

2. Context and need for the project

2.1 The Sydney Metropolitan Strategy

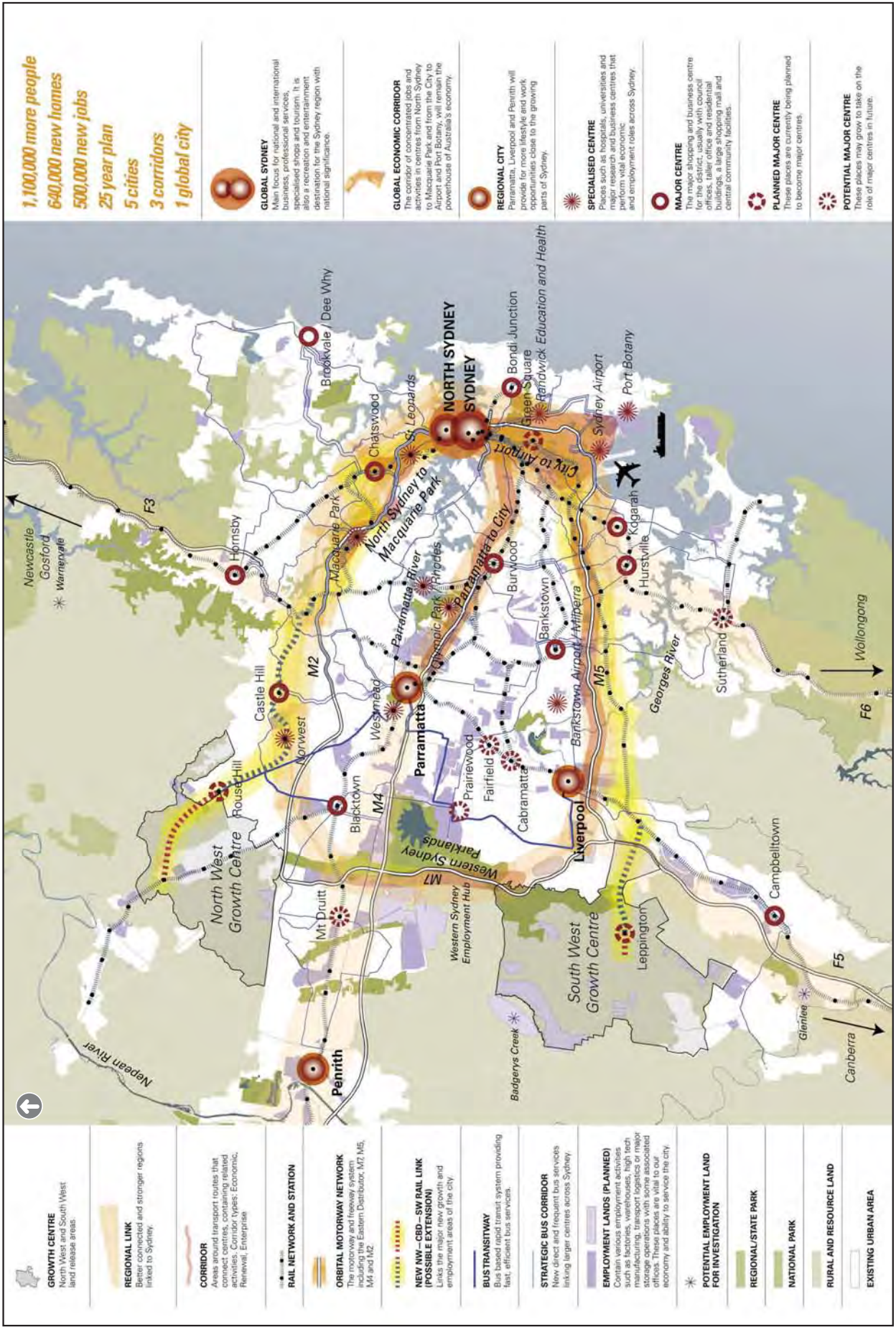
The Department of Planning's (2005b) Sydney Metropolitan Strategy is the key NSW Government planning strategy to guide growth and change in the Sydney Metropolitan Region over the next 25 years. The Strategy was released by the NSW Government in December 2005.

It identifies two major growth centres, the South West and North West Growth Centres, which are land areas proposed to be released for urban development. Figure 2-1 shows the Metropolitan Strategy Map, which identifies the South West Growth Centre, the major and specialised centres, and the 'global economic corridor' (or global arc) where the SWRL is proposed to form part of the rail service. The global economic corridor is defined in the Strategy as the corridor of concentrated jobs and activities in centres from North Sydney to Macquarie Park and from the City to the airport and Port Botany.

The Metropolitan Strategy includes separate components relating to housing, employment and economy, environment, transport, centres and corridors, and parks and public places. The Metropolitan Rail Expansion Program (MREP), including the SWRL, is an integral component of the 'Centres and Corridors' and 'Transport' strategies (Strategies B and Strategy D, respectively) of the Metropolitan Strategy. The MREP projects would link the major new population growth and employment areas of the Metropolitan Region (the global economic corridor), as shown in Figure 1-1. Action D1.1 of the Transport Strategy is to 'Extend the rail and bus networks to connect centres' and includes the planning and, as appropriate, construction of the SWRL.

The South West Growth Centre comprises the last remaining 'greenfield' land available for significant urban development in the south-west portion of the Sydney Basin. The South West Growth Centre Structure Plan (see Figure 2-2), which comprises part of the recently gazetted State Environmental Planning Policy (Sydney Region Growth Centres) 2006 incorporates the SWRL (although the previous southern alignment is shown). The SWRL has been a major determining factor of the urban structure and transport network proposed for the growth centre. The South West Growth Centre could potentially be developed to provide 90,000 to 110,000 dwellings and accommodate 250,000 to 300,000 people, with a town centre at Leppington focused on a major transport hub.

Further detail on the strategic planning context for the SWRL is provided in Chapter 3 (Statutory and planning context).



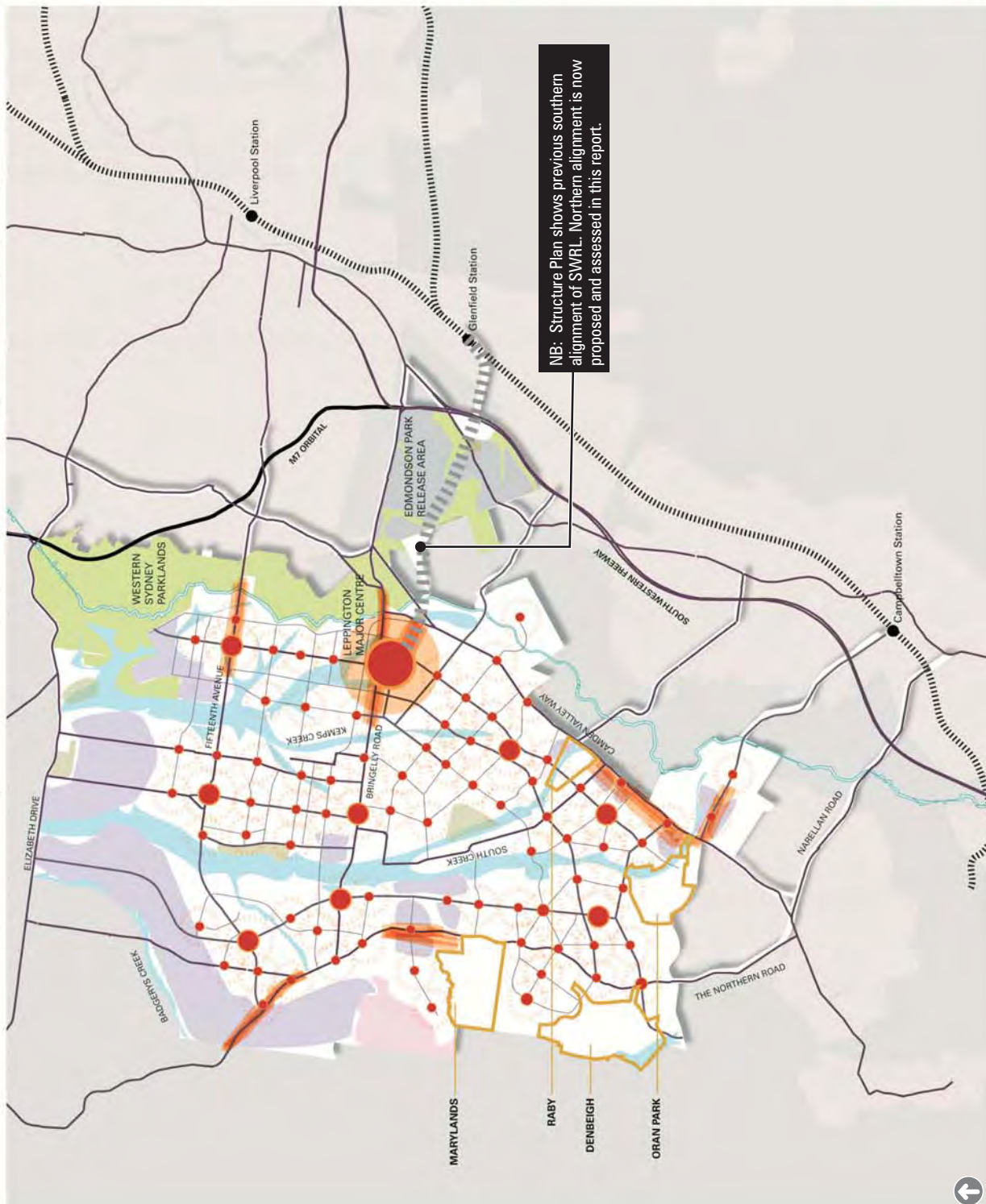
Source: Department of Planning (2005)

Figure 2-1 Metropolitan Strategy map

SOUTH WEST STRUCTURE PLAN

LEGEND

- MAJOR CENTRES**
 Major centres are shown as large red circles on the map.
- TOWN & VILLAGE CENTRES**
 Town and village centres are shown as small red circles on the map.
- WALKABLE NEIGHBOURHOODS**
 Walkable neighbourhoods are shown as red circles with dashed outlines on the map.
- SOUTH WEST RAIL LINK**
 The South West Rail Link is shown as a dashed line on the map.
- EDMONDSON PARK RELEASE AREA**
 The Edmondson Park Release Area is shown as a hatched area on the map.
- FLOOD LIABLE LAND & MAJOR CREEKS**
 Flood liable land and major creeks are shown in blue on the map.
- CONSERVATION / OPEN SPACE**
 Conservation and open space are shown in green on the map.
- HERITAGE CURTLAGES**
 Heritage curtilages are shown as yellow circles on the map.
- TRANSITIONAL LANDS**
 Transitional lands are shown in pink on the map.
- INDUSTRIAL / EMPLOYMENT LANDS**
 Industrial and employment lands are shown in purple on the map.
- MIXED USE EMPLOYMENT CORRIDORS**
 Mixed use employment corridors are shown as orange lines on the map.



Source: Department of Planning (2006)

Figure 2-2 South West Growth Centre Structure Plan

2.2 Population and employment growth predictions

2.2.1 Population growth

The NSW Government is planning for growth in Sydney of up to 1,000 people per week. This level of population growth and a trend towards fewer people in each house, means that an additional 23,500 homes will be needed in Sydney each year (NSW Government 2005). Approximately 30 to 40 % of this new growth is proposed to be accommodated in new release areas, primarily the South West and North West Growth Centres. As described above, the Metropolitan Strategy identifies that approximately 100,000 dwellings will be built in the South West Growth Centre in the next 25–30 years, which is forecast to house up to 300,000 people.

The Growth Centres Commission was formed by the NSW Government to manage the planning and infrastructure coordination for the land release areas in the South West and North West Growth Centres. KBR (2006) reviewed the Metropolitan Strategy population and employment target predictions for the South West Growth Centre and the latest growth estimates, considering land release and dwelling targets from the Growth Centres Commission. Table 2-1 shows population growth estimates to 2031 based on extrapolation of data from the Department of Planning’s Transport and Population Data Centre (TPDC). Table 2-2 amends these estimates considering land release and dwelling targets advised by the Growth Centres Commission.

Table 2-1 Population growth estimates in the South West Growth Centre based on TPDC data

	2001	2011	2021	2031
Actual	22545			
Estimate		62, 688	135,121	208,616
Growth from 2001		+40,143	+112,576	+186,071

Source: KBR 2006

Table 2-2 Population growth estimates in the South West Growth Centre with consideration of land release and dwelling targets (assumes 2.77 persons per dwelling)

	2001	2011	2021	2031
Actual	22,545			
Estimate		31,488	113,926	208,524
Growth		+8,943	+91,381	+185,979
Difference from TPDC estimates		-31,200	-21,195	-92

Source: KBR 2006

Both growth estimates estimate a population of 208,000 by 2031; however, when land release and dwelling targets are considered, the growth is predicted to occur more slowly initially.

2.2.2 Employment growth

The South West Growth Centre Structure Plan identifies the location of proposed industrial/employment lands areas in the Growth Centre (see Figure 2-2). KBR (2006) compared expected employment growth in the South West Growth Centre with Metropolitan Strategy targets for job growth and proposed retail, commercial and industrial development, based on Growth Centres Commission targets.

The Metropolitan Strategy target employment growth for the South West region's four local government areas is a growth of more than 79,719 jobs between 2004 and 2031, to a total of 207,000 jobs. KBR concluded that this growth is generally consistent with a natural predicted growth of more than 58,687 jobs (based on TPDC October 2005 data), plus an additional 4,550 retail/commercial jobs in Leppington/other centres and approximately 23,800 industrial jobs from the proposed development of 1,740 hectares of industrial land in the Growth Centre by 2031 (assuming 13 to 14 jobs per hectare).

2.3 Transport context

Figures 2-3 and 2-4 provide an overview of the existing and planned public transport and road networks in the South West region of Sydney.

The major road network for the South West Growth Centre has been largely defined, but other than the SWRL, the preferred transport strategy (particularly for buses) will require further definition (PB 2006a).

2.3.1 Rail network

Existing rail network

The principal rail transport spines in the south-western Sydney area are currently the Main South and East Hills Lines, connecting the area to the Sydney CBD via Granville and East Hills respectively. A CityRail network map is provided in Figure 2-5. The nearest rail stations to the areas of Leppington, Edmondson Park and other areas in and around the proposed SWRL are on the Main South Line, at locations such as Liverpool, Glenfield and Campbelltown. Frequencies on this line are relatively convenient with regular peak services at 5 to 7 minutes on average and off peak services at 12 minute averages (PB 2006a).

Planned rail infrastructure projects

Other than the SWRL, the key rail infrastructure projects that would service the South West region of Sydney are described below.

Rail Clearways Program

The Rail Clearways Program is a \$1.5 billion initiative of the NSW Government to improve capacity and reliability on the Sydney suburban rail network. It comprises 15 key projects that aim to separate RailCorp's network of 14 metropolitan rail routes into five relatively independent clearways. The Program will remove bottlenecks to reduce congestion and delays on the network, and is expected to be completed by 2010. A number of these projects will benefit the South West region.

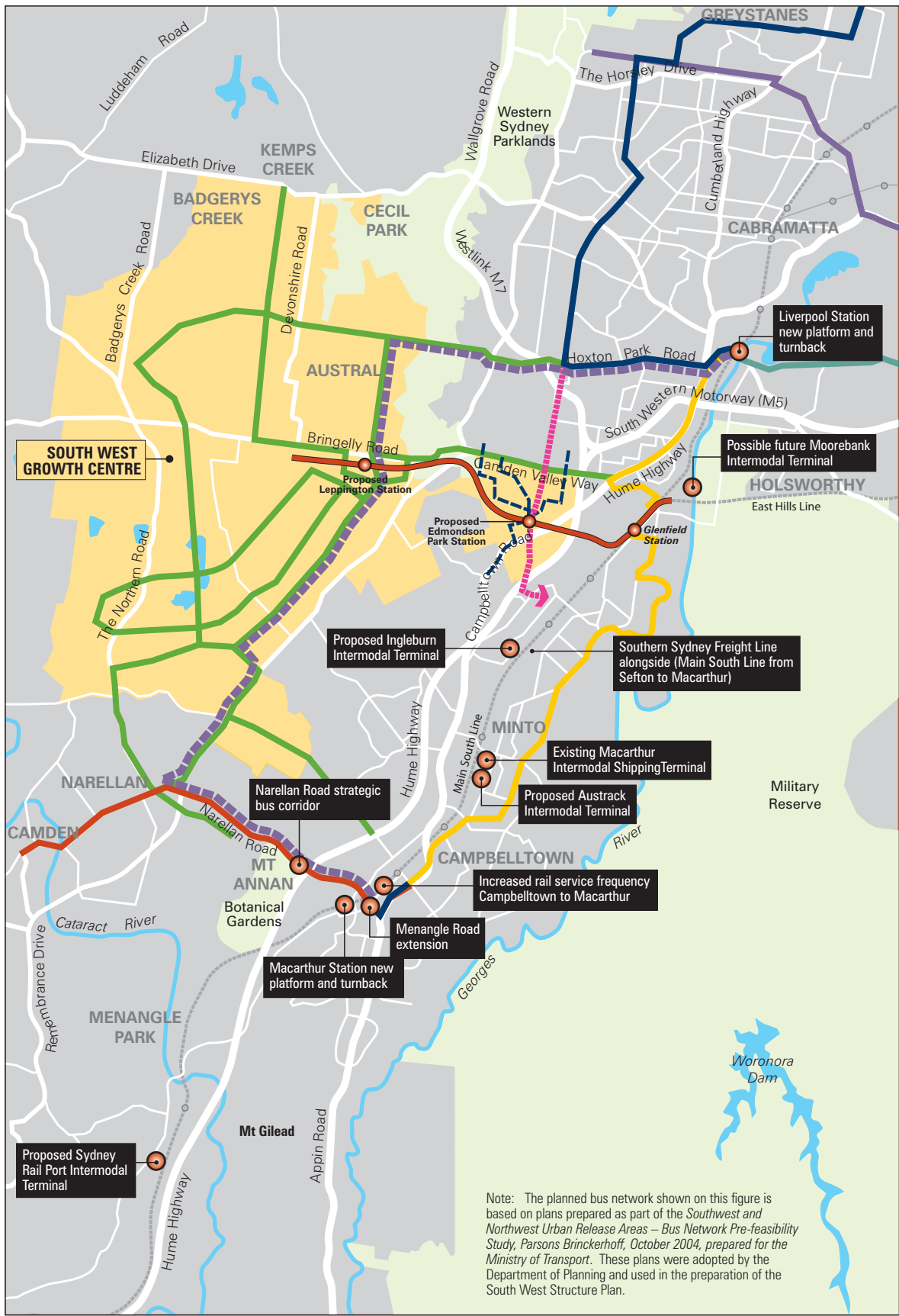
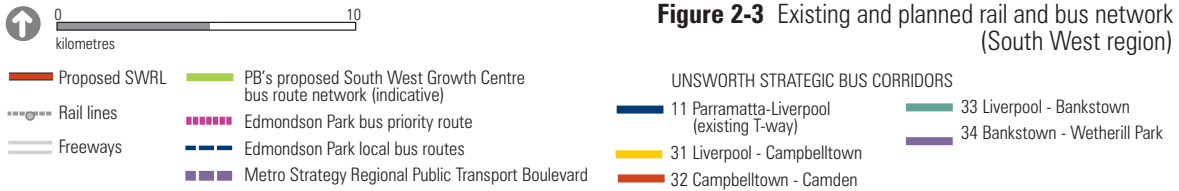


Figure 2-3 Existing and planned rail and bus network (South West region)



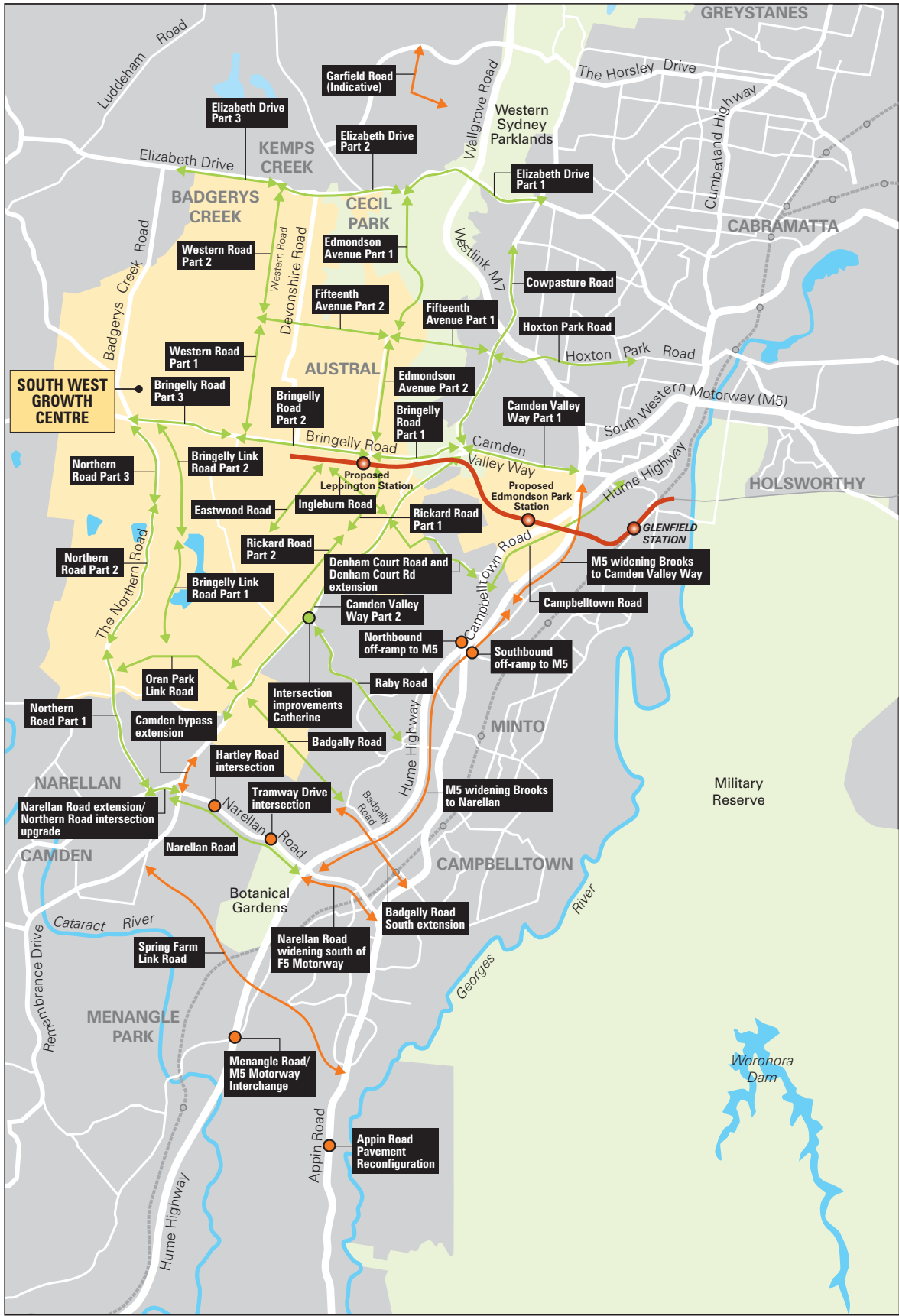


Figure 2-4 Existing and planned road network (South West region)

- Proposed SWRL
- ↔ Road enhancements proposed in Metro Strategy/ South West Growth Centre
- ↔ Other road enhancement

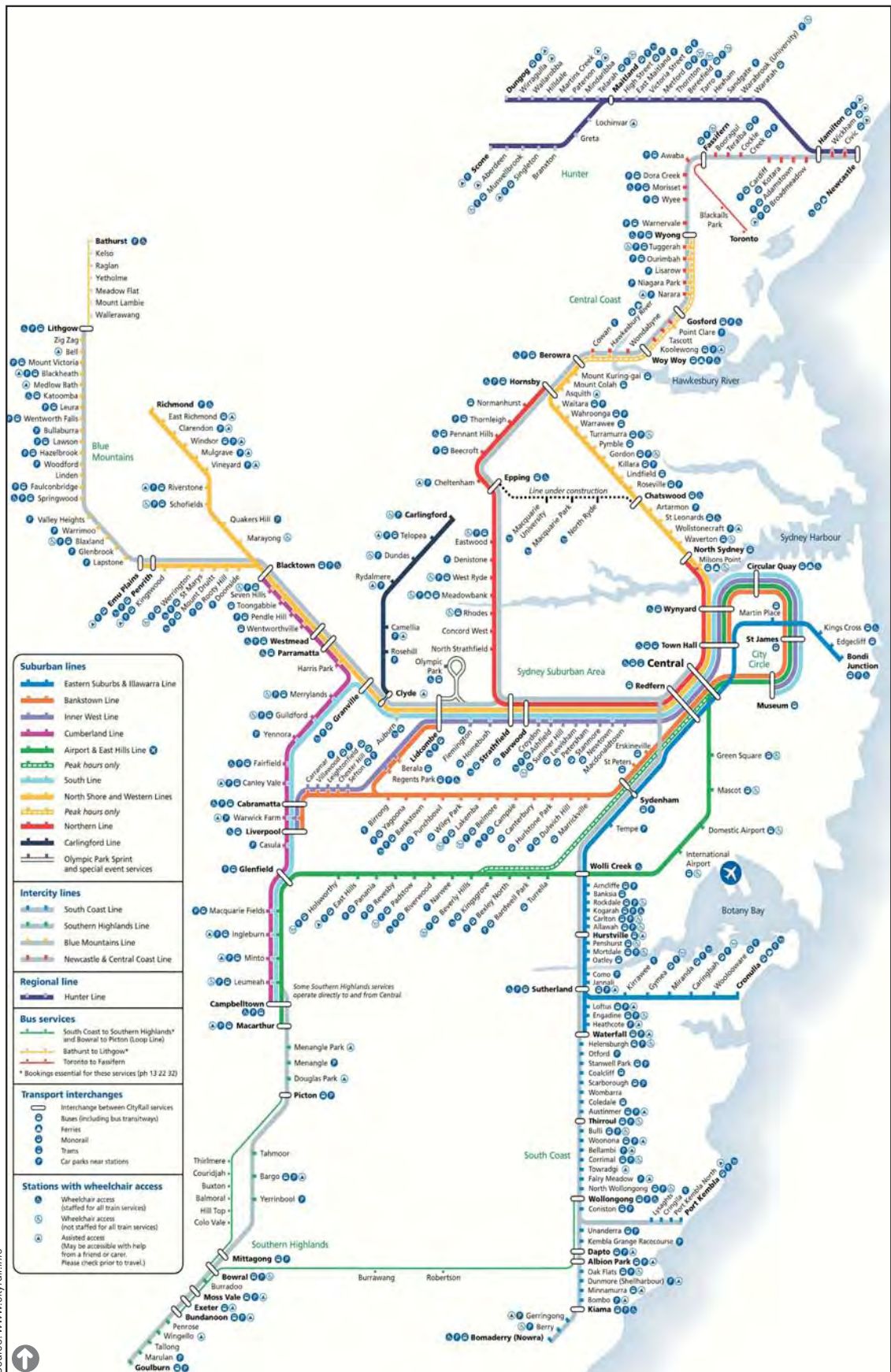


Figure 2-5 Existing CityRail network

The Rail Clearways Program projects on Sector 2 of the CityRail network facilitate (and are required to operate) the SWRL. These projects include a proposed turnback and new platform at Liverpool, and the Revesby turnback and Kingsgrove to Revesby Quadruplication projects, which would enable the physical separation of slow and express services operating on the East Hills Line. The improvements are considered to be a prerequisite for the operation of the SWRL, providing the capacity required to run the additional trains associated with the proposed SWRL (KBR 2004).

The Southern Sydney Freight Line

The Australian Rail Track Corporation (ARTC) proposes to construct a bidirectional, single track freight line between Macarthur and the freight yards at Enfield and Chullora, known as the Southern Sydney Freight Line (the SWRL). The project aims to increase the efficiency of freight movements on this route by increasing capacity, reducing transit times and minimising conflicts with the passenger network.

The project includes a proposed passing loop at Glenfield and a flyover that would take the alignment from the western side of the rail corridor to the eastern side. The new freight track adjacent to and on the western side of the proposed Glenfield North flyover would comprise the eastern track of a possible future two-track formation. The second track on the western side is required to replace the existing freight track, which has to be removed when the Glenfield North flyover is constructed. The proposed alignment of the SSFL allows for the later construction of the Glenfield North flyover component of the SWRL project (Connell Wagner 2006b).

Rail freight terminals

The School of Military Engineering at Moorebank (north-east of Glenfield Junction) has been identified by the NSW and Commonwealth Governments as a possible site for a future intermodal freight terminal facility. Other proposed freight terminals in the South West region include the proposed Patrick Freight Terminal in Ingleburn and a proposed Austrack Intermodal Terminal just south of the existing Macarthur Intermodal Shipping Terminal adjacent to the Main South Line.

2.3.2 Road network

Existing road network

South-western Sydney is serviced by a number of higher-order roads, including the South Western Motorway (the M5), the Hume Freeway (F5), the Hume Highway, and the recently completed Westlink M7 (see Figure 2-4).

The Westlink M7 is a 40 kilometre tollway that provides an uninterrupted journey between the M2, M4 and M5 motorways. It begins at the Hume Highway at Prestons (in the south) and intersects the M4 at Eastern Creek and the M2 at West Baulkham Hills in the north, providing a ring road around the entire Sydney Metropolitan Area. The 17 interchanges along the route have substantially improved access to western Sydney from Liverpool to Baulkham Hills.

Since 1996, there have been major road accessibility improvements in the M5 corridor, including the introduction of the M5 Toll Cashback Scheme soon after 1996, and the completion of the toll-free M5 East in 2001.

The Hume Highway/ Freeway provides good highway access to north-western Sydney via the M7, and the Sydney CBD via the M5. The South West Growth Centre is currently about a 60 minute drive to the Sydney CBD during peak periods. Although many of the existing east-west links are proposed to be upgraded (see Figure 2-4), many of these roads are forecast to experience high demand in the long term.

Planned road network improvements

A large number of road network improvements are proposed in the South West Growth Centre and the wider South West region (see Figure 2-4). A detailed breakdown of the proposed improvements is provided in Tables 3-3 and 3-4 in Technical Paper 1 (Volume 2).

The road network in the South West Growth Centre is broadly planned as a grid network, with most of the proposed improvements comprising upgrades to existing roadways. Major proposed east-west corridors include Elizabeth Drive, Fifteenth Avenue, Bringelly Road, Denham Court Road, Raby Road and Narellan Road. Major north-south roads include Northern Road, Bringelly Link Road, Wester Road, Rickard Road/Edmondson Avenue, and Camden Valley Way (PB 2006a). The proposed upgrading of a number of the existing east-west links, with access to the South Western Motorway, would increase the overall accessibility of the South West Growth Centre; however, many of these roads are still forecast to experience high demand in the long term, including Narellan Road and Camden Valley Way (PB 2006a).

2.3.3 Bus, transitway and pedestrian/cycle network

Existing

Bus services in the South West Growth Centre are available, but their frequency is currently limited, particularly in the areas south of Camden Valley Way/Bringelly Road. The limited nature of the existing services reflects the current rural-residential character of the area, with low population densities and low patronage of public transport services. Busabout operates a route that links Camden with Liverpool, via Narellan, Leppington and Lurnea, and touching on the northern boundary of Edmondson Park. Route 852 operates along the northern edge of Leppington, on its journey between Carnes Hill and Liverpool. Both these routes generally operate hourly during weekdays, with extra services at peaks, and two-hourly services on weekends. Busways operate one route (route 899) on a limited basis between Catherine Field and Campbelltown and Macarthur (PB 2006a).

Outside of residential areas, footpaths and cycleways in the area are virtually non-existent, and facilities within residential areas are relatively sparse (PB 2006a).

Planned

The Sydney Metropolitan Strategy identified a network of 43 strategic bus routes linking Sydney's major centres, railway stations, hospitals, education facilities and other community facilities, improving access to important destinations. The Campbelltown to Liverpool Route (Route 31) would stop at Glenfield Station, increasing local accessibility to the station by bus. The new integrated strategic bus identified corridors would be progressively implemented from 2006, supported by improved bus priority on all corridors by 2012. Bus services on the strategic corridors are proposed to comprise one service every 10 minutes in peak periods, one every 15 minutes in the off-peak, one every 30 minutes at night, and operating from 5am to midnight at least six nights a week.

In addition to the proposed SWRL, the South West Growth Centre Structure Plan identifies a 'regional public transport boulevard' linking Liverpool to Leppington, Narellan and Campbelltown. Other regional and local bus routes, linking neighbourhoods and centres, would provide public transport to the region. Bus priority measures would be implemented on these routes that link town centres. Future expansions of transitways or other forms of bus priority are possible as the road network is largely planned in a grid network.

At this stage, there has been no detailed bus route network planning carried out by the Ministry of Transport for the South West Growth Centre; although the former Department of Infrastructure, Planning and Natural Resources commissioned several studies to look at bus service provision and road network impacts. These strategic planning documents all identified Leppington as the major hub for bus services regardless of whether a heavy rail line existed. From there, a large majority of the proposed services would continue to Liverpool via either Lurnea and the Liverpool–Parramatta T-way, or via Camden Valley Way and Edmondson Park. Bernera Road is proposed to be extended south via Croatia Avenue, to and through the Edmondson Park release area and joining into MacDonald Road south of Campbelltown Road. This would provide the main public transport access to Edmondson Park Station, and is proposed as a bus priority corridor that would link to the Liverpool to Parramatta Bus Transitway.

The SWRL and, particularly, Leppington, would become the natural attractor for feeder bus services, as residents would seek to minimise the number of transfers and access the fastest mode as quickly as possible.

Pedestrian and cycle networks in the South West Growth Centre are largely unplanned at this stage, except at Edmondson Park, where a pedestrian and cycle network linking residential areas, villages and the town centre is proposed to connect localities within the release area, whilst also providing connections to external locations such as the Western Sydney Parklands recreation area to the north-west (see Technical Paper 1). The Department of Planning is currently preparing an Access Plan for the Parklands, to facilitate pedestrian and cycle access along the Parklands corridor through a multi-purpose path system.

2.3.4 Journey to work and station mode of access characteristics in south-west Sydney

South-western Sydney currently has high car ownership and high car usage. TPDC data (cited in PB 2006a) indicates that, excluding internal trips, approximately 60 and 69 % of residents in the Campbelltown and Liverpool LGAs, respectively, travel to work by car (as either a driver or passenger). Rail currently comprises approximately 24 and 17 % of journey to work trips (excluding internal trips) from these LGAs, respectively.

Despite continuing growth in population in the South West region LGAs, rail passenger volumes have only grown marginally since 1996 (KBR 2006). This is most likely because the period from 1996 to 2005 coincided with the development of major road improvements in the M5 corridor. When combined with other rail service issues, these road improvements have limited rail patronage growth from these LGAs since 1996.

The existing typical station access modes for rail passengers in the LGAs within the South West area were determined by KBR (2006) based on 2001 Census data. Overall, walking was the most popular mode at 52 % overall (with a range of 32 to 59%). Bus and car driver access were broadly equivalent at 18 to 19 %, with car passengers representing 10 % of station access. Other modes were minimal at 1 % overall.

Demand for park-and-ride at stations in the South West region of Sydney is higher than in the rest of the Sydney Metropolitan Region, with demand exceeding supply at many existing stations, including Glenfield. The higher than average car driver mode of access to rail stations in the area reflects the distance from the Sydney CBD, the long journey times associated with rail travel, the high car ownership levels, the availability of parking and limited bus feeder services (PB 2006a).

2.4 Need for the SWRL

2.4.1 Overview

The SWRL is needed to:

- support transport growth in a high demand corridor by providing additional services to the East Hills Line and additional stabling for Sector 2 of the Sydney metropolitan rail network
- provide new rail services to the outer metropolitan area and maximise access for new communities
- encourage a reduction in the use of the private car as the main mode of transport for journeys to and from the South West region
- encourage the use of public transport and enhance accessibility for existing and future residents in the South West region
- encourage integrated transport and land use planning in the South West region, which is necessary to achieve the appropriate levels of urban consolidation and commercial development around transport nodes.

A key component of the NSW Government's approach to major land release is to ensure that key infrastructure, such as the proposed SWRL, is provided at the right time to serve newly developing areas. As the source of the majority of 'greenfield' urban development over the next 25–30 years, the Growth Centres represent an opportunity to deliver well-designed urban development, integrated with the timely provision of transport infrastructure.

The area around Leppington and Edmondson Park currently has limited public transport opportunities due to the sparse population and lack of substantial residential and commercial development. Car ownership and car usage rates are high. The presence of reliable public transport when development is occurring can help to influence travel behaviour away from motor vehicles towards more sustainable forms of transport. The early introduction of heavy rail links to the Growth Centres would be a major contributor towards this outcome.

The SWRL is part of a package of transport infrastructure projects that would provide existing and future residents with a high degree of access to public transport and, thereby, to employment, education, health, commercial services, and retail and recreation facilities. The SWRL is planned to pass through new 'transit oriented' development at Edmondson Park and Leppington.

The town centre of Leppington is proposed to be the principal commercial/retail heart and public transport hub for the new surrounding suburbs of the South West Growth Centre. The greenfield nature of the development presents an opportunity for an overall land use and transport plan that would be supportive of sustainable objectives (PB 2006b). The town centre could accommodate a large shopping centre, a TAFE college and medium density housing (apartments and townhouses), while also supporting commercial and community services and recreation facilities.

The SWRL would provide direct access to the global arc — in particular, the Sydney Airport and Sydney CBD — for access to employment, education and recreational facilities. Direct access to the regional economic hub at Liverpool, identified as a regional city in the Metropolitan Strategy, would be provided by both the SWRL and a planned regional bus transitway.

Although a number of road improvements are proposed to improve accessibility of the South West Growth Centre, many of these roads are forecast to experience high demand in the long term as a consequence of development (PB 2006a). The area around Leppington, Oran Park and Edmondson Park currently has limited public transport due to the rural-residential nature of the area, the current lack of demand for public transport services, and the difficulty of providing public transport to a large, sparsely populated area.

Demand for transport services will increase with development of the South West Growth Centre, particularly along the Main South and East Hills Lines, from Macarthur to the Sydney CBD and other regional centres. With no SWRL, people wishing to travel elsewhere in Sydney by rail from the South West Growth Centre would need to travel to stations on the existing rail network by bus and car. The cost of road upgrades and the provision of additional interchange and parking facilities required to facilitate such movements in already developed areas would be considerable (KBR 2004).

2.4.2 Need for the train stabling facility

Train stabling facilities are required at Rossmore to support both rail patronage growth associated with development in the South West Growth Centre, and additional passengers on CityRail's south-western services as a whole (RailCorp 2006). The stabling is required to store trains when they are not in operational use.

Trains that currently operate on Sector 2 of the Sydney metropolitan rail network (the Airport and East Hills Line, Main South Line (via Granville), Bankstown Line, and the Inner West Line) are stabled at Campbelltown, Liverpool, Flemington and Eveleigh. Campbelltown is strategically located to stable most of the trains that are needed in the AM peak for the Main South and East Hills Lines. However, numerous trains travelling south via Liverpool are stabled overnight at Campbelltown as no other facility is available. This means that up to four trains during the 1 hour morning peak travel from Campbelltown northwards to Liverpool, restricting the number of City via East Hills trains to eight trains per hour. Currently, the eight trains per hour to the City during the AM peak become crowded upon departure from Glenfield and Holsworthy, with little capacity for growth.

Under the September 2005 timetable, 19 eight-car trains are stabled at Campbelltown. However, stabling at this location is at capacity at night.

Due to the need to commence services in the AM peak and conclude them in the PM peak, it is preferable to have stabling facilities close to the end of a line. If stabling is not provided on the SWRL at Leppington, additional train stabling would be required at Campbelltown or elsewhere, which would result in significant future empty running of trains to the point of demand. In summary, a stabling facility is needed at Leppington as part of the SWRL as it would:

- relieve congestion by minimising 'dead running' of trains (running of trains without passengers) and provide for growth on the existing rail network by providing an alternative starting point for services that can pick up passengers between Glenfield and Revesby inclusive

- avoid the substantial cost in seeking increased capacity on the existing line from Campbelltown to Glenfield
- provide additional train storage capacity for increased services for the outer metropolitan area and south-west areas in particular
- reduce the need to run empty trains to meet peak hour train positioning requirements
- Provide capacity benefits for rail services between Macarthur and Glenfield.

2.4.3 Need for additional rail service capacity at Glenfield

Whilst the SWRL is proposed to be delivered relatively early in the development of the South West urban release area, it would occur at a time when the existing eight trains per hour operating on the East Hills Line to the City during the AM peak would be under extreme loading pressure out of Glenfield and Holsworthy. It is anticipated that 10 trains/hour would be required from Macarthur/Campbelltown during the peak hour in 2011, following completion of the East Hills Line quadruplication between Kingsgrove and Revesby (which comprises a separate project by TIDC).

The SWRL would increase capacity on the existing East Hills Line from the south-west, by allowing additional services to operate to the City from Leppington. The line between Campbelltown and Glenfield can currently cope with 12 trains per hour in the Up direction in the peak, comprising eight trains to the City and four trains via Liverpool.

The initial rail operating plan for the SWRL would be based on eight trains per hour travelling from Leppington, with four trains going to the City via Revesby and four trains going to the City via Granville. Initially, these trains would act as feeder trains relieving congestion on the existing network, as the population in the South West Growth Centre increases.

2.4.4 Need for reconfiguration of Glenfield Junction

Glenfield Junction is located at the junction of the Main South and East Hills Lines, approximately 750 metres north of Glenfield Station. The Junction is heavily used by Sector 2 passenger and freight services, including:

- East Hills Line services between Campbelltown and Macarthur and the City via the Airport or Sydenham
- Main South Line services between Campbelltown and the City via Liverpool, Fairfield and Granville, some of which terminate at Glenfield
- Cumberland Line services between Campbelltown and Blacktown
- freight services between the ARTC network south of Macarthur and Sefton Park Junction.

The existing junction at Glenfield is a flat junction where trains have to cross the path of trains travelling in the opposite direction. This limits the capacity of the Junction to approximately 10 train movements per hour. Such constraints mean that, without upgrade, the Junction does not have the capacity for additional services to accommodate future growth on the network, including the addition of SWRL services.

To accommodate the service operational requirements at Glenfield Junction in 2012, including the SWRL, the following infrastructure works are required at Glenfield Junction:

- a new flyover at Glenfield North Junction to carry the East Hills Line over the Main South Lines
- new flyovers at Glenfield South Junction over the Main South Lines, to connect the SWRL into the existing network
- new crossovers to facilitate crossing movements
- platform reconfigurations and alterations at Glenfield Station (Connell Wagner 2006b).

The predicted growth on the Campbelltown to East Hills Line means that a flyover would need to be constructed at Glenfield Junction regardless of whether the SWRL proceeds. The Glenfield Junction works proposed as part of the SWRL would need to allow for and interface with the proposed SSFL works. The proposed interface is described in *Chapter 7*.

2.4.5 Need for upgrade of Glenfield Station

The existing Glenfield Station needs to be reconfigured to accommodate two island platforms, including a new platform face on the eastern side of the station. This in turn requires the relocation of the booking office. Construction of the Glenfield South Junction flyovers also require that the southern ends of the Station platforms be shortened by 50 metres and the northern ends be extended by an equal length.

An ‘easy access’ upgrade to the Station is required at the same time as the above reconfiguration works to meet the requirements of the Commonwealth Government’s *Disability Standards for Accessible Public Transport Guidelines 2004 (No. 2)*. These Standards require that when train stations are ‘substantially upgraded, reconstructed, or refurbished’ they must be brought up to the requirements of the Disability Standards to the ‘maximum extent possible’. The Standards prescribe mandatory ‘easy access’ performance outcomes covering a range of accessibility issues, including access paths, ramps, lifts, surfaces, stairs and toilets.

2.5 SWRL patronage predictions

The SWRL is anticipated to generate new rail patronage by:

- providing high quality access to new stations (the proposed Edmondson Park and Leppington Stations) and improved access to the existing Glenfield Station, including bus/rail interchanges and easy pedestrian and cycle access.
- attracting passengers from other modes — Park-and-ride facilities are proposed at the Edmondson Park and Leppington Stations, as the reduced travel time to the new stations would make them particularly attractive to residents of existing developed areas, who may choose to use public transport once it is more accessible (PB 2006a).

The patronage predictions for the SWRL are being undertaken in a staged process, which is ongoing. Preliminary predictions were undertaken in 2004 by KBR/Paul van den Bos for the former Department of Infrastructure, Planning and Natural Resources. The patronage estimates were based on low, medium and high growth scenarios consistent with the then Draft Metropolitan Strategy. 2001 Census journey-to-work data was adopted as the base calibration data for the model, with forecasts limited to 2021.

The results of the patronage predictions were generally supported by two independent reviews: one by Kilsby Australia (cited in KBR 2006) and one by RailCorp (2006). Both reviews were based on extrapolation of existing travel behaviour into the future.

Results of the preliminary patronage predictions are shown in Table 2-3. Patronage studies did not incorporate an increase in mode shift. The modelling did not take into account the effects of recent petrol price rises, which are thought to have contributed to the shifting of approximately 150,000 Sydney commuters per week from private to public transport, according to NSW estimates (based on a Ministerial quote from the Sydney Morning Herald on 23 May 2006).

Table 2-3 SWRL preliminary patronage predictions

	1 hr am peak	3.5 hr am peak ¹	Annual patronage ²
2011	1,821	3,642	3.3 million
2021	3,424	6,848	6.2 million
2031	N/A	N/A	N/A

Notes 1: Multiple of 1hr am peak by 2
2: CityRail Compendium of Travel Statistics (April 2006)

Source: KBR (2006)

Based on the preliminary predictions in Table 2-3, the estimated patronage for the SWRL in 2021 is predicted to be in the range of 2,700 to 4,700 (+/-20%) passenger boardings during the 1 hour AM peak.

Of the two stations on the SWRL, Leppington Station is estimated to attract 86 % of total patronage, with Edmondson Park Station expected to attract the remaining 14 %. By 2021, the AM peak 3.5 hour period station entries at Leppington and Edmondson Park are expected to be 5,900 and 960 passengers respectively. The SWRL is forecast to reduce patronage on the Main South Line as some existing passengers change station access points.

According to the CityRail (2006) *A Compendium of CityRail Travel Statistics*, the existing AM peak 3.5 hour station entries at Glenfield is 2,480.

2.6 Anticipated project benefits

The proposed SWRL is a major public transport initiative that aims to promote the use of public transport in the South West Growth Centre and to quickly and efficiently connect the population of Sydney's south west region with the Sydney CBD, with provision for future growth. It would cater for the predicted population growth in the South West Growth Centre and provide a fast connection to the Sydney central business district and Liverpool. Development of the SWRL would provide opportunities to increase the level of service and patronage to a number of existing lines, reduce congestion on existing roads, provide linkages with other stations on the existing rail network, and achieve operational benefits and cost savings to the existing rail network (Connell Wagner 2006a).

The SWRL is part of a package of transport infrastructure projects that would provide new and existing residents of the South West Growth Centre and the wider South West region of Sydney with real public transport alternatives, by providing direct access to employment, education, health, commercial services, retail and recreation facilities. In the shorter term, it would service development in areas surrounding Edmondson Park and Leppington. In the longer term it could be extended to service areas further to the west. It would connect the newly developing suburbs of South West Sydney to key centres and facilities in Sydney, while providing viable and efficient public transport for residents and workers in the area (Department of Infrastructure, Planning and Natural Resources 2005).

In summary, the key regional benefits of the SWRL would be:

- provision of a new transport link to support urban growth
- improved access to public transport for existing and future residents of the South West region
- improved accessibility to employment within the Global Arc centres, educational and cultural facilities
- reduced congestion on the road network
- support for planned urban development, as higher density residential development would become increasingly attractive as a result of the provision good accessibility to public transport
- reduced need for residents of the new developments to travel to stations on the existing networks, thus reducing congestion on the Main South Line and reducing pressure on the existing stations along the Main South Line
- net travel time savings for car, bus and rail commuters
- reduced motor vehicle costs (fuel and operating costs) due to a lesser reliance on cars
- reduced negative externalities such as accidents, noise/air pollution, greenhouse gas emissions and energy consumption due to the reduction in car usage
- increased stabling capacity for trains in the outer metropolitan area
- provision of additional services on the East Hills line, which would alleviate pressure on existing services on this Line and improve the level of service within this part of the rail network.

The consequences of not proceeding with the SWRL project are described in Chapter 23 (Justification of the project).

