3 Strategic context and project need

This chapter describes the strategic context of the project within the State and national planning policy framework, and explains the need for the project, across national, regional and local perspectives. A summary of the strategic need and justification for the New M5 (the project) is provided at the end of this chapter.

The Secretary of the NSW Department of Planning and Environment (DP&E) has issued a set of environmental assessment requirements for the project; these are referred to as Secretary's Environmental Assessment Requirements (SEARs). **Table 3-1** presents the SEARs, as they relate to the strategic context and project need, and where they have been addressed in this environmental impact statement (EIS).

Table 3-1 SEARs – strategic context and project need

SEAR	Where addressed
A statement of the objectives of the proposal,	**Section 3.5**
including a description of the strategic need, justification, objectives and outcomes for the proposal, taking into account existing and proposed transport infrastructure and services within the adjoining subregions,	**Section 3.3** and **Chapter 31** (Project justification and conclusion)
and as relevant, the outcomes and objectives of relevant strategic planning and transport policies, including but not limited to: *NSW 2021*, *NSW State Infrastructure Strategy 2012* (and update), *NSW Long Term Transport Master Plan* (December 2012), *A Plan for Growing Sydney* (December 2014), *NSW Freights and Ports Strategy 2013*, and any other relevant plans or draft plans published after the date of these requirements.	**Section 3.1** and **Section 3.2**

3.1 Strategic planning and policy framework

The following sections describe the compatibility of the project with various State and national strategic planning and policy documents.

3.1.1 NSW 2021: A Plan to make NSW number one

NSW 2021: A plan to make NSW number one (NSW Department of Premier and Cabinet, 2011) (NSW 2021) is the NSW Government's 10 year strategic business plan which sets priorities for action and guides resource allocation to deliver economic growth and critical infrastructure throughout NSW.

The *NSW 2021 Performance Report* (NSW Department of Premier and Cabinet, 2014) provides information on how the NSW Government intends to measure and deliver on the goals, targets and measures outlined in NSW 2021.

NSW 2021 places emphasis on investing in and delivering an efficient and effective transport system including road infrastructure that would relieve congestion, improve travel times, improve road safety and enhance and expand capacity on key road corridors. These outcomes will contribute to both the national and State economies as well as reducing the costs of doing business for many large and small businesses and services.

Within the context of these goals, the project, and the WestConnex program of works, would help to achieve priority actions within NSW 2021 by delivering key road infrastructure identified by the NSW Government. Specifically, the project would help achieve several NSW 2021 goals, as outlined in **Table 3-2**.

For further information on how the project would help to achieve these goals refer to **Chapter 9** (Traffic and transport) and **Chapter 15** (Social and economic).

Table 3-2 NSW 2021 goals that are relevant to the New M5

NSW 2021 goals	Relevance to project
• Goal 1 – Improve the performance of the NSW economy • Goal 4 – Increase the competitiveness of doing business in NSW • Goal 7 – Reduce travel times	The project would be a key link in the transport network to support Sydney's growth. The project is designed to reduce travel times along the project corridor, which would increase productivity, reduce the cost of doing business and help to increase the competitiveness of businesses in NSW.
• Goal 20 – Build liveable centres	The project would enhance the connections between key housing and employment areas (as described in **Sections 3.2.1** and **3.3.4**). Further, the improved travel times along the project corridor would improve urban amenity and liveability characteristics.

3.1.2 State Infrastructure Strategy 2012-2032

The *State Infrastructure Strategy 2012–2032* (Infrastructure NSW, 2012) (State Infrastructure Strategy) is a 20 year strategy which identifies and prioritises the delivery of critical public infrastructure to drive productivity and economic growth. Infrastructure NSW's assessment of the State's existing infrastructure has highlighted critical deficiencies in urban road capacity. The State Infrastructure Strategy identifies strategic infrastructure options to meet the challenges of population growth and substantial increases in freight volumes.

The State Infrastructure Strategy recognises the economic impacts and other constraints created by reduced functionality along the M5 corridor. This corridor is important for freight and business transport, and provides connections to Global Sydney (as defined in *A Plan for Growing Sydney* (NSW Government, 2014), which is discussed in **Section 3.1.6**), its cultural precincts and its 'global economic corridor'. The WestConnex program of works (including the project) is identified in the State Infrastructure Strategy as a critical program of work with a range of benefits including reduced congestion, improved access to the major international gateways of Sydney Airport and Port Botany (and future Western Sydney Airport), and improved industrial and business efficiency including along the project corridor.

State Infrastructure Strategy Update 2014

In November 2014, Infrastructure NSW released a revised State Infrastructure Strategy – the *State Infrastructure Strategy Update 2014* (Infrastructure NSW, 2014) (State Infrastructure Strategy Update) – to guide the allocation of funds from the sale of the State's 'poles and wires' electricity network businesses, as part of the NSW Government's Rebuilding NSW initiative.

The State Infrastructure Strategy Update has identified the potential expansion of the WestConnex program of works to include connections to Victoria Road and the Anzac Bridge to the north (the northern extension) and a connection to President Avenue at Rockdale to the south (the Southern extension). These extensions, coupled with a completed WestConnex program of works, would provide a western bypass of the Sydney CBD, alleviating pressure on existing north−south corridors (eg Eastern Distributor) on the Sydney orbital network and reducing journey times to Sydney's southern suburbs. The State Infrastructure Strategy also highlights investigations into a third road crossing of Sydney Harbour (the Western Harbour Tunnel), which would connect to the northern extension of WestConnex and provide access to North Sydney between the Gore Hill and Warringah Freeways. This possible new tunnel, together with the future M4−M5 Link, would avoid the need to travel through the CBD.

3.1.3 NSW Long Term Transport Master Plan

The *NSW Long Term Transport Master Plan* (Transport for NSW, 2012a) (Transport Master Plan) provides a framework for delivering an integrated, modern and multi-modal transport system by identifying NSW's transport actions and investment priorities for the next 20 years. Under the Transport Master Plan, WestConnex is identified as a critical link in Sydney's motorway network and an immediate priority for the NSW Government. **Figure 3-1** identifies the project and WestConnex more broadly as key connections for the Sydney motorway network to 2031.

The Transport Master Plan recognises that WestConnex would support Sydney's long-term economic growth through improved motorway access and connections linking Sydney's international gateways including the Sydney Airport, Port Botany with Western Sydney and employment areas across Sydney. It also states that WestConnex would relieve road congestion and thereby improve the speed, reliability and safety of travel, including in the M5 Motorway corridor.

The Transport Master Plan identifies the need for progressive delivery of the WestConnex program of works. It recognises the upgrade of the M5 Motorway corridor as a key component of WestConnex, as it would increase the motorway's capacity to accommodate commercial vehicles and freight demand. The project would help to deliver these benefits by improving the performance of the existing M5 Motorway corridor.

The Transport Master Plan commits the NSW Government to developing integrated land use and transport outcomes in conjunction with the delivery of WestConnex. Strategies to deliver an integrated package of transport improvements in parallel with the construction of WestConnex are recognised in the Transport Master Plan. As part of the Transport Master Plan, six modal strategies were developed to expand on the actions and recommendations outlined in the Transport Master Plan. The connection of each of these modal strategies to the project and the wider WestConnex program of works are discussed in the following sections.

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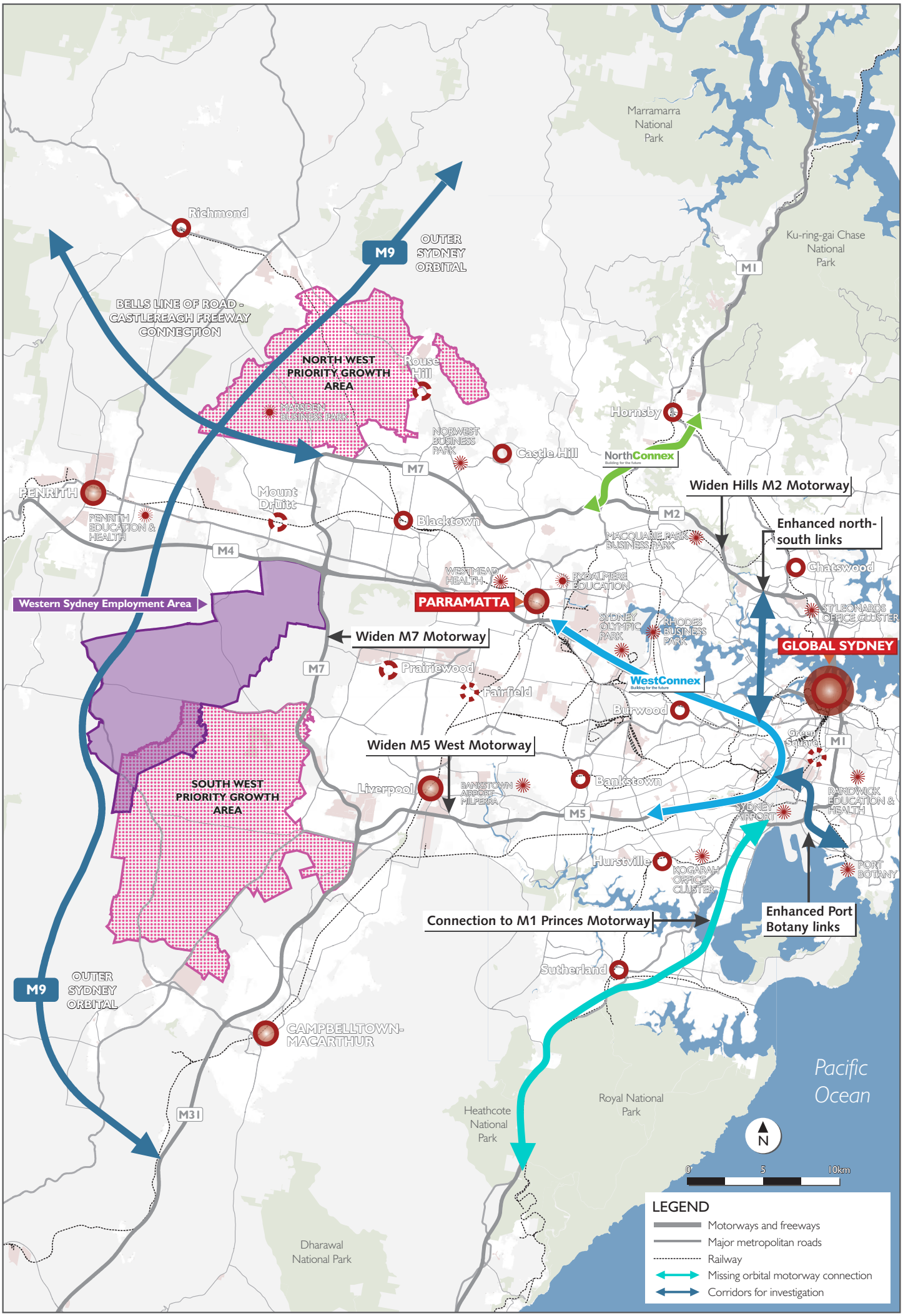

Figure 3-1 Potential connections to address gaps in the Sydney motorway network by 2031

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3.1.4 Transport mode-specific strategies

Transport for NSW has developed and published specific strategies for different transport modes, including:

- *Sydney's Rail Future: Modernising Sydney's Trains* (Transport for NSW, 2012b) (Sydney's Rail Future)
- *Sydney's Bus Future: Simpler, faster, better bus services* (Transport for NSW, 2013a) (Sydney's Bus Future)
- *Sydney's Cycling Future: Cycling for everyday transport* (Transport for NSW, 2013b) (Sydney's Cycling Future)
- *Sydney's Walking Future: Connecting people and places* (Transport for NSW, 2013c) (Sydney's Walking Future).

Sydney's Rail Future

Sydney's Rail Future (Transport for NSW, 2012b) was developed to complement the Transport Master Plan with a particular focus on improving Sydney's rail system. In particular, Sydney's Rail Future highlighted the need to improve the East Hills, Airport and Inner West railway line, which runs generally parallel to the project, and introduced the concept of a Sydney rapid transit, now referred to as the Sydney Metro. The Sydney Metro will comprise the Sydney Metro Northwest (currently under construction and due for completion in 2019) and the Sydney Metro City and Southwest (due to open in 2024) (Transport for NSW, 2015). The Sydney Metro City and Southwest project would involve conversion of the existing passenger line between Sydenham and Bankstown to a rapid transit service that would operate separately from the suburban passenger rail network (Transport for NSW, 2015).

The project would improve vehicular connectivity, which would be complemented by the connectivity improvements proposed under Sydney's Rail Future, particularly the Sydney Metro City and Southwest project. This is because, together with the project, the rapid transit service would enhance transport options between south-west Sydney and the Sydney CBD.

Sydney's Bus Future

Sydney's Bus Future (Transport for NSW, 2013a) was developed to complement the Transport Master Plan by redesigning the city's bus network to meet current and future customer needs through identifying short and longer term priorities for bus services across Sydney. Sydney's Bus Future states that investment in the bus network would occur in parallel with WestConnex.

The strategy flags improved bus services from Sydney Airport to the Inner West, taking advantage of the WestConnex program of works to improve bus access across the Princes Highway.

The project offers a flexible design which does not preclude any bus priority measures being included in the future. It has been assumed that Roads and Maritime and Transport for NSW would continue to work together to deliver Sydney's Bus Futures, which may be extended to this area in due course, at which point the surface road network can be adapted to include measures identified at a future date.

Sydney's Cycling Future

Sydney's Cycling Future (Transport for NSW, 2013b) is the NSW Government's long-term plan to prioritise and provide for cycling in Sydney. The Transport Master Plan and Sydney's Cycling Future provide the strategic policy direction to ensure 'that the needs of bike riders are built into the planning of new transport and infrastructure projects'.

The project would support Sydney's Cycling Future objectives by:

- Maintaining and, where feasible, improving network connectivity
- Where there is a substantial reduction in traffic as a result of the new infrastructure, investigating opportunities for enhanced cycling facilities
- Where existing cycling facilities, or access to them, are directly affected during or post-construction, relocating the cycling facility to provide long-term enhancement.

Chapter 5 (Project description) describes the proposed changes and enhancements to cycling infrastructure and facilities (refer **Sections 5.4.2** and **5.7.9**)

Sydney's Walking Future

Sydney's Walking Future (Transport for NSW, 2013c) is the NSW Government's long term plan to promote opportunities and access to pedestrian activities throughout Sydney.

Sydney's Walking Future states that it will plan and deliver for walking within key transport projects and in corridor planning, such as WestConnex. It also states that WestConnex is of high priority for Sydney's motorway network, providing 33 kilometres of new motorway linking Sydney's west with the Airport and Port Botany precincts.

WestConnex, including the project, would support Sydney's Walking Future strategies by:

- Improving pedestrian network connectivity around the St Peters interchange
- Improving the quality and standard of existing facilities around the western surface works and St Peters interchange
- Improving pedestrian and cyclist safety, particularly at intersections around the St Peters interchange.

Chapter 5 (Project description) describes the proposed changes and enhancements to pedestrian infrastructure and facilities (refer to **Sections 5.4.2**, **5.6.3** and **5.7.9**).

3.1.5 Sydney City Centre Access Strategy

The *Sydney City Centre Access Strategy* (Transport for NSW, 2013d) (City Centre Access Strategy) is the NSW Government's long term strategy to deliver a fully integrated transport network in Sydney's city centre that meets the growing transport needs.

WestConnex, including the project, would support the City Centre Access Strategy by:

- Reducing the volume of extraneous (through) traffic using the CBD's surface road network
- Reducing congestion within the CBD, through encouraging motorists to use by-pass routes and avoid the city centre road network.

3.1.6 A Plan for Growing Sydney

A Plan for Growing Sydney (NSW Government, 2014) (Growing Sydney) was released in December 2014. Growing Sydney aims to promote the growth of Sydney by guiding land use planning decision-making for the next 20 years. It provides a framework based around the following four key goals:

- Goal 1 – To develop a competitive economy with world-class services and transport
- Goal 2 – To deliver greater housing choice to meet changing needs and lifestyles
- Goal 3 – To create strong, healthy and well-connected communities
- Goal 4 – To safeguard the natural environment.

Growing Sydney sets out priority actions that will deliver these goals for Sydney, a number of which are of particular relevance to WestConnex, and specifically the project, including:

- Growing a more internationally competitive CBD
- Growing Greater Parramatta as Sydney's second CBD
- Transforming the productivity of Western Sydney through growth and investment
- Enhancing capacity at Sydney's Gateways – Port Botany, Sydney Airport and the future western Sydney Airport
- Delivering the infrastructure that is needed to achieve the above goals.

These priority actions are directly supported or complemented by the project, which would enhance the capacity of Sydney's gateways and freight networks, expand the global economic corridor (from Macquarie Park, through the Sydney CBD to Port Botany and Sydney Airport) and contribute to urban renewal by reducing through traffic on surface roads and allowing for significant improvements in local amenity.

Growing Sydney aims to unlock capacity constraints in transport corridors to Global Sydney, the global economic corridor and Parramatta as a priority. It also recognises that the transport network between Port Botany, the major clusters of industrial land in Western Sydney and destinations beyond the Sydney Metropolitan Area would see a dramatic increase in freight movements related to the expected increase in Sydney's population by more than 1.6 million people by 2031. This increased demand would need to be accommodated by both freight rail network improvements and an upgraded road network with significantly greater capacity.

Growing Sydney presents a vision for Sydney as a strong global city and the nation's economic and financial powerhouse. In this context it emphasises the need to improve access to major employment hubs and global gateways. The WestConnex program of works would support connections to Sydney Airport and Port Botany which would assist with growth in air travel and freight movements generally.

The project is consistent with Growing Sydney as it would deliver a number of the significant benefits associated with the completion of WestConnex and improve the performance of the M5 East Motorway, which is a key heavy vehicle route.

South Subregional Strategy

Growing Sydney guides subregional planning by identifying the metropolitan priorities for each of the subregions across Sydney. Subregional planning demonstrates how the growth of the city will be closely integrated with long-term transport and infrastructure planning, as major renewal and growth programs capitalise on existing and planned transport.

The project is consistent with a key priority in the plan for the South subregion: to strengthen regional connections to the Illawarra by delivering WestConnex.

3.1.7 NSW Freight and Ports Strategy

The aim of the *NSW Freight and Ports Strategy* (Transport for NSW, 2013e) (the Freight Strategy) is to provide a transport network in NSW that enables the efficient flow of goods to the market.

The Freight Strategy identifies that the NSW road network carried 63 per cent of the total freight volume in 2011, with 33 per cent of freight carried by rail in the same year. The role of heavy vehicles in moving freight across NSW is substantial and will continue to be for the foreseeable future. The Freight Strategy identifies the challenge of increasing the capacity of NSW roads to support the forecast growth in freight task.

The Freight Strategy has two main objectives, being to deliver a freight network that efficiently supports the projected growth of the NSW economy and to balance freight needs with those of the broader community and the environment. The project is consistent with the following strategic action programs identified in the Freight Strategy:

- Network efficiency – the project would improve network efficiency, delivering travel time savings. This would provide more efficient movement of freight, increasing productivity, reducing maintenance and thereby reducing operational freight costs
- Network capacity – the project would provide increased road capacity along the M5 Motorway corridor, a key section of road for freight movement which is currently heavily congested
- Network sustainability – the provision of an alternative route and the resultant travel time savings and reduced vehicle hours travelled would also lead to long-term savings in greenhouse gas emissions (refer to **Chapter 22** (Greenhouse gas)).

The Freight Strategy includes an action to connect and complete Sydney's motorway network including priority freight movements. It recognises that infrastructure provided through WestConnex, including the project, would be a key component in expanding capacity on NSW roads which would provide benefits for freight movement, particularly around major freight activity centres including Sydney's international gateways, Port Botany and Sydney Airport, which are concentrated around the M4 and M5 Motorway corridors.

3.1.8 Action for Air

Action for Air (Department of Environment, Climate Change and Water, 2009a) aims to improve the air quality in the greater metropolitan region. Action for Air identifies ozone and particles as the biggest air quality challenges for the region, and nominates actions and objectives specifically targeted towards reducing motor vehicles emissions. The project would assist meeting this goal by reducing vehicle emissions through anticipated reduction in travel times and improved road conditions for heavy vehicles. Further details regarding the improvements to air quality are provided in **Chapter 10** (Air quality).

3.2 National strategic planning and policy framework

The following sections describe the compatibility of the project with key national strategic planning and policy documents.

3.2.1 Our Cities Our Future – A National Urban Policy

In 2011 the Australian Government released *Our Cities Our Future – A National Urban Policy for a productive, sustainable and liveable future* (Australian Government, 2011). An update was released in June 2012. The Policy outlines the Australian Government's vision to deliver prosperity and wellbeing for city communities, and identifies four goals to achieve this based around productivity, sustainability, liveability and governance.

Productivity

WestConnex, including the project, would support the policy goal of economic growth and productivity by improving freight, commercial and business efficiency through reducing congestion and providing better access to international gateways at Sydney Airport and Port Botany.

Sustainability

WestConnex, including the project, would facilitate urban renewal and improve the ability of communities to utilise space more efficiently. Reducing congestion and through traffic in a number of communities would enable road space to be reallocated to public transport and has the potential to improve air quality in these areas.

Sustainability considerations would be integrated into planning, construction and operation of the project and are described further in **Chapter 28** (Sustainability).

Liveability

WestConnex, including the project, would result in reductions to traffic on surface arterial roads, which would facilitate urban renewal and contribute to improved liveability. The project also has the potential to play a key role in facilitating social inclusion, by providing better access to employment locations and connecting people to social and cultural hubs.

Governance

As part of the WestConnex program of works, the project is consistent with the Policy's governance objective of improving the planning and management of our cities, by facilitating an integrated approach to planning systems, infrastructure delivery and management.

3.2.2 National Ports Strategy 2011

Infrastructure Australia together with the National Transport Commission developed the *National Ports Strategy* in 2011 (Infrastructure Australia, 2011a). This outlines the actions needed to facilitate trade growth and improve the efficiency of port-related freight movement across infrastructure networks delivering:

- Investment certainty, facilitating capacity expansion
- Efficient supply chains
- Timely and efficient approvals.

The National Ports Strategy provides valuable context for WestConnex and illustrates the need for improvements to the supply chain operating from Port Botany. WestConnex is intended to provide the 'missing link' on Sydney's primary road freight network between the Port Botany precinct and Sydney's central west facilitating additional capacity on Sydney's busiest freight and commercial road corridors. The project would deliver improved land-side transport capacity for Port Botany, as well as contribute to improved accessibility improving the productivity of national exports.

3.2.3 National Land Freight Strategy Discussion Paper 2011

Infrastructure Australia identifies that there is considerable scope for improving Australia's productivity and international competitiveness through national thematic approaches to the provision and use of infrastructure. One of the national themes identified by Infrastructure Australia is a national land freight network strategy. The *National Land Freight Strategy Discussion Paper 2011* (Infrastructure Australia, 2011b) provides a case and priorities for a national land freight network strategy, and an indicative list of projects and programs that Infrastructure Australia has flagged for inclusion in a long-term national land freight network plan.

The 2011 discussion paper notes that general freight is likely to grow near population centres. In addition, population growth and urban consolidation will place added pressure on routes used by freight vehicles. Given expected growth in both population and freight, especially in urban areas, the need to resolve issues around effective freight movement will become increasingly pressing.

The project would assist in addressing freight transport needs and congestion along the M5 Motorway corridor by providing an alternative route for State and regional freight travelling to and from Sydney Airport and Port Botany. In doing so, the project would assist in improving efficiency of freight movement and improve amenity along the M5 Motorway corridor. The project demonstrates effective integration of transport and land use planning, which is important in achieving optimal outcomes for productivity and amenity.

3.2.4 National Road Safety Strategy for Australia 2011-2020

The *National Road Safety Strategy for Australia 2011 – 2020* (Road Safety Strategy) (Australian Transport Council, 2011) is based on the Safe Systems approach to improving road safety. This is an inclusive approach that caters for all road users, including drivers, motorcyclists, passengers, pedestrians, cyclists, and commercial and heavy vehicle drivers. The Safe Systems approach recognises that humans, as road users, are fallible and will make mistakes that will result in crashes.

The Road Safety Strategy indicates that infrastructure improvements can have a major influence in preventing crashes or minimising the consequences of a crash; and given that road infrastructure has a life of 25 years or more, the investment in infrastructure improvement will continue to save lives and avoid serious injuries well into the future. By relieving road congestion (and thereby improving the speed, reliability and safety of travel along the M5 Motorway corridor), the delivery of the project is consistent with the overarching road safety directions identified in the Road Safety Strategy. Road safety requirements would continue to be considered during the detailed design, construction, and operation stages of the project.

3.2.5 National Infrastructure Plan 2013

A new national infrastructure priority list is recommended to the Infrastructure Australia Council by the National Infrastructure Coordinator each year.

Action 6 of the *National Infrastructure Plan June 2013* (Infrastructure Australia, 2013) (National Infrastructure Plan) is to 'create a complete national freight network'. A number of long-term directions identified in the National Infrastructure Plan are recommended for incorporation into the national freight network; including progress towards connection from the designated National Land Transport Network by road to all nationally significant container and bulk freight ports. The National Infrastructure Plan identifies WestConnex as a key contributor to achieving this.

3.2.6 State priorities

A number of State priorities are listed on the NSW government website to highlight how the government intends to provide high quality public services and infrastructure. The priorities relevant to the project and the wider WestConnex program of works are provided below:

Building infrastructure

Under this priority, the NSW government is committed to improving road travel reliability; noting that congestion across metropolitan Sydney is estimated to already cost up to $5 billion per annum, and will rise to $8 billion by 2021 if nothing is done. The WestConnex program of works will be a key contributor to this commitment by helping to enable business and the community to move around the city with greater ease, reducing travel times, boosting productivity and reducing business costs.

Better services

This priority recognises that public transport services are crucial in getting customers to their destinations and that Sydney is undergoing a large amount of infrastructure construction. The Government aims to improve integration across public transport services, updating timetables and providing clear information to get people to their destinations on time. The project would provide the opportunity for potential future public transport connections between the Princes Highway, St Peters, Mascot Town Centre and the Airport helping to facilitate improved local public transport services. Further details on changes to bus infrastructure is provided in **Chapter 5** (Project description).

Safer communities

Reducing road fatalities is a commitment of the NSW Government. The 'safer communities' priority aims to reduce road fatalities by at least 30 per cent from 2011 levels by 2021. To achieve this reduction, the Government is putting more money into roads and working with local government to deliver road safety improvements. The project (and the overall WestConnex program of works) will help facilitate the 'safer communities' priority by including control systems to ensure safe and efficient operation of the project under normal operating conditions, and to respond to incidents and other emergency events that may occur. Further details on the operational management control systems and the incident and emergency response procedures are provided in **Chapter 5** (Project description).

3.3 Why the project is needed

3.3.1 Overview

The M5 Motorway corridor (comprising the M5 East Motorway and the M5 South West Motorway) is the main passenger, commercial and freight connection between south-west Sydney and Sydney's global economic corridor, which includes the CBD, Sydney Airport and Port Botany. The greater M5 Motorway corridor supports planned residential and employment growth in South West Sydney and is also a well-established route serving suburbs and growth centres in South West Sydney. Further, the M5 Motorway corridor links with Sydney's orbital road network and interstate routes.

The M5 East Motorway connects the M5 South West Motorway at King Georges Road, Beverly Hills in the west with Southern Cross Drive and the Eastern Distributor in the east. The M5 East Motorway is an important link connecting Sydney's Eastern Suburbs, the Sydney Airport, Port Botany, and the Princes Highway, with the wider southern and south-western Sydney road network including King Georges Road, the Cumberland Highway and the M7 Motorway.

The M5 East Motorway currently experiences heavy traffic congestion, slow speeds and unreliable travel times especially in the morning and afternoon peaks, and increasingly at other times of the day and on weekends.

Sydney's population is expected to increase by more than 1.6 million people by 2031 and without major investment in road network infrastructure this growth would result in worsening road congestion. This congestion would in turn affect Sydney's economic competitiveness as a global city.

To meet these challenges, the NSW Government is proposing to provide additional traffic capacity by constructing the project, a new motorway link from St Peters to connect with the existing M5 East Motorway in Kingsgrove, as part of the WestConnex program of works.

The NSW Government is also currently investigating a connection from the New M5 towards the south (the Southern extension) and a connection from the M4 East Motorway towards the north (the Western Harbour Crossing).

The *WestConnex Business Case Executive Summary* (Sydney Motorways Project Office (SMPO), 2013a) (Business Case) states that a high proportion of demand for travel to the port and the airport precinct originates in either the CBD/Sydney Airport/Port Botany corridor or Western Sydney and about 60 per cent of import containers are delivered to areas serviced by the M4, M5 and M7 motorway corridors. The Business Case identifies that the WestConnex program of works would support Sydney's long-term economic growth, including freight movements, through improved motorway access and connections linking Sydney's international gateways with Western Sydney and places of business across the city.

In addition, the *WestConnex Strategic Environmental Review* (SMPO, 2013b) (Strategic Environmental Review) identifies that the WestConnex program of works would deliver significant long-term benefits to the economic growth and development of NSW and Australia. It would also deliver substantial amenity benefits, improve the function of the city, improve traffic flow along key corridors and provide an important catalyst for urban renewal in areas of the city that currently experience poor amenity due to excessive traffic on local and arterial roads. Importantly, it would improve economic competitiveness allowing people (including tradespeople, delivery drivers, service providers and commuters) and goods (including supplies to factories, warehouses, shops, cafes and restaurants) to move around the city in a more efficient and cost effective way.

3.3.2 Regional context

The population of the Sydney metropolitan area is expected to grow by around 1.6 million people by 2031. The majority of this growth is expected to be in Western Sydney, which will experience a population increase of around 900,000 people (NSW Government, 2014). While growth in jobs in Western Sydney is expected to be strong, it is not expected to match the number of new jobs forecast in the eastern half of Sydney (NSW Government, 2014). This increase in population in Sydney's west (without a similar rate of jobs growth) will significantly increase travel demand towards the east on an already constrained transport network.

In addition, heavy freight activity precincts are concentrated in Western Sydney. Land use changes, including development of the North and South West Growth Centres, the planned construction of the Western Sydney Airport, and proposed intermodal terminals at Moorebank and in Greater Western Sydney near the Western Sydney Employment Area, are reinforcing this concentration. The importance of a well-connected motorway network that facilitates the major east-west movements will increase as the freight task increases.

3.3.3 Existing road network conditions

As highlighted in **Sections 3.1** and **3.2**, the NSW and Australian Governments have long recognised the need for investment in transport infrastructure that supports movements to and around the global economic corridor (and Sydney's international gateways). This investment is needed to address congestion on the road network that is worsening due to population and employment growth and ever-increasing freight and business services demands.

The M5 Motorway corridor east of King Georges Road carries about 100,000 vehicles per day, including about 10,000 heavy vehicles. Substantial traffic delays are experienced eastbound in the AM peak period and westbound in the PM peak period. The result of this congestion is extended AM and PM peaks that extend beyond peak hours. Further, the road network surrounding the project corridor exhibits proportionately higher road congestion than the Sydney network average.

M5 East Motorway users primarily originate from the suburbs of south-western Sydney (27 per cent), southern Sydney (20 per cent) and west central Sydney (36 per cent) in the AM peak. The majority of heavy vehicles using the M5 East Motorway travel to/from industrial areas in west central Sydney (43 per cent). Of the vehicles with origins/destinations to the east of the M5 East Motorway tunnels, 48 per cent travel to the port and airport area (in the AM peak). The M5 East Motorway also attracts regional and interstate users travelling between Sydney Airport and the Hume Highway (Canberra, Melbourne) and other areas of Sydney.

Forecast strong growth in traffic over the next 20 years means road congestion on the motorway network and on the arterial road network will increase unless action is taken (Transport for NSW, 2012a). Congestion occurs mainly during the morning and evening peak hours when many people are commuting to and from work. This congestion is concentrated on the main arterial roads leading to employment centres.

The impacts of congestion include:

- Traffic speed: Road congestion is reflected in the low average speeds along the M5 Motorway corridor, which are well below the posted speed limit of 80 kilometres per hour on the M5 East Motorway. The WestConnex strategic traffic model (refer to **Chapter 9** (Traffic and transport)) results indicate the following average speeds on the M5 East Motorway between King Georges Road and Foreshore Road:
  - 42 kilometres per hour (eastbound) and 68 kilometres per hour (westbound) in the AM peak
  - 55 kilometres per hour (eastbound) and 31 kilometres per hour (westbound) in the PM peak
- Economic impact: In addition to slow average peak hour speeds, congestion leads to travel time variability, resulting in reductions in business productivity and freight efficiency and impacts quality of life factors for all road users. Even minor incidents on a congested road network can have an immediate and serious impact on travel times. The Transport Master Plan notes that road congestion currently costs the economy around $5.1 billion each year and by 2020, the costs of congestion are expected to rise to $8.8 billion each year due to increases in demand associated with population growth (Transport for NSW, 2012a)
- Safety impact: Congestion can result in more frequent vehicle crashes and traffic incidents that impact personal safety, property and road network performance. Rear-end crashes from stop-start conditions are a common symptom of road congestion.

3.3.4 Job creation in Western Sydney

As detailed in Growing Sydney, Sydney is expected to have 689,000 additional jobs by 2031, many of which are expected to be located in Western Sydney in response to an expected population increase of 900,000 in the area. A large percentage of these jobs would be located in zoned employment areas or in areas still to be investigated, such as around the future Western Sydney Airport, which is expected to produce up to 19,900 jobs for Western Sydney (Western Sydney Airport Alliance, 2013).

Growing Sydney and the Transport Master Plan both identify the need to prioritise development of centres such as Parramatta, Penrith and Liverpool to bring jobs closer to homes and areas of increasing population. However, as discussed in **Section 3.3.2** there will continue to be stronger growth in jobs in eastern Sydney in the same time period, despite the higher rate of growth in population in Western Sydney during the next few decades, and the development of the employment hubs and the Western Sydney Airport. The Australian Government has indicated that the Western Sydney Airport at Badgerys Creek may be opened in the mid-2020s, but that Sydney Airport will continue to be the primary airport for both passengers and freight.

The Transport Master Plan identified that Western Sydney is currently home to 47 per cent of Sydney's residents but only 37 per cent of Sydney's jobs (Transport for NSW, 2012a). Although jobs growth in Western Sydney is forecast to be strong, surpassing that of the eastern half of the city in the coming decades, it is not forecast to match the job numbers of the city's eastern half (Bureau of Transport Statistics, 2014). This disparity is due to a complex mix of factors including greater housing affordability in Sydney's west, and the existing employment zones and infrastructure that support stronger business investment and location decisions in the global economic corridor and in Sydney's eastern half more generally. As outlined in Growing Sydney, 28 per cent of workers who live in Western Sydney, work in other areas of Sydney and therefore are required to travel to work by car or on public transport.

There is still a need to provide a link between Western Sydney and other centres in Sydney such as the Sydney CBD, Sydney Airport and Port Botany. These connections are required to allow not only for the flow of workers, but also for the effective flow of goods and freight which can only occur by road transport, as rail transport does not provide point-to-point access to individual homes, warehouses, industrial warehouse and or commercial premises.

In addition, based on the forecast population and job growth, the total number of daily trips made in Sydney will increase from 16 million today to 21 million in 2031. In terms of the global economic corridor, the Transport Master Plan indicates about 500,000 people access Sydney's CBD and 100,000 passengers travel through Sydney Airport each day. These statistics indicate a strong growth in demand for road travel on a network that is already heavily constrained.

While rail and public transport provide for efficient travel between major centres, there will continue to be a need for travel by road to jobs that are dispersed across the metropolitan area and not easily accessed by public transport. In addition, commercial vehicle movements and business travel, for example to provide trade services or to attend clients, will continue to rely on the road network. The transport network will therefore need to serve a larger number of long distance trips between Sydney's west and east to accommodate population growth.

WestConnex, including the project, is a key component of an integrated transport solution and is critical to the delivery of an efficient road network that caters for the diversity and complexity of Sydney's transport user demands. The project would improve accessibility to jobs in Sydney's east, and would encourage business and industry investment, and therefore employment opportunities, in south-western centres such as Liverpool, through improved connections to other centres, allowing for the flow of people and goods.

3.3.5 Freight, commercial and business services

Sydney's freight, service and business task is extensive and a significant contributor to the nation's gross domestic product. *Trade and Logistics Report 2011-12* (Sydney Ports Corporation, 2012) indicates that 98 per cent of containers imported through Port Botany, and more than 60 per cent of exported containers, have their destination or origin within Greater Sydney.

Figure 3-2 is based on an extract from the NSW Freights and Ports Strategy which shows that besides Port Botany and Sydney Airport in the east, heavy freight activity precincts are concentrated in Western Sydney.

There are opportunities to shift more freight onto rail, and this remains a priority for the NSW Government. However, assuming the target of doubling the share of container freight moved by rail is achieved by 2020 (Transport for NSW, 2013b), more than 70 per cent of Port Botany's trade would still be moved by road, requiring investment in an efficient road network to support the port and airport precincts.

In managing the freight task, heavy commercial vehicles require a primary network with high quality connections between major freight hubs, whereas light commercial vehicles, such as goods delivery vans, depend on a multi-layered network with many connections to service more diverse and dispersed markets across Greater Sydney and the adjoining regions. There are around four times as many light commercial vehicle trips as heavy commercial vehicle trips on Sydney's road network (Transport for NSW, 2013b), and this trend is forecast to continue. A key reason for this trend is that heavy freight activity precincts are concentrated in a few key locations in the vicinity of the port and across Western Sydney. This land use pattern is set to continue into the future.

Sydney Airport and Port Botany generate about $10.5 billion of economic activity for Sydney each year (Xu and Milthorpe, 2010) and both locations are heavily dependent on road vehicles for the movement of people and freight. Investment in additional road infrastructure such as the project and the wider WestConnex program of works would increase connections to Sydney's west, where the majority of airport and port freight traffic originates or ends.

The *Sydney Airport Master Plan 2033* (Sydney Airport Corporation Limited, 2014) notes that Sydney Airport handles about half of Australia's international air freight. The total amount of freight handled at Sydney Airport is 76 per cent more than any other Australian airport. The volume of freight handled by Sydney Airport is projected to increase from 615,378 tonnes in 2012 to 1,011,312 tonnes in 2033 (Sydney Airport Corporation Limited, 2014), an increase of 164 per cent.

Freight volumes through Sydney Airport and Port Botany are forecast to increase (Transport for NSW, 2013e). Light vehicle traffic is also forecast to increase as a result of changing land use patterns, including development of the north and south west growth centres and proposed intermodal terminals at Moorebank and in Western Sydney near the Western Sydney Employment Area. As such, the reliance on a well-connected motorway network that facilitates the major east-west movements of the global economic corridor will increase as freight volumes increase.

The development of the proposed Western Sydney Airport has the potential to change the way some freight is moved around Sydney, by providing an alternative entry or exit point for freight. Overall, however, the movement of freight around Sydney is not considered to be significantly altered by the introduction of the new airport, for the following reasons:

- The operation of the proposed Western Sydney Airport would be staged, ramping up over time, with initial operations commencing in the mid-2020s (a minimum of five years after the completion of the project)
- Freight arriving at the new airport would still have destinations across wider Sydney
- Port Botany and Sydney Airport would still be key freight entry and exit points, with the new airport to complement the existing airport.

The WestConnex program of works, including the project, would expand capacity on NSW roads and support connections to Sydney Airport and Port Botany which would assist with growth in air travel and freight movements.

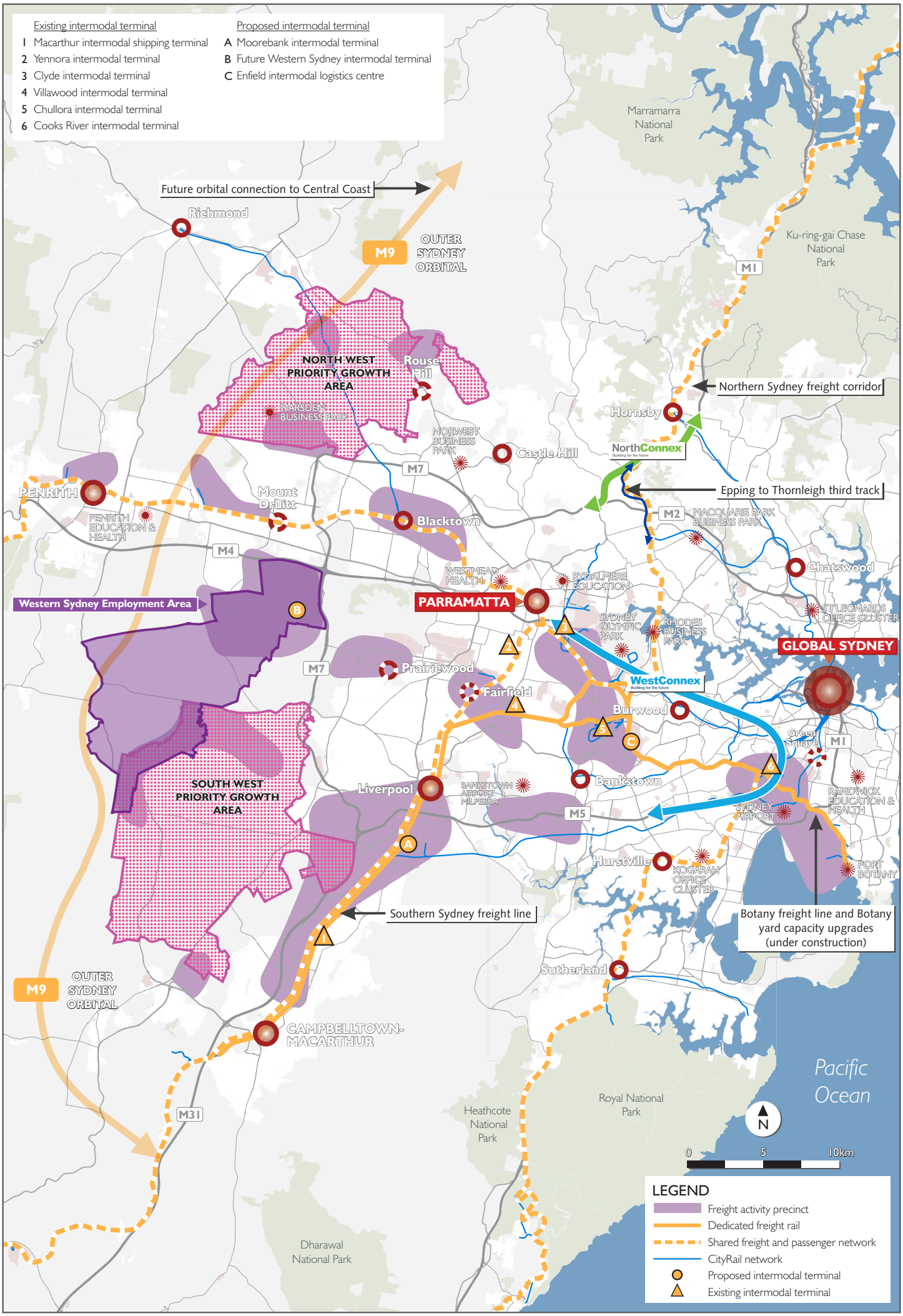

Figure 3-2 Major freight activity precincts in the NSW Freights and Ports Strategy

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3.4 Business Case and economic appraisal

The *WestConnex Business Case Executive Summary* (the Business Case) was endorsed by the NSW Government in September 2013 (Sydney Motorways Project Office, 2013a). The Business Case outlines the need for WestConnex and identifies the process for delivering this major infrastructure initiative, including the New M5.

The WestConnex program of works is expected to significantly reduce traffic congestion on many parts of the Sydney road network. This investment in Sydney's road network would facilitate improvements across the network and generate more than $20 billion worth of benefits to the Australian economy, while creating almost 10,000 jobs during the construction phase. Specifically, the project is expected to support around 1,550 construction jobs as well as numerous operational jobs.

In 2015, the Business Case was updated (the WestConnex Updated Strategic Business Case). The Updated Strategic Business Case reported a benefit cost ratio of 1.7:1.

WestConnex was appraised on an incremental basis, which compared the economic benefits with and without each stage of the program of works by considering the following parameters:

- The direct costs of a project to the community, which include:
  - Capital costs, including construction costs
  - The costs of temporary traffic management and diversions during construction
  - Operating and maintenance costs
- The direct benefits of a project, which include:
  - Travel time saved by freight, service and passenger users
  - Travel time reliability improvements
  - Reductions in vehicle operating costs
  - Reductions in road incident costs
  - Externality reductions including air pollution, greenhouse gas emissions, noise pollution
  - Foregone local road maintenance.
- The indirect benefits of a project to the community. These external benefits include:
  - Benefits that other transport users derive from an expansion in the road network
  - Reductions in travel times and congestion costs on surrounding road links used by other users
  - Benefits that neighbouring businesses derive from better access to their businesses.

The economic analysis found that WestConnex, including the project, would create benefits that would outweigh the initial upfront construction cost and ongoing operational costs.

The Updated Strategic Business Case also identified key user groups of the motorway network and key requirements for freight customers. Key user groups include:

- International gateway users, travelling to and from Sydney Airport and Port Botany
- Heavy and light freight industries
- Dispersed and longer distance travellers
- Commercial services and business users.

The key requirements of the motorway network for freight customers include the ability to support:

- A more direct route to Port Botany via both the M4 and M5 motorway corridors for trucks up to 4.6 metres in height
- Provision of additional higher mass limit alternatives to access Port Botany from the south and north
- Productivity gains from the future use of 32 metre B-Double trucks to transport freight to and from Port Botany.

The Updated Strategic Business Case has identified that the WestConnex program of works would potentially enable a number of future urban development and infrastructure opportunities, including:

- The Parramatta Road corridor
- The Bays Precinct
- Other urban renewal areas:
  - Cooks Cove
  - Greater Parramatta to Olympic Peninsula urban renewal area
  - Mascot Station Town Centre
- Public and active transport improvements to Sydney Airport
- Future strategic projects:
  - Western Harbour Tunnel and Beaches Link
  - Gateway to the South (including Southern extension)
- Port / Airport Precinct upgrades to complement WestConnex Sydney Gateway
- Mascot Network upgrades to complement the WestConnex St Peters interchange.

3.5 Project objectives

The objectives of the project are to:

- Support Sydney's long-term economic growth through improved motorway access and connections linking Sydney's international gateways and Western Sydney and places of business across the city
- Relieve road congestion so as to improve the speed, reliability and safety of travel in the M5 Motorway corridor
- Cater for the diverse travel demands along these corridors that are best met by road infrastructure
- Enhance the productivity of commercial and freight generating land uses strategically located near transport infrastructure
- Fit within the financial capacity of the State and Federal Governments, in partnership with the private sector
- Optimise user pays contributions to support funding in an affordable and equitable way
- Provide for integration with other WestConnex projects while not significantly impacting on the surrounding environment during the project's construction period

- Protect natural and cultural resources and enhance the environment through a commitment to:
  - Manage tunnel ventilation emissions to ensure local air quality meets EPA standards
  - Maintain regional air quality
  - Manage in-tunnel air quality to meet community visibility and health expectations
  - Minimise energy use during construction and operation
  - Manage noise impacts in accordance with the NSW Road Noise Policy and realise opportunities to reduce or mitigate noise
  - Provide for improvement of social and visual amenity
  - Minimise impacts on natural systems including biodiversity
  - Minimise impact on Aboriginal and non-Aboriginal cultural heritage
  - Protect surface and groundwater sources and water quality including management of contaminated areas
  - Reduce susceptibility to, and minimise impacts of, flooding
  - Integrate sustainability considerations throughout the design, construction and operation of the project, including consideration of the Infrastructure Sustainability Council of Australia (ISCA) Sustainability Rating tool scorecard (refer to **Chapter 28** (Sustainability) for more information).

The way in which the project meets these objectives is discussed in **Chapter 31** (Project justification and conclusion).

3.6 Summary

The project is part of the second stage in the delivery of the WestConnex program of works. It is a NSW Government commitment to deliver WestConnex for Sydney in response to the recommendations from Infrastructure NSW in its State Infrastructure Strategy and Transport Master Plan.

The project would provide operational benefits in relieving congestion along the M5 East Motorway, including a reduction in travel times and improvements in road safety. The investment in the project and other WestConnex stages would facilitate a step change in network performance, enabling delivery of major city shaping improvements and delivering economic growth.

The project would improve accessibility to jobs in Sydney's CBD and east. By improving connectivity and enhancing the flow of people and goods to Sydney's south-west, the project would also encourage business and industry investment and, as a result, employment opportunities, in south-west centres.

As part of the WestConnex program of works, the project would support NSW's key economic generators and provide a strategic response to the currently inadequate, and highly congested, road network. Critically, this includes a targeted response to current failures in the motorway network supporting Sydney's global economic corridor and Western Sydney, both of which are important to the economic development of NSW and Australia. Improvements to the transport network, including the project, would support the global economic corridor and Western Sydney by enabling domestic and international freight and trade and therefore underpin a sustainable NSW economy and Sydney's role as a global city.

Integrated land use and transport planning initiatives are a key factor in developing a future in which Sydney's growing population can reliably access jobs and services. The project complements a number of other transport and freight-based infrastructure initiatives identified in the Transport Master Plan, a combination of which would best address Sydney's needs.

Further justification for the project is provided in **Chapters 28** (Sustainability) and **31** (Project justification and conclusion).

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