2 and 8a Lee Street, Haymarket
Transport Assessment

Prepared by: GTA Consultants (NSW) Pty Ltd for Toga Project Services Pty Ltd
on 25/11/2020
Reference: N163790
Issue #: I

GTAconsultants

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Quality Record

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1. INTRODUCTION

01

1.1. Background and Proposal

TOGA Group (TOGA) is a long-term Crown leaseholder of the Adina Apartment Hotel and adjacent Henry Deane Plaza (the site), identified as Block C within the Western Gateway sub-precinct of the Central Station State Significant Precinct (Central Precinct).

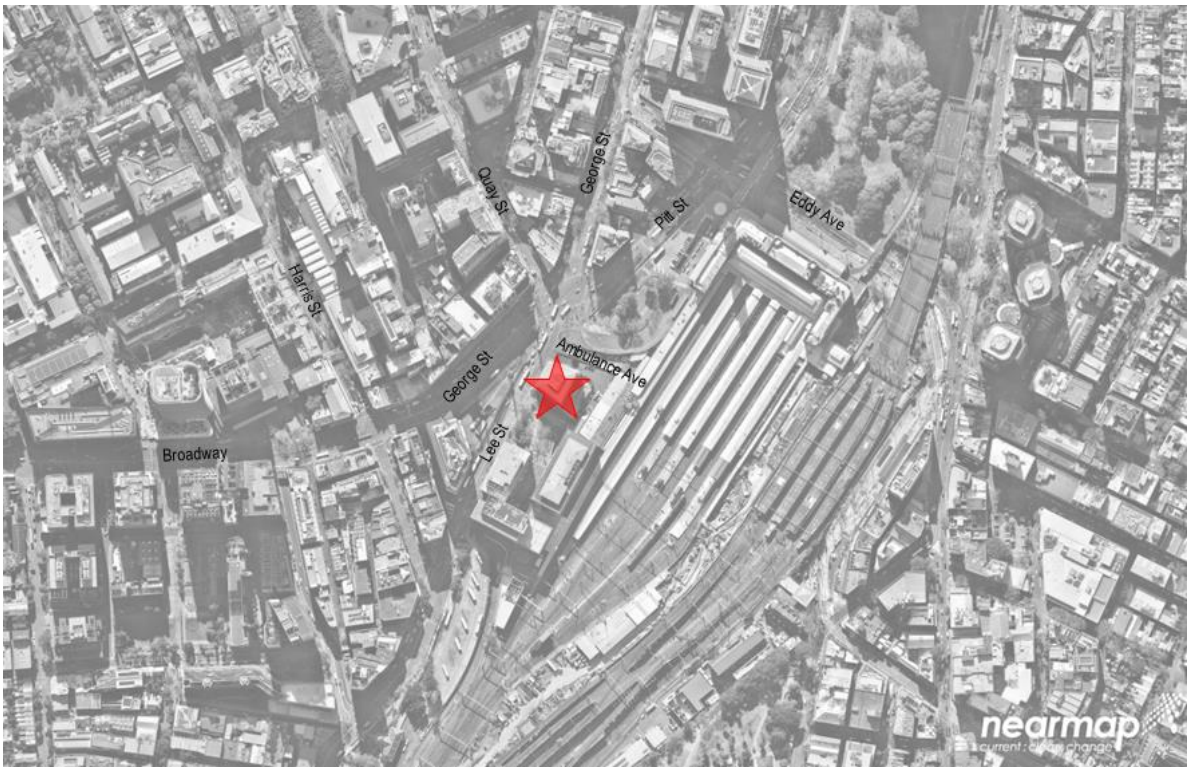
TOGA is proposing to redevelop their land holdings in the Western Gateway sub-precinct, immediately adjoining Central Station, for a mixed-use development including a world-class hotel, technology hub and high-quality retail floorspace. The specific proposal for the site is as follows:

- Retention of the B8 Metropolitan Centre zoning of the site which enables the delivery of commercial premises, retail premises, business premises, and hotel and motel accommodation on the site.
- Provision of new development standards for the site to enable:
    - Demolition of contemporary additions to the existing Adina Apartment Hotel building.
    - Conservation works and additions to the existing Adina Apartment Hotel building and continued use of the building for retail premises, and hotel and motel accommodation.
    - Construction of a hotel and commercial office building above and adjacent to the Adina Apartment Hotel building.
    - The proposed development will be limited by a maximum building height of RL 213.2, defined by the Prince Alfred Park sun access plane.
    - The proposed maximum gross floor area (GFA) on the site includes 41,000 square metres GFA within the Adina Apartment Hotel building footprint and tower form above and immediately adjacent to the current building, with additional floor space below the upper ground level of the site to activate the revised Henry Deane Plaza and pedestrian links to a maximum total 43,000 square metres GFA across Block C.
    - Delivery of a revitalised public domain across the site that is coordinated with adjacent development, including a new north-south thoroughfare adjacent to Block A (the Atlassian site), and an improved public plaza linking Railway Square (Lee Street) and multiple levels of the public realm and Block B (the DEXUS/Frasers site).
- Establishment of a planning framework to guide the future development of the site and surrounds to ensure an integrated public realm, heritage interpretation strategy, and development outcome is achieved across the Western Gateway sub-precinct.

This report will form part of a rezoning submission to the Department of Planning Industry and Environment (DPIE) in relation to the Block C within the Western Gateway sub-precinct.

Toga engaged GTA Consultants to provides a traffic and transport assessment of the proposed rezoning, and specifically an assessment against the reference scheme prepared by FJMT submitted to support the proposed new planning controls for the site. The subject site and environs shown in Figure 1.1.

Figure 1.1: Subject site and environs



Base source: Nearmap

The indicative proposal currently facilitates a significantly expanded hotel to incorporate approximately 230 rooms (with approximately 170 hotel staff) and 28,000 square metres of commercial gross floor area (GFA) and lower level retail space covering 3,000 square metres (1,000 square metres in the Adina Hotel building and 2,000 square metres in Henry Deane Plaza). As part of the proposal, the existing heritage building that is occupied by the Adina Apartment Hotel Sydney Central will be repurposed to provide the lower level retail and ancillary hotel facilities on the upper levels. Basement levels would facilitate services, end of trip facilities, parking for up to 100 vehicles and separate loading area.

1.2. Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposal, including consideration of the following:

- existing and planned transport services surrounding the site
- potential access arrangements for the site
- parking and service vehicles requirements
- traffic generating characteristics of the proposal
- transport impact of the proposal on the surrounding road network.

1.3. References

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds
- Sydney Development Control Plan (DCP) 2012
- Sydney Local Environmental Plan (LEP) 2012
- Australian Standard/ New Zealand Standard, Parking Facilities, Parts 1, 2 and 6
- Greater Sydney Commission, *The Greater Sydney Region Plan*, 2018
- Greater Sydney Commission, *Eastern City District Plan*, 2018
- NSW Government, *Future Transport 2056*, 2018
- City of Sydney, *Central Sydney Planning Strategy 2016-2036*, 2016
- City of Sydney, *Cycling Strategy and Action Plan* – 2018-2030
- Pentelic Advisory, *Preliminary Transport Context Analysis* 2019
- Camperdown Ultimo Collaboration Alliance and Work Plan 2019
- Camperdown-Ultimo Place Strategy 2019
- concept design plans for the planning proposal prepared by FJMT, dated 19 August 2020
- Central Precinct Draft Strategy Vision, dated October 2019
- other documents and data as referenced in this report.

2. STRATEGIC CONTEXT

02

2.1. Overview

The following key strategies and plans have influenced development opportunities in the broader area, and together will have real effects on future travel demand and mode splits for both workers, residents and visitors alike.

The introduction of Sydney Metro, Australia's biggest public transport project that will operate as a standalone railway covering more than 66 kilometres with 31 new metro stations in its initial stages, will generate real growth opportunities in the area. Sydney Metro City and Southwest is under construction linking Chatswood and Bankstown via new underground station precincts within the CBD and stretching through the existing line to Bankstown. With services due to commence in 2024, the Sydney Metro will improve travel time, capacity and reliability to key employment areas such as the Sydney CBD.

2.2. Relevant Strategies and Plans

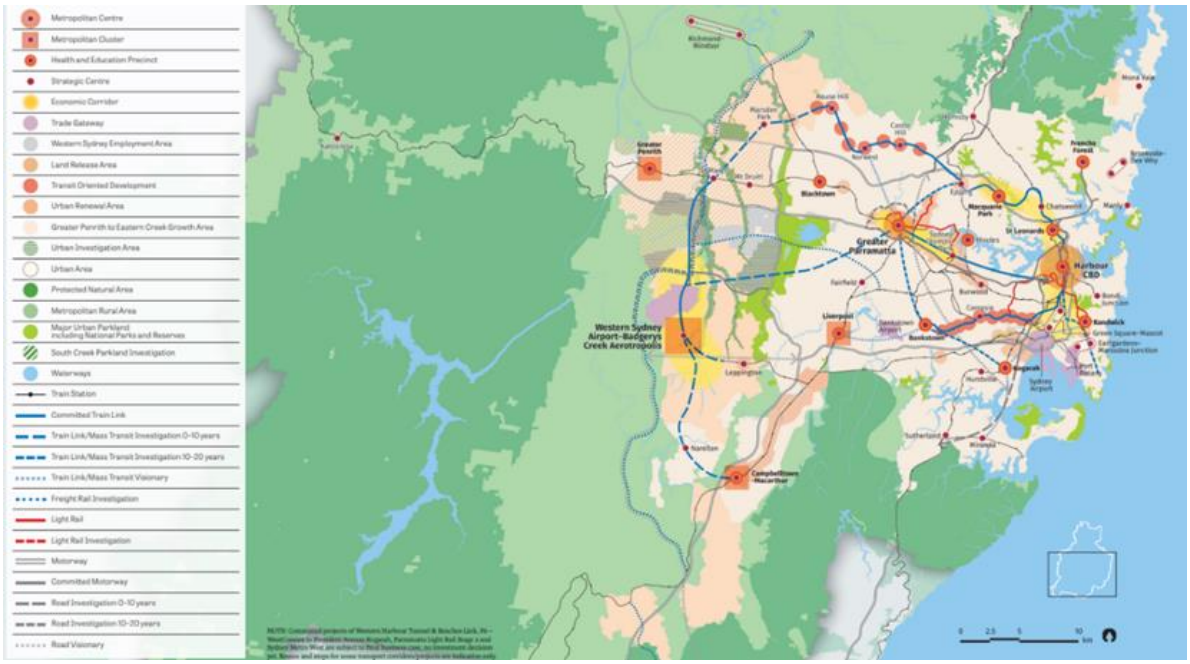
2.2.1. The Greater Sydney Region Plan 2018

The Greater Sydney Commission (GSC) is an independent organisation that leads metropolitan planning for Greater Sydney. It has prepared the Greater Sydney Region Plan which outlines how Greater Sydney will manage growth and guide infrastructure delivery. The plan has been prepared in conjunction with the NSW Government's Future Transport 2056 Strategy and informs Infrastructure NSW's State Infrastructure Strategy.

The GSC's vision is to create three connected cities; a Western Parkland City west of the M7, a Central River City with Greater Parramatta at its heart and an Eastern Harbour City. By integrating land use, transport links and infrastructure across the three cities, more people will have access within 30-minutes to jobs, schools, hospitals and services.

The Greater Sydney Region Plan is a 20-year plan with a 40-year vision and has four key focuses; infrastructure and collaboration, liveability, productivity and sustainability. The Greater Sydney Structure Plan 2056 is shown indicatively in Figure 2.1.

Figure 2.1: Greater Sydney Structure Plan 2056 – The Three Cities



Source: Greater Sydney Commission

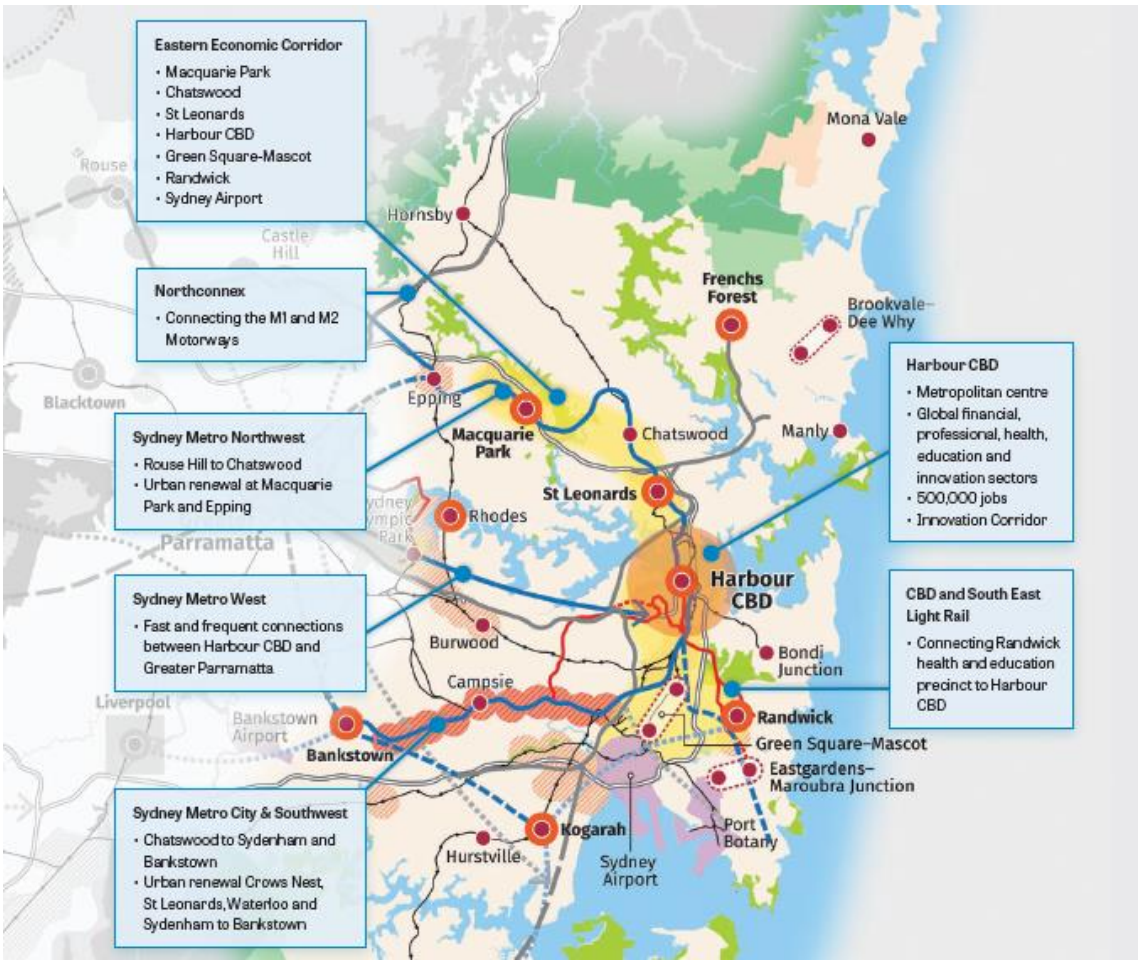
2.2.2. Eastern City District Plan

The Eastern City District is at the centre of the Eastern Harbour City. The metropolitan centre of the Eastern Harbour City, the Harbour CBD, is Australia's global gateway and financial capital, promoting growth to the District. The Eastern City District will grow substantially, due to its well-established, well-serviced and highly accessible Harbour CBD, generating half a million jobs and is the largest office market in the region. The new metro stations will improve access in the Harbour CBD.

The Plan puts emphasis on providing urban renewal around new and existing infrastructure. The focus of growth will be on well-connected walkable places that build on local strengths and deliver quality places. An integrated approach to the green infrastructure of the District – Waterways, bushland, urban tree canopy and open spaces – will improve sustainability. The Greater Sydney Green Grid will provide cool, green links to support walking, cycling and community access to open space.

The Eastern City District is shown in Figure 2.2.

Figure 2.2: The Eastern City District



Source: Greater Sydney Commission

2.2.3. Future Transport 2056

Future Transport 2056 provides a 40-year strategy for how transport will be planned, amended and forecasted within NSW, both regional and metropolitan, for the expected 12 million residents within the state. Future Transport 2056 follows from the 2012 Long Term Transport Master Plan which listed over 700 transport projects, the majority of which are completed or in progress. It also ties in with Greater Sydney Region Plan and the subsequent district plans to support the three cities metropolis vision.

Future Transport 2056 is supported by two key documents, Greater Sydney Services and Infrastructure Plan and Regional NSW Services and Infrastructure Plan, which provide guidance and planning for these areas.

From a metropolitan view, Future Transport 2056 and associated plans include the 30-minute city where jobs and services are within 30 minutes of residents with Greater Sydney. Strategic transport corridors to move people and goods are outlined between metropolitan and strategic centres, clusters and surrounds. The Movement and Place framework is also emphasised to support liveability, productivity and sustainability.

2.2.4. Central Sydney Planning Strategy 2016-2036

The Central Sydney Planning Strategy is a 20-year growth strategy that delivers on the City of Sydney's Sustainable Sydney 2030 program. The Strategy identifies 10 key moves to meet the demands of growing numbers of workers, residents and visitors and their changing needs, using a place-led and people-focused approach. One of the key moves is to provide employment growth in well located new tower clusters where taller buildings with higher floor space ratios are permitted for income-earning uses. To balance this, another key move is to enhance public parks, spaces and views within Central Sydney with adequate sunlight to attract visitors, high-value jobs, tourists and residents.

The Strategy acknowledges the development opportunity of space above and around Central Railway Station, whilst identifies a public domain spine through Central Sydney along George Street with new public squares at Circular Quay, Town Hall and Railway Square.

Furthermore, the Strategy seeks to rationalise bus routes within Central Sydney, including the removal of bus routes from Lee Street and consolidating them along Broadway-George Street to the south to facilitate future expansion of Railway Square.

The Strategy proposes to reduce car movements through Central Sydney, identifying that the majority of commuter trips originate from Inner Suburbs where public transport is most available. It seeks to provide more space on Central Sydney streets for pedestrians and public transport as they accommodate most internal and inbound journeys compared to cars.

2.2.5. City of Sydney Cycling Strategy and Action Plan 2018 – 2030

City of Sydney has issued a cycling strategy plan to meet the cycling needs of the Sydney CBD and surrounding suburbs, identifying active transport as the most accessible, equitable, sustainable, and reliable form of transport. The plan identifies an ambitious mode share target of 10 per cent within the city.

The plan builds on the 2007 to 2017 cycling strategy the preceded it. In retrospect, the plan has encouraged changing attitudes to cycling from government, developers and commuters, including TfNSW's partial subsidy of cycling projects since 2015, real estate evaluations placing value on end-of-trip facilities and the increased cycling mode share observed in school students since 2007.

The plan, in summary, looks to:

- continue connecting the network, including completing regional routes, adding wayfinding and improving intersection design
- support people to ride, ensuring programs are evidence-based and responsive to the needs of a diverse community
- support businesses, including a bicycle-friendly workplace accreditation scheme and to
- lead by example.

2.2.6. Preliminary Transport Context Analysis 2019 – Pentelic Advisory

Pentelic Advisory has completed a study on the strategic transport planning inputs for the City of Sydney Central Square Master Plan, particularly on Central Square (part of the "three squares" public domain). Notably, the transport implications for Central Square have been identified as:

- The need for effective and safe pedestrian movements within the square to accommodate its role as a major intermodal interchange (rail, metro, bus).

- The need to reduce driver traffic flow within the square to accommodate the above active and public transport development – notably Central Square is the only one directly constrained by major cross-city traffic movements.
- The potential to complete "missing links" within the cycling and pedestrian network in the city.
- The opportunity to 'future-proof' rail development within the city by making provisions for future routes and stations.

2.2.7. Camperdown – Ultimo Collaboration Precinct

The Camperdown – Ultimo Collaboration Precinct is recognised as the most significant innovation precinct in NSW with world-class health, education and research institutions, notably including Royal Prince Alfred Hospital, Australian Technology Park, and the tertiary education campuses situated within the Sydney CBD. Stakeholders have identified nine key objective markers to guide growth objectives:

1. High growth sectors, new jobs, and new investment.
2. Economic and social contribution to NSW.
3. Major contribution to research, discovery, and innovation.
4. Excellence in research and industry collaboration.
5. Excellent public transport, walking and cycling and great places.
6. Authenticity, character, outstanding architecture, engaging streetscapes, and built environment.
7. Resilient local community and business.
8. Diverse local community.
9. Attractiveness, liveability, and reliance of sustainable shared resources.

2.2.8. Camperdown – Ultimo Place Strategy

The Camperdown – Ultimo Place Strategy has connectivity priorities and associated actions to achieve these priorities. Relating to transport, these are identified as to:

1. integrate and connect the Collaboration Area, within and beyond its edges
2. improve local transport options within the Collaboration Area.

Immediate imperatives associated with these priorities include:

- Advocacy for a mass transit system that strengthens connections between the Collaboration Area and Greater Sydney's economic corridors.
- Implementing a pilot project along Broadway and Parramatta Road to reallocate road space and prioritise pedestrians between Central Station and key land uses on the Ultimo axis, while achieving an acceptable level of service for vehicles at the gateway to the Harbour CBD.

3. SITE AND TRANPSORT CONTEXT

03

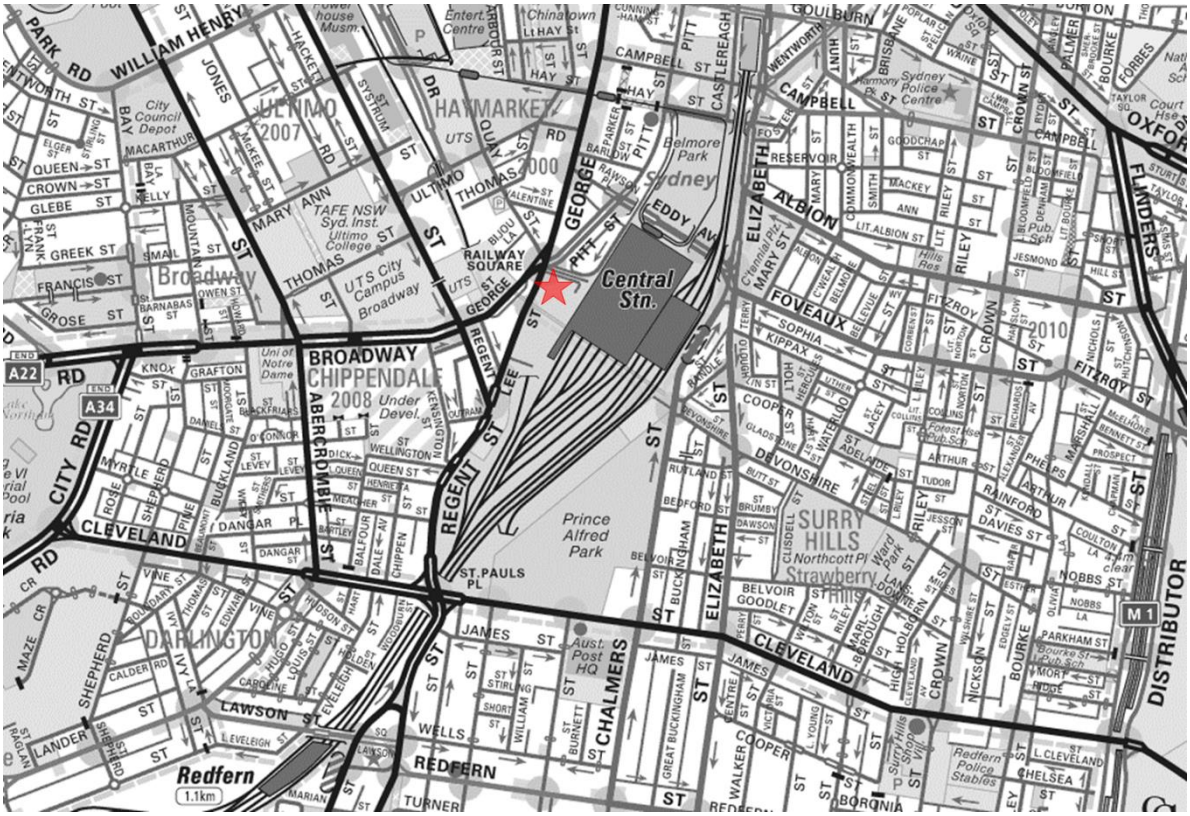
3.1. Site Context

The site is within the City of Sydney Local Government Area on the southern edge of Sydney CBD and adjacent to Central Railway Station.

The site fronts Lee Street to the west which provides vehicle access to George Street, Pitt Street, Broadway and Regent Street. These are key routes for traffic into and out of Sydney CBD. The Sydney Trains corridor is located east of the site, with the 300 metre Devonshire Tunnel providing pedestrian access between Central Railway Station, the site and surrounding precinct.

The location of the site and its surrounding environs is shown in Figure 3.1 with localised context illustrated in Figure 3.2.

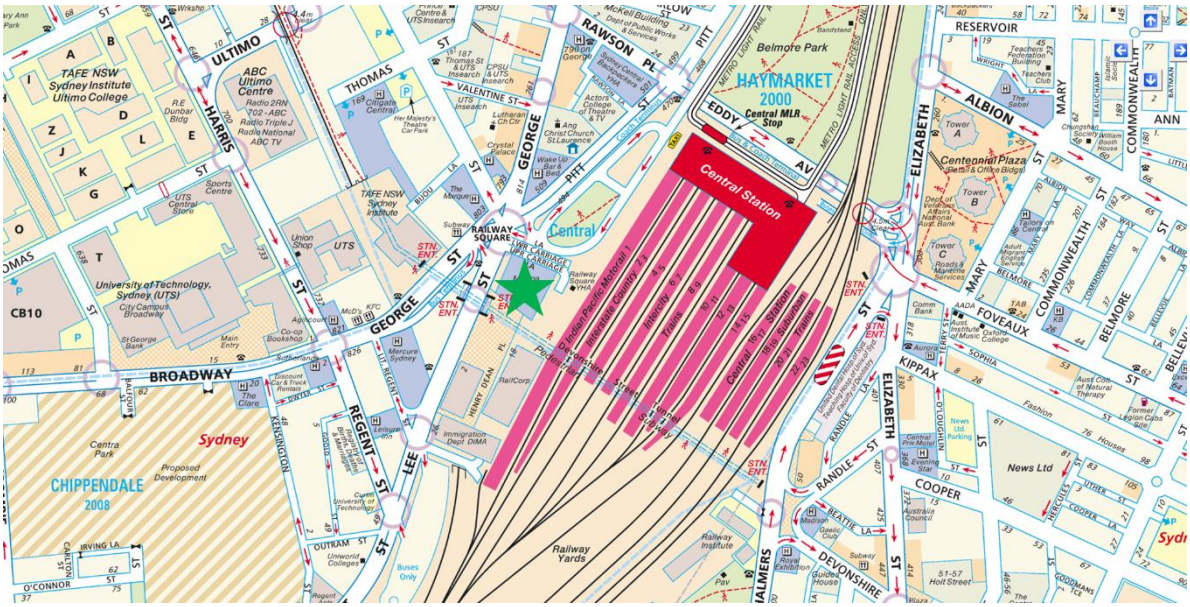
Figure 3.1: Site location and surrounds



Basemap Source: Sydway

Existing vehicle access to the site is provided via Ambulance Avenue and a Right of Way (ROW) over part of the Youth Hostel Association (YHA) lot to the east. Ambulance Avenue provides an at-grade access to basement parking for the hotel and is also used for Sydney Trains staff parking. The ROW transitions up from Lee Street to sit above the basement parking and facilitates access to a set-down/ pick-up area and small parking area for the hotel and YHA site.

Figure 3.2: Local surrounding context



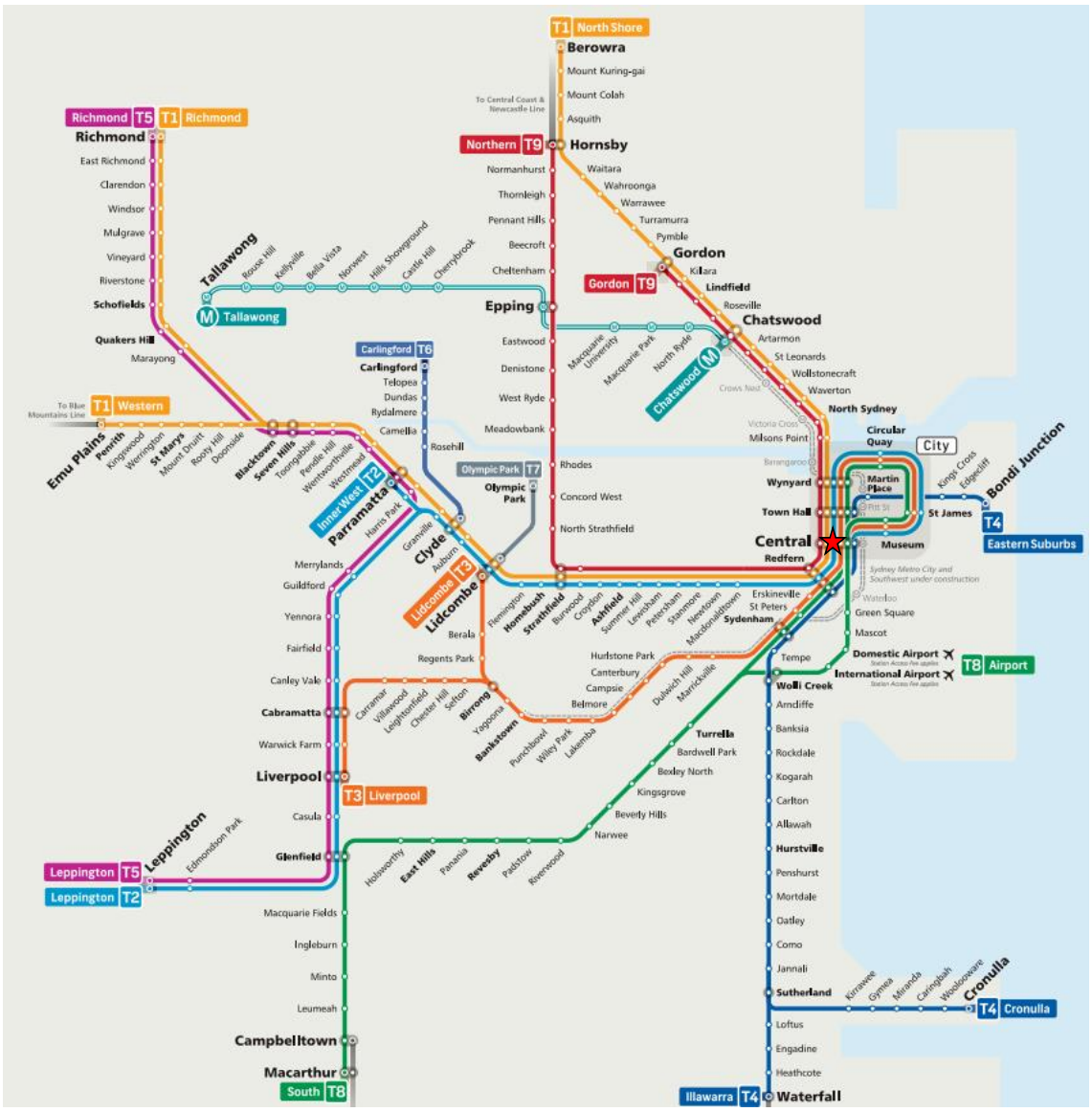
3.2. Public Transport

The site is well serviced by high frequency and highly accessible public transport with Central Station, one of the key transport hubs in Sydney located immediately to the east. The following sections consider the available transport, both present and in the future, located in close vicinity.

3.2.1. Heavy Rail

The site is located within the western precinct of Central Railway Station. Central Railway Station services all train lines within the Sydney Trains and NSW TrainLink networks, and is a major terminus for suburban as well as interstate rail services. The rail network context is shown in Figure 3.3.

Figure 3.3: Surrounding train network



Source: Transport for NSW

3.2.2. Sydney Metro

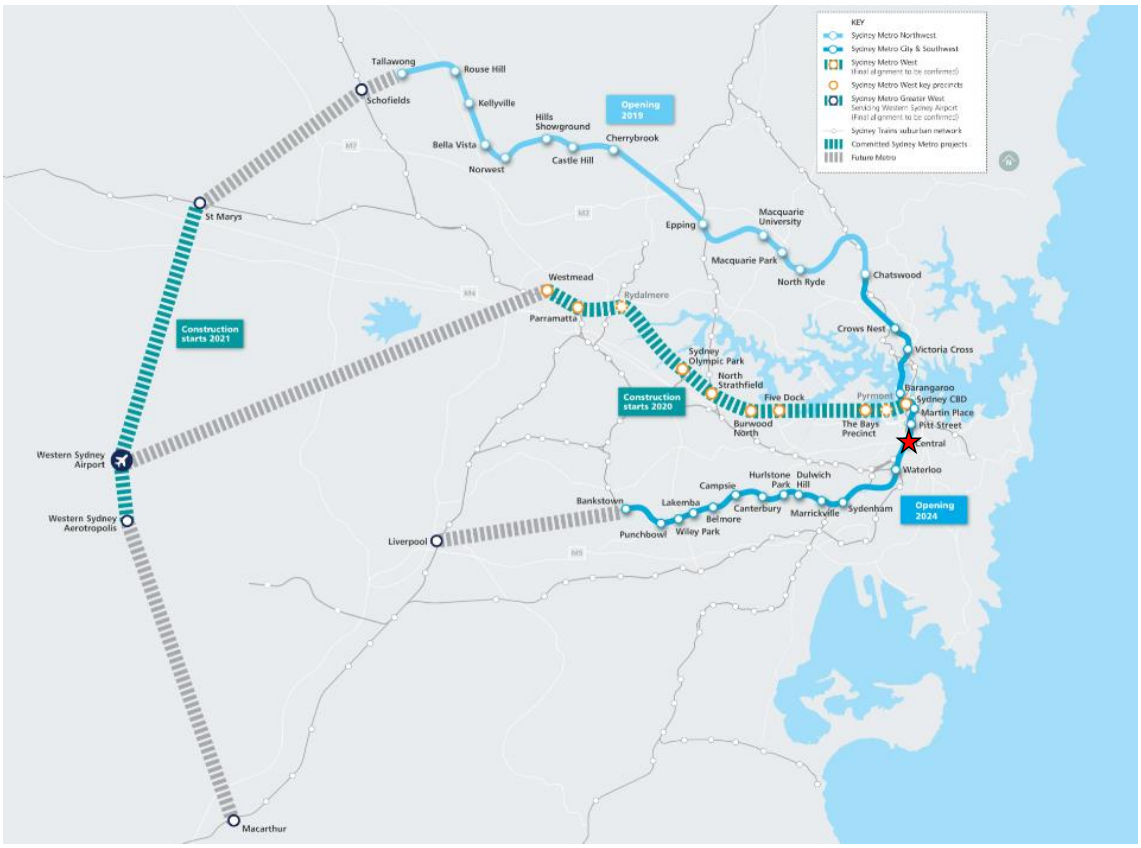
The NSW Government has committed to building a new metro railway line from Chatswood to Bankstown via the Sydney CBD. The project will focus from the end of newly opened Stage 1 (Sydney Metro Northwest) at Chatswood, under Sydney Harbour, through Sydney CBD and the existing T2 Inner West and Leppington Line, servicing key existing centres and growth areas.

The NSW Government anticipates the new metro line will be operational in 2024 with seven new metro stations, including at Central Railway Station, and eleven upgraded stations. Trains would be running at least every four minutes in the peak or 15 trains in an hour.

The proposed stop at Central Railway Station increases capacity on the public transport network to/ from the area driving further development and expansion in the area.

The metro network will be fully segregated from the existing Sydney Trains network that continues beyond Bankstown. An overview of the future Sydney Metro network is shown in Figure 3.4.

Figure 3.4: Sydney Metro route alignments



Source: Sydney Metro

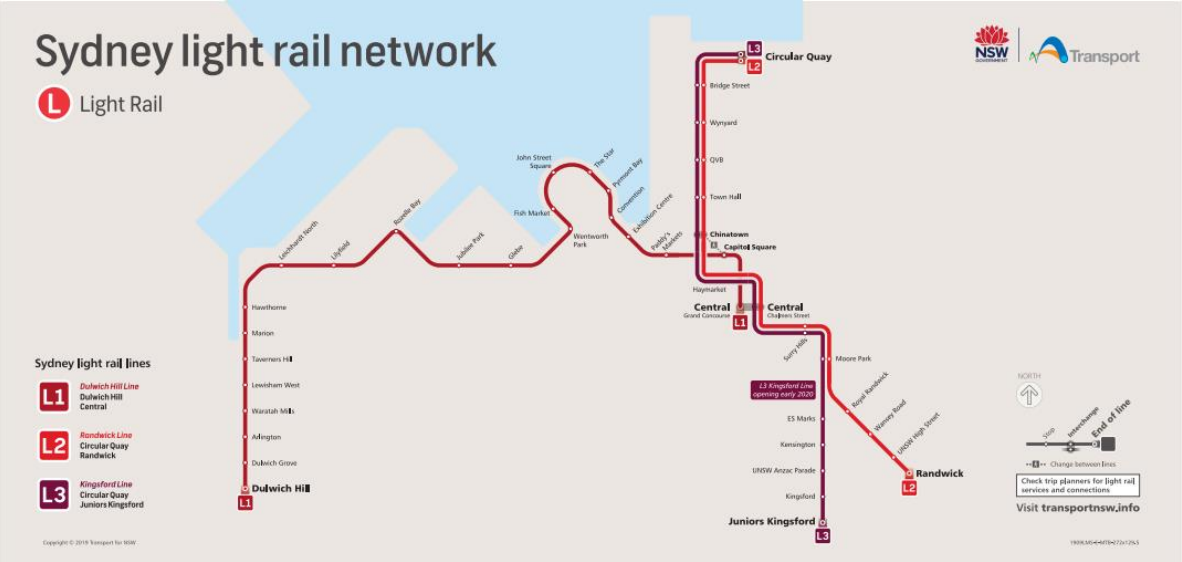
The NSW Government also recently announced planning for Sydney Metro West. This further planned expansion of Sydney's Metro network will significantly increase passenger travel by rail right across Sydney, aggressively reduce travel times and alter perception of public transport generally.

The intended future Sydney Metro network will improve accessibility and travel times for workers, particularly to/ from Sydney CBD while creating opportunities for real change in travel behaviour for all users.

3.2.3. Sydney Light Rail

The site is also within an easy walk of existing light rail stops at the northern end of Central. Running from Central, the L1 Dulwich Hill line connects the inner west with inner-city areas such as Darling Harbour and Ultimo. It has a frequency of 7.5 minutes during the day and 15 minutes at night. The recently completed L2 Randwick line connects Central and Sydney CBD with Randwick via Surry Hills and Moore Park with current frequency of 10 minutes during the day and 15 minutes at night. The L3 Kingsford line will be completed in the first half of 2020 and branches off the L2 line south of Moore Park. The existing and future light rail network is shown in Figure 3.5.

Figure 3.5: Sydney Light Rail network



Source: https://transportnsw.info/documents/timetables/93-L2-Randwick-Line-20200210.pdf accessed 26 February 2020

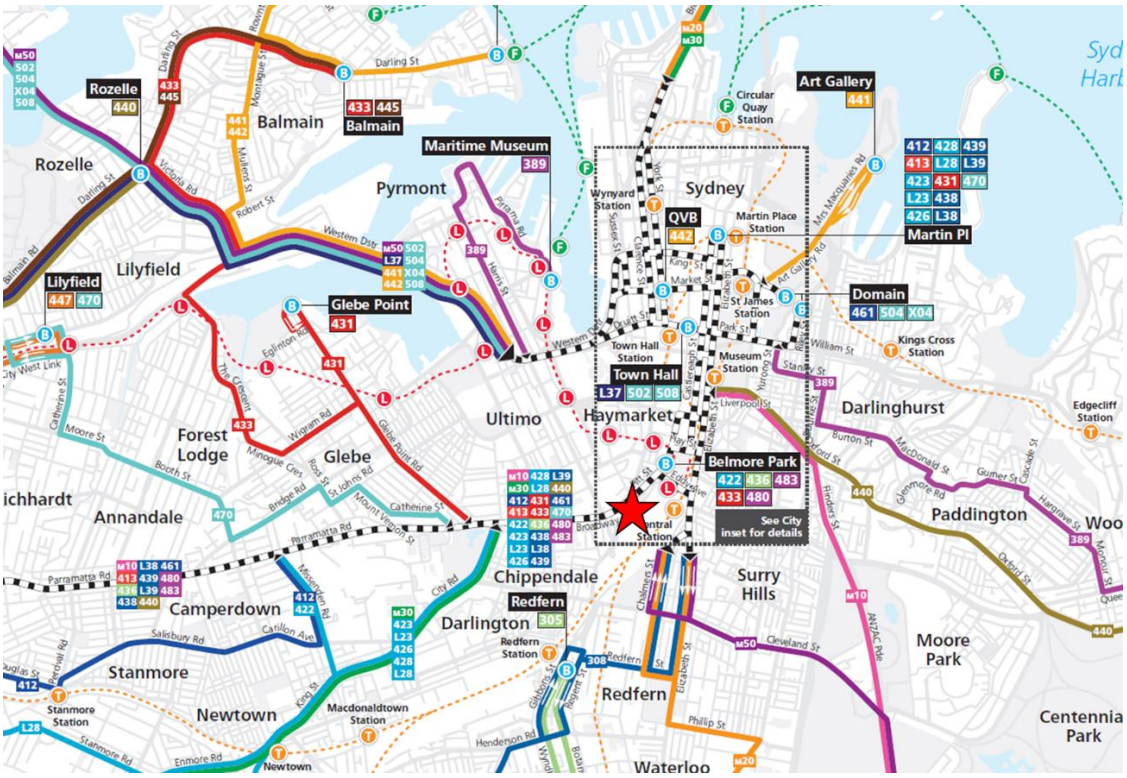
3.2.4. Buses

The site is well served by high frequency and highly accessible bus services travelling on Parramatta Road/ Broadway and Harris Street, with services readily available from Railway Square adjacent to the site.

Railway Square is shown in Figure 3.6 and services approximately 20 separate bus routes, all of which combine to provide a high level of accessibility to multiple destinations including Sydney CBD generally, Lower North Shore, Eastern Suburbs, Inner West and Sutherland Shire. The inner west bus routes that serve the immediate area are shown in Figure 3.7.

Figure 3.6: Railway Square

Figure 3.7: Bus routes serving the subject site



Source: Transport for NSW – Inner West Network Map (accessed 26 February 2020)

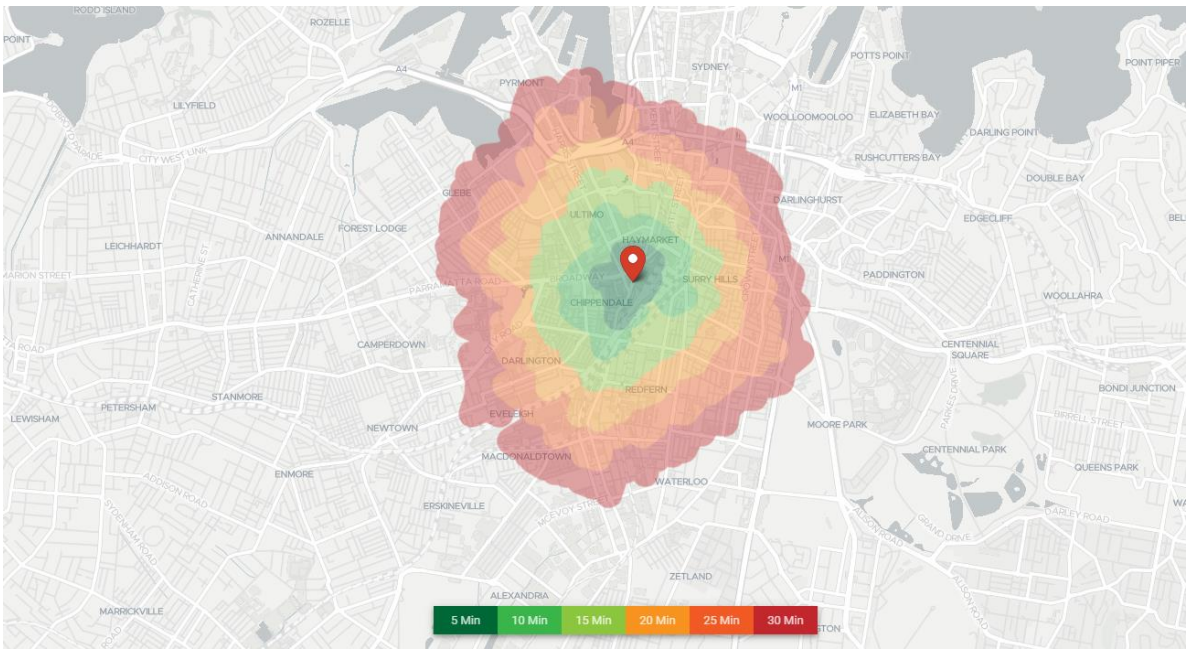
3.3. Active Transport

3.3.1. Pedestrian Accessibility

Walking is the primary local area travel mode with Central naturally providing a high level of pedestrian amenity having played the key role in Sydney's transport network for so long. Generous footpaths are common throughout, with safe crossing facilities at multiple locations including mid-block on Lee Street and at all nearby signalised intersections.

Figure 3.8 illustrates the walking catchment for the site and shows high level of connectivity throughout.

Figure 3.8: Existing walking catchment

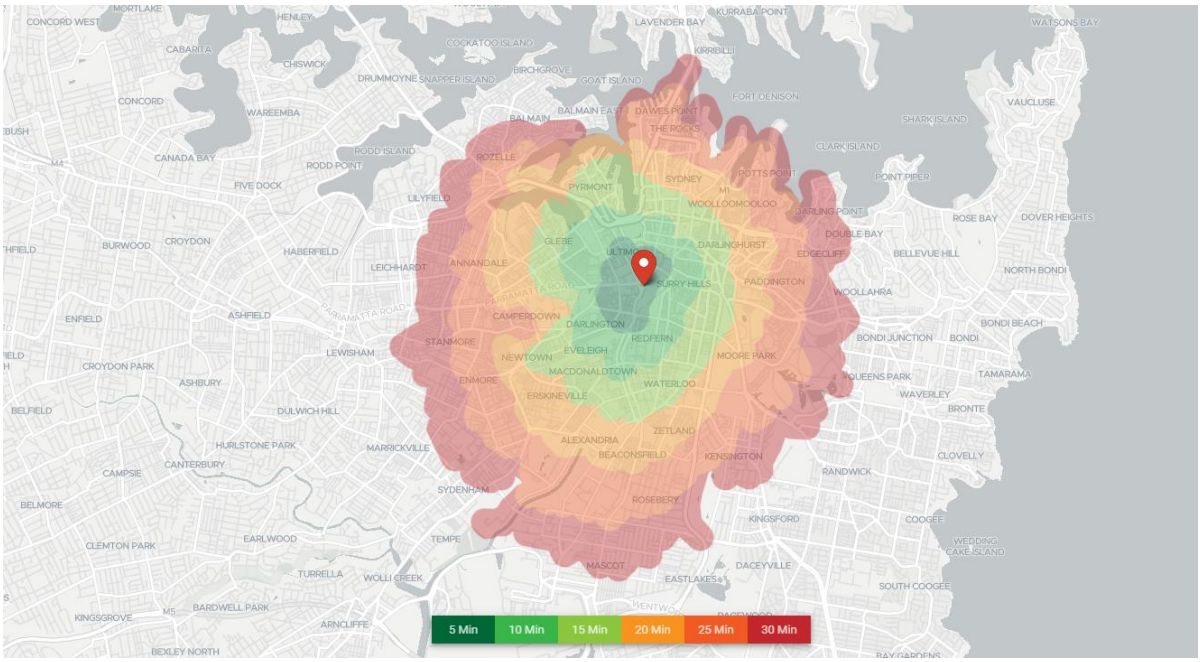


Source: app.targomo.com/ accessed 1 August 2019

3.3.2. Cyclist Accessibility

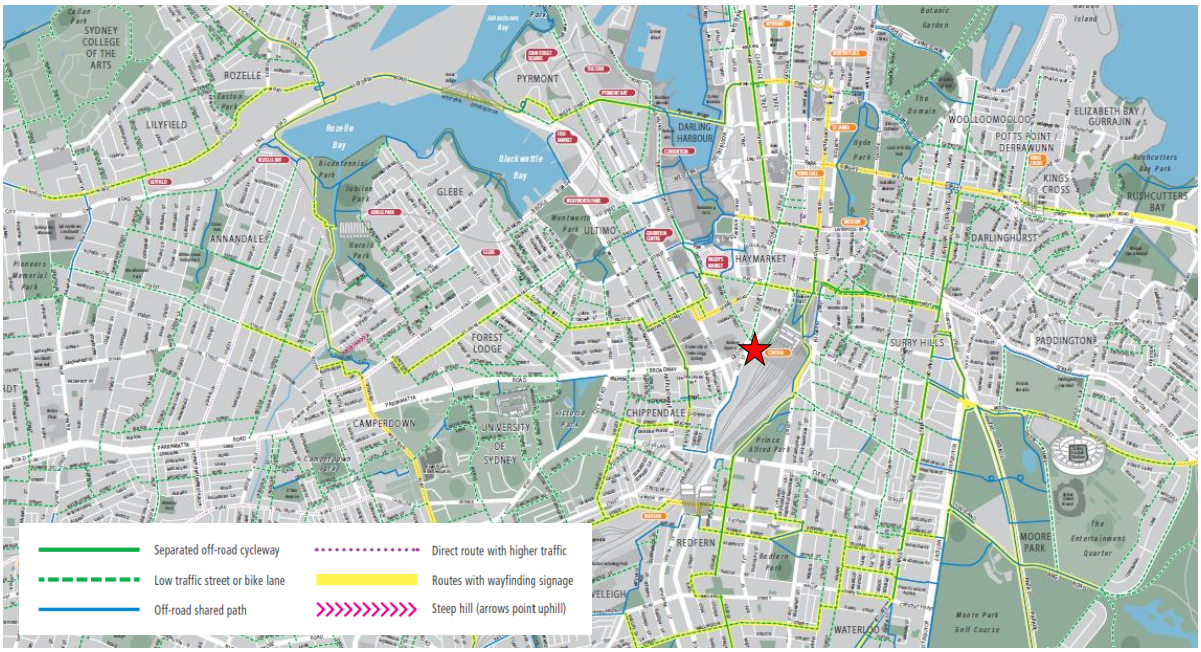
Figure 3.9 highlights the catchment area for cyclists travelling to/ from the site and broader area. The streets near the site include a combination of shared zones and low traffic street with/ without bike lanes that are generally safe cycling routes as identified in Figure 3.10.

Figure 3.9: Existing cycling catchment



Source: app.targomo.com/ accessed 1 August 2019

Figure 3.10: Cycling map



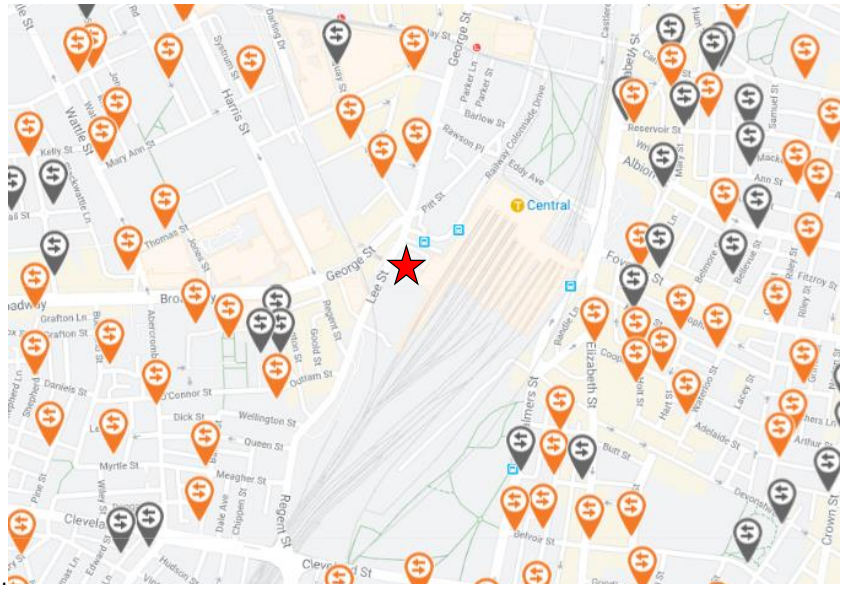
Source: City of Sydney accessed 22 July 2019

3.4. Car Share Initiatives

Car share schemes have become increasingly common throughout Sydney and are now recognised as a viable transport option for a range of trip purposes throughout Sydney, particularly shorter trips. Such facilities are likely to be of benefit to future commercial tenants at the site.

GoGet car share for example has a significant number of pods close to the site as shown in Figure 3.11, with opportunities to provide further facilities as part of the precinct redevelopment to further limit travel by private car. Other providers like Flexicar and Car Next Door also offer services in the area.

Figure 3.11: GoGet car share pods



Source: GoGet website, accessed 22 July 2019

4. TRANSPORT APPRAISAL

04

4.1. Access Strategy

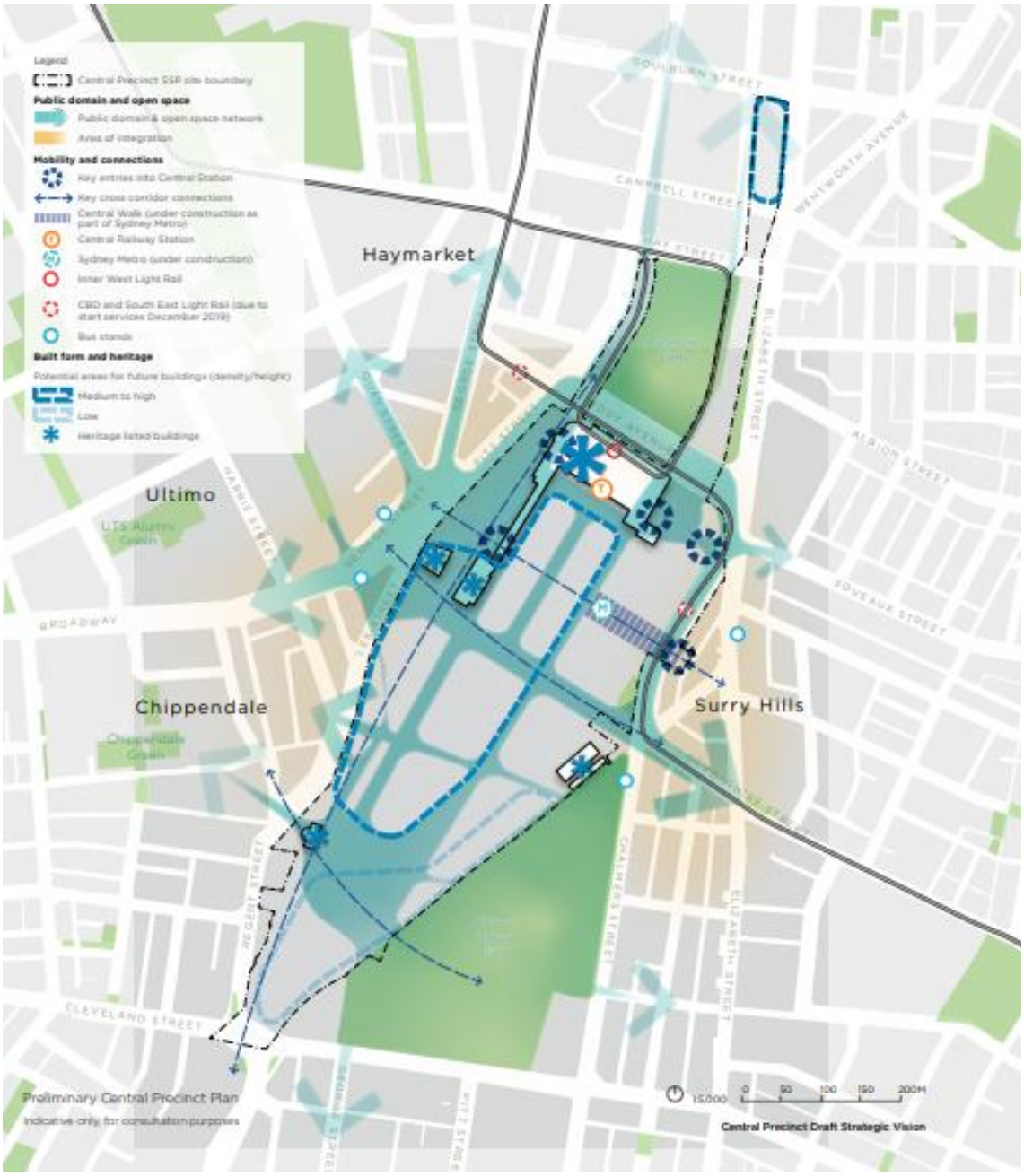
As discussed, the site is in a prime location providing staff and visitors doorstep access to a vast public transport network whether by bus, light rail or train (metro, suburban or interstate heavy rail). This establishes significant opportunities for development whilst keeping private vehicle trip reliance to a minimum.

The site (Block C) forms a key part of the future Central Precinct Western Gateway sub-precinct that includes the consolidated Frasers/ Dexus commercial site (Block B) to the south and Atlassian YHA site (Block A) to the east. Each are also planned for significant redevelopment. To support such development within such a location, industry leading design principles are paramount with access to, from and within the precinct being critical. This is especially important to ensure ease of access to all transport modes in an area that is envisaged to further become central to non-car travel.

Figure 4.1 to Figure 4.3 are extracts from the Central Precinct Draft Strategy Vision and the FJMT Urban Design Report and highlight the key principles for future pedestrian zones planned throughout the precinct and how these link back to Railway Square. This includes new connections with Central Station concourse and pedestrian tunnels to seamlessly incorporate two new grade separated connections between the Adina and YHA sites. A future under platform connection to the north of the site ('Western Walk') is envisaged to transform Ambulance Avenue into a pedestrianised corridor.

These extracts are indicative only with TfNSW to finalise a future Public Realm Strategy in coordination with the proponents (Atlassian, Dexus/ Fraser and TOGA) and further coordinated development of the public realm design to occur prior to submission of a future development application.

Figure 4.1: Future pedestrian connections



Source: TfNSW, Central Precinct Draft Strategy Vision, dated October 2019

Figure 4.2: Future pedestrian zones – lower ground level

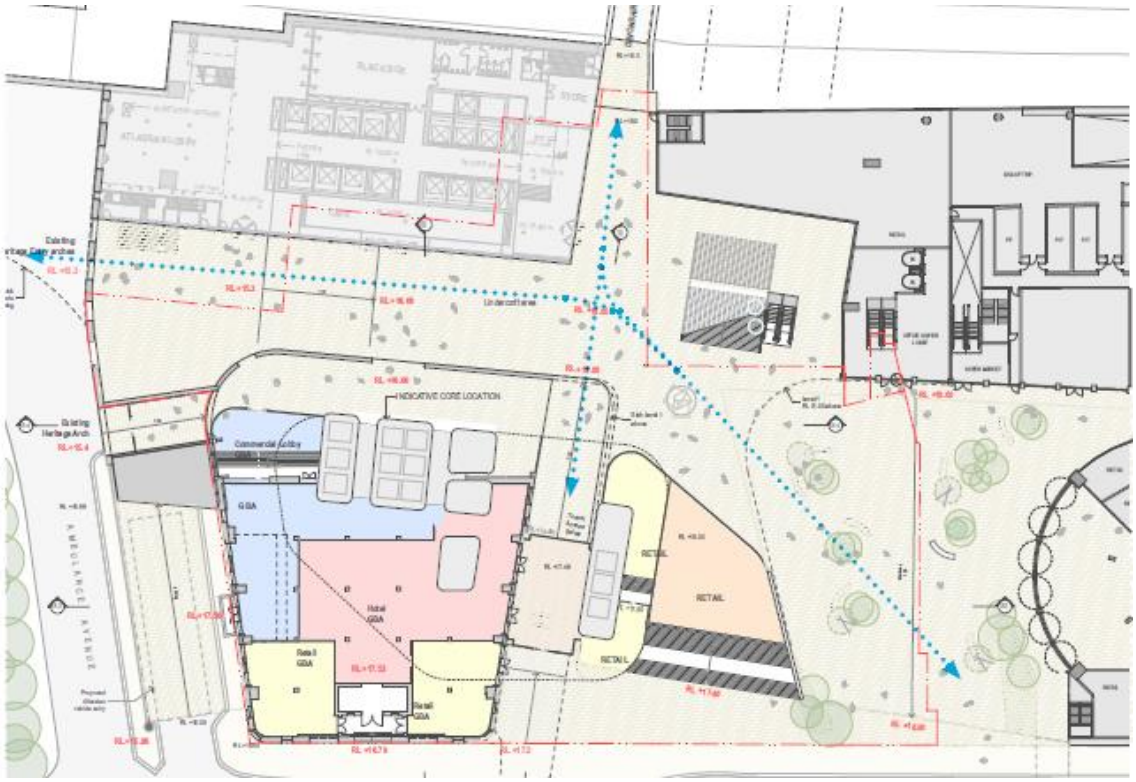
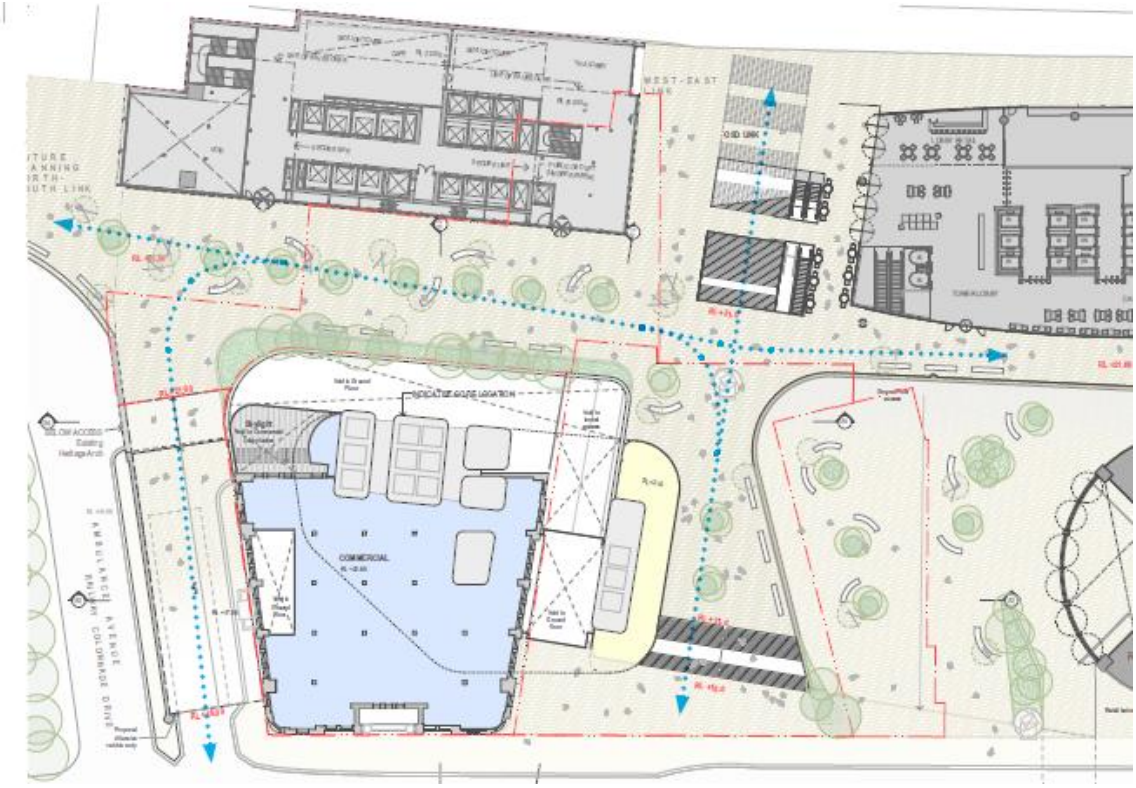


Figure 4.3: F Future pedestrian zones – upper ground level



Source: FJMT, Central Western Gateway – Sub-Precinct Block C Urban Design Report, dated November 2020

The planned pedestrianisation of Ambulance Avenue and the north-south corridor east of the site will realise the level of amenity necessary to facilitate pedestrians in the future. Such pedestrian facilities would clearly benefit from distinct separation from vehicles, especially accounting for the anticipated future pedestrian volumes.

Future vehicle access arrangements for the site (and precinct generally) remains critical. The proposal recognises the desire to pedestrianize Ambulance Avenue to facilitate creation of Central Walk West.

Given the heritage status of the existing building alternative access arrangements are key to finding a balance between pedestrian amenity and practical site operations.

The Lee Street frontage would be able to facilitate set-down/ pick-up activity without negatively affecting through traffic or buses. Bus and coach activity associated with the site may also be able to be incorporated (under prior agreement) into the Central forecourt, adjacent to the site to the north. Such activity is anticipated to be low.

More broadly, the precinct will best realise its full potential by integrating a high level of continuity throughout, including vehicle access to a consolidated basement via the site to the south. Vehicles would remain on the southern periphery of the precinct, well removed from the highly pedestrianised areas.

While significant modifications are expected, the existing access is adjacent to the Lee Street/ Little Regent Street intersection and is expected to be required to accommodate vehicles for the precinct. Significant upgrade works will be required to facilitate the future development of the precinct. While the quantum of parking for all sites is expected to be limited, service vehicle access is important (together with bus/ coach access). The existing access arrangements to the south is shown in Figure 4.4. Consultation with stakeholders will be key to progressing a consolidated access strategy for all three sites and surrounding land uses.

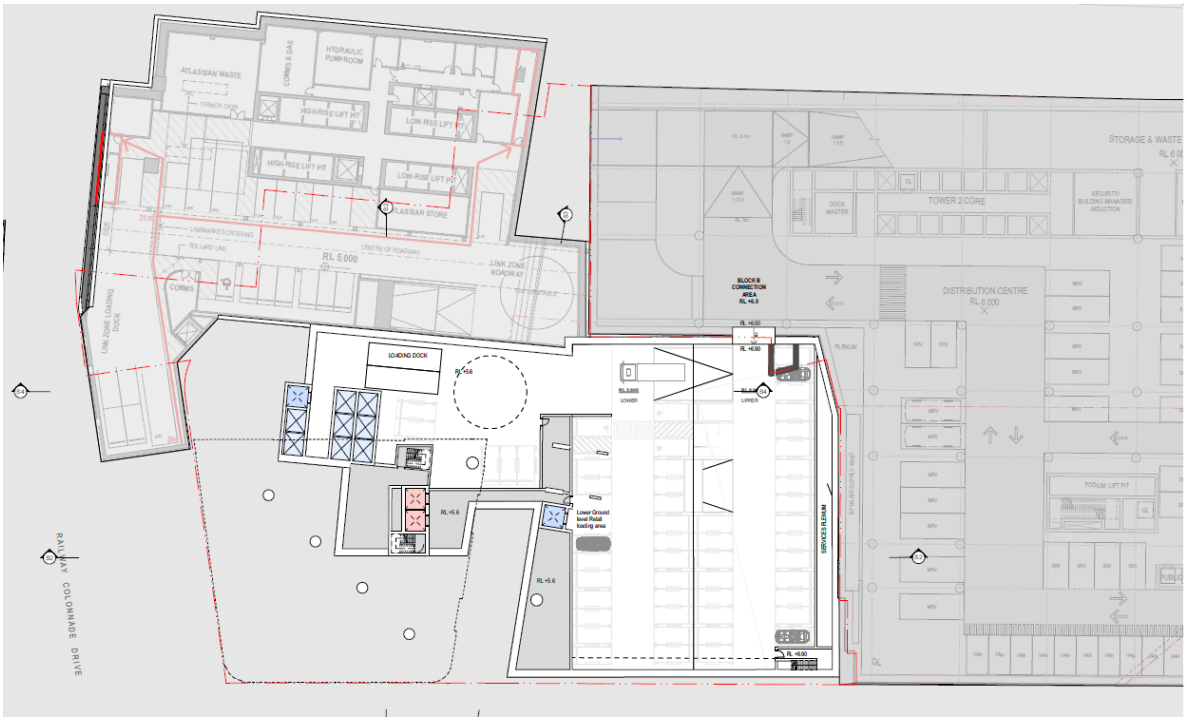
Figure 4.4: Adjacent site access and Sydney Buses depot

The proposal incorporates separate basement car parking and loading dock. The loading dock would allow for up to three service vehicles with all vehicles able to enter and exit in a forward direction with use of a turntable. The indicative basement layout is shown in Figure 4.5.

The basement car park is proposed across two split basement levels to achieve up to 100 parking spaces. The layout and circulation are suitable for the anticipated volumes with design development required as part of any future development applications. Boom gates and security roller shutters are recommended to provide the necessary level of security.

The basement layout is based on an interim shared access arrangement with any future redevelopment of the Atlassian YHA site, with vehicle access aligned with the existing ROW that transitions up from Lee Street. This interim arrangement would be removed should the Fraser/ Dexus site be redeveloped to allow for the ultimate consolidated access arrangement for the precinct via the existing access adjacent to the Lee Street/ Little Regent Street intersection.

Figure 4.5: Indicative upper basement parking and loading



Base source: FJMT, Basement 3, dated 19 August 2020

Further consideration is also required for the provision of suitable set-down/ pick-up facilities for the hotel. As discussed, opportunity for on-street facilities on Lee Street adjacent to the site remain feasible, especially given ongoing changes in the southern section of the CBD, mostly associated with Sydney Light Rail and the changing (and reducing) traffic volumes travelling through the CBD.

The Central Sydney Planning Strategy identifying the potential removal of buses from Lee Street and consolidation of routes onto Broadway-George Street present an opportunity to provide a kerbside or indented set-down/ pick-up facilities. Current conditions would be unlikely to support such arrangements however may be considered as part of future precinct redevelopment.

4.2. Anticipated Travel Behaviour

To understand travel behaviour of existing workers in the area, Journey to Work (JTW) 2016 data from the Australian Bureau of Statistics (ABS) for Haymarket and surrounds has been analysed. Table 4.1 shows worker mode share for the area that covers the site. Given the prime location of the site to high frequency public transport services and the low parking provisions, mode share targets have been developed for travel behaviour associated with the future population of the proposal.

Table 4.1: 2016 travel mode share analysis

Mode of Travel	2016 ABS (Sydney, Haymarket & The Rocks)	Targets
Train	53.4%	60%
Bus	20.4%	20%
Ferry	2.5%	0%
Light Rail	0.6%	2%
Vehicle (as driver)	11.8%	4%
Vehicle (as passenger)	2.6%	2.5%
Motorcycle	0.9%	1%
Bicycle	1.4%	2%
Walking	6%	8%
Other	0.4%	0.5%
Total	**100%**	**100%**

Table 4.1 illustrates a target for approximately 60 per cent of worker trips to the development to be by train and 20 per cent by bus. Worker trips by vehicle (as driver) are targeted to account for four per cent, whilst trips by vehicle (as passenger) account for 2.5 per cent. Up to ten per cent of worker trips are expected to be by active means (walking or cycling). These targets are generally consistent with the JTW data for the area, expect for a targeted higher proportion of train trips and lower vehicle trips that reflect the prime location of the site and limited on-site parking.

4.3. Car and Motorcycle Parking

Parking rates relevant to the proposed land uses are detailed in City of Sydney LEP 2012 and DCP 2012. The rates outline the maximum allowable number of car parking spaces within the development, rounded to the nearest whole number. Minimum rates are not provided in either the City of Sydney LEP 2012 or DCP 2012.

The site is within the “Category A” (Land use and transport integration) and “Category D” (Public transport accessibility level) areas which has the lowest maximum allowances within the City of Sydney LGA. The maximum allowable car parking provisions for the proposed development are summarised in Table 4.2.

Table 4.2: Car parking provision

Land Use	Area	Rate	Maximum Requirements
Office	28,000m²	See below [1]	36
Hotel	230 keys	1 per 5 keys	46
Retail	3,000m²	See below [2]	4
Total			**86**
Accessible Parking		1 per 20 spaces	**4**
Motorcycle Parking		1 per 12 spaces	**7**
Car Share		1 per 30 spaces	**3**

[1] Maximum office parking = (Office GFA x Site Area)/ (50 x Total GFA of Site) = (28,000*4,159)/ (50*64,677) = 36.01 (rounded up to 36)
[2] Maximum retail parking = (Retail GFA x Site Area)/ (50 x Total GFA of Site) = (3,000*4,159)/ (50*64,677) = 3.86 (rounded up to 4)

Table 4.2 indicates that the proposal could provide the following:

- 86 car spaces (maximum)
- four accessible car spaces
- seven motorcycle spaces
- three car share spaces.

The proposal can achieve the maximum number of car spaces across two basement levels. There is opportunity to relocate some car parking area in the basement levels for other facilities (i.e. end of trip or services) to achieve a supply less than the maximum LEP 2012 requirement. Final provision will be subject of a future development application.

4.4. Other Requirements

4.4.1. Bicycle parking and associated facilities

DCP 2012 sets out the minimum provision of bicycle parking and end-of-trip facilities for developments. Table 4.3 outlines the requirements for the proposal.

Table 4.3: Bicycle provisions

Land Use	Area	Rate	Requirements
Office	28,000m²	Staff (1 per 150sqm) Visitor (1 per 400sqm)	187 70
Hotel	230 keys 170 staff	Staff (1 per 4 staff) Visitor (1 per 20 keys)	43 12
Retail	3,000m²	Staff (1 per 250sqm) Visitor (1 per 200sqm)	16 10
Total (Staff - Class 2)			**246**
Total (Visitor - Class 3)			**92**
Lockers		1 per bicycle space	**338**
Showers and change rooms		Formula	**35**

Table 4.3 indicates that the proposal requires the following:

- 246 bicycle spaces for staff in secure locations
- 92 bicycle spaces for visitors in accessible locations
- 338 lockers and 35 showers and change room facilities.

Clearly the majority of workers and visitors would travel to the site by public transport (80 per cent train and bus), with approximately two per cent travelling by bicycle. With a theoretical total commercial building population of approximately 3,440 people, 69 bicycle spaces would be required as a minimum. More aggressive mode share targets encouraging active travel are to remain key to the proposal.

Bicycle parking and end of trip facilities would be provided within a basement level with the use of either a lift, ramp or stairs with bicycle rail to ensure a high level of convenient user access to/ from the ground level. Bicycle parking for visitors would be possible as part of the public domain.

4.4.2. Loading and servicing

In determining the loading requirements, reference has been made to the DCP and Roads and Maritime requirements, A suitable provision with less than these guidelines is considered appropriate in the current circumstances based on the known requirements from other large-scale mixed-use developments and the considerations outlined below:

- Deliveries for hotels and ancillary uses is dependent on the chosen operator and respective land uses, with existing Adina Hotel demand and truck sizes a guide in this regard.
- Commercial tenancies typically require capacity for day to day deliveries by couriers and small rigid trucks. Larger rigid trucks may be required at times of tenancy turnover though are generally infrequent.
- The retail space is assumed to be specialty shops. Based on GTA's database of loading demand associated with such specialty retail uses, they typically receive an average of 1.1 deliveries per day per tenant.
- Waste collection requirements for all proposed land uses is likely to generate the most demand, with input from a waste consultant during future development application stages to give an indication of likely demand.

The typical available operating hours of a loading dock are at least 12 hours per day resulting in opportunity to spread deliveries across the day and to manage via a booking system. Understanding the likely daily demands for the land uses will assist to determine the suitability of the service vehicle provisions and understand the mix of vehicle size required to be accommodated.

The indicative loading dock suggests that at least five service vehicles could be accommodated at any one time. Based on an average stay of 30 minutes, the site could accommodate 10 service vehicles in any peak hour.

4.4.3. Coach and set-down/ pick-up facilities

DCP 2012 also requires a set-down/ pick-up facility for use by the hotel, with capacity for at least two cars and a bus/ coach. As discussed, there are various existing and future constraints that limit the ability to provide such capacity near the hotel main entrance, with further assessment required in conjunction with stakeholder engagement.

Hotels tend to rely a 'front door' address with hotel patrons typically using valet services (or the porte cochere at least) on arrival and departure. Given ultimate future use of a consolidated precinct access further to the south is likely, along with a new drop-off zone integrated into the Western Forecourt fronting Central Station, distance and visibility of the vehicle travel route would be a key consideration. High level wayfinding and valet services will prove critical to day to day operations and overall viability.

4.5. Transport Assessment

4.5.1. Trip Generation

To better understand the trip generation of the proposal, it is important to understand the population of the development. The following assumptions have been adopted to determine a theoretical population:

- Commercial - one person per 10 square metres GFA, equating to 2,800 people.
- Retail – one person per 25 square metres GFA, equating to 120 people.
- Hotel – 170 staff and 1.5 visitors per key, equating to 520 people.

As such, the proposal is anticipated to have a theoretical peak population of approximately 3,440 people across the day. Based on this, the following assumptions have been adopted to understand the potential weekday peak hour trips generated by the development:

- 35 per cent of staff working in the commercial building would travel in the peak hour based on similar sites[1] surveyed for the updated office rates in the Roads and Maritime Guide to Traffic Generating Developments (TDT 2013/04a).
- 25 per cent of retail and hotel staff, and hotel visitors would travel in the peak hour accounting for greater 'peak spreading' and typical for such land uses.

On the basis of the above, the anticipated weekday peak hour trips by the theoretical peak population has been estimated adopting the target travel mode share for the area, as shown in Table 4.4. The retail space is considered very much ancillary to all other uses in the precinct and not considered to generate its own trips during peak periods.

[1] North Sydney, Parramatta, Sydney Olympic Park and Chatswood sites.

Table 4.4: Weekday peak hour trip generation by mode

Mode	Person trips per hour
Train	685
Bus	228
Light Rail	23
Vehicle (as driver)	57
Vehicle (as passenger)	28
Bicycle	23
Walking	91
Other	6
Total	**1,140**

Table 4.4 indicates that the proposal has the potential to generate approximately 1,140 person trips in any weekday peak hour. This includes:

- 936 trips by public transport
- 114 trips by active travel means
- 57 trips by car (as driver)
- 28 trips as a car passenger (private, taxi, rideshare).

Based on similar sites[2] surveyed as part of the Roads and Maritime Technical Direction, a traffic generation rate of 0.4 vehicle movements per space has been conservatively adopted for any weekday peak hour.

With up to 80 on-site parking spaces, it is anticipated that between 32 and 37 of the 57 estimated drivers (55 to 65 per cent) would park in the basement car park. Other drivers would likely use the on-site set-down/ pick-up facilities, or parking off-site.

4.5.2. Cumulative Assessment

As the site forms part of the future Central Precinct Western Gateway sub-precinct, consideration has also been given to the likely traffic generating characteristics of the future redevelopment of the Frasers/ Dexus commercial site to the south (Block B) and Atlassian YHA site to the east (Block A) to understand the cumulative traffic generation.

Reference has been made to the transport assessments prepared for the Frasers/ Dexus site[3] and Atlassian YHA site[4], with the combined traffic generation of all three sites summarised in Table 4.5.

[2] North Sydney and Parramatta sites office premises.
[3] Arup, Western Gateway Sub-Precinct Proposal: Block B 14-30 Lee Street, Haymarket NSW 2000 – Planning Statement – Transport, Traffic, Pedestrian and Parking Report dated 9 October 2019
[4] JMT Consulting, Atlassian Central Station – Transport Assessment dated 9 October 2019.

Table 4.5: Cumulative Traffic Generation

Site	Land uses (area)	Parking provision	Peak hour traffic generation
Adina	Office (28,000m^2) Hotel (230 keys) Retail (3,000m^2)	Up to 80 car spaces	**85 trips**, incl. 35 to basement and 50 using set-down/ pick-up or parking off-site
Frasers/ Dexus	Office (150,000m^2) Retail (5,000m^2)	121 car spaces 48 service vehicle bays (centralised distribution centre)	**248 trips**, incl. 40 to basement car park, 58 to the DC and 150 set-down/ pick-up
Atlassian YHA	Office (58,000m^2) YHA (250 beds) Retail (3,000m^2)	Up to 10 car spaces	**80 trips**, mostly set-down/ pick-up or parking off-site (assuming four to on-site parking)
Total			**413 trips**

Table 4.5 suggests that the combined precinct could generate about 410 to 420 vehicle trips during any weekday peak hour. This includes about 140 trips that actually enter or exit the combined site basements and about 270 trips being set-down or picked-up, or parking off-site. These will also not all constitute new trips given the precinct has traditionally generated some level of traffic activity to accommodate the existing retail, accommodation and commercial uses that presently operate on the three sites.

4.5.3. Transport Impacts

The transport assessment for the Frasers/ Dexus site included post development SIDRA Intersection modelling for the Lee Street/ Regent Street intersection and found that it would continue to operate well (at a Level of Service B) and with appropriate capacity to accommodate traffic associated with development of the whole precinct. Only minor impacts are realised with respect to queuing and degree of saturation.

Overall, the modest increase in vehicle trips associated with all three sites (and other trips associated with the consolidated distribution centre) is not expected to present a significant impact to traffic in the local area nor the operation of the key surrounding intersections. Between two and three vehicle trips per minute does not represent a significant traffic related impact, especially with key intersections generally operating well. It is also noted that with some 4,000 to 5,000 vehicles currently travelling through the George Street/ Pitt Street intersection, the precinct development traffic would account for less than one per cent of total traffic through this intersection, which is negligible.

Based on the above, the anticipated traffic generated by the proposal and the broader precinct is not expected to materially affect the function or safety of the surrounding road network. This is applicable to a range of scenarios, with and without an ultimate consolidated precinct basement with a single access location.

The key transport impacts will be felt across the public transport network. With significant expansion of rail services associated with Sydney Metro Stage 2 and planned Sydney Metro West, plus the relief this will have on the existing heavy rail network, there will be an immense shift in train travel across Sydney. Overall, the anticipated use of train, light rail and bus services by the future building population is not expected to result in noticeable impacts to such a diverse public transport system, especially through the established and yet to be expanded Central Station.

The existing and planned direct pedestrian connections through Central Station, with a focus on the east-west movement of people to conveniently link Central Station with Railway Square will ensure a high level of pedestrian amenity in an essential public domain in the southern part of Sydney CBD. The proposal is anticipated to add approximately 15 pedestrians every minute, or 85 movements every five minutes along the key desire lines.

The public domain improvements proposed in the immediate vicinity, coupled with those intended to be delivered as part of a consolidated masterplan precinct and 'Western Walk' tunnel along Ambulance Avenue will further improve accessibility between the key generators and attractors.

5. CONCLUSION AND RECOMMENDATIONS

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CONCLUSION AND RECOMMENDATIONS

Based on the analysis and discussions presented within this report, the following conclusions are made:

1. 2 and 8a Lee Street, Haymarket is part of a future Central Precinct Western Gateway sub-precinct that is in a prime location providing staff and visitors doorstep access to a vast public transport network whether by bus, light rail or train (metro, suburban or interstate heavy rail). This establishes significant opportunities for development whilst keeping private vehicle trip reliance to a minimum.
2. The site is currently occupied by the 98-room Adina Apartment Hotel Sydney Central (Lot 30) and various specialty retail stores fronting Henry Deane Plaza (Lot 13) with the indicative proposal currently facilitating a significantly expanded hotel comprising approximately 230 rooms, commercial office space covering 28,000 square metres gross floor area (GFA) and lower level retail space across 3,000 square metres GFA (1,000 square metres in the Adina Hotel building and 2,000 square metres in Henry Deane Plaza).
3. The proposal integrates with future pedestrian zones planned through the precinct including new over and under platform connections linking the station with Railway Square through the precinct; as well as two new grade separated connections between the Adina and YHA sites. A future under platform connection to the north of the site ('Western Walk') is envisaged to transform Ambulance Avenue into a pedestrianised corridor.
4. This proposal is aligned with one of City of Sydney Council's key moves to provide employment growth in well located new tower clusters where taller building with higher floor space ratios are permitted for income-earning uses.
5. Given the sites' prime location to high frequency and capacity public transport services and the low parking provisions anticipated for the site (80 car spaces maximum), mode share targets have been developed for travel behaviours for the future population of the site.
6. The targets include approximately 60 per cent of worker trips to the development to be by train and 20 per cent by bus, whilst trips by vehicle (as driver) are targeted to account for four per cent. These targets are generally consistent with the JTW data for the area, expect for a targeted higher portion of train trips and lower vehicle trips.
7. The proposal generates a maximum City of Sydney LEP 2012 parking requirement of 86 car spaces, in addition to minimum seven motorcycle and three car share spaces. Whilst the proposal can achieve the maximum car parking requirement of 86 spaces across two newly construction and situated split basement levels north of the heritage hotel building, there is opportunity to relocate some car parking area for other facilities (i.e. end of trip or services) to have a provision below the maximum City of Sydney LEP 2012 requirement.
8. Whilst the proposal generates a requirement for 246 bicycle spaces for staff and 92 spaces for visitors, bicycle trips are only expected to account for two per cent of all commuter trips (approximately 69 trips). The bicycle parking and associated end of trip facilities could be provided within a basement level and in strategically positioned small clusters throughout the public domain for short-term users.
9. The indicative loading arrangement is expected to accommodate at least three service vehicles at the time, or up to nine deliveries in any hour assuming an average stage of 20 to 30 minutes.
10. There are various existing and future constraints that limit the ability to provide basement car park access and/ or set-down/ pick-up facility at the proposed buildings, with further investigation required with relevant stakeholders (i.e. adjacent landowner and relevant authorities) to identify opportunities for a coordinated approach to service the precinct.

11. The proposal considers an interim basement car park access aligned with the existing ROW that transitions up from Lee Street. Ultimately access could be provided through the adjacent Frasers/ Dexus site, which would limit vehicle access to the southern periphery of the precinct, away from the future highly pedestrianised areas. Upgrade works will need to be considered to reduce the likelihood of vehicle and pedestrian conflicts at the entry, as both activities are expected to increase.
12. Based on the anticipated population of the development and the target mode share splits, the proposal is expected to generate approximately 1,140 people trips in the weekday peak hours including 685 trips by train, 228 trips by bus, 57 trips by car (as a driver) and 28 trips as a car passenger or using taxi/ rideshare services.
13. Of the 57 vehicle trips generated by people driving to/ from the site in the peak hours, between 32 and 37 trips would likely be associated with basement parking with the remainder using the on-site set-down/ pick-up area or people parking off-site.
14. The consolidated site assessment indicates that the precinct is likely to generate 410 to 420 vehicle trips during any weekday peak hour. Most of these (about 270 trips) would use the set-down/ pick-up facilities of park off-site. Only about 140 trips would actually enter or exit the combined site basements.
15. With the existing sites also generating existing traffic, the net change is expected to be moderate and amount to less than two or three vehicle trips per minute.
16. The traffic generated by the development in comparison to the existing traffic conditions is not expected to materially impact the function or safety of the road network. Furthermore, the anticipated public transport, cyclist and pedestrian trips are not expected to result in any adverse effects to the public and active network infrastructure when considering that staff residences are located across the Greater Sydney Metropolitan region, and therefore will disperse the trips across the broader network.

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