sectors. The Forum focuses on:

- developing capability and skills to ensure projects are delivered effectively
- creating more streamlined and efficient bid processes
- ensuring projects are delivered on time and on budget.

### Ensuring the availability of essential construction skills

Securing the necessary construction-related skills is likely to be one of the biggest challenges to NSW's construction capacity and capability. Growing construction activity means that there is rising demand for construction and professional skills, with the greatest risks likely to revolve around securing critical on-site skills, including high quality supervisors, site managers and project engineers. Meeting demand for

19 Ibid, p. 49

20 Ibid, p. 55

21 Legislative Assembly Committee on Transport and Infrastructure 2017; Legislative Assembly of New South Wales 2017; BIS Oxford Economics 2017; Australian Government Productivity Commission 2014

22 NSW Treasury 2017

high quality skills in tunnelling is likely to be particularly challenging given the size of the approaching boom in tunnelling work.

There is a range of constraints to the ‘transferability’ and ‘mobility’ of labour.<sup>23</sup> ‘Transferability’ is the ability of skills to be applied equally in different contexts; for example, between resources and infrastructure sectors. ‘Mobility’ is the ability of skills to move geographically.

Emerging skills gaps will not be closed through simply hiring labour from other regions, sectors or even from other parts of the construction industry. It will be essential to boost workforce development to meet demand for key onsite skills. This should include expanding the coverage of the NSW Infrastructure Skills Legacy Program and removing existing constraints to workforce development initiatives at the procurement phase. The NSW Government will need to ensure that it is an informed client by continuing to improve its technical capability to handle the growing complexity and volume of work.

### Driving construction industry productivity and innovation

The Australian construction industry has generally lagged behind other industries in terms of productivity growth. The challenge for industry and government is to find ways in which productivity can be improved, including by securing higher quality supervision and project management, harnessing new technologies and processes, and adopting a more innovation-friendly culture.

The Productivity Commission identified new technologies emerging in the construction sector with the potential to deliver a step-change in productivity improvements:

- prefabrication and modularisation
- robotics and automation
- use of advanced materials or processes
- digital technologies, including Building Information Modelling.<sup>24</sup>

Industry and government need to foster innovation to ensure that inefficient construction practices are reformed and new productivity-enhancing technologies are adopted.

## Recommendation 14

Infrastructure NSW recommends that the NSW Government establish a whole-of-government process, led by Infrastructure NSW and in partnership with industry, to identify and deliver major project procurement reforms by mid-2019. The reforms should focus on driving innovation, reducing bid costs and promoting competition.

### 3.3.6 Building public sector capacity

Currently, NSW Government infrastructure planning and delivery agencies do not have structured learning programs in place to foster knowledge-sharing between agencies and project teams. Opportunities to promote good practice, and to avoid past mistakes, are being missed. While Infrastructure NSW identifies trends and analysis through the IIAF, there is a need for a more structured approach across government to sharing project knowledge. Project innovation could be captured and shared in a structured and systemic manner, particularly in major projects like Sydney Metro and WestConnex.

NSW could be guided by other jurisdictions’ approaches to building sector capacity. The UK Government’s Major Projects Leadership Academy (MPLA) offers a useful model for improving leadership of major projects. Through this program, ‘Senior Responsible Owners’ appointed to lead major projects pass through the MPLA to ensure they have the necessary leadership capability, including technical and commercial know-how.

Infrastructure planning and delivery agencies should implement structured learning programs and transfer of knowledge from project to project and across sectors to strengthen public sector infrastructure planning and delivery capability.

<sup>23</sup> BIS Oxford Economics 2017, p. 62

<sup>24</sup> Ibid, p. 100