

the context

The NSW economy is the largest and most diverse in Australia. Sydney alone contributes more to Australia's economy than the whole of the country's mining sector.

However, since 2000 the State has been in relative economic decline.

Infrastructure NSW's baseline economic forecast for the next 20 years shows that the growth forecast for NSW,

2.6 percent per annum, remains lower than the rest of Australia.

A targeted infrastructure planning and investment strategy is critical to reversing NSW's relative economic decline.

In line with the requirements of our Act, Infrastructure NSW completed a gap analysis between future needs and the current condition and capacity of infrastructure in NSW.

1.0 Strategic framework

Key points

Good infrastructure is the foundation stone for a successful economy and productive, cohesive society.

The NSW Government's infrastructure assets are worth almost a quarter of a trillion dollars and new infrastructure investment is around \$15 billion per annum.

NSW's problem is not so much the quantity of investment but the quality. Poor infrastructure investment decisions for the past decade have contributed to the relatively poor State economic performance in comparison with the rest of Australia (which has grown faster than NSW since 1991).

Unless targeted where needed, infrastructure investment will achieve little – except to add to public debt and the cost of living.

Infrastructure NSW has consulted widely across Government and industry to better understand the key drivers of the effect of infrastructure on the economy. Key issues include an excessive focus on big, long term projects rather than an approach that encourages making the most of existing assets and incremental opportunities and fixing pinch points. A pipeline of projects remains an important concern, particularly to enable private sector investment.

The Strategy has focused on ensuring that future investment supports rapid improvement in the State's position, with investment targeted at delivering the most benefit to the largest number of people.

This Strategy is Infrastructure NSW's independent advice to Government on the infrastructure investments and reforms needed to 'Make NSW Number One again'.

Infrastructure NSW asked Deloitte Access Economics to take a whole of economy perspective to assess the flow on additional benefits of infrastructure recommendations.

Effective implementation of this strategy could increase the size of the NSW economy by over \$50 billion (present value) or \$18.4 billion a year (in current dollars) by 2032. This is around a 2.4 percent increase from the forecast baseline which means around 100,000 extra jobs by 2032.

1.1 Introduction

Our infrastructure networks enable delivery of the basic facilities and services that are the foundation stone for a successful State economy and society.

A complex and interconnected series of networks and systems form the infrastructure base of NSW, working together to deliver these facilities and services.

'Hard' infrastructure – the large physical networks necessary for the functioning of a modern industrial nation, such as roads, railways and utilities – provides the people of NSW with the means to get to and from work and family. It also gives them access to everything from safe drinking water to internet connections and electricity to run the operating theatre equipment that saves lives in our hospitals. From the mundane to the life-changing, these hard infrastructure networks make NSW tick.

Hard infrastructure networks in turn enable the delivery of what is known as 'soft' infrastructure – all the institutions that are required to maintain the economic, health, cultural and social standards of the State, such as the financial system, the education system and the healthcare system.

Together, these networks provide the quality of life and breadth of opportunity that have made NSW one of the best places in the world to live.

Protecting that quality of life and ensuring the economic prosperity of NSW is at the heart of this Strategy. It focuses principally on hard infrastructure networks and seeks to forecast, in line with NSW Government objectives, where future needs will be, how the priorities

for projects should be decided and how best to meet these needs from finite public funds and available private capital.

1.2 Infrastructure and the NSW economy

As a developed modern economy, NSW has a large existing infrastructure sector and a major portfolio of assets.

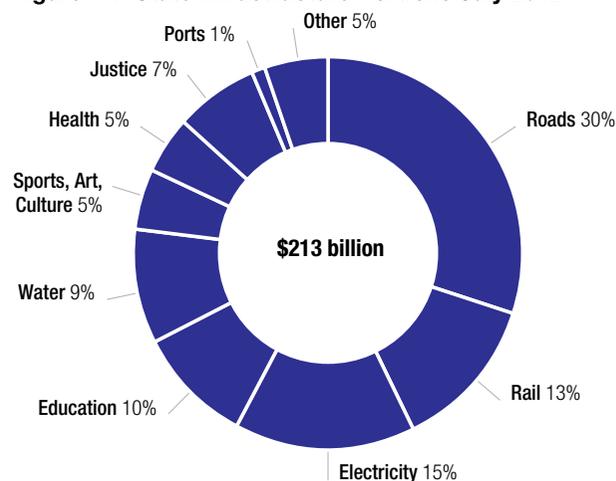
The Strategy covers both economic and social infrastructure investments by the NSW Government. The Strategy does not consider public housing, land and property utilisation, the planning system or local Government reform. These areas are subject to separate Government reform processes.

The Government's portfolio of infrastructure assets within scope amounts to \$213 billion, with the largest portion, \$91 billion, in transport assets (Figure 1.1). In 2012-13 the capital budget is \$15 billion, of which \$6 billion is for transport projects (Figure 1.2).

Within the scope of this Strategy, there is a mix of private and public infrastructure owners in the sectors and a mix of funding by Government and by user charges.

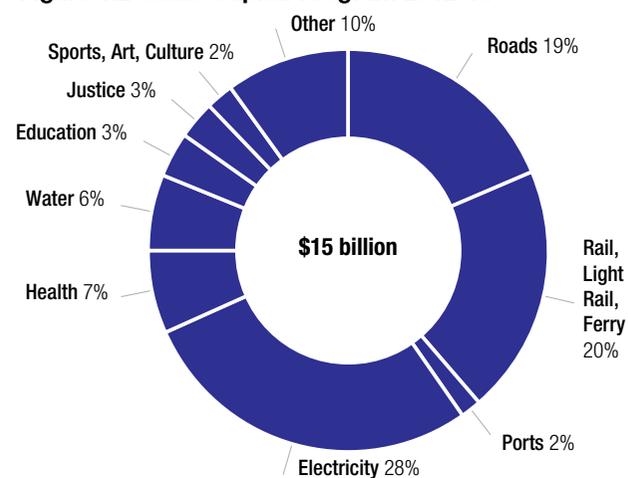
NSW has more Government ownership and less private ownership in the energy, rail and health sectors than other States. This is significant given that 72 per cent of all hard infrastructure spending in NSW (all sectors) is Government funded, compared to 55 per cent in Australia¹.

Figure 1.1 State Infrastructure Portfolio July 2012



Source: NSW Treasury.

Figure 1.2 State Capital Program 2012-13



Source: NSW Treasury.

¹ Port Jackson Partners, report for Infrastructure NSW 2011, Better Value Infrastructure Paper for COAG.

Table 1.1 shows, for each sector, the asset managers, the sources of funding and the value of NSW Government assets and NSW Government capital expenditure planned for 2012-13.

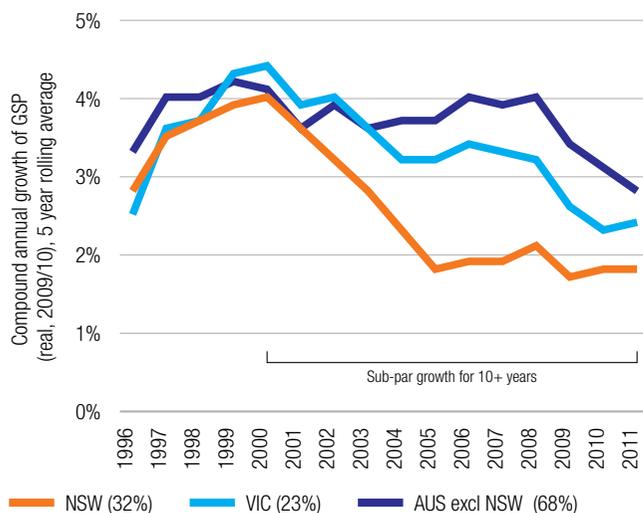
In considering this installed infrastructure base and allocation of capital, a key question is whether the funding is well directed towards areas of need that will help NSW communities and the State in general to prosper.

Table 1.1 Scope of the State Infrastructure Strategy – Sector Descriptions

Transport	Funding and Revenue Sources	Government Capital Expenditure (2012-13)	Asset Managers	Value of Assets (July 2012)
Roads	<ul style="list-style-type: none"> – Public Sector, from user charges, road user charges, vehicle registration, tolls – Local Government, rates and council activity 	\$2.8b	<ul style="list-style-type: none"> – RMS – Local Governments – Tollroad concessionaire 	\$64b
Public Transport	<ul style="list-style-type: none"> – Public Sector, farebox revenue – Local Government, rates and council activity 	\$3.3b	<ul style="list-style-type: none"> – RailCorp – Country Rail Infrastructure Authority – CountryLink 	\$27b
Airports/ Ports	<ul style="list-style-type: none"> – Airport and Port – Corporations, from user charges (airport and shipping company fees) – Shareholder contributions 	\$0.3b (Ports)	<ul style="list-style-type: none"> – Stated-owned enterprises – Listed companies 	\$2b
Energy	<ul style="list-style-type: none"> – Energy companies and State-owned enterprises, from user charges (consumer) 	\$4.2b	<ul style="list-style-type: none"> – Private companies – State-owned enterprises 	\$30b
Water	<ul style="list-style-type: none"> – State-owned enterprises and Local Government, from rates and user charges (consumer) 	\$0.9b (Including water and waste water)	<ul style="list-style-type: none"> – State-owned enterprises – Local Government 	\$20b
Health, Social and other	<ul style="list-style-type: none"> – Public Sector – Private health and education providers 	\$3.8b	<ul style="list-style-type: none"> – Public Sector – Private health and education providers 	\$70b
Total		\$15.3b	Total	\$213b

Over the past decade, NSW has achieved significantly lower economic growth than the rest of Australia and Victoria (as shown in Figure 1.3). In 1991, NSW accounted for 37 percent of Australia's economy; by 2011 this had fallen to 32 percent. NSW productivity and population growth has been sub-par for more than 10 years.

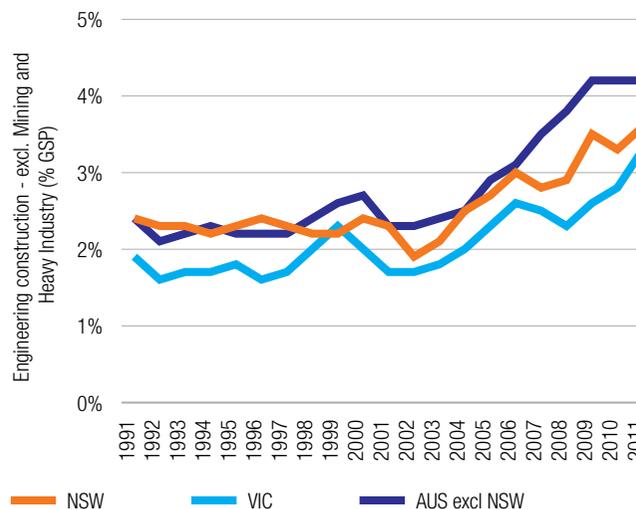
Figure 1.3 NSW Relative Economic Performance



Source: Port Jackson Partners. () gives % of national GDP.

However, NSW has invested more in infrastructure, in terms of percentage of GSP, than Victoria (the most comparable State, given the exceptional resources boom in other major States), as shown in Figure 1.4 below. This suggests that high levels of infrastructure spending do not guarantee better economic outcomes.

Figure 1.4 NSW Relative Infrastructure Investment



Source: Port Jackson Partners. Note: Engineering construction covers roads, highways and subdivision, bridges, railways, harbours, water storage and supply, sewerage and drainage, electricity generation, transmission and supply, pipelines, recreation and telecommunications.

The current Budget context provides additional imperative to consider how best to target and fund infrastructure wisely given the extent to which it dominates public expenditure.

As the Treasurer noted in the 2012-13 Budget speech:

The deterioration in the State's revenue position due to the write-down in the GST requires urgent and serious action. A further \$2.4 billion in savings is identified in this Budget, building on those savings measures announced last year. At a time when households are tightening their belts, this Government will do the same².

² NSW Treasurer Mike Baird, Budget Speech, 2012-13.

The question for NSW is: what is the right formula for ensuring that State infrastructure investment is worth every cent?

The evidence is that infrastructure affects economic growth positively via the three 'Ps': productivity, participation and population³:

- Infrastructure directly affects productivity through reduced travel costs, better communications and increased production capacity.
- Infrastructure affects participation by increasing access to employment opportunities for people who may not otherwise join the labour force.
- Infrastructure affects population flows by improving the quality of life and encouraging more people to remain in NSW, which facilitates economic growth.

This indicates that to deliver net benefits to the economy, infrastructure investments need to be of the right type, in the right place, at the right time. It suggests that the greatest impact is gained by sharpening the focus of infrastructure projects on productivity and economic growth.

Conversely, poor infrastructure investment decisions risk increasing the public debt burden and/or the cost of living without improving productivity or providing a better life. A single major public infrastructure investment can cost every person in NSW thousands of dollars. Therefore the benefits must outweigh the costs.

Although there are other factors that would affect

³ Deloitte Access Economics 2012, The NSW Economy in 2031-32: Report to Infrastructure NSW.

each State's economic performance, this analysis suggests that the quality of investment is at least as important as that the quantity. Infrastructure performance is the result of planning, delivery and effective governance and market arrangements. Reform of infrastructure sectors introduced market incentives and efficiencies and delivered high productivity dividends in the 1980s and 1990s, but the reform agenda has stalled in the past decade.

Improving the planning, procurement and use of infrastructure will contribute to reversing this trend and delivering greater economic growth and enhanced standards of living in NSW.

1.3 Infrastructure NSW

The NSW Government is determined to 'Make NSW Number One', and part of achieving this is a vision for infrastructure:

...the right infrastructure, in the right places, not only boosting productivity and competitiveness, but makes a difference to peoples' quality of life⁴.

To achieve this vision the Government created Infrastructure NSW in 2011.

Established by the **Infrastructure NSW Act 2011** (the Act), Infrastructure NSW's prime task is to prepare and submit to the Premier a 20 year State Infrastructure Strategy (the Strategy). The Act States that the Strategy must assess the current State of infrastructure in NSW and the need and strategic priorities for infrastructure

for the next 20 years. Further, the Strategy is to focus on major projects and reforms necessary for the successful provision and use of infrastructure. It is to be based upon independent and expert analysis and advice. The main points in the Act that relate to the development of the Strategy are summarised in Table 1.2.

⁴ NSW Government 2011, NSW 2021 – A Plan to Make NSW Number One.

Table 1.2 Legislative Requirements

Requirements of Infrastructure NSW Act (2011)

The Infrastructure NSW Act (the Act) tasks Infrastructure NSW with 14 functions including:

- preparation and submission to the Premier of a 20 year State Infrastructure Strategy
- preparation and submission to the Premier of five year infrastructure plans and other plans as requested by the Premier
- preparation of sectoral State infrastructure strategy Statements
- review and evaluation of proposed major infrastructure projects by Government agencies or the private sector
- advice on infrastructure planning and delivery assessment, economic or regulatory impediments and funding models
- coordination of infrastructure submissions by NSW to the Commonwealth Government.

20 year Infrastructure Strategy

Part 4, Section 17 of the Act provides that the 20 year State Infrastructure Strategy must:

- assess the current State of infrastructure in NSW and the needs and strategic priorities for infrastructure in NSW for the next 20 years; and
- in preparing or reviewing the 20 year State Infrastructure Strategy, have regard to any State strategic priority of which Infrastructure NSW has been advised by the Premier.

Section 17 (2) provides some guidance on the criteria and objectives which may be considered when developing the 20 year State Infrastructure Strategy. Infrastructure NSW has taken this guidance into consideration in developing the Strategy and in particular, has developed a number of options to deal with identified deficiencies, including options relating to demand management and other policy, pricing and regulatory reform options.

Section 18 provides that the Premier is to consider any 20 year State Infrastructure Strategy submitted by Infrastructure NSW, and adopt the strategy with or without amendments, or refer it back to Infrastructure NSW for further consideration.

Further, the Premier must notify Infrastructure NSW of the Premier's decision and make the adopted strategy publicly available.

Section 16 allows for the State Infrastructure Strategy to be reviewed every five years (and at such other times as the Premier directs or is considered appropriate). Infrastructure NSW is then required to submit a revised strategy to the Premier.

5 year Infrastructure Plans

In addition to the 20 year State Infrastructure Strategy, Infrastructure NSW is also required to prepare and submit to the Premier a five year Infrastructure Plan to identify specific major infrastructure projects to be undertaken as a priority in the following five-years. These five-year plans are to be reviewed every year and a revised plan submitted to the Premier, if required. In preparing the five-year plans, Infrastructure NSW must have regard to the 20 year State Infrastructure Strategy adopted by the Premier.

Infrastructure NSW's governance model (as established by the Act) comprises a Board, Chief Executive Officer and management team. The Board comprises the CEO, an independent Chairman and nine additional Board members. The Board provides strategic policy direction and oversight for planning, management and performance.

The Board is one of the most experienced in the country with a mix of leading business people with expertise in infrastructure, working alongside the State's most senior public servants.

Table 1.3 Infrastructure NSW Board

Nick Greiner AC	Chairman
Paul Broad	CEO, Infrastructure NSW
Roger Fletcher	Private Sector Member
David Gonski AC	Private Sector Member
Carolyn Kay	Private Sector Member
Max Moore-Wilton AC	Private Sector Member
Rod Pearse OAM	Private Sector Member
Chris Eccles	Director General, Department of Premier and Cabinet
Sam Haddad	Director General, Director of Planning and Infrastructure
Philip Gaetjens	Secretary, NSW Treasury
Mark Paterson AO	Director General, Department of Trade, Investment, Regional Infrastructure and Services

This Strategy was prepared by Infrastructure NSW following consultation with line departments, private sector proponents and other significant stakeholders including Infrastructure Australia.

The development of this Strategy has cost \$2 million, which was spent to investigate options and obtain advice from industry experts including Cisco, Deloitte Access Economics, Deloitte, Ernst & Young, Evans & Peck, GHD, Interfleet Transport Advisory, L.E.K, Molino Stewart, MR Cagney, PriceWaterhouseCoopers, Sapere, SMART (University of Wollongong) and others. All reports prepared for Infrastructure NSW are available on our website.

The Strategy is the considered advice of Infrastructure NSW to the Premier of NSW, who told Parliament when introducing the legislation:

The Government, through Infrastructure NSW, is determined to set New South Wales back on the path of investment in world's best practice infrastructure planning and delivery to improve the lives of our citizens across this State. The people of New South Wales want our State to be number one again. We want to restore that great sense of pride in our cities and in our regions, and to be confident in the opportunities for the future available to all our citizens. Providing the infrastructure that New South Wales needs and deserves is the first step⁵.

Infrastructure NSW is also charged by the Act to manage and monitor the implementation of the Strategy and the major infrastructure projects including their funding.

⁵ Premier Barry O'Farrell, Infrastructure NSW Bill 2011, Second Reading, Hansard, 26 May 2011.

Infrastructure NSW has been asked to provide specific identification of individual projects that will require priority for Government consideration.

Infrastructure NSW's findings and conclusions are informed recommendations to enable Government decision making and are not necessarily Government policy. The Government will consider Infrastructure NSW's recommendations in conjunction with:

- the Department of Planning and Infrastructure's advice, which will include the **Metropolitan Strategy for Sydney and Regional Strategies**, an integrated planning approach to meeting NSW's housing, employment, land and recreational needs over the next 20 years
- Transport for NSW's advice, which will include the **Long Term Transport Master Plan**, setting out an approach for delivering world class transport networks and services to the people of NSW.

Infrastructure NSW's recommendations were formulated following extensive discussion with these State agencies among others.

Infrastructure NSW recognises that these agencies will be responsible for the detailed development of future plans for investment in their sectors and has sought to co-ordinate wherever possible. However, Infrastructure NSW's mission is to provide Government with independent advice in a 'big picture' context of all State infrastructure for the next 20 years. While there are some differences of emphasis, these are relatively few and Infrastructure NSW has noted a high degree of co-operation and common thought on where NSW needs to go next.

1.4 The State Infrastructure Strategy

The Strategy focuses on the strategic investments and reforms that Infrastructure NSW has assessed as being likely to have most impact over the next 20 years.

It is not intended as a comprehensive capital plan for the whole of the NSW public sector for the next two decades; as noted much of this detailed work properly devolves to the expertise of departments and specialist agencies at the coalface. It comprises recommendations for:

- investment in specific major projects
- wider policy and market reforms to improve how infrastructure is planned, procured and delivered, particularly reforms that introduce competition and increase private sector involvement and offer an opportunity for innovation and for greater efficiency.

In framing the priorities for this Strategy, Infrastructure NSW has taken the Premier's directive that NSW should be number one again as per its mission Statement. Infrastructure needs to act as a key enabler in getting the economy moving again and in so doing make the lives of all people in NSW better.

The Report of the NSW Financial Audit 2011 and Commission of Audit reports have highlighted deficiencies in asset management and infrastructure decisions across NSW Government agencies. Some specific issues that Infrastructure NSW has considered include:

- **Low levels of capital utilisation**

Inadequate consideration has been made of options that can delay major capital investment by incrementally improving how assets are utilised.

For example, in the energy sector, the Australian Energy Market Commission has estimated that \$11 billion of electricity infrastructure is used for less than 100 hours per year.

Rail infrastructure primarily services commuter traffic between a small number of stations, rather than providing an all day network across Sydney. Only 35 percent of weekday journeys take place outside the AM and PM peak hours⁶, while half the stations on the network service only six percent of traffic in aggregate⁷.

- **Poor project selection**

Public infrastructure investment has in recent years lacked focus on projects that underpin productivity growth. For example, there has been limited investment in metropolitan roads despite widespread congestion, which is estimated to cost the Australian economy around \$5 billion⁸.

A number of major projects that have been selected have either been delayed or cancelled – notably the Sydney Metro, a \$400 million bill for taxpayers for nothing at all. The underlying failures leading to these outcomes have been poor planning and project selection, rather than an inability to deliver. NSW is in fact capable of delivering excellent results as projects

(such as the Westlink M7 indicate), given the right policy framework, long term planning and judicious use of private sector expertise.

- **Poor value for money in delivery**

Infrastructure construction costs in Australia have been rising between 5 and 7 percent per annum⁹, much faster than the wider inflationary trend. Increases in project scope have produced even larger cost increases. In 2011, the NSW Auditor General found that 19 of the 43 major transport projects are late or over budget, with rail projects of particular concern¹⁰. For example the rail clearways program will be completed five years after the original completion date at a cost of \$2 billion compared with a budget of \$1.3 billion¹¹.

- **Low levels of private participation**

Increasing use of outsourcing and divestment are a feature of modern Government service delivery and can deliver lower cost with greater innovation¹². In general, private sector-led projects are delivered closer to time and budget than public sector led projects. However, a significantly lower proportion of infrastructure investment is delivered by the private sector in NSW than the Australian average.

6 CityRail 2010, Compendium of Travel Statistics.

7 CityRail 2010, Compendium of Travel Statistics.

8 Infrastructure Australia.

9 Infrastructure Australia.

10 Audit Office of NSW Overview.

11 Auditor General's Report 2011, Transport.

12 NSW Commission of Audit 2012, Final Report: Government Expenditure.

- **Difficulty in predicting the future.**

The acknowledged difficulty in predicting future demand and the disruptive change of new technologies means that when the unexpected occurs infrastructure assets can be stranded as a result. It is a better option to prioritise ‘no-regret’ options that will be required in all likely demand scenarios.

Wrong infrastructure choices and failures of implementation dampen economic growth, reduce productivity and get in the way of peoples’ lives. NSW needs to look honestly at its recent record if it is to avoid repeating such failures.

To summarise Infrastructure NSW’s thinking:

- **A ‘first things first’ approach** is needed to ensure priorities for action are projects and policies that maximise economic benefits for all of NSW. NSW should focus on what will have the greatest impact in the shortest timeframe
- Investment should **support NSW’s strengths** as a first priority, rather than seeking to create economic growth from scratch
- **Priority investments should benefit the greatest number of people**
- There has been a bias towards major projects at the expense of **incremental projects** that are capable of yielding substantial benefits and addressing critical pinch points

- NSW should also **maximise the use of existing** assets wherever possible before investing in new projects because it is both cost effective and it is capable of delivering quick improvements for the community that are sacrificed when there is too great a focus on big projects with long lead times
- A key objective is to **ensure projects of all scale, both big and small, are done well.** Governance of delivery and ongoing management of the asset is as important as the initial investment
- Establishing a solid **pipeline of projects** is important for future success as it enables meaningful private sector involvement.

Investment in infrastructure should be made when it can be shown to:

- support economic activity and improve amenity
- enable the movement of people, goods and information
- service the needs of households
- support the quality of life of individuals and resilience of communities
- connect individuals, businesses and communities with each other and the rest of the world.

1.5 The Strategy’s regions

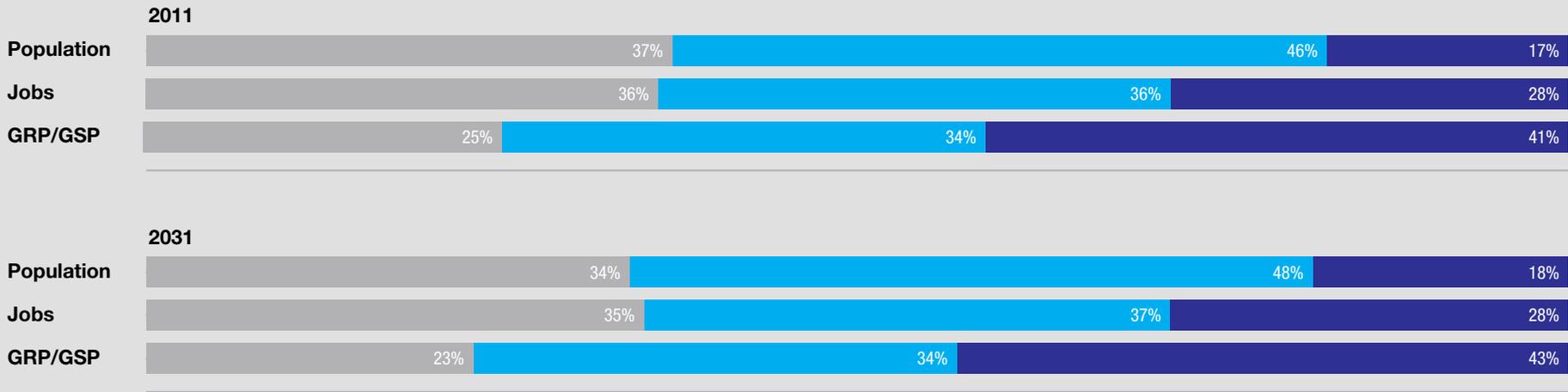
Infrastructure NSW has divided NSW into three regions as shown in Figure 1.5. The Strategy examines each of Regional NSW, Greater Sydney and Global Sydney separately.

Our analysis of the economy, (described in detail in Section 2), shows that the situation and imperatives, and therefore the infrastructure needs, of regional and rural NSW, the Greater Sydney area and Global Sydney are different.

Table 1.4 The Strategy’s Regions – Key Facts and Imperatives

Location	Fact
Regional NSW	<ul style="list-style-type: none"> • Australia’s largest and most diversified regional economy, contributes 25 percent of NSW GSP. • Home to over a third (36 percent) of population, with 36 percent of jobs. • World’s largest coal port at Newcastle.
Greater Sydney	<ul style="list-style-type: none"> • Nearly half of the NSW population lives here (46 per cent) • Lower proportion of jobs, (36 percent), and production, (34 percent).
Global Sydney	<ul style="list-style-type: none"> • Australia’s only global city. Nearly half (41 per cent), of GSP is generated here from high value, knowledge-based industries. • Only 17 percent of population, 28 percent of jobs.

Figure 1.5 The Strategy and Regions



Source: Deloitte Access Economics.

1.6 Economic benefits

Infrastructure NSW commissioned Deloitte Access Economics to model the economic benefits of the Strategy.

The model found that effective implementation of this Strategy could increase the size of the NSW economy by over \$50 billion (net present value) or \$18.4 billion a year (in current dollars) by 2032. This is around a 2.4 per cent increase from the long term baseline, which means around 100,000 extra jobs by 2032. The Deloitte Access Economics report can be found on the Infrastructure NSW website.

The economic benefits exclude the direct economic activity from the infrastructure capital and ongoing operating expenditure. This effect has been excluded as it is of little long term economic importance. The long term value of the Strategy to the economy is generated by the services.

The CGE modelling of the key infrastructure investments means that the Strategy assessment is focused on the benefits of completed infrastructure rather than on funding sources or jobs created during construction.

To finesse the model, Deloitte Access Economics has relied on relationships identified in economic literature and adapted these to the specific circumstances of NSW as required. Each type of infrastructure project will have a different mechanism for how these benefits will manifest themselves in everyday life. That is, each project will affect population, participation and productivity differently.

Economic benefits of the State Infrastructure Strategy recommendations

Infrastructure NSW and Deloitte Access Economics have estimated the potential economic benefits expected from the recommended strategies. This detailed Comparable General Equilibrium (CGE) analysis was conducted from a whole of economy perspective to assess the flow on additional benefits of the recommended strategies in regard to productivity, population and participation over the long term to 2032.

Effective implementation of the Strategy could increase the size of the NSW economy by around \$50.8 billion (present value of the total benefits over the period to 2032), which is an increase in GSP of around \$18.4 billion a year (in current dollars) by 2032, in today's dollars.

This is around a 2.4 percent increase from the long term baseline as forecast by the NSW Treasury¹³.

This increase in growth means that there could be up to 100,000 more jobs created by 2032.

The analysis reveals that the investments improve quality of life, driving a significant increase in population which, in turn, lifts GSP. These include access to markets and less congestion, all of which make NSW a more desirable place to live, leading to more jobs, more ideas and more demand for goods, all of which enhance economic activity.

An important result is that there are significant benefits for regional NSW. Gross Regional Product (GRP) is expected to increase by \$21 billion reflecting the close economic ties between Sydney and Regional NSW.

To be conservative, not all benefits or the direct expenditure on the key infrastructure is captured in the model. Also the economic benefits of certain social infrastructure investments are not modelled.

¹³ NSW Treasury, 2011-12, Budget Paper 6.

1.7 Methodology

Infrastructure NSW has undertaken a systematic approach to develop the Strategy and to identify and prioritise potential projects and programs that add to the economic and social well being of the whole NSW community. The method follows the logical framework of problem analysis, option assessment and prioritisation illustrated in Figure 1.6.

Infrastructure NSW's methodology was guided by the requirements of the Infrastructure NSW Act (2011).

1.7.1 Principles

Three principles have guided Infrastructure NSW in ensuring that the Strategy is affordable, achievable and delivers the best value across scarce resources.

Incremental improvement

Incremental improvement can address infrastructure problems more quickly and cost effectively than one-off major and mega projects, and should be thoroughly considered first to resolve problems. Major projects, if shown to be necessary and cost effective, should be the second option considered. Incremental improvements include operational and economic reforms that increase the utilisation of existing assets.

Investing in NSW's strengths

The priority is those regions of NSW and sectors of the economy with the highest growth potential, which are constrained by inadequate infrastructure capacity. Speculative infrastructure investment on the promise of creating growth has often led to waste, not regeneration, and should be avoided.

Affordability and fiscal sustainability

To be capable of being delivered the Strategy must be affordable and realistic. Rigorous prioritisation of infrastructure investment ensures that the projects and reforms recommended deliver strong positive economic returns to NSW.

1.7.2 Analysis

Infrastructure NSW is required to analyse the challenges and gaps confronting infrastructure in NSW. This is discussed in Sections 2 – 5.

Infrastructure NSW considered the macro-economic challenges and trends: what is the situation today, and how will needs change over the next 20 years? Added to this was a 'capability assessment' of today's infrastructure networks, and forward projections of infrastructure demand and economic forecasts.

The gap analysis was undertaken for each sector and the needs assessed for each of the Strategy's regions: Global Sydney, Greater Sydney and Regional NSW.

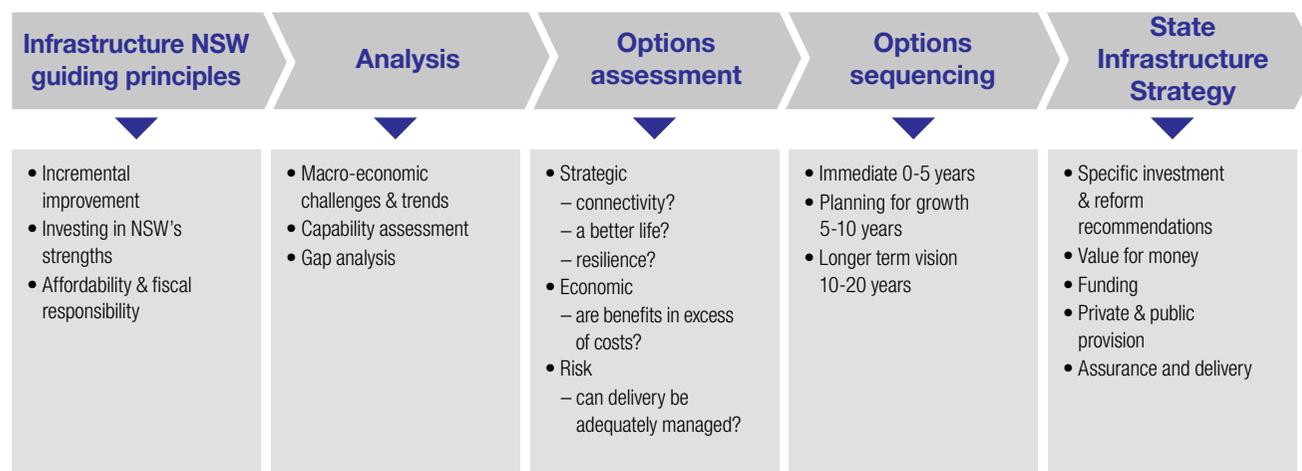
The results of the analysis of the challenges and gaps inform the assessment of the various options.

1.7.3 Options assessment and prioritisation

To establish the priority projects and reforms, Infrastructure NSW applied a multi-criteria assessment to gauge strategic fit, economic benefit and delivery risk.

The options are discussed by sector in Sections 6-14.

Figure 1.6 State Infrastructure Strategy: Methodology



Strategic assessment

Infrastructure NSW has applied a strategy evaluation method and an investment planning and prioritisation framework developed with Deloitte¹⁴ consisting of three criteria (described below). This approach is in line with that applied by Infrastructure Australia in its Reform and Investment Framework.

These three criteria also align with the Department of Planning and Infrastructure, Draft Metropolitan Strategy for Sydney: liveability, productivity and prosperity, healthy environment, accessibility and connectivity.

1. connectivity

Infrastructure worthy of consideration must deliver economic growth and productivity improvements by better connecting people and business with markets and services.

2. a better life

If the State is to continue to be an attractive place to work, live or start and run a business, infrastructure to be supported must improve the quality of life for the people of NSW, and the benefits must exceed the costs.

3. resilience

Resilient infrastructure ensures NSW has a reliable backbone, which meets the State's needs now and into the future. It covers the capacity of public and private infrastructure to withstand disruption, absorb disturbances, act effectively in crisis and deal with climatic variability. Infrastructure that fails at times of greatest need is not resilient and is not serving the public interest because it destroys economic value.

¹⁴ Deloitte Access Economics 2012, Economic Evaluation, CGE Models and Infrastructure and State Infrastructure Strategy Prioritisation Assessment, Report to Infrastructure NSW.

Economic assessment

Economic benefit cost analysis is the standard tool for rigorous and objective project assessment. To the extent possible it monetises all financial and non-financial impacts of a project to determine whether it offers net benefits to society.

Projects or reforms that demonstrate a potential to generate positive economic returns have been prioritised accordingly by Infrastructure NSW. It should however be noted that in some cases projects are at an early development stage and economic merit is correspondingly uncertain. In these cases the recommended priority determined by Infrastructure NSW is necessarily more indicative, and could change in light of further detailed analysis.

Risk assessment

Infrastructure NSW has assessed the current State of development of each project, particularly in its identification and assessment of delivery risks. It should be noted that some projects are at the early scoping and concept stages.

The risk assessment has also considered the proposed way in which the project or reform will be funded and financed, since financial viability can substantially affect project delivery and the realisation of community benefits. Financial risk can be affected (either way) by the adoption of user-charging and/or using the private sector for delivery of the project, service or reform.

1.7.4. Option sequencing

Once the project or reform option has been assessed and prioritised, the Strategy has ranked each according to its recommended timeframe for delivery. This is summarised in Table 1.5 below.

Table 1.5 Strategy Priorities Timeframe

Period	Description
Immediate actions 0 – 5 years	In the short term, Infrastructure NSW's recommendations focus on ensuring the existing infrastructure asset base is of high quality and delivers value-for-money. Recommendations in this period focus on packages of minor investments (for example, resolving pinch-points) and the most essential major investments, as well as regulatory and policy reforms.
Planning for growth 0 – 5 years	Given the long lead times for delivering infrastructure projects, this period includes many of the most important major infrastructure investments for the State – those projects which can have a 'game changing' impact on NSW's economy and society.
Longer term vision 0 – 5 years	Beyond 10 years, the phasing of projects is inevitably more subjective. The urgency for a project may change in response to economic or societal change. For projects beyond the immediate horizon, Infrastructure NSW recommends that flexibility over the precise timing be retained.

Final confirmation of project priorities and their timing is to be determined in association with Infrastructure NSW's review of agency project plans in accordance with the assurance framework described in Section 16, and will inform Infrastructure NSW's five-year Infrastructure Plans.