Brisbane Long Term Infrastructure Plan 2012-2031

BRISBANE CITY

Dedicated to a better Brisbane

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FOREWORD

It is certainly an exciting time for Brisbane, Australia's new world city.

As the centre of the fastest growing region in Australia, Brisbane is facing significant challenges. Brisbane is expecting a sustained period of growth over the next 20 years. Council is committed to the delivery of world-class infrastructure to cater for this growth while retaining our city's unique character and ensuring Brisbane is well placed to prosper.

Council has prepared this second edition of the *Brisbane Long Term Infrastructure Plan* to build upon the strategic direction and coordinated approach to developing future infrastructure outlined in the first edition released in 2007.

The *Brisbane Long Term Infrastructure Plan* continues to strive for transparency and integration of infrastructure planning and delivery for Brisbane as a whole, incorporating Council projects with Federal and Queensland Government initiatives, and the private sector.

I look forward to the implementation of the *Brisbane Long Term Infrastructure Plan.* It will help Council ensure Brisbane's infrastructure provision meets the community's needs while enhancing the city's capacity for long term economic development.

Graham Quirk
Lord Mayor, Brisbane City

Brisbane Long Term Infrastructure Plan 2012-2031

INTRODUCTION

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Infrastructure delivers services that support active and healthy communities, cultural vibrancy, a strong economy, and a clean and green environment.

Providing efficient infrastructure solutions that meet anticipated demand for infrastructure will contribute to driving economic growth and will support the city's regional role as a centre for commerce, tourism, education and cultural activity.

This *Brisbane Long Term Infrastructure Plan (BLTIP) 2012-2031* is Council's long term infrastructure policy for the city. The BLTIP aligns infrastructure delivery with *Living in Brisbane 2026* – a shared vision for the future of Brisbane City. Implementing the BLTIP will contribute to the "triple bottom line" which may be summarised as:

- growing the economy – enhancing the city's capacity for long term economic growth
- building communities – supporting a growing and diverse Brisbane population
- enhancing the environment – managing and mitigating the impact on the natural environment.

Based on forecasts which depict the future for the city in terms of population and economic activity, the BLTIP identifies actions to deliver infrastructure strategies for:

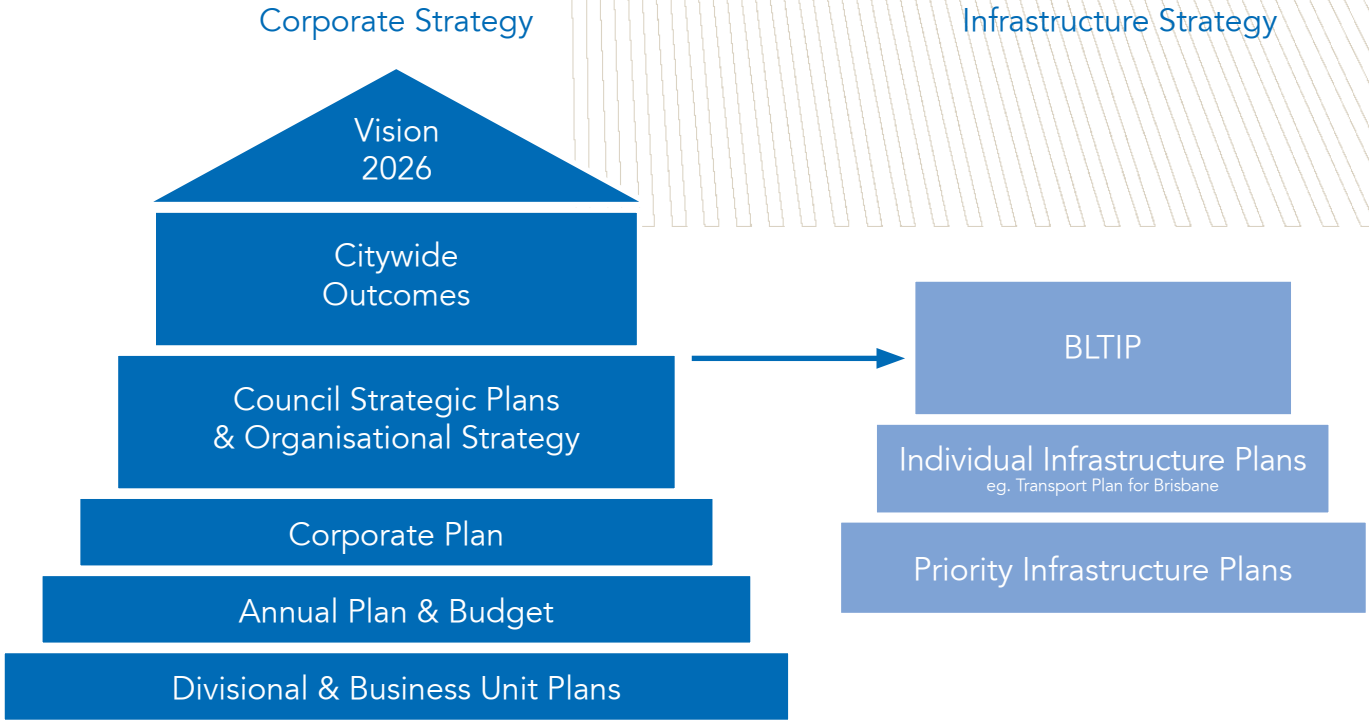
- transport
- water
- energy
- telecommunications
- waste management
- social infrastructure
- green space
- key districts – Greater Central Business District (CBD), Australia TradeCoast (ATC) and South West Industrial Gateway (SWIG).

The purpose of this plan is to:

- ensure that infrastructure provision is consistent with the city's economic, social and environmental aspirations
- guide the prioritisation and alignment of Brisbane's infrastructure building and asset maintenance program
- ensure Brisbane receives an appropriate return on its infrastructure investments
- realise savings, synergies and complementarities that are available from simultaneous, comprehensive planning and delivery of different infrastructure classes
- provide a reference for other levels of government to consider their complementary roles in contributing to Brisbane's infrastructure
- provide a reference for the private sector to consider its role in contributing to and investing in Brisbane's infrastructure.

This BLTIP aligns with Council's corporate strategic planning, Council's Transport Plan for Brisbane and other elements of Council's strategic planning framework (Figure 1.1). The BLTIP has been prepared with regard to the Queensland Government's *South East Queensland Regional Plan 2009-2031*, *Queensland Infrastructure Plan 2011*, *Connecting SEQ 2031* and the *Queensland Transport and Roads Investment Program 2010-11 to 2013-14*.

Figure 1.1 Council's strategic planning framework



The BLTIP builds on the first edition released in 2007. This plan initially examines available forecasts and trends in Chapter 2 to quantify the demands for which this infrastructure plan must provide solutions. Employment and population growth forecasts are outlined together with the changing characteristics of demand that arise from social and demographic changes.

Based on the "triple bottom line" goals outlined above, Chapter 3 sets out specific objectives for the plan according to each class of infrastructure, and outlines the measures by which the performance of this infrastructure is to be judged. Strategies and actions are then described to achieve these objectives.

The BLTIP's implementation is the subject of Chapter 4, which consolidates the infrastructure projects planned for Brisbane into a comprehensive suite of tables.

Brisbane is at the centre of one of Australia's fastest growing regions. Brisbane's strong population and employment growth, coupled with changing trends in infrastructure demand, will have far-reaching implications for infrastructure provision over the next 20 years.

2.1 Population growth

Over the decade to 2010[1], metropolitan Brisbane's[2] resident population grew by 25.2%, from 1.63 million to 2.04 million. Over the next two decades, the resident population in metropolitan Brisbane is expected to grow by an additional 820,000 residents.

By 2010-2011, net overseas migration was the main driver of Queensland's population growth, accounting for 81.4% of all net migration into the State. In fact from 2006-2007 net overseas migration has accounted for more population growth than interstate migration.

Although net overseas and interstate migration into Queensland has declined over the last five years, strong future population and employment growth is still expected to occur in the Brisbane Local Government Area (LGA), with this sentiment reflected in the Queensland Government's revised 2011 Edition population projections. Future population growth will be a significant driver of demand for all types of infrastructure, including transport, social and cultural facilities, and basic services such as water and electricity.

The population forecasts outlined in Table 2.1 are sourced from the 2011 Edition, Local Government Area forecasts released by the Queensland Government. As the 2011 Edition forecasts were prepared in 2010, any adopted BCC Neighbourhood Plans from mid 2010 will not be reflected in the forecasts. It is anticipated that Council's neighbourhood planning program will result in an increase to residential and employee growth in the Brisbane LGA due to an increased capacity of the City.

It is forecast that by 2031 the Brisbane LGA resident population will account for 29.0% of South East Queensland's (SEQ) resident population and contribute to 14% of SEQ's residential population growth from 2011 to 2031 (Table 2.1).

Table 2.1 Projected population growth by Local Government Area (a) in South East Queensland, 2006, 2011 and 2031 (medium series).

	2006(a)	2011(b)	2031	Share of SEQ population by 2031 (%)	Projected growth 2011-2031	Share of SEQ population growth 2011-2031 (%)
Brisbane	991,260	1,085,614	1,272,272	29.0	186,658	14.1
Gold Coast	466,433	544,165	798,417	18.2	254,252	19.2
Ipswich	142,477	175,469	461,990	10.5	286,521	21.6
Lockyer Valley	31,932	37,710	63,551	1.4	25,841	1.9
Logan	260,021	289,010	452,184	10.3	163,174	12.3
Moreton Bay	332,862	390,204	533,170	12.1	142,966	10.8
Redland	131,210	145,874	188,471	4.3	42,597	3.2
Scenic Rim	34,750	39,149	80,364	1.8	41,215	3.1
Somerset	19,676	22,502	35,245	0.8	12,743	1.0
Sunshine Coast	295,084	338,429	508,177	11.6	169,748	12.8
Total SEQ	**2,705,705**	**3,068,126**	**4,393,841**	**100**	**1,325,715**	**100**

Source: (projections) Queensland Government population projections, 2011 Edition (medium series), Office of Economic and Statistical Research, Queensland Treasury. (ERP) Australian Bureau of Statistics (ABS) Regional Population growth, Australia, 2009-2010, cat. No. 3218.0.
SEQ = South East Queensland
Bolded LGAS = Brisbane Statistical Division (metropolitan Brisbane)
(a) The Local Government Area boundary as defined by the 2011 Australian Standard Geographic Classification (ASGC). By using the 2010 ASGC, the LGA boundaries reflect changes to Queensland LGA boundaries that occurred in 2009.
(b) The 2006 population data is the 2006 Estimated Resident Population (ERP) data and forms the base data for the 2011 Edition population projections. As the 2011 ABS Census results will not be released until mid-2012, population projections are based from the ERP of the most recent Census which is 2006.
(c) The 2011 population data is a projected figure from the 2011 Edition population projections.

[1] 2010 ERP data is a preliminary estimation of the resident population.
[2] Metropolitan Brisbane is defined as the Brisbane Statistical Division (2010 ASGC) and includes the following Local Government Area boundaries: Brisbane, Ipswich, Logan, Moreton Bay and Redland.

2 FORECASTS AND TRENDS

Around 138,000 out of 156,000 new dwellings required in Brisbane City will be delivered through infill and redevelopment. Though already serviced with infrastructure, infill developments and redevelopments often require an upgrade to trunk infrastructure to meet increased levels of demand, or to deliver a higher quality service standard. Infill developments also provide opportunities to install the latest infrastructure technologies, such as fibre optic cable. Areas just outside Brisbane City, are expected to house the majority of the population growth forecast for metropolitan Brisbane.

This growth will also place additional demand on Brisbane's infrastructure, most notably transport, tertiary services in health and education as well as cultural and recreational infrastructure. Infrastructure investment must also support residential populations outside of Brisbane City, commercial activities across the SEQ region and demand for visitors (such as tourists and students).

Infrastructure will need to cater for the needs of the Brisbane aged community including suitable access to services and encouraging participation in City life. The number of residents aged 65 years and over is projected to increase by 87% from 113,421 persons in 2006 to 212,486 persons in 2031. In particular, the number of residents aged 80 years and over is anticipated to nearly double over the timeframe (34,785 residents aged 80 years and over in 2006 to 66,151 residents aged 80 years and over by 2031).

The number of children aged less than 15 years living in Brisbane City is also expected to slightly increase from 175,000 children in 2006 to nearly 200,000 children by 2031. Additional schools in high population and employment growth areas will be needed to cater for demand.

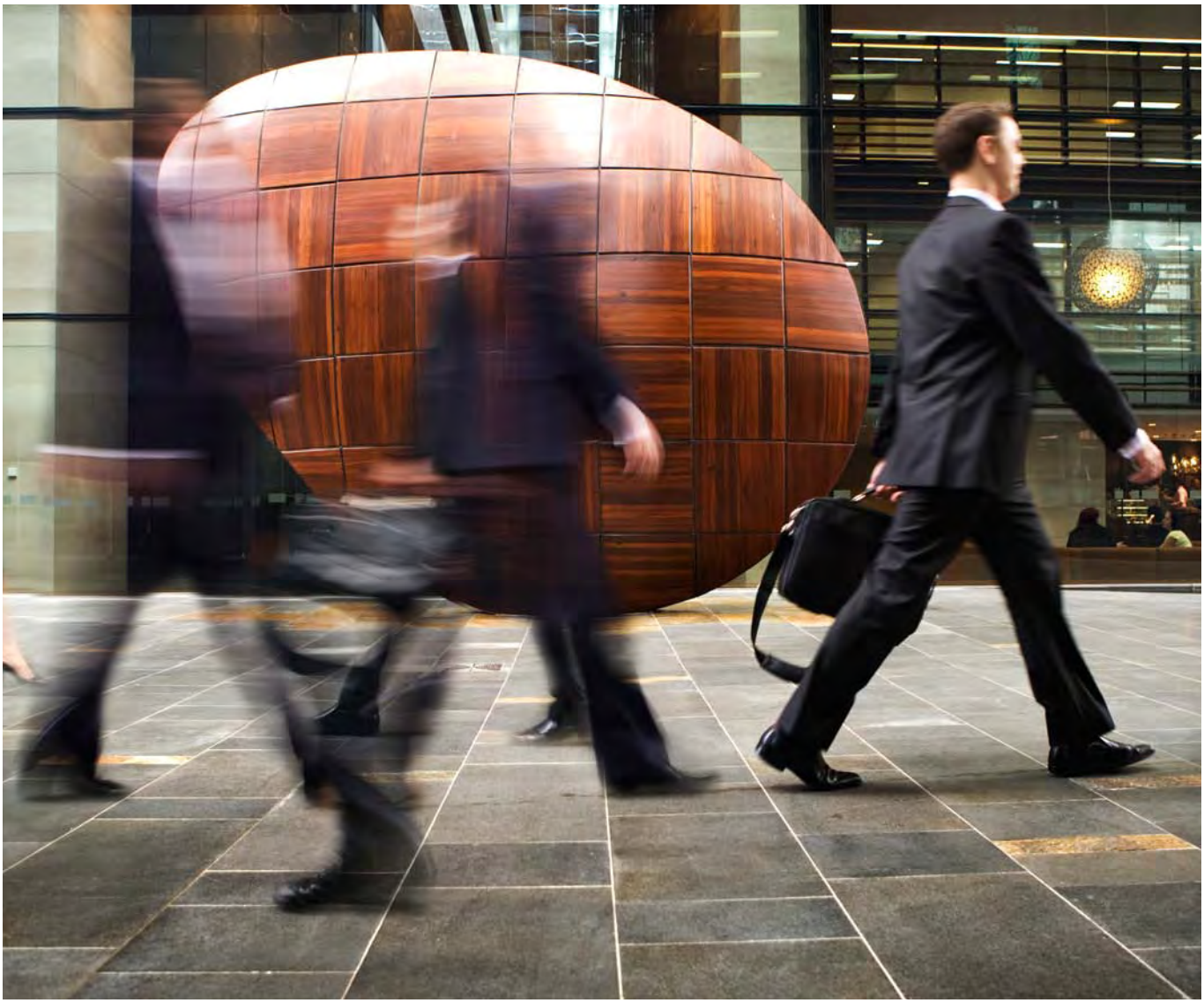
2.2 Employment growth

As the economic hub for the SEQ region, metropolitan Brisbane accounted for 1.07 million jobs in 2011, equivalent to nearly 63% of the 1.7 million jobs in SEQ.

Over the decade to 2011, employment in metropolitan Brisbane grew by 282,000. Around 60% of these jobs were located in Brisbane City.

Of the 670,000 additional jobs forecast in SEQ by 2031, 443,000 (66%) are expected to be located in metropolitan Brisbane. Almost two-thirds (290,000) will be in Brisbane City, which demonstrates the city's role as the region's economic powerhouse.

The CBD and surrounding suburbs will remain a key employment centre for SEQ's widely-distributed residential population, providing approximately 380,000 jobs by 2031.




Heritage
ANZ

Brisbane's long term competitive advantage is contingent on innovation, productivity growth and sustainability. The shift towards knowledge and technology-intensive employment is expected to continue. Most of Brisbane's future workforce will be engaged in the processing and transformation of information for a wide range of end uses.

Over the next two decades, employment growth in Brisbane is expected to be highest in business services. This includes a wide range of knowledge-intensive technical, professional and consulting services used by businesses. Other high employment growth sectors include health, community and education services, which are also knowledge-intensive. As new technology automates work that was previously done by manual workers across many sectors, knowledge-intensive employment will expand its share of the whole economy, including manufacturing.

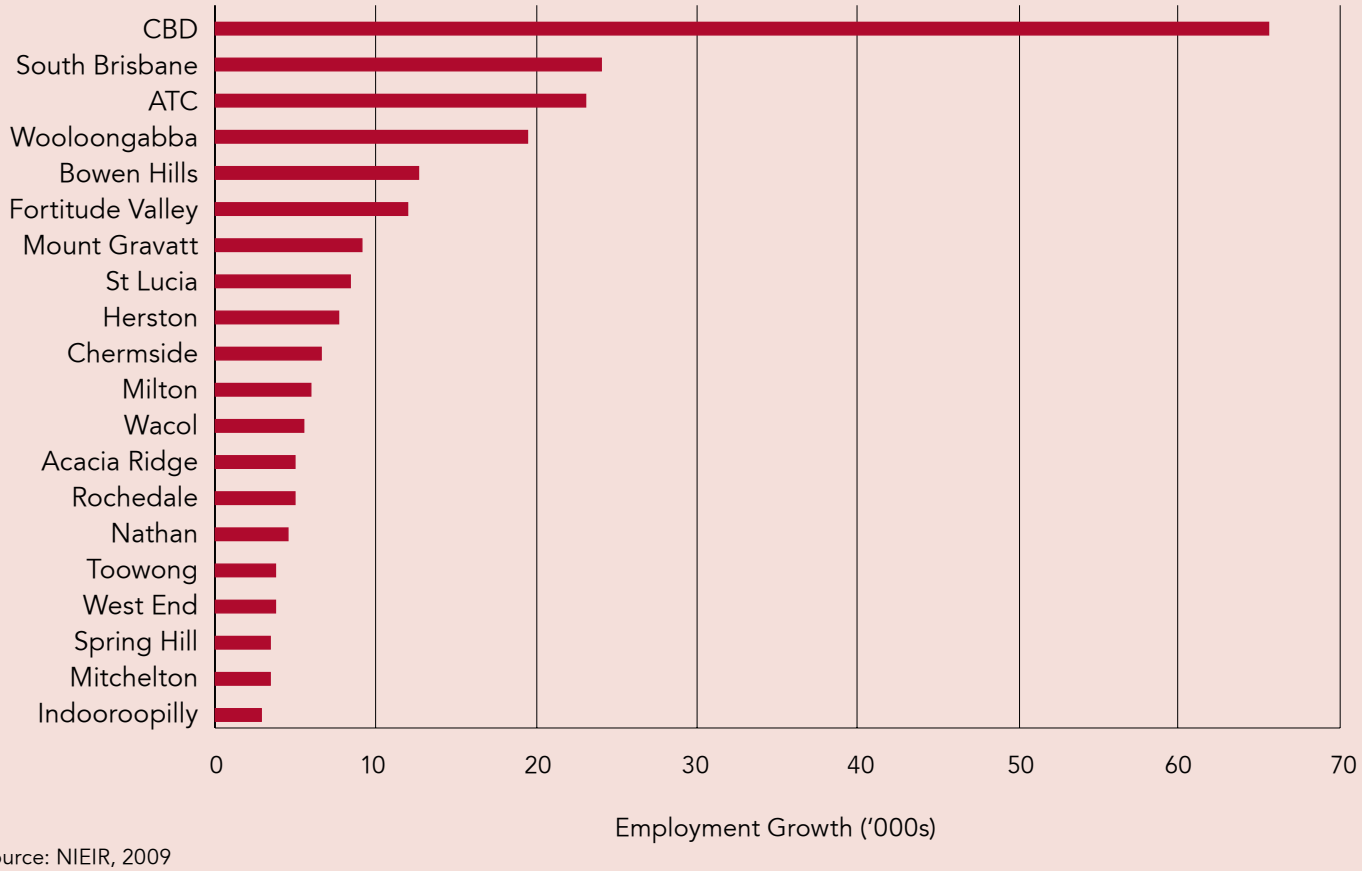
As knowledge-intensive, office-based employment increases, there is also a growing need for better infrastructure services for workers, including provision of amenities and services in proximity to Brisbane's workplaces.

New types of infrastructure such as high speed broadband access will also be critical to business profitability and performance.

The top 20 employment growth areas in Brisbane will account for approximately 80% of total employment growth in the area to 2031. The CBD and surrounding suburbs, and Australia TradeCoast (ATC) will experience the largest increases in employment (Figure 2.1).

These areas offer location advantages such as access to skilled labour, proximity to suppliers, competitors and customers, access to transport routes, and access to research and knowledge institutions.

Figure 2.1 Top 20 employment growth areas in Brisbane, 2011 to 2031



Source: NIEIR, 2009

2.2.1 CBD and surrounding suburbs

The greatest concentration of employment growth in Brisbane is forecast to occur within the CBD and surrounding suburbs. The existing CBD is expected to grow from 156,600 to 220,200 workers between 2011 and 2031.

Further expansion of office-based businesses into surrounding suburbs, including Fortitude Valley, Milton, South Brisbane, Spring Hill and Woolloongabba, will add a further 64,400 jobs to inner Brisbane over the same period (Figure 2.2).

Figure 2.2 CBD and surrounding suburbs, employment growth, 2011 to 2031

Source: NIEIR, 2009



2.2.2 Other employment growth areas

Sizeable employment growth is forecast for areas outside the CBD, reflecting the different advantages these areas offer businesses, including access to major transport routes, the seaport and airport, land size, cost and zoning.

The areas of greatest expected employment growth are listed in Table 2.2.

The varying types of industries that will want to locate in these areas will influence the mix of infrastructure requirements.

Table 2.2 Employment growth areas, excluding CBD and surrounding suburbs

Local area	Employment growth 2011 to 2031	Top three growth industries
ATC	23,203	Transport, Government, Manufacturing
Bowen Hills	12,604	Transport, Business Services, Health and Community
Mt Gravatt	8,894	Education, Retail, Health and Community
St Lucia	8,372	Education, Business Services, Hospitality
Chermside	6,705	Health and Community, Retail, Government
Wacol	5,397	Manufacturing, Health and Community, Transport
Acacia Ridge	4,857	Manufacturing, Transport, Wholesale
Rochedale	4,794	Education, Business Services, Personal Services
Nathan	4,352	Education, Business Services, Health and Community
Toowong	3,713	Health and Community, Business Services, Retail
West End	3,691	Cultural and Recreational, Health and Community, Personal Services
Mitchelton	3,275	Retail, Education, Health and Community
Indooroopilly	2,979	Retail, Education, Business Services

Source: NIEIR, 2009

NOTES:
Mt Gravatt = Upper Mt Gravatt + Mt Gravatt East + Mt Gravatt

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2.3 Infrastructure class forecasts

Public transport

Total patronage of TransLink services (bus, rail and ferry) across SEQ has increased from 123.8 million trips in 2003-04 to 181.8 million trips in 2009-10, an increase of 47%.

Notably, patronage of Brisbane Transport's bus services has risen by 60% over the same period (Table 2.3).

Transport solutions will need to meet anticipated growth in demand for public and active transport services, which is driven by population and employment growth in key areas of the city. For instance, inner Brisbane will require a high-frequency local public transport system, including cross-river services and links to line haul public transport networks.

By 2026, over 105,260 passengers are expected to board inbound trains in the two-hour morning peak, up from 44,571 in 2006 (DTMR, 2008).

Table 2.3 Brisbane Transport bus services patronage

	Trips (millions)	Annual growth (%)
2003-04	48.1	n/a
2004-05	53.1	10.5
2005-06	59.8	12.6
2006-07	63.5	6.3
2007-08	67.6	6.4
2008-09	72.5	7.2
2009-10	77.2	6.5

Source: Brisbane City Council, 2011a

Road services

The cost of congestion in Brisbane is currently estimated at $1.2 billion in 2005, or approximately $670 per person, and is expected to rise to $3 billion in 2020, or approximately $1350 per person, without appropriate investment in infrastructure.

The Australian Government's Bureau of Infrastructure, Transport and Regional Economics (2009) forecasts the number of vehicles per day travelling into Brisbane from the NSW border (via the Pacific Motorway) will increase from 91,000 in 2005 to 173,000 in 2030. In the corridor between Brisbane and Gympie, vehicle numbers per day are expected to increase from 35,000 to 70,000.

About 90% of Brisbane's freight movements are by road, with road freight forecast to double from 68 million tonnes to 139 million tonnes in 2026. Metro short-haul road freight is forecast to grow by 3% per year between 2003 and 2020, while total road freight across Queensland is projected to grow by 4% per year to 2020 (NTC, 2006).

Air, sea and freight rail

Investment in the road and rail transport network will be required to support growth of Brisbane's sea and air ports. Rail freight is expected to double by 2020 in Queensland (Queensland Government, 2008b).

Between 2002-03 and 2007-08, passenger numbers through Brisbane Airport increased by 50%, from 12.3 million to 19.5 million. Brisbane Airport anticipates strong growth in demand and has put in place an investment program to increase its capacity. Annual growth of passenger movements through the airport is expected to be around five per cent for international and four per cent for domestic passengers. Total passenger movements through the airport are expected to reach 29 million by 2018-19 and 45 million by 2028-29.

Total containerised trade through the Port of Brisbane is expected to grow by 7.4% per year between 2004-05 and 2024-25 (BITRE, 2006).

Water

Demand for water for urban uses and power generation in SEQ will increase from around 467,000 megalitres per year in 2005 to approximately 533,000 in 2026 (QWC, 2010). This figure reflects a 23% saving from trend projections as a result of demand management initiatives.

Non-residential demand is forecast to increase from about 91,000 megalitres per year in 2005 to about 117,000 megalitres per year by 2026.

Local supplies (rainwater tanks, stormwater harvesting, grey water, and dual reticulation recycled water systems) in new houses are forecast to reduce demand for grid water by about 35,000 megalitres per year by 2026.

Telecommunications

There has been strong growth in data downloaded over recent years, with an increase in broadband coverage and the uptake of new access technologies (for example, wireless 3G) has rapidly increased demand for bandwidth. Data downloads for Australia increased from 55,434 terabytes in June Quarter 2008 to 99,993 terabytes in June Quarter 2009 (ABS, 2009a). This trend is expected to continue.

Energy

Total energy consumption is forecast to increase, through continued population growth and increasing energy consumption per person. At the national level, energy use per person is forecast to increase by 0.7% per year to 2029-30.

Peak summer demand for electricity in SEQ is forecast to increase by 4.1% per year over the next 10 years. Gas consumption in SEQ is forecast to increase by 3.8% per year to 2033 (Queensland Government, 2009a).

Energy intensity (energy per dollar of GDP) is expected to decline at 1% per year over the same period (ABARE, 2007).

Waste

Queensland currently generates 1.9 tonnes of waste per person, of which 0.9 tonnes per person is recycled (Table 2.4).

Given current trends in disposal, it is anticipated Brisbane will run out of capacity at land fill sites before 2020.

Without changes in behaviour to reduce waste and encourage recycling, investment will be required in additional waste processing and disposal infrastructure.

Table 2.4 Waste per capita, 2006

	Queensland (tonnes)	Australia (tonnes)
Disposed	1.0	1.0
Recycled	0.9	1.1
Total	1.9	2.1

Source: EPHC, 2008

2.4 Key infrastructure themes

Brisbane's infrastructure program needs to meet the service needs of the community and contribute to achieving the broader economic, social and environmental aspirations for the city.

Anticipated future demand for infrastructure services necessitates a policy and project response that will contribute to:

- regional employment outcomes
- export growth
- the knowledge economy
- culturally diverse and inclusive communities
- a smart and connected city
- higher density, public transport-oriented living
- providing an environment for a liveable city.

Ensuring that the city's infrastructure contributes to addressing these key infrastructure themes (refer Figure 2.3), and to the infrastructure planning objectives discussed in Chapter 3, will maximise the benefits derived from investment in infrastructure.

Figure 2.3 Key infrastructure themes

Regional employment outcomes

Brisbane's economy supports residents who reside in Brisbane, but also residents who commute from surrounding regions to work in Brisbane (around 27% (net) of workers).

By 2031, Brisbane's economy is expected to support over one million jobs, a 56% increase on 2010. Approximately 80% of this growth is expected to be located in only 20% of Brisbane suburbs. The greater CBD (including areas of West End and Fortitude Valley) is also expected to remain SEQ's major employment and knowledge hub, supporting 380,000 jobs by 2031.

Transport services must provide a mix of express long-distance services, and provide a reliable service of a suitable frequency to commuters within Brisbane.

Environment for a liveable city

Infrastructure networks contribute to the liveability of the river city, with open space providing recreation and relaxation for residents, and supporting high levels of biodiversity in areas to support the city's environmental health. As demand for scarce resources rise, residents will be encouraged to conserve energy and water which will help to reduce the investment required in networks, and will enhance the long term sustainability of these resources. Residents and businesses will be encouraged to continue to move towards zero waste.

The knowledge economy

Brisbane's competitive advantage will increasingly be as a diversified, knowledge based economy, fostering the development of industries with innovative practices. Co-location of knowledge industries supported by ultra high speed telecommunications infrastructure will enhance the competitiveness of Brisbane industries.

Export growth

Infrastructure must support the continued growth of Brisbane's export industries and particularly sales of high value-added exports. Facilitating the efficient operation of manufacturing supply chains, particularly through provision of adequate freight infrastructure, is critical to maximising export efficiency.

Education services and tourism exports will continue to be a key source of employment and export growth for the region. Investment in tourism infrastructure, affordable student accommodation and 24-hour transport services to major tourist facilities, such as Brisbane Airport, will support the growth of the export sector.

A smart and connected city

A connected community will benefit from enhanced access to health, education, welfare services and employment opportunities. Virtual and physical connectivity will become increasingly important in driving productivity improvements. Smart infrastructure solutions will be particularly important in the delivery of health and education services.

Culturally diverse and inclusive communities

Active transport infrastructure, tailored and affordable public transport solutions, and engaging open spaces to support healthy and cohesive communities will support a growing population with diverse interests and needs.

Higher density, public transport-oriented living

Infrastructure solutions need to cater for higher residential densities to meet growth in demand for housing, while continuing to deliver premium transport services to get people to where they work and play, while also enabling access to essential services such as health and education.

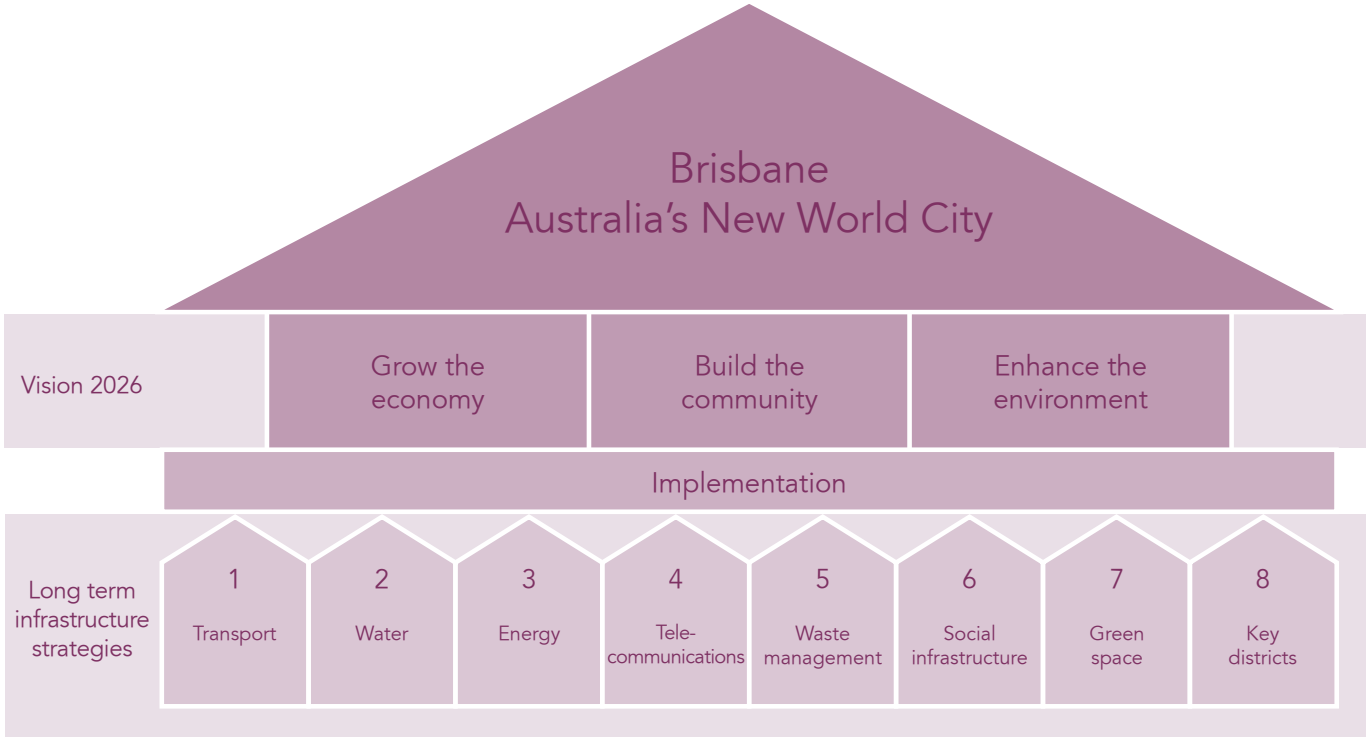
To meet the challenges in delivering the vision for the city, *Living in Brisbane 2026*, this infrastructure plan for Brisbane commits to achieving results that will better enable the city to grow the economy, build the community, and enhance the environment.

Council will pursue the following eight infrastructure strategies in conjunction with other levels of government and the private sector (Figure 3.1):

- Strategy 1 – Transport
- Strategy 2 – Water cycle
- Strategy 3 – Energy supply and distribution
- Strategy 4 – Telecommunications
- Strategy 5 – Waste management
- Strategy 6 – Social infrastructure
- Strategy 7 – Green space
- Strategy 8 – Key districts

These strategies are described in detail in subsequent sections along with the implementation roles of Council, agencies, other levels of government and the private sector. The strategies and actions reflect Council's preferred outcomes, and do not necessarily reflect agreement or support from those organisations referred to in the strategies and actions.

Figure 3.1 Brisbane Long Term Infrastructure Plan



3.1 Objectives and key results

Aligning infrastructure strategies with broader goals and aspirations of the city will help to ensure that infrastructure policies and programs deliver the greatest benefits to the community. Table 3.1 outlines the desired key results from the eight strategies that make up Brisbane's Long Term Infrastructure Plan.

These key results are aligned with the *Living in Brisbane 2026* vision, which aims to grow the economy, build the community and enhance the environment. The measures identified for each key result area are long term targets to 2031, and will be used to track how the city is progressing in achieving its infrastructure planning objectives.

Table 3.1 Objectives and measures

Transport

INFRASTRUCTURE	GROW THE ECONOMY	BUILD THE COMMUNITY	ENHANCE THE ENVIRONMENT

Objectives	• Road and public transport networks provide efficient and reliable travel options for:
	  • workers to access jobs
	  • residents and visitors to access services
	  • business and industry to operate effectively and productively.
	• Freight moves easily between industrial areas, major interstate routes and the seaport and airport.
	• Transport networks and travel demand are effectively managed by Intelligent Transport Systems.
		• The transport network delivers people to where they want to go.
		• Safe, accessible transport options meet the needs of users, specifically:
		  • satisfying resident demand for active transport
		  • supporting needs of the aged, disabled and non-English speaking persons.
		  • The public transport network supports major events and access to key tourism destinations.
			• Emissions from transportation are reduced with increased walking and cycling, and use of public transport.

Measures	• More than 90% of Brisbane residents can get to work within 45 minutes. • Public transport services are reliable and include support for visitors (e.g. tourists) and 24-hour services.	• Public transport accessibility – reasonable access every 15 minutes to key activity nodes, and every half an hour for rest of public transport network. • 90% of residents live within 15 minutes walk of a public transit stop.	• Increase the morning peak mode share for active and public transport to 41%. • Emissions from bus and vehicle fleets are carbon neutral through efficiency fuel switching and carbon offsets.



Table 3.1 Objectives and measures (continued)

Water

INFRASTRUCTURE	GROW THE ECONOMY	BUILD THE COMMUNITY	ENHANCE THE ENVIRONMENT
Objectives	• Potable and non-potable water supply is fit-for-purpose and meets the needs of a growing economy. • Non-potable water is utilised where appropriate. • Smart water management technologies are adopted in a majority of commercial and industrial applications. • Sustainable water design, including stormwater harvesting, is incorporated to all new infrastructure projects.	• Water supply meets anticipated residential demand. • The Brisbane community demonstrates watersmart behaviours. • There will be a targeted reduction in the number of houses affected by one-in-two-year flood events.	• The health of natural waterways and rivers is maintained and protected. • The community values water and responds through changes in water consumption and acceptance of new technologies. • Water networks are resilient to increased rainfall levels and flooding. • Enhance natural corridors and promote ecological values. • The ecosystem health of the Brisbane River, Moreton Bay and local waterways will be maintained and improved. • No wastewater will be discharged into the Brisbane River or Moreton Bay. • By 2012, all new development will meet or exceed regional standards for Water Sensitive Urban Design for pollutant load reduction and flow management.
Measures	• Most Brisbane businesses use water supplied from alternative sources.	• By 2012, the average annual use of the reticulated water supply by Brisbane's community will be within 10% of 200 litres per person per day during periods when no restrictions are in place. • 50% of properties use alternative water supplies. • The impacts of flooding and other adverse water cycle events are mitigated through built form and new infrastructure.	• Most waste water is reused. • Health of waterways is improved from 2006 levels. • No waste water is discharged into the Brisbane River and Moreton Bay. • Sustainable water use techniques such as Water Sensitive Urban Design and stormwater harvesting are considered for all new infrastructure projects.

Table 3.1 Objectives and measures (continued)

Energy

INFRASTRUCTURE	GROW THE ECONOMY	BUILD THE COMMUNITY	ENHANCE THE ENVIRONMENT
Objectives	• Energy infrastructure delivers a reliable, high quality supply of energy at a competitive cost. • Energy production, capacity, storage, management and distribution infrastructure is rapidly adapted to changing patterns of demand.	• Energy supply meets anticipated increase in demand for electricity. • Reliable energy is available to all residents including in peak periods. • Energy supply supports sustainable community lifestyle choices. • Energy prices are affordable for residents.	• Widespread use of energy sourced from renewable energy generation, such as solar, wind, tidal and hydro. • Increasingly, electricity used will be generated or redeployed through distributed energy resources and renewable energy resources. • Increased investment to deliver more sustainable energy technologies. • Brisbane businesses use energy efficiently and use low carbon emission sources.
Measures	• Minimise days of disruption to energy supply.	• Electricity supply (transmission and distribution) keeps pace with expected growth in peak demand of 4.1% per annum over the next 10 years (this target includes forecast energy savings from demand management initiatives). • Demand management initiatives will provide a 10% reduction in peak demand.	• Brisbane is a carbon-neutral city by 2026. • Renewable power sources meet residential and industry demand. • Energy efficiency initiatives are incorporated into all major infrastructure works.

Telecommunications

INFRASTRUCTURE	GROW THE ECONOMY	BUILD THE COMMUNITY	ENHANCE THE ENVIRONMENT
Objectives	• Telecommunications networks allow business and industry to operate more efficiently with increased connectivity between offices, and with remote locations. • Business and industry throughout Brisbane embrace high speed, bi-directional broadband networks, and use the technology to become more productive and innovative.	• Reliable telecommunication networks provide access to learning and information opportunities in the home and workplace. • Community services are delivered using telecommunications technology.	• High speed internet access supports the use of smart-grid technologies encouraging energy efficiency. • Telecommunications networks facilitate telecommuting including teleconferencing and telemeeting.
Measures	• 100% of businesses have easy access to business-grade bi-directional high speed broadband.	• 100% of households have easy access to high speed broadband.	• Most residents have access to a broadband service that supports high-quality telecommuting.



Table 3.1 Objectives and measures (continued)

Waste management

INFRASTRUCTURE	GROW THE ECONOMY	BUILD THE COMMUNITY	ENHANCE THE ENVIRONMENT
Objectives	• Appropriate waste collection and disposal services are provided to support business and industry. • Recovered resources are used as an input to production.	• Infrastructure delivers solutions that reflect community values around waste minimisation (e.g. recycling solutions). • Waste infrastructure and services contribute to a healthy population.	• Recovery, reuse and recycling of resources and materials are maximised. • The volume of waste being disposed to landfill is minimised.
Measures	• Recovered waste is commonly used as a resource by relevant industry (e.g. property development).	• Waste disposal options meet the community's needs.	• Recycling and recovery of domestic waste is undertaken to a high level.

Social infrastructure

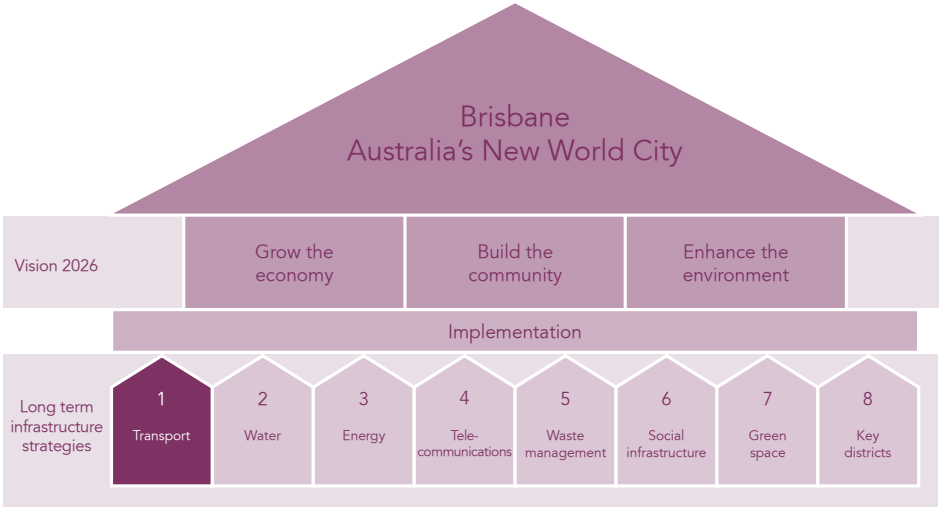
INFRASTRUCTURE	GROW THE ECONOMY	BUILD THE COMMUNITY	ENHANCE THE ENVIRONMENT
Objectives	• Business activity areas are supported with appropriate community facilities, and health and education facilities. • Major regional community infrastructure facilities contribute to the city economy by supporting world-class events and tourism.	• Community facilities are accessible, high quality and meet community needs. • Communities are supported by community facilities that provide for diverse needs of the community and meet demand by current and future population. • Social infrastructure supports healthy lifestyles, learning opportunities and community cohesion. • Health and education infrastructure is readily accessible and meets community needs.	• Social infrastructure seeks to maintain or improve environmental quality and amenity.
Measures	• Services meet the desired standard of service in commercial and industrial areas. • Employees consider that social infrastructure adequately supports their working lives. • Brisbane attracts world class conferences and events.	• Desired standards of service are achieved for community facilities, and health and education facilities. • Community facilities in centres and urban areas are within a 30 minute walk or ride, or 15 minutes by car or public transport of a district facility. • Community facilities in centres and urban areas are within 10 minutes walk/ride from public transport access, and 30 minutes by car/public transport.	• Social infrastructure is delivered with regard to minimising adverse impacts on the environment.

Table 3.1 Objectives and measures (continued)

Green space

INFRASTRUCTURE	GROW THE ECONOMY	BUILD THE COMMUNITY	ENHANCE THE ENVIRONMENT
Objectives	• Green space contributes to the attractiveness and functionality of the city, providing recreational, transport and relaxation functions. • Green space provides appropriate buffers between business/industry uses and residential areas. • Green spaces cater for the recreational needs of workers in high employment areas.	• A linked green space network provides for a range of active and passive sporting, cultural and recreational uses.	• The community recognises and contributes to sustaining the natural environment • The green space network contributes to environmental and ecological sustainability as well as supporting future residential, commercial and industrial development. • Natural environment values are protected through a network of open space that protects natural habitats.
Measures	• Major commercial and industrial precincts incorporate green space.	• Green space is within a short commute for most Brisbane residents (within 400 metres or 5 minutes for residents in the inner city).	• More than 2 million trees are planted across the city by 2012. • Accommodate new development in Brisbane while increasing mainland natural habitat to 40%.

3.2 Strategy 1 – Transport



Transport infrastructure provides vital services that support the efficient functioning of Brisbane's economy. Investment that improves the efficiency of the transport network is necessary given that by 2026, a five minute increase in travel times from 2007 levels could cost the South East Queensland economy 135,000 jobs. The efficient movement of freight into and around the city is essential for business productivity. Accordingly, the transport infrastructure challenge is not only important for commuters but to the overall prosperity of the city.

The provision of a safe and efficient road network, sufficient active and public transport services and dedicated freight service routes will help alleviate congestion and contribute to a healthy and active city. The transport system must address demand for transport services, both private, public and freight services (Figure 3.2).

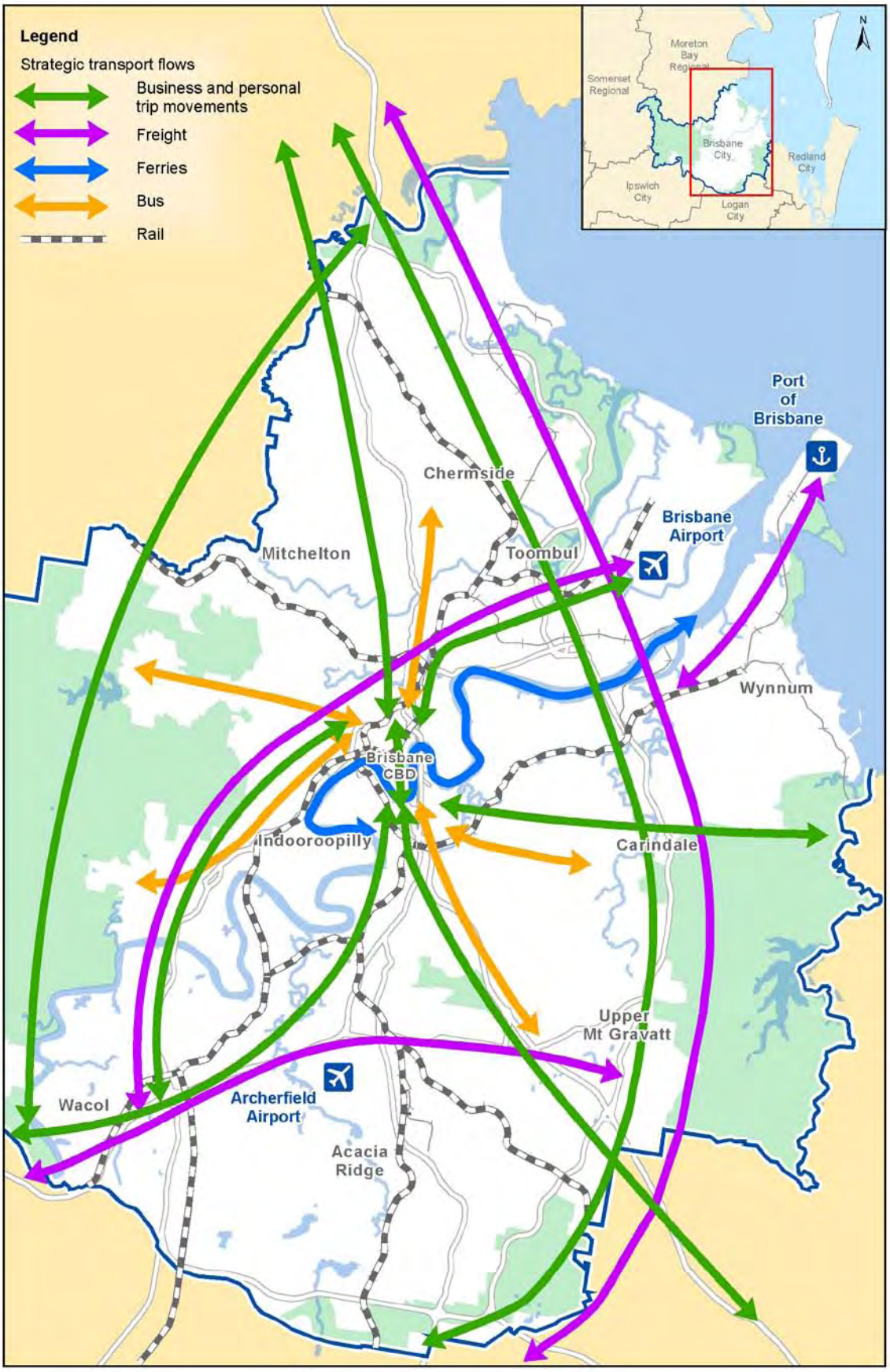
Initiatives that maximise interconnectivity between all modes of the transport network are essential to ensure investment in the network delivers the greatest possible benefits to commuters (e.g. providing interchanges at key cross-city and radial transport nodes, and interconnecting active and public transport options). The augmentation of the heavy rail network with a river crossing will help deliver this outcome. The TransApex projects will facilitate orbital traffic flows, reducing the need for commuters to travel through the city centre to their destination.

Brisbane's air and sea ports play an important economic function supporting the export sector. In the longer term, the construction of a new parallel runway and terminal at Brisbane Airport and the construction of new berths at Fisherman Islands are needed to support anticipated growth in throughput.

Together these initiatives will assist the major transport tasks in the city to be accomplished and will help to minimise congestion and travel times throughout the city, moving people to where they want to go efficiently and cost effectively. This strategy outlines specific actions to deliver an efficient transport system including network elements of:

- roads
- public transport
- active transport
- air, sea and rail freight infrastructure.

Figure 3.2 Strategic transport flows



3.2.1 Roads

Brisbane's major road network is a series of radial corridors focussed towards the CBD, with some orbital links providing for connections between major employment hubs and shopping locations.

Accordingly, further enhancement to the orbital road network will help reduce congestion in the CBD, redirecting unnecessary vehicle trips away from the city centre. Increasing the number of connections between the north and south of the river will help to alleviate congestion at key pinch points in inner city areas.

Council's TransApex projects particularly Legacy Way and the completed Clem7 tunnel, will improve orbital connectivity. The recent completion of the Gateway Bridge duplication will help improve connectivity of the north and south of the Brisbane River.

Improving the quality and connectivity of the road network will also contribute to improving safety, congestion and access. Council is committed to tackling congestion in Brisbane in this way, and will not implement a congestion charge.

Technology is expected to play an important role in enhancing the operation of the road network. The continued evolution of Intelligent Transport Systems will provide real-time information to commuters, improving travel choices and enhancing the capacity of transport managers to respond to emerging network issues. The Brisbane Metropolitan Transport Management Centre currently provides real-time traffic information to Council and the Queensland Government on the network.

With most freight transported by road and the volume of freight set to double by 2026, the effective development and management of the freight network is critical to support the efficiency of Brisbane's road network. Well established road freight routes with intermodal facilities at key interconnection points will help reduce pressure on the road network.

Table 3.2 Road network actions

	Action	Description	Responsible
T1.	Further develop the cross-city road network	Complete a cross-city road network around the inner city. This includes the completion of the balance of TransApex (Airport Link, Legacy Way and East-West Link).	Qld Govt/Council
T2.	Develop a strategic car parking policy	• Develop a car parking policy supporting 'park and ride' facilities and identify suitable locations for mass parking, particularly in suburban areas. • Construct additional 'park and ride' facilities at appropriate major interchanges, particularly to increase usage by residents located in the outer suburbs.	Qld Govt
T3.	Upgrade road network including completion of Road Action Program	Complete Council's Road Action Program delivering upgrades to Brisbane's most congested roads.	Council
T4.	Improve the use of the road network	• Reinforce the road hierarchy in planning for the transport network. • Grade-separate key railway open level crossings. • Develop intelligent transport systems that monitor arterial roads and provide real-time information on travel conditions via technologies such as internet, text messages and electronic signage. • Consider opportunities for utility service co-location (e.g. telecommunications) in delivering road upgrades and/or new road projects.	Qld Govt/Council
T5.	Increase the efficiency of freight movement	• Reinforce the use of core freight networks and separate major freight movement from residential areas. • Identify opportunities to enhance access and movement of freight to and within major economic growth areas such as ATC, SWIG and the Brisbane-Ipswich corridor. For example, the upgrade of the Port of Brisbane Motorway. • Identify opportunities to support the increased use of rail to transport freight for long haul, as appropriate. • Ensure that freight networks support supply chain efficiency.	Qld Govt/Council

3.2.2 Public transport

Public transport is critical to maintain the liveability of the city. Brisbane's public transport system will evolve to provide:

- reliable, frequent and accessible services
- access to major centres, services and facilities that meet the needs of commuters
- well-connected, multimodal networks with seamless integration between different modes.

Integral to achieving the outcomes sought for the public transport network, is ensuring ease of access and use of public transport facilities, including for people with a disability. Locating bus/rail interchanges at strategic interconnection points, and providing 'park and ride' facilities where appropriate at key bus and rail stations, will facilitate this outcome. Twenty-four-hour services will also be delivered in areas where demand for such services is high (e.g. for shift workers and international visitors). Dedicated busways and high frequency services (e.g. BUZ services), particularly during peak times, will improve the reliability of, and demand for public transport services.



Frequent and reliable services between areas of high population and employment growth will contribute to improved employment outcomes and boost economic activity. The CityGlider bus rapid transit service provides a fast and prioritised service between key commercial areas of the greater CBD. The Cross River Rail and subway projects outlined in the Queensland Government's *Connecting SEQ 2031* are intended to provide a longer term solution to rapid transit and expand capacity of the rail network with a second inner city river rail crossing. However, with the very high expected cost of Cross River Rail questions remain about the affordability and viability of the project. Council's proposed Suburbs 2 City Buslink aims to address bus capacity issues into the CBD. The 3.6km Suburbs 2 City Buslink will go from South Brisbane to Fortitude Valley through the CBD. It will provide a bus-only bridge across the Brisbane River, separating buses from other traffic, and will link up with the existing underground bus network.

Construction of the new Darra to Springfield rail line and subsequent extension to Ipswich will deliver improved public transport services to Richlands and Springfield. Australia TradeCoast should also be considered as a priority for public transport services (refer ATC strategy Section 3.9.2).

Table 3.3 Public transport actions

	Action	Description	Responsible
T6.	Introduce a rapid transit service in the CBD	Implement high frequency services linking major commercial precincts of the greater CBD. The CityGlider service is the first step in supporting this strategy, with longer term solutions including subway and heavy rail solutions outlined in *Connecting SEQ 2031*.	Qld Govt/Council
T7.	Increase the capacity of the bus network	Construct a segregated busway network as well as investigating opportunities for signal priority and quicker loading times. Increase inner city bus capacity through further river crossings for buses and providing inner city layovers. Future locations for bus depots also need to be identified.	Qld Govt/Council
T8.	Increase the capacity of the rail network	• Implement the proposed Cross River Rail project, as outlined in *Connecting SEQ 2031*, to provide sufficient capacity to cater for anticipated demand for rail services. • Investigate opportunities to increase capacity of passenger and freight rail infrastructure (e.g. using tailored rolling stock and network separation for different levels of service).	Qld Govt
T9.	Enhance multimodal transport systems	• Integrate pedestrian and cyclist networks (including bike facilities) into public transport corridors and modal interchanges. • Develop further intermodal passenger facilities to increase overall system capacity.	Qld Govt/Council
T10.	Develop additional services to support future major employment and tourism centres	• Assess and implement solutions to deliver premium public transport options to support major future employment centres (e.g. ATC). • Investigate the need for a major ferry terminal linking Brisbane CBD to Moreton Bay and Islands. • Provide 24-hour public transport services to cater for increasing demand in areas such as Brisbane Airport and Australia TradeCoast.	Qld Govt/Council

3.2.3 Active transport

Brisbane's growing active transport network provides a healthy and efficient transport service. Walking and cycling infrastructure provides an attractive, convenient and safe travel option, supported by readily accessible information, and mid-journey and end-of-trip facilities.

Active transport facilities will connect to major employment precincts, shopping areas, schools, universities, major recreation and cultural destinations. Providing good connections and facilities at major public transport nodes will also encourage active transport trips, particularly over short to medium distances.

Once complete, Brisbane's ever-increasing network of bikeways will complement 4000km of footpath in the pedestrian network.

Promoting active transport through education, and creating walkable and cycle-friendly neighbourhoods around public transport nodes, will encourage use of the network. In key employment nodes where densities support such initiatives, prioritising pedestrian traffic and improving access to key public transport nodes will improve the travel experience and journey-to-work times.

Table 3.4 Active transport actions

	Action	Description	Responsible
T11.	Upgrade bus stop and ferry terminal infrastructure to be fully compliant with the Disability Standards for Accessible Public Transport (DSAPT)	Improve accessibility of public transport infrastructure, particularly for those with disabilities or restricted mobility, by ensuring bus stops and ferry terminals meet DSAPT requirements.	Council
T12.	Promote active transport options	Promote the environmental, health and economic benefits of walking and cycling to transport and recreation (e.g. CityCycle bike hire scheme).	Qld Govt/Council
T13.	Prioritise pedestrian traffic in high density, key employment nodes, particularly the CBD	Investigate opportunities to enhance pedestrian connectivity in the CBD.	Qld Govt/Council
T14.	Integrated transport programs and projects	• Assess cycling and walking infrastructure options in the construction of transport infrastructure projects (e.g. opportunities for end of trip facilities). • Identify corridors that can deliver active transport, open space and stormwater/overland flow mitigation solutions. • Identify opportunities for on-road bike lanes and/or shared zones in the delivery of road upgrades or new road projects.	Qld Govt/Council
T15.	Improved integration with public transport	• Identify improved opportunities for integration between public transport and active transport solutions across the network.	Qld Govt/Council
T16.	Provide mid-journey and end-of-trip facilities	• Provide dedicated bicycle and pedestrian storage and change facilities at major public transport nodes (including trains and busway stations) and in commercial buildings.	Qld Govt/ Council/private sector



Table 3.4 Active transport actions (continued)

	Action	Description	Responsible
T17.	Enhance pedestrian and cyclist safety and personal security	• Prioritise user safety and security through the implementation of Crime Prevention Through Environmental Design (CPTED) principles. • Improve pedestrian and cyclist safety at traffic intersections.	Qld Govt/Council
T18.	Expand the city's on and off-road bikeway network	• Develop an integrated commuter network. • Develop local area networks to schools, shops and local community facilities. • Develop bikeway lighting and wayfinding signage.	Qld Govt/Council

3.2.4 Air, sea and rail freight

Air, sea and rail freight infrastructure will facilitate the development of Brisbane as Australia's premier east coast trade hub and will support the movement of international and interstate visitors to the region.

Major air, sea and rail freight infrastructure includes QR National's rail freight network, Brisbane Airport, Archerfield Airport, Port of Brisbane and the Portside Wharf Cruise Ship Terminal.

Rail

The capacity of Brisbane's freight rail network will be increased with the construction of:

- a new rail crossing of the Brisbane River as part of the proposed Cross River Rail Project
- an upgrade to the railway connecting the Port of Brisbane with the Acacia Ridge intermodal terminal as outlined in the Queensland Government's *Connecting SEQ 2031*
- new rail/truck intermodal facilities, complementing the capacity of the Acacia Ridge intermodal terminal in the longer term. The Queensland Government in *Connecting SEQ 2031,* notes that a number of sites have been proposed for this facility including the Bromelton State Development Area south of Brisbane and a new site north of the Brisbane River.

A supply chain approach to planning freight infrastructure will minimise the potential for inefficiencies and bottlenecks in parts of the distribution network. For instance, road networks providing access to the Acacia Ridge intermodal facility will be designed to complement anticipated growth and the continued efficient operation of the facility.

Airport

The continued efficient operation of Brisbane's major passenger airport is essential to support growth in tourism and business services.

To support an anticipated increase in demand for services, Brisbane Airport Corporation plans to construct a new runway, parallel to the existing. The runway is expected to be operational by 2020.

A no-curfew status for the airport will continue to provide the necessary flexibility to deliver services that meet consumer needs and contribute to economic growth.

Premium public transport and private transport services to the airport will support an anticipated increase in passengers and goods.

The functioning of Archerfield Airport and the surrounding area also needs to be enhanced to maximise the value of the facility to Brisbane and surrounding regions.

Seaport

The Port of Brisbane Corporation will continue to reclaim land and construct additional berths to meet anticipated growth in throughput.

In the medium to long term, enhancing cruise ship facilities at the port, with appropriate public and private transport connections to the CBD, will contribute to supporting Brisbane's expanding tourism sector.

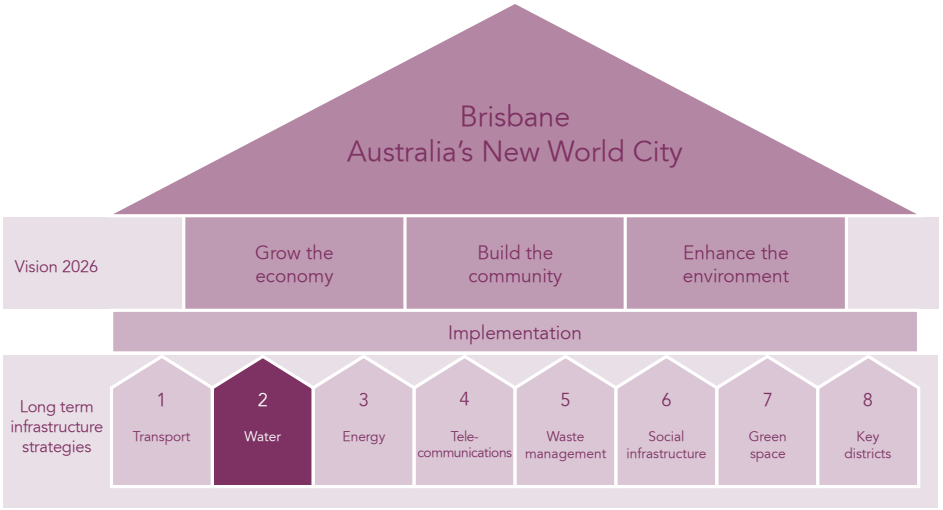
Suitable access to the Port of Brisbane at Fisherman Islands by road and rail is critical to the continued efficient operation of the facility. An expansion of the Port of Brisbane Motorway will be required to accommodate an expected increase in vehicle traffic.

Table 3.5 Air, sea and rail freight actions

	Action	Description	Responsible
T19.	Support the long term use of the Acacia Ridge Intermodal Terminal	• Develop and promote the Acacia Ridge Intermodal Terminal as the gateway for regional and national rail freight. • Identify and develop new freight intermodal infrastructure within or outside of Brisbane, to support the long-term function of the Acacia Ridge Intermodal Terminal. • Investigate the continued efficient operation of the facility with anticipated growth in freight volumes.	Qld Govt
T20.	Enhance the functionality of the Port of Brisbane	Increase rail freight capacity to the Port of Brisbane in the long term, and complete the upgrade to the Port of Brisbane Motorway.	Port of Brisbane Corporation/ Qld Govt
T21.	Increase capacity at the Port of Brisbane	Expand capacity with the construction of additional terminals to accommodate expected increase in throughput, particularly containerised freight.	Port of Brisbane Corporation/Qld Govt
T22.	Enhance cruise ship terminal facilities and their connectivity to the public transport network	• Investigate options to provide direct public transport connections between the Hamilton cruise ship terminal and the CBD. • Investigate options for an enhanced cruise ship terminal at Fisherman Islands.	Qld Govt/Council
T23.	Increase connectivity to Brisbane Airport	Progressively upgrade the public transport networks to the airport and surrounding commercial precincts to meet anticipated future demand for services.	Qld Govt/private sector
T24.	Increase capacity of Brisbane Airport	Increase capacity to accommodate an expected increase in passenger numbers as necessary.	Brisbane Airport Corporation
T25.	Investigate long term role of Archerfield Airport and efficiency of logistics networks in the surrounding area.	Enhance the functioning of Archerfield Airport and surrounding area.	Qld Govt



3.3 Strategy 2 – Water



Future investment in water infrastructure will help to secure reliable, fit-for-purpose water for residents and businesses. In Brisbane, water distribution and retail functions are delivered by Queensland Urban Utilities, while the South East Queensland water grid is managed and maintained by Queensland Government-owned bodies. The Queensland Government advises that its priorities over the next 20 years will include developing new bulk water sources, while all levels of government will need to play a role in encouraging the efficient use of water, and recycling water.

To service SEQ's growing population, new bulk water sources will be required as early as 2021. Diversifying water sources will improve water security and reduce the impact of drought on water supply. Current plans for the Queensland Government include new desalination facilities at Lytton and Marcoola.

The health of SEQ waterways depends on the management of water resources across catchments. Measures to reduce pollution must be implemented to protect the long term economic, social and environmental uses of water.

The management of overland water flows and stormwater is critical to protect properties and government assets.

Given the potential for long term changes in weather patterns, water management practices will require ongoing review.

3.3.1 Water supply

Forecast population growth coupled with community expectations for a high quality and reliable source of water will necessitate the construction of additional bulk and trunk water supply infrastructure over the next 20 years.

The Queensland Government expects that desalination facilities will underpin future water security. Priority sites were announced at Lytton and Marcoola and reserve sites at Tugun and Bribie Island and detailed investigations into desalination and other alternative sources are being undertaken. This detailed planning will inform a final decision regarding the next major supply when regionally significant supply is needed.

Recycling water and providing fit-for-purpose water will help meet overall demand for potable water. Opportunities to use recycled water should be explored and supported by governments across the city, particularly for industrial applications.

Brisbane's water distribution network will require additional investment to replace and renew ageing sections of the network, and cater for anticipated demand and increase in residential densities. Adopting pressure reduction and leakage management techniques will help extend the life of some sections of the network and reduce water losses.

Demand management initiatives and education will continue to play a key role to inform users about the relative scarcity of water.

Table 3.6 Water supply actions

	Action	Description	Responsible
W1.	Upgrade and augment the water distribution network	Continue to enhance and upgrade where necessary the water distribution system to promote reliable and quality water services and to cater for increased densities particularly in the inner city.	Queensland Urban Utilities
W2.	Investigate new bulk water sources in addition to the proposed desalination projects already identified	Investigate new diverse water sources to cater for future demand. Ensure that potable water supply is increasingly diversified.	Qld Govt
W3.	Encourage the use of recycled water	Encourage and promote the use of and development of recycled water networks, including for industrial use.	Qld Govt/ Queensland Urban Utilities

3.3.2 Waste water

Brisbane's waste water network protects natural waterways and the marine environment, and minimises disease threats to human health.

The waste water network comprises seven catchments served by nine water reclamation plants. These catchments are generally defined by the natural drainage basins to take advantage of gravitational flow, minimising energy costs associated with transporting waste water.

Brisbane's waste water services comprise of the reticulated sewer network, treatment facilities and recycling and/or disposal systems. These services collect and treat domestic and industrial liquid wastes.

Four of the city's waste water treatment plants are currently connected to the Western Recycled Water Pipeline which has the capacity to recycle up to 220 megalitres per day.

To accommodate forecast population growth and an anticipated increase in building density in the inner city, new waste water infrastructure and the refurbishment of some existing assets (e.g. relining and replacing pipes) will be required.

Table 3.7 Waste water actions

	Action	Description	Responsible
W4.	Improve water treatment processes and recycling	Enhance water treatment processes and recycling of waste water, including improved water testing and monitoring regimes for purified recycled water.	Queensland Urban Utilities/Qld Govt
W5.	Provide waste water infrastructure to accommodate future demand	Construct and refurbish infrastructure to accommodate anticipated population growth and increase in density, with a focus on maintaining the functionality and safety of the network.	Queensland Urban Utilities/Qld Govt/ Council

3.3.3 Stormwater

Brisbane is a city built on a flood plain with a river that has a history of flooding. The stormwater network is critical in managing runoff from storm events, major flood events and avoiding pollution in our natural waterways and marine waters.

Brisbane's stormwater system includes a mix of built (pipes, open drains, flow control facilities, stormwater quality improvement devices, etc.) and natural stormwater pathways (waterway corridors, overland flow paths, creeks, rivers and Moreton Bay).

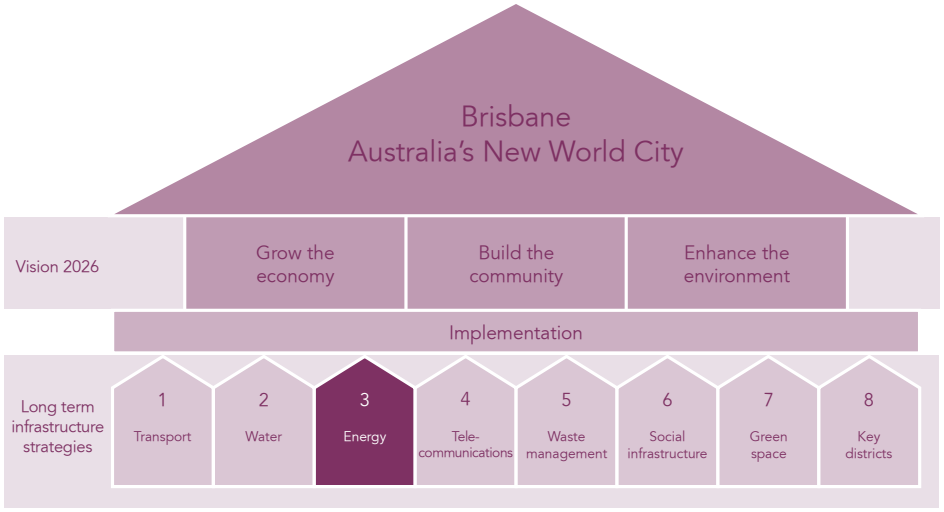
Flood management strategies will respond to more frequent storm events, and improve catchment management to help the community become "flood wise" and better cope with extreme weather events (e.g. including with the provision of real time information). Strategic infrastructure assets in low lying areas, which may be adversely impacted by extreme weather conditions and sea level rises, should be identified and protected as necessary.

The densification of urban areas will require retrofitting of part of the stormwater drainage network to manage an expected increase in water runoff from impervious areas. Alternative water sources such as stormwater harvesting will provide a water source for industrial and residential users, minimising the impact urban land uses have on the water cycle, protecting waterways from further degradation, and maintaining a good quality water supply.

Table 3.8 Stormwater actions

	Action	Description	Responsible
W6.	Enhance flood management	• Develop enhanced flood management strategies, including engineering and land management practices, to improve safety during flood events and reduce impacts of flooding on people and property. • Ensuring stormwater drainage systems operate at optimal capacity and reduce the amount of stormwater pollutants entering waterways • Identify ways to capture water runoff reducing the impact of flooding on highly impacted areas.	Queensland Urban Utilities/Qld Govt/ Council
W7.	Expand stormwater retention and harvesting capabilities	• Identify and promote stormwater retention and harvesting projects in new and existing developments and infrastructure projects, particularly for large outdoor uses and other uses that do not require potable water. • Invest in the research and development of stormwater harvesting technologies • Maximise surface water infiltration and minimise stormwater runoff and pollutants from urban areas. • Minimise changes to the natural hydrological or environmental flow regimes to mimic natural water cycles.	Council
W8.	Examine the susceptibility to flood and sea level rise of strategic infrastructure assets	Conduct an assessment of the possible impact of a long term increase in storm frequency and sea level rises on the flood immunity of areas where key infrastructure is or is likely to be located in the long term across the city (e.g. ATC).	Council/Qld Govt/ Australian Govt
W9.	Promote water sensitive urban design	Promote and support water sensitive urban design that minimises negative urban environment impacts on the water cycle in all built forms including infrastructure.	Council/Qld Govt

3.4 Strategy 3 – Energy



Securing affordable, reliable and sustainable energy supply is critical to maintain the competitiveness of the city.

Although the use of low-carbon emitting energy sources is expected to increase, coal-fired generated energy will remain a key source of energy for Brisbane for the foreseeable future. Investment in new energy technologies is required to identify and develop energy sources that deliver an affordable and efficient alternative to coal-fired generated energy.

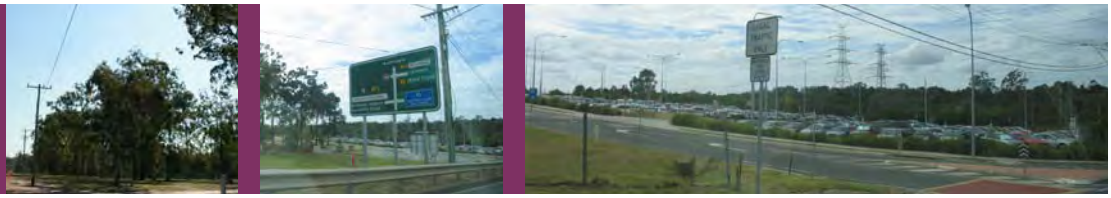
An increase in the use of domestic air conditioners is expected, increasing demand for electricity particularly during peak periods. New and emerging energy sources will cater for some of this increase in demand.

Priority must be afforded to investment in research and development and the implementation of no-or low-carbon emitting energy sources as soon as possible to achieve the target of a carbon neutral city by 2026.

Design of buildings and standards of equipment will lower the overall energy consumption of the city. Better management of peak demand will allow more efficient use of electricity assets lowering per-unit energy costs.

As with many infrastructure projects, identifying new easements for network augmentations is critical for the energy sector. Opportunities for the co-location of different providers and different types of infrastructure need to be identified.

In Brisbane, Powerlink and ENERGEX manage the electricity transmission and distribution networks respectively, while the APA Group and Envestra supply natural gas to residential areas and large industrial customers.



3.4.1 Electricity

Growth in residential, commercial and industrial demand for energy is expected to result in an increase in demand for electricity over the next 20 years, particularly during peak periods. The need to cater for electricity demand in peak periods dictates the required capacity of the network.

Given current electricity demand forecasts, the existing 275kV transmission network that supplies Brisbane and the rest of SEQ is anticipated to reach maximum capacity by 2015.

An expansion to the existing transmission network will be required to accommodate forecast growth and an expected increase in peak demand. Powerlink plans to build a 500kV transmission line to service Brisbane by 2014. In addition, future substation augmentation projects, including new substations and upgrades at existing substations and lines, will increase transmission capacity into Brisbane.

A program of renewal and investment in ageing electricity assets will also enhance network reliability and security.

Education will continue to play a key role in managing demand for electricity. Smart grid technology will improve the management of peak loads, deferring costly investment in the network required to accommodate demand during these periods.

Table 3.9 Electricity transmission and distribution actions

	Action	Description	Responsible
E1.	Construct a new 500kV transmission line	Construct a 500kV line by 2014.	Powerlink
E2.	Augment the electricity network to deliver reliable services to high employment growth and industrial areas	Augment the network to cater for anticipated demand and maintain service reliability, particularly to key employment growth and industrial areas and during peak periods.	Powerlink/ ENERGEX
E3.	Asset replacement programs/network replacements	Maintain and/or replace the existing transmission and distribution assets to meet forecasted demand.	Powerlink/ ENERGEX
E4.	Invest in smart meter technology	Invest in smart meter technology to enhance the management of peak load demand.	ENERGEX/ Qld Govt

3.4.2 Natural gas

Demand for natural gas is expected to continue to increase over the next 20 years as a fuel source that is affordable and less carbon polluting (compared to coal).

The APA Group owns and operates the Roma to Brisbane Pipeline (RBP) that transports natural gas from gas fields near Roma to the markets of Brisbane and the regional centres along the pipeline route. The RBP connects with the APA Gas Networks (Brisbane south side) and the Envestra gas network (Brisbane north side), which APA Group operates on behalf of Envestra. Currently, commercial and industrial uses (other than power generation) account for around 50% of total demand on the RBP.

To cater for the expected increase in demand for gas particularly from industrial customers, APA intends to augment the RBP by upgrading pipeline compression, increasing the operating pressure of the mainline and constructing a second metropolitan pipeline that runs in parallel to the existing infrastructure through southern Brisbane.

APA Group is continuing a program for renewal of the ageing gas distribution network on Brisbane's south side, primarily within a 10km radius of the CBD. Priority areas for the next five years include Norman Park, Coorparoo, Wynnum, Fairfield, Morningside, Bulimba and Balmoral. The plan is to complete this renewal program over 15 to 25 years.

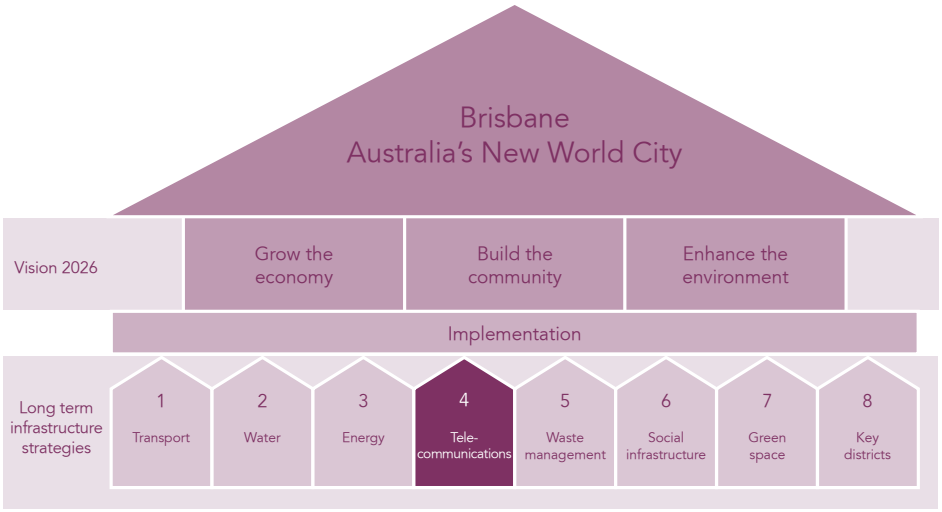
Envestra is continuing a program for renewal of the gas distribution network on the north side of Brisbane located in suburbs including Hamilton, Clayfield, Kelvin Grove, Newmarket, Wilston, Grange, Gordon Park, Wavell Heights, Wooloowin and Bardon. This program is planned to be completed in the next 10 years.

Table 3.10 Gas transmission and distribution actions

	Action	Description	Responsible
E5.	Renew distribution networks	• APA Group is implementing a 15-to 25-year program to renew distribution networks on the south side of Brisbane. • Envestra is continuing with distribution network renewal on Brisbane's north side which is planned to be completed in the next 10 years.	APA Group Envestra
E6.	Roma-Brisbane Pipeline (RBP) expansion	Expansion of the RBP underway that includes additional mainline compression and metropolitan pipeline construction for completion in late 2012.	APA Group
E7.	Promote the use of gas	Identify opportunities to support the increased use of gas where appropriate, as a lower carbon emitting fuel, particularly to cater for demand in peak periods.	Australian Govt/ Qld Govt



3.5 Strategy 4 – Telecommunications



Telecommunications services and information technology are critical to delivering services that will drive productivity and enhance Brisbane's position as Australia's New World City. Applications delivered over telecommunications networks will assist business operation, improve the management of infrastructure services and contribute to creating smart, connected and engaged communities.

It is important that, where appropriate, Brisbane's telecommunications network utilises fibre optic technologies that are capable of providing the high bandwidth that is required by modern applications and that the network provides "open access" in commercial and technological terms.

The availability of a high speed fibre-to-the-premises (FTTP) network, particularly to large commercial precincts, is essential for the international competitiveness of Brisbane businesses. FTTP technology can combine telephone (VOIP), data transfer (including internet) and vision into one medium.

Businesses, workers and residents will need such infrastructure to telecommute and to support high bandwidth applications and services delivered across the network. This technology also has important implications for delivery of other infrastructure classes such as smart metering for energy. This integrated smart technology approach will help deliver inclusive communities and will lessen demand on a range of infrastructure services (e.g. transport, water and energy) in the longer term.

In April 2009, the Australian Government announced it would roll out a National Broadband Network (NBN). The program will be rolled out progressively across Australia in partnership with the private sector.

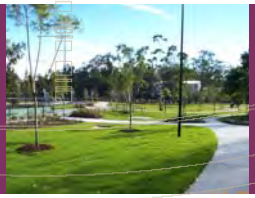
As part of the implementation of a NBN, the Australian Government requires the installation of conduit in greenfield estates and in some infill development in readiness for a fibre rollout. New developments, homes and office buildings will be designed to facilitate connection to FTTP networks. In certain locations, such as major roads and bus routes, additional conduit is required for future public community services and utility services including interactive bus stops, public safety CCTV and traffic measurements.

Infrastructure projects should be designed to ensure that in the future, enhanced methods for managing infrastructure can be employed, with the evolution of new technologies (e.g. intelligent transport systems that manage traffic flows and methods for monitoring and managing infrastructure condition).

Major infrastructure projects such as bridges, road widenings and tunnels, will be constructed with conduit to enable the deployment of fibre optic networks to facilitate these new technologies.

Fibre optic networks will be complemented by wireless technologies, providing users with mobile solutions. Mobile communication networks are essential for businesses and the community. This infrastructure is important for mobile voice communication, and increasingly for wireless broadband for smart phones, mobile devices and home computers. Council has a key planning and development approval role in ensuring mobile networks are developed to meet community expectations.

Wi-Fi hot spots in public spaces around Brisbane (e.g. parks) will provide visitors with information about the city.

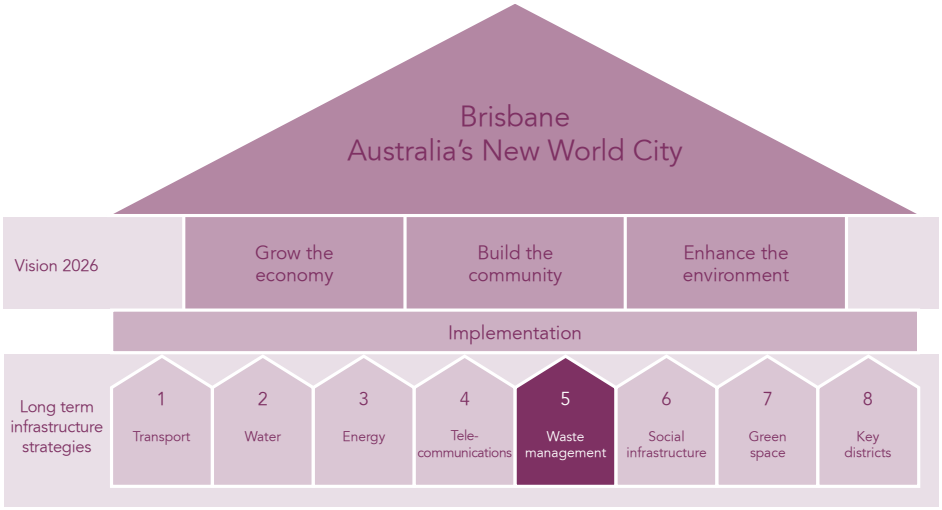




3.5 Strategy 4 – Telecommunications (continued)

Table 3.11 Telecommunications actions

	Action	Description	Responsible
TC1.	Support the rollout of high speed broadband	Support the rollout of a high speed broadband by providing a supportive legislative and administrative framework.	All government
TC2.	Install fibre-ready conduit in new developments	Install a future-proof system of conduits in new developments, so all premises can be readily connected to optic fibre. Additional conduit in certain locations, such as major roads and bus routes, will be required.	Private sector/ all government
TC3.	Install FTTP in new developments	Install fibre optic cable in new developments, as appropriate.	Private sector/all government
TC4.	Install telecommunications conduit in all suitable works projects	Install conduit in all suitable works projects to accommodate future conduit requirements for the rollout of FTTP networks.	All government
TC5.	Adopt technologies that enhance the management and use of infrastructure	Investigate emerging information technology applications (e.g. intelligent transport systems) to monitor the condition of infrastructure and optimise use.	All government
TC6.	Promote building designs that support fibre networks	Ensure building design codes facilitate connection to FTTP networks.	Qld Govt
TC7.	Promote investment in open-access fibre optic networks	Support the development of commercially and technologically open networks, particularly in areas with high commercial demand.	All government/ private sector

3.6 Strategy 5 – Waste management



Waste management maintains good public health and environmental outcomes. The focus of future waste management is based on resource recovery and beneficial reuse of resources.

Current waste management infrastructure includes the Brisbane landfill, four waste transfer stations and three material recycling facilities.

With a target to recycle or reuse 90% of waste by 2026, the following measures are required:

- reduce the volume of waste being disposed to landfill
- maximise the recovery, reuse and recycling of resources from Brisbane's waste streams
- educate residents on how to avoid and minimise waste and prevent litter
- provide world class waste management infrastructure and services.

Brisbane will progressively move away from waste disposal to waste minimisation, beneficial reuse and resource recovery. To achieve this, alternate waste technologies and resource recovery facilities will be needed with consideration to:

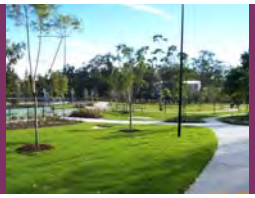
- the location of these facilities near access to major transport routes
- facility management (private and public operators)
- supporting high population growth areas
- the type of resources to be collected (e.g. organic waste, construction and demolition materials, electronics).

Brisbane will need to continue operation of a landfill, and the identification of a replacement for the existing landfill site must be a priority in the medium term. An upgrade of existing transfer stations is needed.

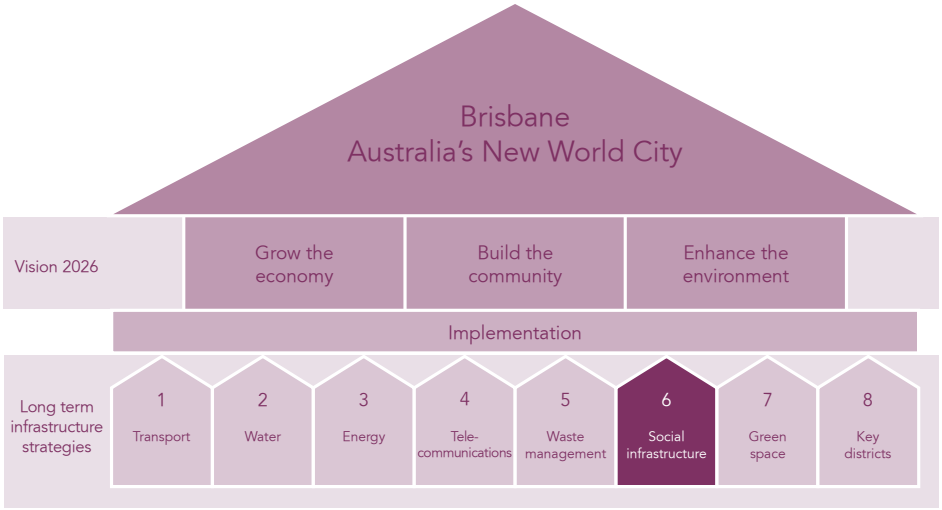
With population growth and limited land availability, it is evident that a regional approach to waste management is necessary to meet demand from Brisbane and surrounding areas. Council is working with other local governments in South East Queensland to identify opportunities for shared waste facilities. New sites should be protected with appropriate buffer zones from residential areas.

Table 3.12 Waste management actions

	Action	Description	Responsible
WM1.	Identify and secure locations for regional waste management facilities	Identify new locations for waste management facilities to service SEQ in conjunction with other local councils.	Council
WM2.	Develop and implement alternative waste technologies	Evaluate appropriate alternative waste management technologies and identify a preferred long term integrated management approach, with an emphasis on resource recovery and reuse.	Council


3.7 Strategy 6 – Social infrastructure



Social infrastructure provides essential services to maintain the liveability of the city, and support the health and cohesion of Brisbane's communities.

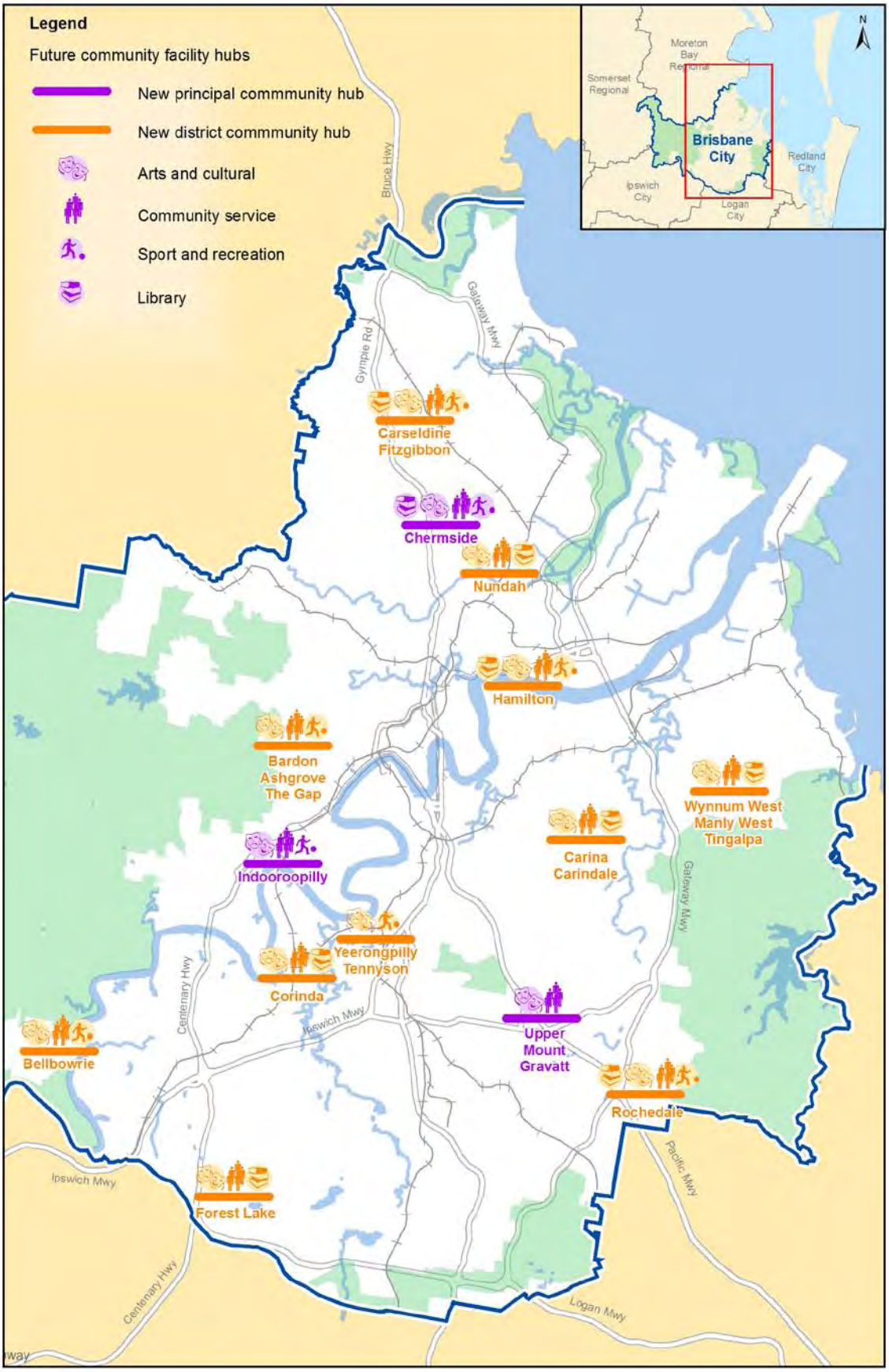
Council is largely responsible for providing publicly-funded community infrastructure, including community service facilities (community centres, halls and libraries), sport and recreation hubs and art and cultural hubs. These facilities assist in creating community cohesion and attract workers to key areas. The Queensland Government provides major health and education facilities, major cultural venues including the Gallery of Modern Art, Queensland Museum, State Library, and major sporting facilities including Suncorp Stadium.

Future community facility planning needs to meet expectations and demand for services, with a focus on areas with rapidly increasingly populations, or where there may be an existing community need for a new or upgraded facility.

Council defines areas where significant new facilities will be located as 'community hubs' (refer Figure 3.3). Co-locating community infrastructure will realise synergies in delivery of community facilities, delivering enhanced outcomes for local areas. Community hubs can offer a range of facilities across the community service, arts, cultural, recreation and sports sectors.

Collaboration between different levels of government, community groups and the private sector ensures the effective and cost efficient delivery of community services. Development of facilities for multiple uses is to be encouraged (for example, school halls to provide a venue for community meetings).

Figure 3.3 Strategic community hubs





3.7.1 Health and education

Health

Health infrastructure should support service delivery that contributes to improved health outcomes and meets the needs of the community. Appropriate access to health facilities will be important as the population ages. Population and employment growth areas must be a focus for new, high-quality health provision.

Major additional hospital facilities are planned in SEQ, including the new Queensland Children's Hospital to be located in South Brisbane.

Education

Population growth and the demand for new skills in the workforce will drive demand for new education facilities.

The Queensland Government is planning new kindergartens and 19 new primary and secondary schools by 2031 for Brisbane, Moreton, Redland and Logan. Only two of these schools will be in Brisbane, due to a forecast low growth rate in public school enrolments. Vocational education facilities close to employment growth centres (such as the SkillsTech Australia campus at Acacia Ridge) are also important to develop and maintain a skilled workforce and to further improve the competitiveness of Brisbane's firms.

Table 3.13 Health and education actions

	Action	Description	Responsible
Health			
S1.	Provide adequate infrastructure to support population growth	Develop health precincts and plan new sites to accommodate population growth, health needs and opportunities for service integration.	Qld Govt
S2.	Support appropriate access to and from key health precincts	Support affordable and suitable access solutions to health precincts and major facilities.	Qld Govt/Council
S3.	Refurbish and maintain health infrastructure	Refurbish and maintain health infrastructure to ensure these assets meet or exceed current service standards.	Qld Govt
Education			
S4.	Locate education facilities in growth areas	Locate new schools in major population and employment growth areas of Brisbane.	Qld Govt
S5.	Refurbish and maintain education infrastructure	Refurbish and maintain education infrastructure to ensure these assets meet or exceed current standards.	Qld Govt

3.7.2 Community service infrastructure (community centres, community halls and libraries)

Demand for community services will continue to rise as the population grows and expectations increase.

Community facilities often form the nucleus of a wider district or regional community centre. The location and design of community facilities needs to provide ease of access to public and active transport, and proximity to other services and facilities.

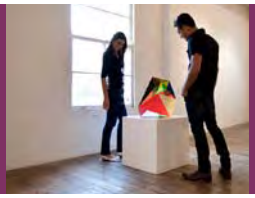
Council currently provides 33 fixed location libraries, 24 community halls, and 78 community service centres, of varying size across the city. At community centres, a range of services are provided by Council, the Queensland Government and private providers (including churches, schools and not-for-profit groups).

The priority is to further develop services in high population growth areas, or where there is an existing unmet need or deficiency in service level.

New innovative low-cost approaches and spaces for community services will be explored to minimise ongoing costs associated with maintaining these assets.

Table 3.14 Community centres, hall and library actions

	Action	Description	Responsible
S6.	Enhance the use of existing community facilities	Identify and act on opportunities to improve the use of existing community facilities, including retrofitting to accommodate new use, or use for multiple purposes.	Council/Qld Govt
S7.	Invest in existing and new facilities	Expand existing facilities and invest in new facilities (of appropriate location, size, design and management) to cater for community needs.	Council/Qld Govt
S8.	Develop partnerships for facility co-delivery	Develop partnerships with local schools, tertiary institutions and business for co-delivery of facilities.	Council/Qld Govt/ private sector


3.7.3 Art and cultural facilities

Major cultural facilities such as the Queensland Performing Arts Centre, Queensland Art Gallery/ Museum, Gallery of Modern Art, Brisbane Entertainment Centre and Brisbane Convention and Exhibition Centre service national, state and regional markets and contribute significantly to supporting Brisbane's growing convention, exhibition and events industry. Such facilities need to be located in central areas with good access to public transport and accommodation. They also benefit from co-location with similar and related activities to form a defined cultural precinct.

The protection and growth of major cultural precincts such as the Cultural Centre is important to Brisbane's future economic and community development. Establishing appropriate suburban opportunities for local arts and cultural activities is important to ensure ease and equity of access to facilities, inspiring creativity and cultural pursuits in areas outside of the inner city. Facilities will also be provided to service the ethnic cultural interests of local areas.

Table 3.15 Cultural and art facility actions

	Action	Description	Responsible
S9.	Provide facilities to support a diverse community	Provide adequate cultural and arts facilities to meet the profile of communities throughout Brisbane, including areas with a high proportion of young people, seniors, people with disabilities and people with specific ethnic cultural needs.	Council/Qld Govt
S10.	Develop partnerships for facility co-delivery	Develop partnerships with local schools, tertiary institutions and business for co-delivery of facilities.	Council/Qld Govt/ private sector

3.7.4 Sport and recreation facilities

Brisbane has a long history of active participation in sport, both at the community and elite level.

Sporting infrastructure, outdoor and indoor facilities contribute to increasing participation rates in physical activity which delivers health benefits to the community. Increasing physical activity is important to combat obesity and diabetes, and to facilitate mobility in an ageing population.

The right mix of indoor and outdoor sporting facilities is critical to deliver this outcome. Council is primarily involved in providing sporting facilities for local clubs, while the Queensland Government is responsible for significant stadiums and other major sporting facilities.

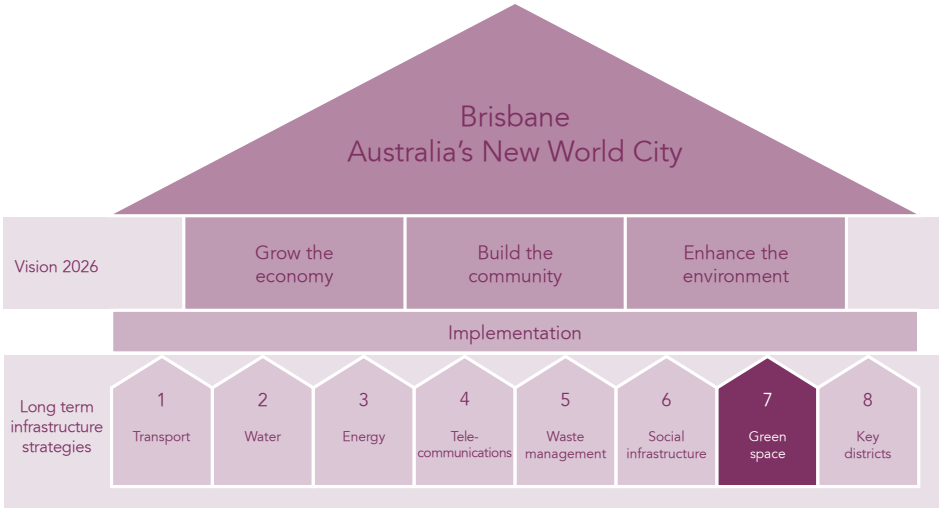
Where possible, sporting facilities should be designed to accommodate multiple uses and users, maximising the use of these facilities. For instance, community benefits can be enhanced by harnessing general purpose community facilities (e.g. community halls) for appropriate indoor sports, while grouping facilities for multiple sports can improve both accessibility for users and delivery of maintenance services.

Table 3.16 Sports facility actions

	Action	Description	Responsible
S11.	Support high-growth and emerging communities with sports facilities	• Allocate land and development of sport facilities in high-growth areas and emerging communities. • Develop new outdoor sport facilities in emerging community areas (including the outer southern suburbs).	Council
S12.	Enhance the use of existing sporting facilities	Maximise the use of existing sport facilities including identifying opportunities for compatible mixed uses.	Council
S13.	Invest in infrastructure to attract major sporting events	Develop sporting facilities to attract major events, including international. Such sporting facilities should be serviced by high-frequency, high-volume transport services. Facilities may be within a short commute to major accommodation and entertainment precincts.	Qld Govt
S14.	Develop partnerships to co-deliver sporting facilities	Develop partnerships with schools and tertiary institutions to support the co-delivery of community sport facilities.	Council



3.8 Strategy 7 – Green space



Brisbane's green space network contributes to delivering a healthy environment and provides opportunities for residents to recreate and rest. Augmenting the green space network is therefore important to enhance social and environmental outcomes.

Parks, playgrounds, sports fields, natural areas, bushland, wildlife corridors, and some bikeways collectively comprise Brisbane's green space network.

With anticipated increases in the density of living in the inner city, and anticipated increase in land prices, new and innovative approaches to identifying, protecting and using green spaces are necessary. For instance, there is opportunity to further integrate green spaces with the built environment.

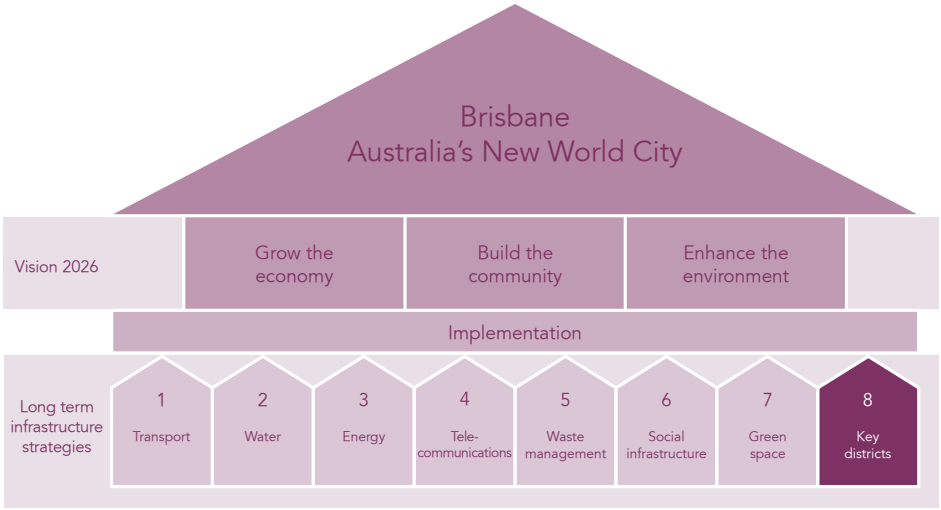
By 2031, the city's open space network will incorporate:

- a diverse and resilient network of green space while adopting a "no net loss" approach to the protection of existing space
- provide well-connected green spaces accommodating multiple purposes including recreation, transport and ecological processes
- provide spaces that communities can safely and actively enjoy through sporting, cultural and recreation facilities, programs and events.

Table 3.17 Green space actions

	Action	Description	Responsible
G1.	Develop a multi-purpose, linked network of green spaces	• Identify opportunities to develop a functional, multi-purpose and linked network of green spaces. • Secure appropriate green space as part of new large-scale development projects (infill and greenfield) as appropriate.	Council
G2.	Support sustainable resource management and use in the development of green spaces	• Incorporate sustainable resource use in green space networks (e.g. stormwater capture, and water and energy conservation measures). • Incorporate biodiversity, habitat and ecosystem protection into the planning and management of the green space network, where applicable.	Council

3.9 Strategy 8 – Key districts



The coordination of infrastructure planning and delivery in key districts of Brisbane will greatly contribute to achieving the strategic infrastructure goals to grow the city's economy, enhance the environment and build communities.

Targeting infrastructure planning and coordination in key areas of the city is critical to support the efficient functioning of these areas at the local level, while benefiting the city as a whole. The areas identified are localities of:

- forecast high employment growth to support local and regional development outcomes
- high ecological, habitat and/or broader environmental and community value
- high population growth and legacy infrastructure issues that require a targeted infrastructure response.

Accordingly, the following locations have been identified as priority areas:

- Greater Central Business District (CBD)

  The Greater CBD (refer Section 2.2.1 for a description of the Greater CBD) will remain the largest employment node in Queensland, supporting 380,000 jobs by 2031, with the largest category being the business services sector.

- Australia TradeCoast (ATC)

  The ATC is expected to support around 33,000 additional jobs over the next 20 years and 25% of Brisbane City's export growth. Key export facilities, including Brisbane's major passenger airport and seaport, are located in this precinct.

- South West Industrial Gateway (SWIG)

  The SWIG includes some of Brisbane's most significant logistics and manufacturing areas. The SWIG is forecast to account for 19% of the city's export growth over the next 20 years. By 2031 the SWIG is forecast to generate 34% of Brisbane's manufacturing output.



3.9.1 Greater CBD

Brisbane's Greater CBD is a significant contributor to the Queensland economy. The challenge for the future is supporting anticipated jobs growth whilst maintaining the liveability of the city.

The Greater CBD includes the area known as the Central Business District, as well as Fortitude Valley, Spring Hill, Milton, South Brisbane, and Woolloongabba (Figure 3.4).

The Greater CBD is a location of diverse activity, as a commercial, retail, cultural and entertainment, education, and tourist centre for the state. Infrastructure solutions must support the diversity of activities in the Greater CBD.

For its effective function, the Greater CBD requires an integrated public transport system, pedestrian and cycle friendly streets and spaces, an orbital road network bypassing the heart of the CBD, and improved integration between the public domain, transport and private development.

Rapid transit solutions for the CBD area include the bus-based CityGlider, the proposed Suburbs 2 City Buslink project which will address bus capacity issues, and rail projects announced by the Queensland Government including Cross River Rail should funding be available.

Active transport will be increasingly used for short trips around the city centre.

The connectivity of the Greater CBD with other employment nodes in SEQ is of central importance, with the CBD providing business services to these areas. High- frequency public transport services to major population growth areas (such as Richlands and Rochedale) are also required, to cater for growing CBD businesses and to provide access to jobs for residents.

Sufficient energy and telecommunications infrastructure is important to continue to support the long-term efficiency and function of the Greater CBD. A high speed bi-directional telecommunications optic fibre network for the Greater CBD will enhance productivity and encourage telecommuting in the longer term as fibre optic cable is rolled out across the city. As the city is the centre for commerce, it is important that the CBD's networks have significant redundancy to ensure the continued reliable supply of energy and telecommunications infrastructure when sections of the network fail.

Figure 3.4 Greater CBD

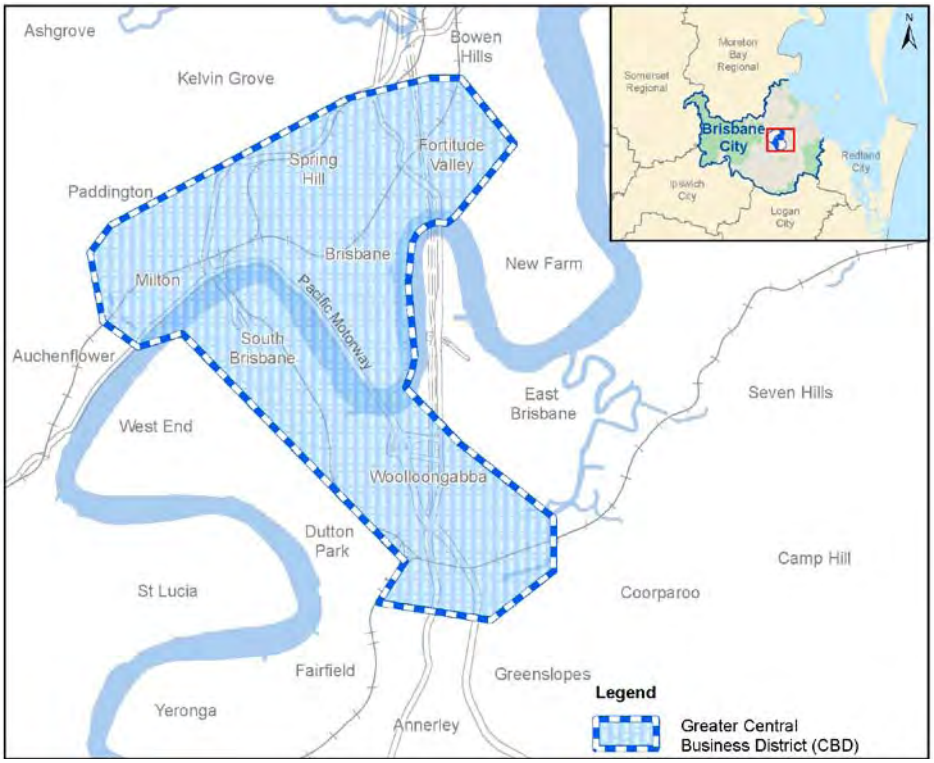


Table 3.18 Greater CBD actions

	Action	Description	Responsible
GCBD1.	Improve the public transport network servicing the Greater CBD	• Identify and develop multi-modal transport hubs and interchanges on the frame of the CBD, including at Milton, Woolloongabba and Bowen Hills, which would be supported by the Cross River Rail project announced in *Connecting SEQ 2031* • Identify bus marshalling areas and short-term parking for buses to improve service efficiency in peak periods and during significant events. • Support the further development of a mass transit system (incorporating CityGlider service) connecting West End, the city centre and Fortitude Valley to support large scale and very-high-frequency passenger movement on bus and rail services. • Investigate a possible extension of the public transport operating period to 24 hours, seven days a week where demand necessitates the service. • Construct an inner city subway and support the implementation of the Cross River Rail project, as announced by the Queensland Government in *Connecting SEQ 2031* to link key areas of the Greater CBD and provide additional river crossing and stations. • Construct additional ferry terminals and/or undertake further upgrades to the CityCat fleet.	Qld Govt/Council
GCBD2.	Identify opportunities and implement policies to support pedestrian prioritisation, active transport and activation of public spaces in Greater CBD.	• Street improvements to be undertaken include: o improving footpaths o increased shading o prioritising pedestrian movement with signalling and signage to promote wayfinding and route familiarisation, "scatter" crossings (all directions) o extension of pedestrian-only access on laneways and streets. • Identify open space corridors to improve pedestrian flow, and additional green and urban areas for recreational and passive uses. • Extend the cycle network and invest in end-of-trip facilities to promote the take-up of active transport. • Continue to deploy a bike hire scheme in the city to provide an active transport alternative for transiting the Greater CBD. • Prioritised signalling and signage on crossings and intersections to increase connectivity and flow of active transport.	Council/Qld Govt



Table 3.18 Greater CBD actions (continued)

	Action	Description	Responsible
GCBD3.	Enhance the telecommunications network	• Develop a competitive high speed fibre optic network for the Greater CBD. • Actively promote telecommuting, tele-meetings and local tele-work centres. • Incorporate smart grid technology in the design of buildings. • Install conduit in all major works projects to accommodate the provision of optic fibre cable.	All government/ private Sector

3.9.2 Australia TradeCoast

Strategically located at the mouth of the Brisbane River and close to the CBD, the Australia TradeCoast (ATC) is Australia's fastest growing and largest trade hub, encompassing the Brisbane Domestic and International Airport and the Port of Brisbane. The ATC comprises the suburbs of Pinkenba, Eagle Farm, Hamilton, Morningside, Murarrie, Hemmant, Lytton and Port of Brisbane (Figure 3.5).

Over the next 20 years, the ATC is expected to generate 25% of Brisbane's export growth and 9% of jobs growth.

Drainage and fill works and adequate public transport are central to the growth and efficient functioning of the ATC.

Although the ATC has approximately 2000 hectares of land for future development, much of the land is prone to flooding particularly on the north side of the river.

The strategic filling of land and other measures are required to ensure existing and future development is provided with appropriate levels of flood immunity.

With an expected increase from 31 to 58 million tonnes in the volume of freight transported between 2006 and 2026, major road and rail networks into, around and out of the ATC will need to support increased road and rail traffic. Growth in containerised trade at the Port of Brisbane is expected to increase sixfold during this period. Freight and other transport movements between the north and south of the river are also restricted by the limited number of bridge crossings. The Gateway Bridge duplication and the CLEM7 will assist in accommodating some of this demand.

Facilitating an increase in airport passenger, commuter and business movement, into, out of, and around the ATC, is central to the long term economic function of the area.

Augmentation of the Airtrain service should be considered to provide a service to the airport commerce precinct in the ATC. An additional station with a bus interchange at 'Airport Village' near the existing commercial area (north east of Hendra) will help to address this need. Another possibility is to develop a rail/bus interchange service at Eagle Farm. These services must be delivered with an affordable integrated ticketing solution to further develop the area as a commercial precinct. Planned work to increase the capacity of Kingsford Smith Drive, will also facilitate private and public transport trips.

Airport Link, a key part of the city's road network, will facilitate vehicular traffic flows from the western and inner northern suburbs to Brisbane Airport, particularly on the completion of Legacy Way as part of the TransApex initiative.

Figure 3.5 Australia TradeCoast



Table 3.19 Australia TradeCoast actions

	Action	Description	Responsible
ATC1.	Facilitate increased traffic volumes	• Upgrade Kingsford Smith Drive to six lanes • Improve connections between the ATC and the South West Industrial Gateway to facilitate movement of freight and workers. The construction of Legacy Way and Airport Link projects will help to achieve this objective.	Council/Qld Govt/ Federal Govt
ATC2.	Expand public and active transport services	• Investigate opportunities for the improved use of the existing rail network (Cleveland Line, disused portion of Pinkenba Line and Airtrain corridor) to provide access for workers to the ATC. Investigate the reinstatement of a full-time rail station at Eagle Farm with a bus interchange servicing the ATC. • Encourage commuters to the ATC to use public transport. • Investigate a rail and bus interchange at Airport Village to further enable the area's operation as a commercial precinct. • Increase affordable public transport options to and from the airport, including potential for a fast 24-hour service connecting the airport to the CBD. • Increase CityCat services to Hamilton, particularly Northshore Hamilton to cater for anticipated increase in population and demand for services. • Provide dedicated bus priority services to the region from key trip generator areas, including linking with workers in the southwestern suburbs.	Qld Govt/Council
ATC3.	Develop a coordinated approach to energy supply	• Collaborate with energy utilities to ensure appropriate investment in energy infrastructure to support the forecast increase in energy-intensive heavy manufacturing. The ATC Strategic Infrastructure Plan has identified the need for a 275kV transmission line in the next 10-20 years. • Promote the use of natural gas (southern ATC is adjacent to the Roma Brisbane Pipeline) and renewable energy. Install smart grid technologies to enhance energy demand management.	Qld Govt/ Council/ ENERGEX/ Powerlink/ATC APA Group

Table 3.19 Australia TradeCoast actions (continued)

	Action	Description	Responsible
ATC4.	Develop a coordinated approach for water supply	• Collaborate with water utility and managers to ensure appropriate investment in water infrastructure. • Continue to promote efficient water use, including greater use of water sensitive design and demand management. • Support a potential project to transport recycled water via a pipeline from Luggage Point to ATC Central. • Investigate targeted opportunities for stormwater harvesting.	Queensland Urban Utilities/Council/ ATC
ATC5.	Develop flood mitigation measures	• Establish a longterm strategy for flood immunity in the ATC. • In the short- to medium-term, establish a coordinated approach to filling land across the ATC.	Council/Qld Govt/ Brisbane Airport Corporation/ Port of Brisbane Corporation
ATC6.	Deploy fibre optic cable	• Support the deployment of high speed fibre optic cable networks. • Ensure works projects in the ATC include conduit suitable for fibre optic cable networks.	All Government/ private sector
ATC7.	Provide open space and community facilities	• Identify opportunities to buffer residential areas from roadways and industrial areas. • Identify opportunities to improve links between education and training institutions (e.g. TAFE/SkillsTech in Eagle Farm) and industry (manufacturing, aviation, logistics) within the ATC. • Develop appropriate community facilities to cater for an increasing workforce in the ATC, including health, education, child care and recreation facilities. • Improve use of the river and bay for recreational and tourism purposes (e.g. investigate the feasibility of a river-based integrated ferry terminal to service Moreton Bay).	Qld Govt/Council

3.9.3 South West Industrial Gateway

The South West Industrial Gateway (SWIG) is a major manufacturing, logistics and residential area, strategically located with connections to the Ipswich Motorway, Logan Motorway and Centenary Highway, and access to both the Queensland and interstate rail lines at Acacia Ridge. The area includes the suburbs of Rocklea, Coopers Plains, Acacia Ridge, Archerfield, Oxley, Darra, Richlands and Wacol (Figure 3.6).

The SWIG is a major location of manufacturing and logistics activity. By 2031, the SWIG is expected to account for 34% of total manufacturing activity in Brisbane, with machinery and equipment, metal products, chemicals and petroleum, and food and beverage manufacturing being the largest growth activities between 2006 and 2031.

The area is also an important generator of export income for Brisbane, with 19% of Brisbane's export growth between 2006 and 2031 expected to be generated in this area.

The Acacia Ridge Intermodal Terminal is the largest road/rail intermodal terminal in SEQ, and services both north Queensland and interstate markets. An additional intermodal facility in SEQ may be needed in the long term to support the Acacia Ridge terminal.

Archerfield Airport is a major general aviation facility complementing the extensive passenger and freight activities of Brisbane Airport. Given the strategic location of this facility at the crossroads of freight and logistics operations, the long term use of the facility needs to be optimised.

Additional public transport services and community facilities will be needed to support an additional 11,000 residents in the SWIG area over the next 20 years.

Public transport must support connectivity within the region and to other employment centres. Manufacturing and service industries located in the region will also require child care and open spaces to support the working population. Council's Neighbourhood Plans for Acacia Ridge/Archerfield and Richlands/Wacol address these issues.

Areas of the SWIG, particularly around Oxley Creek, are prone to flooding. Where the flood immunity of an area does not support commercial, industrial or residential development, opportunities to maximise the use of such spaces, including for recreation, stormwater capture and retention should be considered.

Figure 3.6 South West Industrial Gateway

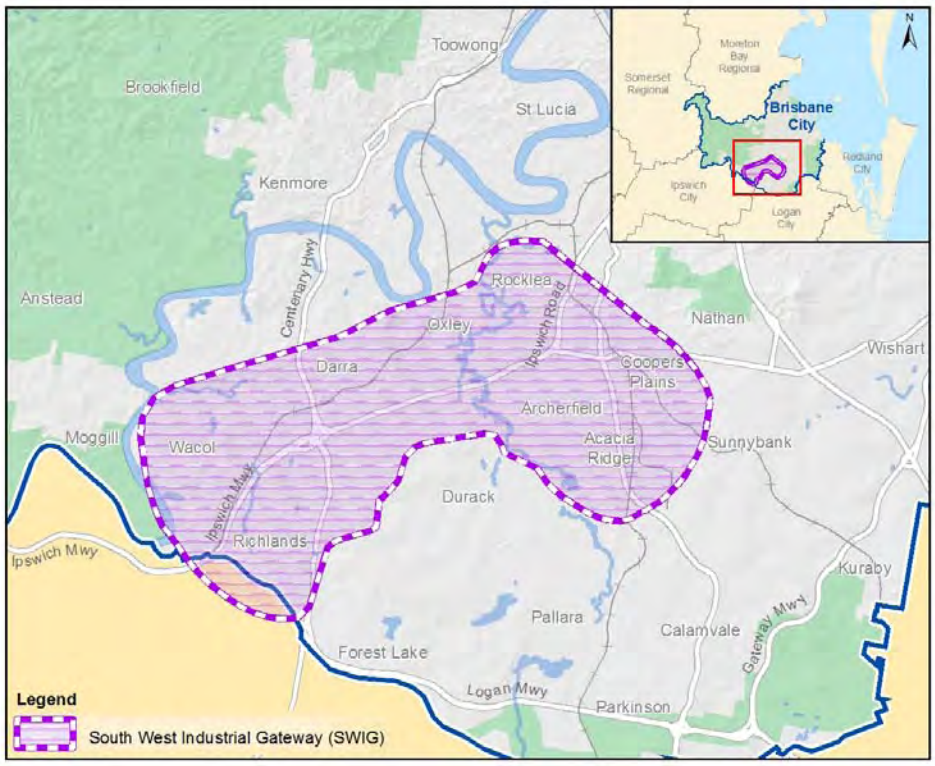


Table 3.20 South West Industrial Gateway actions

	Action	Description	Responsible
SWIG1.	Facilitate increased freight and private traffic movement	• Investigate opportunities to improve links between the Ipswich Motorway and the Port of Brisbane to facilitate freight movement and movement of workers to and from the SWIG and the ATC. • Investigate opportunities to expand the use of service roads on Ipswich Motorway to reduce congestion, removing local traffic from the Motorway.	Qld Govt/Council
SWIG2.	Expand public and active transport services for the SWIG	• Assess the need for major rail and bus interchanges incorporating active transport end-of-trip facilities, to support use of active and public transport options in the SWIG (including around Richlands). • Public transport services to cater for shift workers, particularly in high-growth areas (e.g. Springfield). • Incorporate bikeways into other infrastructure projects to link with existing networks.	Qld Govt/Council
SWIG3.	Investigate the long term role of Archerfield Airport	Enhance the functioning of Archerfield Airport	Qld Govt/Federal Govt
SWIG4.	Invest in appropriate energy infrastructure to service demand	• Ensure appropriate investment in energy infrastructure to support the forecast increase in energy-intensive heavy manufacturing. • Promote use of natural gas and renewable energy sources in manufacturing production.	Qld Govt/Council
SWIG5.	Invest in appropriate water infrastructure to service demand	• Ensure appropriate investment in water infrastructure, including stormwater mitigation. • Continue to promote efficient water use, including greater use of water sensitive design and demand management. • Encourage use of recycled water from the nearby Western Recycled Water Pipeline and stormwater harvesting and storage to service industrial needs.	Qld Govt/Council
SWIG6.	Improve flood mitigation	Through the Development Assessment process and Council's flood flag mapping, ensure that development takes account of the potential for flooding.	Council
SWIG7.	Deploy fibre optic cable networks	• Encourage investment in the installation of high speed fibre optic cable networks to facilitate the connectivity of the SWIG to other areas of Brisbane, and the world. • Install conduit to provide the right of way for fibre in areas as they develop to facilitate the rollout of a National Broadband Network.	All Government/ private sector

Table 3.20 South West Industrial Gateway actions (continued)

	Action	Description	Responsible
SWIG8.	Provide open space	• Buffering of residential areas from roadways and industrial areas with open space. • Examine opportunities to develop an open space network along Oxley Creek addressing natural, recreational and active transport options.	Council
SWIG9.	Improve the provision of community facilities	• Investigate options to locate high-noise recreation activities, such as trail bikes, in industrial areas. • Identify opportunities to improve linkages between education and training institutions (e.g. TAFE/ SkillsTech) and industry (manufacturing, aviation, logistics) within the SWIG. • Develop appropriate community facilities to support a growing workforce.	Qld Govt/Council

IMPLEMENTATION

4

Council's long term infrastructure policy aligns infrastructure planning with the economic, social and environmental aspirations for the city.

The implementation of this Plan will contribute to ensuring that Brisbane's infrastructure program aligns with the eight infrastructure strategies highlighted, enhancing Australia's New World City and surrounding regions.

4.1 Implementing Brisbane's infrastructure strategy

This Plan outlines the infrastructure strategies and actions needed to deliver Council's *Living in Brisbane 2026*.

The actions outlined for each strategy in Tables 3.2 to 3.20 in Chapter 3, are the investigations and initiatives required to deliver Brisbane's long term infrastructure policy.

> Council will work with infrastructure providers to implement the actions outlined in the Plan.

Council will seek to align infrastructure policy across a range of stakeholders (both public and private) to deliver the strategy articulated in this Plan.

As Brisbane grows, the strategies required to support the city will adapt, as new needs, priorities, initiatives and projects are identified.

> Council will update this Plan every five years to ensure the strategies and actions deliver a progressive infrastructure approach and program for the city.

Council will continue to monitor changes in demand for different infrastructure services to deliver a program that meets the city's future needs. The strategies and programs in this Plan will adapt to meet the changing needs of the community, delivering a strategy that not only provides the community with essential infrastructure services, but also enhances the liveability of the city.

4.2 Brisbane's infrastructure program

Brisbane's current infrastructure program is listed in Tables 4.1 to 4.14.

This program highlights the projects which have been announced by different levels of government and major private sector infrastructure providers for the next 20 years.

> Council will continually review its infrastructure program to ensure it is aligned to achieve the objectives and key result areas outlined in Table 3.1 in Chapter 3.

Council will continue to strive for transparency and integration of infrastructure planning information, through working with government agencies and private sector organisations involved in the planning and delivery of infrastructure.

> Council will work with stakeholders to regularly update the project tables in Chapter 4, providing infrastructure providers with timely and up-to-date information on the status of major infrastructure projects in Brisbane.

This process will facilitate coordination in the delivery of infrastructure between providers and across different infrastructure classes. This will assist in realising cost savings between multiple projects which are planned for the same location in a similar timeframe.

Cost savings may be achieved through different projects sharing the cost of capital works, such as trenching. The identification of synergies between projects may also lead to the changing in the timing of the delivery of some projects.

Such an approach is also likely to minimise disturbance to Brisbane residents associated with construction, through reducing the delivery time for infrastructure projects.

This plan includes around $44 billion in infrastructure projects planned to support the growth of the city.

Financing this significant infrastructure program is a key concern for Council and other levels of government in delivering the infrastructure needs of the community.

Council will continue to work with co-delivery agencies and funding providers, to identify innovative and lowest-cost options to finance projects.



Index to infrastructure project tables and figures

Infrastructure class	Table No.	Figure No.
Brisbane's major infrastructure projects, 2011-2031		Figure 4.1
Transport		
Major road network projects	Table 4.1	Figure 4.2
Major public transport projects	Table 4.2	
Major active transport projects	Table 4.3	
Water		
Major water supply projects	Table 4.4	Figure 4.3
Major waste water projects	Table 4.5	Figure 4.4
Major stormwater projects	Table 4.6	Figure 4.5
Energy		
Major electricity projects	Table 4.7	Figure 4.6
Major gas projects	Table 4.8	
Social		
Major health, education and law enforcement projects	Table 4.9	Figure 4.7
Major community hub and integrated facility projects	Table 4.10	Figure 4.8
Major community centre, hall and library projects	Table 4.11	Figure 4.9
Major cultural and art facility projects	Table 4.12	Figure 4.10
Major sports facility projects	Table 4.13	Figure 4.11
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Major green space projects	Table 4.14	Figure 4.12
Key districts		
Greater CBD projects	Table 4.15	Figure 4.13
Australia TradeCoast projects	Table 4.16	Figure 4.14
South West Industrial Gateway projects	Table 4.17	Figure 4.15

Note:

– Information about Queensland Government projects has been sourced from the *Queensland Infrastructure Plan 2011* (QIP), the *Queensland Transport and Roads Investment Program 2010-11 to 2013-14* (QTRIP) and *Connecting SEQ 2031*

– Projects listed in Chapter 4 are projects which have been announced by the relevant sponsor. This does not mean that every project listed is fully funded. Projects are subject to changes in costing and timing.

– Not all projects listed in Chapter 4 are depicted on the maps

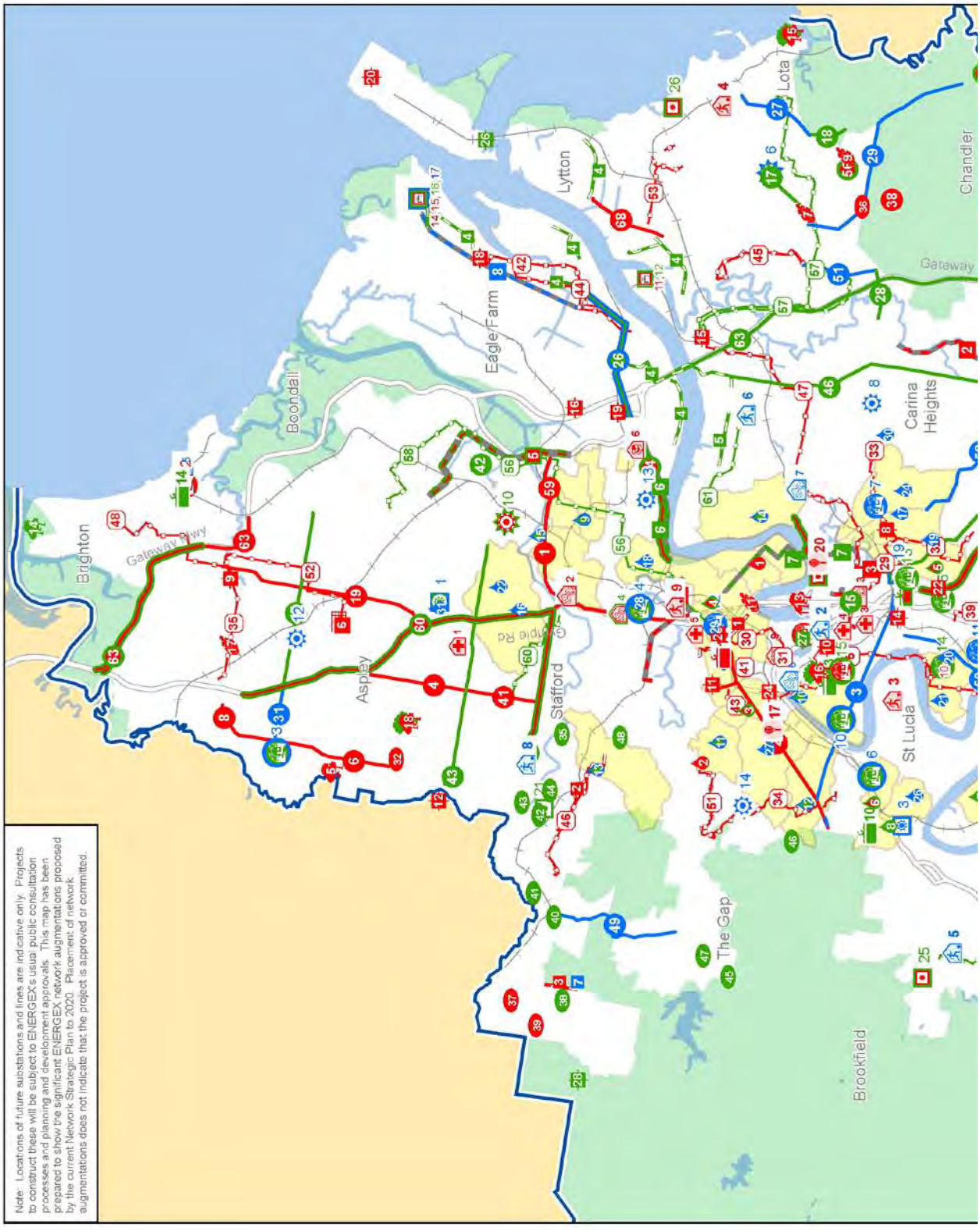
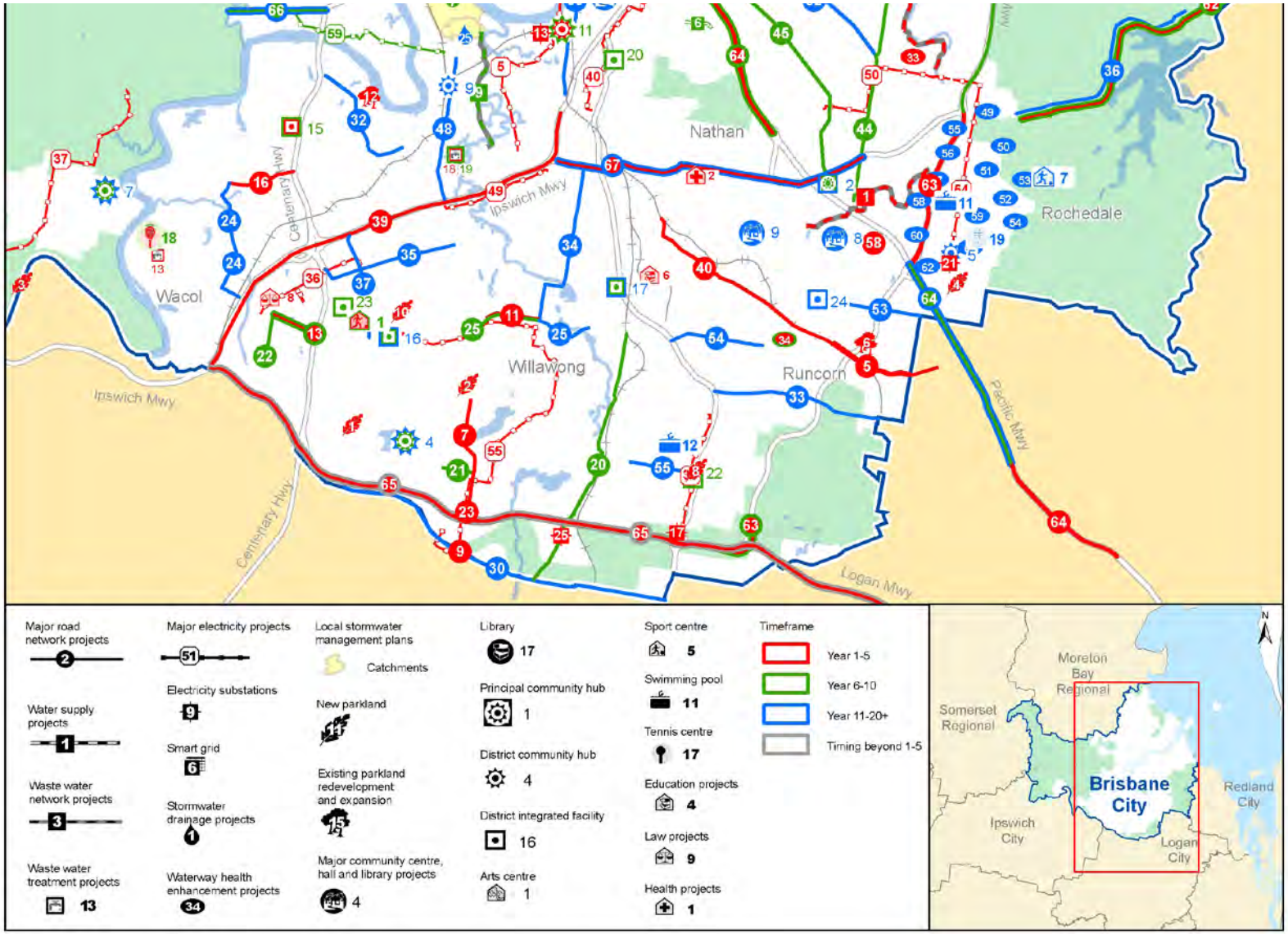


Figure 4.1 Brisbane's major infrastructure projects, 2011-2031



Detailed project information is provided in the following infrastructure class project lists outlined in Tables 4.1 to 4.14.

Table 4.1 Major road network projects (Refer to Figure 4.2)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
TransApex						
1	Airport Link	Qld Govt/ BrisConnections	4800	■		
2	Legacy Way	Council	1500	■		
3	East-West Link	TBD	TBD			■
Road Action Program						
4	Hamilton Road – intersection with Maundrell Terrace	Council	19	■		
5	Beenleigh Road: • Intersection with Warrigal Road		4	■		
	• Road Upgrade		6	■		
6	Beckett Road widening		28	■		
7	Blunder Road – Stages 6 and 7		36	■		
8	Bridgeman Road – Stages 1 and 2		39	■		
9	Johnson Road and Staplyton Road intersection		10	■		
10	Intersection upgrades – various		200	■	■	■
11	Inala Avenue-King Avenue – King Avenue and Sherbrooke Road intersection		10	■		
12	Wynnum Road: Shafston Avenue to Hawthorne Road		TBD	■	■	
13	Progress Road upgrade: Stage 4, Boundary Road to Centenary Highway		32	■	■	
14	Kingsford Smith Drive: Future Stages		TBD	■	■	
15	Stanley Street and Old Cleveland Road		TBD		■	
Road upgrades						
16	Sumners Road – Wacol Station Road to Centenary Motorway	Council	17	■		
17	Wondall Road – Manly Road to Radford Road		17		■	
18	Green Camp Road – Manly Road to Rickertt Road		60		■	
19	Handford Road – upgrade to four lanes, Depot Road to Gympie Road		40	■		
20	Paradise Road		52		■	
21	Wadeville Street – Staplyton Road to Forest Lake Boulevard		12		■	
22	Boundary Road – Tile Street to Progress Road		62		■	
23	Staplyton Road		26	■		
24	Wacol Station Road – widen to four lanes: • Sumners Road to Wolston Road		36			■
	• Wolston Road to Ipswich Motorway		24			■



Table 4.1 Major road network projects (Refer to Figure 4.2) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
25	Inala Avenue/King Avenue – widen to four lanes: • Blunder Road to Sherbrooke Road	Council	34		■	
	• Sherbrooke Road to Watson Road		40			■
26	Kingsford Smith Drive/Eagle Farm Road – upgrade to six lanes, Gateway Motorway to Eagle Farm Road		35		■	■
27	Manly Road – Green Camp Road to Preston Road		60			■
28	Meadowlands Road – Belmont Road to Preston Road		19		■	■
29	New Cleveland Road – Manly Road, Green Camp Road, Old Cleveland Road		82			■
30	Johnson Road – Mount Lindesay Highway to Woogaroo Road		105			■
31	Beams Road West – Bridgeman Road to Gympie Road		15			■
32	Seventeen Mile Rocks Road		35			■
33	Compton Road – six lanes		17			■
34	Beatty/Sherbrooke Road – upgrade to four lanes, Granard Road to King Avenue		59			■
35	Freeman Road – Garden Road to Blunder Road		27			■
36	Mount Gravatt-Capalaba Road – widening to four lanes, Mount Cotton Road to Moreton Bay Road		42			■
37	Archerfield Road – Ipswich Road to Progress Road		15			■
38	Gumdale Traffic Plan – various projects		0.3	■		
Corridor improvements						
39	Ipswich Road	Council	28	■		
40	Beenleigh Road – Boundary Road to BCC Boundary		39	■		
41	Appleby Road – Albany Creek Road to Stafford Road		22	■		
42	Toombul Road – Nudgee Road to Melton Road		4		■	
43	Rode Road – Old Northern Road to Edinburgh Castle Road		27		■	
44	Newnham Road – Creek Road to Logan Road		21		■	
45	Logan Road – Montague Street to Kessels Road		26		■	
46	Creek Road		31		■	
47	Beams Road East		20		■	
48	Oxley Road – upgrade to four lanes, Ipswich Motorway to Sherwood Road		26			■
49	Settlement Road – Samford Road to Waterworks Road		13			■
50	Fairfield Road – Sherwood Road to Annerley Road		36			■

Table 4.1 Major road network projects (Refer to Figure 4.2) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1 - 5	YEAR 6 - 10	YEAR 11-20+
51	Belmont Road – Manly Road to Meadowlands Road	Council	8			■
52	Cavendish Road		28			■
53	Underwood Road		16			■
54	Hellawell Road		23			■
55	Nottingham Road		14			■
56	Tilley Road Extension – Wondall Road to Lytton Road		60	■	■	
Open level crossings						
57	Removal of various crossings	Qld Govt/ Council*	–	■	■	■
Arterials, motorways and highways^						
58	Logan Road intersection upgrades – Miles Platting Road/Padstow Road	Qld Govt	11	■		
59	East-West Arterial upgrade: Airport Link to Gateway Motorway		326	■		
60	Gympie Arterial – Stafford Road to Roghan Road • Investigation		7	■		
	• Corridor preservation		TBD	■	■	
61	Stafford Road – Gympie Road to South Pine Road • Investigation		TBD	■		
	• Corridor preservation		TBD	■	■	
62	Redland sub-arterial road upgrade: Mount Gravatt-Capalaba Road to Tingalpa Creek – intersection upgrades and four lane duplication	Qld Govt	TBD	■	■	
63	Gateway Motorway upgrade: • Gateway Motorway Upgrade North additional lane – Sandgate Road to Depot Road on-ramp		TBD°	■		
	• Gateway Motorway Upgrade North – future stages		TBD°	■	■	
	• Gateway Motorway Upgrade South (Mount Gravatt-Capalaba Road – Pacific Motorway) extension – Stages 2(a) and 2(b)		TBD°		■	
	• Gateway Motorway Upgrade South Stages 3(a), 3(b) and 3(c) – overpass and interchange upgrades		TBD°		■	
	• Gateway Motorway extension south of Logan Motorway – Investigation and corridor preservation		TBD	■	■	

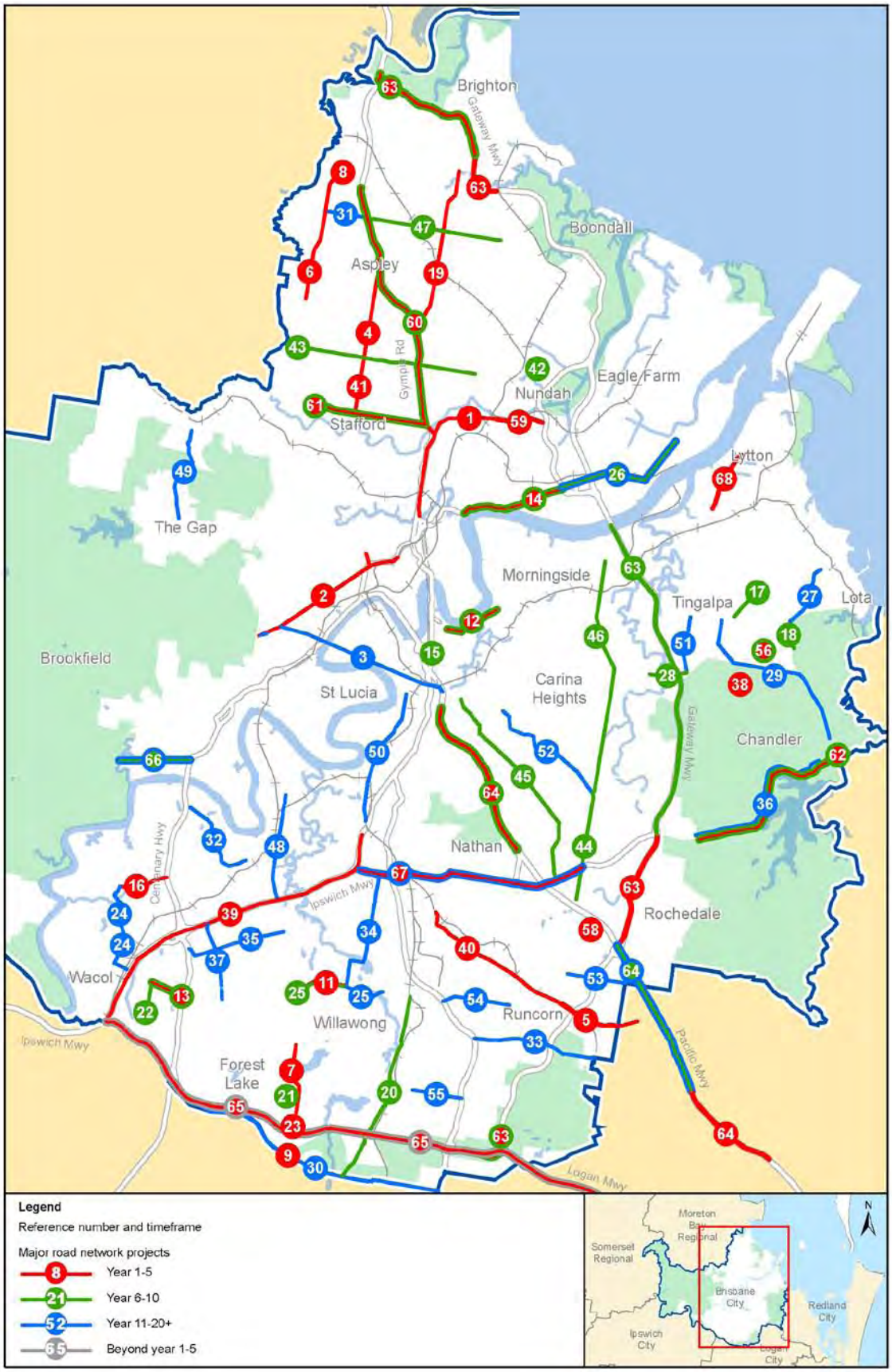


Table 4.1 Major road network projects (Refer to Figure 4.2) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
64	Pacific Motorway Upgrade: • Springwood South to Daisy Hill upgrade	Qld Govt	422°	■		
	• Gateway Motorway to Springwood South		TBD°		■	■
	• Juliette Street to Klumpp Road		TBD	■	■	
65	Logan Motorway Upgrade: Ipswich Motorway to Pacific Motorway		TBD	➔		
66	Kenmore Bypass: Western Freeway to Moggill Road		TBD		■	■
67	Brisbane Urban Corridor intersection upgrades: • Mains to Kessels Road interchange		300°	■		
	• Future projects (intersection upgrades)		TBD°			■
68	Port of Brisbane Motorway • Lindum Street to Pritchard Street		385	■		

TBD – To be determined
^ Queensland Government projects based on QIP, QTRIP and *Connecting SEQ 2031.*
° Subject to federal funding
➔ Timing beyond Year 1-5, exact timing not specified
* With funding contribution from Council on Council roads

Figure 4.2 Major road network projects



Projects with defined locations have been mapped. Numbering may not be sequential.



Table 4.2 Major public transport projects

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
Bus network^						
1	Suburbs 2 City Buslink: • Feasibility study	Council+	2	■		
	• Construction stage		TBD°	■	■	
2	Sherwood Road bus depot, Sherwood	Council	65	■		
3	Northern bus depot (Australia TradeCoast), Schneider Road, Eagle Farm		69	■		
4	Upgrade of bus stops for DSAPT compliance		TBD	■	■	
5	Northern Busway: • Windsor to Kedron	Qld Govt	732	■		
	• Kedron to Bracken Ridge		TBD	➔		
6	Eastern Busway: • Main Avenue, Coorparoo to Capalaba		340	➔		
	• Future stages		TBD°	➔		
7	South East Busway: • Eight Mile Plains to Preistdale Road		40	■		
	• Future stages		TBD		■	■
8	CBD Bus Infrastructure Capacity Program: • Cultural Centre safety upgrades		10	■		
	• Future projects		TBD	■	■	
9	SEQ TransitWays / HOV Program		TBD°	■	■	■
Rail network^						
10	Mitchelton to Ferny Grove track duplication – Keperra to Ferny Grove	Qld Govt	80	■		
11	Mayne-Ferny Grove line connection		20	■		
12	Cross River Rail		8225°	➔		
13	Brisbane Subway		TBD°			■
14	Cleveland rail corridor upgrades		TBD			■
15	Sandgate to Shorncliffe track duplications		TBD			■
16	Northwest rail: • Strathpine to Cross River Rail		TBD			■
Ferry network						
17	New permanent ferry terminals*	Council	TBD	■		
18	Upgrade of ferry infrastructure for DSAPT compliance		TBD	■	■	

TBD – To be determined
+ Subject to outcome of feasibility study and Queensland Government and Federal Government funding
^ Queensland Government projects based on QIP, QTRIP and *Connecting SEQ 2031*
° Subject to federal funding
➔ Timing beyond Year 1-5, exact timing not specified
* Subject to state and federal flood recovery funding

Table 4.3 Major active transport projects^

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
1	Arterial Commuter Cycle Bikeway from CBD to Chermside (Northern Corridor)	Council	TBD	■		
2	Arterial Commuter Cycle Bikeway from CBD to Mitchelton (North West Corridor)		TBD			■
3	Arterial Commuter Cycle Bikeway from CBD to Carindale and Wynnum-Manly (Eastern Corridor)		TBD		■	
4	Commuter Bikeway Upgrade		TBD	■	■	
5	Local Bikeway and Pedestrian Network Links		TBD	■	■	
6	Bikeway lighting, signage and mid- and end-of-trip facilities		TBD	■	■	
7	ULDA Bikeway, Fitzgibbon	ULDA	–			■
8	Inner city 'green bridge' (cycle and pedestrian) connections over the Brisbane River: • West End to Toowong	Qld Govt	TBD	■		
	• New Farm to Bulimba		TBD		■	
	• West End to St Lucia		TBD			■

^ Queensland Government projects based on QIP, QTRIP and *Connecting SEQ 2031*

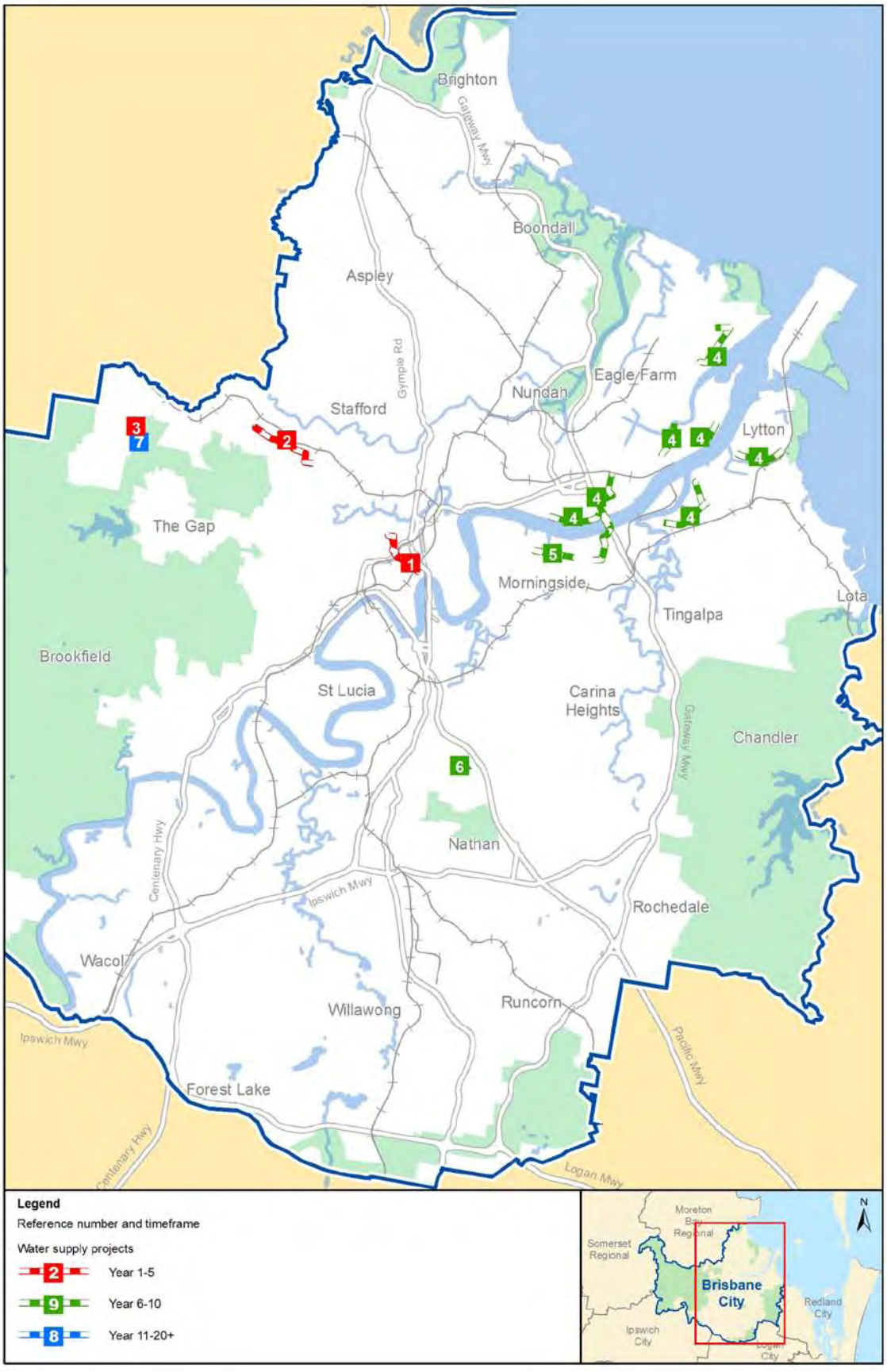
Table 4.4 Major water supply projects (Refer to Figure 4.3)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
1	Green Hill/Bartleys Hill – Ann Street to Bartleys Hill Trunk Main, Fortitude Valley/Newstead	Queensland Urban Utilities	25	■		
2	Green Hill – Lloyd Street PS to Hay Street PS, Alderley/Gaythorne		5.2	■		
3	Ferny Grove – Trunk Main O'Quinn Road, Upper Kedron		3.8	■		
4	Australia TradeCoast water upgrades		47		■	
5	Wellers Hill – Thynne Road, Morningside		5.5		■	
6	Wellers Hill Reservoir/Wellers Road, Tarragindi		4.5		■	
7	Ferny Grove Reservoir		5.2			■
8	Leakage and pressure management – citywide		28	■	■	■
9	Fireflow capacity improvements – citywide		19	■		
10	Burst Main replacement program – citywide		51	■		
11	Water Trunk Main replacements – citywide		15	■		
12	Meter replacement program		22	■		

PS – Pump Station



Figure 4.3 Major water supply projects



Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.5 Major waste water projects (Refer to Figure 4.4)

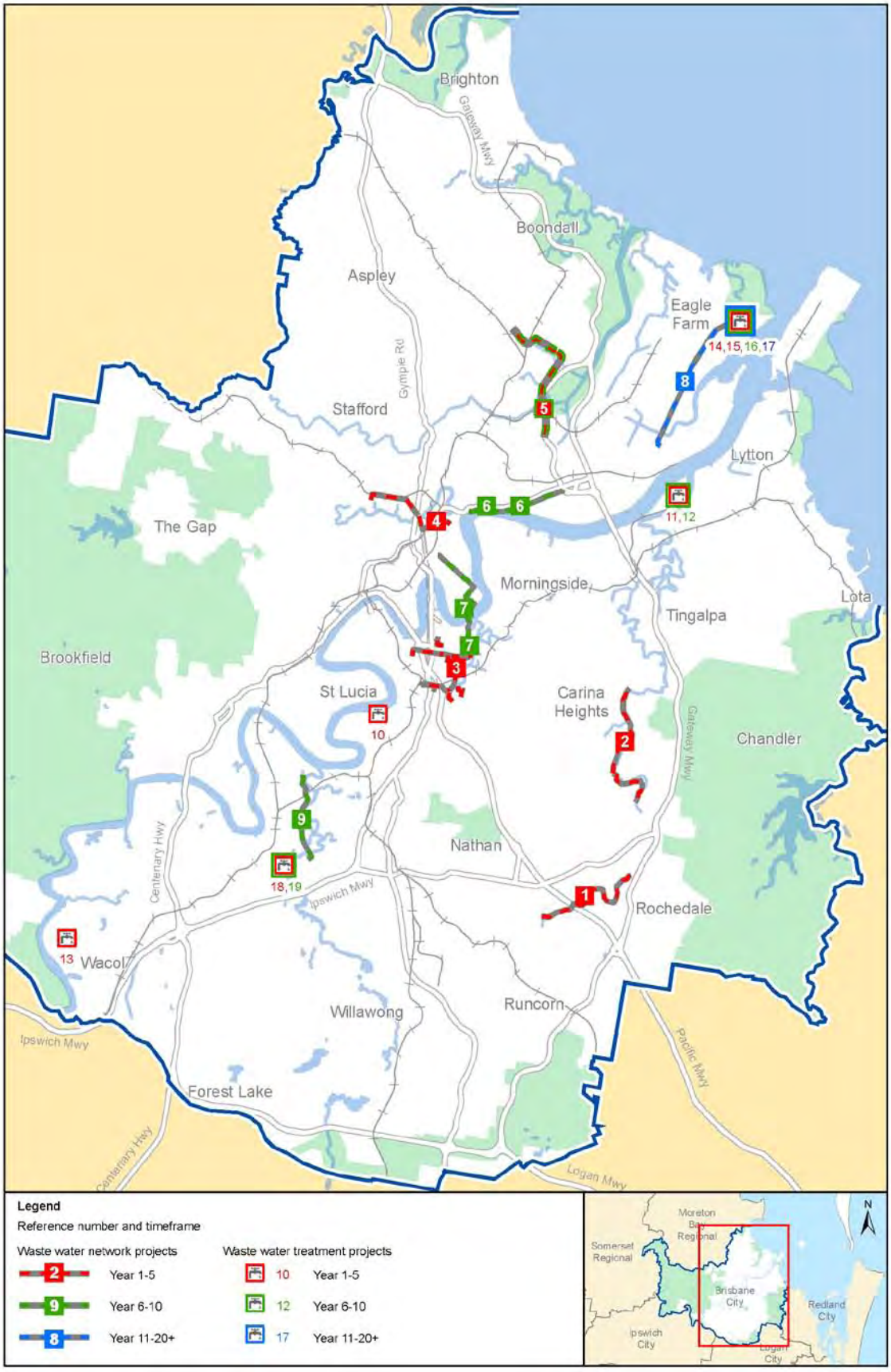
Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
Waste water network						
1	Bulimba Creek Trunk Main Section 1 – Padstow Road to Coora Street, Eight Mile Plains/Wishart	Queensland Urban Utilities	52	■		
2	Bulimba Creek Trunk Main Section 2 – Wecker Road to Old Cleveland Road, Mansfield/Carindale		50	■		
3	Luggage Point WRP Sewerage Scheme – Woolloongabba sewers upgrade		51	■		
4	Luggage Point WRP Sewerage Scheme – Breakfast Creek Main, Newmarket/Newstead		43	■		
5	Luggage Point WRP Sewerage Scheme – Virginia Branch, Virginia/Hendra		41	■	■	
6	Luggage Point WRP S1 Main Sewer Interceptor – Cooksley Street to Eagle Farm/Hamilton		186		■	
7	Luggage Point WRP Sewerage Scheme – Norman Creek Main and Siphon – Caswell PS to Fortitude Valley, Woolloongabba		94		■	
8	Luggage Point WRP Sewerage Scheme – Eagle Farm 1840mm Rising Main – Serpentine PS to Luggage Point WRP, Pinkenba		47			■
9	Oxley Creek WRP Sewerage Scheme – Corinda-Chelmer Branch, Graceville/Oxley		53		■	
Waste water treatment						
10	Fairfield WRP – new plant upgrade	Queensland Urban Utilities	17	■		
11	Gibson Island WRP – wet weather capacity upgrade		13.2	■		
12	Gibson Island WRP – capacity and treatment upgrade		70.1		■	
13	Wacol WRP – inlet screens upgrade		3	■		
14	Luggage Point WRP – outfall capacity upgrade		4.7	■		
15	Luggage Point WRP – grit removal system upgrade		7.8	■		
16	Luggage Point WRP – odour system		30.8	■	■	
17	Luggage Point WRP – capacity and treatment upgrade		51.9			■
18	Oxley Creek WRP – digester rehabilitation		2.4	■		
19	Oxley Creek WRP – capacity upgrade		62.5		■	

WRP – Water Reclamation Plant

PS – Pump Station



Figure 4.4 Major waste water projects



Projects with defined locations have been mapped. Numbering may not be sequential.


OOLWORTHS
CUSTOMER
PARKING

Table 4.6 Major stormwater projects

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
Stormwater drainage						
1	New Farm-Teneriffe Catchment Study*	Council	4	■		
2	Woolcock Park Catchment Study – Scheme A*		3.5	■		
3	Castlemaine-Caxton Streets Catchment Study*		12.4	■	■	
4	Stratton Street Catchment Study*		12.5	■	■	
5	Greenslopes LSMP North*		8.8	■	■	
6	Westerham Street Catchment Study*		10.6	■	■	
7	Faulkner Park Catchment Study – Network 1*		7.4		■	
8	Sandy Creek LSMP		0.6		■	
9	Ascot-Clayfield Drainage Study*		11.3		■	■
10	West End LSMP – Hockings Street Outlet 21*		16.3		■	■
11	Grove Street – Woolcock Park Catchment Study*		9.3		■	■
12	Langsville Creek Catchment Study*		16.8		■	■
13	Alderley North LSMP*		9.6		■	■
14	Pashen Creek Hawthorne Catchment Study*		31		■	■
15	Kemble Street – Hendra Catchment Study*		15.1		■	■
16	Ramsay Street – Kedron LSMP "B"*		8.3			■
17	Coorparoo Creek – Coorparoo Catchment*		25.2			■
18	Albion Catchment LSMP*		2.7			■
19	Greenslopes LSMP South*		4.5			■
20	Yeronga LSMP East*		9.2			■
21	Yeronga LSMP West*		4.6			■
22	Kedron LSMP – Section A*		12.8			■
23	Water-Campbell Street LSMP*		7.8			■
24	Bridgewater Creek Catchment*		37.3			■
25	Long Street East – Graceville Catchment Study		1.6			■
26	Sandy Creek Indooroopilly Piped Catchment Study*		15.1			■
27	Western Creek LSMP*		34			■
28	Bowen Street – Albion-Windsor Drainage*		5.2			■
29	Water Street, Spring Hill-Fortitude Valley*		17.3			■
30	Third Street, Camp Hill*		20			■
31	Playfield Street, Chermside*		5.3			■

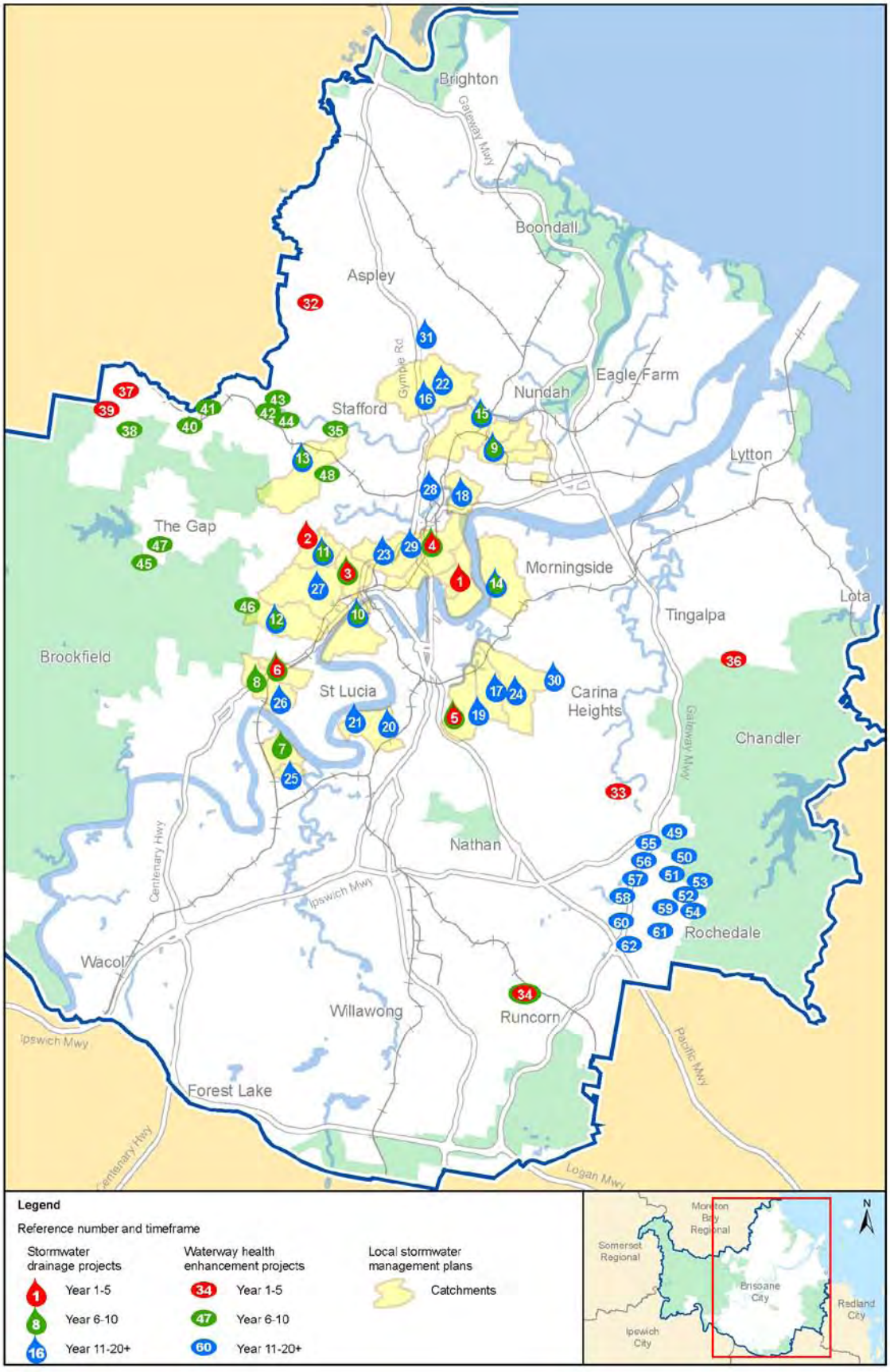
Table 4.6 Major stormwater projects (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1 - 5	YEAR 6 - 10	YEAR 11-20+
Waterway health enhancement						
32	Paramount Circuit, McDowall*	Council	1.5	■		
33	Dividend Street, Mansfield		1.2	■		
34	Glenefer Street, Runcorn*		2.5	■	■	
35	Shand Street, Stafford*		2.1		■	
36	New Cleveland Road, Wakerley		1.0	■		
37	McGregor Way, Ferny Grove*		2.0	■		
38	Kirralee Cresent, Upper Kedron		1.2		■	
39	Selkirk Cresent, Ferny Grove		1.2	■		
40	Camoola Street, Keperra*		4.0		■	
41	Duggan Street, Keperra*		5.0		■	
42	Sussex Street, Mitchelton*		1.5		■	
43	Teralba Park, Mitchelton*		2.0		■	
44	Bellevue Avenue, Gaythorne		1.0		■	
45	Doyle Place, The Gap		1.2		■	
46	J.C. Slaughter Falls, Mt Coot-tha*		1.4		■	
47	Glenwood Place, The Gap		1.0		■	
48	Banks Street, Ashgrove*		2.0		■	
49	Waterway Acquisition Gateway Motorway to Rochedale Road, Rochedale		8.3			■
50	Gateway Motorway to Gardner Road, Rochedale*		5.0			■
51	Gardner Road North, Rochedale*		1.6			■
52	Gardner Road to Rochedale Road, Rochedale*		2.8			■
53	Farley Road, Rochedale*		1.9			■
54	Waterway Acquisition Farley Road to Ford Road, Rochedale		9.1			■
55	Waterway Acquisition Gateway Motorway to Prebble Street, Rochedale		7.2			■
56	Gateway Motorway North, Rochedale		0.8			■
57	Gateway Motorway to Prebble Street, Rochedale		1.2			■
58	Prebble Street, Rochedale		0.5			■
59	Waterway Acquisition Gateway Motorway to Gardner Road, Rochedale		12.2			■
60	Gateway Motorway South, Rochedale		1.1			■
61	Gardner Road South, Rochedale*		2.8			■
62	Waterway Acquisition School Road, Rochedale*		2.3			■

LSMP – Local Stormwater Management Plan

*Works to be staged

Figure 4.5 Major stormwater projects



Projects with defined locations have been mapped. Numbering may not be sequential.



Table 4.7 Major electricity projects (Refer to Figure 4.6)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
Electricity transmission						
1	Larapinta to Algester 110kV transmission line and Larapinta Substation – proposed new 275/110kV substation	Powerlink	–	■		
2	Sandgate to Nudgee transmission line (275kV)		–		■	
3	Nudgee to Murarrie transmission line (275kV)		–			■
4	Bergin's Hill to Drewvale transmission line (275kV)		–	■		
5	Woolloongabba: establish zone substation and Rocklea 110kV connection – new supply to ENERGEX substation	Powerlink/ ENERGEX	–	■	■	
	• Rocklea to Woolloongabba to West End to Milton – construct 110kV new transmission circuits	ENERGEX	86.3	■		
Demand management and smart grid activities						
6	Zillmere – smart grid development trial	ENERGEX	13.1	■		
Substations						
7	Substation augmentation – various locations	ENERGEX	92.9	■		
8	Coorparoo – establish 110/33kV bulk substation		48.4	■		
9	Sandgate BS – upgrade 110/33kV bulk substation		21.2	■		
10	Woolloongabba – establish 110/11kV zone substation		30.9	■		
11	Kelvin Grove – establish 110/11kV zone substation		48.5	■		
12	Bunyaville – establish 110/11kV zone substation		15.8	■		
13	Tennyson – establish 33/11kV zone substation		8.4	■		
14	Buranda – establish zone substation		12.9	■		
15	Doboy – establish zone substation		6.8	■		
16	Lomandra Drive – establish zone substation		3.4	■		
17	Parkinson – establish zone substation		13.5	■		
18	Pandanus Avenue – establish zone substation		4.7	■		
19	Whinstanes – establish zone substation		11.7	■		
20	Fisherman Island North – establish zone substation		23.2	■		
21	Rochedale – establish zone substation		22.4	■		
22	Greenslopes – establish zone substation		17	■		
23	Victoria Park – convert to 110/11kV and new 110kV, 33kV and 11kV switchgear		26.8	■		
24	Makerston Street – install 110kV indoor switchboard		9.8	■		

Table 4.7 Major electricity projects (Refer to Figure 4.6) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
25	Larapinta • establish 33/11kV zone substation	ENERGEX	13.6	■		
	• establish 110/33kV bulk substation		2.1		■	
26	Fisherman Island – establish 110/33kV bulk substation		7.4		■	
27	Adelaide Street – establish 110/11kV zone substation		31.9		■	
28	Upper Kedron – establish 110/11kV zone substation		11.5		■	
Feeders						
29	Wellington Road to Coorparoo – establish double circuit 110kV UG	ENERGEX	48.4	■		
30	Victoria Park to Ann Street – establish new double circuit 110kV UG feeders		20.5	■		
31	Ann Street to Adelaide Street to Makerston Street – establish new double circuit 110kV UG feeders		11.2	■		
32	Coorparoo BS to Holland Park to Greenslopes – construct double circuit 33kV UG feeders		12.1	■		
33	Coorparoo BS to Camp Hill – construct double circuit 33kV UG to replace F612 and F613		6.7	■		
34	Ashgrove West to Toowong – install new double circuit 33kV UG cables		13.7	■		
35	Sandgate BS to Bald Hills to Zillmere – establish double circuit 33kV (SGT-BHL and SGT-ZMR)		9.9	■		
36	Richlands to Wacol – establish single 33kV UG circuit (double circuit construction)		12.4	■		
37	Ebbw Vale to Moggill – construct 33kV circuit		11.2	■		
38	Calamvale to Parkinson – establish 33kV single circuit		13.5	■		
39	Moorooka to Annerley – establish single circuit 33kV UG		3.9	■		
40	Rocklea to Moorooka – construct single circuit 33kV UG cable to replace F517		8.6	■		
41	Roma Street Rail yards to Makerston Street – establish 110kV supply to Queensland Rail 110/25kV		7.8	■		
42	Myrtletown to Pandanus Avenue – establish 33kV DCCT feeders energised by 11kV		4.2	■		
43	Kelvin Grove to Milton – feeder works from 110kV F782		48.5	■		
44	Meeandah to Myrtletown – replace 4.1km of 33kV OH feeder F609		1.6	■		
45	Hemmant to Tingalpa • replace 3.5km of 33kV OH feeder F558		1.3	■		
	• replace 3.3km of 33kV OH feeder with 33kV UG F560		5.1	■		



Table 4.7 Major electricity projects (Refer to Figure 4.6) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
46	Enoggera to Grovely – replace 33kV feeders F596 and F595	ENERGEX	7.9	■		
47	Wellington Road to Doboy BS – replace 33kV OH feeder F584		3.8	■		
48	Sandgate to Brighton – replace 4.4km of 33kV OH feeder F656		1.7	■		
49	Oxley to Archerfield – replace F625 and F626 33kV UG		7.5	■		
50	Belmont BS to Mount Gravatt – replace F631 and F632 33kV UG		22.4	■		
51	Ashgrove to Ashgrove West – replace F565A and F565B 33kV cable with single circuit UG		10.3	■		
52	Sandgate to Zillmere – upgrade 33kV feeders (F505)		1.2	■		
53	Doboy BS to Lota – upgrade 33k feeder F414, F558, F569 and F560, including new double circuit to Lota BS		10	■		
54	Rochedale to Belmont BS – upgrade F647 and new single circuit UG		22.4	■		
55	Inala to P28765 – upgrade feeder F543 between Inala and pole P28765		1.6	■		
56	Nudgee to Hendra to Victoria Park – reinforce Brisbane CBD with additional 110kV UG		81.3		■	
57	Doboy to Tingalpa – build new 110kV double circuit UG feeder joining F414 to F558/560 at 33kV		11.1		■	
58	Nudgee to Geebung – new 33kV UG double circuit to replace F604 and F605		21.9		■	
59	Kenmore to Sherwood – replace 4.9km of 33kV OH feeder F539		1.9		■	
60	Stafford to Kedron – replace ageing 33kV UG feeders F567 and F568		9.5		■	
61	Bulimba to Queensport – upgrade F443 by replacing UG tails and uprating OH component		2.5		■	

BS – bulk supply
UG – underground
OH – overhead

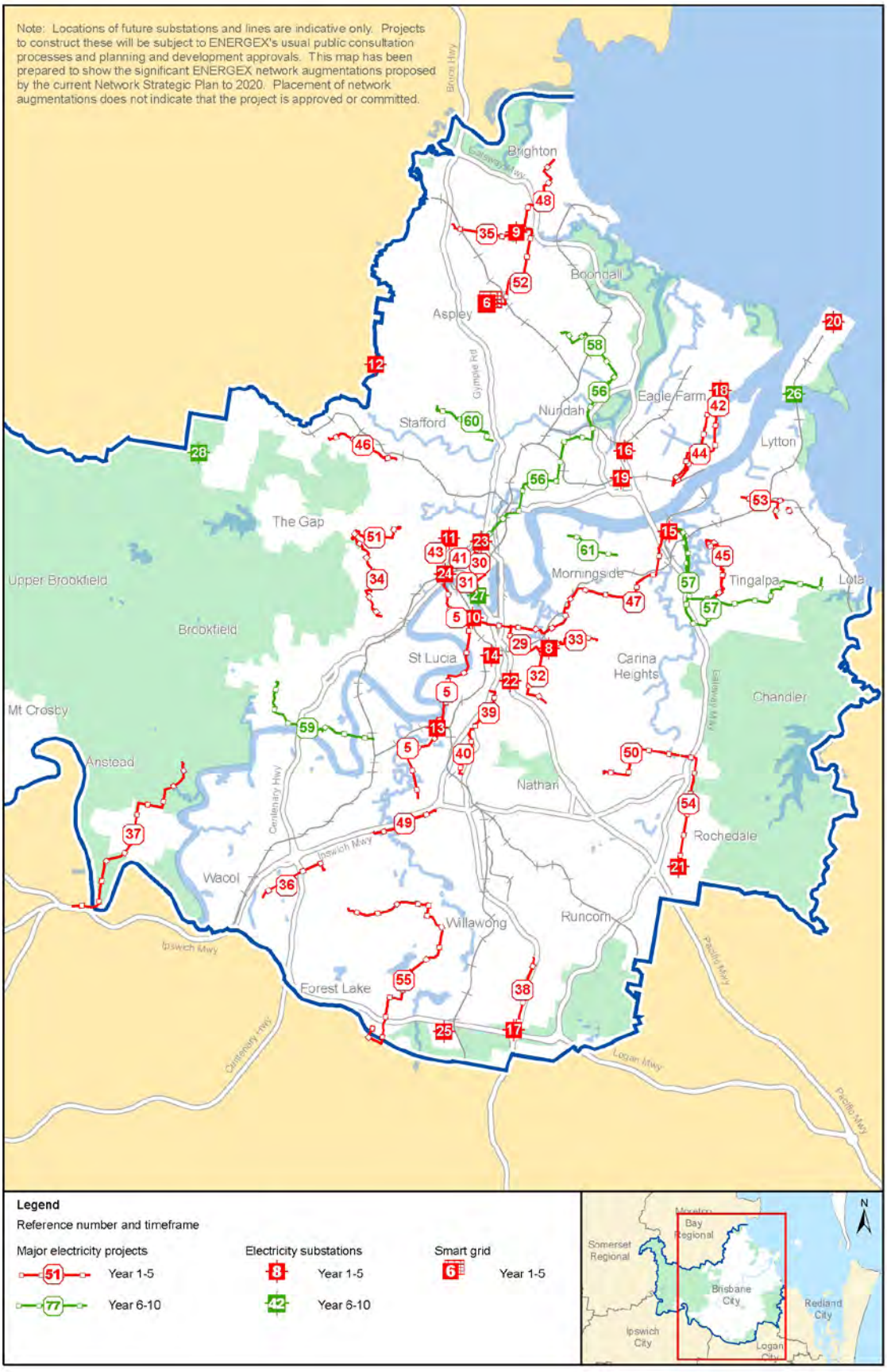
Table 4.8 Major gas projects

Ref. No.	PROJECT	SPONSORS	DELIVERY TIMEFRAME		
			YEAR 1-5	YEAR 6-10	YEAR 11-20+
Gas transmission					
1	High-pressure steel pipe expansion (6km), RBP	APA Group	■		
2	High-pressure steel pipe expansion (33km), RBP			■	
Gas distribution					
3	Major mains renewal on the south side of Brisbane (~450km)	APA Group	■	■	■
4	Major mains renewal on the north side of Brisbane (~230km)	Envestra	■	■	

RBP – Roma to Brisbane Pipeline



Figure 4.6 Major electricity projects



Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.9 Major health, education and law enforcement projects^ (Refer to Figure 4.7)

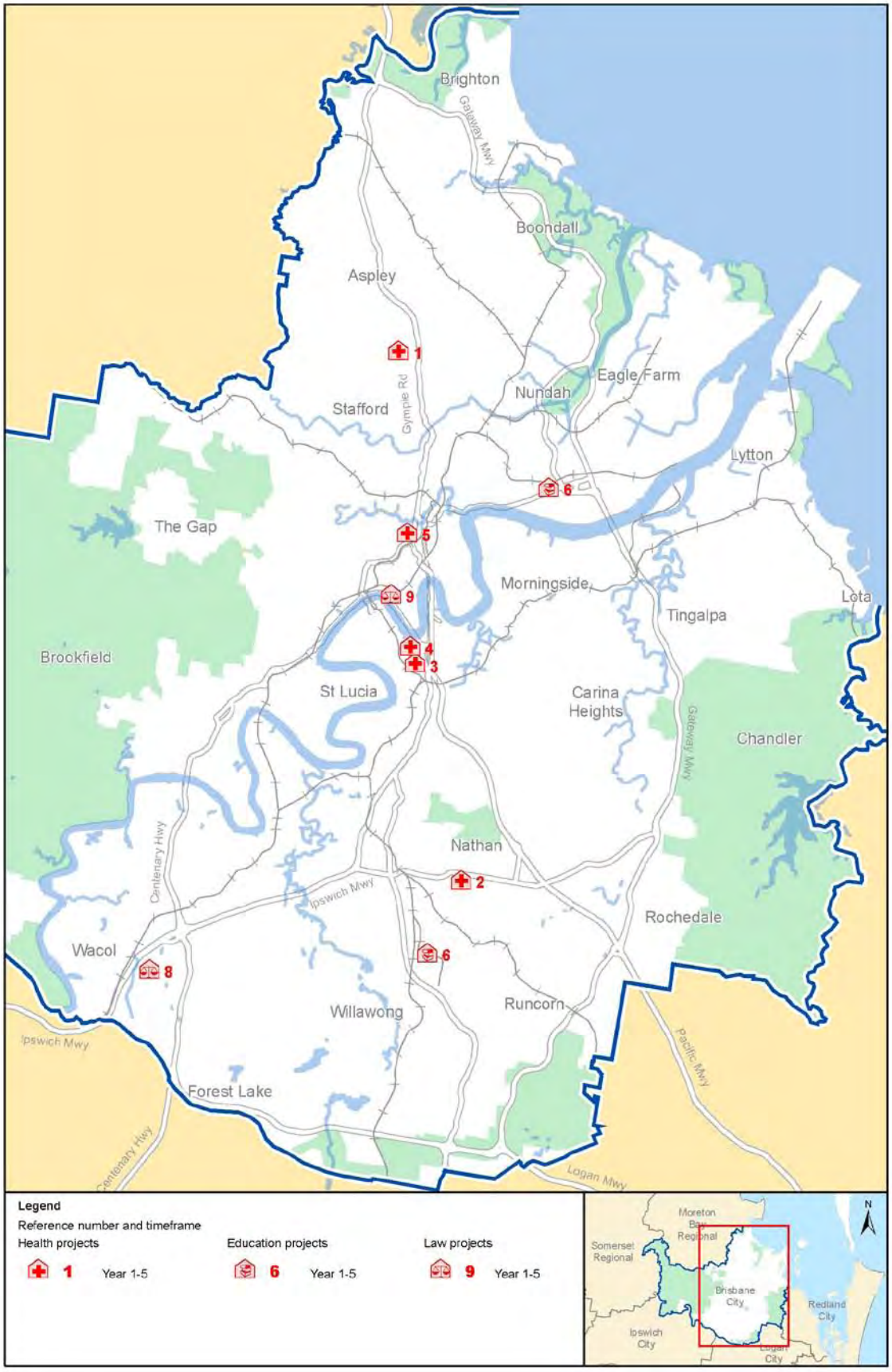
Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
Health						
1	The Prince Charles Hospital: Paediatric Emergency Department	Queensland Health	46			
2	Emergency Department upgrades – QEII, Coopers Plains		TBD			
3	Translational Research Institute		334			
4	Queensland Children's Hospital and Academic and Research Centre		1434			
5	Smart State Medical Research Centre		173			
Regional vocational education and training						
6	SkillsTech Australia – redevelopment of Brisbane Trade Facilities: Acacia Ridge and Eagle Farm	Education Queensland	TBD			
7	State school infrastructure in Greater Brisbane (Brisbane, Moreton, Redland and Logan)	Education Queensland	TBD	➔		
Law enforcement						
8	Queensland Police Academy	Department of Justice and Attorney-General	460			
9	Brisbane Supreme Court and Supreme Court		570			

^ Queensland Government projects based on QIP, QTRIP and *Connecting SEQ 2031*

➔ Timing beyond Year 1-5, exact timing not specified



Figure 4.7 Major health, education and law enforcement projects

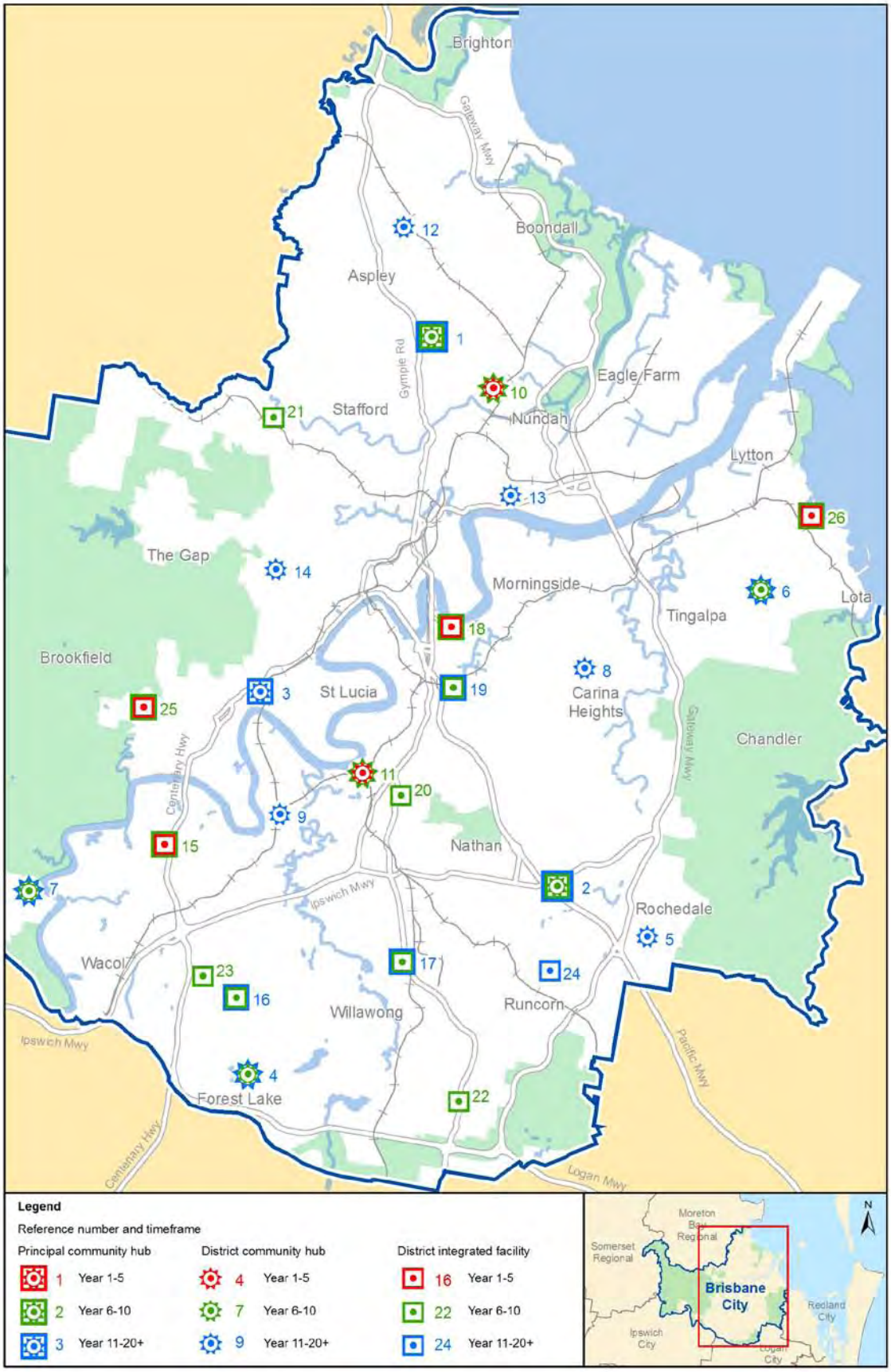


Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.10 Major community hub and integrated facility projects (Refer to Figure 4.8)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
New principal community hub						
1	Chermside	Council/ Qld Govt	40		■	■
2	Upper Mount Gravatt	Council	12.7		■	■
3	Indooroopilly		12.2			■
New district community hub						
4	Forest Lake	Council	10.3		■	■
5	Rochedale		11.6			■
6	Wynnum West/Manly West/Tingalpa		10		■	■
7	Bellbowrie (including existing facility upgrade/expansion)		3.7		■	■
8	Carina/Carindale (including existing facility upgrade/expansion)		9.5			■
9	Corinda (including existing facility upgrade/expansion)		8.2			■
10	Nundah (including existing facility upgrade/expansion)		7.8	■	■	
11	Yeerongpilly/Tennyson	Council/ Qld Govt	13.0	■	■	
12	Carseldine/Fitzgibbon		24.1			■
13	Hamilton (including existing facility relocation/ upgrade)		22.7			■
14	Bardon/Ashgrove/The Gap		11.6			■
New district integrated facility						
15	Mt Ommaney	Council	3	■	■	
16	Inala		8.3		■	■
17	Acacia Ridge		5.1		■	■
18	East Brisbane		2.9	■	■	
19	Stones Corner		4.2		■	■
20	Moorooka		6.3		■	
21	Mitchelton		6.1		■	
22	Calamvale		5.9		■	
23	Richlands		3.7		■	
24	Runcorn		6.1			■
Major upgrade of existing district integrated facility						
25	Kenmore	Council	1.5	■	■	
26	Wynnum		3.2	■	■	

Figure 4.8 Major community hub and integrated facility projects



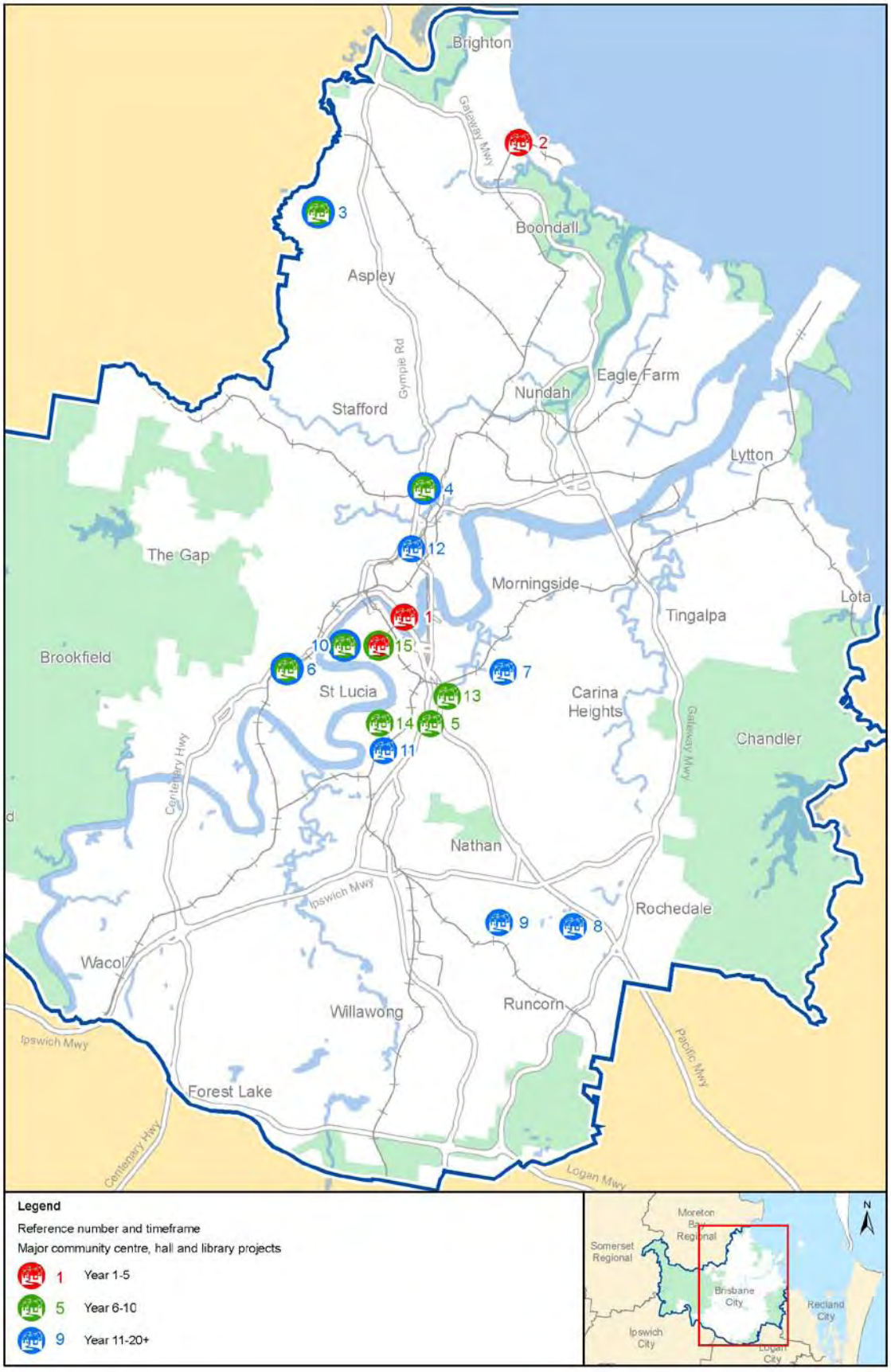
Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.11 Major community centre, hall and library projects in addition to community hub and integrated facility projects (Refer to 4.9)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
1	City Hall restoration, Brisbane	Council	215	■		
2	Sandgate Town Hall upgrade		3	■		
3	Bridgeman Downs		3.4		■	■
4	Lutwyche/Windsor		3.4		■	■
5	Annerley		1.7		■	
6	Toowong		3.4		■	■
7	Coorparoo/Camp Hill		1.7			■
8	Eight Mile Plains		3.4			■
9	Sunnybank		2.9			■
10	West End		0.8		■	■
11	Yeronga/Fairfield		1.7			■
12	Fortitude Valley/Bowen Hills		4.2			■
13	Stones Corner, Buranda – relocation/upgrade/ expansion		4.2		■	
14	Fairfield – upgrade/expansion		2.1		■	
15	West End – upgrade/expansion		2.1	■	■	



Figure 4.9 Major community centres, hall and library projects



Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.12 Major cultural and art facility projects (Refer to Figure 4.10)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
1	Brisbane Convention and Exhibition Centre expansion^	Qld Govt	147	■		
SubARTS community arts centre#						
2	Kedron Substation, Wooloowin	Council	0.2	■		
3	Woolloongabba Substation		1.3	■		
4	Windsor Arts Precinct (Windsor Town Quarry Park)		2.5	■	■	
Community arts centre#						
5	Sandgate	Council	2.5			■
6	South Brisbane		4			■
7	Balmoral/Morningside		2.5			■

In addition to community arts facilities that are part of proposed community hub and integrated facilities

^ Queensland Government projects based on QIP, QTRIP and *Connecting SEQ 2031*

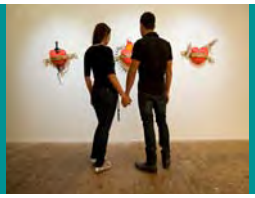
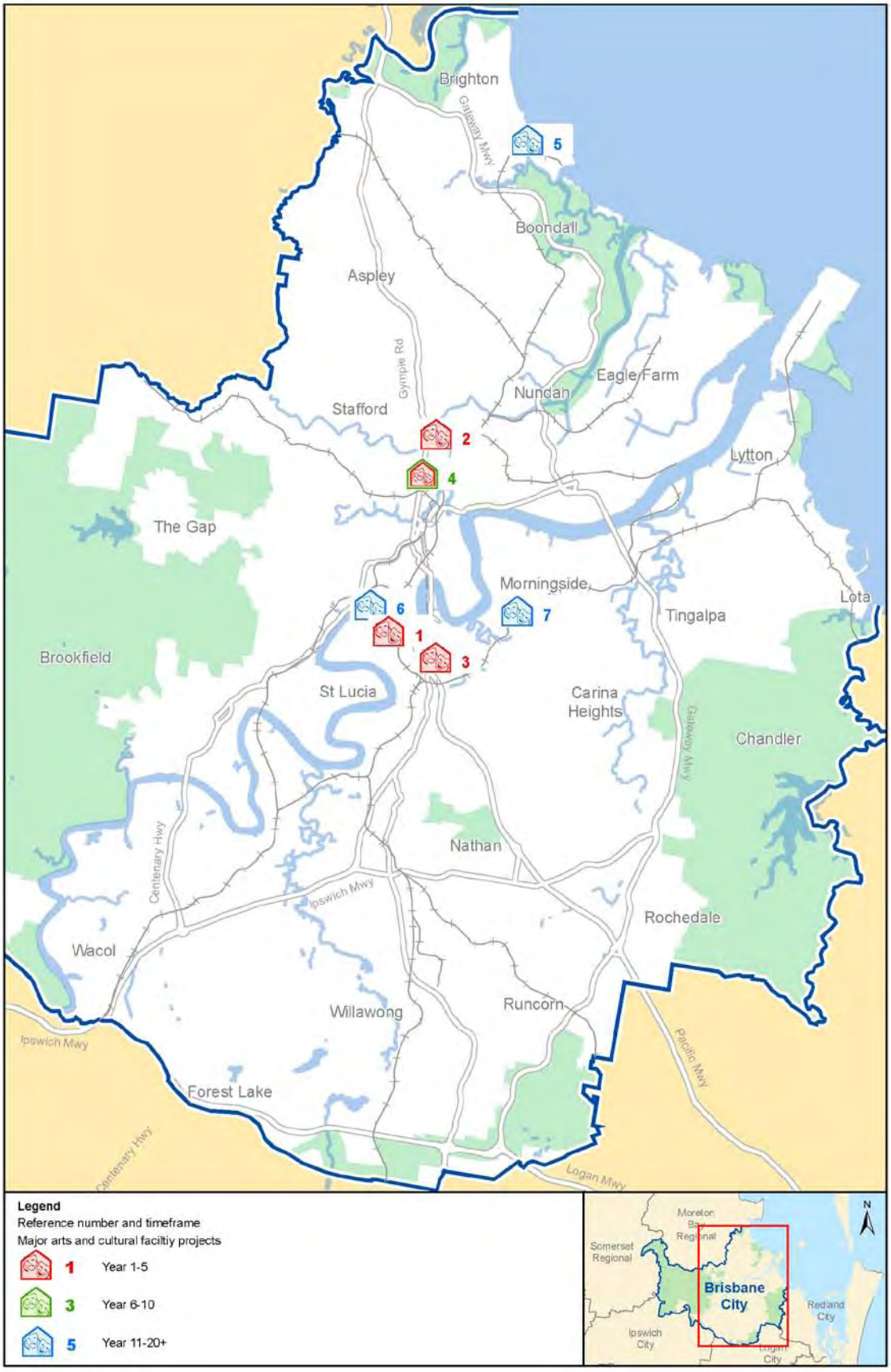




Figure 4.10 Major cultural and art facility projects

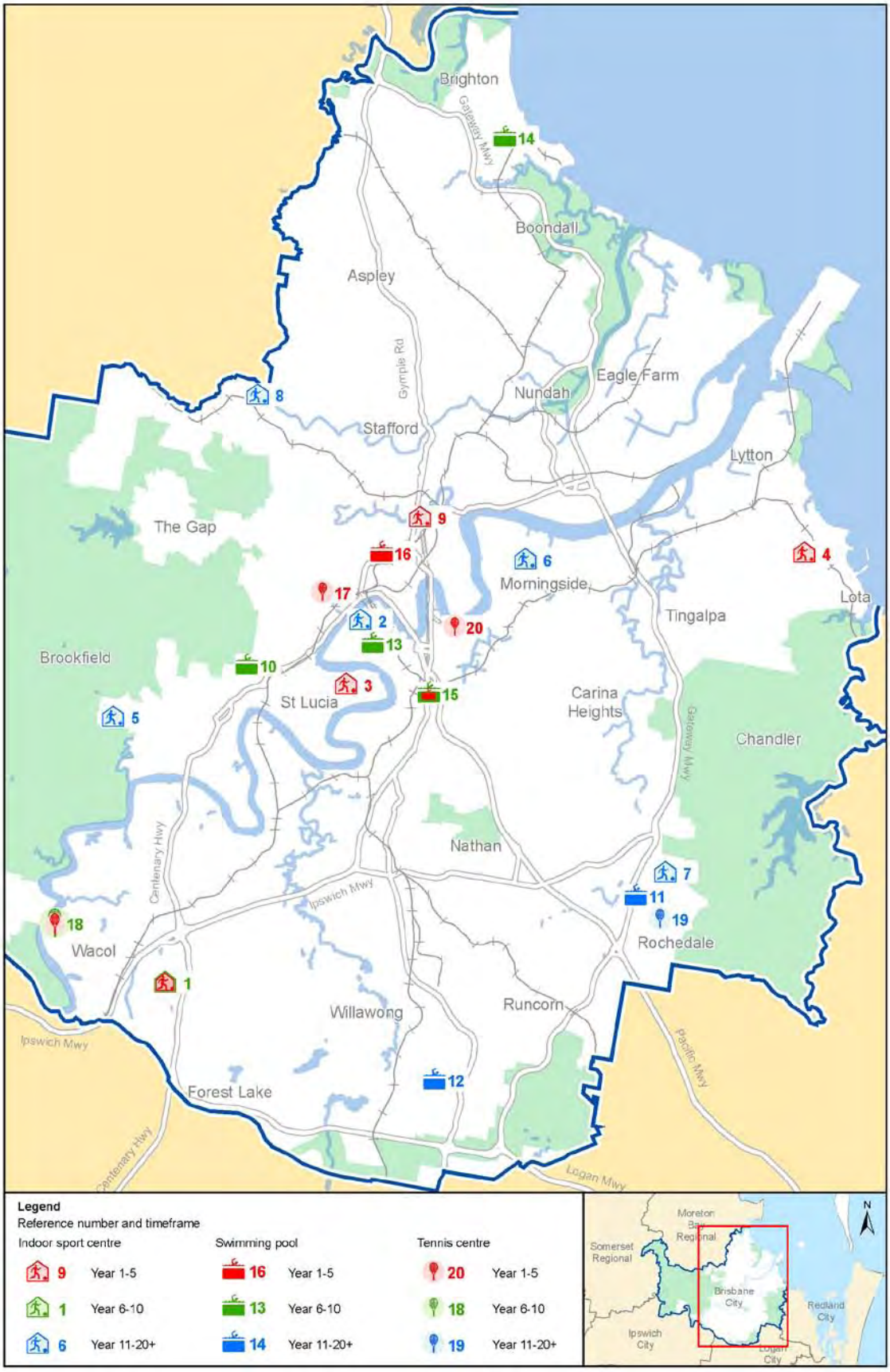


Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.13 Major sports facility projects (in addition to community hub and integrated facility projects) (Refer to Figure 4.11)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST $m	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
New principal indoor centre						
1	Southwest, Richlands	Council/Qld Govt	10	■	■	
2	Inner city (South Brisbane or alternative)		10			■
3	The University of Queensland, St Lucia	UQ	10	■		
New district indoor centre						
4	Wynnum/Manly	Council/ Qld Govt	5	■		
5	Kenmore		5			■
6	Morningside		5			■
7	Rochedale Leisure Centre		12.5			■
8	Mitchelton		5			■
9	Perry Park, Bowen Hills	Council/ private sector	10	■		
New district swimming pool						
10	Indooroopilly/Toowong	Council/ Qld Govt	7.5		■	
11	Rochedale		–			■
12	Calamvale/Parkinson		7.5			■
Major Upgrade/expand existing pool						
13	Musgrave Park, South Brisbane – upgrade to district	Council/ Qld Govt	3.5		■	
14	Sandgate – upgrade to district	Council/ private sector	2.5		■	
15	Langlands Park, Greenslopes – redevelopment post-busway completion		5	■		
16	Centenary Pool, Spring Hill – upgrade to principal	Council	7.5	■		
New district tennis centre						
17	Inner north	Council/ Qld Govt	–	■		
18	South west		–	■	■	
19	Rochedale	Council/ private sector	–			■
20	Heath Park, East Brisbane		–	■		

Figure 4.11 Major sports facility projects



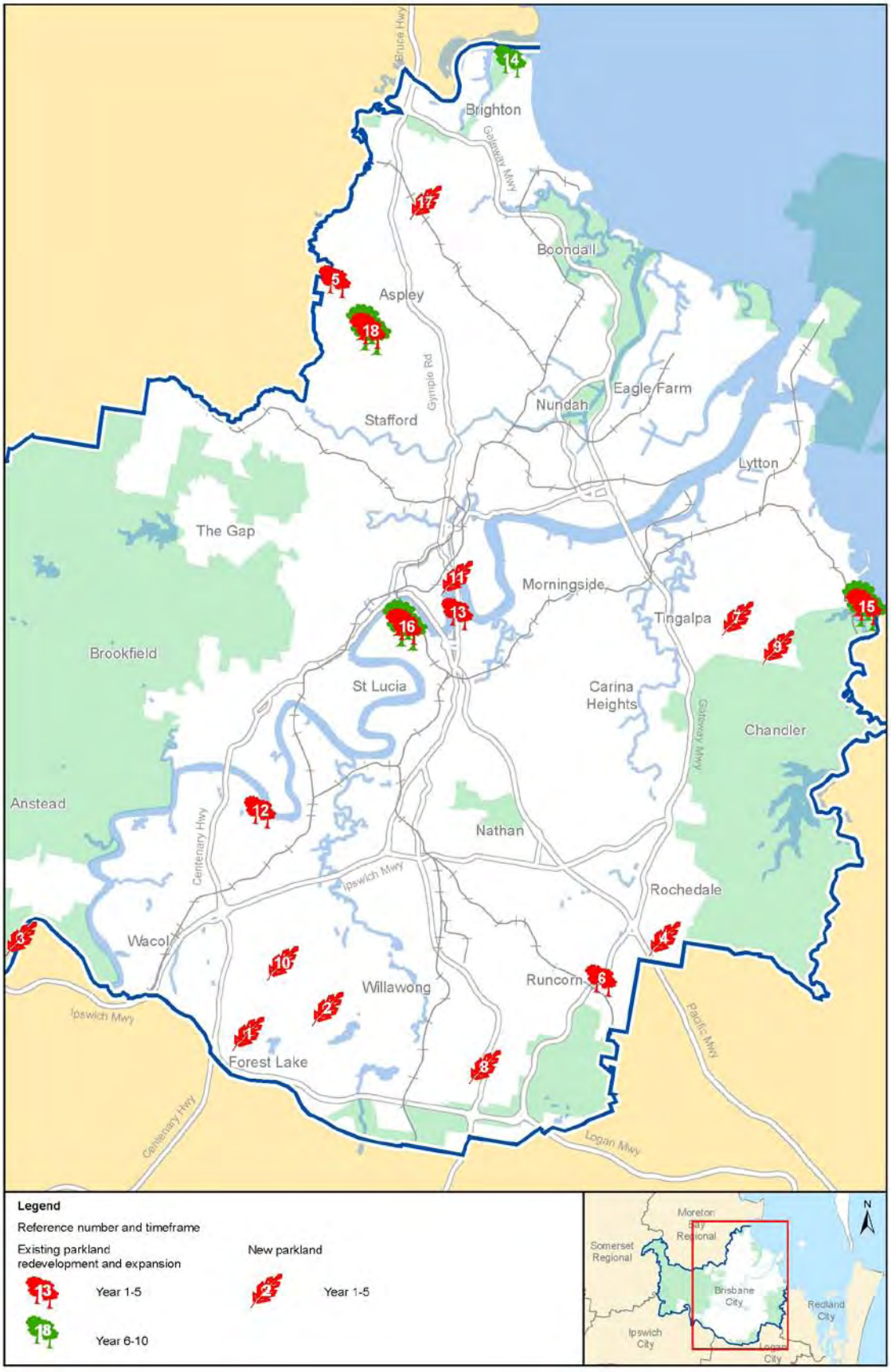
Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.14 Major green space projects (Refer to Figure 4.12)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
Sports and community – new district park						
1	Woogaroo Street, Ellen Grove	Council	6-8	■		
2	Doolandella Sports Park		6-8	■		
3	Moggill Road, Moggill		10	■		
4	Southern District Sports Park, Rochedale		8	■		
Sports and community – expansion to existing park						
5	Darien Street Reserve, Bridgeman Downs	Council	4	■		
6	Wally Tate Park, Runcorn		2-3	■		
Informal recreation – new district park						
7	880 Manly Road	Council	4	■		
8	Calamvale		6	■		
9	Wakerley		8-12	■		
10	Inala		8-12	■		
Informal recreation – new inner suburbs park						
11	Howard Smith Wharves	Council	5	■		
Informal recreation – expansion to existing park						
12	Rocks Riverside	Council	4	■		
Informal recreation – redevelopment of existing park						
13	Kangaroo Point	Council	6	■		
14	Decker Park, Brighton		3	■	■	
15	Lota Foreshore		2	■	■	
16	Musgrave Park, South Brisbane		4-6	■	■	
Mixed – new district park						
17	Fitzgibbon Parkland Master Plan	Council	12	■		
Mixed – redevelopment of existing park						
18	Chermside Parklands	Council	4	■	■	
Land acquisition						
19	Park acquisition: building on the open space system (as per PIP program)	Council	–	■	■	■
20	Bushland acquisition: adding to the conservation reserve network (target 9548ha)		–	■	■	■



Figure 4.12 Major green space projects



Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.15 Greater CBD projects (Refer to Figure 4.13)

NB: Project reference numbers in this table refer to the original reference number as indicated in the infrastructure class project lists outlined in Tables 4.1 to 4.14.

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
TransApex						
2	Legacy Way	Council	1500	■		
3	East-West Link	TBD	TBD			■
Road Action Program						
15	Stanley Street and Old Cleveland Road	Council	TBD		■	
Bus network^						
1	Suburbs 2 City Buslink: • Feasibility study	Council+	2	■		
	• Construction stage		TBD°	■	■	
8	CBD Bus Infrastructure Capacity Program: • Cultural Centre safety upgrades	Qld Govt	10	■		
	• Future projects		TBD	■	■	
Rail network^						
12	Cross River Rail	Qld Govt	8225°	➔		
13	Brisbane Subway		TBD°			■
Water supply						
1	Green Hill/Bartleys Hill – Ann Street to Bartleys Hill trunk main Fortitude Valley/Newstead	Queensland Urban Utilities	25	■		
Waste water network						
3	Luggage Point WRP sewerage scheme – Woolloongabba sewers upgrade	Queensland Urban Utilities	51	■		
7	Luggage Point WRP sewerage scheme – Norman Creek main, and siphon – Caswell PS to Fortitude Valley, Woolloongabba		94		■	
Stormwater drainage						
3	Castlemaine-Caxton Streets catchment study*	Council	12.4	■	■	
4	Stratton Street catchment study*		12.5	■	■	
10	West End LSMP – Hockings Street outlet 21*		16.3		■	■
23	Water-Campbell Street LSMP*		7.8			■
29	Water Street, Spring Hill-Fortitude Valley*		17.3			■
Electricity transmission						
5	Woolloongabba: establish zone substation and Rocklea 110kV connection – new supply to ENERGEX substation	Powerlink/ ENERGEX	–	■	■	
	• Rocklea to Woolloongabba to West End to Milton – construct 110kV new transmission circuits	ENERGEX	86.3	■		
Substations						
10	Woolloongabba – establish 110/11kV zone substation	ENERGEX	30.9	■		



Table 4.15 Greater CBD projects (Refer to Figure 4.13) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
14	Buranda – establish zone substation	ENERGEX	12.9	■		
23	Victoria Park – convert to 110/11kV and new 110kV, 33kV and 11kV switchgear		26.8	■		
24	Makerston Street – install 110kV indoor switchboard		9.8	■		
27	Adelaide Street – establish 110/11kV zone substation		31.9		■	
Feeders						
29	Wellington Road to Coorparoo – establish double circuit 110kV UG	ENERGEX	48.4	■		
30	Victoria Park to Ann Street – establish new double circuit 110kV UG feeders		20.5	■		
31	Ann Street to Adelaide Street to Makerston Street – establish new double circuit 110kV UG feeders		11.2	■		
41	Roma Street Rail yards to Makerston Street – establish 110kV supply to Queensland Rail 110/25kV		7.8	■		
43	Kelvin Grove to Milton – feeder works from 110kV F782		48.5	■		
56	Nudgee to Hendra to Victoria Park – reinforce Brisbane CBD with additional 110kV UG		81.3		■	
Health^						
3	Translational Research Institute	Queensland Health	334	■		
4	Queensland Children's Hospital and Academic and Research Centre		1434	■		
Law enforcement^						
9	Brisbane Supreme Court and District Court	Department of Justice and Attorney-General	570	■		
New district integrated facility						
19	Stones Corner	Council	4.2		■	■
Major community centre/hall/library						
1	City Hall restoration, Brisbane	Council	215	■		
12	Fortitude Valley/Bowen Hills	Council	4.2			■
Major cultural and art facility projects^						
1	Brisbane Convention and Exhibition Centre expansion	Qld Govt	147	■		

Table 4.15 Greater CBD projects (Refer to Figure 4.13) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
SubARTS community arts centre#						
3	Woolloongabba Substation	Council	1.3	■		
New district community arts centre#						
6	South Brisbane	Council	4			■
New principal indoor sports centre						
2	Inner City (South Brisbane or alternative)	Council/ Qld Govt	10			■
Major upgrade/expand existing pool						
13	Musgrave Park, South Brisbane – upgrade to district	Council/ Qld Govt	3.5		■	
15	Langlands Park, Greenslopes – redevelopment post-busway completion	Council/ private sector	5	■	■	
16	Centenary Pool, Spring Hill – upgrade to principal	Council	7.5	■		
New district tennis centre						
17	Inner north	Council/ Qld Govt	–	■		
Informal recreation – new inner suburbs park						
11	Howard Smith Wharves	Council	5	■		
Informal recreation – redevelopment of existing park						
16	Musgrave Park, South Brisbane	Council	4-6	■	■	

⁺ Subject to outcome of feasibility study and Queensland Government and Federal Government funding

^ Queensland Government projects based on QIP, QTRIP and *Connectimg SEQ 2031*

*Works to be staged

In addition to proposed community hub and integrated facilities

TBD – To be decided

WRP – Water Reclamation Plant

PS – Pump station

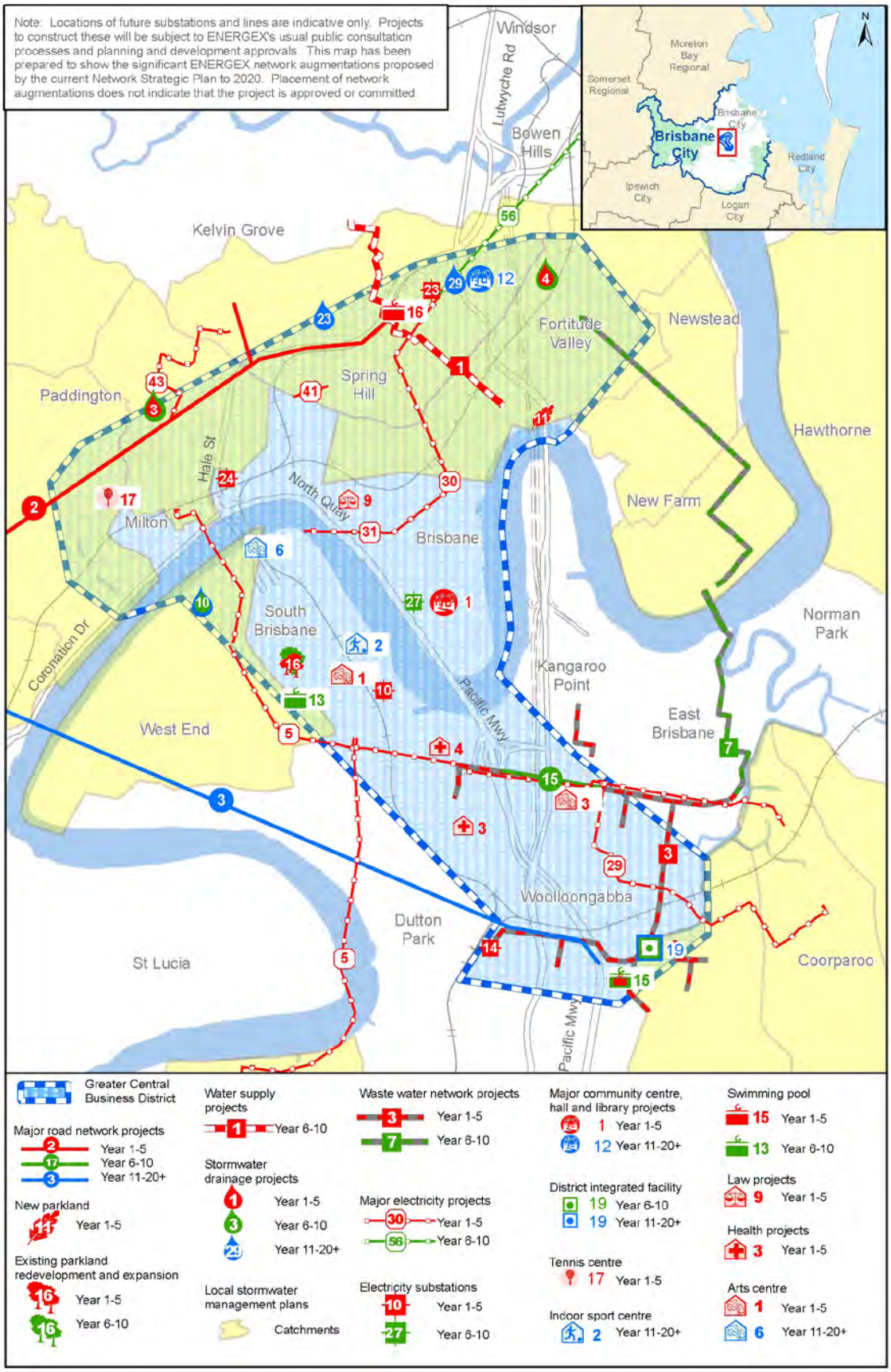
LSMP – Local stormwater management plan

UG – underground

➔ Timing beyond Year 1-5, exact timing not specified

° Subject to federal funding

Figure 4.13 Greater CBD projects



Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.16 Australia TradeCoast projects (Refer to Figure 4.14)

NB: Project reference numbers in this table refer to the original reference number as indicated in the infrastructure class project lists outlined in Tables 4.1 to 4.14.

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
TransApex						
1	Airport Link	Qld Govt/ BrisConnections	4800	■		
Road Action Program						
14	Kingsford Smith Drive: future stages	Council	TBD	■	■	
Road upgrades						
26	Kingsford Smith Drive/Eagle Farm Road – upgrade to six lanes, Gateway Motorway to Eagle Farm Road	Council	35		■	■
Corridor Improvements						
46	Creek Road	Council	31		■	
Arterials, motorways and highways^						
59	East-West Arterial upgrade: Airport Link to Gateway Motorway	Qld Govt	326	■		
63	Gateway Motorway upgrade North: future stages		TBD°	■	■	
68	Port of Brisbane Motorway upgrade • Lindum Street to Pritchard Street		385°	■		
Bus network^						
3	Northern bus depot (Australia TradeCoast), Schneider Road, Eagle Farm	Council	69	■		
Major air, sea and rail freight projects^						
1	Port of Brisbane infrastructure – including Berth and Wharf 11 and 12 Hamilton site redevelopment	Port of Brisbane	2265	■	■	
Water supply						
4	Australia TradeCoast water upgrades	Queensland Urban Utilities	47	■		
5	Wellers Hill – Thynne Road, Morningside		5.5	■		
Waste water network						
5	Luggage Point WRP Sewerage Scheme – Virginia Branch, Virginia/Hendra	Queensland Urban Utilities	41	■	■	
6	Luggage Point WRP S1 Main Sewer Interceptor – Cooksley Street to Eagle Farm/Hamilton		186		■	
8	Luggage Point WRP Sewerage Scheme – Eagle Farm 1840mm Rising Main – Serpentine PS to Luggage Point WRP, Pinkenba		47			■



Table 4.16 Australia TradeCoast projects (Refer to Figure 4.14) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
Waste water treatment						
11	Gibson Island WRP – wet weather capacity upgrade	Queensland Urban Utilities	13.2	■		
12	Gibson Island WRP – capacity and treatment upgrade		70.1		■	
14	Luggage Point WRP – outfall capacity upgrade		4.7	■		
15	Luggage Point WRP – grit removal system upgrade		7.8	■		
16	Luggage Point WRP – odour system		30.8	■	■	
17	Luggage Point WRP – capacity and treatment upgrade		51.9			■
Electricity transmission						
3	Nudgee to Murarrie transmission line (275kV)	Powerlink	–			■
Substations						
15	Doboy – establish zone substation	ENERGEX	6.8	■		
16	Lomandra Drive – establish zone substation		3.4	■		
18	Pandanus Avenue – establish zone substation		4.7	■		
19	Whinstanes – establish zone substation		11.7	■		
20	Fisherman Island North – establish zone substation		23.2	■		
26	Fisherman Island – establish 110/33kV bulk substation		7.4		■	
Feeders						
42	Myrtletown to Pandanus Avenue – establish 33kV DCCT feeders energised by 11kV	ENERGEX	4.2	■		
44	Meeandah to Myrtletown – replace 4.1km of 33kV OH feeder F609		1.6	■		
45	Hemmant to Tingalpa • replace 3.5km of 33kV OH feeder F558 • replace 3.3km of 33kV OH feeder with 33kV UG F560		1.3 5.1	■ ■		
47	Wellington Road to Doboy BS – replace 33kV OH feeder F584		3.8	■		
53	Doboy BS to Lota – uprate 33k feeder F414, F558, F569 and F560, including new double circuit to Lota BS		10	■		

Table 4.16 Australia TradeCoast projects (Refer to Figure 4.14) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
57	Doboy to Tingalpa – build new 110kV double circuit UG feeder joining F414 to F558/560 at 33kV	ENERGEX	11.1		■	
61	Bulimba to Queensport – upgrade F443 by replacing UG tails and uprating OH component		2.5		■	
Regional vocational education and training^						
6	SkillsTech Australia – redevelopment of Brisbane Trade Facilities: Acacia Ridge and Eagle Farm	Education Queensland	TBD	■		
New district community hub						
13	Hamilton (including existing facility relocation/ upgrade)	Council/Qld Govt	22.7			■
New district community arts centre#						
7	Balmoral/Morningside	Council	2.5			■
New district indoor centre						
6	Morningside	Council/Qld Govt	5			■

^ Queensland Government projects based on QIP, QTRIP and *Connecting SEQ 2031*

In addition to proposed community hub and integrated facilities

TBD – To be determined

WRP – Water Reclamation Plant

PS – Pump station

BS – bulk supply

UG – underground

OH – overhead

° Subject to federal funding

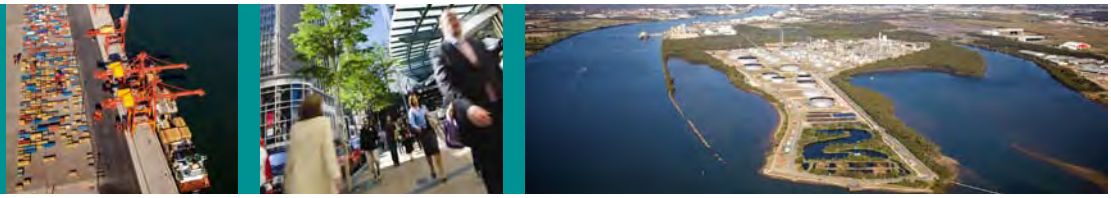
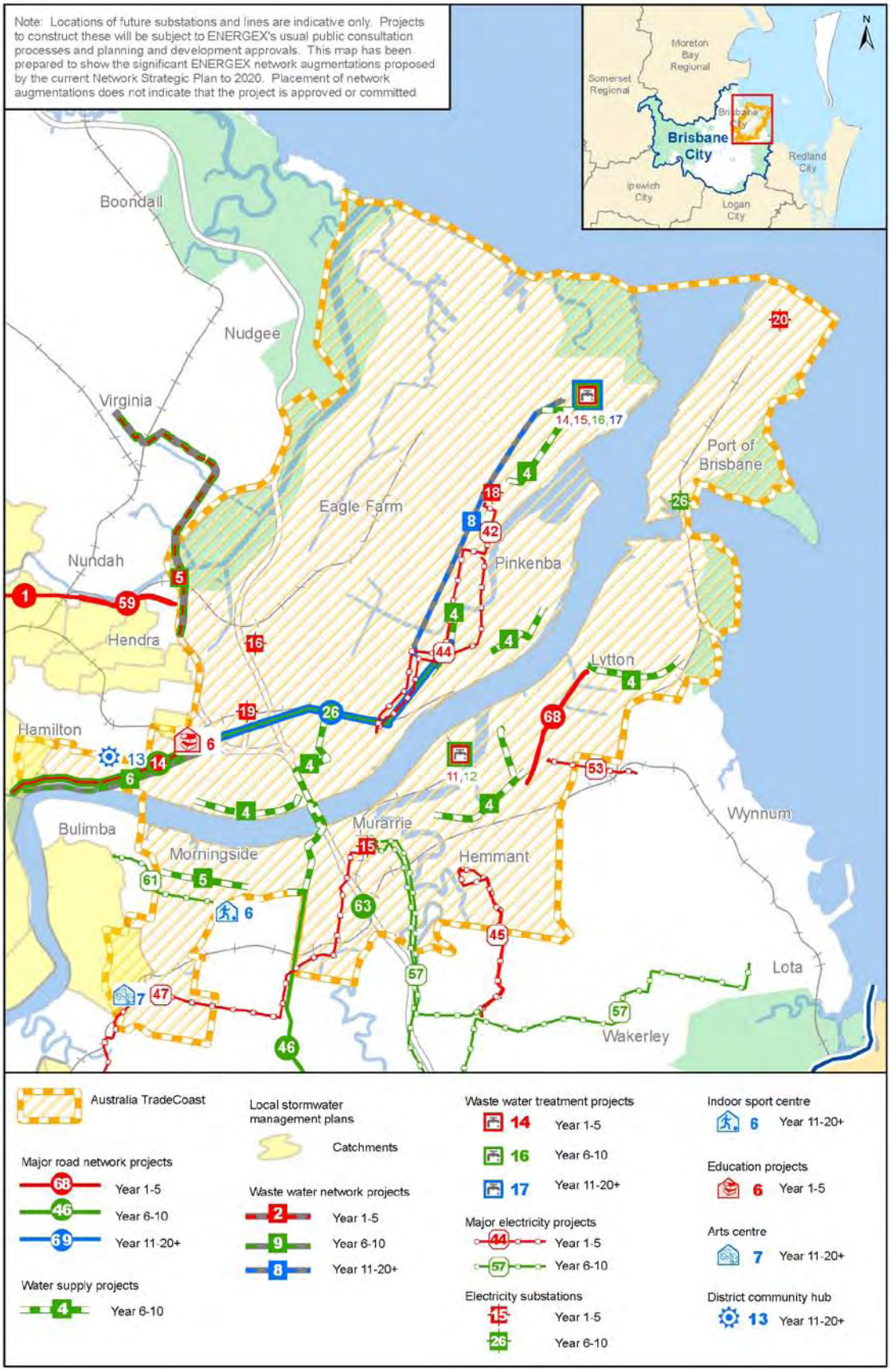


Figure 4.14 Australia TradeCoast projects



Projects with defined locations have been mapped. Numbering may not be sequential.

Table 4.17 Major South West Industrial Gateway projects (Refer to Figure 4.15)

NB: Project reference numbers in this table refer to the original reference number as indicated in the infrastructure class project lists outlined in Tables 4.1 to 4.14.

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
Road Action Program						
13	Progress Road upgrade: Stage 4, Boundary Road to Centenary Highway	Council	32	■	■	
Road upgrades						
16	Sumners Road, Wacol Station Road to Centenary Motorway	Council	17	■		
22	Boundary Road – Tile Street to Progress Road		62		■	
24	Wacol Station Road – widen to four lanes: • Sumners Road to Wolston Road		36			■
	• Wolston Road to Ipswich Motorway		24			■
32	Seventeen Mile Rocks Road		35			■
34	Beatty/Sherbrooke Road – upgrade to four lanes, Granard Road to King Avenue		59			■
35	Freeman Road – Garden Road to Blunder Road		27			■
37	Archerfield Road – Ipswich Road to Progress Road		15			■
Corridor improvements						
39	Ipswich Road	Council	28	■		
40	Beenleigh Road, Boundary Road to BCC Boundary		39	■		
48	Oxley Road – upgrade to four lanes, Ipswich Motorway to Sherwood Road		26			■
50	Fairfield Road, Sherwood Road to Annerley Road		36			■
Arterials, motorways and highways^						
65	Logan Motorway Upgrade: Ipswich Motorway to Pacific Motorway	Qld Govt	TBD	➔		
67	Brisbane Urban Corridor intersection upgrades: • Mains to Kessels Road interchange		300°	■		
	• Future projects		TBD°			■
Waste water network						
9	Oxley Creek WRP Sewerage Scheme – Corinda-Chelmer Branch, Graceville/Oxley	Queensland Urban Utilities	53		■	
Waste water treatment						
13	Wacol WRP – inlet screens upgrade	Queensland Urban Utilities	3	■		
18	Oxley Creek WRP – digester rehabilitation		2.4	■		
19	Oxley Creek WRP – capacity upgrade		62.5		■	
Electricity transmission						
5	Rocklea to Woolloongabba to West End to Milton – construct 110kV new transmission circuits	ENERGEX	86.3	■		

Table 4.17 South West Industrial Gateway projects (Refer to Figure 4.15) (continued)

Ref. No.	PROJECT	SPONSORS	ESTIMATED COST ($m)	DELIVERY TIMEFRAME		
				YEAR 1-5	YEAR 6-10	YEAR 11-20+
Feeders						
36	Richlands to Wacol – establish single 33kV UG circuit (double circuit construction)	ENERGEX	12.4	■		
40	Rocklea to Moorooka – construct single circuit 33kV UG cable to replace F517		8.6	■		
49	Oxley to Archerfield – replace F625 and F626 33kV UG		7.5	■		
Regional vocational education and training^						
6	SkillsTech Australia redevelopment of Brisbane Trade Facilities: Acacia Ridge and Eagle Farm	Education Queensland	TBD	■		
Law enforcement						
8	Queensland Police Academy	Department of Justice and Attorney General	460	■		
New district integrated facility						
17	Acacia Ridge	Council	5.1		■	■
23	Richlands		3.7		■	
New principal indoor sports centre						
1	Southwest, Richlands	Council/Qld Govt	10	■	■	
New district tennis centre						
18	Southwest	Council/Qld Govt	–	■	■	

^ Queensland Government projects based on QIP, QTRIP and *Connecting SEQ 2031*

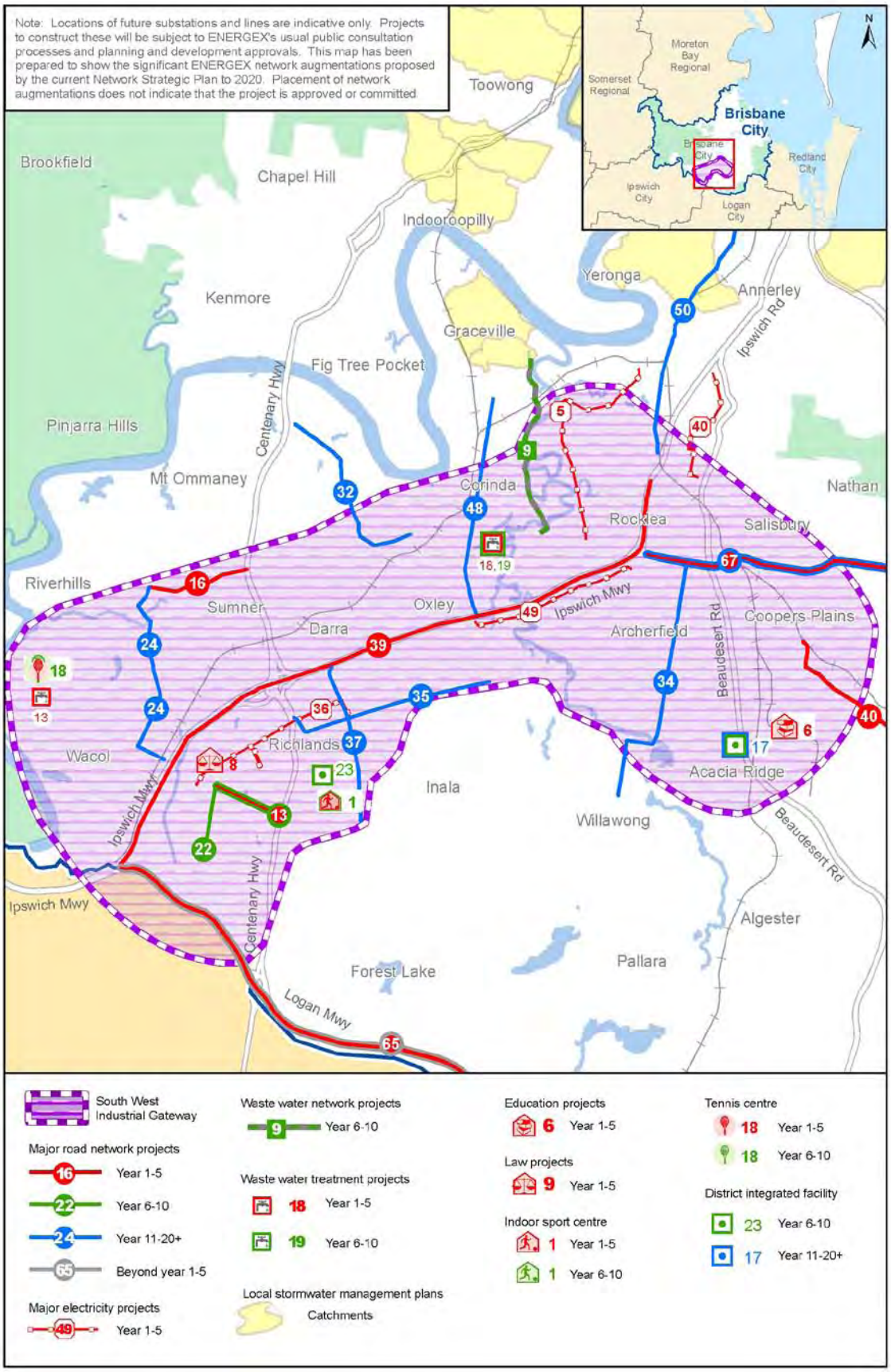
WRP – Water Reclamation Plant

UG – underground

➔ Timing beyond Year 1-5, exact timing not specified

° Subject to federal funding

Figure 4.15 South West Industrial Gateway projects



Projects with defined locations have been mapped. Numbering may not be sequential.

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Printed on recycled paper

N2012-02877

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