Strathfield Central Planning Proposal

Traffic and Parking Report

80219044

Prepared for
Memocorp Australia Pty Ltd

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Executive Summary

The report documents a preliminary traffic assessment for a planning proposal (Strathfield Central) located at 11 The Boulevarde, Strathfield. The site currently operates as a shopping centre (Strathfield Plaza) with retail, commercial and on-site car parking spaces over several upper and roof top levels.

The proposal includes new residential high rise and commercial/ retail floor space. Key features of the proposal include:

- Residential: 753 apartments, including studio, 1, 2, 3 and 4-bedrooms;
- Retail: 19,185m^2;
- Commercial: 16,666m^2;
- Community Hub: 700m^2;
- Car parking in seven basement levels;
- Loading and servicing areas in two basement levels;
- Transport hub along the west boundary; and
- Pedestrian plaza and links through the site.

The scale of the proposal is considered appropriate given growth targets identified by the NSW state government and it strategic location adjacent to Strathfield Station which is serviced by frequent transport services.

Vehicle access points are proposed from Churchill Road and Redmyre Road. Seven basement car parking levels are proposed.

The proposed transport hub provides the opportunity to redesign the current interchange and improve safety and performance. The potential benefits of the transport hub are:

- Provides a sheltered and enclosed waiting area for pedestrians resulting in improved comfort, away from harsh weather conditions.
- Improved level of active and passive surveillance can be achieved by connecting the transport hub with an activated area.
- Allows the existing bus interchange to be modified to improve pedestrian amenity between Strathfield Station and the town centre. The Taxi rank and Kiss ‘n Ride areas can be relocated to pedestrianize Albert Road immediately in front of the station entrance.
- Improve traffic circulation during peak times by reducing the number of conflict points and level of interaction between buses stopping and cars circulating within the town centre. Improving the separation of cars and buses will improve the customer experience when utilising the transport hub.
- Provide space for bus layover.
- The Strathfield Central proposal inclusion of the transport hub, within the Strathfield Town Centre, is creating usable space for TfNSW and the general public that is not typically afforded by developments.

A total of 964 retail/ commercial, 825 residential/ residential visitor spaces equating to a total of 1,789 spaces.

It is estimated the site will have typical car parking peak demands of 686 spaces for retail/ commercial uses and 795 spaces for residential land uses.

It is estimated the proposal could generate in the order of 619 – 820 vehicles in a peak hour, which could be in the order of 400 – 430 net additional trips against existing land uses.

Further detailed assessment of the proposal will be undertaken at DA stage to determine the overall traffic impact and to refine access to the transport hub and its integration with the overall public transport service network. However this report outlines that the proposed development, if adopting TOD principles and improved public transport accessibility (and reliance), has merit at this planning proposal. Overall, the planning proposal is supported.

1 Introduction

Cardno has been engaged by Memocorp Australia to provide advice documented in this Traffic Report to support the planning proposal (Strathfield Central) for the redevelopment of the Strathfield Plaza site, located at 11 The Boulevarde, Strathfield. The proposal includes new residential high rise and commercial/ retail floor space.

1.1 Scope of works

- To review strategic transport planning documents applicable to the site;
- To address the existing transport conditions surrounding site;
- Review relevant documentation including Council LEP, DCP and RMS Guidelines;
- Provide an overview of the traffic and parking strategies proposed; and
- Outline the potential traffic and parking impacts of the proposal.

1.2 References

Key documents and data sources used to prepare this report include:

- Strathfield Central Planning Proposal -Urban Design Report 04 Final, Grimshaw, 17/09/2019;
- 190917_GAS_Drawing Set.pdf, Grimshaw, 17/09/2019;

Other sources for data and figures are referenced in this report.

1.3 Planning proposal

Memocorp Australia Pty. Ltd. proposes a redevelopment of the site the approval for which is to be applied for via Planning Proposal Submission (PP).

Cardno has been engaged by Memocorp Australia Pty. Ltd. to provide advice inclusive of Civil, Stormwater, Flooding, Services and Traffic Engineering advice to support the Planning Proposal (PP).

The PP seeks to amend the height of building and floor space ratio development standards applicable to the site, under the Strathfield Local Environmental Plan 2012 (SLEP 2012), in accordance with Section 3.33 of the Environmental Planning and Assessment Act 1979 (EP&A Act). It also proposes to increase the cap on residential accommodation permitted on the site.

The intended outcome of the Planning proposal is to amend SLEP 2012 as follows:

- Amend the applicable maximum height of buildings development standard, under Clause 4.3: Height of buildings, to permit buildings with a height of up to 156 metres.
- Amend the applicable maximum floor space ratio development standard, under Clause 4.4 Floor Space Ratio to permit a floor space ratio of 9.5:1 and identify Strathfield Plaza as “Area 4”.
- Remove application of Clause 4.4B Exceptions to floor space ratio (Strathfield Town Centre) to Strathfield Plaza.
- Amend Clause 6.7 Design excellence for Strathfield Town Centre to include “Area 4” on the Floor Space Ratio Map.
- Amend Clause 6.8: Additional provisions for development in Strathfield Town Centre on “Area 4” to increase the cap on residential accommodation permitted on the site to 70%.

These amendments will facilitate the redevelopment of the Strathfield Plaza site for a landmark mixed-use development, comprising:

- A vibrant and active retail plaza at the ground and lower floors with provision for supermarkets, speciality retail, restaurants and cafes.
- A publicly accessible through site link and plaza, providing additional open space for the Town Centre, activating the ground plane and facilitating direct pedestrian connectivity between Strathfield Station and the wider precinct.

> A commercial office campus, with versatile floorplates to support a broad range of market requirements, interconnected by landscaped terraces and communal meetings spaces.

The proposal consists of five residential towers ranging from 13 to 38-storeys providing approximately 750 apartments of varying sizes, typologies, and layouts including one, two, three and four-bedroom units with rooftop communal open spaces. It includes:

> Provision for 10% of the GFA uplift dedicated to 'key worker' subsidised rental housing for 10 years.

> Dedication of a 700m² community hub.

> A Transport Hub incorporating a bus interchange to be complemented with taxi / ride-share drop-off and pick-up and bicycle parking with direct connections to the existing Strathfield Station, supporting use of sustainable transport options.

Figure 1-1 Planning Proposal Schematic Visual

2 Strategic context

Several strategic plans are in place than define planning frameworks relevant to traffic and transport planning. Relevant overviews are provided in the following sub-headings, applicable to the redevelopment of Strathfield Plaza.

2.1 Greater Sydney Region Plan (A Metropolis of Three Cities), Greater Sydney Commission

To meet the needs of a growing population this regional plan's vision is to transform Greater Sydney into a metropolis of three cities: the Western Parkland City, the Central River City, and the Eastern Harbour City. The vision brings new thinking to land use and transport patterns to boost Greater Sydney's liveability, productivity and sustainability by spreading the benefits of growth. A Metropolis of Three Cities is built on a vision of three cities where most residents live within 30 minutes of their jobs, education and health facilities, services and great places. The plan was prepared concurrently with Future Transport 2056 and State Infrastructure Strategy 2018–2038 to align land use, transport and infrastructure outcomes for Greater Sydney for the first time in a generation.

To support the vision of boosting Greater Sydney's liveability, productivity and sustainability, the GSC have established ten (10) directions which establish the aspirations for Greater Sydney over the next 40 years.

These include:

- A city supported by infrastructure
- A collaborative city
- A city for people
- Housing the city
- A city of great places
- A well-connected city
- Jobs and skills for the city
- A city in its landscape
- An efficient city
- A resilient city

The planning proposal is consistent with the directions provided by the Greater Sydney Regional Plan as:

- The planning proposal can capitalise on the nearby Strathfield Station. The location of the site within 100 metres of rail and bus networks will reduce the site's reliance on private motor vehicles while allowing future residents easy and efficient access into the rest of Sydney.
- The site can potentially accommodate new dwellings within 100 metre of a key transport interchange, contributing to the shift towards public transport. Strathfield Station has good connections to greater Sydney and is strategically located to allow easy public transport access to the Sydney and Parramatta CBDs.
- The planning proposal proposes significant levels of commercial, residential and retail space which will contribute to the local economy of Strathfield.

The Greater Sydney Structure Plan is shown in **Figure 2-1**.

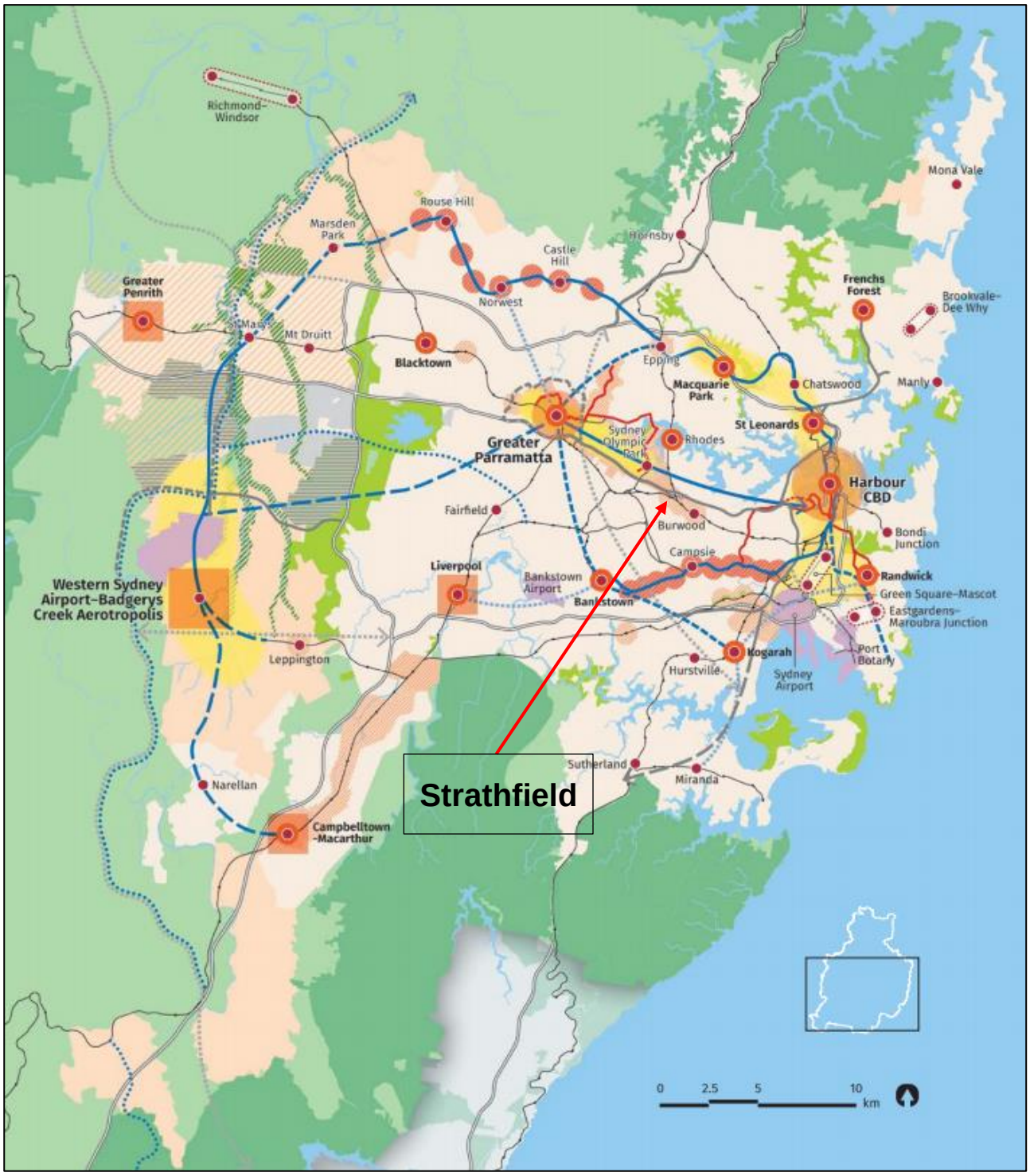

Figure 2-1 Structure Plan - Greater Sydney

Source: Greater Sydney Region Plan – A Metropolis of Three Cities – connecting people, Greater Sydney Commission, March 2018

2.2 Eastern City District Plan, Greater Sydney Commission

In March 2018, the Greater Sydney Commission (GSC) released the updated Eastern City District Plan. The Eastern City District covers the Bayside, Burwood, City of Canada Bay, City of Sydney, Inner West, Randwick, Strathfield, Waverley and Woollahra local government areas.

This Eastern City District Plan is a 20-year plan to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision for Greater Sydney. It contains the planning priorities and actions for implementing the Greater Sydney Region Plan, A Metropolis of Three Cities, at a district level and is a bridge between regional and local planning.

The District Plans are structured around the GSC's three key themes of a Productive City, a Liveable City and a Sustainable City.

Strathfield is classified a Local Centre and is located within a nominated Urban Renewal Area. Urban renewal opportunities generally exist and around regional transport and strategic centres. Where there is significant investment in transit corridors, urban renewal is best investigated at key nodes like Strathfield Station.

The planning proposal is consistent with the directions provided by Plan as:

- The Eastern City District Plan sets a strategic target for housing and employment growth within the Eastern City District, with a direction to "create housing capacity in the Eastern City District", targeting 157,500 dwellings by 2036 and a short-term housing target of 46,550 new dwellings by 2021. Approximately 3,650 of these dwellings are proposed to be delivered in the Strathfield LGA from 2016-2021.
- In relation to housing capacity, the Plan notes one of Strathfield Council's key actions to prepare housing strategies that address the delivery of various housing supply targets. The Planning Proposal will facilitate the delivery of new dwellings, contributing to the above targets set for the Eastern City District and Strathfield LGA.
- The provision of residential dwellings near to a transport interchange (the Strathfield Station) will allow residents the option of living in Strathfield and working elsewhere, with the Harbour CBD, and Parramatta being within 30 minutes – contributing to the creation of a 30-minute city.

The Structure Plan for the Eastern City District is shown in **Figure 2-2**.

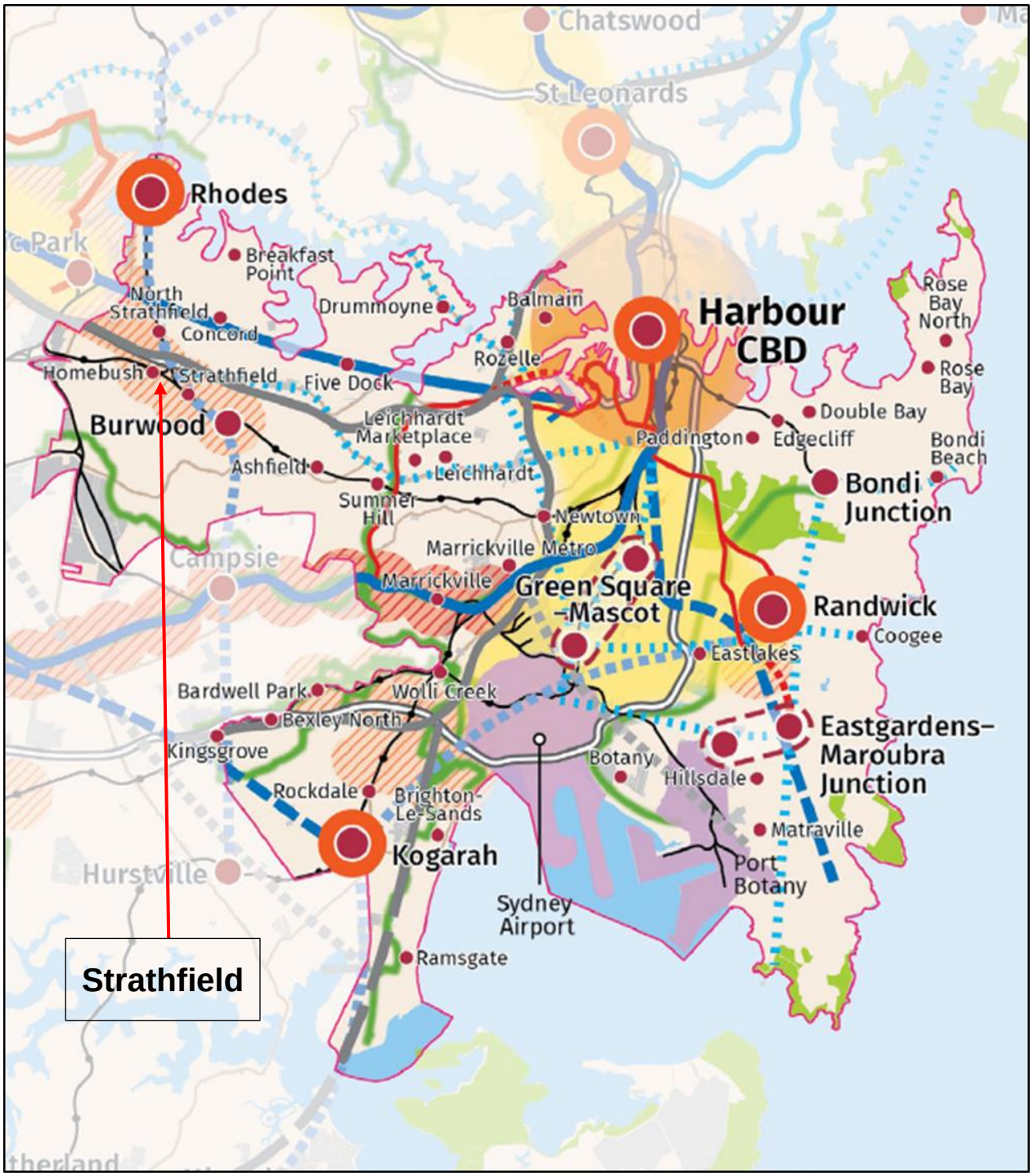

Figure 2-2 Structure Plan – Eastern City District

Source: Our Grater Sydney 2056 – Eastern City District Plan – connecting communities, Greater Sydney Commission, March 2018

2.3 Future Transport 2056, Transport for NSW

Future Transport 2056 aims to ensure that Sydney is prepared for rapid changes in technology and innovation to create and maintain a world class, safe, efficient and reliable transport system over the next 40 years. Future Transport 2056 acknowledges the vital role transport plays in the land use, tourism, and economic development of towns and cities. It includes issue-specific and place-based supporting plans that shift the focus away from individual modes of transport, toward integrated solutions. The vision 2056 includes:

- A metropolis of three cities
- A 30-minute city

> Corridors for moving people and goods

The six outcomes that The Future Transport 2056 strategy is focussed on are:

> Customer Focussed
> Successful Places
> A Strong Economy
> Safety and Performance
> Accessible Services
> Safety and Performance

The planning proposal is consistent with the directions provided by the Future Transport 2056 as:

> The provision of residential dwellings near to a transport interchange (the Strathfield Station) will allow residents the option of living in Strathfield and working elsewhere, with the Harbour CBD and Parramatta, being within 30 minutes – contributing to the creation of a 30-minute city.

2.4 Sydney Metro West.

Sydney Metro West is proposed to link Westmead to Sydney CBD via a new, generally underground rail corridor. The NSW state government has identified that customer demand for the existing heavy rail corridor (T1 Western Line) will be severely overcrowded (during peak periods) by the early 2030's. It is implied that Metro West would divert some demands and allow the existing T1 Western Line to operate at satisfactory levels of service. This is expected provide a benefit to Strathfield station customers which may have the capacity to handle more customers that enter or exit the network at this location.

In the context of Strathfield, the closest Metro West station may be located at North Strathfield or Concord West. This would increase the convenient (time and ease of access) public transport catchment of Strathfield via an interchange. The study area corridor is shown in **Figure 2-3**.

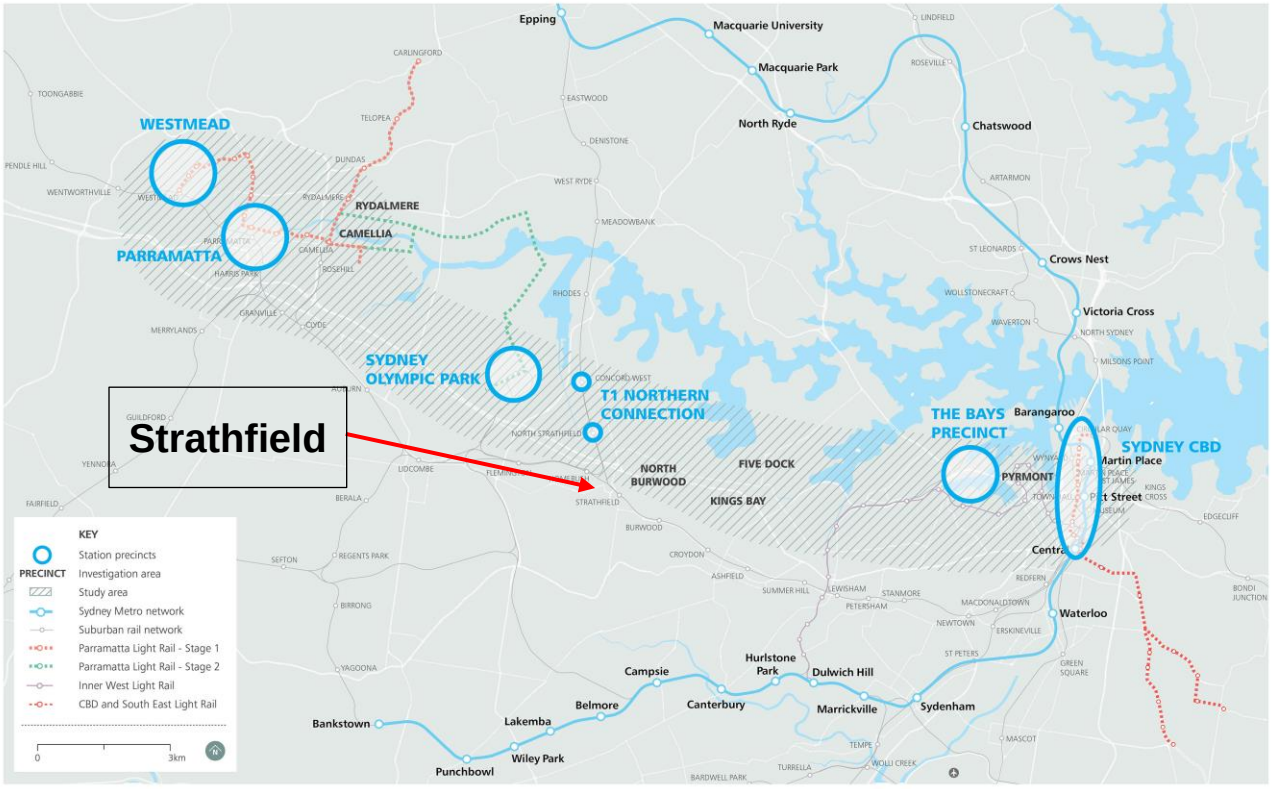

Figure 2-3 Sydney Metro West investigation corridor

Source: https://www.sydneymetro.info/files/west-map, viewed 19/09/2019

3 Transit Orientated Development

The Planning proposal would achieve the principles and benefits of Transit Orientated Development (TOD), leveraging existing investment in transport infrastructure. The site is located close to high frequency public transport, including rail and bus networks as well as having access to essential services (both within the Plaza itself and outside) and employment and educational opportunities. The combination of high frequency sustainable transport modes, essential services, employment and education all within walking distance can significantly reduce private car dependency through implementing key transport principles within the development.

There is no established planning framework for TOD's which outlines the requirements or characteristics of developments, and definitions and visions may vary. However, the Guideline for State Environment Planning Policy (Urban Renewal) 2010 states the following:

"Key principles of the State Environmental Planning Policy (Urban Renewal 2010) are to integrate land use planning with existing or planned infrastructure to create revitalised local communities, greater access to public transport and a broader range of housing and employment options. This is also sometimes referred to as transit orientated development (emphasis added)."

Transport for Main Roads (TMR Queensland) states that TOD is characterised by:

- A rapid and frequent transit service
- High accessibility to the transit station
- A mix of residential, retail, commercial and community uses
- High quality public spaces and streets, which are pedestrian and cyclist friendly.

In its simplest form, a TOD seeks to reduce private car dependency through increased uptake in sustainable transport modes.

Strathfield Central planning proposal is consistent with the above principles based on the following:

- Mixed use development, inclusive of a potential community facility, located within 100 metre walking distance of Strathfield Train Station and Bus Interchange
- Built within an established town centre with potential to provide increased activity within the precinct
- Delivery of open space and improved pedestrian amenity through potential improvements to Strathfield Square
- Direct connectivity to pedestrian and cycle network
- Reduced car parking provision with potential to promote the introduction of car sharing schemes to Strathfield town centre.

4 Existing Conditions

4.1 Site location

The existing site located at 11 The Boulevarde, Strathfield (Strathfield Plaza). The site is located within the town centre of Strathfield. The site is bound by mixed use developments on its western and eastern boundaries. There are three road boundaries, being Churchill Street to the north, The Boulevarde to the east and Redmyre Road to the south. Vehicular access to the site is available from Churchill Street via a two-way driveway and Redmyre Road, which is an entry only driveway.

Strathfield Train Station and bus interchange is located to the north within 100 metres of the site and the Meriden School is located south on Redmyre Road.

A layout of the existing shopping centre site is shown in **Figure 4-1.**

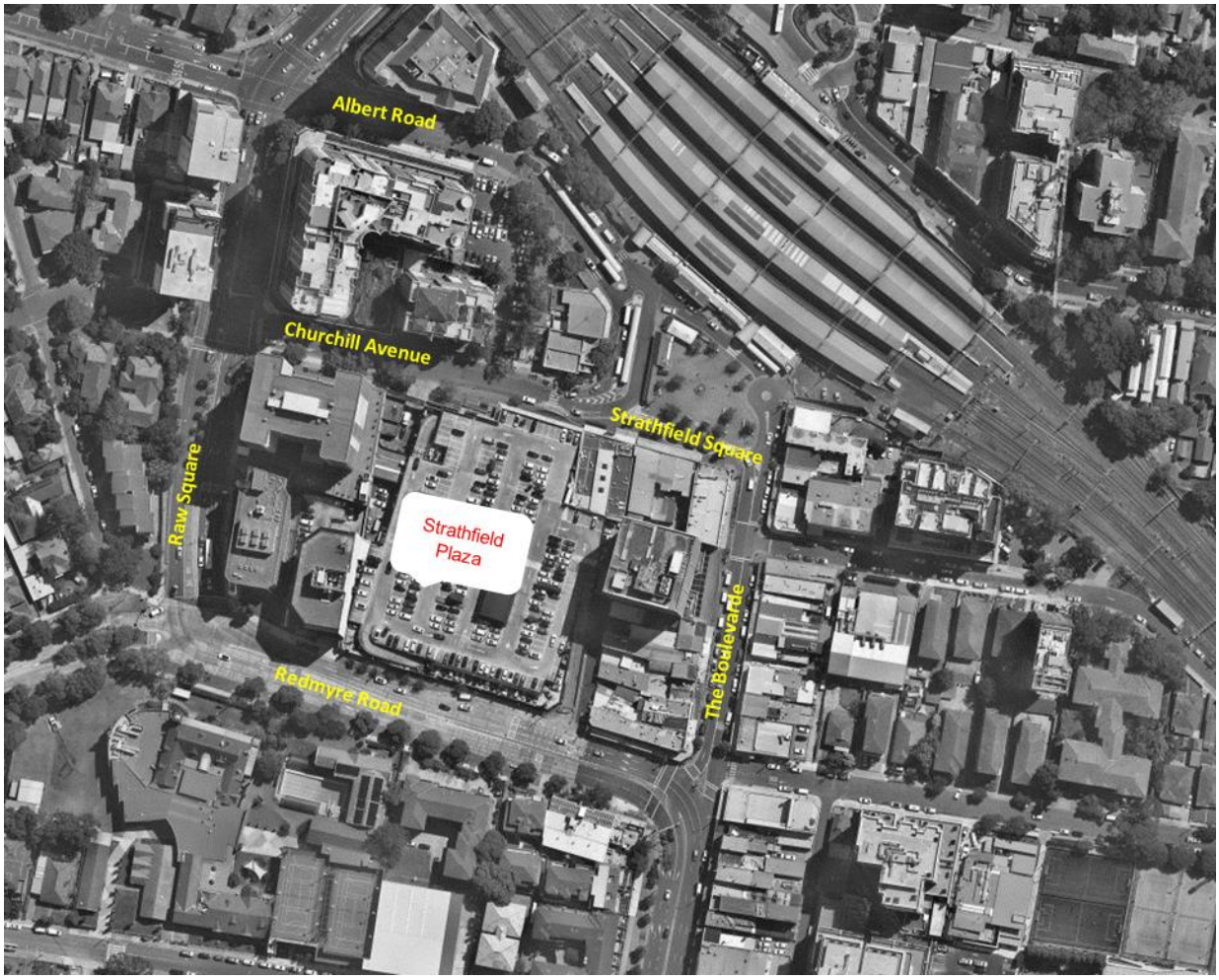

Figure 4-1 Existing Strathfield Plaza aerial view

Source: Nearmap, viewed 11/09/2019

4.2 Existing Road Network

4.2.1 Schedule of Road Classification

Roads and Maritime Services (Roads and Maritime) in partnership with local government established an administrative framework of State, Regional and Local Road categories to help manage the extensive network of roads.

State roads are managed and financed by Roads and Maritime, and Regional / Local Roads are managed and financed by Councils. Notwithstanding, Regional Roads perform an intermediate function between the main arterial network of State Roads and Council controlled Local Roads and therefore received financial assistance from Roads and Maritime.

Key roads surrounding the subject site include:

- Raw Square
- Redmyre Road
- Strathfield Square
- Churchill Avenue
- The Boulevarde
- Albert Road

4.2.1.1 Raw Square

Raw Square is classified as a State Road (No. 668) under the care and maintenance of Roads and Maritime. The road is configured as a separated two-way carriageway, generally two-lanes through lanes in each direction. The road runs in a north-south alignment with a posted speed limit of 60 kilometres per hour, reducing to 40 kilometres per hour during school zone hours of 8:00 - 9:30am and 2:30 - 4:00pm. Parking is not permitted and there are clearways restriction also exist within the kerbside lanes between the hours of 6:00 - 10:00am and 3:00 - 7:00pm Monday to Friday.

4.2.1.2 Churchill Avenue

Churchill Avenue is a local road that runs in an east-west direction between Strathfield Plaza in the east and Homebush Road to the west. Between Strathfield Plaza and Raw Square, it accommodates two lanes of traffic that are restricted to one-way flow in a westbound direction, increased to three on approach to the intersection of Raw Square. Churchill Avenue is a 50 kilometres per hour speed zone and permits restricted kerbside parking in some locations.

4.2.1.3 Redmyre Road

Redmyre Road is classified as a State Road (No. 668) under the care and maintenance of Roads and Maritime. The road is generally configured with a split carriageway, two general traffic through lanes in each direction with additional auxiliary lanes provided at the intersections. A posted speed limit of 60 km/h, reducing to 40km/h during school zone hours of 8:00 - 9:30am and 2:30 - 4:00pm, is applicable. Kerbside parking is not permitted between The Boulevarde and Raw Square.

4.2.1.4 The Boulevard (north of Redmyre Road)

The Boulevard (north of Redmyre Road) is a local road split between Strathfield Council and Burwood Council. The road is configured as a single carriageway with one northbound and one southbound lane. The posted limit in 50 kilometres per hour. Parking is available and permitted on both sides of the carriageway between Lyons Street and Parnell Street and on the west side of the carriageway north of Parnell Street, subject to restrictions.

4.2.1.5 The Boulevard (south of Redmyre Road)

The Boulevard (leading on from Redmyre Road) is classified as a State Road that forms part of the NSW State Road Number 668 under the care and maintenance of Roads and Maritime. The road has two northbound through lanes and three southbound lanes. The sign posted speed limit is 60 kilometres per hour, reducing to 40 kilometres per hour during school zone hours of 8:00 - 9:30am and 2:30 - 4:00pm. There are multiple kerbside parking restrictions along both sides of the road and clearways restriction also exist within the kerbside lanes between the hours of 6:00-10:00am and 3:00-7:00pm Monday to Friday.

4.2.1.6 Strathfield Square

Strathfield Square is a short local road between The Boulevarde and Churchill Avenue. It is predominantly a link between these two roads for the purpose of pick-up / drop-off activities with a one-way, east to west operation.

4.2.1.7 Albert Road

Albert Road, to the east of Raw Square, is a local unclassified road.. It is one-way from Raw Square to Strathfield Square / The Boulevarde and provides access to the current bus interchange, Kiss 'n' Ride and Taxi rank. A default speed limit of 50 kilometres per hour applies.

4.3 Traffic Volume

RMS have a permanent vehicle count station located on the Boulevard 30 metres north of Torrington Road, which is approximately 600 metres from Strathfield Plaza. **Table 4-1** below summarises the two-way traffic flow at this location.

Table 4-1 The Boulevard Traffic Volume History

	Year				
	2015	**2016**	**2017**	**2018**	**2019**
Weekdays					
Northbound	12,032	12,086	11,627	11,003	10,510
Southbound	11,213	11,317	10,959	10,845	10,703
Total	23,245	23,403	22,586	21,848	21,213
Weekends					
Northbound	10,066	10,064	9,426	8,505	8,553
Southbound	9,499	9,453	9,251	8,453	8,537
Total	19,565	19,517	18,677	16,958	17,090

Note: The AADT for 2019 is only a partial dataset

Source: https://www.rms.nsw.gov.au/about/corporate-publications/statistics/traffic-volumes/aadt-map/index.html#/?z=6, viewed 19/07/2019

The daily traffic profile given in **Table 4-1** shows that the northbound direction is generally the peak direction, carrying higher volumes than the southbound direction. Weekday demands are higher than the weekend. Two-way volumes on a weekday and weekend, on average, are in the order of 22,000 and 19,000 respectively and have been decreasing since 2016.

4.4 Existing Public Transport

The subject site is currently well served by public transport services being 100 metres from Strathfield Station. The station is served by Sydney Trains T1 North Shore, Northern & Western Line and T2 Inner West & Leppington Line suburban services as well as NSW TrainLink Intercity and regional services. Strathfield Station is a junction point on the Sydney Trains network.

Public Transport Map of various bus routes and train services serving the station is shown **Figure 4-2**:

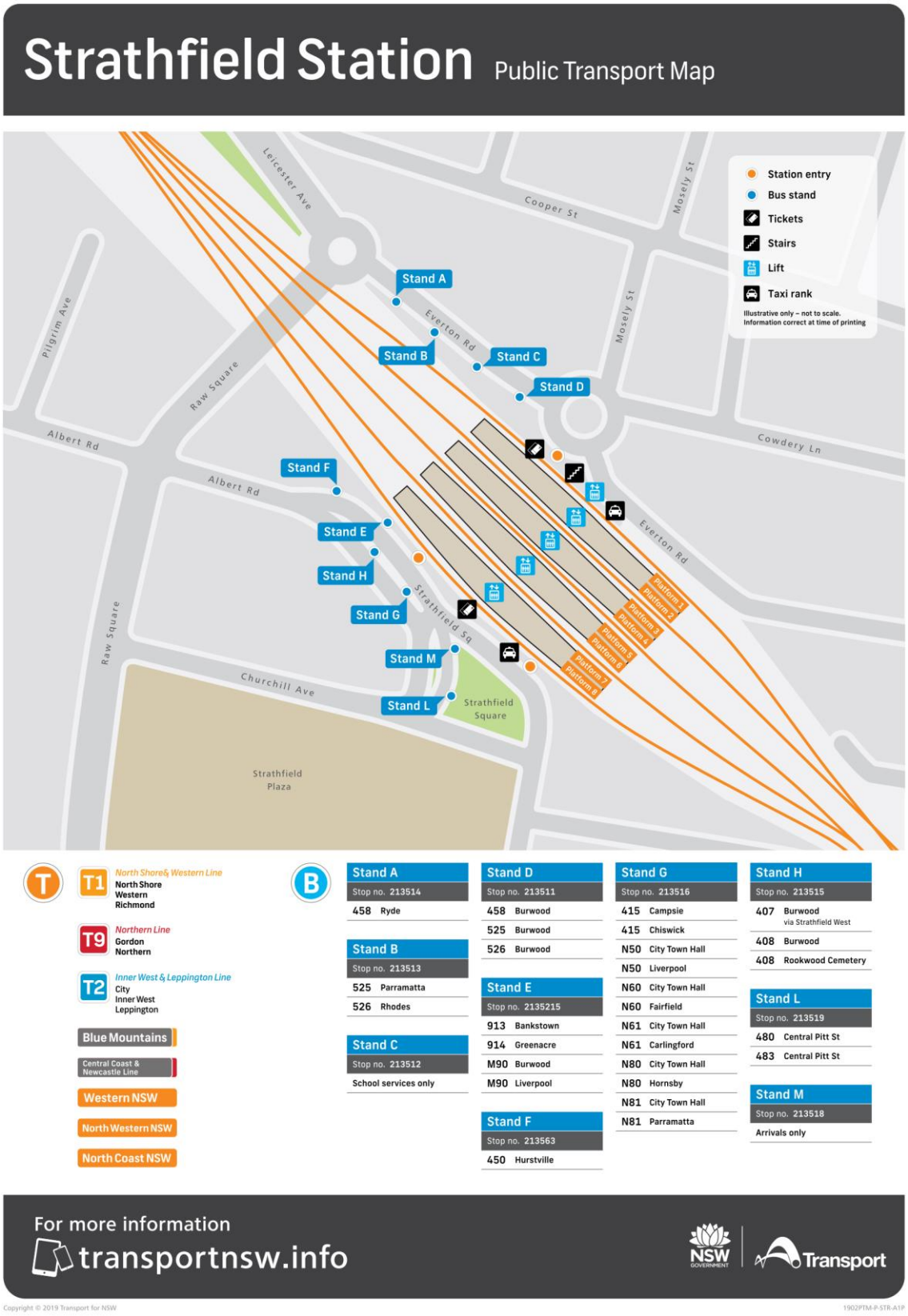

Figure 4-2 Strathfield Public Transport Map

Source: https://transportnsw.info/document/1925/strathfield-station-map.pdf, viewed 11/09/2019

The site is conveniently located to take advantage of the connectivity of existing public transport services and support the greater use of sustainable modes of transport, likely reducing reliance on private vehicles.

4.5 Kiss and Ride

Near to the bus interchange are three Kiss & Ride parking zones, located in Albert Road. Kiss & Ride zones have the same restrictions as “No Parking” where a limit of 2 minutes applies.

4.6 Car Share

Car sharing is a convenient, affordable and sustainable transport option for residents and businesses. Car share vehicles have the ability to reduce parking demand by providing a flexible transport option such that people do not need to own a vehicle or a second vehicle. This reduces congestion and the competition for parking spaces, which ultimately benefits all road users. Car share also reduces overheads for residents who rarely drive, and do not need to own their own vehicle. Identified car sharing services available in the proximity of the subject site include Car Next Door and GoGet.

Figure 4-3 and **Figure 4-4** shows the locations of car share vehicles from the Car Next Door and GoGet operator near the subject site.

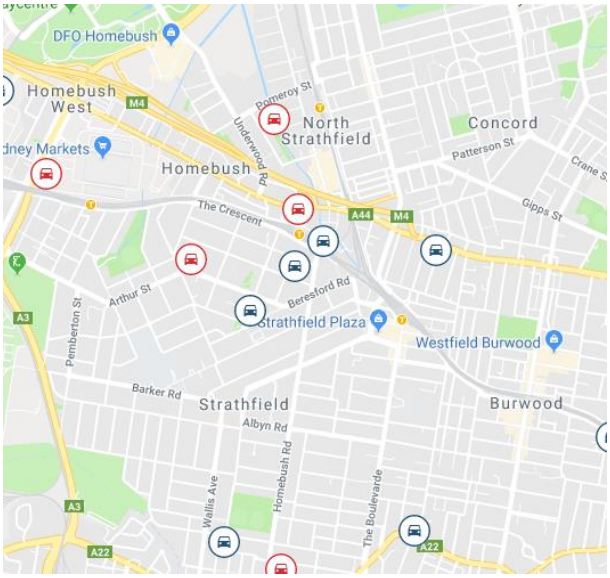

Figure 4-3 Car Next Door locations

Source: https://www.carnextdoor.com.au, viewed 10/09/2019

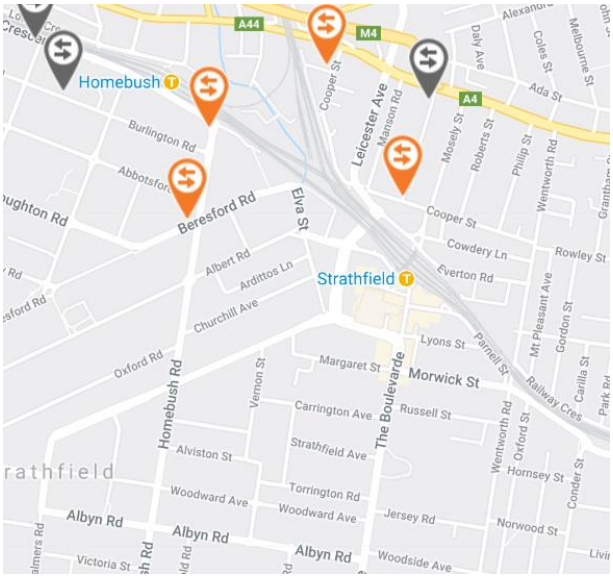

Figure 4-4 GoGet vehicle locations

Source: https://www.goget.com.au/, viewed 10/09/2019

There is currently a lack of car share choice in close proximity to Strathfield Plaza, with no vehicles located within the town centre itself.

4.7 Taxi

The transport interchange provides access taxi services with the provision of some seven taxi spaces on the southern side of the Strathfield, located on Albert Road

4.8 Journey to Work

Journey to Work (JTW) data (rounded to nearest whole number) as per the 2016 Census results is summarised in **Figure 4-5** and **Figure 4-6**.

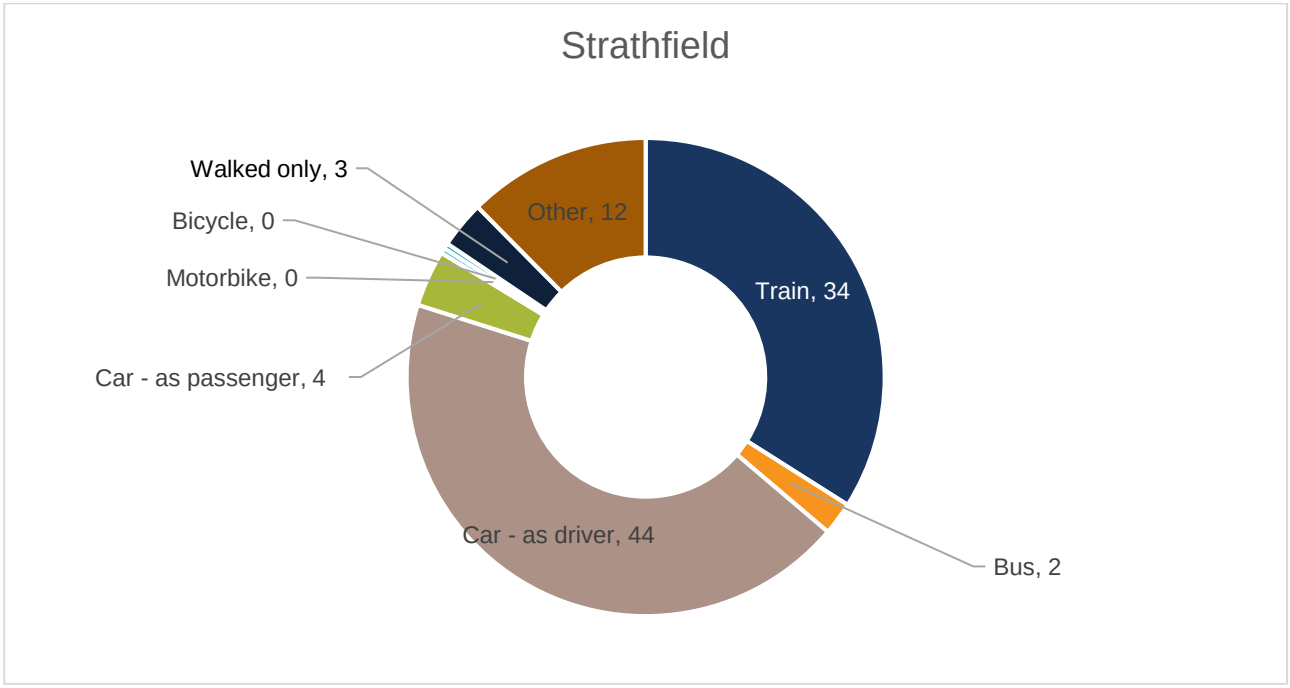

Figure 4-5 Journey to work – Strathfield

Source: Australian Bureau of Statistics Census 2016

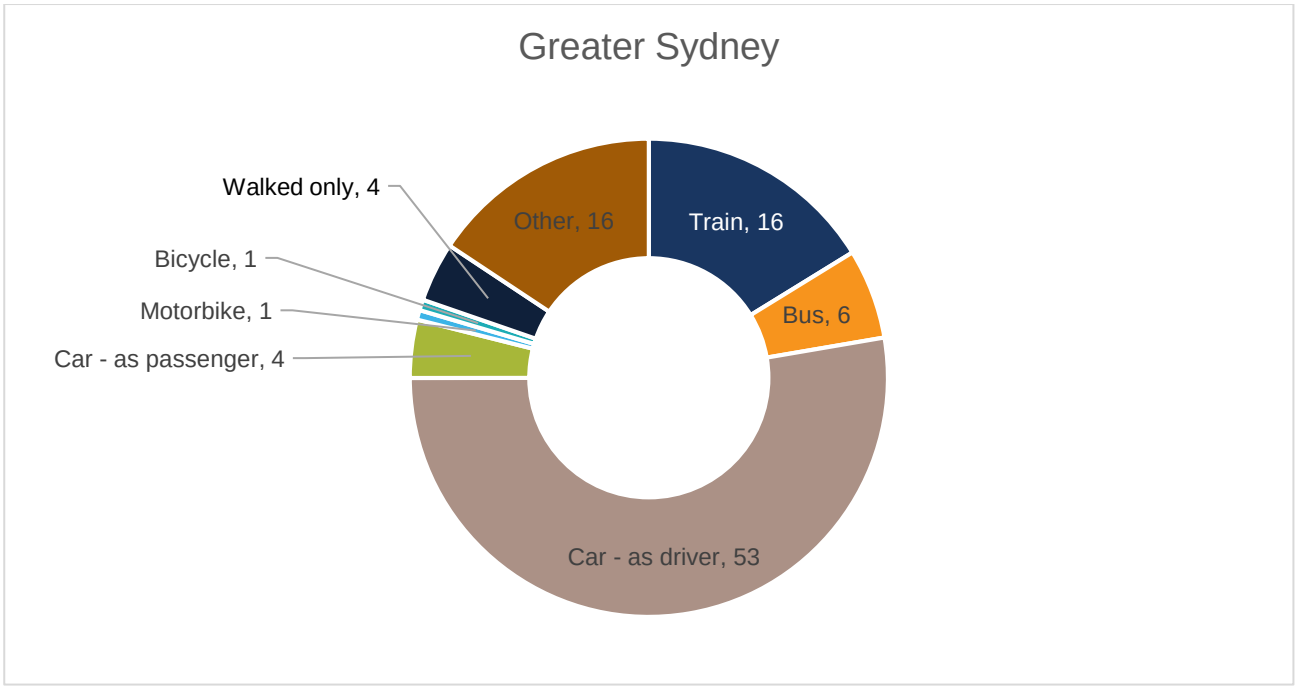

Figure 4-6 Journey to Work - Greater Sydney

Source: Australian Bureau of Statistics Census 2016

It is evident that the private car dependency of people within Strathfield is lower than Greater Sydney likely as a result of the high frequency public transport and the link that Strathfield provides to Parramatta and the Sydney CBD.

5 Planning Proposal Details

The planning proposal seeks to modify the existing LEP controls, in particular the floor space ration (FSR) of 7.5:1 to 9.5:1, and increasing the permissible building height.

The indicative development yield assess is summarised in **Table 5-1** below.

Table 5-1 Indicative Development Yield

Type	Quantum
Studio / 1 bedroom	204
2 bedroom	406
3 / 4 bedroom	143
Retail	19,185m^2 GFA
Commercial	16,666m^2 GFA
Community Hub	700m^2 GFA

Residential	GFA	Storeys	Apartments
Tower 1	22,610 sqm	36	248
Tower 2	15,380 sqm	38	172
Tower 3	16,027 sqm	38	153
Tower 4	9,653 sqm	22	115
Tower 5	6,786 sqm	14	65
Subtotal	70,456 sqm		753
Commercial	**GFA**	**Storeys**	
Tower 1	1,382 sqm	2	
Tower 2	6,990 sqm	10	
Tower 3	6,841 sqm	10	
Tower 4	715 sqm	2	
Tower 5	739 sqm	2	
Subtotal	16,666 sqm		
Retail	**GFA**		
Level 1	4,753 sqm		
Ground Level	3,198 sqm		
Basement 1	3,944 sqm		
Basement 2	7,290 sqm		
Subtotal	19,185 sqm		
Community Hub	**GFA**	***not included in GFA**	
Community Hub	700 sqm		
Subtotal	700 sqm		
Parking/Plant	**GBA***		
Carpark	78,771 sqm		
Subtotal	41,250 sqm		
Total GFA	107,006 sqm		

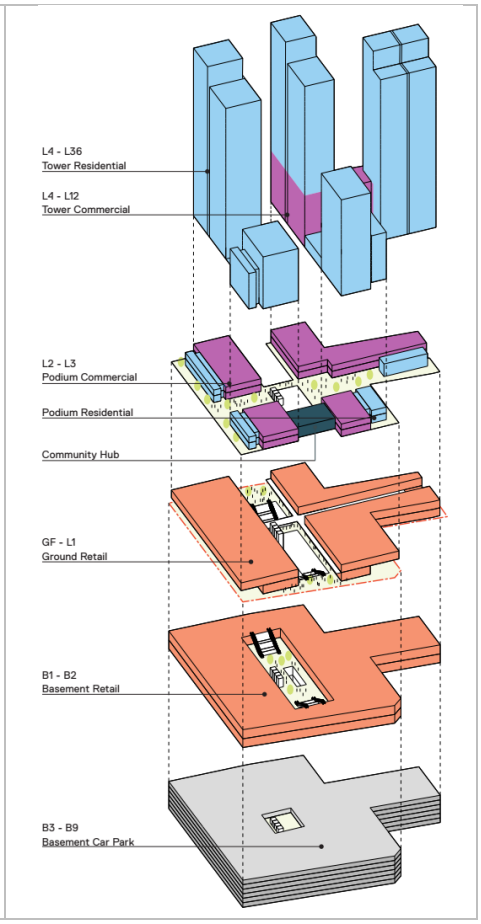

Figure 5-2 Development Proposal

Source: Strathfield Central Planning Proposal -Urban Design Report, Grimshaw, 05/09/2019

6 Access and parking

6.1 Pedestrian

The proposal offers the opportunity to improve pedestrian amenity, minimise conflict points with vehicular traffic and create public spaces. This could include the delivery of an expanded pedestrian plaza (**Figure 6-1**), the new integrated public transport hub (on the western side of the subject site), a new subterranean pedestrian link (**Figure 6-2**) and a footbridge connecting the subject site / transport hub (**Figure 6-3**) with the southern side of Redmyre Road.

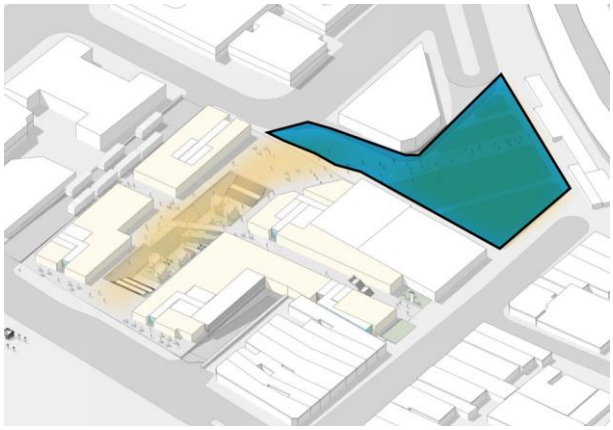

Figure 6-1 Visionary expanded plaza eliminating road crossings between the site and Strathfield Station.

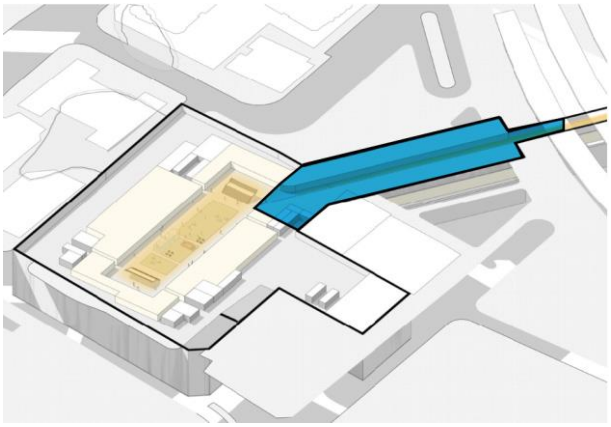

Figure 6-2 Visionary pedestrian tunnel between the site and Strathfield Station.

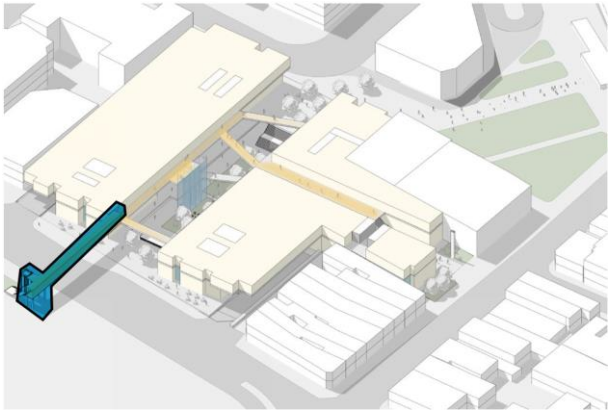

Figure 6-3 Visionary footbridge over Redmyre Road.

6.2 Bicycle

The proposal plans to provide basement bicycle parking provisions for employees and residents. This will help encourage sustainable transport uptake and reduce reliance on

6.3 General vehicle access and parking

Access points are proposed for residential and non-residential vehicles (cars) from Churchill Road and Redmyre Road can be seen in **Figure 6-4**. The rationale for two access points is to distribute over the road network, as is the current arrangement of Strathfield Plaza.

The Churchill Road access will allow entry and exit for cars, adjacent to the proposed Strathfield Central's transport hub entry lane. The Churchill Road access is provided with a direct ramp from ground floor to B3, the first level of non-residential parking.

The Redmyre Road access will also allow entry and exit for cars, with the access point shared with loading / delivery vehicles. The general vehicle ramp will also provide direct access to B3. Internally, the basement levels will include another direct ramp from B3 to B7, where B7 is the first level of residential parking.

The existing deceleration lane will be maintained minimise impacts to traffic past this point.

Seven basement car parking levels are proposed. A total of 964 retail/ commercial, 825 residential/ residential visitor spaces equating to a total of 1,789 spaces as outlined in **Table 6-1**.

Table 6-1 Parking provisions (subject to design refinement)

Level	Allocation	Motorcycle	Car
B03	Retail/ Commercial	-	241
B04		-	241
B05		-	241
B06		-	241
Sub-total		***0***	***964***
B07	Residential	20	275
B08		20	275
B09		20	275
Sub-total		***60***	***825***
Total		**60**	**1,789**

Figure 6-4 Planning Proposal – Ground Floor Plan

6.4 Service vehicle access

Loading / service vehicles are provided direct access to Redmyre Road with entry and exit ramps to B1 (first level of loading) and internal connectivity to B2 loading, where the largest design vehicle (semi-trailer) is to be accommodated. There is also a second loading point within the Transport Hub to accommodate loading facilities for Tower 5.

The main service vehicle access point is away from Churchill Road to minimise impacts on the existing bus interchange and proposed transport hub as well as the pedestrian environment on Albert Avenue, Strathfield Square and Churchill Road.

6.5 Transport Hub

The on-site transport hub is detailed as a one-way, southbound configuration. Buses would be able to enter via Churchill Road with access to a four (12.5 metre) long bus zone. There is also space provided for bus layover.

The provision of a transport hub provides the opportunity to redesign the current interchange and improve safety and performance. The potential benefits of the transport hub are:

- Provides a sheltered and enclosed waiting area for pedestrians resulting in improved comfort, away from harsh weather conditions.
- Improved level of active and passive surveillance can be achieved by connecting the transport hub with an activated area.
- Allows the existing bus interchange to be modified to improve pedestrian amenity between Strathfield Station and the town centre. The Taxi rank and Kiss ‘n Ride areas can be relocated to pedestrianize Albert Road immediately in front of the station entrance.
- Provide the opportunity to remove the conflict point between pedestrians and vehicles immediately outside the train station. This would provide the opportunity for pedestrians to walk from the new, upgraded transport hub to the train station via a new plaza. It also improves the connectivity between the subject site (containing a mix of land uses) and surrounding public transport infrastructure.
- Improve traffic circulation during peak times by reducing the number of conflict points and level of interaction between buses stopping and cars circulating within the town centre. Improving the separation of cars and buses will improve the customer experience when utilising the transport hub.
- Provide space for bus layover.
- The Strathfield Central proposal inclusion of the transport hub, within the Strathfield Town Centre, is creating usable space for TfNSW and the general public that is not typically afforded by developments.

Figure 6-5 Transport Hub View

Source: Strathfield Central Planning Proposal -Urban Design Report, Grimshaw, 17/09/2019

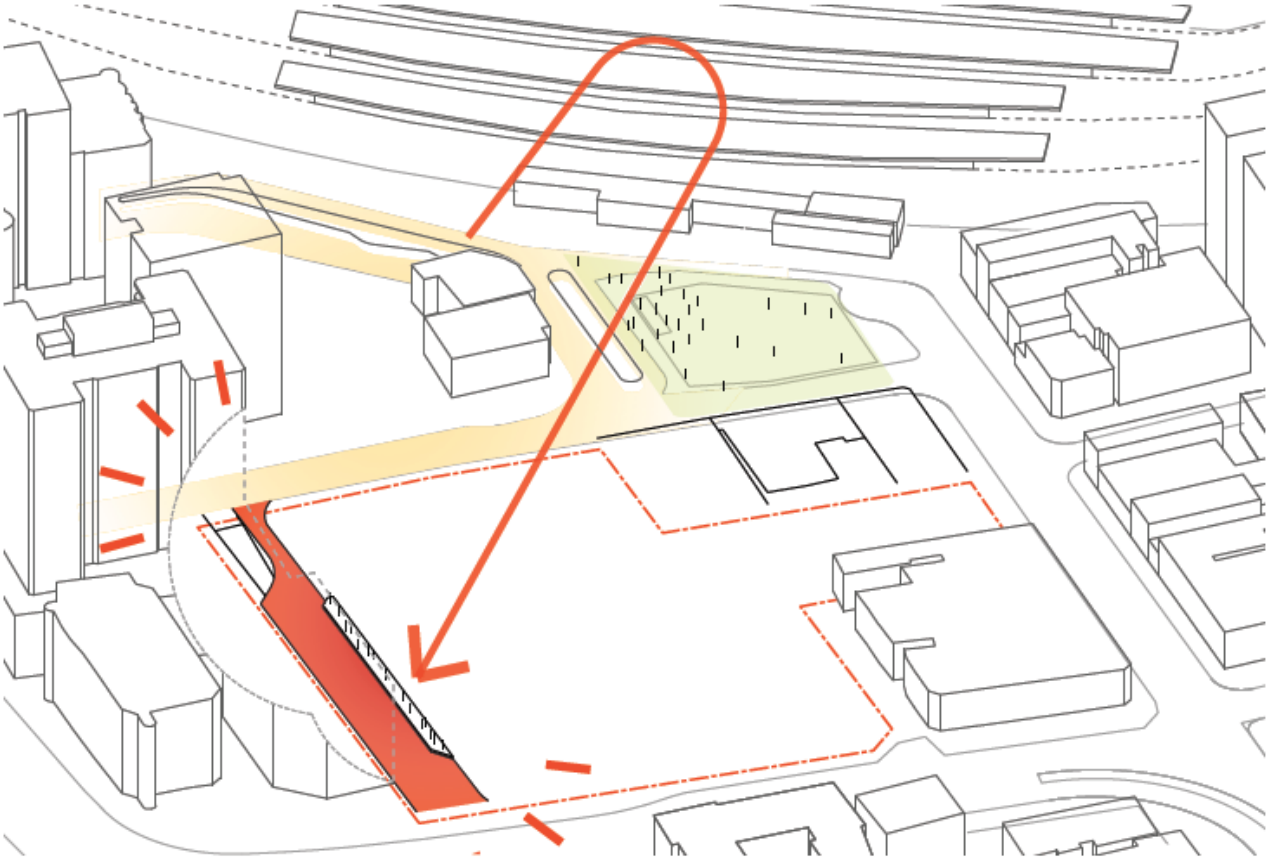

Figure 6-6 New Transport Hub Location

Source: Strathfield Central Planning Proposal -Urban Design Report, Grimshaw, 17/09/2019

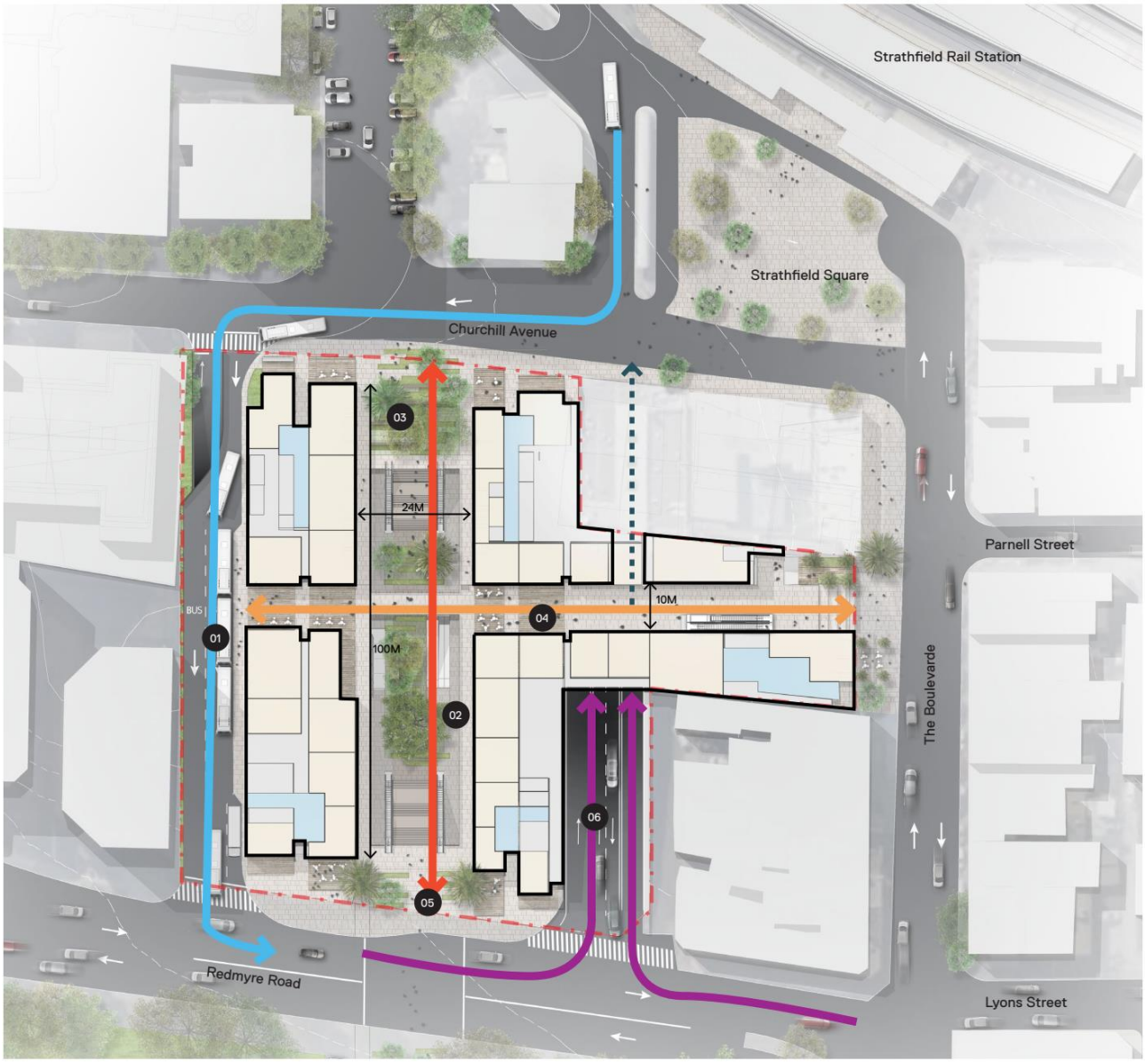

Figure 6-7 Transport Hub Movement shown in Blue

Source: Strathfield Central Planning Proposal -Urban Design Report, Grimshaw, 17/09/2019

7 Parking assessment

The development site is located on the doorstep of Strathfield Train Station and Bus Interchange within the Strathfield town centre. As previously identified, the development has the potential to achieve the desired outcomes of a transit orientated development by integrating land use with the high frequency transport and essential services within the town centre. Additionally, the creation of employment and essential services (retail, medical etc) within the development itself will aid in delivering sustainable outcomes for the future residents of the site who will have incentives not to utilise private vehicle transport.

Restricted parking can influence the traffic generation potential of the site, and given the site's locality within the town centre, there are numerous avenues to justify reduced on-site car parking. The following sub-sections will outline the parking requirements of the site and discuss the potential impact of reduced on-site car parking provisions.

7.1 Car parking requirement

The following Minimum Car Parking requirement is listed:

7.1.1 Strathfield DCP

The car parking requirements from Strathfield Consolidated DCP 2005 is listed below.

Table 7-1 Strathfield Council Parking Rates

Land Use	Dwelling Size	Rates
Residential	1 bedroom dwelling	1 space
	2 bedroom dwelling	1.5 spaces
	3 or more bedroom dwelling	2 spaces
	On-site visitor parking	1 space for every 5 dwellings
Commercial	-	1 space per 30m^2 gross floor area (Strathfield Town Centre).
Retail	-	6.2 spaces per 100 metres gross leasable floor area. 75% spaces must be designated short stay (customer, visitor,etc) 25% spaces must be designated long stay (employee) "Gross leasable floor area" means the sum of the area at each floor of a building where the area of each floor is taken to be the area within the internal faces of the walls, excluding stairs, amenities, lifts, corridors and other public areas but including stock storage area.

Further to the above parking rates, Council's DCP provides the following criteria for departures against the DCP parking provision:

a. Will the proposed development / change of use / alteration / addition to the premises create a demand for additional parking?

b. The existing situation in relation to car parking in the locality

c. Whether any dedication of land to Council for public parking purposes is proposed

d. Proximity and adequacy of off-street parking facilities to the site, ie a public parking station within 180 metres of the site having spare capacity during the premises' hours of operation

e. Whether the site is located on a main or county road

f. The hours of operation of the premises'

g. Any other factors which in the Council's opinion, may have an impact on the amount of requisite off-street parking

Application of the Apartment Design Guide (ADG) as per SEPP 65, the residential parking component is to be as per the RMS Guide to Traffic Generating Developments. In this case, the sub-regional residential parking rates are applicable.

When assessing the car parking requirement of sites with a significant scale of non-residential floor space, it is generally understood (by traffic and transport practitioners) that an increase in floor space does not result in a linear increase in parking demand, i.e. large floor spaces result in a lower rates of parking per unit area. The influence of public transport, the objectives of a TOD and the varying peak hours of the different on-site land uses need to be considered when determining the appropriate car parking provision.

7.1.2 RMS Guide

Selected car parking requirements from RMS (formerly RTA) Guide to Traffic Generating Developments listed in **Table 7-2**:

Table 7-2 RMS Guide Parking Rates

Land Use	Dwelling size	Car parking rates
Residential High Density Flat buildings Metropolitan Sub-Regional	1 bedroom unit	0.6
	2 bedroom unit	0.9
	3 bedroom unit	1.4
	Visitor parking	1 space per 5 units
Commercial	-	Unrestrained situation: 1 space per 40m^2 GFA Restrained situation: refer to council parking code
Retail	0-10,000 GLFA m^2	6.1
	10,000-20,000 GLFA m^2	5.6
	20,000-30,000 GLFA m^2	4.3
	over 30,000 GLFA m^2	4.1

Source: Guide to Traffic Generating Developments Version 2.2, (former RTA), October 2002

The site would not be classified as a CBD location under the RMS Guide. It is relevant to note that the residential visitor parking rate reduces to 1 space per 7 dwellings which is commensurate to the increased public transport and restrictive nature of on-site parking in CBD locations.

7.1.3 Comparable Town Centres

Both Council's and the RMS Guide car parking rate for retail and commercial are considered to be relatively high for the proposed planning proposal due to the accessibility and quality of public transport near the site.

Other Council DCPs with town centre controls have been investigated and show that there is an overall approach to restrict on-site car parking in town centre developments. The applicable Council DCP's are outlined below.

- Burwood Council
  - Commercial – 1 space per 400m^2, the 1 space per 120m^2
  - Retail – 1 space per 400m^2 then 1 space per 40m^2
- Waverly Council (Bondi Junction)
  - Commercial – 0.66 spaces per 100m^2
  - Retail – 1.6 spaces per 100m^2
- Willoughby Council
  - Commercial – 1 space per 110m^2
- Liverpool Council
  - Non-residential – 1 space per 100m^2
- City of Sydney (Green Square town centre)
  - Commercial – 1 spacer per 125m^2

- Parramatta Council
  - Commercial – 1 space per 100m^2
  - Shops – 1 space per 30m^2

It is noted the adjacent approved development at 1-9 The Boulevarde was approved with a car parking rate of 1 space per 100m^2 for the proposed approximate 4,770m^2 GFA.

7.1.4 Census Statistics

Journey to Work (JTW) data, along with car ownership responses identified within the 2016 Census indicates that Strathfield has a lower dependence on private cars than other areas of Greater Sydney.

The JTW data indicates that 47.5% of people travel via car (either as a driver or passenger) and some 34% travel via train. This compared to the Greater Sydney average of 56.6% and 16.2% who travel by car and train respectively.

Additionally, car ownership cross referenced with dwelling and bedroom type reveals that majority of people who reside in residential flat buildings have no more than 1 car irrespective of the type of unit (e.g. 1, 2 or 3 bedroom apartments).

This emphasises the opportunity to achieve a TOD for the planning proposal.

7.2 Car parking requirements

In terms of compliance with Council's DCP and SEPP 65 requirements, the parking quantum shown in **Table 7-3** is required.

Table 7-3 Council DCP Parking Requirement

	Scale	Rate	Requirement
Studio / 1 bedroom	204	0.6 / bedroom	122.4
2 bedroom	406	0.9 / bedroom	365.4
3 / 4 bedroom	143	1.4 / bedroom	200.2
Visitor	753	1 per 5 units	150.6
Sub-total			**839**
Commercial [1]	17,366m^2	1/30m^2	579
Retail [2)]	19,185m^2 (assume 14,388.75 GLFA)	6.2/100m^2	892
Sub-total			**1,471**
Total-			**2,310**

Notes:

(1) Includes community facility

(2) GFA converted to GLFA by factor of 0.75

A reduced car parking provision for both residential and non-residential floor space is considered appropriate due to the close proximity to public transport. This is in line with State Government policy to reduce private car dependency.

It has been shown that the JTW data for Strathfield reveals a higher update of public transport, resulting in reduce private car utilisation. For comparative purposes, the RMS Guide identified a private car use of 62% when surveying the commercial floor space which resulted in a car parking rate of 1 space per 40m^2 (or 2.5 spaces per 100m^2). The JTW data of 47.5% represents a 23.3% reduction, which correlates to a parking provision of 1.9 spaces per 100m^2. This is before consideration to the implementation of car sharing schemes being brought on-site and green travel plans.

The influence on public transport on retail customers also needs to be considered couple with the increase in population density right on-top of the retail floor areas. The RMS Guide rate for retail centres of this size is 4.3 spaces per 100m^2. Applying the same JTW discount results in 3.3 spaces per 100m^2.

For the planning proposal, the on-site car parking provision is proposed as summarised in Table 7-4 below. The following has been considered:

- Residential visitors are likely to have increased demand on weekday evenings and weekends. The proximity to high frequency public transport, and the site's location within the town centre are factored to reduce the overall visitor parking provision.
- Commercial floor area has been considered to be predominately business premises having a peak during the weekday. A reduced floor area operating in the weekend has been considered. A reduced rate has been applied to constrain parking and promote alternate transport modes
- Retail parking peak is Thursday / Friday evening and Saturday midday. A reduced parking rate has been applied as a consideration to the public transport, the significant increase in density the proposed 753 units will provide (i.e. walking mode) and the constraint parking within a town centre to reduce private car dependency.

Table 7-4 On-site car parking requirement and peak demand estimate

	Rate	Scale	Base Requirement	Weekday 9am-6pm	Weekday 6pm onwards	Weekend	Proposed car parking supply	Car parking supply meets estimated peak demand
Residential (753 units)	0.6 – 1.4 spaces per dwelling (RMS Guide)	753	688	100%	100%	100%	**825**	Yes
Residential Visitor	1 per 7 (RMS Guide)	753	107	25%	75%	100%		
Sub-total			*795*	*715*	*768*	*795*		
Commercial and community	1.9 spaces per 100m^2	17,366m^2	330	100%	25%	25%	**964**	Yes
Retail	3.3 spaces per 100m^2	19,185m^2 (assume 14,388.75 GLFA)	475	75%	100%	100%		
Sub-total			*805*	*686*	*558*	*558*		
Peak demand	**-**		**1600**	**1401**	**1326**	**1352**	**1,789**	**Yes**

Based on **Table 7-4**, the planning proposal car parking provision is exceeds the expected peak parking demand.

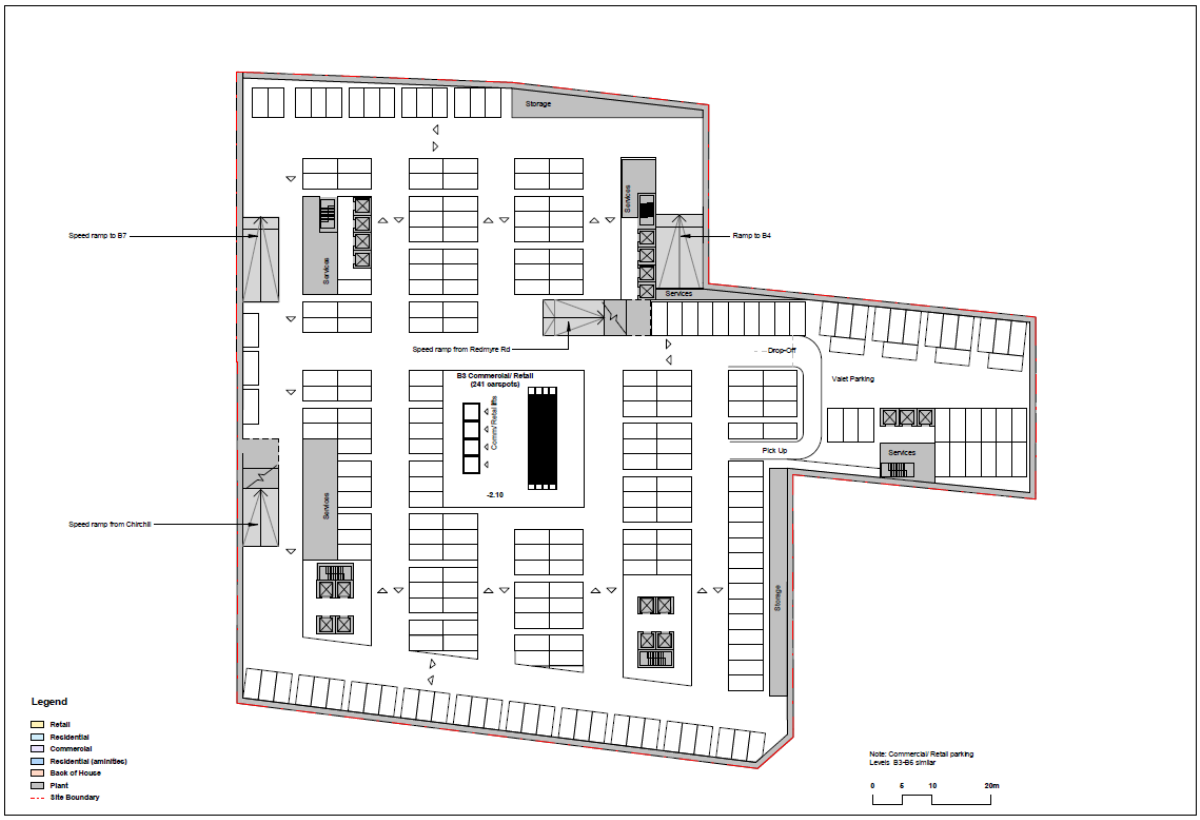

Figure 7-1 Typical Parking Layout B3-B6

Source: Strathfield Central Planning Proposal –GAD Drawing Set, Grimshaw, 17/09/2019

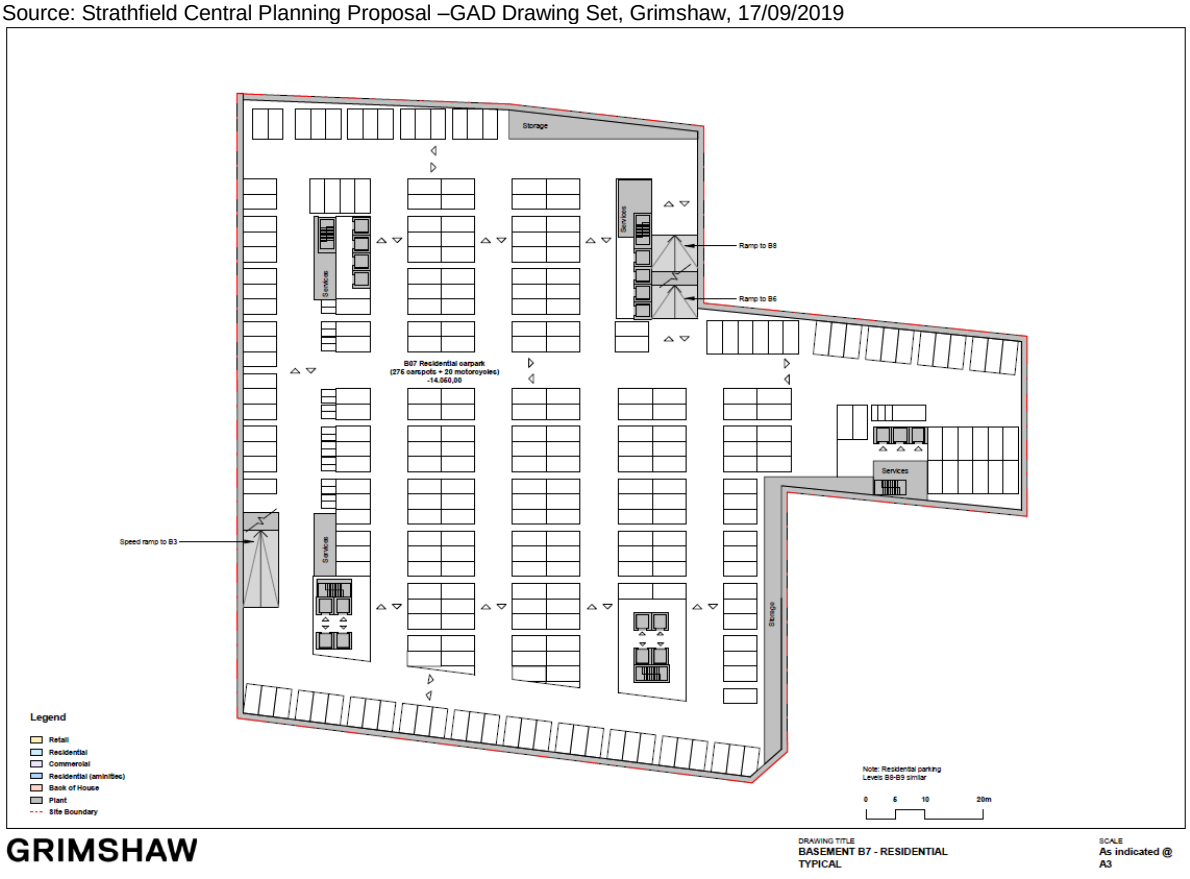

Figure 7-2 Typical Parking Layout B7-B9

Source: Strathfield Central Planning Proposal –GAD Drawing Set, Grimshaw, 17/09/2019

7.3 Loading, & Delivery & Waste Management

Loading and servicing is provided at ground floor (within transport hub) and B1 and B2 levels.

Basement 1, shown in **Figure 7-3** will cater for Medium Rigid Vehicles (MRV). Basement 2, shown in **Figure 7-4** will be designed to accommodate 19-metre semi-trailers for the major supermarket tenancy.

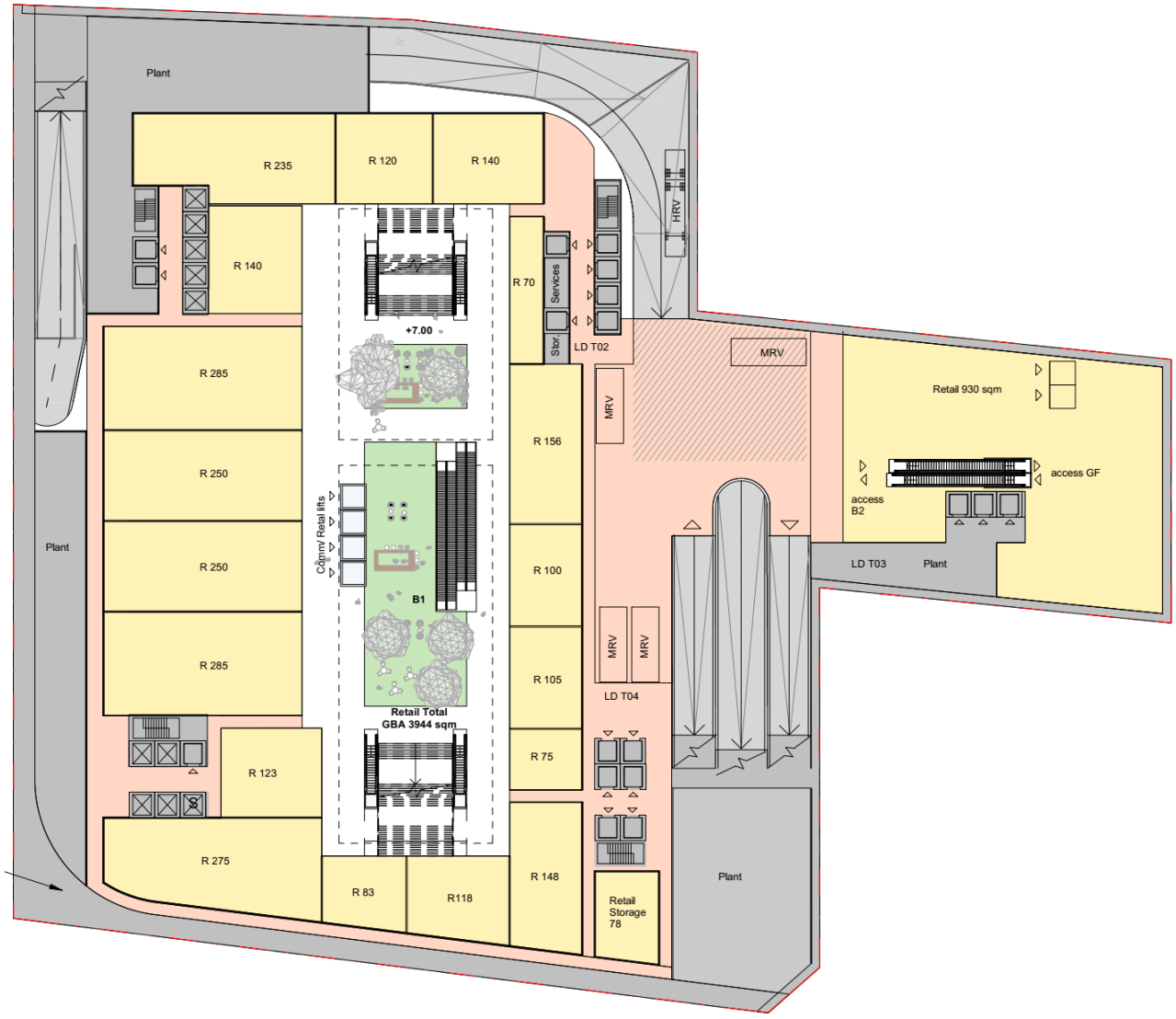

Figure 7-3 Basement level 1 plan

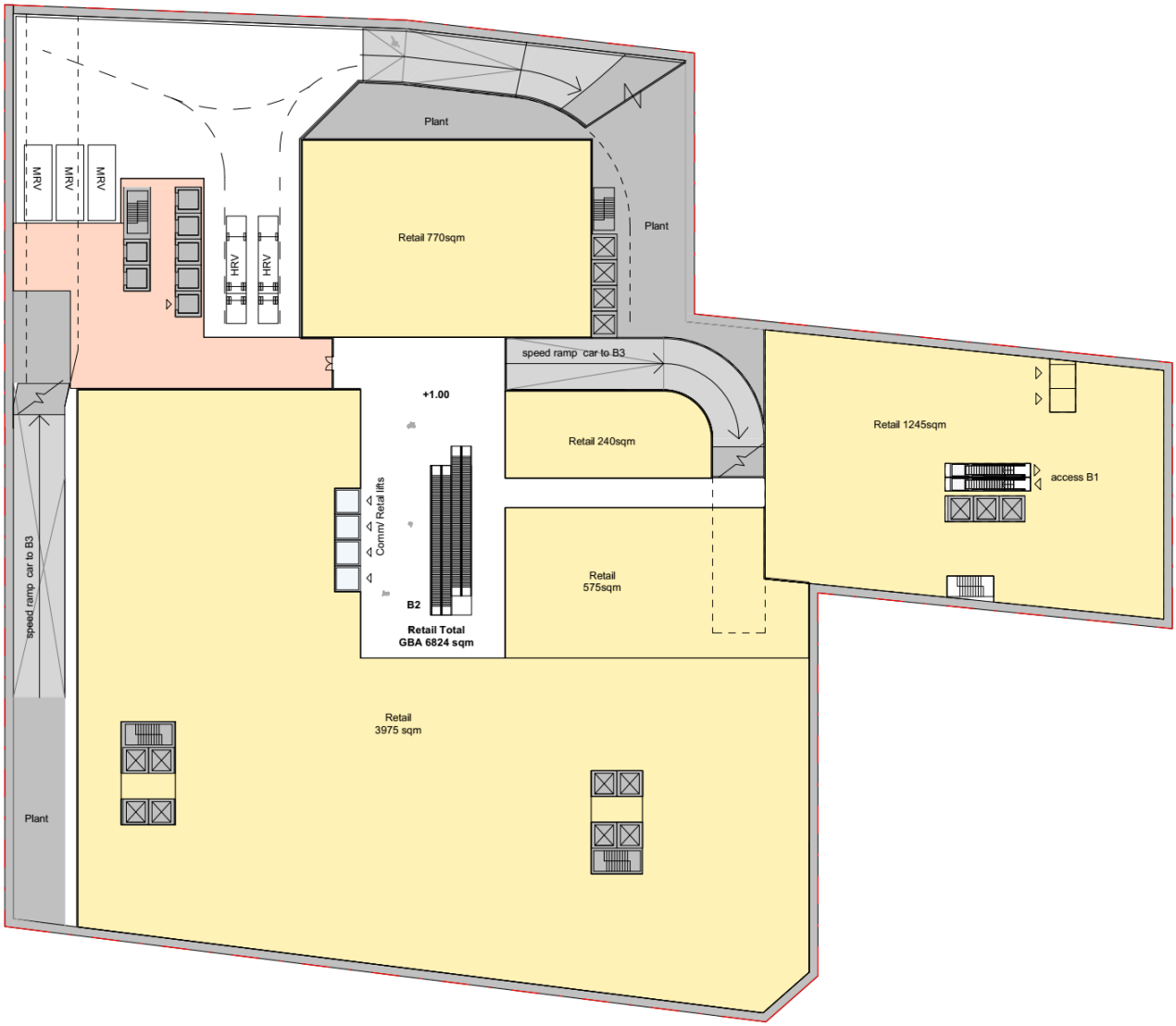

Figure 7-4 Basement level 2 plan

8 Traffic Impact Consideration

Reference is made to the RMS Guide to Traffic Generating Developments (Version 2.2, October 2002) and 2013/04a Technical Direction which outlines the trip generation rates for various land uses.

The resulting traffic generation (peak hour) is summarised in **Table 8-1.**

Table 8-1 Traffic Generation

Land use	Peak hour trip generation	Weekday Peak (PM)	Weekend Peak
Residential (High Density)	0.15 - 0.19 trips per unit (Sydney average – Technical Direction)	113	72
Commercial	1.2 – 1.6 trips per 100m2 (Sydney average – Technical Direction)	208	69
Retail	4.3 – 5.7 trips per 100m2 (Reduced rate based on RMS Guide and consideration of JTW data)	619	820

It is unlikely that different land uses would generate peak hour trips at the same time.

Surveys of the existing traffic generation of the site may yield an alternate trip rate.

The above table does not discount the existing site's traffic generation potential which should be taken into consideration when assessing the external traffic impact. Therefore, when considering the existing land use, car parking and associated traffic generation, the net impact is likely to be reduced than what is shown in **Table 8-1**.

9 Conclusion

Cardno was commissioned by Memocorp Australia Pty Ltd to provide Traffic Engineering advice to support the Planning Proposal (PP) for a major redevelopment of the Strathfield Plaza site including new high rise and new basement overlayed by new retail space and new commercial and residential high-rise. The findings are as follows:

- The site is positioned and consistent with the strategic direction that the most suitable areas for urban renewal are those areas best connected to employment and which include centres that are close to jobs and serviced by high frequency public transport that can move large numbers of people;
- The proposed access strategy seeks to minimise impact to the pedestrian amenity surrounding the site by maintaining similar access conditions to the existing site;
- The proposed transport hub on-site provides a unique opportunity to re-think the existing interchange and achieve improved safety and operational efficiencies.
  - Provides a sheltered and enclosed waiting area for pedestrians resulting in improved comfort, away from harsh weather conditions.
  - Allows the existing bus interchange to be modified to improve pedestrian amenity between Strathfield Station and the town centre. The Taxi rank and Kiss ‘n’ Ride areas can be relocated to pedestrianise Albert Road immediately in front of the station entrance.
  - Improve congestion during peak times by reducing the number of conflict points and level of interaction between buses stopping and cars circulating within the town centre.
- The proposed public transport hub will support the existing public transport system, improve the local area of Strathfield Town Centre and promote the use of alternate transport modes through better connectivity.
- The car parking strategy and provision should adopt outcomes in line with Transit Orientated Development (TOD). Restricting on-site car parking is will influence travel mode choice. Along with green travel plans and improved access to car share facilities, the reliance on private car dependency can be reduced.
- The planning proposal has potential to generate in the order of 619 to 820 vehicular trips in a peak hour. Further analysis post gateway submission will take into consideration the existing site’s traffic generation, however based on the available information the net difference may be some 400 to 430 additional trips.

Further detailed assessment of the proposal will be undertaken at DA stage to determine the overall traffic impact and to refine access to the transport hub and its integration with the overall public transport service network. However this report outlines that the proposed development, if adopting TOD principles and improved public transport accessibility (and reliance), has merit at this planning proposal. Overall, the planning proposal is supported.