



State Infrastructure Plan

Part A: Strategy

March 2016





Commuting via the Goodwill Bridge, Brisbane

Foreword

The State Infrastructure Plan marks the culmination of work across government to deliver an infrastructure strategy and program that underpins economic growth, supports jobs and creates long-term prosperity for all Queenslanders.

It represents a bold new approach to addressing Queensland's future infrastructure needs, focused on using our scarce resources wisely, working in partnership with the private sector and implementing a program of reform initiatives.

The new framework for planning and prioritisation of infrastructure projects provides a solid foundation for making informed investment decisions. It will help identify the best, most cost-effective way to address the service needs and infrastructure challenges facing Queensland.

Leveraging opportunities for the private sector to put forward value-for-money proposals that respond to Queensland's infrastructure opportunities, while protecting our ownership of public assets, will play a critical role in this.

Innovative new reform initiatives will improve the way infrastructure planning is coordinated across government, and strengthen integration with regional land-use planning.

As part of this, a newly-created Infrastructure Portfolio Office will monitor the implementation of the State Infrastructure Plan, and drive infrastructure innovation and best-practice across government. It will undertake an important program management function, providing a cross-government perspective to infrastructure expenditure, timeframes, and resourcing.

A high-level Infrastructure Cabinet Committee will also be established, with responsibility for driving the state's infrastructure program, ensuring whole-of-government integration in relation to infrastructure planning and delivery.

Importantly, feedback from industry, investors and other stakeholders during consultation on the draft State Infrastructure Plan reinforced the government's approach to planning, prioritising and delivering infrastructure.

It has also helped strengthen the final State Infrastructure Plan, ensuring it provides a clear direction on the future of infrastructure in Queensland for all levels of government, the private sector and the community.

As our economy undergoes a period of structural change and diversification, it will be vital for our infrastructure investments to maximise the economic opportunities of the future, while continuing to support traditional drivers of growth.

Annual updates to the government's infrastructure program will ensure we make the most of our existing assets and select the right projects to deliver benefits to all Queenslanders.



A handwritten signature in black ink, appearing to read 'Anastacia'.

ANNASTACIA PALASZCZUK MP
Premier and Minister
for the Arts



A handwritten signature in black ink, appearing to read 'Jackie Trad'.

JACKIE TRAD MP
Deputy Premier, Minister for
Infrastructure, Local Government
and Planning and Minister for
Trade and Investment



Contents

The State Infrastructure Plan	6
Queensland overview	13
Challenges and objectives	23
Planning, prioritisation and delivery	34
Outcomes	49
Responses	52

The State Infrastructure Plan

Introduction

The State Infrastructure Plan (SIP) sets out the Queensland Government’s infrastructure priorities and a clear vision to grow the state. The SIP includes a framework to plan and prioritise infrastructure investment and delivery. It demonstrates the government’s commitment to address the state’s infrastructure needs in a timely, sensible and cost-effective way, while working within current funding constraints. The SIP:

- ▶ sets the strategic direction and fosters innovation in planning and delivering infrastructure
- ▶ identifies the anticipated service needs and infrastructure investment opportunities for a prosperous Queensland
- ▶ develops a sustainable and credible program of investment, which will be informed by the independent advice of Building Queensland
- ▶ provides a framework for greater coordination between public and private infrastructure.

The SIP describes how and where government will focus its attention through two distinct but related components—the strategy and program.

Accommodating future population and economic growth provides a challenge and an opportunity for all levels of government. Similarly, planning for and providing infrastructure to support a growing population, or as a catalyst for economic development, is a shared responsibility across all levels of government. While the SIP focuses mainly on infrastructure delivered by the Queensland Government, it is also a valuable tool for planning infrastructure across other levels of government and the private sector.



Kinchant Dam Improvement, completed 2015 (image courtesy of SunWater)

It will help to coordinate infrastructure across government agencies and align national, state, regional and local infrastructure plans.

The SIP positions the Queensland Government to take the lead in relation to:

- ▶ coordination and integration of land-use and infrastructure planning and delivery
- ▶ coordination and integration of infrastructure across all asset classes
- ▶ best-practice in asset management and procurement
- ▶ data gathering and analytics for improved demand forecasting and information sharing, as well as network optimisation and identification of network inefficiencies
- ▶ managing community expectations, user demand and behavioural change
- ▶ ensuring new approaches in planning, delivery, funding and maintenance of infrastructure are feasible and sustainable.

The SIP recognises the significant investment local government makes in infrastructure, the community assets for which it is responsible and its commitment to continuous improvement in financial reporting and asset management practices.

Through the implementation of the SIP, the state government will continue to partner and work cooperatively with local government in the development and delivery of shared priorities to optimise economic development opportunities for Queensland communities.

The SIP program provides local authorities with an understanding of key state government projects and regional priorities. Examples of private infrastructure proposals which are important to the state’s development are also highlighted.

Building or expanding existing infrastructure will not always be the best solution, so the SIP looks at ways to use infrastructure better, smarter and differently. If we can reuse, refit and share infrastructure, we can do more with less, be innovative and agile and better plan for disruption.

Through the SIP, the state government is capitalising on previous infrastructure investments and making prudent decisions for the timely provision and operation of infrastructure into the future.

The SIP therefore sets out a vision that extends beyond market and election cycles, and holds public service delivery, productivity and performance as underlying drivers by setting policy frameworks.

How to use this plan

The SIP is built around three core components: directions, responses and programs. These components are outlined in two separate documents—Part A: Strategy and Part B: Program (Figure 1).

Part A: Strategy

Part A sets a clear vision to guide infrastructure investment in Queensland and will be updated every five years. The strategy provides a cohesive model for infrastructure planning and delivery which integrates with land-use and economic planning. It is designed to guide infrastructure planning within Queensland Government agencies and policy responses to broader infrastructure challenges.

It also identifies the state's infrastructure challenges and objectives, and presents a clear set of directions to address them. The directions will guide the government's approach to the planning, delivery and operation of infrastructure.

The state's approach to infrastructure planning and prioritisation, as well as future investment across sectors, is also highlighted, with broad outcomes giving a high level indication of what the government is seeking to achieve as a result of this investment.

Part A then presents the government's responses, or statements of intention, for each infrastructure asset class (e.g. health, transport and education) based on a planning and prioritisation framework.



Marsden State High School

Part B: Program

Part B outlines how the SIP will be implemented, immediate and longer term projects, as well as opportunities and priorities for each region.

It identifies a number of policies and initiatives that government will undertake to support implementation of the SIP.

It outlines, by region, potential future projects to support liveability and productivity in regional Queensland, including projects at various levels of maturity. Many of these are currently unfunded, but represent potential projects for future investment, either by varying levels of government or the private sector.

Part B confirms the government's infrastructure program prepared for each asset class. These initiatives are in two categories:

1–4 year program: Forward program of projects either in planning, approaching procurement and construction or underway. It also includes key maintenance programs. The majority of these projects and programs have firm funding commitments for 2015–16 through the state budget. In later years, the funding amount is indicative only.

For the construction and engineering sectors, the 1–4 year program will help guide workforce management and business planning.

Future opportunities: Consisting of future priority opportunities and infrastructure gaps, identified as either short-term or medium to long-term (covering the indicative 15-year timeframe of the document). While the program outlines what needs to be achieved, it is not prescriptive about how this is delivered. Where possible, these issues will be addressed in collaboration with the private sector to develop innovative, cost-effective solutions.

The future opportunities will help inform stakeholders such as industry bodies, regional development groups and the research sector looking to work with government to address longer term challenges.

The State Infrastructure Plan

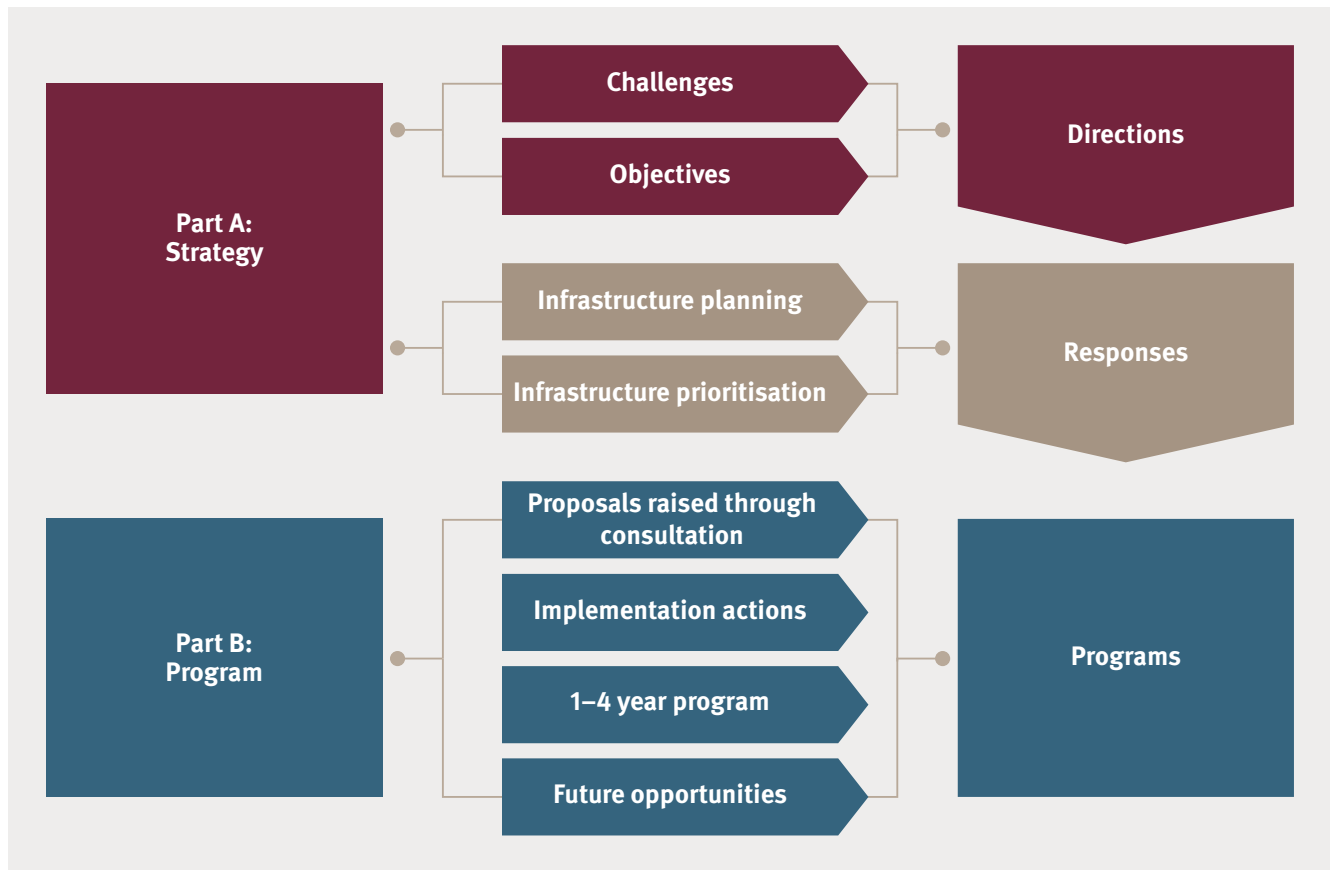


Figure 1: Structure of the State Infrastructure Plan

Infrastructure benefits

Infrastructure supports business efficiency and is a critical factor in improving the competitiveness of the Queensland economy.

Along with other states and countries, Queensland will face a number of challenges over the coming years. These challenges come with exciting opportunities, which require bold new strategic directions for planning, investment and delivery of infrastructure. The opportunities for new infrastructure investment in Queensland are substantial and extend well beyond the existing capacity of federal, state and local governments.

In recent times there has been a shift at all levels of government to increased private sector involvement in owning, financing, building and operating infrastructure. Consideration of future funding sources should include alternative methods which may better capture the value of public investment and provide a return on investment to the private sector.

We need to consider alternative solutions and innovative approaches to meeting future infrastructure needs, built on transparent processes that give the public confidence they are receiving value-for-money. This may include pursuing new funding models that challenge the current private/public ownership debate. For example:

- ▶ determining how the value the private sector gains from public infrastructure investment can be shared with government and the community
- ▶ utilising hybrid investment vehicles that can allow funders to draw income from assets.

The SIP presents opportunities for the private sector to partner with government and to put forward innovative market-led proposals that respond to Queensland's challenges in an efficient and value-for-money way.

It recognises that investment in non-infrastructure solutions, such as behaviour change, may generate the best value-for-money. For example, South East Queensland's (SEQ) water consumption permanently reduced after the 'waterwise' campaigns of the latter part of the last decade.

Implementation of the SIP will encourage:

- ▶ equitable and sustainable funding and financing models that encompass opportunities for local government and the private sector
- ▶ economic growth and innovation

- ▶ proactive engagement with industry, the private sector, communities and other levels of government as an integral part of the government's new approach. Engagement will occur at initial planning and assessment, through to funding and co-funding opportunities with the private sector
- ▶ social and employment outcomes for communities from major infrastructure projects.

Infrastructure investment is guided by consistent long-term pipelines of infrastructure projects that will:

- ▶ meet anticipated needs for new infrastructure, maintenance and replacement
- ▶ manage/mitigate the risk for private sector investors and contractors
- ▶ maintain ongoing employment of a capable workforce for infrastructure construction and maintenance
- ▶ provide long-term confidence in the economy.

Supporting employment and productivity through infrastructure-related spending

Infrastructure investment has a well-established link to economic gains. The International Monetary Fund estimates that each dollar of infrastructure investment could boost economic activity by as much as \$1.80¹. It has long-term benefits to labour productivity and incomes by enhancing the state's capital stock.

Building new infrastructure is not the only path for government to support economic activity and jobs. In fact, maintenance of existing assets often supports more jobs per dollar spent than construction of new infrastructure as it is more labour intensive. Further, with relatively less time needed to undertake planning and design and obtain permits, maintenance projects can provide a faster response when addressing concerns relating to weak demand in the economy. In addition, maintaining existing assets preserves past investments in infrastructure and ensures communities remain attractive and vibrant. As a result, this type of activity not only extends the life of existing assets but has the immediate benefit of supporting jobs in local communities.

¹ IMF Note to the Group of Twenty Deputies (February, 2009).

The State Infrastructure Plan

The Queensland Government is committed to delivering better infrastructure outcomes for Queensland. Through development of the SIP, the government delivers on its guarantee to effectively engage with all levels of government, industry and the community to build confidence and progress infrastructure priorities for the state.

In 2013–14, Queensland's 77 councils managed \$89 billion of non-financial assets, with an average of \$1.9 billion in assets added to the total local government asset base each year for the past ten years². This represents about one-third of all public (non-financial) assets across the state.

Under the Partners in Government Agreement, the Queensland Government and Local Government Association of Queensland (LGAQ) have committed to cooperate and coordinate activities, including to:

- ▶ recognise that local government is responsible for significant community assets and is committed to continuous improvement in financial reporting and asset management practices
- ▶ seek opportunities to partner and work cooperatively in the development and delivery of shared priorities
- ▶ work together to optimise economic development opportunities for Queensland communities.

As part of Working Queensland, the state is advancing important capital works projects to boost business confidence, increase labour force productivity and skills development, foster emerging and innovative industries and support investment in productive infrastructure. This includes the capital works program of \$10.1 billion in the 2015–16 financial year, ensuring a consistent flow of works to underpin jobs growth and economic activity. Queensland Treasury estimates the capital works program will support 27,500 full-time equivalent jobs.



Team work on the Bruce Highway Upgrade Project (Vantassel Street to Cluden Drive) in Townsville

² ABS 5512.0 – Government Finance Statistics, Australia, 2013–14

North Queensland infrastructure

Almost three-quarters of northern Australia's population live in Queensland. The Queensland Government has identified a range of projects, programs and infrastructure to drive economic growth in North Queensland.

In response to the Australian Government's White Paper on Developing Northern Australia (White Paper), the Queensland Government held the Townsville Economic Forum on 9 October 2015. The forum was attended by around 40 North Queensland mayors, the Premier and a number of Queensland Government ministers.

Several priorities to shape the implementation of the White Paper were proposed at the forum with key priorities being water, energy and transport infrastructure, stronger governance frameworks and embracing the digital economy more effectively. These key priorities are reflected throughout the SIP.

Much discussion at the forum focused on infrastructure classes such as water infrastructure, ageing health assets and beef roads. These are reflected in the new proposals raised through consultation section in Part B of the SIP.

A number of private investment projects such as oilseed processing facilities in the Central Highlands, the Palm Island Business Precinct, the proposed Aquis Great Barrier Reef Resort, and the Hinchinbrook to Wallaman Falls ecotourism master plan were highlighted at the forum.

As a result of the forum, the Minister for Disability Services, Minister for Seniors and Minister Assisting the Premier on North Queensland, the Honourable Coralee O'Rourke MP, led a delegation of North Queensland mayors to Canberra from 2–3 February 2016. As part of the delegation, Minister O'Rourke and mayors met with Australian Government ministers to discuss regional infrastructure priorities and make the case for additional Australian Government funding.

In addition, Minister O'Rourke met with more than 130 North Queensland business leaders through the North Queensland business roundtables to discuss the challenges and opportunities facing the region. As part of these consultations, stakeholders identified a number of road, rail and water infrastructure options that have informed the development of the SIP.

Further, the Northern Queensland Economic Summit in Cairns from 4–6 November 2015 showcased the region to around 250 potential investors. Feedback from potential investors has helped inform the development of the SIP.

The State Infrastructure Plan

Case study Gold Coast Light Rail Stage 2

Gold Coast Light Rail is a transformational project for the Gold Coast and SEQ.

Together, the Queensland Government and the City of Gold Coast have identified a light rail corridor to be delivered in stages. The corridor extends 42 kilometres from the heavy rail network at Helensvale station to the Gold Coast Airport at Coolangatta.

Gold Coast Light Rail Stage 2 is the second stage of a world class public transport system for residents and visitors to the Gold Coast.

Extending the system will reduce road congestion on the Gold Coast and its major arterials, and improve connectivity between the Gold Coast and Brisbane. As congestion increases on the Pacific Motorway, the efficiency of the rail system and its mass transit capabilities become increasingly important for the region.

Stage 2 proposes a 7.3 kilometre light rail system to extend Stage 1 from the terminus at the Gold Coast University Hospital in Southport, to connect with the existing heavy rail network at Helensvale via the Smith Street motorway.

Delivery of Stage 2 will not only enhance Stage 1 of the system but will also improve connectivity between Brisbane and the Gold Coast, providing significant economic benefits to Queensland.

Stage 2, with the potential to carry around 3000 customers per hour, is critical infrastructure to respond to the increasing demand for public transport in the city and support the Gold Coast 2018 Commonwealth Games.

Delivering Gold Coast Light Rail Stage 2 in time for the games will help to guarantee Queensland's international reputation as a premier host of major events.



Gold Coast Light Rail Stage 1

Setting the scene

Queensland is a large and diverse state, with strong communities, climate extremes, and natural resources that underpin our economy and have environmental and cultural heritage values that need to be protected for future generations. These attributes shape the infrastructure we need to support development and contribute to Queensland's identity.

Queensland's infrastructure must adapt to economic changes affecting our industries and regions, such as technological change and the emergence of a knowledge economy. Long-term infrastructure planning will seek to anticipate and positively facilitate these shifts to stimulate growth and job creation, and encourage public and private sector innovation.

Infrastructure must also be flexible to meet changing service needs, including where and how people choose to live and work, and the services they need through different stages of their lives. Queensland's infrastructure must be sustainable, resilient and work with the environment to reduce impacts and improve our ability to recover from natural disasters.

Underpinning these factors is increasing pressure on government expenditure in the context of weakening government revenue. While there are high community expectations about the provision of infrastructure and service levels, there are competing priorities for limited funds. Fundamental shifts in thinking, planning and delivery are therefore required.

The community

Over the past decade, there has been a dramatic change in Queensland's social profile in terms of population, age, where we live and what is important to us. People are living longer and more will be entering retirement in coming decades (see Figure 2).

This will increase demand on health services, requiring a different approach to the provision of some services. Queensland households are also changing with more people living alone, creating demand for different housing types and more dwellings.

Likewise, demographic changes will also impact the way we deliver services and infrastructure. Younger generations need different housing types, use technology differently, and make different transport choices, which is generating more demand for digital networks and transport and housing options.

As consumers we are spending less on physical products and more on experiences, culture and entertainment, driving new and increased demand for leisure and recreation. We are also spending and doing more online with more personalised services. Queenslanders are investing more money and placing more importance in education, contributing to the growth of our knowledge economy.



Enjoying a healthy, active retirement

Queensland overview

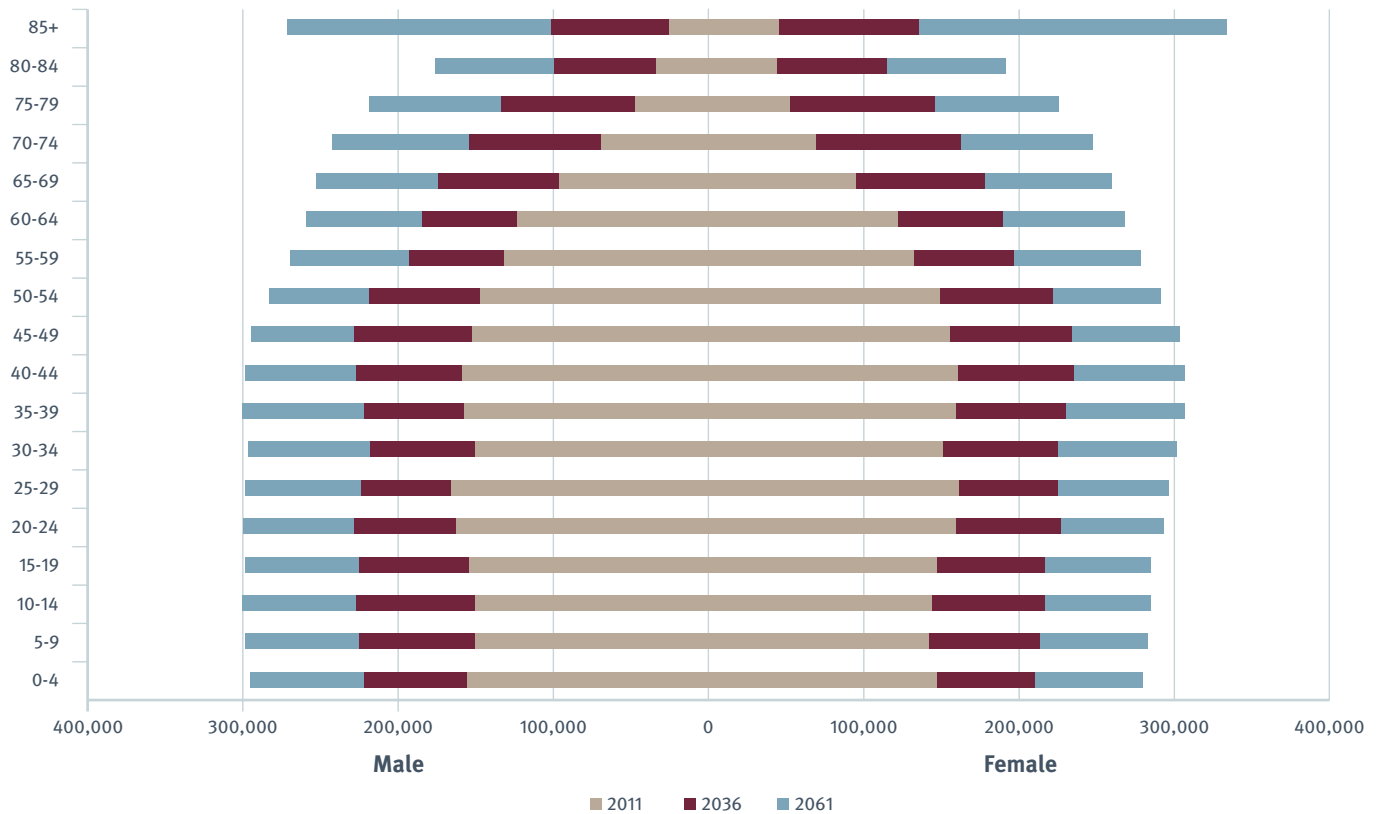


Figure 2: Projected population by age group and gender (Source: ABS 3101.0 Australian Demographic Statistics and Queensland Government population projections, 2013 edition, medium series)

These demographic and lifestyle changes are set to continue over the next 10 to 20 years and this is in the context of a population that continues to grow. From a population of 4.7 million, Queensland is expected to grow to 7 million by 2036, and reach 10 million by 2061. Most of this growth will be in SEQ and some coastal centres (see Figure 3).

Along with economic activity, the fundamental driver for infrastructure demand is population growth, therefore demand for future infrastructure is likely to be greater in areas where growth is expected to be highest.



Smith Street Motorway upgrade and construction underway on the Gold Coast 2018 Commonwealth Games Athletes Village

Queensland overview

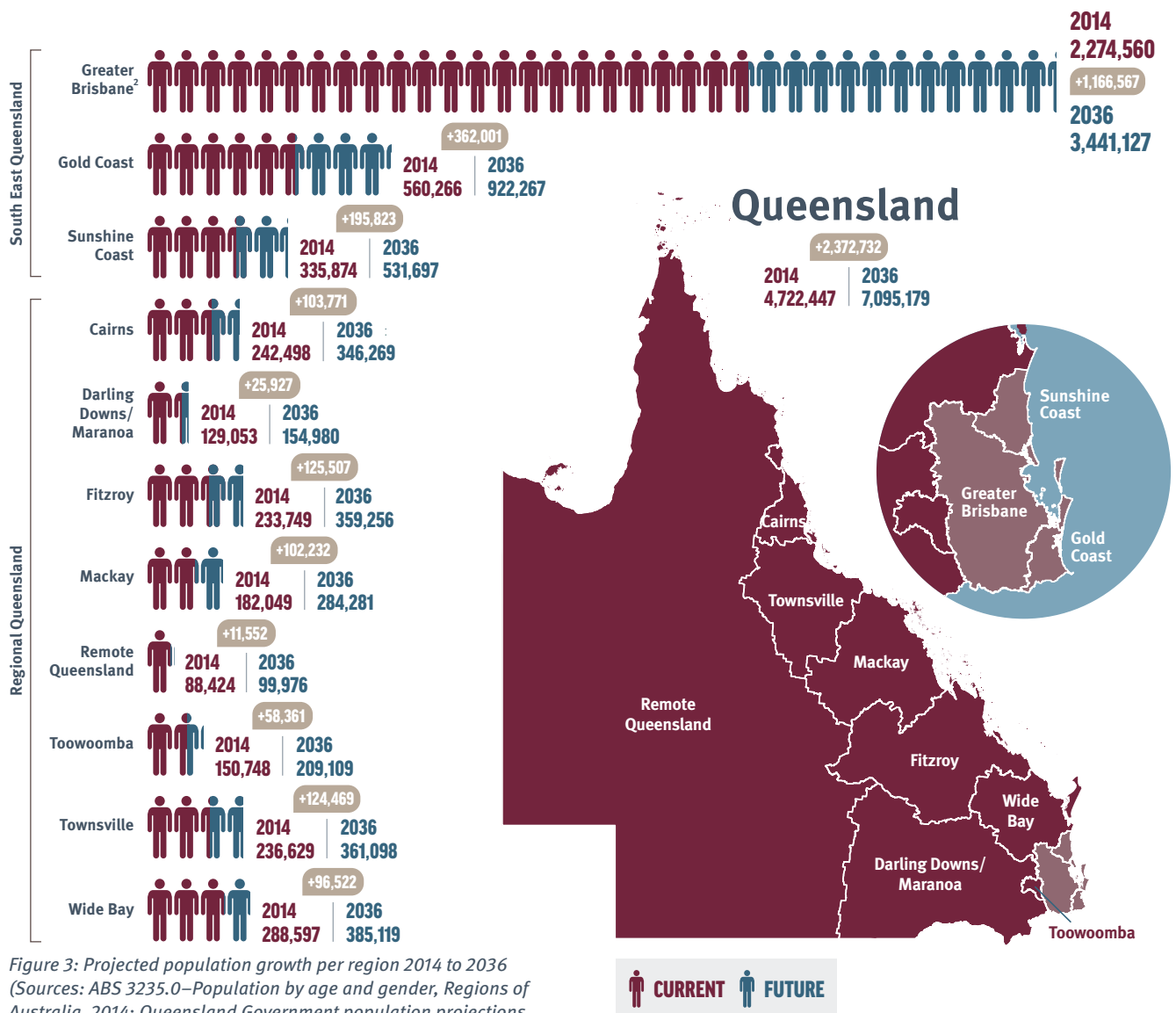


Figure 3: Projected population growth per region 2014 to 2036 (Sources: ABS 3235.0—Population by age and gender, Regions of Australia, 2014; Queensland Government population projections, 2013 edition)³

With this growth will come increased demand for essential services such as education, water and transport. Figures 4 and 5 provide a simplified illustration of the total additional demand the state will need to meet, based on this expected population growth. These figures are intended to be illustrative only and the examples of additional infrastructure/services required are representative of the additional demand, rather than a suggested solution. For example, the suggestion of 170 wind turbines (Figure 5: Energy) is a representation of additional demand and not a proposal to build wind turbines, or a suggestion that this demand would be met solely through renewable sources. This demand has been aggregated based on existing consumption patterns and does not take account of demand management or

other strategies that may be implemented. SEQ and regional Queensland are shown separately as they have different demand profiles. For example, water consumption per person is substantially lower in the south east than in Far North Queensland. It is also recognised that demand in different communities may vary significantly, therefore infrastructure planning is based on detailed modelling.

In SEQ, demand is increasing in all asset classes except for energy, where supply generated from rooftop solar installations is offsetting demand created by population growth. In response to demand in other infrastructure classes, the government will need to look at new and different ways to service this demand, which may not always be new infrastructure.

³ The Greater Brisbane statistical area includes Brisbane City Council, Ipswich City Council, Logan City Council, Redland City Council, Moreton Bay Regional Council, Somerset Regional Council, and parts of the Scenic Rim and Lockyer Valley Regional Councils.

Queensland overview

SEQ-indicative future service demand



Digital

(x100 PB/month)

2015 **2036**
503.79 **755.30**

25 billion gigabytes



Water

(ML/day)

2015 **2036**
930.54 **1395.10**

2 large water treatment plants



Energy

(GW hours/week)

2015 **2036**
140.01 **138.89**

no additional commercial generation required



Public transport

(x10,000 trips/day)

2015 **2036**
50.3 **111.56**

1682 additional rail services or
14,247 additional bus services



Road transport

(x10,000 trips/day)

2015 **2036**
766.18 **1098.67**

an additional 15 lane motorway



Airports

(x100,000 trips/day)

2015 **2036**
169.78 **254.54**

an additional 35,000 flights



Hospitals

(x100,000 bed days/year)

2015 **2036**
20.7 **43.2**

718,316 additional hospital admissions



Schools

(x100 classrooms)

2015 **2036**
128.7 **193.5**

6480 additional classrooms



Emergency services

(x100 staff)

2015 **2036**
114.7 **171.9**

5720 additional staff



Corrections

(x100 prisoners)

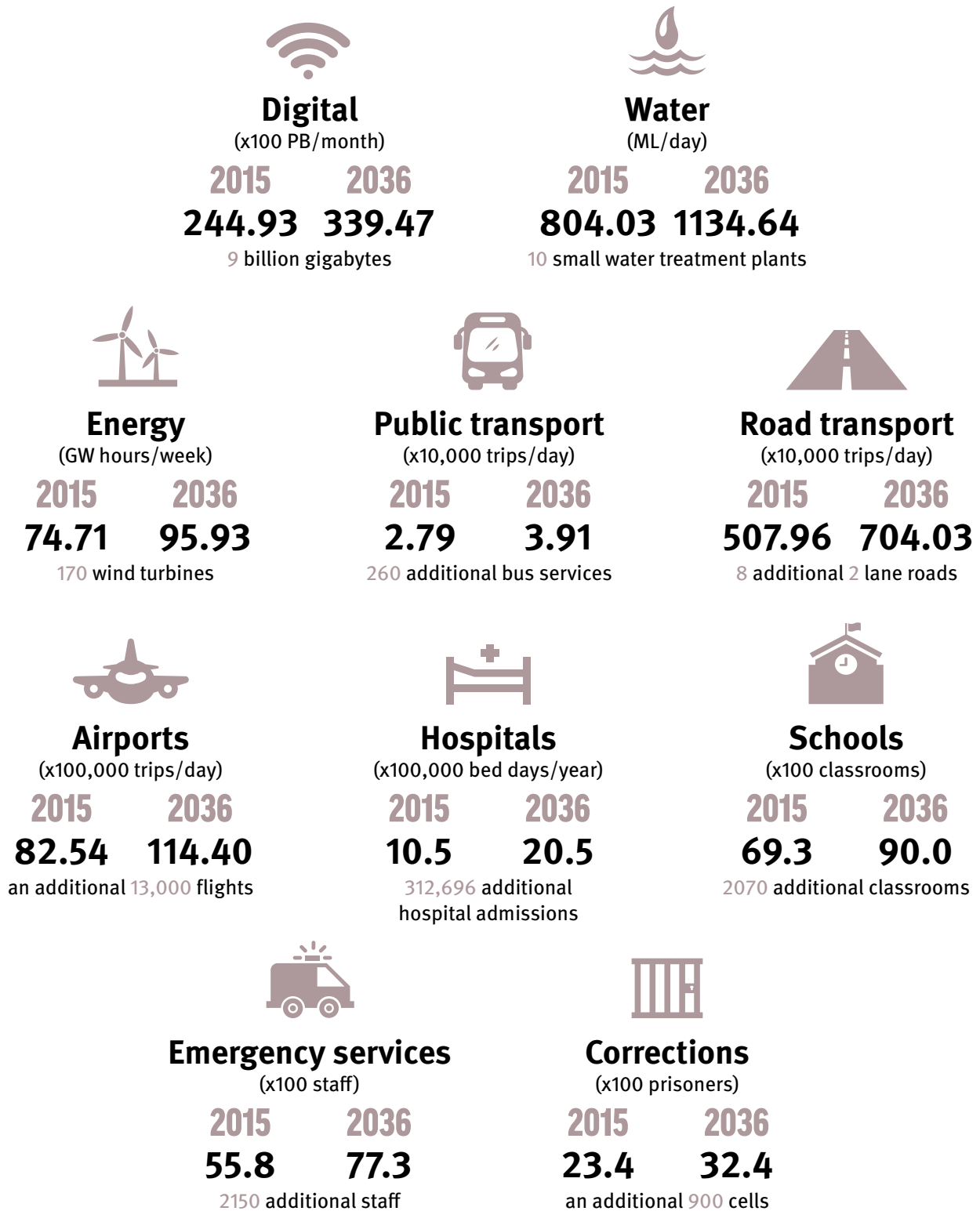
2015 **2036**
48.0 **72.0**

an additional 2400 cells

Note: These figures are illustrative only and do not consider existing or planned capacity or changes in government policy, behavioural change or efficiencies brought about by new technology. Demand in different communities may also vary significantly with infrastructure planning based on more detailed modelling. Based on indicative demand projections commissioned by the Queensland Government (2015).

Figure 4: SEQ-indicative future service demand

Regional Queensland—indicative future service demand



Note: These figures are illustrative only and do not consider existing or planned capacity or changes in government policy, behavioural change or efficiencies brought about by new technology. Demand in different communities may also vary significantly with infrastructure planning based on more detailed modelling. Based on indicative demand projections commissioned by the Queensland Government (2015).

Figure 5: Regional Queensland—indicative future service demand

Queensland overview

The economy

The Queensland economy is currently undergoing a period of structural change and diversification, as it transitions from the historic surge in resources investment toward broader-based drivers of growth. While the resources sector will continue to be an important contributor to the Queensland economy, the shift in activity and employment towards services, in particular health, education, professional services and tourism-related industries, is likely to continue (see Figure 6).

Future economic growth in Queensland will benefit from further diversification of the state's industries, including opportunities to expand our knowledge-intensive and technology-intensive industries, such as bio-manufacturing and e-health. Such fields have the potential to be significant creators of the jobs of the future, as well as becoming leading contributors to the state's economic growth.

In order to cater for growth in these sectors, future infrastructure requirements in Queensland are likely to differ from the resource-based infrastructure investment that has been a major contributor to Queensland's economic growth in recent years.



Boggo Road EcoSciences Precinct—growth in the knowledge economy

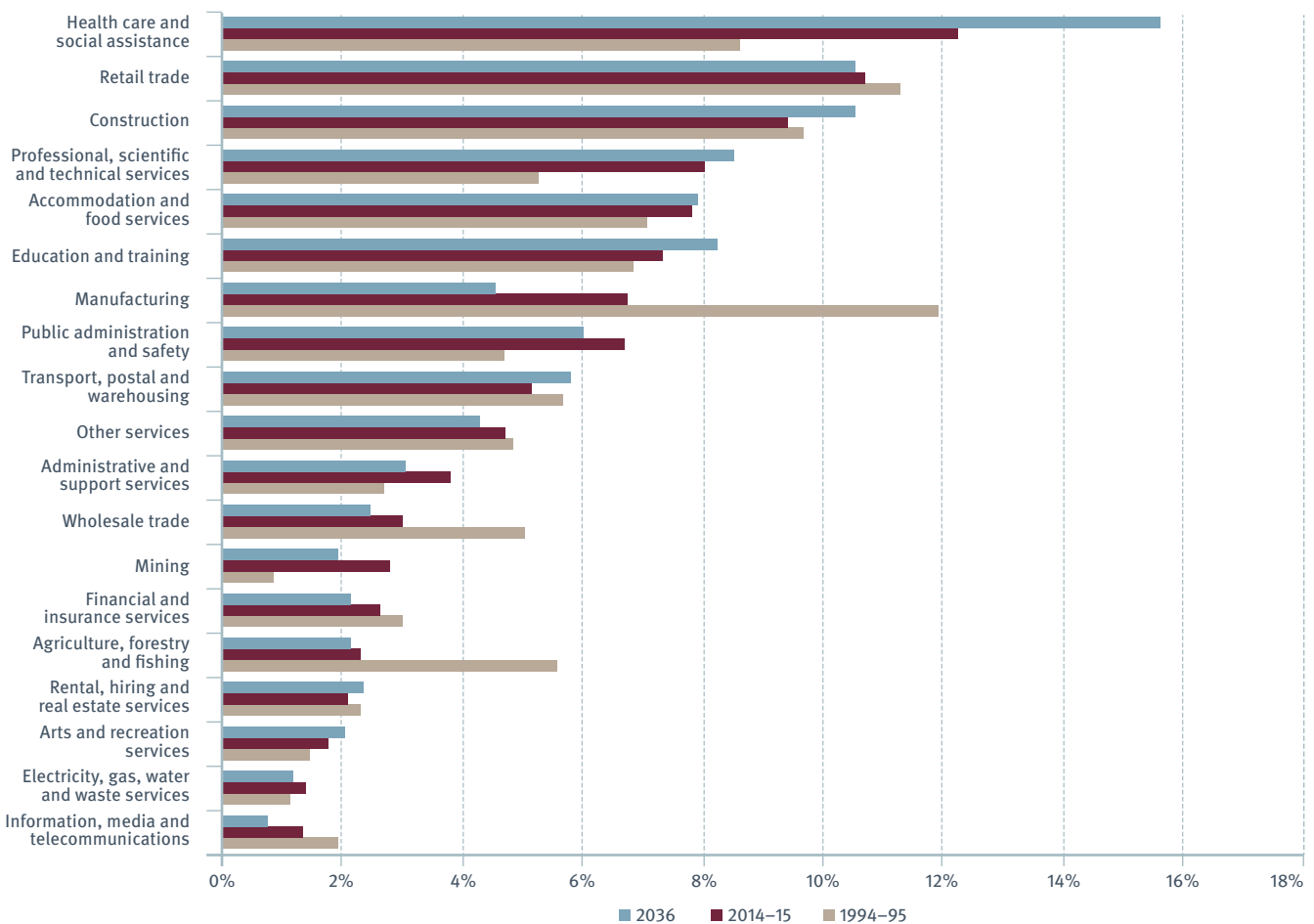


Figure 6: Jobs in Queensland by industry (Source: Report prepared for Queensland Government by EY, 2015. Figures for 2036 are indicative only)

Queensland overview

Beyond Queensland, the world economy is also changing. The rise of Asia and its growing middle class is creating new opportunities. Queensland is well positioned to capitalise on these opportunities. This will present opportunities for both regional and metropolitan areas of Queensland to build upon their competitive and comparative advantages and drive economic growth.

The provision of efficient infrastructure is a key enabler of this economic activity and can be met by making better use of existing infrastructure, and by selecting the right projects expected to deliver productivity benefits to the state.

To truly leverage the opportunities of the new world economy, Queensland's regions will need to play to their advantages to grow local economies. Different parts of Queensland possess valuable natural assets (e.g. fertile farmlands), resources, tourism attractions or beneficial proximity to markets (see Figure 7).

These different industry zones and the supply chains that underpin them require different infrastructure responses. For example, regions with tourism advantages require marine and aviation infrastructure, while agricultural areas and resource production need access to domestic and export markets through effective integrated supply chains.

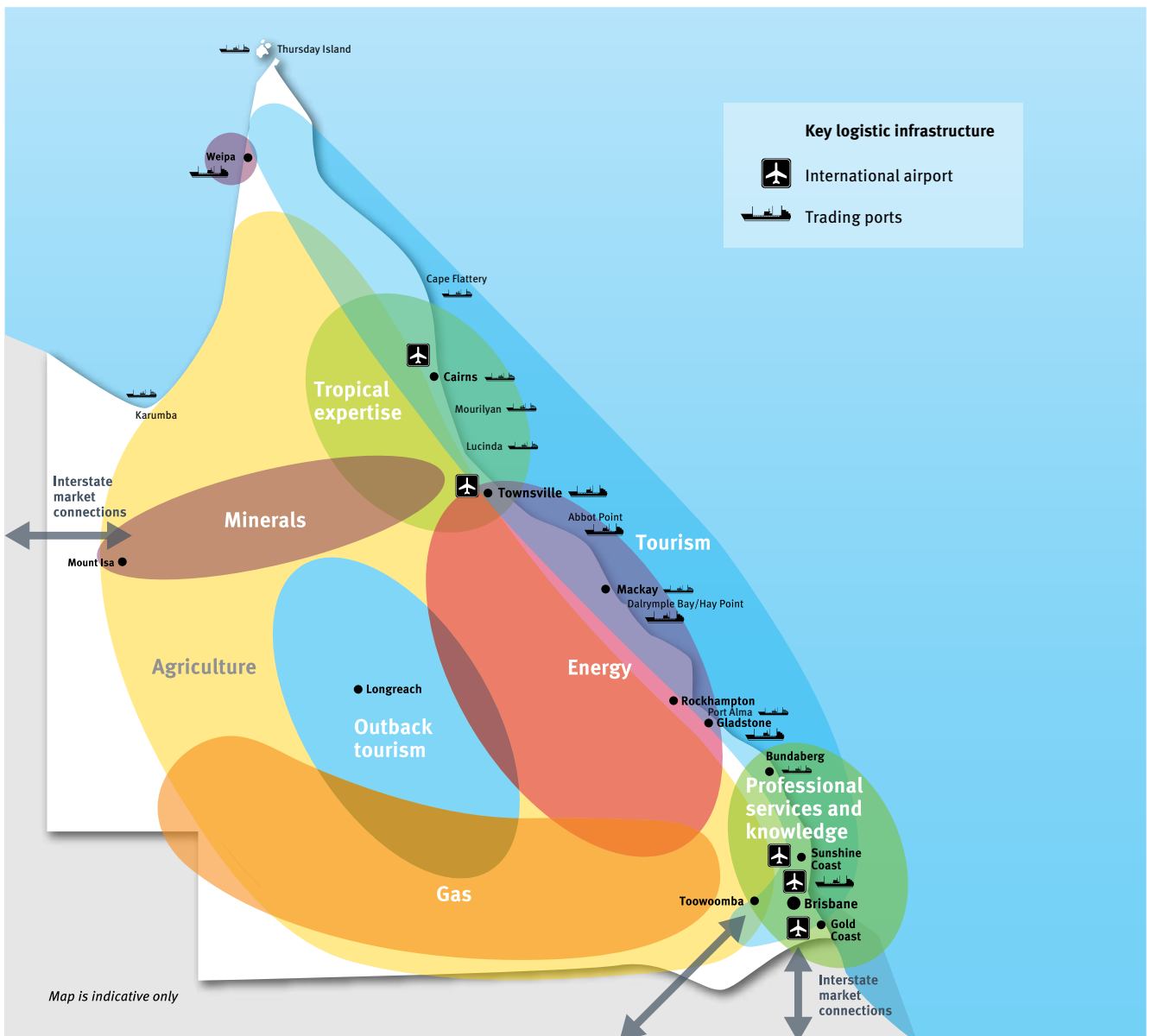


Figure 7: Queensland's broad economic zones—indicative only

Queensland overview

The environment

Queensland is renowned for its environmental assets, which are both beautiful and diverse. Our natural assets are a part of our identity and also a strong part of our economy, with the popularity of ecotourism and the Great Barrier Reef.

For the benefit of future generations we must look after our environment, minimise the impact of infrastructure and work with our ecological systems. We must address Queensland's declining biodiversity and habitat fragmentation.

In looking after our environment, we must also closely manage our non-renewable wealth (e.g. minerals, coal and gas) and how we use our fertile farmlands, waterways and coastal areas, particularly as we look to increase high-value food exports to the Asia-Pacific region.

We must also plan to adapt to our changing climate, particularly with sea level rises of 0.8 metres expected by 2100, as well as increasing extreme weather events. Climate change requires significant, immediate and long-term action with smarter infrastructure solutions. Restricting average temperature rises to no more than 2°C will require

global emissions to approach zero by the second half of the century. This challenge requires Queensland and its infrastructure to boldly transition to a cleaner, more resilient and sustainable future.

As Figure 7 shows, Queensland's environmental assets support tourism along the coast and in the Outback. Our natural values provide competitive advantages in these areas. Therefore, while we need to support and build strong supply chains throughout regional Queensland for other industries, these should not be developed at the detriment of the environment, which also supports economic development through tourism, recreation and leisure.

Our infrastructure choices can also reduce our environmental impact. Initiatives and policy decisions such as facilitating more freight on rail, and greater public transport patronage, can contribute to a reduction in the state's carbon emissions. Similarly, a switch to more energy-efficient infrastructure models may have a positive economic impact by reducing reliance on imported fuels and reducing potential fuel supply chain interruptions or spikes in global fuel prices.



Daintree rainforest

Regional variations and needs

Queensland is Australia's second largest state consisting of 1,727,000 square kilometres. In an international context, it is nearly five times the size of Japan, seven times the size of Great Britain and more than double the size of Texas.

With a current population of 4.7 million, we have a population density of just 2.7 persons per square kilometre. By comparison, the population density of New South Wales is around nine persons per square kilometre.

Our decentralised population provides challenges in planning and delivering infrastructure and services. In SEQ, infrastructure will support economic development and help manage growth, whereas in regional Queensland, the role of infrastructure is also to support liveability and promote access to markets to further strengthen our regional economy. There are also major differences and challenges between SEQ and regional Queensland, given the differences in population density, distribution of expected population growth and climatic variations.

South East Queensland

SEQ is currently home to about 67 per cent (3.2 million people) of Queensland's population. SEQ has experienced high rates of population growth for more than 30 years, particularly within the Brisbane metropolitan area and on the Gold and Sunshine coasts. This growth has driven the need for significant infrastructure provision over time.

Around 1.7 million more people are forecast to call SEQ home by 2036, an increase of 54 per cent on the current population. Most of this growth is expected in the Brisbane metropolitan area, including significant infill and redevelopment as well as major new growth areas such as Ripley Valley in Ipswich, and Greater Flagstone and Yarrabilba in Logan. Significant growth is also projected for the Gold Coast and Sunshine Coast.

Brisbane continues to face increasing traffic congestion, with reliance on cars and a slow shift toward public transport. However, the trend towards more inner city and higher density residential development will help accommodate future growth, create a more sustainable public transport system and enable more efficient infrastructure solutions. This increase in density will also increase demand and support more active travel options, which in turn lead to a healthier lifestyle.

Road connections within SEQ are increasingly under pressure, with congestion and delays reducing economic efficiency and costing industry millions per year. The Australian Infrastructure Audit estimates the cost of delays on the Brisbane–Gold Coast–Sunshine Coast transport network caused by congestion in 2011 was around \$2 billion. In the absence of any additional capacity, the cost of delays across the region is projected to grow to around \$9 billion in 2031.

With the region's expected growth, existing natural rural and semi-rural areas will need to be protected, housing density increased in other locations, and infrastructure and land-use planning integrated to maintain our enviable lifestyles and improve service delivery.



Springfield Station catering for growth in SEQ

Queensland overview

Regional Queensland

Regional Queensland is home to 33 per cent (1.5 million people) of Queensland's population, with most living in coastal cities or centres along inland transport routes. Queensland's regions are diversifying their economies by seeking out new opportunities, following a decline in mining investment and the impacts of drought. Lifestyle opportunities and liveability are key attributes of our regional centres. Infrastructure investments play a key role in maintaining that liveability.

For many regional communities, diversification will be essential to their long-term economic sustainability and resilience so they can endure hard times and build on their traditional strengths. New markets can help drive a more sustainable and broader based tourism industry in the regions.

Unlocking untapped coal reserves in the Galilee Basin will have significant economic benefits for centres such as Rockhampton, Mackay, Bowen and Townsville. Developing our knowledge industries in association with key universities at Rockhampton and Townsville will help expand our globally-recognised tropical expertise and ability to export knowledge services associated with the energy sector. Regional Queensland's fertile farmlands will also help grow food exports with increasing opportunities throughout Asia, particularly for luxury and specialised food products.

Connectivity between regional communities and secure and reliable supply chains will be important to underpin economic growth and competitiveness. Similarly, ensuring regions remain liveable by maintaining high quality education and health services and employment opportunities is vital to attract investment and underpin long-term prosperity.



Charters Towers, a liveable and vibrant regional centre (image courtesy of Townsville Enterprise)

The SIP sets out the state's strategic direction for infrastructure by identifying what we ultimately want from our infrastructure (our objectives) and how we can best achieve this (our directions). These objectives and directions seek to address the high-level challenges Queensland will face over coming decades. This relationship is shown in Figure 8.

The objectives and directions will help to guide and align planning across government and industry, and decision-making across government.



Disability support in Townsville

Challenges

Like the rest of Australia, Queensland faces many challenges if it is to maintain a prosperous, green and liveable society. Sound, well-coordinated planning is critical to position the state to address these challenges, and to ensure investment in infrastructure is of lasting benefit to current and future generations.

We must identify and develop strategic responses to the challenges of the future, so that we can improve our quality of life. This section defines and discusses the key challenges facing Queensland to inform the approach to planning, delivery and operation of infrastructure under the SIP.

Queensland's key challenges are:

- ▶ productivity
- ▶ population change and growth
- ▶ consumer expectations
- ▶ climate change
- ▶ natural environment
- ▶ domestic economy
- ▶ rapidly changing technology
- ▶ regional liveability.

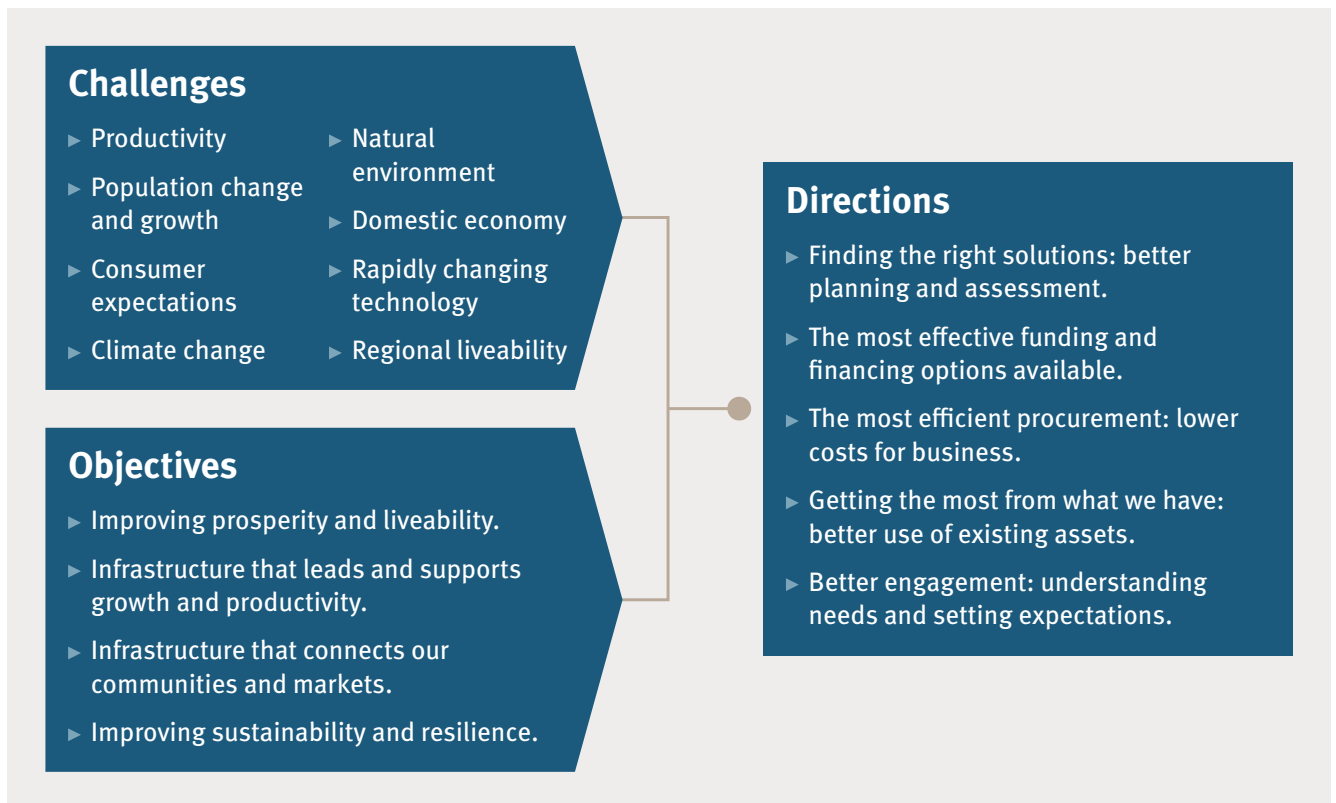


Figure 8: Challenges, objectives and directions

Challenges and objectives

Challenge

Productivity: Queensland's future standard of living is at risk because of slower productivity and workforce participation.

Infrastructure investments that improve productivity will be key to Queensland's economic growth. Queensland has recorded weak growth in productivity since 2007–08 relative to the rest of Australia⁴. We will need to pursue new growth opportunities, adopt new technology and use our resources more productively.

While an increasing proportion of older people are continuing to work, their levels of participation in the workforce are lower than other age groups. Low levels of employment, including youth unemployment, can adversely impact on regional liveability.

Slower growth in the workforce will lead to weaker growth in incomes and subsequently lower government revenue to fund the services people require.

Challenge

Population change and growth: In a growing and ageing population, there will be increasing demand for high quality public services, many of which have a relatively high cost to government.

Improved health care and advances in medical treatments and technologies have contributed to increased longevity and life expectancy which, without changes to the way we deliver services, will see increased demand for high cost health infrastructure.

A key challenge for government is to respond to the needs of an ageing population while managing the ageing of the workforce. As the population ages, more people will move into older age groups that are the most frequent users of the public health system. This results in increased demand for existing services, and demand for new services as technologies and different models of care become available.

The largest pressure on the state budget in future decades is projected to come from increasing demand for health services. Without a change in approach, the proportion of the Queensland Government's expenditure on health care is projected to rise from around 28 per cent to over 40 per cent by 2050⁵. Funding significant increases in health costs over the longer term presents significant challenges and the need to deliver these services differently is imperative.



Queensland Health Cancer Care Centre, Cairns

⁴ Queensland Treasury & Trade, *Queensland Productivity Update: 2011–12, February 2013*

⁵ Deloitte Access Economics, *An IGR for the States: health and aged care expenditure Final Report, 23 January 2012*

Challenges and objectives

Case study Boosting economic growth through infrastructure investment

In the United Kingdom, long-term contracts between the central government and economic regions are being used to give cities greater control of their economic opportunities and challenges.

Known as ‘City Deals’, the contracts are designed to provide an additional incentive for regions to invest in infrastructure that boosts economic growth and productivity. This is achieved by allowing the region to ‘earn back’ a portion of the additional tax revenue generated from local investments in infrastructure.

As part of the City Deals, potential projects are assessed using an investment framework that examines their contribution to growth in jobs, productivity, and gross value added for an economic region. The City Deals also include locally relevant economic development programs and initiatives.

For example, the Greater Manchester City Deal includes plans to lower carbon emissions, encourage investment in new housing, and provide integrated trade, investment and businesses advice. The Greater Manchester City Deal was announced in March 2012 and more than 20 City Deals have since been signed.

Challenge

Consumer expectations: Rapidly changing and complex expectations of citizens are straining traditional methods of service delivery.

While government agencies have traditionally engaged with people through a ‘per agency, single channel’ approach, choice, customisation, responsiveness and ease of use are increasingly framing community views about the delivery and content of public services.

To ensure government expenditure is sustainable and better targeted, particularly as we face major demographic change, government will need to make better use of technology to potentially delay or avoid the need for capital-intensive infrastructure while achieving more efficient and responsive service provision.

Importantly, government can learn lessons from the private sector in harnessing new technology to achieve service delivery efficiencies. By designing digital services that are consistent and easy to use, fewer people will need to make phone or in-person contact. This will deliver efficiencies in operating costs, while making government services simpler, clearer and faster for Queensland families and businesses. However, the success of online service delivery will depend on adequate access to technology, particularly in regional Queensland.



Customer service guide at the Queensland Government Customer Centre–Beaudesert

Challenges and objectives

Challenge

Climate change: Impacts of extreme weather are likely to worsen with climate change, compromising community safety and degrading public assets.

The Intergovernmental Panel on Climate Change has stated that the evidence for climate change is unequivocal. Rising global temperatures and sea levels will mean extreme weather events will be more commonplace in the future.

Queensland already experiences extreme weather and the impact on communities and public assets has been significant in recent times. For example, recent natural disasters have seen the loss of life, destruction of thousands of homes and reconstruction costs of billions of dollars. Transport network reconstruction costs between 2010 and 2013 totalled \$6.4 billion to repair 8741 kilometres of state-controlled roads (more than 25 per cent of the total) and 1733 bridges and culverts.

Addressing climate change requires planning and design decisions that make infrastructure networks more resilient to the long-term impacts of climate change and maximise safety, reliability and connectivity during extreme weather events. Appropriate disaster management and flood mitigation measures, either through infrastructure or other planning responses, will also help protect the community from the impacts of climate change. We need to minimise the chances of a cascade of failures in critical or priority infrastructure during extreme weather events.

Adapting to climate change will also require planning and design that works with vegetation, soils and natural processes to deliver infrastructure outcomes, called 'green infrastructure'. Such design recognises and works with natural defenses from extreme storms such as mangroves, natural processes for managing water flows and maintaining water quality, and natural processes to heat, cool, provide light and shelter.

Challenge

Natural environment: Queensland's acclaimed natural environment must be sustained for future generations.

Achieving strong economic growth and environmental outcomes are complementary objectives and must go hand-in-hand to maintain our prosperity and liveability. An improved environment can boost opportunities for tourism, while appropriate and sustainable management of fisheries can protect the future of the fishing industry.

A significant challenge in the coming decades will be the protection of the Great Barrier Reef, which supports nearly 70,000 jobs and is worth \$5.6 billion a year to the economy⁶. With a growing population and increased tourism, the reef will require careful policy management.

While 80 per cent of the state's regional ecosystems are represented in the protected area estate, greater effort is needed to offset the impacts of growth. The government's goal to protect 17 per cent of Queensland's land area by 2035 is an attempt to balance liveability, environmental protection and much needed growth and development. The infrastructure choices we make should avoid or minimise impacts on the natural environment.



Yeppen South floodplain works south of Rockhampton (image courtesy of AECOM)

⁶ Reef 2015 Long-Term Sustainability Plan, Australian Government, 2015

Challenge

Domestic economy: Shifting global demand is altering the economic base Queensland has historically relied upon, risking job growth and revenue to fund public services.

In recent history, Queensland's economy has been underpinned by agriculture, resources, construction, manufacturing and tourism. As Queensland moves from peak resource sector investment, additional workforce capacity is becoming available to transition to other growth sectors. More jobs are now being created in health and professional services, as the state's economy undergoes a structural shift into services.

Ensuring the state's resources, both human and physical, are directed to our most competitive export-orientated industries will ensure sustainability and profitability of industry, leading to sustainable high-value jobs. A greater emphasis on high value exports to Asia will require different or adapted infrastructure.

Challenge

Rapidly changing technology: New technology is testing the limits of how we plan for infrastructure, disrupting established methods of cost recovery and conventional sources of jobs.

New technologies will play an increasing role in how we plan future infrastructure capacity, from electric cars, to embedded sensors that report on asset condition. Technology is impacting the way we think about traditional 'hard' infrastructure, and also what we now consider to be critical infrastructure in its own right.

In the future, decisions between delivering new and replacement infrastructure may compete with technological responses to the same need. Some technology, such as smart metering, will likely disrupt established methods of cost recovery.

If consumer demand dictates building less (or different) infrastructure, there will be changes to the quantity and types of jobs available. An estimated 40 per cent of existing occupations may not exist within the next 15 years⁷. However, there will be new jobs that have not yet been imagined. As the construction industry is Queensland's fifth largest employer of the state's workforce, those currently working in infrastructure-related sectors will need to prepare for new jobs provided by technological change.

Case study Digital disruption of infrastructure

Technology is fundamentally changing how we use and what we need from our infrastructure, presenting challenges in adaption but also opportunities with increases in efficiency.

A 2015 Telstra⁸ report has predicted that the adoption of technology, like autonomous vehicles, could reduce the need to build new roads by around 60 per cent over the next 35 years. Embracing new technologies can deliver substantial benefits, including more informed decision-making and reducing demand costs. Other new technologies include sensors to monitor water quality and levels, electricity meters, and real-time information about public transport for operators and commuters.

CISCO's 'Smart Region' concept⁹ promotes the implementation of new technologies on a regional scale to improve public services and achieve economies of scale. They cite impressive achievements by cities using 'smart' initiatives, such as a 50 per cent reduction in water consumption. For individuals, it could mean accessing a smart phone application to monitor the electricity use of various appliances in your home, or checking the location of your bus. For governments, it can provide the ability to improve traffic management or to quickly detect water leaks and notify the landowner.

⁷ *Australia's future workforce?*, CEDA, June 2015

⁸ *How Digital Infrastructure can substitute for physical infrastructure*, 2015

⁹ *South East Queensland: A Smart Region*, CISCO, 2015

Challenges and objectives

Challenge

Regional liveability: Regional Queenslanders continue to need quality services to ensure our regions remain strong, vibrant and self-contained.

Queensland is the nation's most decentralised state and consequently regions are a critical economic driver. However, Queensland's regions are sometimes affected by cyclical factors such as commodity price cycles, global economic downturns and low levels of private investor confidence.

Securing private and public sector investment in regional infrastructure is a key priority to achieve future

prosperity and to attract investment in high-value industries to rejuvenate regional economies. Attracting this investment will also drive growth and enhance the traditional retail and tourism industry base of many regions.

Improved access to cultural, recreational and digital infrastructure as well as good quality education and health infrastructure and services all improve regional liveability. Investment in this type of infrastructure helps generate lifestyle benefits that attract new residents.

Supporting economic growth by delivering the right infrastructure in regional areas will create sustainable job opportunities and ensure our regions remain strong and liveable.



The Strand water park, Townsville (image courtesy of Townsville Enterprise)

Objectives

As part of the government's strategy for infrastructure planning and investment, Queensland's infrastructure objectives articulate why infrastructure is important to maintaining and improving our way of life. The objectives, which will guide infrastructure priorities over the coming decades, are:

- ▶ improving prosperity and liveability
- ▶ infrastructure that leads and supports growth and productivity
- ▶ infrastructure that connects communities and markets
- ▶ improving sustainability and resilience.

These objectives are consistent with the Queensland Government's objectives for the community which seek to create jobs and a diverse economy, deliver quality frontline services, protect the environment and build safe, caring and connected communities.

Objective

Improving prosperity and liveability

Infrastructure investment drives competitiveness by increasing productivity and creating the right conditions for job creation. Well-functioning social infrastructure, such as health and education facilities and a range of affordable housing options, enhances community wellbeing and helps make our regions attractive places to invest and live. Infrastructure investment needs to recognise that some communities require specific investment to address social, economic, cultural and locational disadvantages. With limited capital and competing investment priorities, it is vital that all investments maximise economic, environmental and social return.



Enjoying drive tourism in regional Queensland

Challenges and objectives

Objective

Infrastructure that leads and supports growth and productivity

Queensland's population will continue to grow over the next 20 years, with most of this growth in SEQ. Infrastructure supports economic development, liveability, and promotes access to markets both in SEQ and across the state. In regional Queensland, supporting liveability and facilitating access to markets are particularly important objectives, due to the size of the state and remoteness of many communities. Investment will need to facilitate supply chains, reduce the costs of doing business and create jobs. To achieve this, Queensland needs to carefully plan for the infrastructure needs of its growing population and future economy, with closer integration with land-use planning and careful sequencing to deliver the right solutions at the right time.

Objective

Infrastructure that connects our communities and markets

It is important that our communities and markets are well connected with the infrastructure linkages they need to function efficiently. Queensland's communities also need access to a broad range of private and public services including secure, reliable and affordable access to energy, water and the internet. We also need an integrated transport network that efficiently moves freight and people around and between communities.



Connecting communities and markets through efficient road networks

Case study Building back better

The Queensland Betterment Fund, funded jointly by the Queensland and Australian Governments under Natural Disaster Relief and Recovery Arrangements (NDRRA), was established in 2013 following Tropical Cyclone Oswald.

This natural disaster caused \$2.1 billion damage to many public assets that had been repeatedly impacted and restored following earlier disasters. Under the fund, \$80 million was approved to allow assets to be built back 'better' to a standard that would be more disaster resilient, reducing risk to the community and reconstruction costs from future events.

The funding framework significantly streamlined the process of eligibility, submission and assessment criteria for distribution of betterment funds. Local governments across Queensland have been empowered to assess, plan and implement disaster recovery at the grass-roots level. This enables betterment works to begin as soon as possible following a natural disaster, mitigating their impact on local communities.

Since 2013, the fund has delivered more than 230 projects with a total value of \$178 million, including contributions of council and NDRRA funding. A key test for the betterment program is whether it leaves infrastructure and communities less vulnerable to the natural hazards of Queensland's climate, with betterment projects withstanding disasters in 2014 and 2015, including cyclones Ita and Marcia.

Objective

Improving sustainability and resilience

Economic development and community wellbeing is underpinned by reliable infrastructure. Queensland's infrastructure must be resilient and adaptive to climate change, contribute to reductions in greenhouse gas emissions, for example by reducing energy intensity, and be considerate of the surrounding natural environment. In a state like Queensland, which is susceptible to cyclones and other extreme weather events, infrastructure must be suitable to withstand these events, or be quickly and cost-effectively repaired to reduce the impact to business and the community.

Directions

While the SIP objectives set out what we want from our infrastructure, the directions set out how we will achieve this.

The SIP sets the foundation for a better way forward—one that fosters innovation in planning, investment, delivery and use of infrastructure, and better communication and engagement with stakeholders.

Queensland's infrastructure directions are:

- ▶ Finding the right solutions: better planning and assessment.
- ▶ The most effective funding and financing options available.
- ▶ The most efficient procurement: lower costs for business.
- ▶ Getting the most from what we have: better use of existing assets.
- ▶ Better engagement: understanding needs and setting expectations.

Direction

Finding the right solutions: better planning and assessment

Finding the right solutions for Queensland is one of the most critical phases in the infrastructure lifecycle. Regardless of how well a solution is designed and delivered, the wrong project will always deliver suboptimal outcomes. Once selected, the right solutions need to be correctly timed and sequenced to optimise investment.

The government will strive to promote innovation and informed decision-making through the planning, design and selection of the right solutions. This may include non-build solutions where these can deliver the same outcome without the need to invest in expensive building and construction. The right projects will seek to balance economic, social and environmental outcomes.

Reform initiative Infrastructure Portfolio Office

Establish an Infrastructure Portfolio Office within the Department of Infrastructure, Local Government and Planning to plan and coordinate infrastructure, and integrate the links between regional planning and infrastructure planning.



Maintaining our vital rural industries

Challenges and objectives

Direction

The most effective funding and financing options available

After selecting the right solutions, the most effective funding and financing methods must be identified. In broad terms, infrastructure can be funded and/or financed by government, the private sector or a combination of both. With appropriate arrangements and risk sharing, the private sector can sometimes deliver or manage infrastructure more efficiently than government. However, private sector finance operates on commercial terms, so government must consider the ultimate cost and benefit to users and taxpayers of different delivery mechanisms. Notwithstanding this, infrastructure funding models such as public private partnerships are attractive for some large investments, and value capture methodologies can provide new ways to help fund infrastructure.

Reform initiative Value capture and improved funding and financing

Enhance the government's ability to fund and finance infrastructure by establishing a value capture approach and improving alternative funding and financing options.

Direction

The most efficient procurement: lower costs for business

Procuring and delivering solutions in the most efficient and cost-effective way has the potential to reduce the cost to end users and taxpayers. Improvements to procurement can help reduce the time and expense to industry to tender for government projects, and result in more innovative or flexible delivery or financing solutions.

Reform initiative Industry taskforce

Establish a joint industry-government Infrastructure Innovation Taskforce to examine a range of matters and report back to government, including ways to improve early market engagement and simplify procurement contracts and approvals.

Northern Australia Infrastructure Facility

The Northern Australia Infrastructure Facility (NAIF), an initiative of the Australian Government, is an example of the public and private sectors working together to bring forward infrastructure that would otherwise not be built for some time.

The Australian Government announced its intention to establish the Northern Australia Infrastructure Facility (NAIF) in the 2015–16 Federal Budget. It was one of the major initiatives included in the White Paper on Developing Northern Australia when it was released in June 2015. The White Paper recognised that infrastructure is critical in linking the dispersed populations and remote businesses in the north. When it commences on 1 July 2016, the NAIF will provide up to \$5 billion in concessional loans and/or guarantees to encourage and complement private investment in economic infrastructure. The NAIF will be targeted at projects that boost the productive capacity of northern Australia and would not otherwise be viable without access to concessional finance. At least half the finance for projects must come from the private sector.

Once the NAIF becomes operational, Queensland will administer loans on behalf of the Australian Government and ensure that infrastructure proposed for concessional finance is appropriately prioritised and sequenced in accordance with national and state investment pipelines and policies, including the SIP.

NAIF project selection will be undertaken by an independent board, which will be required to consult with the state government on projects being considered. All supported projects will need to meet existing regulatory requirements. North Queensland accounts for almost 75 per cent of northern Australia's population, and can expect to attract a significant share of NAIF finance across a range of possible projects including airports, ports, rail, roads, energy, water and communications infrastructure.

Direction

Getting the most from what we have: better use of existing assets

With such a large existing infrastructure portfolio, there are significant opportunities to better use, maintain and preserve existing assets. In some cases, successfully maintaining our assets and maximising their benefits would provide a credible alternative to delivering billions of dollars of new infrastructure. In considering the importance of making the most of what we have, the government is committed to making better use of existing assets, including moving to an approach where state assets are viewed as being assets of the Crown rather than of an individual agency.

Reform initiative Better asset use

Undertake an independent audit of Queensland Government agency (including statutory authorities) assets to identify underutilised capacity, which will inform strategic asset management plans.

Direction

Better engagement: understanding needs and setting expectations

Government must balance a variety of stakeholder interests and expectations. The Queensland Government will seek to raise community awareness about service delivery constraints, increase community involvement in infrastructure matters and strive to better communicate how interests are balanced amongst competing priorities.

Reform initiative Community Infrastructure Reference Group

Establish a Community Infrastructure Reference Group, and undertake an initial program of work and research, including recommendations about the best way of supporting engagement in rural, regional and metropolitan areas of the state. This includes the use of engagement platforms.

Case study WestConnex alternative funding model

An innovative funding model is being used to deliver Sydney's WestConnex project, a 33 kilometre toll road designed to improve access to the city, airport and ports precinct. The \$14.9 billion project is planned to be constructed in three stages, with anticipated completion by 2023.

Under the typical public private partnership framework for toll roads, private sector investors accept the initial revenue risk for a project. For the WestConnex project, the New South Wales Government has established a state-owned company to deliver the project. Once the first stage of the project is operating and the toll revenue is established, the state-owned company can then borrow funds against that toll revenue to construct the next stage of WestConnex.

The government can then elect to sell some or all of its shares in the company and use that money to fund subsequent stages of WestConnex or an alternate project. The New South Wales Government has approved \$1.8 billion in 2013 to begin construction of the first stage of the project, with the Australian Government contributing \$1.5 billion. The Australian Government is providing a concessional loan of up to \$2 billion to help bring forward delivery of stage two, allowing work to start in 2015.

Planning, prioritisation and delivery

Introduction

There is a strong relationship between the mechanisms the government uses to plan for future infrastructure needs and the development and selection of projects to address these needs. This process leads to a series of responses which will guide decisions over the longer term. This relationship is shown in Figure 9.

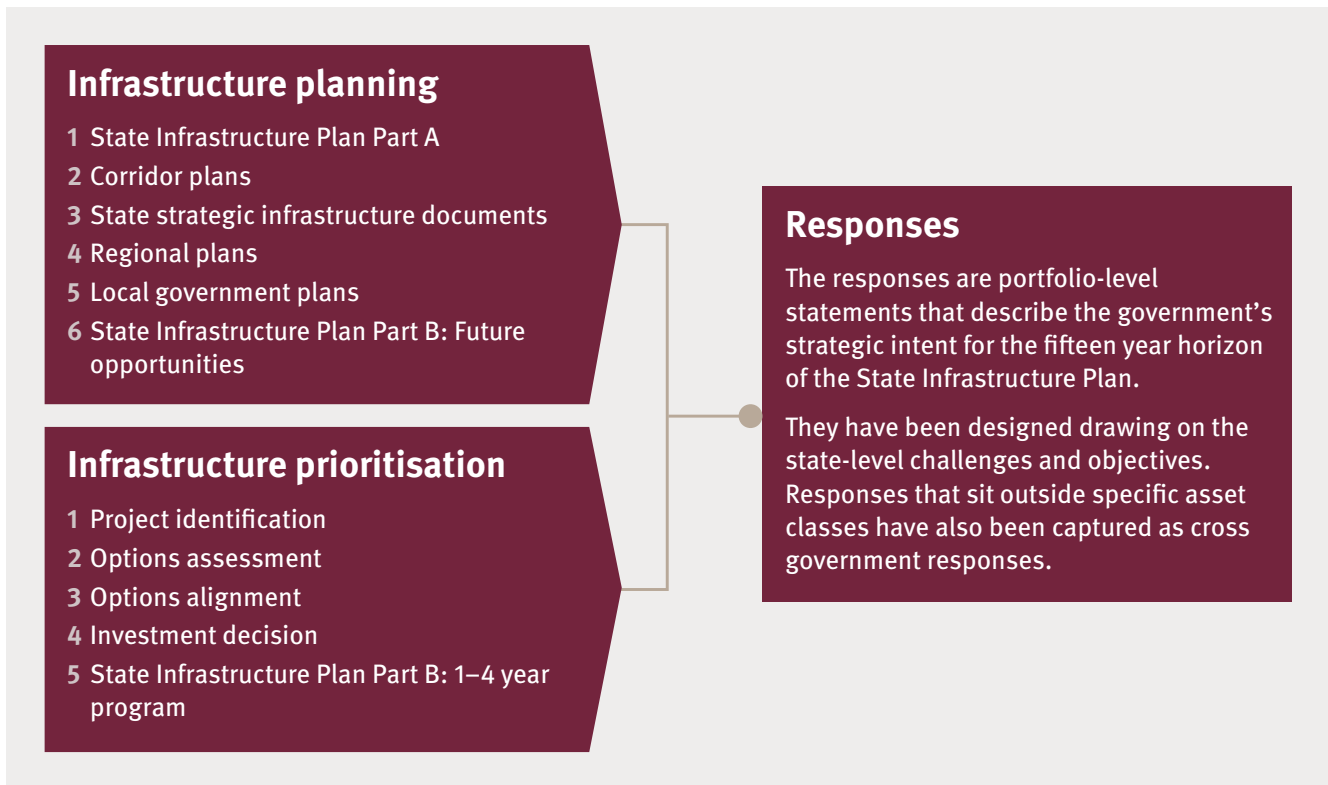


Figure 9: Infrastructure planning, prioritisation and responses

Achieving the state's objectives for infrastructure requires a rigorous planning process that ensures the right solution is delivered when and where it is needed. It is an approach that:

Will stand the test of time: Good planning is not rushed; it is methodical and evidence based. This does not mean the community and industry should have to wait to understand the government's plans. What it does mean is the government will take a long-term view and will commit to specific projects and initiatives as and when they are needed.

Responds to the real challenges facing the state: Proper planning should address the challenges faced by our economy, community and natural environment. The eight major challenges described in this document will be reviewed every five years in line with the update of the SIP. Some may remain the same but others may change.

Takes advantage of the opportunities ahead of us: It is equally important to identify the opportunities that are within our grasp to ensure we have the infrastructure in place to take advantage of them. New technology, new markets and new ways of thinking are constantly

emerging. This is why government is engaging with industry, through means such as market-led proposals, on its future opportunities to develop innovative, cost-effective solutions.

Seeks whole-of-government solutions: Most of the challenges the state faces will not be solved by government acting alone through a single government department. Often the actions of one agency can help achieve outcomes for another.

For example, through planning for active transport the Department of Transport and Main Roads has a role in tackling the problem of obesity, a challenge identified by Queensland Health. Government works best when a range of levers are used to address problems. The new approach will capture input from across agencies and coordinate infrastructure planning.

Draws on the best ideas from industry: In July 2015 the government announced a streamlined process to enable private sector proponents to put forward innovative proposals for consideration by government. These market-led proposals will be facilitated through government by Queensland Treasury.

Infrastructure planning process

The SIP sets out a clear framework for both planning and prioritisation of infrastructure projects. The framework will be driven by a clear understanding of the state’s needs in relation to transport, water, digital, energy and social infrastructure. These will be confirmed through a series of strategic infrastructure evaluations. Coupled with broad strategic corridor investigations, these will help inform regional planning processes.

The three key inputs that will inform the planning stage are as follows:

- ▶ corridor plans—planning for strategic transport and supply chain corridors that support regional productivity and access to markets
- ▶ state strategic infrastructure documents—strategic assessments for transport, water, digital, energy and social infrastructure
- ▶ local government planning documents.

The integration of these inputs and investigations through the regional planning process will identify the services that Queenslanders need and the corresponding infrastructure that delivers these. Once those needs are identified, the second step in the framework is prioritisation, where all options that could be used to address an identified need can be considered and evaluated.

This process of project identification and prioritisation informs investment decisions and ultimately agency delivery programs. The framework ensures consistency across government on strategies, regional plans and assessment processes. It is important that the state has mechanisms to prioritise across its asset classes to support and facilitate economic growth. This process is illustrated in Figure 10 and explained in further detail in this section.

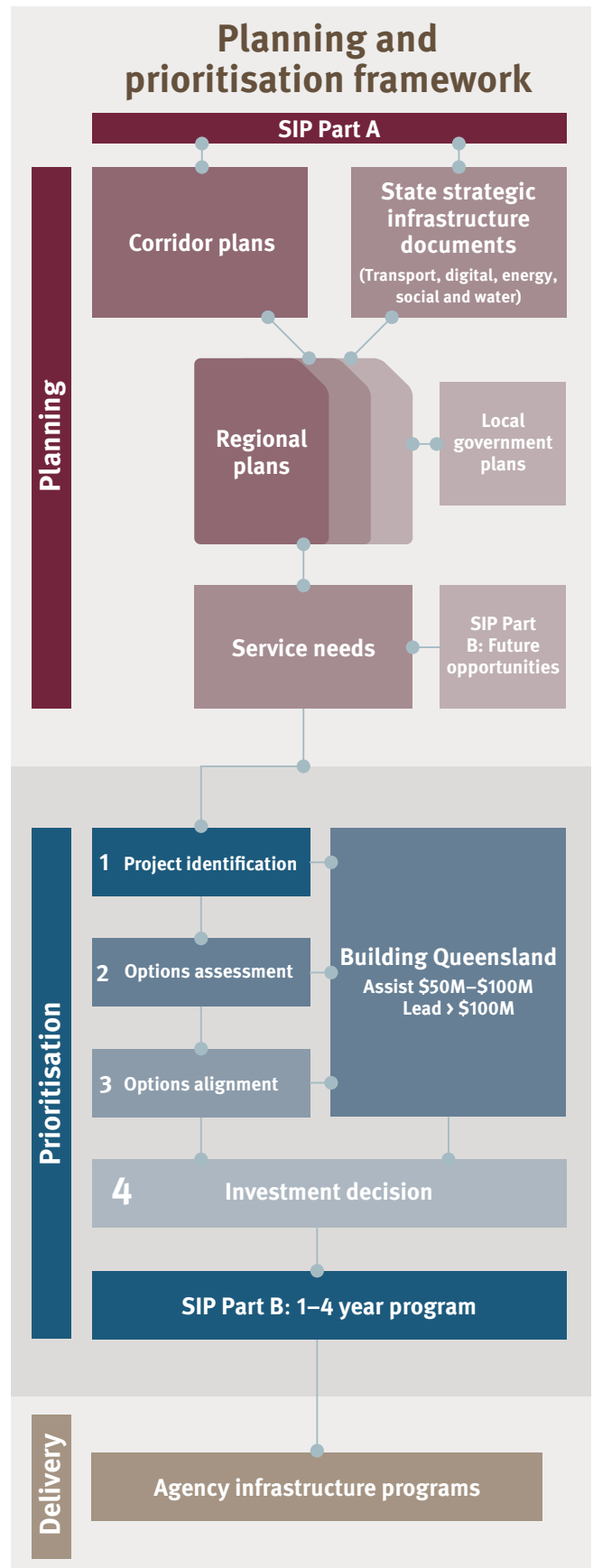


Figure 10: Planning and prioritisation framework

Planning, prioritisation and delivery

Integrating the drivers of planning

Delivering infrastructure in Queensland has two distinct drivers—supporting growth and facilitating growth. The drivers vary across the state, depending on the key characteristics and needs.

In SEQ, infrastructure principally supports growth. For example, by ensuring there are sufficient schools and health services to support areas of high population growth.

Along the coastal zone, infrastructure facilitates both population and economic growth by increasing the attractiveness of regional centres for business and industry and providing the right conditions to help business flourish. In these areas, infrastructure and services that support access to markets and regional connectivity facilitate economic growth.

Inland, infrastructure supports the efficient movement of commodities and supply logistics (refer to Figure 11).



Figure 11: Macro drivers—indicative only

Planning, prioritisation and delivery

Corridor strategies

As shown in Figure 12, vital east-west and north-south corridors support resource development, provide access to markets and connect communities.

Economic zones are largely connected or located along key transport corridors and connect key components within supply chains. These corridors generally contain highways and rail lines, which sometimes compete for the freight task.

Better infrastructure investment decisions can be made when the definition of the task is clear. Additionally, there is the potential for optimisation of corridors by co-locating other infrastructure classes.

The review of regional plans across the state will consider the strategic importance of identifying and protecting corridors.



Figure 12: Strategic corridors—indicative only

Regional plans

The state will integrate the development of regional land-use plans, economic plans and transport plans in a way that ensures alignment and consistency of approaches.

These regional-scale plans will build off the outputs of the state's corridor strategies and state strategic infrastructure assessments. They will be informed by local government planning documents such as planning schemes and local government infrastructure plans.

In developing these regional scale plans, there will be regard for other state policies including the Reef 2050 commitments, ports legislation, freight and tourism strategies as well as sectoral and asset class strategies.

Planning, prioritisation and delivery

Aligning infrastructure planning across government

Ensuring the infrastructure program aligns with infrastructure planning at other levels of government is another key aim of the SIP. Figure 13 shows the relationships between the SIP and corporate/strategic planning, infrastructure planning and land-use planning activities that take place at other levels of government.

At a federal level, the SIP has been informed by Infrastructure Australia’s Australian Infrastructure Audit and the Northern Australia Audit. The state government will work with the Australian Government to determine the initiatives and projects from the 1–4 year program and future opportunities to be included in the Infrastructure Priority List and future national partnership agreements.

While detailed land-use planning is primarily the responsibility of local governments, the state

government’s interest in ensuring regional level actions meet state level priorities is expressed in the statutory regional plans that exist in Queensland. Going forward, regional plans, including the SEQ Regional Plan, will describe future infrastructure challenges at a regional level, but actual projects will be reflected in updates to the SIP program.

In Queensland, local governments prepare local government infrastructure plans as part of their planning schemes. The state will work with local councils on incorporating key infrastructure into State Development Areas and Priority Development Areas.

In addition to achieving alignment across governments, alignment of infrastructure and land-use planning is essential for sustaining growth and infrastructure investment along with the identification and protection of key infrastructure corridors.

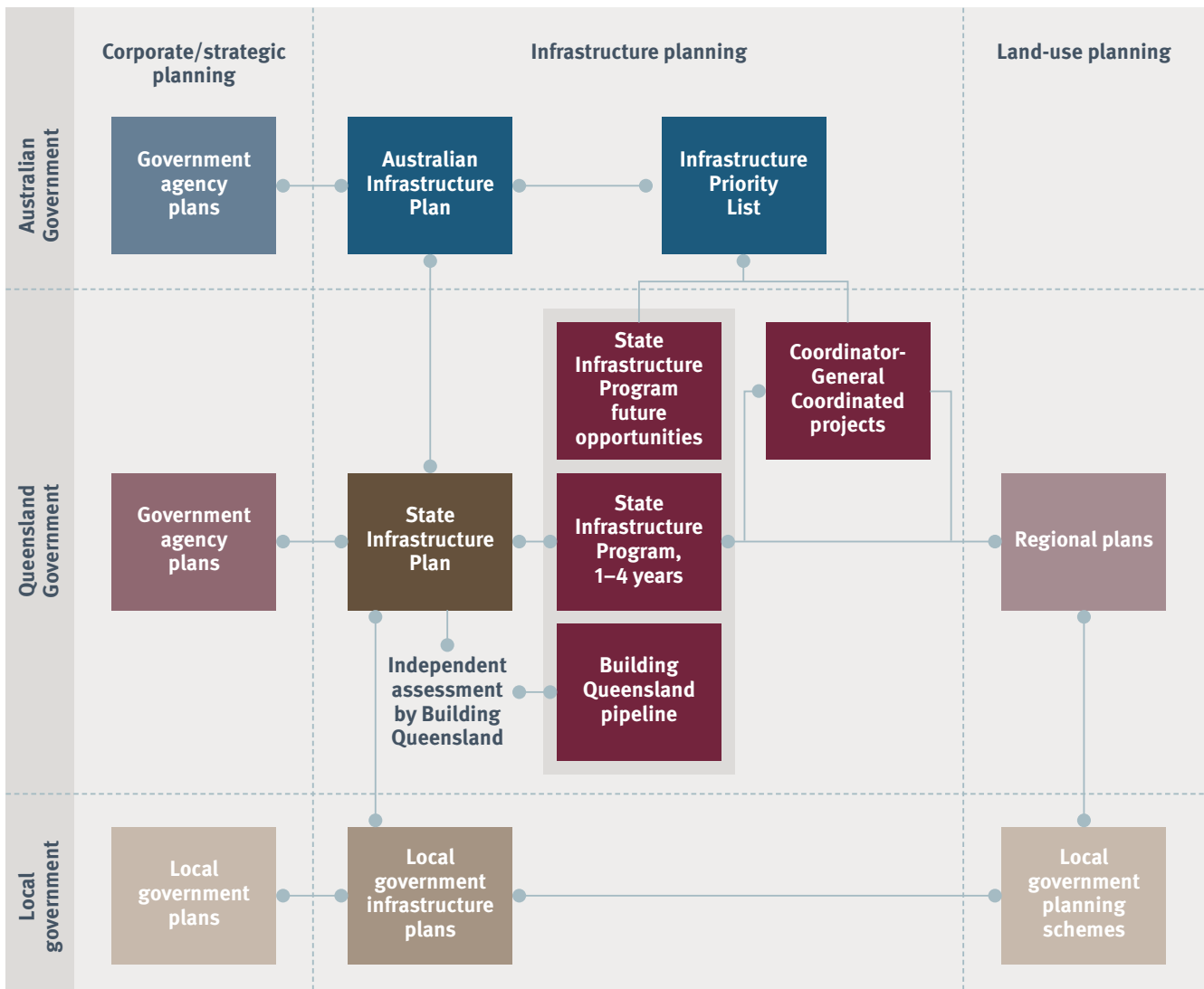


Figure 13: Planning alignment framework

Infrastructure planning responsibilities

Given the role of infrastructure as an enabling component for effective service delivery, a number of Queensland Government agencies have responsibilities with respect to infrastructure provision. Some carry out a cross-government role with respect to oversight, coordination and governance, such as the Department of Premier and Cabinet and Queensland Treasury. Others have ministerial responsibility for cross-sector priorities such as economic development. Line agencies have varying degrees of responsibility for and control over infrastructure provision, however there has also been a shift towards the establishment of independent agencies or units within agencies to lead discrete elements of these infrastructure roles.

In Queensland, key agencies with responsibilities for infrastructure planning include:

- ▶ **Department of Infrastructure, Local Government and Planning (DILGP)** has ministerial responsibility for infrastructure prioritisation, planning, development, facilitation and coordination, including the development of the SIP and investment facilitation.
- ▶ As an independent statutory authority **Building Queensland** provides strategic, expert advice to government around a pipeline of priority infrastructure projects and their development, including assistance with (or taking carriage of) business cases for larger scale projects.
- ▶ The Commercial Group within **Queensland Treasury** provides governance over the delivery of privately-financed projects by lead agencies, including leading the procurement phase and facilitating the evaluation of market-led proposals.
- ▶ Within the **Department of State Development, the Coordinator-General** is empowered to plan, deliver and coordinate large-scale infrastructure projects that are of economic, social and/or environmental significance to Queensland.
- ▶ The **Department of Transport and Main Roads (TMR)**, **Department of Energy and Water Supply** and **Department of Science, Information Technology and Innovation**, are responsible for policy and/or regulatory frameworks associated with the delivery of economic infrastructure. TMR also has responsibility for the planning, development and delivery of a significant capital program.

Role of the Coordinator-General

The Coordinator-General has wide-ranging powers under the *State Development and Public Works Organisation Act 1971* to plan, deliver and coordinate large-scale infrastructure projects, while ensuring their environmental impacts are properly managed¹⁰. These powers could therefore be used to improve project delivery certainty and reduce delivery timeframes.

Measures implemented by the Coordinator-General to reduce project approval timeframes include:

- ▶ standardisation of assessment terms of reference and outcome-focused conditions
 - ▶ addressing the key requirements of subsequent statutory approvals during the assessment process
 - ▶ disciplined procedures to set and adhere to timeframes underpinned by effective project scheduling, control and tracking procedures
 - ▶ improved collaboration with the Australian Government under the Assessment Bilateral Agreement to meet all requirements under the *Environment Protection and Biodiversity Conservation Act 1999* and thus reduce Australian Government approval timeframes after completion of state approval processes.
- ▶ **Department of Education and Training, Queensland Health, Justice and Attorney General, Arts Queensland, National Parks, Sport and Racing and Public Safety Business Agency** are responsible for the planning, development and delivery of a significant capital works program for social infrastructure.
 - ▶ **Department of Housing and Public Works** is responsible for policy and regulatory frameworks associated with the planning and delivery of social infrastructure.
 - ▶ A range of **government-owned corporations** and **statutory authorities** also play a role in planning and providing for key enabling infrastructure networks such as rail, ports, power and water.

¹⁰ Further information on the Coordinator-General's powers and current coordinated projects is available online at www.statedevelopment.qld.gov.au/coordinator-general

Planning, prioritisation and delivery

Infrastructure prioritisation

The Queensland Government's approach to infrastructure planning recognises there is typically more than one way to solve a problem. Often the best solution may be to upgrade existing infrastructure or consider different ways of meeting a service need. Infrastructure is ultimately built to deliver a service, so it is critical we explore options that involve building as well as those involving a change in the way we deliver services. This is why the future opportunities in Part B articulate infrastructure service gaps and challenges, not solutions.

To prioritise future infrastructure investment, the government is implementing an Infrastructure Investment Framework.

This four stage approach to prioritising infrastructure consists of the following steps:

Step 1: Project identification

Step 2: Options assessment

Step 3: Options alignment

Step 4: Investment decision.

The outputs of this prioritisation feed into either Building Queensland's assessment process and pipeline, or for projects less than \$100 million, into agency programs, which both feed into the SIP.

Role of Building Queensland

The government is committed to ensuring a consistent approach is applied to prioritising and assessing the costs and benefits of competing infrastructure projects. To that end, Building Queensland will play a role in developing business cases for all projects with an estimated capital cost of more than \$50 million (see Table 1). Projects assessed by Building Queensland will utilise the Project Assessment Framework as a foundation assessment standard. Building Queensland's frameworks will provide additional rigour in the assessment of projects.

Any business case led by Building Queensland must confirm the productivity gains anticipated from the project, timeframes for delivering the project and the cost benefit analysis for the proposal.

Building Queensland will produce a pipeline of priority projects every six months, which will be provided to government for consideration. In the first instance, the Board-endorsed pipeline will be provided to the Minister for Infrastructure. The pipeline will help to inform the deliberations of government as it determines which projects to fund for further development and/or implementation. The status of projects as reflected in six-monthly pipelines will be reflected in annual SIP updates.

Future opportunities identified in Part B of the SIP may form the basis of potential projects that Building Queensland will develop in future years.

Table 1: Building Queensland responsibilities

Estimated capital cost or net present value	Building Queensland	Sponsoring government agency
Less than \$50 million	Assist or lead, if directed	Lead
Between \$50 million to \$100 million	Assist or lead, if directed	Lead
Greater than \$100 million	Lead	Assist

Planning, prioritisation and delivery

Step 1: Project identification

Following identification of service needs through planning processes outlined above, the first stage of prioritisation involves the consideration of a range of ideas that are able to address an identified service need and generate a project.

There may be a number of options available to address a need, with both benefits and disadvantages to each. These options may be infrastructure or non-infrastructure in nature.

Detailed assessment of benefits, costs, viability, affordability and relative priority occurs in subsequent stages of the assessment framework.

Step 2: Options assessment

The options assessment (Figure 14) acts as the first filter for any infrastructure related investment decision across government. It represents a clear statement from the government that low cost options, that either maintain or improve services to Queenslanders, will be considered over 'big ticket' infrastructure projects that achieve similar outcomes.

While there is a clear preference towards non-build options, in many situations multiple options will be required to achieve the desired outcome. A combination of 'better use' and 'improve existing' can effectively delay the need for 'new' infrastructure, while 'reform' in combination with 'new' could reduce the cost of new infrastructure to the public.

This prioritisation tier is consistent with the strategic assessment stage of the government's Project Assessment Framework (first adopted in 2007) which seeks to develop and describe a range of solutions that have the potential to achieve the desired outcome.

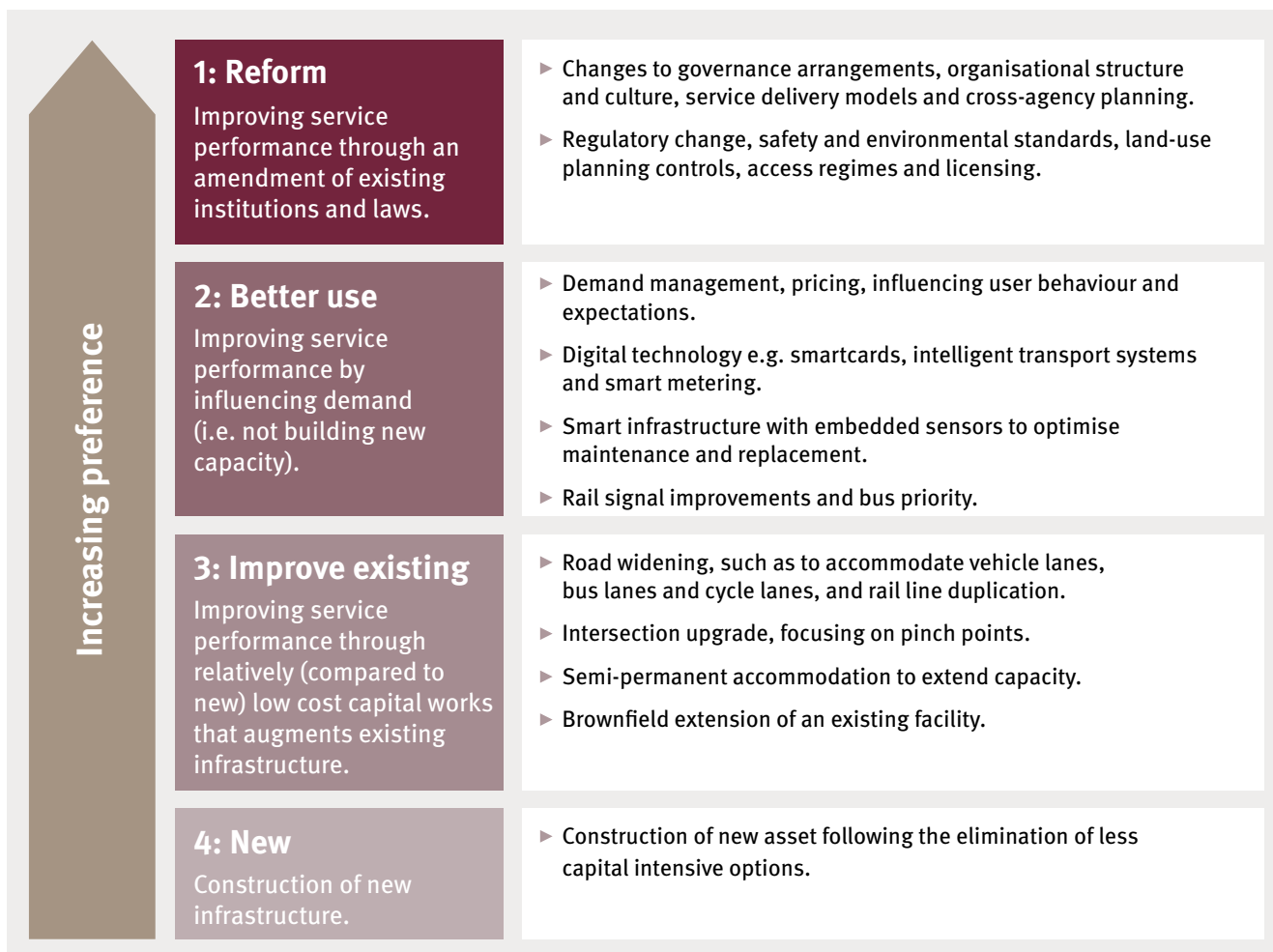


Figure 14: Queensland Government options assessment

Planning, prioritisation and delivery

Step 3: Options alignment

This tier of evaluation (Figure 15) provides a level of detail regarding the government’s objectives and priorities for infrastructure. The infrastructure objectives are ‘foundation’ criteria—they build off the core values of the government and are subsequently not expected to change.

The priorities are intentionally designed to focus investment towards specific areas of infrastructure development and delivery (e.g. sectors and components of the project lifecycle) for the five year horizon of the SIP.

They are not intended to be exclusionary—projects and initiatives that do not immediately sit within these will still be delivered by government. However, government is more likely to support public and private projects that demonstrate alignment with the priorities. For example, the development of new schools and renewal of existing schools to accommodate population growth will clearly remain an ongoing and necessary investment for government.

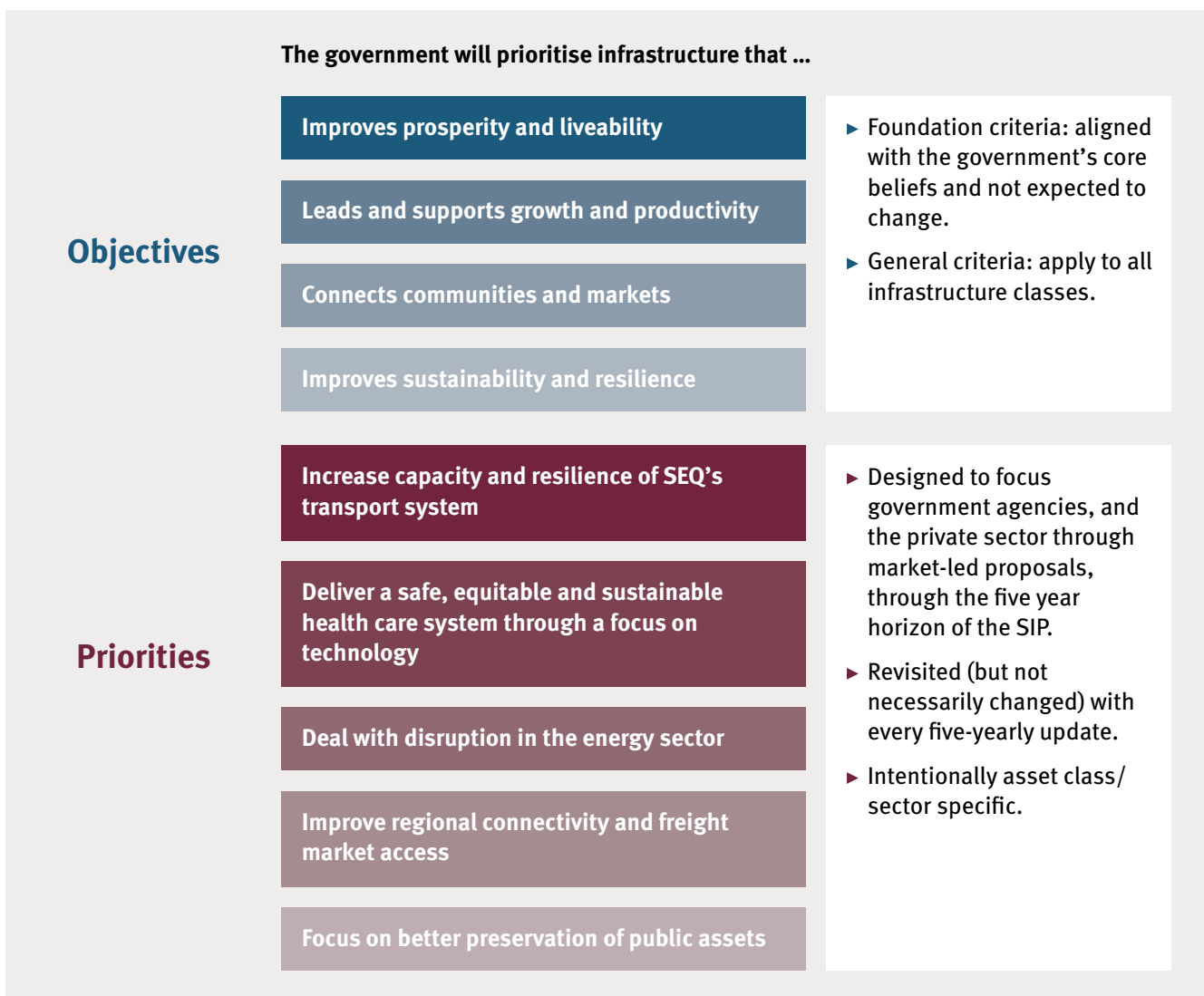


Figure 15: Infrastructure objectives and strategic priorities

Planning, prioritisation and delivery

The priorities, which are detailed below, represent the government's priority responses for infrastructure in a constrained funding environment. If additional funds became available, these areas should become the first focus of investment.

Priority

Increase capacity and resilience of SEQ's transport system

In the past there has been spare capacity for the region's demand to 'grow into'. However, Brisbane is now facing the highest traffic growth of any Australian city. Several of the region's major arterials are at more than 90 per cent capacity during peak hour and demand will likely exceed capacity on the Gold Coast, Sunshine Coast and Ipswich rail lines by 2031¹¹.

There is an urgent need to manage the transport system to meet the demands of a growing population, ensure its operational resilience to current and future climate impacts, reduce its greenhouse gas emissions and to maintain economic growth in the state. This has been identified in Queensland's submission to Infrastructure Australia for the Australian Infrastructure Plan as Queensland's highest priority.

Priority

Deliver a safe, equitable and sustainable health care system through a focus on technology

Queensland's size is one of its great advantages, with strong regions being the bedrock of our diverse economy and vibrant culture. However these positives must be balanced with the difficulty of maintaining safe, equitable and quality health services between regions. The state has made large investments in Queensland's hospitals in recent years. The imperative now is to fully optimise the use of these assets.

Even with advances in telehealth and other delivery models, face-to-face health services will always be needed. However, providing personalised and modern health services across a large and low density state places pressure on health professionals, upkeep of health facilities and medical equipment, and consequently health budgets.

The government must find a way to maintain an appropriately equitable level of health services across the state, while keeping expenditure within a budget envelope that also recognises the need to fund other essential government services. This priority draws on advances in digital technology as a key lever in improving the provision and management of health services across the state and leveraging from the new world-class hospitals.

Priority

Adapt to new technologies in the energy sector

Solar PV, smart meters, large-scale renewable energy generation, battery storage, smart homes, electric vehicles and smart grids will all play a role in transforming the electricity sector over the next 20 years.

Consumers will participate more actively as smart meters enable technology integration and demand side initiatives. Uptake of solar panels in Queensland has already been strong with one in four detached dwellings having solar installations.

While domestic demand is currently declining, with the introduction of solar PV creating upward pressure on network costs for all users, the long-term may include increased demand to service electric vehicles, increased centralised renewable generation or trade in localised generation. All of these scenarios would require reliable and sustainable network infrastructure.

Queenslanders have invested significantly in their transmission and distribution infrastructure assets and are best served by those assets continuing to provide critical services going forward.

To ensure those assets remain sustainable, Queensland will continue to actively pursue innovation from its transmission and distribution businesses, infrastructure resilience to dynamic change and efficient and innovative investment in the electricity network.

¹¹ *Infrastructure Australia, Australian Infrastructure Audit, Volume 2, April 2015*

Planning, prioritisation and delivery

Priority

Improve regional connectivity and freight market access

The government will prioritise projects and initiatives that support connectedness and freight productivity in regional areas. The movement of freight is a critical activity driven by industry, population growth and consumer needs, and is fundamental in supporting economic growth.

Freight movement across the state is forecast to increase from 871 million tonnes in 2010–11 to between 1643 and 1741 million tonnes by 2026¹². This task will continue to place increasing pressure on road and rail transport systems and ports, particularly those supporting key inter-regional and urban links and freight market access.

Queensland's varied industries have different transport needs, including containerised freight, bulk freight, large and over-sized loads. Across the state there are ageing structures and pavements on key freight routes that are reaching their designed maximum load limits. Some of these structures and pavements were not designed for the size and weight of heavy vehicles. Other assets also require improved disaster and flood mitigation.

Transport's role in providing access to essential services cannot be overlooked, particularly in regional areas where distances are often greater and public transport services are less prevalent. Such transport disadvantage can also play a role in promoting individual isolation and disconnectedness from the community.

Priority

Focus on better preservation of public assets

The Australian Infrastructure Audit noted that much of the infrastructure that Australians will use in 2031 has already been built. There is a clear need then to invest in preservation and optimising existing assets.

The audit highlighted the assets at most risk of degradation are located in regional areas. The often relatively low demand or volumes experienced in these areas can make adequate cost recovery difficult and can make the consequences of asset failure seem less significant. Asset preservation is subsequently delayed.

There are also risks for higher density locations, particularly those experiencing high growth rates. Greater wear and tear from high volume use can degrade public assets quickly. The government will therefore prioritise projects and initiatives that preserve the state's public asset base.

An early indication of the government's intention in this space is the \$500 million statewide schools and hospitals fund. This was provisioned in the 2015–16 state budget towards asset maintenance and refresh of Queensland's education and health facilities.



Access to international markets through Port of Townsville Limited

¹² *Moving Freight*, Department of Transport and Main Roads, 2013

Step 4: Investment decision

Following assessment of project proposals and their alignment with priorities, this stage involves an assessment of the priority of the project. The assessment takes into account affordability and its alignment with priorities and objectives outlined by the government in documents such as Part A of the SIP.

The investment decision stage involves an assessment of the business case for the project and aspects such as the financial cost, and economic and social benefits. The costs, benefits and risks both of proceeding with the project and not proceeding should be considered. The preferred delivery method is also confirmed at this stage. For large complex infrastructure projects, specific purpose vehicles or statutory authorities may be the appropriate entity to oversee delivery. These delivery options are to be investigated as part of the investment decision stage.

However, an investment decision for a project is not made solely on the outcomes of a business case. The government's financial position and fiscal strategy is also a key input into these decisions, as the government must be accountable for the money it spends. To this end, investment decisions are a coalescence of the state's budget and its infrastructure and servicing needs.

Critical to managing the state's finances is the budget process. This process outlines the government's revenue and expenses for the coming years, provides an overview of the state's economy and details the government's priorities for delivery. Informing the infrastructure priorities for the government are the SIP, Building Queensland's pipelines, market-led proposals and total assessment management plans. Figure 16 outlines the relationship between the SIP and other infrastructure funding pathways, all of which combine to inform budget decisions.

As part of the ongoing management of the SIP, following the release of the budget each year, the 1–4 year program will be updated.

The Project Assessment Framework (PAF) is structured over seven stages, with evaluation and prioritisation of investment options occurring in progressively greater detail as more is understood about a project.

In alignment with Step 2: Options assessment, the PAF requires proponents to approach infrastructure from the perspective of service need and to prioritise non-infrastructure methods of meeting that need.

The government requires a business case to be prepared for all major projects and initiatives. For infrastructure projects, the business case will include an economic cost benefit analysis which generates outputs such as a project's net present value (NPV) and benefit cost ratio (BCR).

The NPV and BCR are two metrics amongst a number of critical decision metrics the government will use to prioritise projects against each other and also options within projects (e.g. different rail route alignments).

The majority of these assessments are undertaken by individual line agencies, who are responsible for undertaking relevant processes in the development and delivery of their minor capital works programs.

Infrastructure delivery responsibilities

In Australia, planning, funding and delivering infrastructure is a complex business that is not well understood. It encompasses all three levels of government and the private sector. Figure 17 depicts a typical urban environment to illustrate, in a conceptual way, the various responsibilities for infrastructure provision. An aim of the SIP is to clarify the state's responsibilities and to articulate how the responsibilities across levels of government align.

The **Australian Government** currently has a lead responsibility to ensure infrastructure networks are integrated at a national level and that infrastructure planned and delivered at a state level contributes to national priorities and challenges. The Australian Government has a responsibility for significant economic infrastructure such as airports and major highway networks.

The **Queensland Government** currently has a lead responsibility in responding to the needs and challenges specific to the state and to represent the state in various forums at both the national and international level. State governments have been responsible for delivering public transport, road infrastructure and energy networks, and social infrastructure such as schools, hospitals and major sporting and cultural facilities.

Some state infrastructure is provided by government-owned corporations, which are commercial businesses that provide important infrastructure to the state on a competitively neutral basis compared to the private sector.

Government-owned corporations additionally play an important role in sponsoring and enabling economic infrastructure.

Local government currently has a lead responsibility for the provision of road, walking and cycling, water, stormwater, sewerage and open space infrastructure that underpins urban and rural development at a local level.

The **private sector** plays a role in financing, building and operating infrastructure, often in partnership with government. Private infrastructure may be funded directly by users, or by payments by the government.

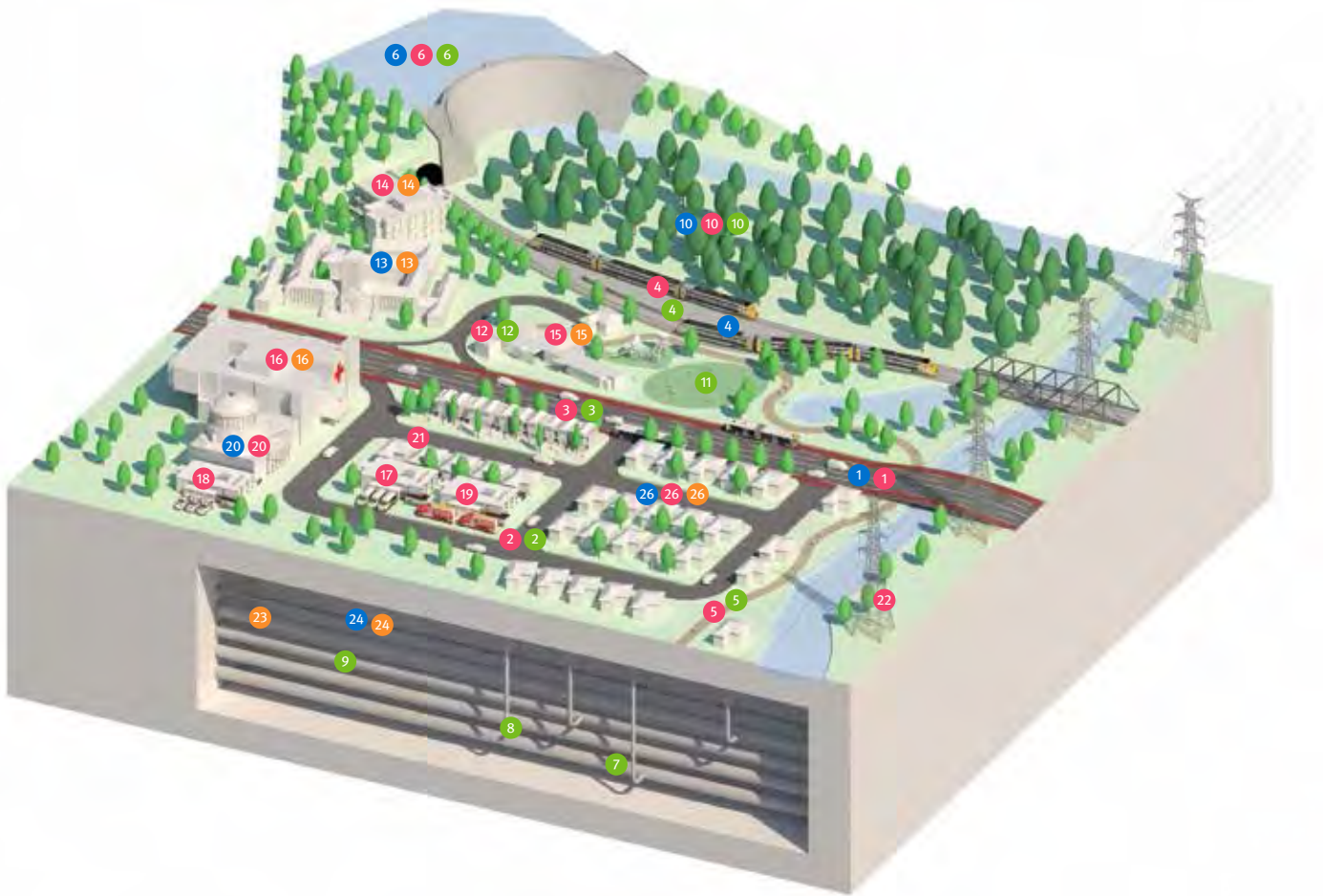
This complex network presents a number of challenges for infrastructure planning. These include:

- ▶ **Line of sight between service need and planning/funding:** Ideally in providing a service to the community, there should be alignment of activity, planning and funding between all levels of government. For example, in the case of water, local governments and local government-owned businesses are responsible for providing water to households and businesses. Councils would look to the state for certainty in relation to the construction and operation of dams, and to the Australian Government, which may choose to fund catalytic water infrastructure.
- ▶ **Different incentives:** Changes in infrastructure provision and service delivery desired by one level of government may be resisted by another in order to appeal to different constituencies. Achieving a high degree of cooperation between governments is often required for reform to occur.
- ▶ **Accountability:** It is often difficult for the broader community to understand which level of government is accountable for services and the delivery of infrastructure.

Despite these differences, there is a strong expectation that all levels of government and the private sector will work together to meet the infrastructure needs of communities.

The SIP plays a valuable role in addressing the challenge of coordinating across jurisdictions and balancing competing priorities. By providing a long-term but visible planning horizon, the SIP allows government agencies at all levels to make informed, considered decisions, while not being so far into the future as to be meaningless.

Planning, prioritisation and delivery



	Transport					Water			Arts and recreation			Education and health				Justice and public safety			Energy		Digital		Housing					
	Highways/motorways	Local roads	Busways	Heavy and light passenger rail	Cycleways	Regional water supply (source, treatment, transport)	Local water supply	Sewerage	Stormwater management	Conservation areas	District and local parks	Cultural centre	Universities	Technical and further education	Schools/kindergartens	Hospitals	Ambulance	Police	Fire and emergency services	Law courts	Correctional facility	Electricity (transmission/distribution)	Gas	National Broadband Network	Other telecommunications	Social housing		
Australian Government	1			4		6						10		13							20				24		26	
Queensland Government	1	2	3	4	5	6					10	12		14	15	16	17	18	19	20	21	22					26	
Local government		2	3	4	5	6	7	8	9	10	11	12																
Private sector													13	14	15	16							23	24	25		26	

Note:
 Queensland Government includes government-owned corporations, statutory authorities and boards.
 Local government includes sub-regional entities with multiple local governments as shareholders.
 Private sector may include non-government organisations.

Figure 17: General responsibilities for urban infrastructure provision

Outcomes of infrastructure investment

Part A of the SIP outlines a number of objectives in relation to what we want from our infrastructure and directions that explain how we can achieve this. These seek to address Queensland’s future needs at a statewide level to proactively drive the economy, enhance liveability and support population growth. They apply across infrastructure classes rather than specific asset types.

The statements identified below provide a further level of detail relevant to each asset class. They explain what government is seeking to achieve in relation to its investment in each asset class examined in the SIP. The state government makes a significant annual investment in the maintenance and delivery of infrastructure across the state. These statements show how communities and industry will benefit from this investment.

These statements provide different levels of detail, depending on the asset class being examined. The projects and opportunities appearing in Part B will support the achievement of these statements. Over time, they may be refined or change as others are identified or become more relevant.

Cross-government

- ▶ By 2031, most state owned infrastructure is “smart” and able to provide real-time data to operators and customers.
- ▶ Improved supply chain performance has increased productivity, accessibility and reliability.
- ▶ An increase of irrigable land has led to agricultural growth in North Queensland.
- ▶ Land-use, economic and infrastructure planning has been integrated.
- ▶ The state’s investment in infrastructure is sustainable and better managed.
- ▶ Planning will enable growth and economic prosperity.
- ▶ Government assets will be better used.

Transport

- ▶ The safety and reliability of Queensland’s transport system has progressively improved so that there are fewer fatal and serious injury crashes and improved travel time and reliability.
- ▶ The efficiency of the freight task has improved with more freight moved onto rail and through innovations in road freight.
- ▶ The north-south inland freight corridor via the Carnarvon Highway, Dawson Highway, Gregory Highway Developmental Road and the Kennedy and Palmerston highways has been progressively developed as an alternative to the Bruce Highway.
- ▶ Access to real-time transport information has improved the ease of public transport use and customer experience.
- ▶ Cycling’s share of commuter trips to work has doubled by 2021 and tripled by 2031.
- ▶ “Towards zero deaths on Queensland Roads” targets are achieved including:
 - ▶ hospitalised casualties reduced from 6670 (average 2008–2010) to 4669 or fewer
 - ▶ fatalities reduced from 301 (average 2008–2010) to 200 or fewer by 2020.
- ▶ Shipping has continued to be effective because port channels, berth pockets and swing basins have been maintained in a sustainable way.
- ▶ Infrastructure consistent with master plans prepared under the *Sustainable Ports Development Act 2015* is enhancing freight efficiency and supply chains for priority port development areas.

Energy

- ▶ By 2020, one million rooftops or 300 megawatts of solar photovoltaics (PV) provide energy in Queensland.
- ▶ Up to 60 megawatts of solar generation have been provided with Queensland Government support.
- ▶ By 2030, agreed outcomes from an independent review into 50 per cent renewable energy are implemented.
- ▶ Agreed outcomes from the Queensland Gas Supply and Demand Action Plan are implemented.

Outcomes

Water

- ▶ Water supply infrastructure is in place or in train where there is a sound business case and water resources are available.
- ▶ Appropriate solutions, including demand management, are evaluated and implemented after the water needs of local government have been assessed in partnership with the state.
- ▶ Greater use of recycled water has been encouraged by state policies, where it is fit-for-purpose and economically viable.
- ▶ Water demand and the effects of stormwater and sewerage discharge on the environment has been minimised, the effects of flooding mitigated and reuse of water maximised through urban design.
- ▶ State dams are safe during extreme climate events.
- ▶ Water is regarded as a valuable finite resource and the impact on availability and cost of water use behaviours is recognised by Queenslanders.
- ▶ The water management and trading framework maximises the efficient use of water and water infrastructure.

Health

- ▶ The value and benefit of capital investment proposals and commitments against the health capital budget have been maximised by the use of effective and disciplined system-wide capital governance arrangements.
- ▶ E-health and built assets that support and/or enable the implementation of new models of health service delivery are enhanced.
- ▶ A secure digital health system that enables the sharing of medical records for every patient in the Queensland Health system has been established in accordance with the e-health investment strategy.
- ▶ Telehealth service access has increased by 10 per cent for people in rural and remote Queensland.
- ▶ Continuity of appropriate levels of access, and effective asset management across the portfolio, are ensured by using capital funds to maintain and preserve aged health facilities in rural and remote Queensland.
- ▶ Ambulance attendance to the scene of a Code 1 incident (potentially life threatening situation) within a response time of 8.2 minutes (for 50 percentile) and a response time of 16.5 minutes (for 90 percentile) is supported by continued infrastructure investment.



Disability support in school

- ▶ Health care services and facilities for Aboriginal and Torres Strait Islander patients have been planned and designed with indigenous input to ensure an environment that encourages and welcomes patients in need of care.
- ▶ The needs of hospital and health services for new and vital health technology equipment have been addressed through a statewide strategy that supports innovation.
- ▶ Preventative health care activities (such as walking, cycling and passive and active recreation) have been enabled and promoted through a collaborative partnership with other government agencies that facilitates connected Queensland communities.

Education and training

- ▶ Skills and productivity have progressively improved through investment in assets and training priorities.
- ▶ By 2031, indigenous school attendance (between prep and year 12) meets the equivalent average rate for non-indigenous students across all regions.
- ▶ Partnerships between education institutions and industry have been expanded by collaborative use of facilities.
- ▶ The rate of education and training participation and qualification attainment by Queensland students has improved.
- ▶ By 2031, 100 per cent access to e-learning programs has been provided in regional areas.
- ▶ Infrastructure upgrades to enhance modern curriculum delivery requirements have been progressively undertaken.

Digital

- ▶ By 2031, all Queenslanders have fast connectivity to the internet.
- ▶ By 2031, every Queensland city and town with a population of 2000 or more will not experience any mobile blackspots.
- ▶ Queensland is recognised globally for its world-class digitally-enabled health care.
- ▶ Queensland will lead Australia in digital government services.
- ▶ By 2031, the Queensland Government leads the nation in the use of open data and data science to fully leverage infrastructure investments.

Justice and public safety

- ▶ By 2031, digital alternatives are available for 50 per cent of non-judicial processes and services.
- ▶ Modern court services cater for the safety, accessibility and confidential needs of all clients, judiciary and partners.
- ▶ The collaborative use of court infrastructure is increased by up to 50 per cent.
- ▶ By 2031, the occupancy rate in high security centres has reduced to 95 per cent.
- ▶ Rehabilitation and reintegration outcomes have been enhanced, through increased prisoner access to technology and digital communication.

- ▶ The use of technological solutions to deliver efficient and effective supervision services for offenders in the community has increased and the number of offenders returned to custody reduced.
- ▶ By 2031, less than four fire deaths per annum per million people has been achieved.

Arts, culture and recreation

- ▶ Access to arts and cultural infrastructure in regional and remote communities has improved.
- ▶ Queensland's reputation as a cultural destination in the Asia-Pacific region has grown.
- ▶ The heritage value of the cultural precinct and the state's most treasured collection has been conserved.

Social housing

- ▶ By 2031, the supply of affordable housing across the state has increased by 10,000.
- ▶ Where large surplus state land sites are disposed in the market for residential purposes, 15 per cent of new dwellings are designated for social/affordable housing.
- ▶ The supply of housing suitable for indigenous households across the state has increased or improved.
- ▶ The number of beds provided through shelters, crisis housing and social housing has increased by 5000 to help reduce homelessness.
- ▶ By 2046, 50 per cent of social housing customers will interact with support services through real time information and communication.

Responses

Previous sections have explained the state’s challenges along with the Queensland Government’s infrastructure objectives and directions. This section now outlines the government’s strategic direction in response to these.

These responses describe where concerted effort may be required across the full spectrum of infrastructure over the SIP’s 15-year planning horizon. These responses provide strategic direction for the Queensland Government across each infrastructure class, in addition to the five high-level priorities outlined earlier. These strategic directions allow state government departments and industry to align their activities in response to these priorities.

These responses provide higher order areas of focus and are intended to guide investment, by interpreting what the challenges and objectives may mean for each infrastructure class.

Future total asset management plans, agency strategic and service delivery plans and other asset activities of agencies should be influenced by these responses.

These responses also provide a line of sight from this strategy document to the annual SIP program where government departments have already begun working toward many of these. Through the annual revisions, additional projects will also come into focus in the 1–4 year program thanks to greater attention to these specific areas of response.

CROSS-GOVERNMENT

Integrate land-use and infrastructure planning to assist major projects and facilitate market-led proposals.	Early definition of infrastructure needs for regions and major projects.	Coordinate infrastructure to support critical domestic and export supply chains, key market sectors and high growth areas.	A digital-first approach to deliver higher quality services and manage demand.	Cross-government coordination to optimise government investment.	Focus on preserving the existing asset base.
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TRANSPORT

Focus on maintenance and rehabilitation of existing infrastructure to reduce the long-term cost of repair and improve network resilience.	Unlock the potential of critical supply chains by identifying and improving the freight network.	Seek innovation and technology solutions to create a better performing and lower emissions transport system.	Seek public transport solutions including demand management to address the strong growth of SEQ.	Digitally connected smart infrastructure to improve capacity, safety and security.	Connect regional communities with access to essential services and opportunities.
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ENERGY

Pursue a renewable energy future and continued demand management.	Maximise growth opportunities by improving the functioning of the gas market in Queensland.	Improve the efficiency of network businesses.	Manage the benefits of new technology and innovation.	Enable an adaptive, resilient and cost-effective energy sector in Queensland.	
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WATER

Working with customers and providers, to identify and progress potential infrastructure to support future water needs and economic opportunities.	Delay the need for new infrastructure by being more efficient and using alternative water sources.	Progress dam safety and capacity upgrades.	Encourage technologies in homes, farms, businesses and communities to reduce water use, improve water quality and communicate flood risks.	Use scientific-based water resource planning to support infrastructure decision-making.	Strengthen the coordination and planning of water infrastructure.
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HEALTH

Focus more on prevention to reduce demand on strained resources.	Employ more alternative service delivery models to improve access and patient experience and delay the need for new infrastructure.	Seek innovative partnerships with industry to deliver health services and fit-for-purpose health facilities.	Use new digital infrastructure that improves efficiency and the patient experience.	Deliver adaptive infrastructure that flexibly responds to changing service needs.	
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EDUCATION AND TRAINING

Create knowledge precincts on the sites we control by co-locating education with industry and local communities.	Provide fit-for-purpose and future focused infrastructure that maximises educational outcomes.	Support infrastructure that maximises export earnings from education.	Increase the use of digital service delivery to delay the need for new infrastructure.	Adopt a 'renew before new' approach to infrastructure to meet the demand for education.	Protect Queensland's education heritage.
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DIGITAL

Work with providers and the Australian Government to improve digital infrastructure.	Develop infrastructure in regions that promotes digital inclusion.	Use government's purchasing power to drive digital transformations across all asset classes.			
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JUSTICE AND PUBLIC SAFETY

Innovatively manage the need for new infrastructure using demand management strategies.	Increase the use of technology to integrate services.	Rationalise under-utilised facilities and those that are no longer fit-for-purpose.	Enhance community safety through digital capabilities.		
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ARTS, CULTURE AND RECREATION

Deliver the Commonwealth Games legacy infrastructure program.	Work with industry to deliver infrastructure that drives visitor expenditure.	Protect the state's most treasured collections.	Deliver dedicated infrastructure for indigenous and regional art and culture.	Promote a coordinated approach to supporting infrastructure that elevates Queensland's tourism offering and delivers an exceptional journey for every visitor.	
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SOCIAL HOUSING

Realign the housing portfolio to improve its service capacity.	Renew the property portfolio to align with housing needs and reduce maintenance costs.	Leverage the capacity of non-government organisations and the private sector in the delivery of services.			
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