

Prepared for
Charter Hall Holdings Pty Ltd
ABN: 15 051 363 547

2 Chifley Square, Sydney Planning Proposal

Traffic and Transport Assessment

29-Jul-2021

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Client: Charter Hall Holdings Pty Ltd

ABN: 15 051 363 547

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Quality Information

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Reviewed by Martin Mallia

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1.0 Introduction

1.1 Project background

This Traffic and Transport Assessment has been prepared by AECOM in support of a Planning Proposal to amend the Sydney Local Environmental Plan 2012 (Sydney LEP). This report has been prepared on behalf of Charter Hall (the Proponent) and it relates to the site at 2 Chifley Square, Sydney (the site).

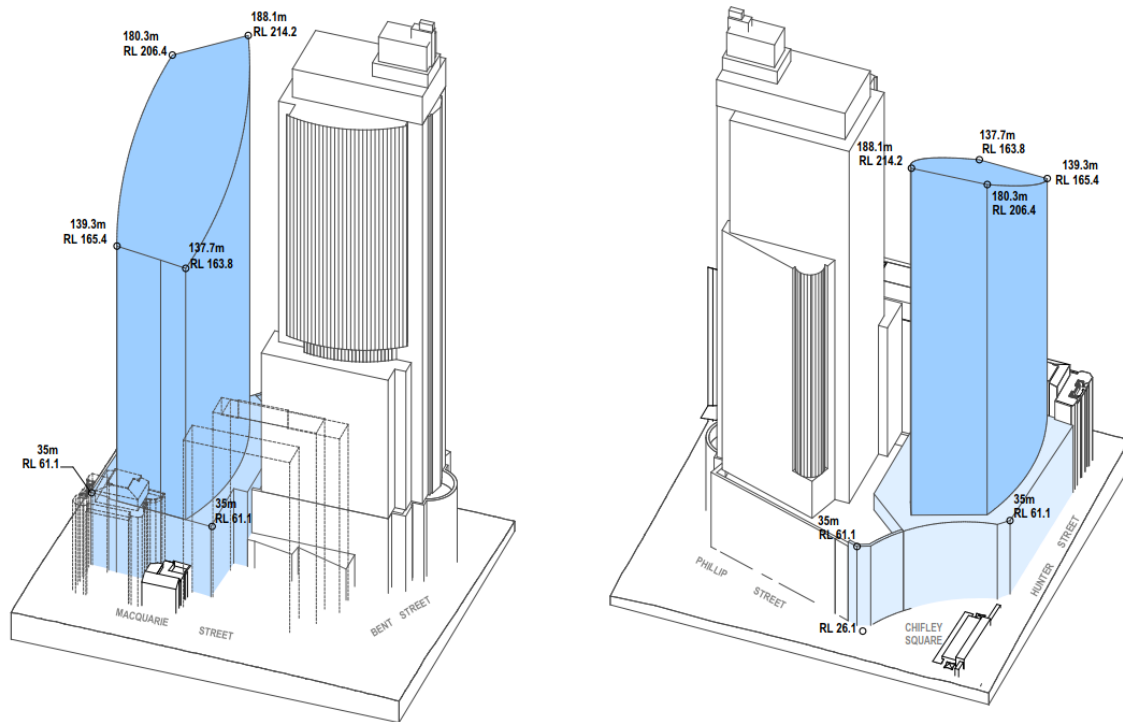
The purpose of this Planning Proposal is to amend the site's Floor Space Ratio (FSR) and Maximum Building Height development standards to align with the Domain Sun Access Plane contained within the Central Sydney Planning Strategy (CSPS) and accompanying Planning Proposal: Central Sydney 2020. The subject Planning Proposal will facilitate the development of a new commercial tower on the southern portion of the existing Chifley site, up to a height of RL 214.2 (being a height above ground level of approximately 188.1m). When combined with the existing north tower and podium, the new, refurbished and existing floor space will total approximately 131,391m² of Gross Floor Area (GFA).

This Planning Proposal supports the City of Sydney Council's CSPS by unlocking additional employment generating floor space within a designated tower cluster. The proposed Sydney LEP amendment is part of the broader redevelopment plan for the site to facilitate a new commercial office tower. It will also facilitate significant public benefits through additional site activation of Chifley Square, improved pedestrian accessibility and a commitment to sustainable design.

The Planning Proposal is accompanied by amendments to the Sydney Development Control Plan 2012 (Sydney DCP). The site specific DCP amendments reflect the proposed building envelope and the extent of the site's redevelopment, as illustrated at Figure 1. Further detail is provided in the reference design prepared by Architectus which serves as a baseline proof of concept for this Planning Proposal.

The uplift being sought is consistent with the strategic intent of the CSPS, which contains the City's requirements and expectations for projects pursuing this pathway. Following the Planning Proposal, the planning approval pathway involves a competitive design process and a detailed Development Application. As such, this report reflects the concept stage of the proposal, and may be embellished as the detailed design and required works evolve.

Figure 1 Proposed building envelope



1.2 Study area

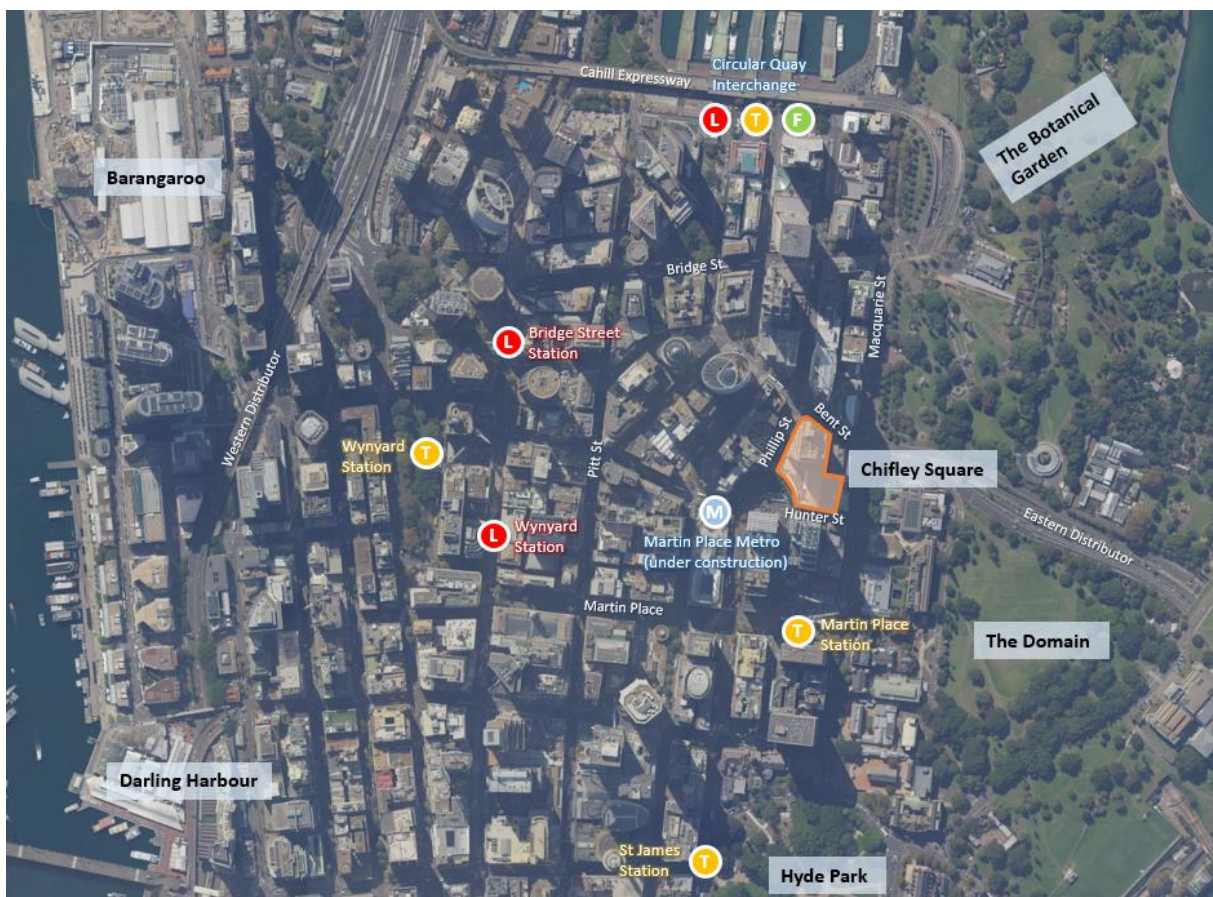
The Project site is located at 2 Chifley Square, Sydney. The site has an area of 6,438 square metres and is located in the centre of Sydney CBD. The site occupies the majority of the city block bounded by Macquarie Street to the east, Bent Street to the north, Phillip Street to the west and Hunter Street to the south. The three other sites which complete the city block are 175, 171-173 and 167 Macquarie Street. 167 Macquarie Street is a 19-storey commercial tower. 171-173 Macquarie Street is a three-storey heritage listed residential building and 175 Macquarie Street is an eight-storey heritage listed commercial office building.

The site has a prominent position within the Sydney CBD and is located close to many key attractions including the Botanical Garden, the Parliament of NSW, Law Courts and the Circular Quay precinct. It is also within short walking distance to a number of public transport services including train stations located on the City Circle line, the newly constructed light rail and the Sydney ferry services. The site is also located near hotels, residential towers, retail precincts, museums and various tourist attractions.

Major construction work is being conducted within the vicinity of the site. In particular, as part of the Sydney Metro City and South-West project, Martin Place Metro Station will be located around 100 metres from the site.

Figure 2 details the key features within the study area.

Figure 2 Study area



Source: AECOM, June 2020

1.3 Study objectives

This Traffic and Transport Assessment provides a high-level investigation of the potential impacts of the Proposal on transport, traffic, access, road safety and pedestrian movement. The purpose of this report is to provide:

- A review of existing traffic and transport conditions
- A qualitative assessment of the impact of the proposed planning controls on the surrounding road network, public transport infrastructure and active transport infrastructure
- A quantitative assessment of the impact of additional pedestrian demand on the surrounding street network generated from potential future increased density on the site resulting from the proposed planning controls
- Measures to promote sustainable transport.

1.4 Report structure

This report is structured to provide an assessment of the traffic and transport impacts related to the proposed development as follows:

- **Section 2** of this report provides an overview of existing traffic and transport conditions
- **Section 3** describes the existing site
- **Section 4** describes the proposed planning controls
- **Section 5** provides the traffic and transport assessment which includes the parking requirements and trip generation estimates
- **Section 6** describes the pedestrian assessment, undertaken through modelling
- **Section 7** describes the measures to promote sustainable travel
- **Section 8** summarises the key outcomes of the traffic and transport assessment.

2.0 Existing Traffic and Transport Conditions

AECOM has reviewed the existing traffic conditions around the subject site. This includes a review of the existing public transport provisions, pedestrian and cycling facilities and the local road network.

2.1 Existing travel patterns

Travel characteristics for NSW residents travelling to work are gathered from the Journey to Work (JTW) data extracted from the Australian Bureau of Statistics (ABS) 2016 census data. It includes data on the workers' place of usual residence, place of work and socio-demographic characteristics; as well as the method of travel to work at the Statistical Area Level 2 (SA2) region. The Project site is located in the Sydney – Haymarket – The Rocks SA2 region, illustrated in Figure 3. The JTW data provides information of the mode share in the statistical region and is detailed in Table 1.

Figure 3 Sydney – Haymarket – The Rocks SA2 region



Source: AECOM, adapted from Australian Bureau of Statistics, June 2020

Table 1 Travel to work in Sydney - Haymarket - The Rocks SA2 region

Mode	Sydney – Haymarket – The Rocks	NSW Average
Vehicle driver or passenger	13.5%	64.0%
Public transport	70.9%	16.3%
Active transport	6.8%	4.6%
Worked at home ¹	7.7%	13.5%
Other	0.4%	0.6%
Not stated	0.8%	1.0%

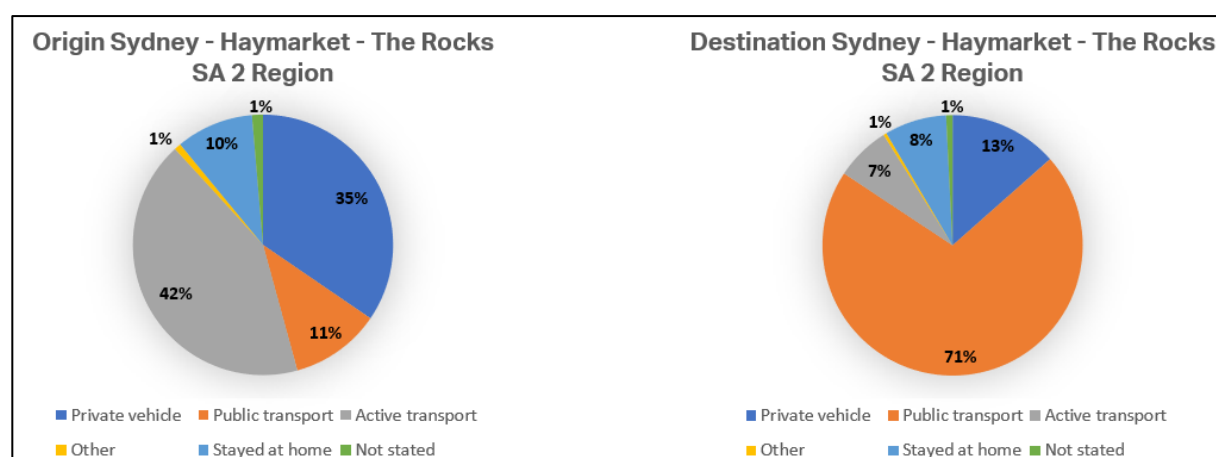
Source: AECOM, data from Australian Bureau of Statistics, June 2020

¹includes did not go to work

The 2016 JTW data indicates that among the employed people working in the Sydney – Haymarket – The Rocks SA2 region, 70.9% use public transport and 13.5% use private vehicles to get there. Compared with the NSW average, this shows a significantly higher proportion of people using public transport to get to work. This can be attributed to the strong transport links to the city as well as disincentives for using private vehicles such as limited car parking spaces and expensive day parking. 6.8% of people either walked or cycled to work and 7.7% of people stayed at home.

The 2016 JTW data also details the travel patterns of employed people living in the Sydney – Haymarket – The Rocks SA2 region and either working elsewhere or in the same statistical region. The data indicates that 34.5% and 42.4% of people living in the statistical area travelled to work using public transport and active transport respectively. Only 11.2% of people used private vehicles. 9.6% said that they either worked from home or did not go to work that day.

Details of the travel mode splits for employed people working in the Sydney – Haymarket – The Rocks SA2 region and those living in the region are detailed in Figure 4.

Figure 4 Mode share for employed individuals working and employed individuals living in the Sydney – Haymarket – The Rocks SA2 region

Source: AECOM, data from Australian Bureau of Statistics, June 2020

2.2 Existing public transport provision

2.2.1 Bus services

Being located within the Sydney CBD, Chifley Square is very well serviced by bus routes. The Martin Place Station bus interchange on Elizabeth Street is located about 150 metres from the site and is served by 19 bus routes. The Martin Place bus interchange on Castlereagh Street is located about 200 metres from the site and facilitates an additional five bus routes. One more bus route operates on Macquarie Street, with bus stops less than 100 metres from the site.

In the Inner West and Southern Region, Transit Systems operates the 412, 413, 423, L23, 426, 428, L28, 431, 438, L38, 439, L39 and 470 bus routes, as illustrated in Figure 5. In the Eastern Suburbs region, State Transit operates the 304, 333, 373, 374, 377, 392, 294, L94, 396, 397 and 399 bus routes, as illustrated in Figure 6. In the North Shore and West region, State Transit operates the 507, 515, 518, 520 and M52 bus routes, as illustrated in Figure 7. All these routes have bus stops within 200 metres of Chifley Square and the details for the number of services during the morning peak, evening peak, off peak and weekends are outlined in Table 2.

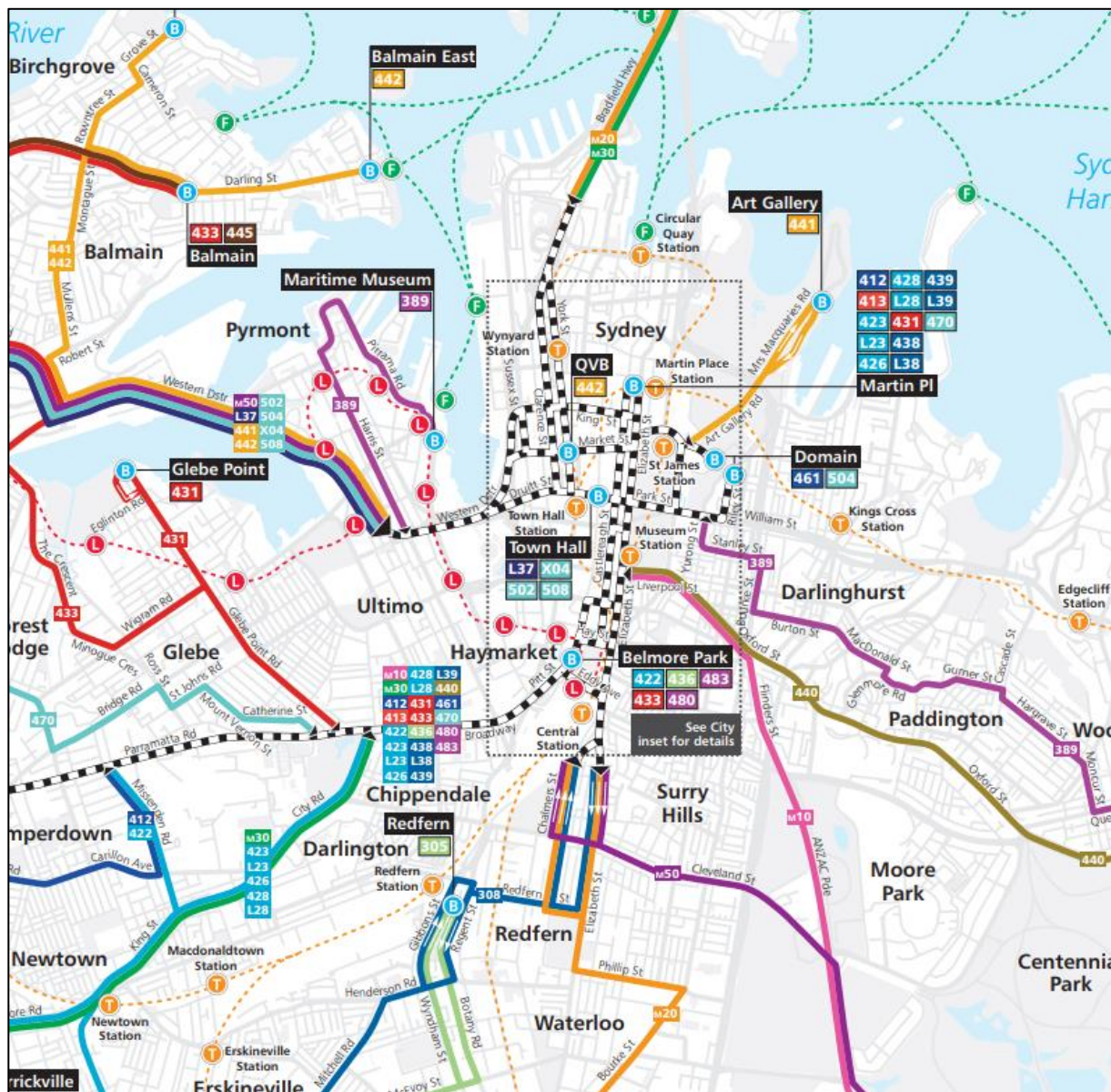
Table 2 Frequency of bus services for Chifley Square

Route	Description	Approximate time between services (mins)			
		Weekday			Weekend
		AM Peak	Off Peak	PM Peak	
200	Chatswood to Bondi Junction	15	30	15	NA
	Bondi Junction to Chatswood	15	20	20	NA
304	Circular Quay to Roseberry	12	12	6	12
	Roseberry to Circular Quay	3	12	12	12
333	Circular Quay to North Bondi	6	6	6	6
	North Bondi to Circular Quay	6	6	6	6
339	City Gresham St to Clovelly	NA	30	20	30
	Clovelly to City Gresham St	10	30	30	30
343	Chatswood to Kingsford	8	10	5	15
	Kingsford to Chatswood	5	10	8	15
373	Circular Quay to Coogee via Belmore Rd	20	7	6	10
	Coogee to Circular Quay via Belmore Rd	6	7	15	10
374	Circular Quay to Coogee via Bream St	30	30	15	30
	Coogee to Circular Quay via Bream St	10	30	30	30
377	Circular Quay to Maroubra Beach	30	30	10	30
	Maroubra Beach to Circular Quay	15	30	25	30
392	Circular Quay to Little Bay via Eastgardens & Prince Henry Hospital	30	30	16	30
	Little Bay to Circular Quay via Eastgardens & Prince Henry Hospital	10	30	30	30
394	Circular Quay to La Perouse	22	NA	20	30
	La Perouse to Circular Quay	15	NA	30	30
396	Circular Quay to Maroubra Beach	30	30	30	30
	Maroubra Beach to Circular Quay	30	30	30	30
397	Circular Quay to South Maroubra	30	30	15	30
	South Maroubra to Circular Quay	20	30	30	30
399	Circular Quay to La Perouse via Malabar Beach & Maroubra Junction	30	30	10	30
	La Perouse to Circular Quay via Malabar Beach & Maroubra Junction	20	30	30	30
423	Martin Place to Kingsgrove	7	15	10	20

Route	Description	Approximate time between services (mins)			
		Weekday			Weekend
		AM Peak	Off Peak	PM Peak	
	Kingsgrove to Martin Place	15	15	20	20
426	Martin Place to Dulwich Hill	15	15	10	20
	Dulwich Hill to Martin Place	15	15	15	20
428	Martin Place to Canterbury	12	15	10	20
	Canterbury to Martin Place	12	15	15	20
L23 (Ltd stops)	Martin Place to Kingsgrove	NA	NA	15	NA
	Kingsgrove to Martin Place	15	NA	NA	NA
L28 (Ltd stops)	Martin Place to Canterbury	NA	NA	15	NA
	Canterbury to Martin Place	15	NA	NA	NA
507	Circular Quay to Macquarie University via Putney	60	30	15	60
	Macquarie University to Circular Quay via Putney	60	60	20	60
515	Circular Quay to Eastwood	15	30	30	30
	Eastwood to Circular Quay	20	30	30	30
518	Circular Quay to Macquarie University	15	30	20	30
	Macquarie University to Circular Quay	7	30	15	30
520	Circular Quay to Parramatta via West Ryde	30 minutes between services. Midnight to 5:00am only			
	Parramatta to Circular Quay via West Ryde	30 minutes between services. Midnight to 5:00am only			
L94 (Ltd stops)	Circular Quay to La Perouse	15	15	15	15
	La Perouse to Circular Quay	15	15	30	15
M52 (Ltd stops)	Circular Quay to Parramatta	10	15	6	20
	Parramatta to Circular Quay	5	10	10	20

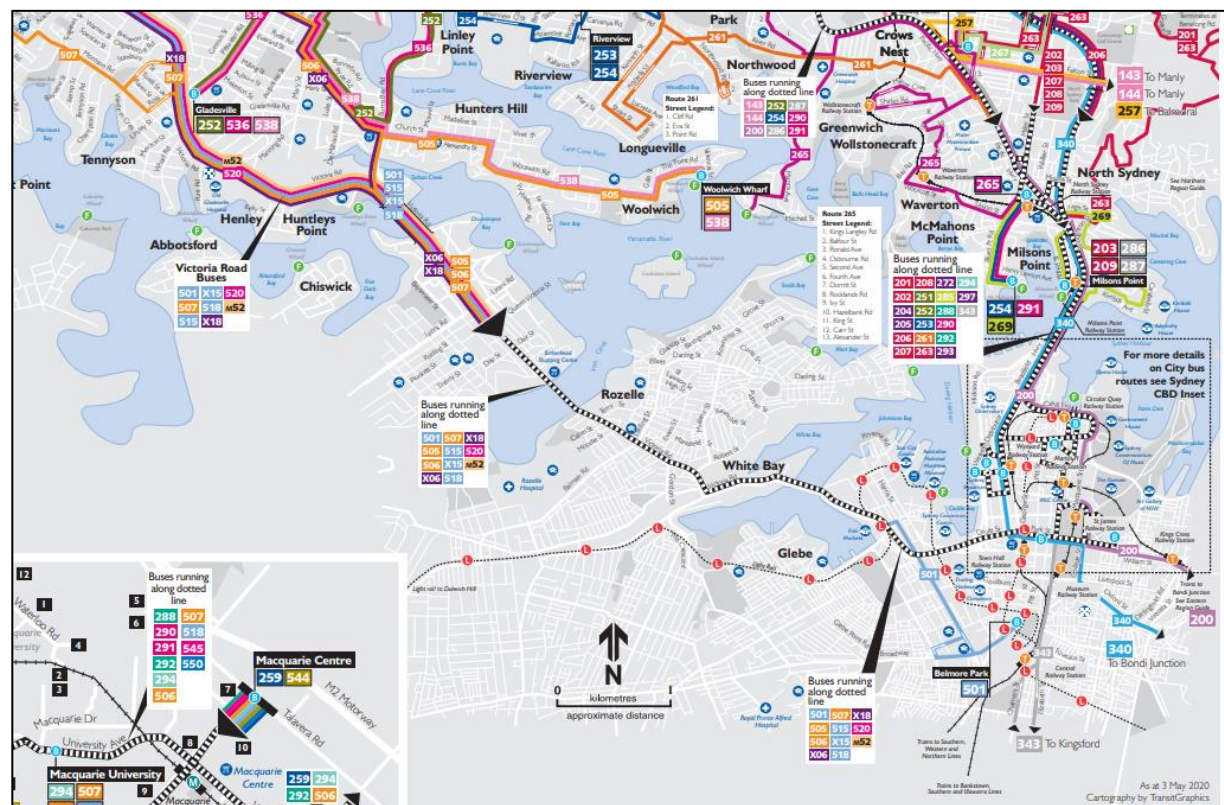
Source: AECOM, data from Transport for NSW timetabling, valid on 18 June 2021

Figure 5 Inner West and Southern bus routes operated by Transit Systems Sydney servicing Chifley Square



Source: Transit Systems website, June 2021

Figure 7 North Shore and West bus routes operated by State Transit servicing Chifley Square



2.2.2 Train services

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Martin Place, Wynyard and St James stations provide interchange with the bus networks. In addition, Wynyard station also provides an interchange with the CBD and South East Light Rail line. Circular Quay has an elevated train station and is the only station in Sydney to incorporate all four main modes of public transport - heavy rail, light rail, bus and ferry – into one interchange.

Circular Quay and St James stations both run on the T2 Inner West & Leppington Line, T3 Bankstown Line and T8 Airport & South Line. In addition to these three lines, Wynyard also operates services from the T1 North Shore Line and the T9 Northern Line. Martin Place station operates solely on the T4 Eastern Suburbs & Illawarra Line.

Table 3 details the train services to the stations surrounding Chifley Square and Figure 8 illustrates the Sydney rail network map.

Table 3 Train services on the train lines and stations surrounding Chifley Square

Train Line	Direction	Stations ¹	Approximate time between services (mins)		
			AM Peak	PM Peak	Off Peak
T1	Berowra to City	Wynyard	3	3	10
	City to Berowra		4	4	5
T2	Parramatta or Leppington to City	Wynyard, St James, Circular Quay	3	5	6
	City to Parramatta or Leppington		4	4	6
T3	Liverpool or Lidcombe to City	Wynyard, St James, Circular Quay	9	15	12
	City to Liverpool or Lidcombe		15	15	8
T4	Waterfall or Cronulla to Bondi Junction	Martin Place	3	3.5	10
	Bondi Junction to Waterfall or Cronulla		3	3.5	10
T8	Macarthur to City	Wynyard, St James, Circular Quay	4	6	7.5
	City to Macarthur		7.5	4.5	7.5
T9	Hornsby to North Shore via City	Wynyard	15	15	15
	North Shore to Hornsby via City		15	15	15

Source: AECOM, data from Transport for NSW timetabling, valid on 18 June 2021

¹All trains on the lines stop at each of the stations and the headways across the stations are the same for the same line and direction

Figure 8 Sydney rail network map



Source: Transport for NSW, June 2021

In addition to the train services, Chifley Square will also be serviced by the Sydney Metro City & South-West line upon completion in 2024. A newly constructed Martin Place Metro station will be located just over 100 metres from Chifley Square. The metro line will operate 15 services an hour during the peak periods which will connect the CBD to Tallawong and Bankstown.

The area will also be serviced by the future Sydney Metro West line when completed in 2030. The newly announced Hunter Street station will be located near the proposed development. The metro line will operate 15 services an hour during the peak periods which will connect the CBD to Parramatta through Sydney Olympic Park. Figure 9 shows the indicative locations of future metro stations on the Sydney Metro City & Southwest and Sydney Metro West lines

Figure 9 Future Sydney Metro City & Southwest and Sydney Metro West stations

Source: Transport for NSW, June 2021

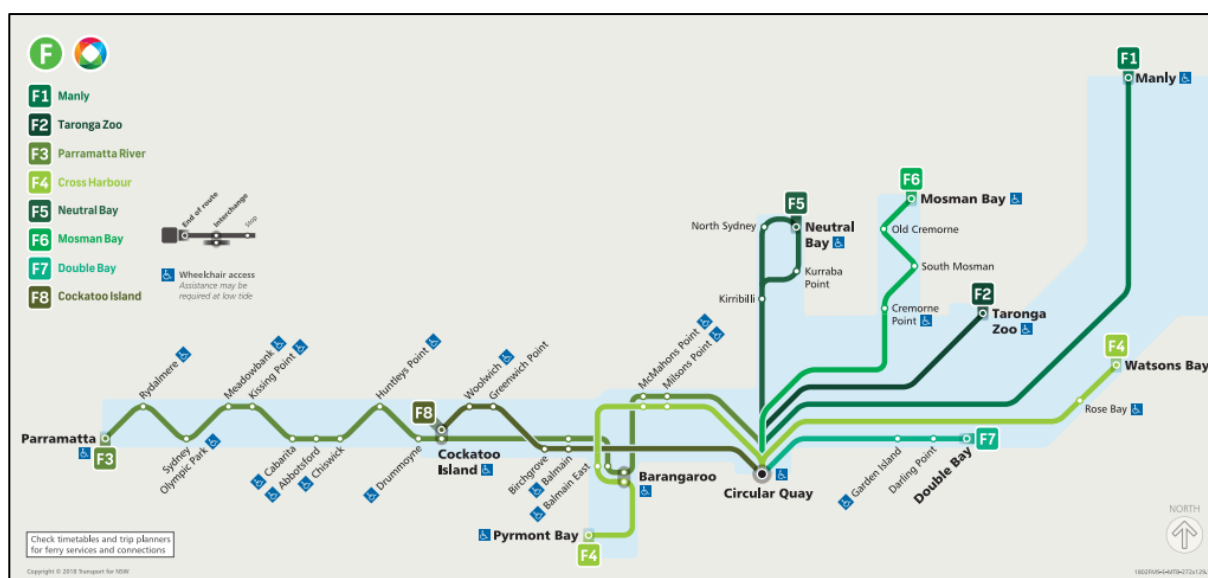
2.2.3 Ferry services

Chifley Square is serviced by ferry services through the Circular Quay ferry terminal which is located about 500 metres north of the site. Circular Quay consists of five wharfs which facilitate eight ferry services. The eight services all run along Parramatta River and Port Jackson Bay towards the west and east of Circular Quay respectively. The termination stations for the eight lines are at Manly, Taronga Zoo, Parramatta, Pyrmont Bay, Watsons Bay, Neutral Bay, Mosman Bay, Double Bay and Cockatoo Island. Table 4 details the ferry services at Circular Quay and Figure 10 illustrates the ferry network.

Table 4 Ferry services at Circular Quay

Ferry Line	Direction	Time between services (mins)		
		AM Peak	PM Peak	Off Peak
F1 - Manly	Circular Quay to Manly	30	30	30
	Manly to Circular Quay	30	30	30
F2 – Taronga Zoo	Circular Quay to Taronga Zoo	30	30	30
	Taronga Zoo to Circular Quay	30	30	30
F3 – Parramatta River	Circular Quay to Parramatta River	30	10	30
	Parramatta River to Circular Quay	10	30	30
F4 – Cross Harbour	Pymont Bay to Watson Bay via Barangaroo and Circular Quay	20	20	30
	Watson Bay to Pymont Bay via Barangaroo and Circular Quay	20	20	30
F5 – Neutral Bay	Circular Quay to Neutral Bay	30	30	30
	Neutral Bay to Circular Quay	30	30	30
F6 – Mosman Bay	Circular Quay to Mosman Bay	30	30	30
	Mosman Bay to Circular Quay	30	30	30
F7 – Double Bay	Circular Quay to Double Bay	60	30	60
	Double Bay to Circular Quay	30	30	60
F8 – Cockatoo Island	Circular Quay to Cockatoo Island	30	30	60
	Cockatoo Island to Circular Quay	30	30	60

Source: AECOM, data from Transport for NSW timetabling, valid on 18 June 2021

Figure 10 Sydney Ferries Network

Source: Transport for NSW website, June 2021

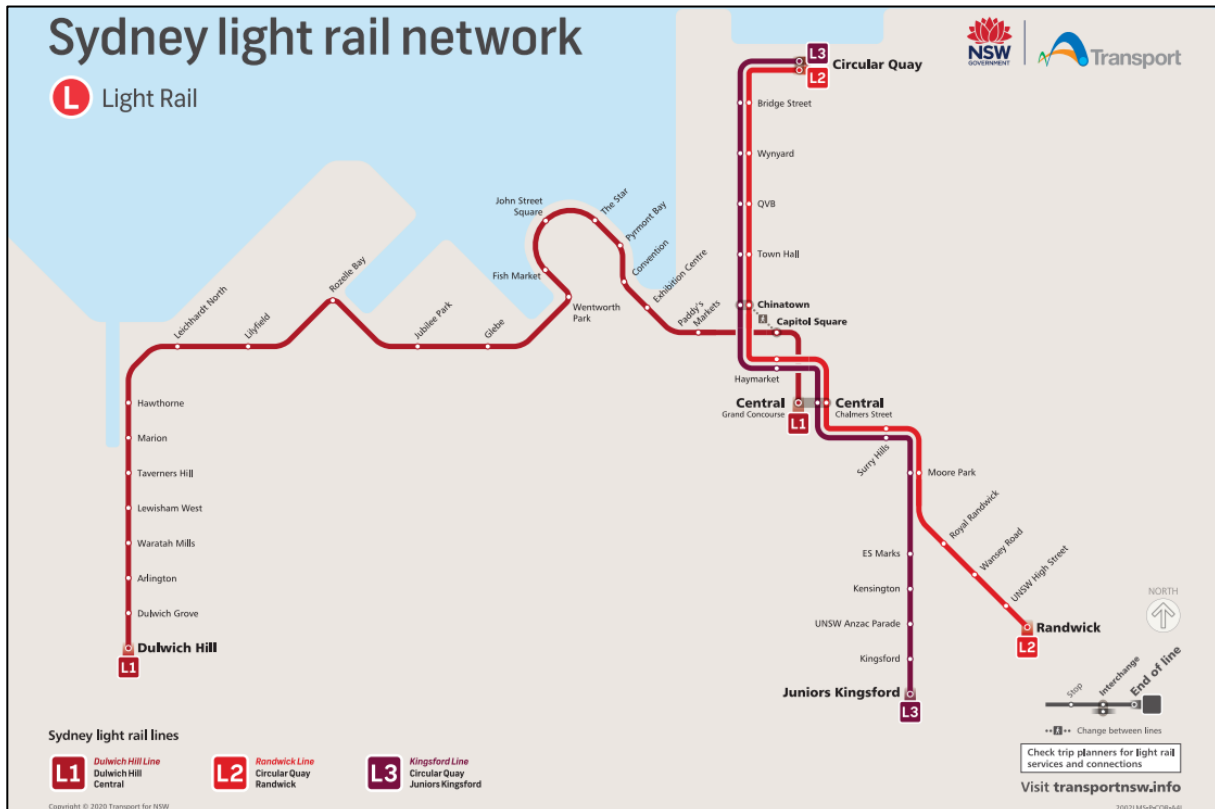
2.2.4 Light Rail services

Chifley Square is also serviced by the Sydney CBD & South East Light Rail line. There are three stops located within 500 metres of the development site. These are Circular Quay, Bridge Street and Wynyard light rail stops which are located to the north, north-west and west respectively. The Sydney

CBD & South East Light Rail consists of two lines. Both originate at Circular Quay and travel through the Sydney CBD. They then split at Moore Park with one line continuing to Randwick (Line L2) and the other travelling to Kingsford (Line L3).

Both lines operate one service every eight minutes between 7:00am and 7:00pm Monday to Friday. A service then runs every 10 minutes until the last service at around 1:00am. On weekdays, both lines operate a service approximately every 10 minutes. The Sydney light rail network map is illustrated in Figure 11.

Figure 11 Sydney light rail network map



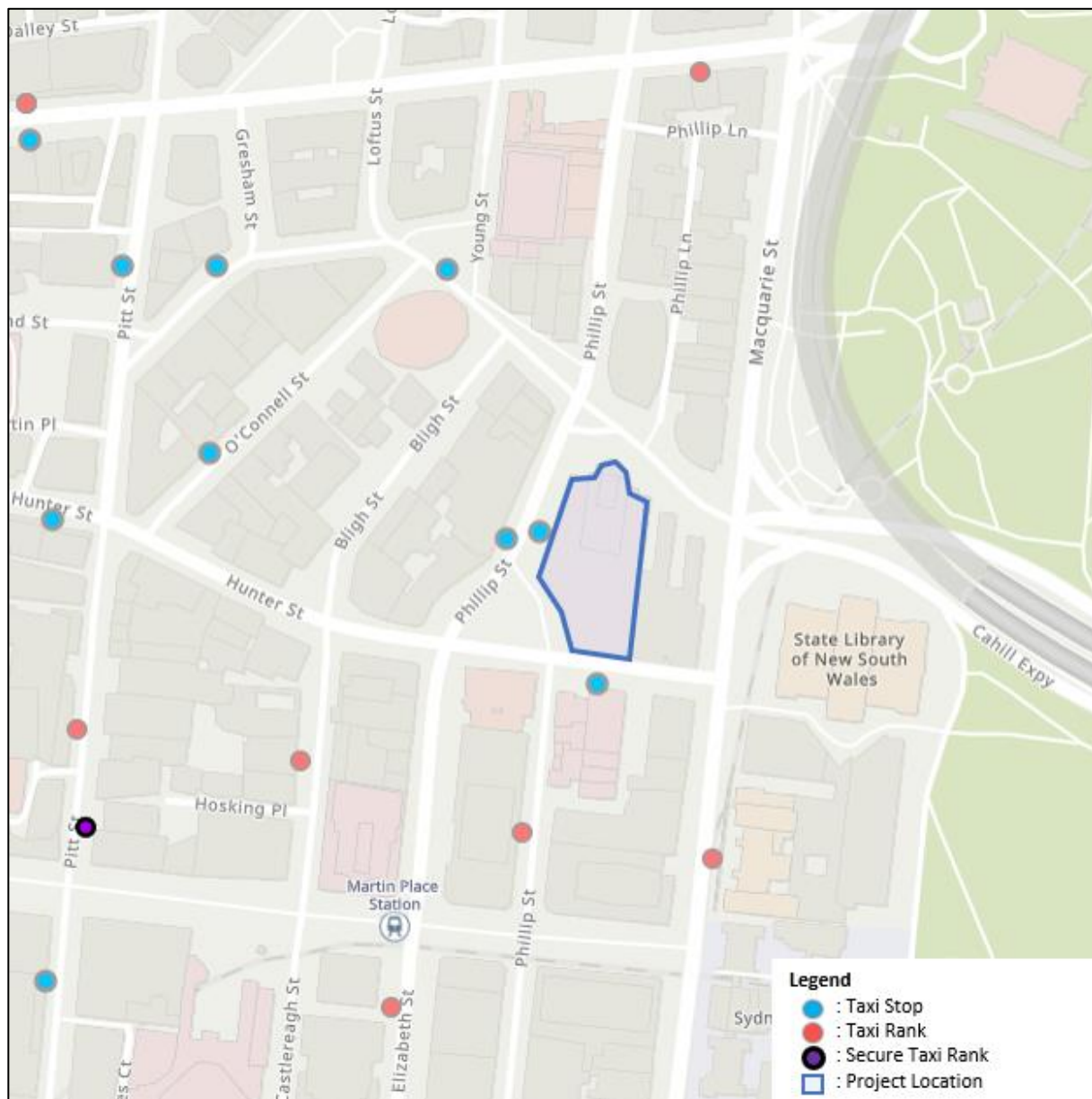
Source: Transport for NSW website, June 2021

2.2.5 Taxi services

There are dedicated taxi ranks located adjacent to Chifley Square on both Phillip Street and Hunter Street. The taxi ranks on Phillip Street operate 24 hours a day. There are approximately 10 taxi spaces on Phillip Street. A taxi shelter is provided on the east side of Phillip Street.

There are approximately four taxi spaces on the south side of Hunter Street. The taxi rank is operational during the night from 8:00pm to 6:00am on weekdays. No Stopping restrictions apply otherwise on weekdays and regular parking is allowed on weekends.

Due to the Sydney CBD location, there are also other taxi rank and taxi stops located in the vicinity. Figure 12 illustrates the location of nearby taxi ranks and stops near the project site.

Figure 12 Taxi services locations near Chifley Square

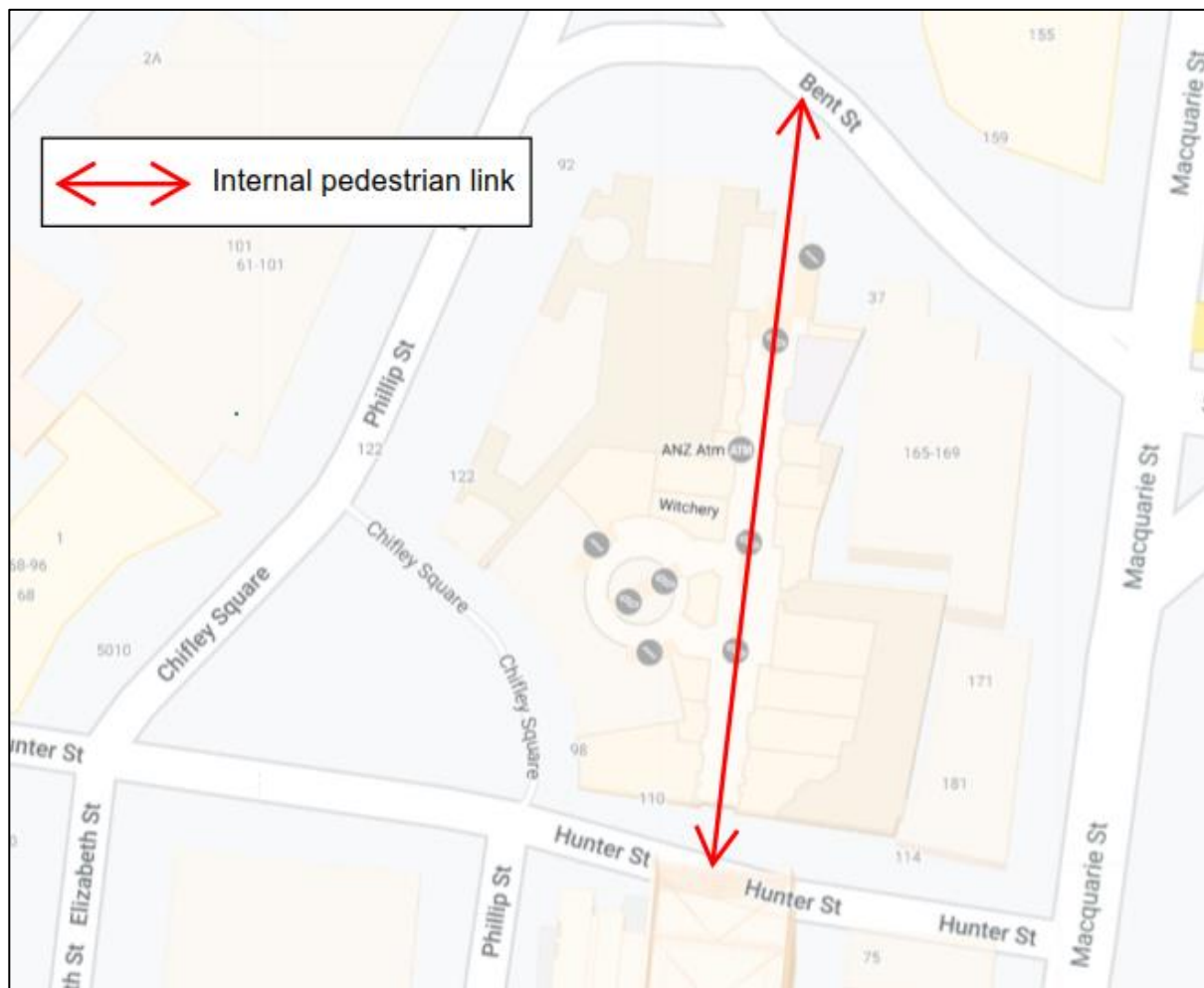
Source: Based from City of Sydney Spatial Systems, adapted by AECOM, June 2021

2.3 Existing active transport provision

2.3.1 Pedestrian facilities

The Sydney CBD has an extensive network of walking paths which are designed to provide connections within the CBD and to nearby locations. These facilities include urban footpaths, nature footpaths, dedicated pedestrian areas, pedestrian crossing and a general 40km/h zone for motorists within the Sydney CBD. There is also an internal north-south link through the existing Chifley Square development that provides access between Bent Street and Hunter Street, as highlighted in Figure 13 below. Observations show that this link is currently underutilised with spare capacity.

Figure 13: Internal north-south pedestrian link



2.3.2 Cycle facilities

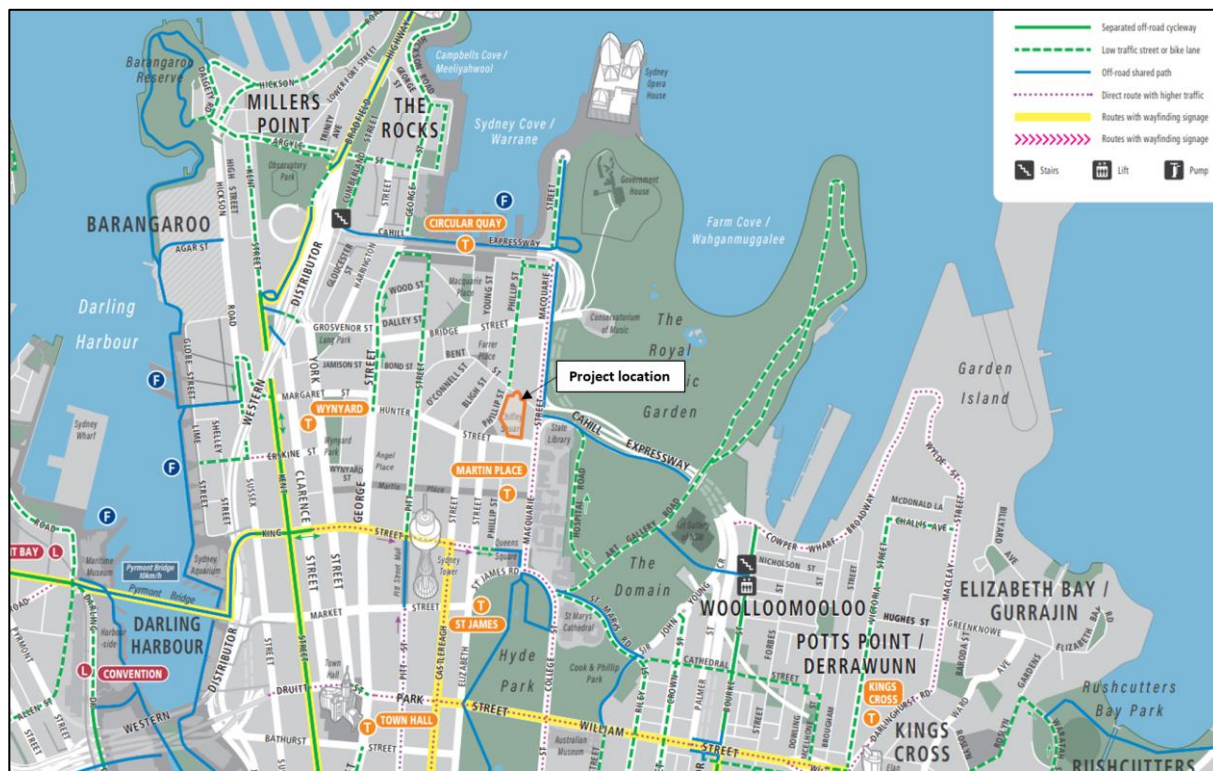
Chifley Square is located near many cycling facilities including shared paths, off-road cycleways and wayfinding signage. As part of the City of Sydney Cycling Strategy and Action Plan 2018 – 2030, the City of Sydney Council has committed to improve the existing cycling infrastructure through additional shared paths, separated cycleways and improved connections between existing infrastructure. In response to the COVID-19 pandemic, the City of Sydney has proposed to accelerate some of this strategy through the construction of six new “pop-up” cycleways.

Off-road shared paths are located to the north and east of the site. The shared path to the north travels along Macquarie Street, the Cahill Expressway and Bradfield Highway across the Sydney Harbour Bridge. The shared path to the east crosses The Domain and connects with the dedicated cycleway on Bourke Street. The cycleway on Bourke Street provides access to suburbs to the south of the city including the densely populated Waterloo and Zetland regions. Other cycling infrastructure in the area include separated off-road cycleways on Kent Street, Liverpool Street and Castlereagh Street.

The City of Sydney Council produces a cycling map which outlines all of the cycling provisions within the city council area. The map outlines the separated off-road cycleways and off-road shared paths. It also identifies low traffic streets that would be safer for cyclists than roads with higher volumes, and also provides information on routes with wayfinding signage. The cycling infrastructure near the subject site is illustrated in Figure 14.

In addition, the City also provides public bicycle parking spaces in the area. These include O-Ring Pole Mounted parking spaces on Bligh Street, Castlereagh Street, Elizabeth Street and outside the State Library of NSW, all located within 200 metres of the site.

Figure 14 City of Sydney cycling map



Source: City of Sydney cycling map, June 2021

2.4 Existing road network

2.4.1 Road network description

Chifley Square is located in the centre of Sydney CBD. The site occupies the majority of the city block bounded by Macquarie Street to the east, Bent Street to the north, Phillip Street to the west and Hunter Street to the south. The site is also located adjacent to the on and off ramps to Eastern Distributor. The Cahill Expressway and the Sydney Harbour Bridge can be accessed off Macquarie Street.

2.4.1.1 Macquarie Street

Macquarie Street is a four lane, two-way collector road that runs along the eastern side of the Chifley Square city block. Macquarie Street provides connections with the city south, Eastern Distributor and the Cahill Expressway. Many significant and historic landmarks are located on Macquarie Street including the Parliament of NSW, State Library of NSW, Supreme Court of NSW, Reserve Bank of Australia head office and the Opera House. Macquarie Street has a sign posted speed limit of 40km/h and is designated as a high pedestrian activity area. On-street parking lanes are provided along some sections of Macquarie Street on both sides.

2.4.1.2 Bent Street

Bent Street is a four lane, two-way local road that runs along the northern side of the Chifley Square city block. Bent Street has a sign posted speed limit of 40km/h and is designated as a high pedestrian activity area. On-street parking is permitted along some sections of Bent Street on both sides.

2.4.1.3 Phillip Street

Phillip Street is a four lane, two-way local road that runs along the western side of the Chifley Square city block. Phillip Street helps facilitate north-south travel across the city CBD. A bus lane operates in the eastbound direction. A porte-cochere for the Sofitel Sydney Wentworth hotel is located the western side of Phillip Street. Phillip Street has a sign posted speed limit of 40km/h and is designated as a high

pedestrian activity area. Taxi ranks are located on both sides of the road next to Chifley Square and on-street parking for regular vehicles is not permitted.

2.4.1.4 Hunter Street

Hunter Street is a four lane, two-way collector road that runs along the southern side of the Chifley Square city block. Hunter Street helps facilitate east-west travel across the city CBD. Hunter Street has a sign posted speed limit of 40km/h and is designated as a high pedestrian activity area. On-street parking is permitted along some sections of Hunter Street on both sides. An access point to the new Martin Place Metro station will be located on Hunter Street.

2.4.2 Key intersections

There are four main signalised intersections which surround the project site. They will be used to provide access to the site for construction vehicles and the vehicles required for operation of the development. The four intersections are:

1. Macquarie Street / Bent Street / Shakespeare Place (Eastern Distributor on & off ramps)
2. Phillip Street / Bent Street
3. Hunter Street / Elizabeth Street / Chifley Square
4. Macquarie Street / Hunter Street

3.0 Existing site

3.1 Existing site description

2 Chifley Square is a 6,438 square metre site located in the centre of Sydney CBD. The site occupies the majority of the city block bounded by Macquarie Street to the east, Bent Street to the north, Phillip Street to the west and Hunter Street to the south. Chifley Tower is a 244-metre-tall tower with 42 levels. Chifley Tower was the tallest building in Sydney from its construction in 1992 until 2019.

3.2 Existing basement parking and loading facilities

The existing building has a four-level basement car park and loading dock area which services the existing Chifley Tower. The first basement level is used for the loading dock facilities which contains 13 loading dock spaces. The three basement levels provide parking for 361 car spaces. There are currently 200 bicycle parking spaces provided on the first basement level, as well as end-of-trip (EOT) facilities such as lockers, showers and change rooms.

The access to the basement carpark is currently located along Bent Street, about 30 metres west of the intersection of Macquarie Street and Bent Street. The existing access has a vertical clearance of 3.4 metres which is typical of CBD assets of this typology, despite being lower than the specified requirement of 4 metres as described in the *Sydney Development Control Plan 2012*, and 4.5 metres for an MRV as described in Australian Standard 2890.1 (2004). A Loading Dock Management plan is used which specifies the specific dimensions for service vehicles accessing the loading dock. Waste collection is carried out by a private contractor which uses a vehicle suitable for the low vertical clearance.

The access to the basement levels is located directly adjacent to the basement access for the neighbouring 167 Macquarie Street building. The basement access locations for Chifley Square and 167 Macquarie Street are illustrated in Figure 15.

Figure 15 Existing basement access locations for Chifley Square and 167 Macquarie Street



Source: Charter Hall, adapted by AECOM, June 2020

4.0 Planning Proposal

4.1 Planning Proposal background

The purpose of the Planning Proposal, which this Traffic and Transport Assessment supports, is to amend the site's Floor Space Ratio (FSR) development standard, and the Maximum Building Height to align with the remodelled Domain Sun Access Plane contained within the concurrent Central Sydney Planning Proposal.

The application will aim to change the planning controls to provide an FSR of around 20.41:1, or a total GFA of approximately 131,391 square meters. The existing tower on the northern portion of the site will be retained, and a new commercial office tower is proposed on the southern portion of the podium. Compared to the existing site, the Project proposes an increase of 49,940 square metres of commercial GFA and a reduction of 779 square metres of retail GFA. A reconfigured loading zone will be provided on the first basement level which will service both the existing and new commercial and retail tenants. This is reflected in the accompanying reference design prepared by Architectus which serves as a baseline proof of concept for this Planning Proposal.

Table 5 Proposed Commercial and Retail GFA

Land Use	Existing GFA (m ²)	Proposed GFA (m ²)	Change in GFA (m ²)
Retail	6,459	5,680	-779
Commercial	71,768	121,708	+49,940
Other (Lobby)	4,276	4,003	-273
Total	82,503	131,391	+48,888

Following the Planning Proposal, the planning approval pathway involves a competitive design process and a detailed Development Application (Stage 2 DA). As such, this report reflects the concept stage of the proposal, and will be updated as the detailed design and required works evolve.

5.0 Traffic Impact Assessment

5.1 Car parking facilities

Since the initial car parking approvals for the existing Chifley Tower in 1988, there have been several reconfigurations in the number of parking spaces provided. The initial approval for the 1988 DA allowed a maximum of 390 tenant car spaces within the four basement levels. A 1996 DA amended the use of 103 car parking spaces from tenant spaces to short stay public car parking spaces. A 2018 DA approved a reduction of 16 car spaces due to alterations to the EOT facilities, resulting in a maximum of 374 spaces, comprising of 271 tenant and 103 public car parking spaces. Table 6 details the history of the Development Applications which relate the number of parking spaces provided at Chifley Square.

Table 6 History of Development Applications for the number of approved car parking spaces for Chifley Tower

Application Number	Application Description	Decision date	Approved car parking spaces
DA Z88/777	Original DA for the existing building on the site	November 1988	390 tenant spaces
DA Z96/584	DA for the change of use of 103 car spaces on Basement Level 4 to the use of a short stay public car park	November 1996	390 spaces, comprising <ul style="list-style-type: none"> • 287 tenant spaces • 103 public spaces
D/2018/583	Alterations to Chifley Tower to include change of use and fit out works to part of Level 42 from plant room to commercial office and removal of 16 car parking spaces for the expansion of End of Journey (EOJ) Facilities and reconfiguration of plant and services on basement levels P1 and P2.	June 2018	374 spaces, comprising <ul style="list-style-type: none"> • 271 tenant spaces • 103 public spaces

The current parking arrangements at Chifley Square provides a total of 361 car parking spaces. The objectives set out in the Sydney Local Environment Plan (LEP) 2012 are to identify the maximum number of car parking spaces that may be provided to service particular uses of land, and to minimise the amount of vehicular traffic generated because of proposed development. In line with the objectives of the City, Charter Hall is committed to reducing the number of car parking spaces provided on the site by up to 50% despite the increase in development yield on the site. Therefore, the result of this would likely mean a reduction in the number of vehicular trips generated by the combined development. The total number of parking spaces to be provided on the site will be determined through the Development Application process in line with the LEP based on the final proposed development yields.

5.2 Loading dock facilities

A future loading dock will service both the existing building and the proposed additional development. The existing site has a total of 13 marked loading dock spaces, which currently services 71,768 square metres of commercial GFA and 6,459 square metres of retail GFA. The proposed development includes a total of 49,940 square metres GFA of additional commercial area and a reduction of 779 square metres of retail GFA.

The loading dock will be accessed via the existing driveway and ramp from Bent Street. The existing ramp has a vertical clearance of 3.4 metres which is lower than the specified requirement of 4 metres as described in the *Sydney Development Control Plan 2012*, and 4.5 metres for an MRV as described in Australian Standard 2890.1 (2004). However, the proposed vertical clearance height of 3.4 metres is considered acceptable as the existing development has a loading dock management plan which stipulates the specific dimensions for service vehicles accessing the loading dock. Furthermore, waste collection is undertaken by a private contractor and not by City of Sydney, and therefore the vertical height clearance for Council's waste truck is not required. The development will continue to be

served by a vehicle fleet that can suitably access the loading dock and will be managed through an updated loading dock management plan.

5.2.1 Service vehicle parking requirements

The service vehicle parking requirements are detailed in *Schedule 7* of the *Sydney Development Control Plan 2012*. The schedule outlines the minimum requirements for new developments to be:

- Office premises
 - 1 space per 3,300 square metres GFA for the first 50,000sqm; plus
 - 1 space per 6,600 square metres GFA for additional floor area over 50,000sqm and under 100,000sqm; plus
 - 1 space per 13,200 square metres for additional floor area over 100,000sqm
- Retail premises
 - 1 space per 350 square metres GFA for the first 2,000sqm; plus
 - 1 space per 800 square metres GFA thereafter.

As the loading dock area for the proposed development will be shared with the existing Chifley Tower, the loading dock requirements have been calculated for the whole development, with the proposed additional land uses calculated over and above the existing. A review of the service vehicle parking requirement rates and the floor area for the proposed development is summarised in Table 7.

Table 7 City of Sydney DCP 2012 service vehicle parking requirements

Use	Size (sqm GFA)	Service vehicle rate	Service vehicle parking requirements
Commercial	121,708	1 space per 3,300sqm GFA, for the first 50,000sqm 1 space per 6,600sqm GFA for the second 50,000sqm 1 space per 13,200 for additional GFA over 100,000sqm	24
Retail	5,680	1 space per 350sqm GFA for the first 2,000sqm 1 space per 800sqm GFA thereafter	10
Total			34

Table 7 indicates that the proposed development requires 34 service vehicle spaces. The reference design demonstrates that a total of 21 service vehicle spaces can be provided in the proposed loading dock area and basement car park. This includes six spaces for medium rigid vehicles, two of which will be accessed via a turntable, and five spaces for small rigid vehicles in the loading dock located on basement level 1. 10 courier spaces are located on basement level 2.

The loading dock provision in the reference design is less than the number prescribed by the City of Sydney. However, it is expected that the loading demand will remain proportionate to the demand for the existing building. The existing loading dock has 13 service vehicle spaces and is able to adequately service the current loading demand for the existing Chifley Square building. The loading dock services both the commercial and retail land uses simultaneously.

A calculation of the existing service vehicle parking spaces compared to the CoS DCP requirements is shown in Table 8.

Table 8 Existing service vehicle requirements

Existing use	Existing GFA	CoS DCP 2012 Parking requirements	Service vehicle spaces provided
Commercial	71,768	18	13
Retail	6,459	11	
Total		29	

Table 8 shows that based on the City of Sydney DCP, the existing development should provide a total of 29 loading dock spaces comprising 18 spaces for commercial areas and 11 spaces for retail areas. However, the development only provides 13 spaces in total, which represents an existing deficiency of 16 loading dock spaces. Based on the additional commercial GFA which could be achieved via the Planning Proposal, there is a requirement to provide an additional six loading dock spaces. The retail GFA is being reduced by 779 square metres GFA in the reference design, which would require one less space.

The Project proposes to increase the quantum of loading dock spaces by eight for the proposed additional commercial GFA, and therefore this provision is surplus to the City of Sydney requirements.

Section 7.8.1 of the City of Sydney DCP Schedule 7 states that the total service vehicle requirement may be reduced for developments with GFAs in excess of 50,000 square metres where it can be demonstrated that the proposed uses are complementary in terms of servicing demand. The proposed development will be complementary to the existing commercial land use of the site. The loading dock facilities will be shared by both commercial towers and will service all commercial areas on the site simultaneously.

In addition to the 21 service vehicle spaces provided, the proposed development also reserves 18 overflow spaces on basement level 2 which can be converted to courier spaces if required.

The existing loading zone deficiencies are offset through a Loading Dock Management Plan which manages the loading demand. The Loading Dock Management Plan will be updated in order to facilitate the new demand within the 21 proposed loading dock spaces.

The updated Loading Dock Management plan will also inform how the arrangements will occur. A loading dock manager will also be located on site who will direct service vehicles. Mitigations for any potential queueing will be addressed in the Loading Dock Management plan which will state for all queueing to occur in the loading dock area as so not impact the driveway ramps.

The loading zone arrangements have been assessed for the MRV and SRV design vehicles which are used in the current building. A swept path assessment has been prepared and confirms that the required design vehicle can enter and exit the loading dock in a forward direction.

For the reasons described above, the reference design is capable of accommodating the required loading to service a future proposal with a total FSR of 20.41:1 and total GFA of approximately 131,391 square meters.

5.2.2 Potential shared access with 167 Macquarie Street

As outlined in Section 3.2, Chifley Square and the neighbouring property at 167 Macquarie Street have adjacent basement entries located about 10 metres apart. Multiple driveways which service heavy vehicles can pose safety concerns for pedestrians on the footpaths and add additional collision points for turning manoeuvres in and out of the driveways. An initial review of combining the two driveways into one driveway located on Chifley Square was undertaken, to provide flexibility in the proposed development should 167 Macquarie St be developed in the future. Although 167 Macquarie Street is not part of this application, this Proposal will provide the ability to connect driveways in the future.

A future shared access would have to facilitate the safe movement for design vehicles for both Chifley Square and 167 Macquarie Street. Vehicles accessing 167 Macquarie Street would first access the driveway on Chifley Square before manoeuvring into a new access point for the 167 Macquarie Street basement. Vehicle access to Chifley Square will not be altered. The option is illustrated in Figure 16.

Table 9 Traffic generation estimates

Land use	Area	Rate (PM peak)	Traffic generation
Existing Commercial	71,768	0.14 per 100m² GFA¹	100
Total Commercial area	121,708		170
Additional trips			70

¹North Sydney office block trip rate used

Table 9 indicates that the proposed development is expected to generate an additional 70 commercial trips during the PM peak hour. Due to the development's location in central Sydney CBD, it is not expected that the additional commercial areas will add any significant levels of traffic to the area. As detailed in Section 2.1, public transport is the main form of transport into the city centre. In addition, the development site's close proximity to frequent bus, heavy rail, light rail and ferry services will encourage even more public transport usage.

Based on an assumption of 80% out, 20% in split of trips for a commercial development in the PM peak, it is therefore forecast that an additional 56 vehicles would exit the development onto Bent Street, equating to about one vehicle trip per minute. 14 vehicles would enter the development from Bent Street, equating to about one vehicle trip every four minutes. Traffic increases of this level are not considered to have a material impact on the operation of the adjacent road network and intersection performance. Furthermore, as the site is located on the periphery of the CBD, the majority of traffic generated by the development will not travel through the CBD centre and therefore not contribute to congestion within the CBD.

5.5 Public transport impacts

The Project is likely to increase the overall volumes of public transport patronage in the nearby services. As described in Section 2.2, Chifley Square is supported by an extensive network of bus, train, light rail and ferry services. This includes the Elizabeth Street bus interchange and Martin Place station, both located 200 metres from the site and various other stations, bus interchanges, light rail stops and a ferry terminal at Circular Quay which are all located within 500 metres of the site. Hundreds of services run across these public transport infrastructures and the combined network covers most of Sydney.

In addition to the existing public transport facilities, Chifley Square will also be serviced by the new Sydney Metro City and South West line through a newly constructed metro station at Martin Place, 100 metres from the site. Metro train services will run along this line every four minutes during the peak hours in each direction. The line is expected to open in 2024, in line with the forecasted completion of the proposed development.

It is not expected that the Project will negatively impact the surrounding public transport network and is consistent with the City of Sydney's objective to increase commercial floor space in the CBD.

6.0 Pedestrian Impact Assessment

6.1 Assessment Methodology

With pedestrian demands in the CBD low due to COVID-19, a preliminary assessment has been carried out for the future 2026 performance based on available public data from pre-COVID-19 levels. In a later stage, this assessment will be reviewed and updated with survey data once demands return to normal levels.

The static pedestrian assessment methodology for this preliminary study consists of the following steps:

Figure 17 Pedestrian assessment methodology



6.1.1 Demand Forecast

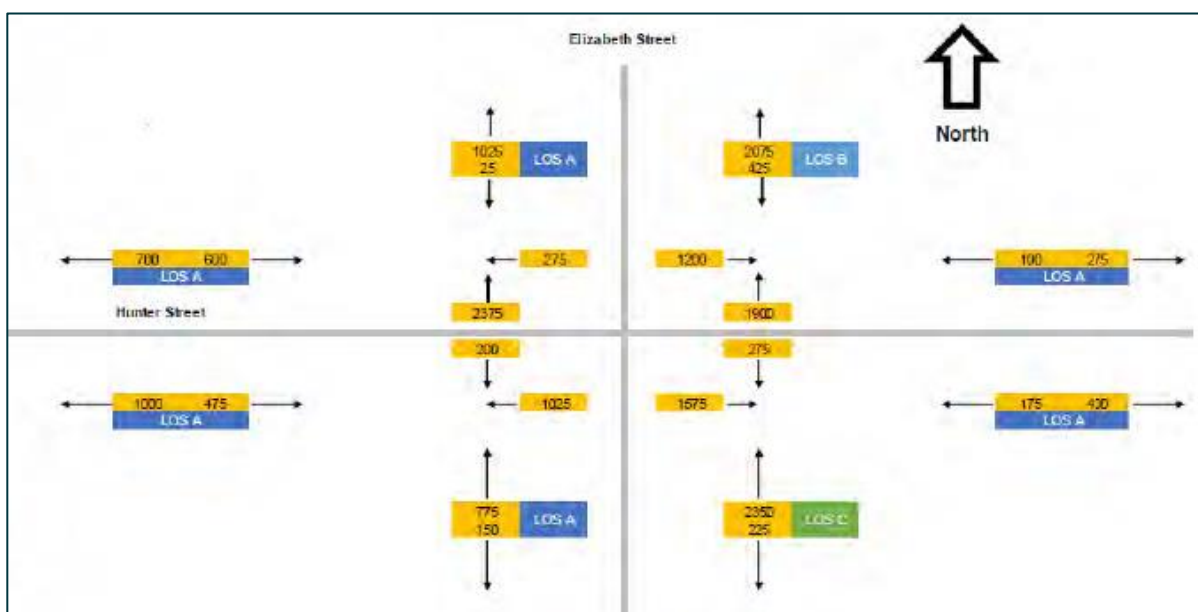
The pedestrian demand has been forecasted for the typical AM, midday and PM peak hours for the following scenarios:

- **2026 No Development** – Future 2026 demand including growth due to employment and the impact of a future Sydney Metro Station at Martin Place. This scenario looks at the impact of the future Sydney Metro commuter demand around the site area.
- **2026 With Development** – Similar to 2026 No Development, but includes the net impact of developing Chifley Square Tower 2.

6.1.1.1 2026 No Development

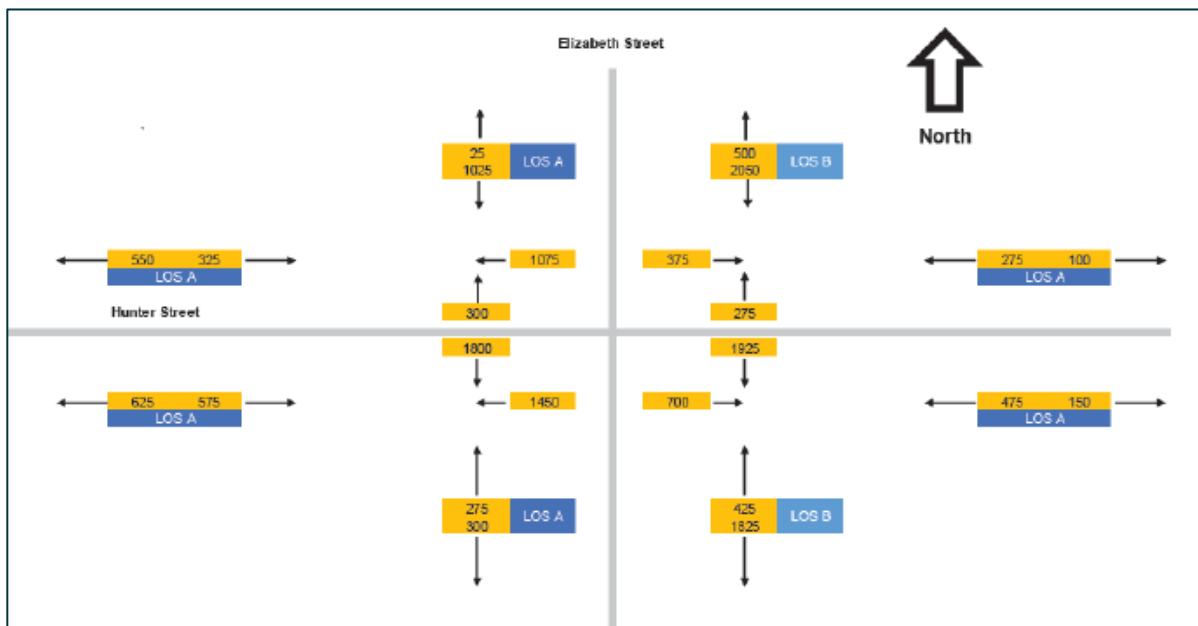
As no surveys have been conducted, the future demands have been based upon the publicly available *Sydney Metro Chatswood to Sydenham Environmental Impact Assessment Technical Paper 1: Traffic and Transport* (Jacobs, 2016), which provides 2026 AM and PM peak hour flows on the street network surrounding the Sydney Metro Martin Place development. These locations include those presented in Figure 18 and Figure 19, which are close to the Chifley Square development.

Figure 18 2026 AM peak hour demands from the Sydney Metro EIS



Source: Sydney Metro Chatswood to Sydenham Environmental Impact Assessment Technical Paper 1: Traffic and Transport (Jacobs, 2016)

Figure 19 2026 PM peak hour demands from the Sydney Metro EIS



Source: Sydney Metro Chatswood to Sydenham Environmental Impact Assessment Technical Paper 1: Traffic and Transport (Jacobs, 2016)

This demand information has been used as follows for the 2026 No Development scenarios:

- **AM Peak** – Demands have been taken directly from Figure 18 above.
- **Midday Peak** – To reflect the bi-directionality of this period, midday peak demands are assumed to be the average of the AM and PM peak demands.
- **PM Peak** – Demands have been taken directly from Figure 19 above.

6.1.1.2 2026 With Development

The additional demand generated by the development has been calculated based upon arrival and departure trip rates derived from Roads and Maritime Service (RMS) office block surveys conducted in 2010. These trip rates are presented in Table 10.

Table 10 Commercial development trip rates (trips/100 m² GFA)

Peak Period	Arrivals	Departures
AM Peak	1.8	0.7
Midday Peak	1.5	1.8
PM Peak	0.6	1.5

Total commercial GFA of Chifley Square, including both the existing and proposed development, is approximately 121,708 square metres, including additional commercial GFA of 49,940 square metres from the proposed development. Additional pedestrian trip generation for the '2026 With Development' scenario is estimated based on the additional commercial GFA of 49,940 square meters, with pedestrian demand for the existing development based on that of the '2026 No Development' scenario as discussed in Section 6.1.1.1 above.

6.1.2 Walking Route Assessment

A high-level walking route assessment was undertaken to determine the routing that would be used by pedestrians due to the proposed Chifley Square Tower 2 development.

For the AM and PM peaks, development driven demand is expected to be driven by workers arriving and departing work. As such, routing has been informed by the 2016 Census place of work mode shares for the Sydney CBD, covered by the SA2 zone of *Sydney - Haymarket - The Rocks*, is shown in Table 11.

Table 11 2016 Census place of work mode share for Sydney CBD

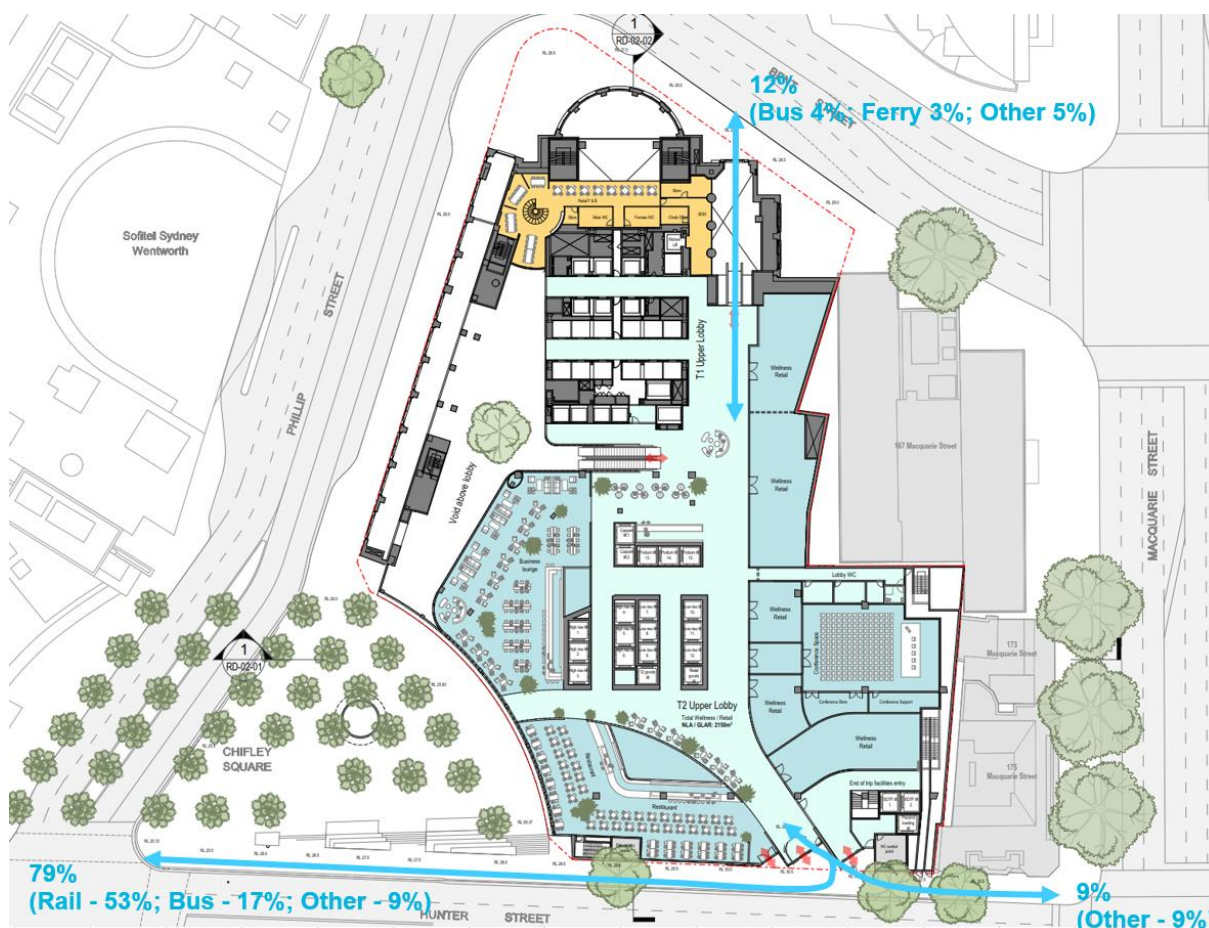
Mode	Proportion
Rail	53%
Bus	21%
Ferry	3%
Other ¹	23%

Source: AECOM, data from Australian Bureau of Statistics, June 2020

¹Includes car, cycling and walking. Excludes those who did not work or worked from home.

The resulting routes for the AM and PM peaks are shown in Figure 20 below.

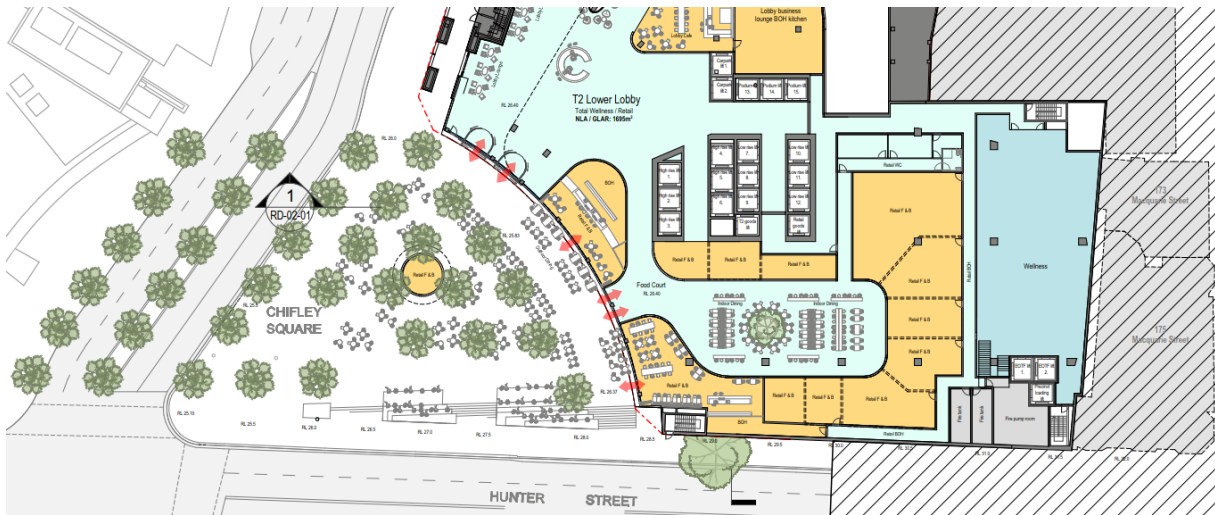
Figure 20 AM and PM peak distribution for development generated demand



For purposes of analysis, it is assumed that all pedestrians who cross the Hunter St / Elizabeth St intersection to access the new development (79% of pedestrians as shown in Figure 20 above) use the new entrance on Hunter St, and thus all utilise the Hunter St footpath. However, it should be noted that the new development can also be accessed via Chifley Square on the lower ground level, as

indicated by the red arrows in Figure 21 below, and in reality some passengers would utilise the lower ground entrance rather than the new Hunter St entrance. Therefore, the pedestrian impact assessment can be considered a “worst case” scenario for Hunter St and thus represents a conservative analysis.

Figure 21: Chifley Square Lower Ground Entrance



During the midday peak, workers are expected to travel for lunch and meetings, resulting in a more evenly distributed split between the entrances, as shown in Figure 22. As a conservative estimate, all development demand is assumed to exit Chifley Square and utilise the surrounding pedestrian network. It is noted that some of these workers may instead utilise the F&B facilities within Chifley Square for lunch. As in the AM and PM peak analysis, all pedestrians who cross the Hunter St / Elizabeth St intersection to access the new development are assumed to use the new Hunter St entrance, which represents a conservative analysis for Hunter St as in reality some pedestrians would access the new development via Chifley Square on the lower ground level.

Figure 22 Midday peak distribution for development generated demand



At the Hunter Street / Elizabeth Street intersection, development related demand is assumed to use the crossing as follows:

- Rail related demand heads to/from the southwest corner.
- Bus related demand is split evenly to/from the northwest and southeast corners.
- All other movements are split evenly to/from the northwest, southwest and southeast corners.
- Demands to/from the southwest corner are split evenly between the two available routes.

6.1.3 Future Pedestrian Assessment

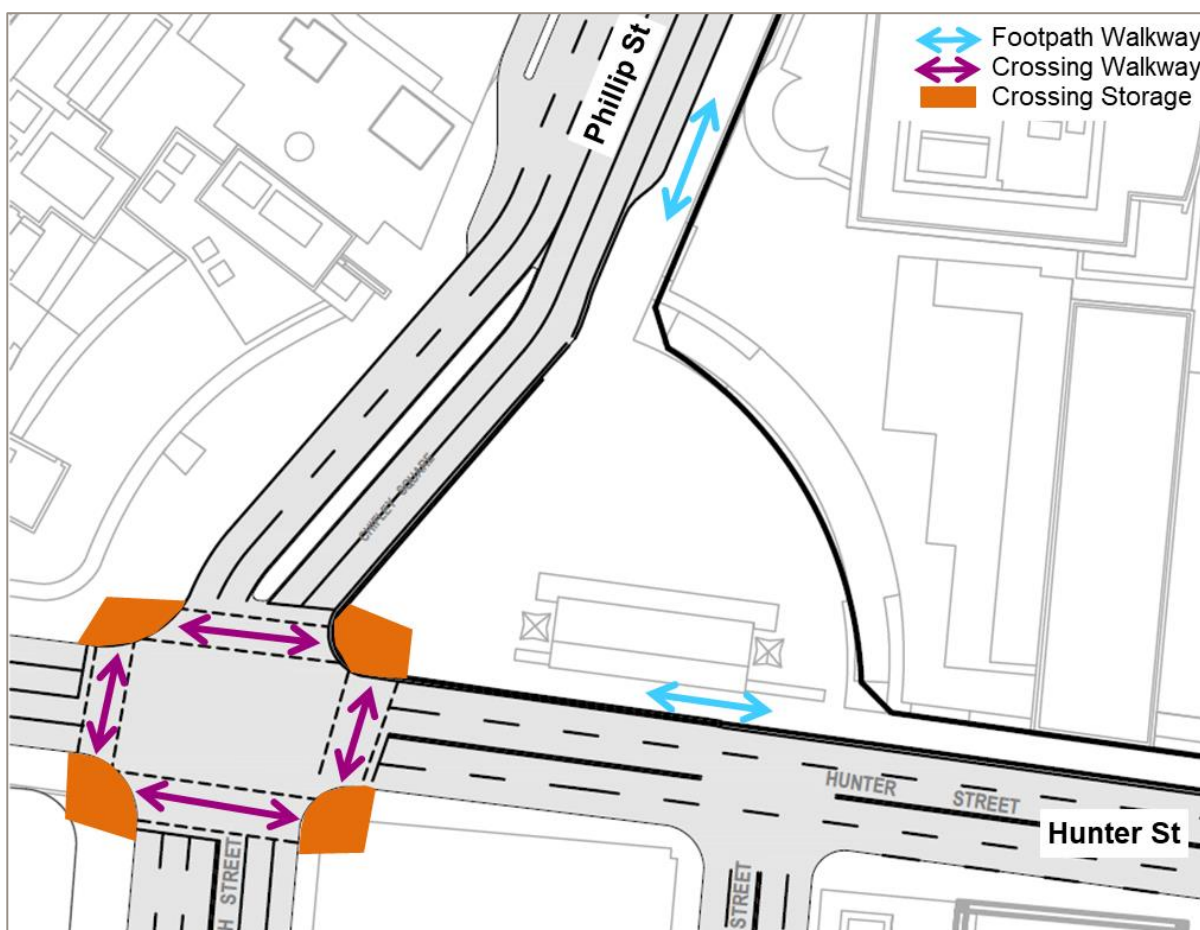
The future pedestrian assessment follows a methodology comparable to that set out in *Pedestrian Comfort Guidance for London* (TfL, 2010). This guidance document provides information on assessing the walking comfort for footpaths and crossings. However, this document does not provide a methodology for assessing the comfort level of footpath storage space at the crossings. For queuing, the document only contains guidance on the comfort of midblock pedestrian islands.

Based on the demand forecasts and walking route assessment, two demand scenarios were assessed for each peak hour period:

- **2026 No Development** – Future 2026 demand including growth due to employment and the impact of future Sydney Metro at Martin Place.
- **2026 With Development** – Similar to 2026 No Development, but includes the net impact of developing Chifley Square Tower 2.

In line with the information available in the *Sydney Metro Chatswood to Sydenham Environmental Impact Assessment Technical Paper 1: Traffic and Transport* (Jacobs, 2016), the static spreadsheet assessment evaluated the performance of the following pedestrian infrastructure near Chifley Square Tower 2, as shown in Figure 23.

Figure 23 Pedestrian assessment elements



6.1.3.1 Street Layout

The street dimensions used to inform the pedestrian assessment has based upon a desktop study and site investigation of the area. The widths and storage areas are shown in Table 12 and Table 13.

It is acknowledged that the southwest corner of the Hunter Street / Elizabeth Street intersection will change due to the introduction of a northern entrance to Martin Place Station. However, no future plans of this area were received, and the location currently has construction hoardings and scaffolding

set up. Thus, for the purpose of this analysis Nearmap street dimensions from 2016, prior to commencement of construction, have been used.

Table 12 Footpath width measurements

Location	Full Footpath Width (m)	Effective Footpath Width (m)
Phillip Street East Side	4.5	2.6
Hunter Street North Side	3.6	2.6

Table 13 Hunter Street / Elizabeth Street indicative dimensions

Crossing Arm	Crossing Width (m)	Pedestrian Storage Area (m ²)	
		Northbound / Eastbound	Southbound / Westbound
North Arm	3.6	25	20
East Arm	3.6	40	15
South Arm	4.5	20	30
West Arm	4.5	20	20

6.1.3.2 Additional Assumptions

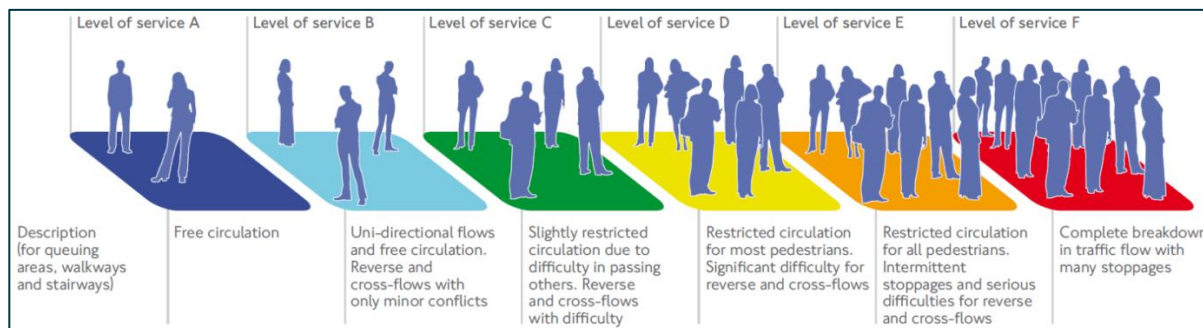
Additional assumptions used in the pedestrian assessment and not covered in previous parts of Section 6.1 include:

- The average phase timings at the Hunter Street / Elizabeth Street intersection assessed in this report is based on site observations made June 2020 and is assumed to be the same for the future year analysis.
- At pedestrian crossings, it is assumed that there is a uniform arrival profile and that no pedestrians will jaywalk.
- In line with the *Pedestrian Comfort Guidance for London* (TfL, 2010), a 0.2 metre buffer is used to account for the edge effect of buildings and kerbs.
- A minimum 0.6 metre buffer is used to account for street furniture observed on the kerbside of the footpath. This includes trees, light poles, signposts and parking metres.
- The effect of additional portable street furniture which may be placed along the footpath is not considered for the purpose of this analysis. Whilst these items may cause the footpath comfort level to drop to undesirable levels, this assessment aims to identify whether the footpath infrastructure itself is capable of catering for future demands. The additional portable street furniture can be more easily reduced or removed to cater for higher pedestrian demands.
- The future expansion of pedestrian space along the southwest corner of Hunter Street / Elizabeth Street intersection due to the introduction of a northern entrance to Martin Place Station is not included in the assessment due to a lack of detailed plans and drawings.
- Peak minute demand factors have been taken from previous analysis by AECOM for the 4-6 Bligh Street development. These factors are 2.87%, 3.35% and 2.93% of the peak hour demand for the AM, midday and PM peaks, respectively.
- All pedestrians accessing the new development from the west, east, or south of Chifley Square are assumed to do so via the new Hunter St entrance rather than existing Chifley Square and Phillip St entrances, in order to perform a conservative footpath capacity analysis for Hunter St.

6.1.3.3 Performance Assessment Criteria

John J. Fruin's concept of Level of Service (LoS) was developed in his book *Pedestrian Planning and Design* (Fruin, 1987) and has been adopted as the global industry standard approach to planning for pedestrians. Fruin's LoS can be used to interpret the performance of space and how people move and interact under certain conditions. The Levels of Service are categorised into six bands, with LoS A representing free-flow conditions while LoS F represents a complete breakdown in flow.

Figure 24 Fruin Walkways LoS description



The Fruin Walkways LoS is typically applied to areas where pedestrians are traversing, such as footpaths. The values presented by different colour bands are shown in Figure 25.

Fruin Walkways LoS will be used to assess pedestrian walking comfort along the eastern footpath along Phillip Street and the northern footpath along Hunter Street. It is also used to assess the crossing arms at the intersection of Hunter Street / Elizabeth Street.

Figure 25 Fruin Walkways LoS thresholds

Fruin LoS Criteria for Walkways					
A	B	C	D	E	F
∞	3.25	2.32	1.39	0.93	0.46
0	23	33	49	66	82
					ped/min/m

The Fruin Queuing LoS is typically applied to areas where pedestrians queue or wait. The values presented by different colour bands are shown in Figure 26. The thresholds are more relaxed than Fruin Walkways, reflecting that pedestrians will accept being in closer proximity with others when they are standing still and expect queuing conditions. In an open street environment with a Fruin Queuing LoS C or worse, some pedestrians can be expected to spread out further than the allocated 'queuing space' due to perceived discomfort. Additionally, LoS E-F is unlikely to occur in an open street environment and is reflective of conditions in a crush loaded train or lift.

Fruin Queuing LoS will be used to assess the comfort of pedestrian storage space at the intersection of Hunter Street / Elizabeth Street.

Figure 26 Fruin Queuing LoS thresholds

Fruin LoS Criteria for Queuing					
A	B	C	D	E	F
∞	1.21	0.93	0.65	0.28	0.19
					m ² /ped

In recognising the importance of footpath design in fostering a positive walking culture, Transport for London (TfL) created the *Pedestrian Comfort Guidance for London* (TfL, 2010). This guidance is tailored for pedestrian behaviour and perception within London and used to identify issues at existing sites and schemes in development in London. This guide provides an alternative Level of Service range for walkways, referred to as the Pedestrian Comfort Level (PCL). As with Fruin LoS, the TfL PCL uses an A to F range. However, the thresholds are stricter than Fruin Walkways LoS and PCL A-C are further split into subcategories. The values presented by different colour bands are shown in Figure 27.

Note that PCL F is reserved for walkway widths under 1.5 metres. Additionally, in an open street environment with footpaths which experience PCL B or worse, pedestrians will begin considering avoiding the footpath if alternative routes are available. Similarly, crossing arms which experience PCL

B or worse will have an increased likelihood of pedestrians crossing outside of the marked crossing lines due to perceived comfort.

The TfL PCL will be used to assess pedestrian walking comfort along the eastern footpath along Phillip Street and the northern footpath along Hunter Street. It is also used to assess the crossing arms at the intersection of Hunter Street / Elizabeth Street.

Figure 27 TfL PCL thresholds

TfL PCL Criteria for Walkways

A+	A	A-	B+	B	B-	C+	C	C-	D	E	
0	3	6	9	12	15	18	21	24	27	35	ped/min/m
<3%	13%	22%	31%	41%	50%	59%	69%	78%	100%	100%	Restricted movement

The TfL guidance document provides an indication of the comfortability of the walkway based on the area type, average PCL during the peak hour and the PCL for the Average Maximum Activity level. The Average Maximum Activity level is the maximum flow over a short period and is thus comparable to the peak minute, which is used in this analysis for assessing walkways. This guidance is presented in Figure 28. The area in which the proposed Chifley Square Tower 2 development lies can be considered as office and retail, which is the second column in the figure.

Figure 28 TfL pedestrian comfort guidance for different area types

	HIGH STREET		OFFICE AND RETAIL		RESIDENTIAL		TOURIST ATTRACTION		TRANSPORT INTERCHANGE	
	Peak	Ave of Max	Peak	Ave of Max	Peak	Ave of Max	Peak	Ave of Max	Peak	Ave of Max
A	COMFORTABLE		COMFORTABLE		COMFORTABLE		COMFORTABLE		COMFORTABLE	
B+										
B	ACCEPTABLE				ACCEPTABLE		ACCEPTABLE			
B-	AT RISK		ACCEPTABLE				AT RISK		ACCEPTABLE	
C+	UNACCEPTABLE/ UNCOMFORTABLE				AT RISK	AT RISK	UNACCEPTABLE/ UNCOMFORTABLE			
C-			AT RISK	AT RISK						
D					UNACCEPTABLE/ UNCOMFORTABLE					
E										
	Peak and Average of Maximum Activity levels have similar guidance as people visiting retail areas stated they were particularly sensitive to crowding.		The “at risk” level is set at a lower PCL during the Average of Maximum Activity than peak flows. This is because of the greater number of single travellers and the short duration of maximum activity.		The “at risk” level is set at a lower PCL than peak flows in Residential Areas to reflect the short time this is likely to occur. A site visit to Residential sites is particularly important to check if there is school activity or a bus stand in the area.		Peak and Average of Maximum Activity levels have similar guidance as people visiting tourist areas are likely to be particularly sensitive to crowding		The “at risk” level is set at a lower PCL during the Average of Maximum Activity than peak flows. This is because of the greater number of single travellers and the short duration of maximum activity.	

For pedestrian crossings, the TfL document provides guidance on the width of the marked crossing and the width and storage space of midblock pedestrian islands. It recommends a minimum comfort of PCL B- for crossing arms. The document does not provide consideration for pedestrian crossing storage space at the footpath.

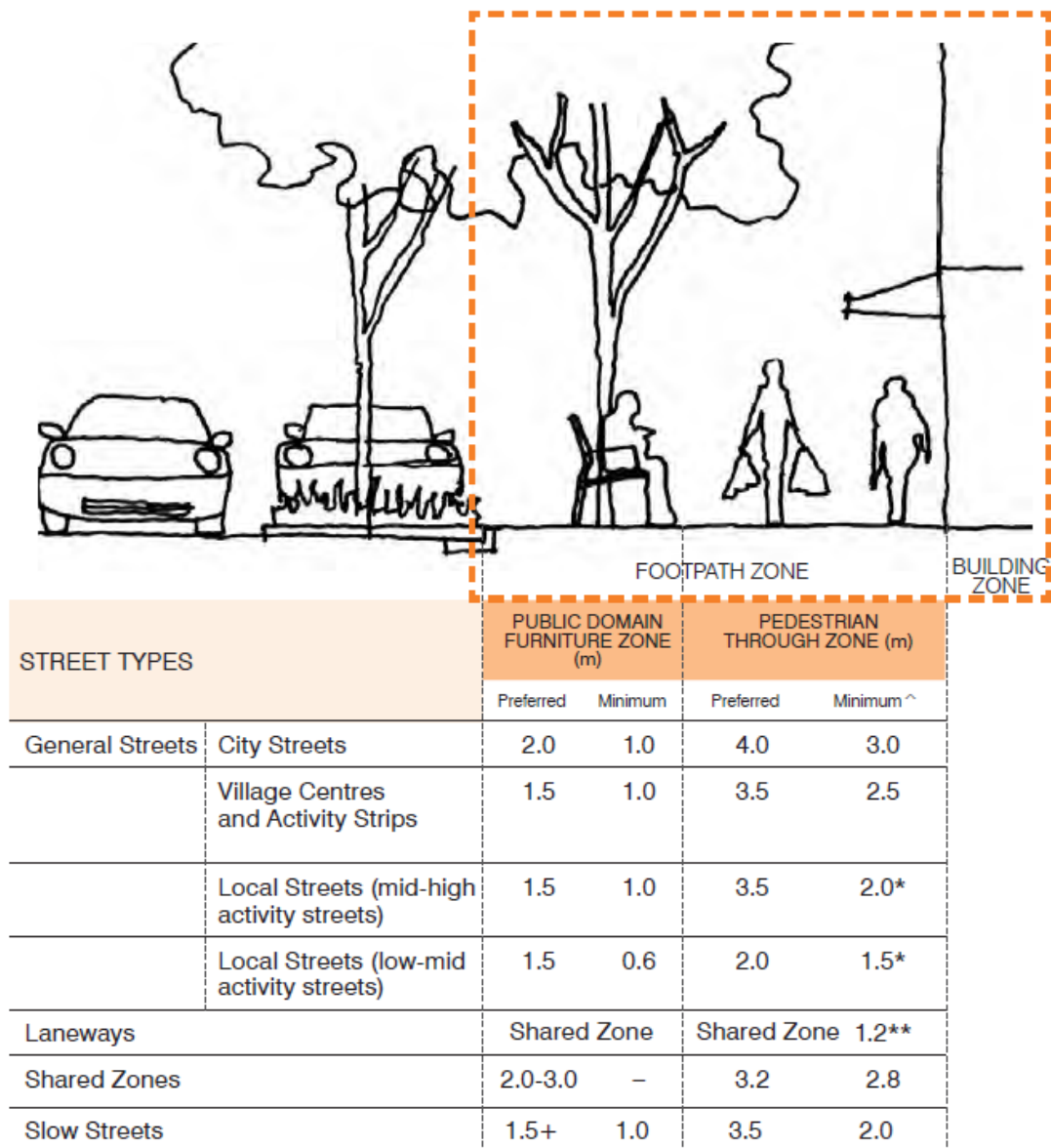
In this report, the Fruin Walkways LoS and TfL PCL are presented to highlight the walking comfort of the footpath and intersection crossing arms, while the Fruin Queuing LoS is used to assess the comfort of the storage space at intersection crossings. The guidance provided by TfL's pedestrian comfort spreadsheet is relayed in the text of Section 6.2, with the full ranges and advice presented in Appendix B.

6.2 City of Sydney Guideline Assessment

6.2.1 Footpath Provision Guidance

The City of Sydney's *Sydney Streets Code 2013* provides guidance on the provision of footpath space for new streets and street upgrades. The two assessable footpath locations in this report will be compared against this guidance as a point of reference. These requirements are summarised in Figure 29 below.

Figure 29 City of Sydney footpath provision guidance



Notes

- Pedestrian Through Zone - is the clear path of travel.
- Public Domain Furniture Zone - where lighting, street trees and seating are positioned.
- Minimum footpath widths are based on the City's minimal provision for a comfortable pedestrian access, and for two wheelchairs to pass.
- Preferred footpath widths are desired City dimensions for providing better pedestrian comfort and amenity and full inclusion for street trees, verge landscaping and public domain furniture. Street upgrades will need to be assessed for minimal and preferred widths on a project basis.

^ The State Government RTA standard is absolute 1.2m minimum (with frequent 1.8m wide passing opportunities for people passing in wheelchairs).

* The City recommends a more comfortable preferred width of at least 2.0m.

** If the footpath does not meet the minimum of 1.2m then a Shared Zone must be considered.

Source: City of Sydney, 2013

6.2.2 Existing Footpath Provision Assessment

A comparison of existing footpath provisions against the City of Sydney's minimum and preferred width guidelines is provided in Table 14. Note that these are prescriptive guidelines only and do not consider pedestrian comfort from a performance perspective, which is discussed in the next section of this report (Section 6.3).

Table 14 Footpath width provisions

Location	Public Domain Furniture Zone (m)			Pedestrian Through Zone (m)		
	Preferred Guidance	Minimum Guidance	Existing Provision	Preferred Guidance	Minimum Guidance	Existing Provision
Phillip Street East Side	2.0	1.0	1.5	4.0	3.0	3.0
Hunter Street North Side	2.0	1.0	0.6	4.0	3.0	3.0

Footpath provisions for the eastern footpath of Phillip Street meet the minimum guidance for both the public domain furniture zone and the pedestrian through zone, but not the preferred guidance. Pedestrian amenity can be improved from existing conditions by increasing footpath widths to the preferred guidance.

For the northern footpath of Hunter Street, the pedestrian through zone provision meets the minimum guidance but the public domain furniture zone does not. The public domain furniture zone allows for a 600mm setback from the kerb which provides a sufficient buffer between pedestrians and vehicles, but does not provide adequate space for furniture and seating. While this space does not affect the pedestrian performance of the footpath, it does have potential to enhance the amenity and pedestrian experience when walking through this area. If the design of Chifley Square is reconfigured, it is recommended that the footpath width be increased to meet the minimum guidance.

It should be stressed that for both Phillip Street and Hunter Street footpaths, inability to meet CoS guidelines is not related to the proposed development, as the proposed development does not include any changes to the position of the existing building line. Moreover, the guidelines do not consider pedestrian comfort from a performance perspective, which is considered in Section 6.3 of this report, and hence do not provide an accurate basis of pedestrian impact assessment. The purpose of this analysis of CoS footpath width guidelines is to help identify opportunities to improve footpath amenity beyond what is existing.

6.3 Future Pedestrian Performance Assessment Results

The additional pedestrians expected to arrive at and depart from Chifley Square due to the proposed development is provided in Table 15. The distribution of these pedestrians into the surrounding street network is as outlined in Section 6.1.2.

Table 15 Proposed development generated peak hour flows

Period	Arrivals in Addition to Existing Building	Departures in Addition to Existing Building
AM Peak	895	375
Midday Peak	775	925
PM Peak	300	755

The expected pedestrian demand at the intersections and eastern Bligh Street footpath are shown in Figure 30 to Figure 32. The two demand scenarios for each peak period is as follows:

- **2026 No Development** – Future 2026 demand including growth due to employment and the impact of future Sydney Metro at Martin Place.
- **2026 With Development** – Similar to 2026 No Development, but includes the net impact of developing Chifley Square Tower 2.

The figures show that the 2026 With Development scenarios have the increases in flows at the northern footpath along Hunter Street. The impacts to the Hunter Street / Elizabeth Street intersection are less pronounced as there are high flows already using the intersection in the 2026 No Development scenarios. These flow increases are also seen to be more prominent for the AM and PM peaks than for the midday peak.

Note that footpath flows for both Hunter St and Phillip St can be considered conservative (onerous), as for purposes of analysis, the Chifley Square entrance on the lower ground entrance is excluded (see Section 6.1.2). In reality, some pedestrians would access both the existing and proposed development via this lower ground entrance which provides a large space for people to disperse, helping to relieve footpath congestion on both Hunter St and Phillip St. Hence the flows used in both the '2026 No Development' and '2026 With Development' scenarios can be considered conservative.

Figure 30 AM Peak pedestrian flows

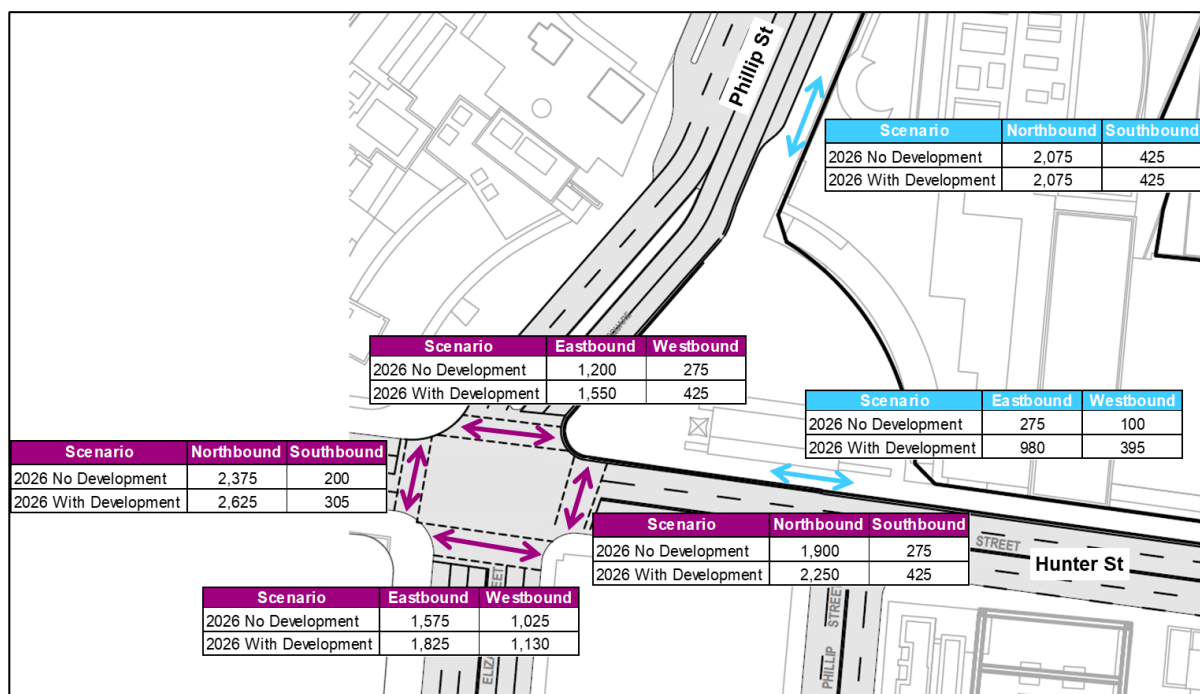


Figure 31 Midday Peak pedestrian flows

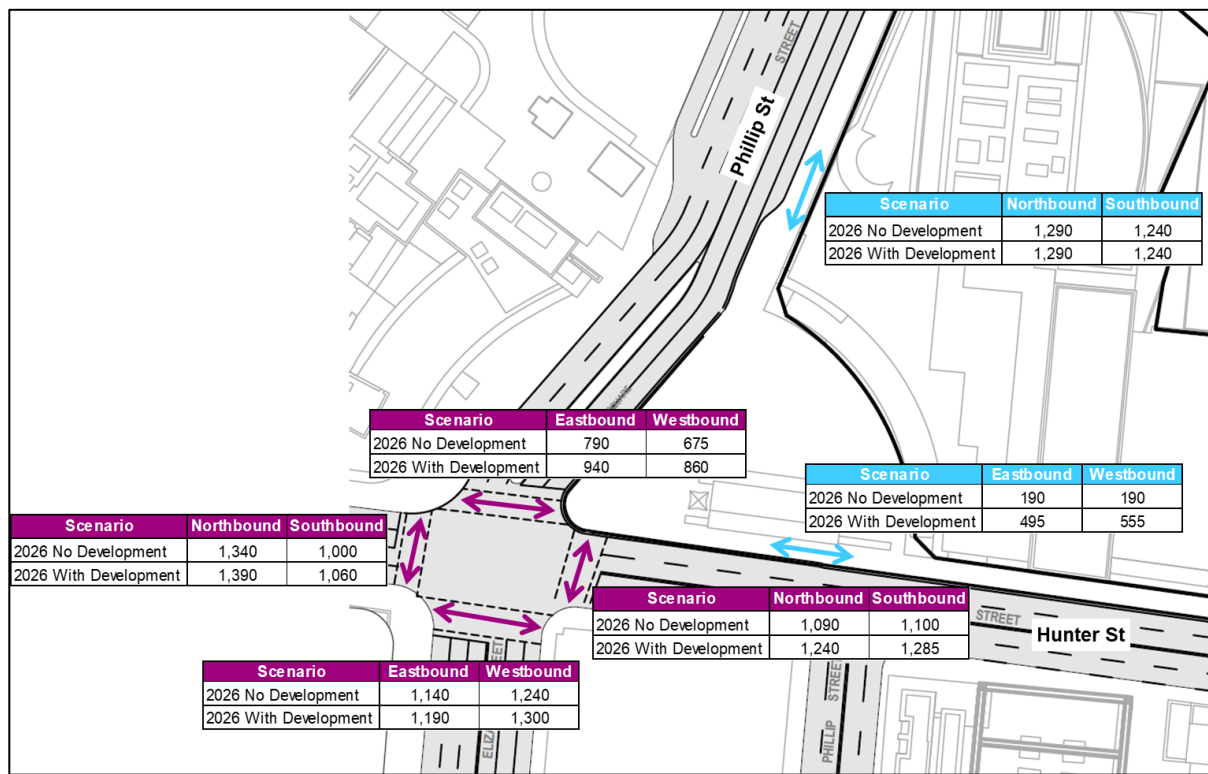
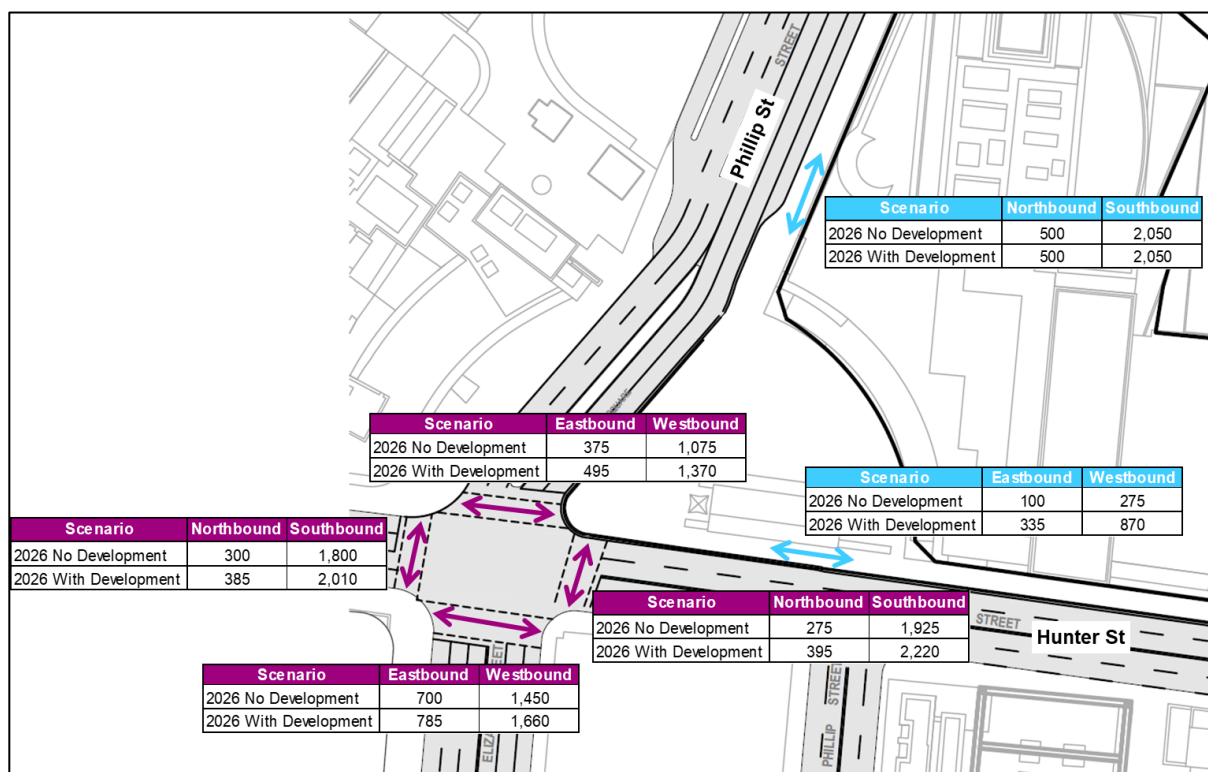


Figure 32 PM Peak pedestrian flows



6.3.1 Walkway Performance

To assess the performance of walkways, the total bidirectional flow at each location of interest is considered. Figure 34 to Figure 36 present the walkways performance for:

- The eastern footpath on Phillip Street.
- The northern footpath on Hunter Street.
- All crossing arms at the Hunter Street / Elizabeth Street intersection.

The footpath performance presented here is for the peak minute. The average performance over the peak hour was also calculated but is not presented in this section as the peak minute performance is the predominant limiting factor. Results for the peak hour average and the in-depth analysis steps can be found in Appendix A. The performance results show that:

- The eastern footpath on Phillip Street performs at Fruin LoS B and PCL D during all scenarios and peak periods. This places it within the 'at risk' category as per Figure 28, indicating that pedestrians may feel uncomfortable walking through this area during the busiest periods and may consider using alternative routes. However, it is noted that the peak hour average PCL (refer to Appendix A) performs at PCL B- and that there is a colonnade immediately adjacent to the assessed footpath, which can be used by pedestrians for additional circulation space during the busier periods. As such, the footpath performance can be considered acceptable / comfortable for pedestrians. The additional demand from the development is not expected to significantly affect the footpath performance.
- Without the new development, the northern footpath on Hunter Street performs at Fruin LoS A during all scenarios and periods. The additional demand from the development causes the PCL performance to slightly worsen from PCL A in 2026 No Development to PCL B in 2026 With Development. This performance is still acceptable and thus the development generated demand is not seen to significantly affect the footpath performance.

For the crossings, the presented performance includes the effect of signal phasing. When the crossing performs at PCL B or worse, it becomes more likely that pedestrians will spill out beyond the marked pedestrian crossing due to perceived comfort. The performance results show that for the Hunter Street / Elizabeth Street intersection:

- All crossing legs are seen to perform at PCL C or worse for 2026 No Development. This indicates that the marked crossing lines are not wide enough to cater for the expected crossing flows and that pedestrians are likely to cross outside of the marked lines due to perceived comfort. As the performance worsens to PCL D/E for some legs, there is also an increased risk of crossing close to the live traffic lanes.
- For 2026 With Development, comfort levels are expected to slightly worsen with more pedestrians using the crossings. However, the relative impact of the proposed development is minor in comparison to the prior performance and does not impact the overall outcome of the performance assessment.

As noted, the development itself is not expected to cause a significant impact on the surrounding street network. Issues identified at the Hunter Street / Elizabeth Street intersection are already present without the development. Changes to improve pedestrian performance could be implemented by the City of Sydney and other stakeholders. These solutions include adjusting the signal phase timings for more pedestrian green time and increasing the marked pedestrian crossing line widths. Other strategies may also be required, such as demand management through providing more attractive alternative routes for pedestrians.

Figure 33 Walkway performance keys**Fruin LoS Criteria for Walkways**

A	B	C	D	E	F	
∞	3.25	2.32	1.39	0.93	0.46	m ² /ped
0	23	33	49	66	82	ped/min/m

TfL PCL Criteria for Walkways

A+	A	A-	B+	B	B-	C+	C	C-	D	E	
0	3	6	9	12	15	18	21	24	27	35	ped/min/m
<3%	13%	22%	31%	41%	50%	59%	69%	78%	100%	100%	Restricted movement

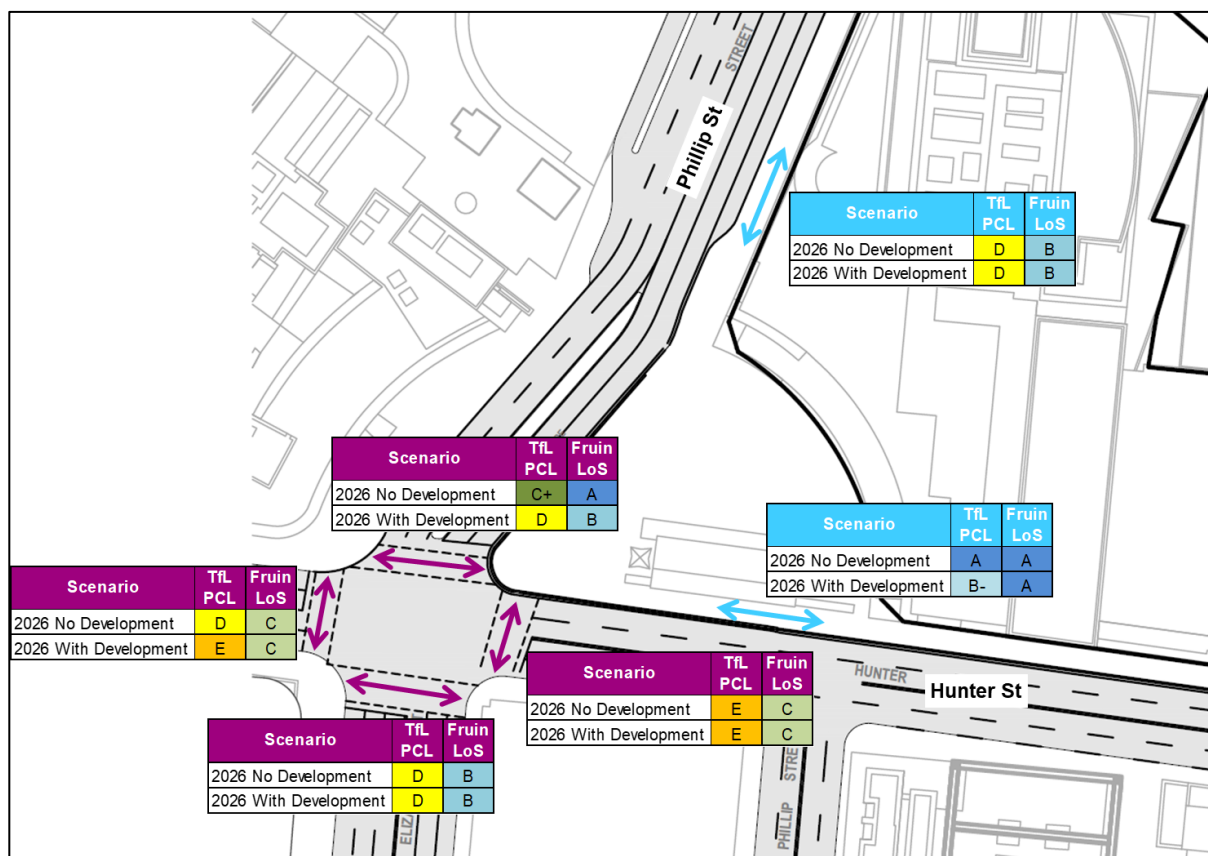
Figure 34 AM Peak footpath and crossing walkway performance

Figure 35 Midday Peak footpath and crossing walkway performance

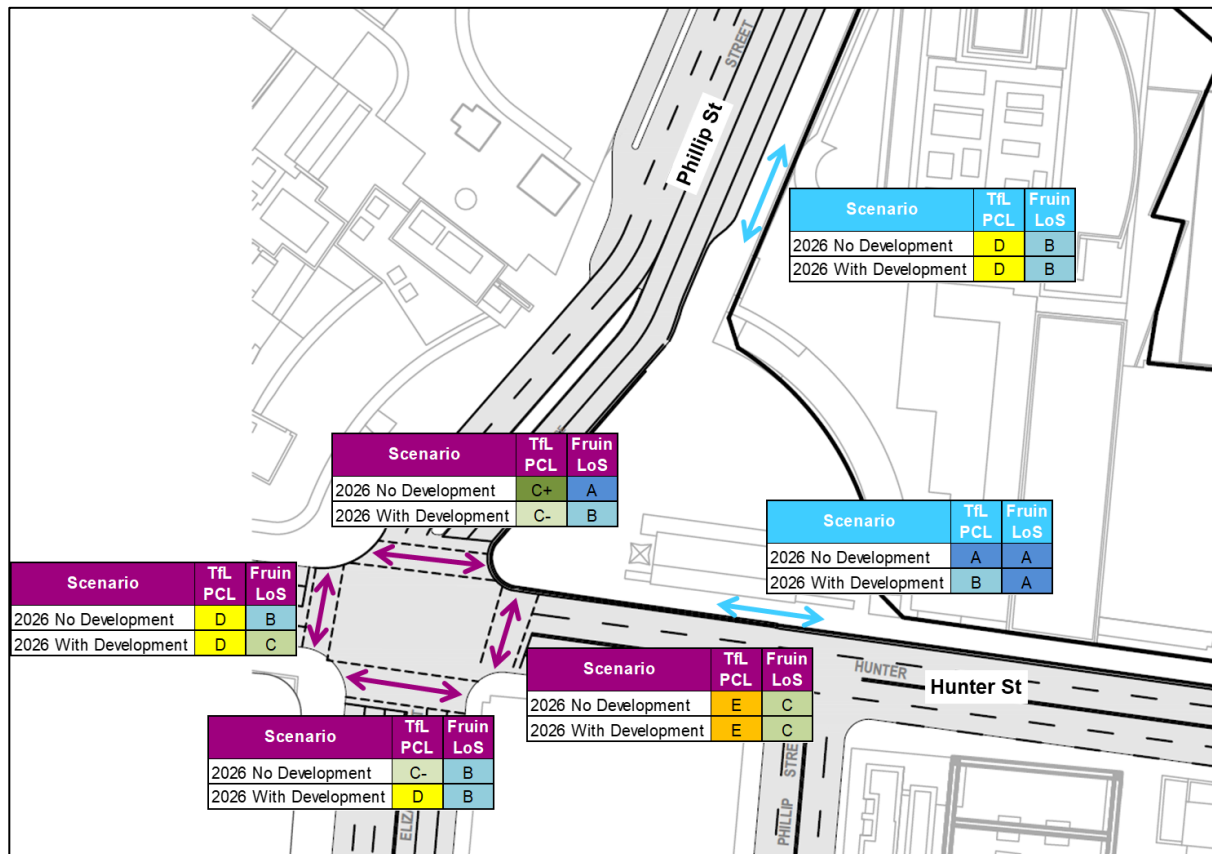
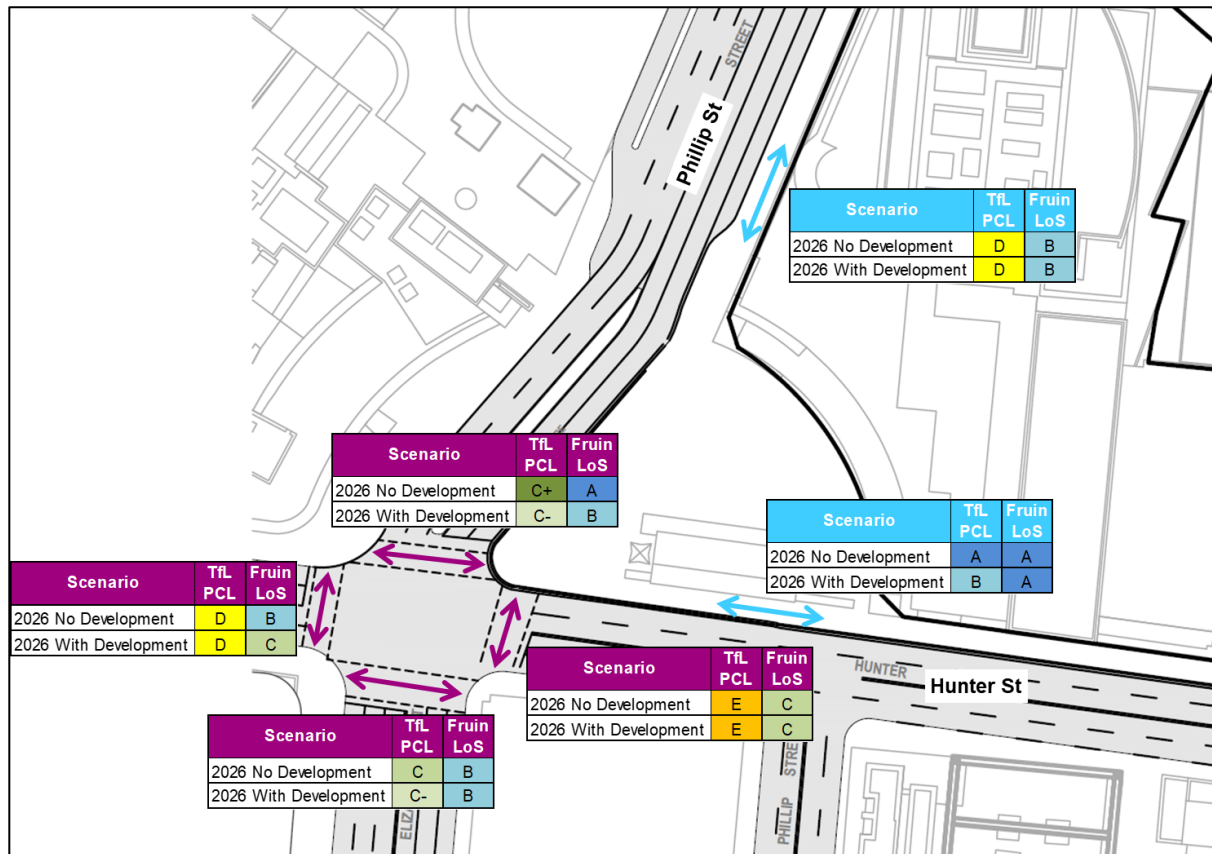


Figure 36 PM Peak footpath and crossing walkway performance



6.3.2 Queuing Performance

To assess the performance of the footpath storage space for pedestrian crossings, the directional flow at each crossing arm, footpath dimensions and signal phasing are considered. A uniform arrival at the crossings has been assumed over the peak hour. The indicative pedestrian storage space assumed for each crossing arm and direction (see Table 13) provides for a 1.5 metre corridor for non-crossing pedestrians to pass.

Figure 38 to Figure 40 present the queuing performance at the Hunter Street / Elizabeth Street intersection. The performance results show that:

- Without the new development, Fruin LoS D is experienced at the west arm by northbound movements during the AM peak and at both east and west arms by southbound movements during the PM peak. Pedestrians can be expected to spill out of the indicative storage space and noticeably obstruct other movements at the intersection.
- Without the new development, Fruin LoS C is notably experienced at the east and west arms during the midday peak, as well as by eastbound movements on the southern arm during the AM peak. This performance level indicates an increased likelihood for queuing outside of the indicative storage space and obstruction to other movements.
- The additional demand from the proposed development does not have a significant impact on the observed crossing storage performance levels.

Note that the available space for the southwest corner has been based on the layout prior to construction of Sydney Metro City and Southwest. It is understood that corner will be turned into a plaza for the new north entrance of Martin Place Station. This will likely improve pedestrian storage situation for that corner, although no plans of the proposed design were received as for the purposes of this assessment. However, even with improved storage space performance for the southwest corner, performance concerns still remain for the northwest and northeast corners.

As noted, the development itself is not expected to cause a significant impact on the surrounding street network. Issues identified at the Hunter Street / Elizabeth Street intersection are already present without the development.

To address queuing performance concerns at the northeast corner of the Hunter Street / Elizabeth Street intersection, a reconfiguration of Chifley Square could be considered to increase the pedestrian storage space for the southbound movement. This could be done in conjunction with a widening of the footpath to meet City of Sydney guidance and improve pedestrian amenity from existing, as noted in Section 6.2.2.

Other changes to improve the Hunter Street / Elizabeth Street intersection would require involvement by the City of Sydney and other stakeholders. These solutions include adjusting the signal phase timings for more pedestrian green time and increasing the pedestrian storage space for the other corners. Other strategies may also be required, such as demand management through providing more attractive alternative routes for pedestrians.

Figure 37 Queuing performance key

Fruin LoS Criteria for Queuing

A	B	C	D	E	F	
∞	1.21	0.93	0.65	0.28	0.19	m ² /ped

Figure 38 AM Peak crossing storage queuing performance

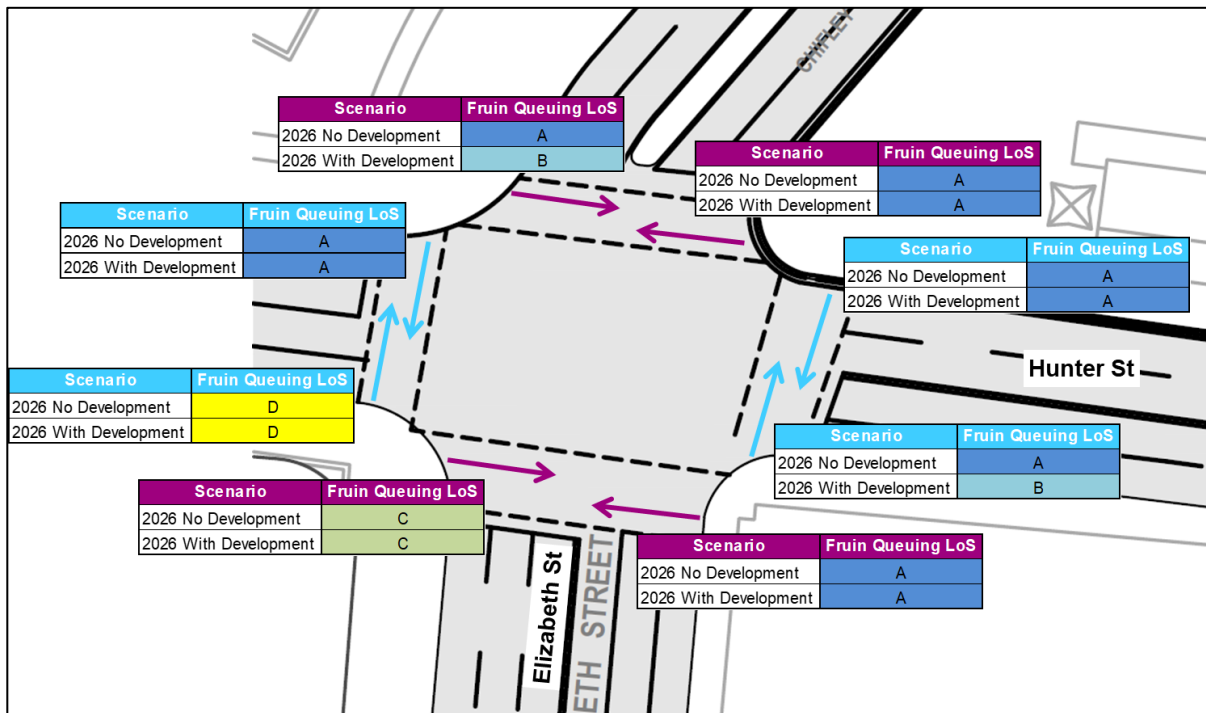


Figure 39 Midday Peak crossing storage queuing performance

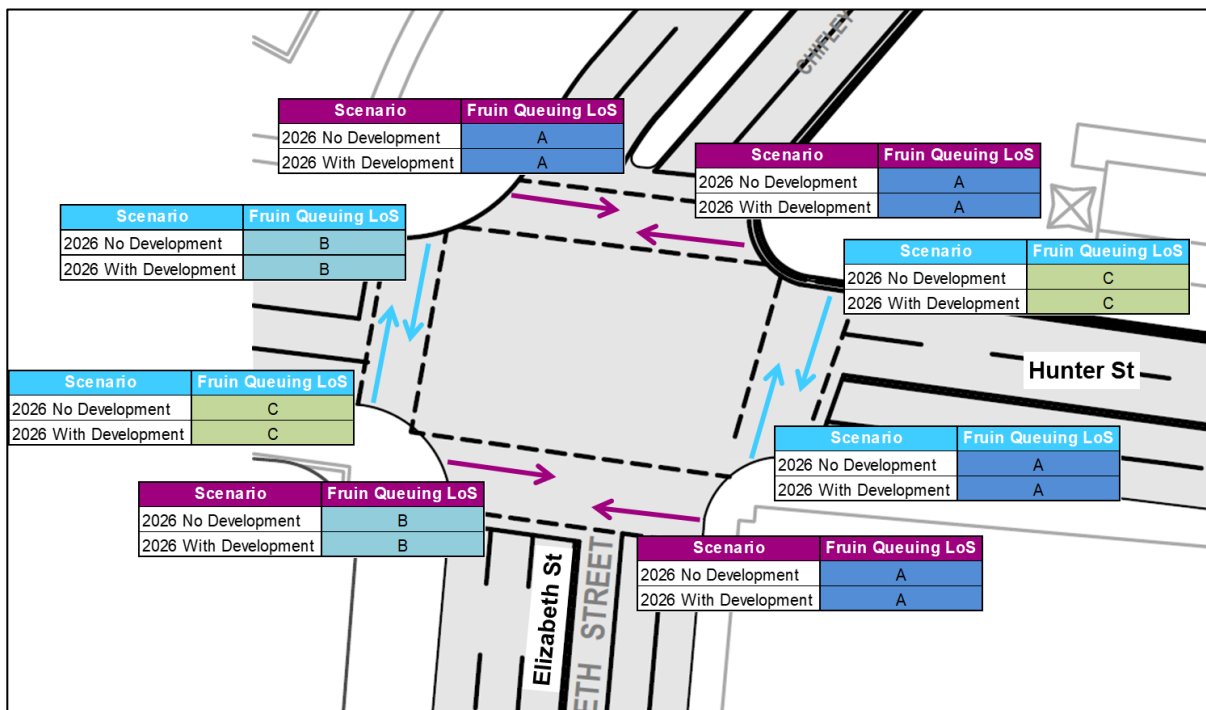
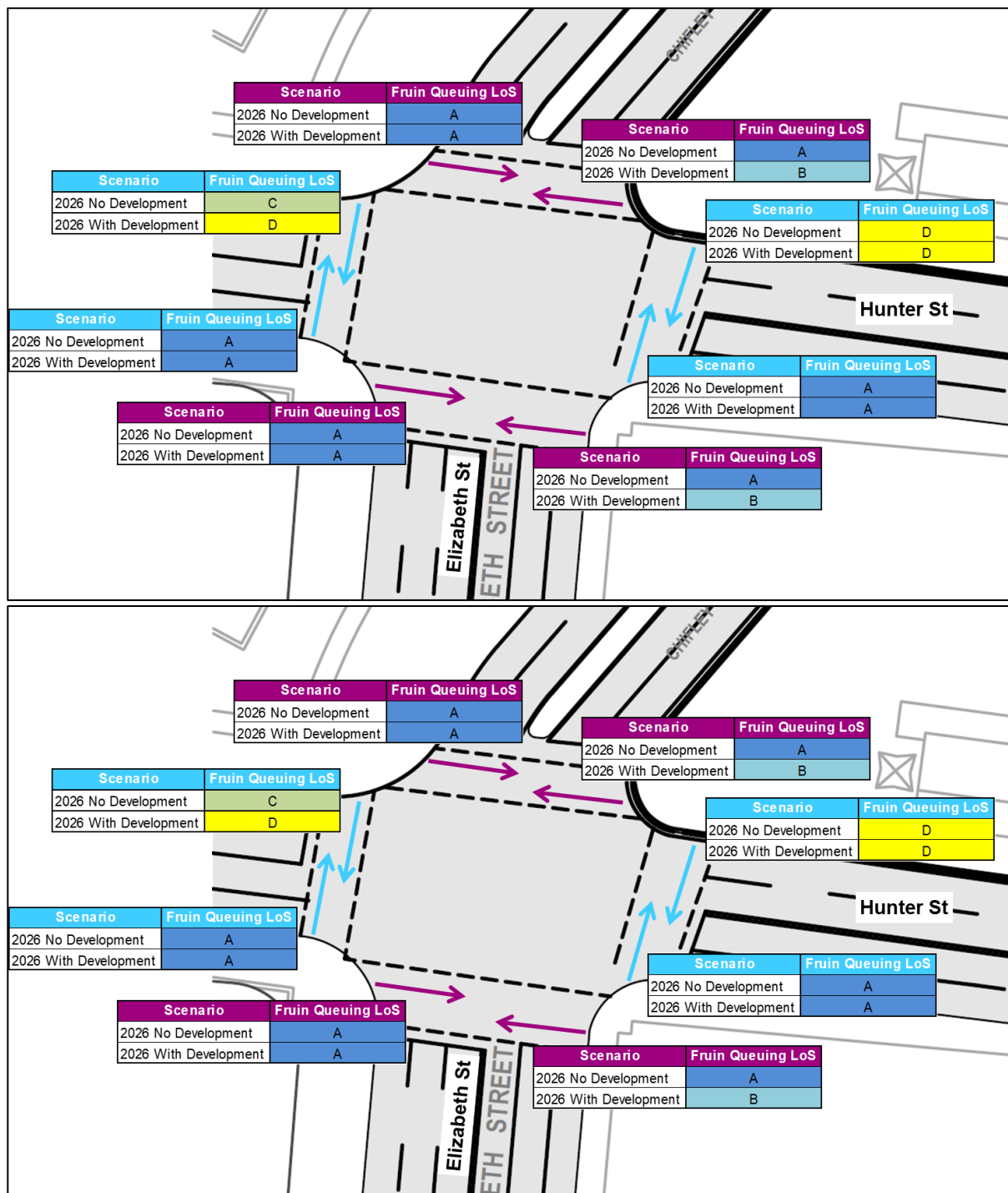


Figure 40 PM Peak crossing storage queuing performance



7.0 Measures to Promote Sustainable Travel

7.1 Introduction

A Sustainable Travel Strategy (STS) for Chifley Square is designed to encourage the use of public transport, walking and cycling wherever possible for all journey purposes. Where alternatives to the car are not viable, options to encourage car sharing can be promoted to minimise the need for single occupancy vehicle travel. The benefits of similar strategies are now widely understood to include:

- Reducing air and noise pollution and other types of negative environmental impact;
- Improving fitness, health and wellbeing due to increased physical activity;
- Reducing traffic congestion and associated road network delays and costs;
- Reducing the need for costly road infrastructure upgrades (which research has shown only serves to attract additional vehicle traffic, necessitating future highway upgrades);
- Helping residents save money by reducing their need to own and operate motor vehicles;
- Improving travel options, particularly for non-drivers or non-car owners;
- Reducing the need for parking provision and maximising land opportunity for other uses;
- Supporting strategic land use planning objectives, such as reduced urban sprawl; and
- Improving local environmental quality and community cohesion.

Implementing a STS will assist Chifley Square in achieving its strategic direction of becoming a commercial precinct which provides for healthy and active lifestyles, does not negatively adversely impact on the environment, seeks to address sustainability and climate change objectives, and does not lead to unnecessary vehicle trip generation and highway network congestion.

The role of the STS for Chifley Square is to encourage local trips by bus, bicycle and walking wherever possible and longer distance trips by bus and rail, by making these modes viable and realistic alternatives. This is facilitated through the location of Chifley Square close to key public transport networks and highly permeable pedestrian and bicycle networks around Chifley Square including crossing facilities and end-of-trip facilities such as bicycle parking.

7.2 Proposed sustainable travel measures

The measures support delivery of the high-level transport and travel demand management objectives and support the wider principles discussed. This is how the precinct planning process will deliver a sustainable precinct, in which travel by car is not the only option for workers, staff and visitors to make the journeys they wish to make.

The measures include a range of different types of initiatives which together reinforce the principles and objectives of the sustainable travel strategy. These measures include:

1. Travel behaviour measures – Initiatives to encourage sustainable travel.
2. Services measures – Service delivery standards to maximise potential uptake of sustainable modes
3. Infrastructure measures – Provision of infrastructure designed to facilitate sustainable travel

The following measures will assist Chifley Square achieve a high level of sustainable travel users.

a. Public transport network coverage

Due to its location within the Sydney CBD, Chifley Square will be well serviced by public transport including bus, train, light rail and ferry services. The public transport network covers a significant portion of Sydney and can accommodate trips from the north, south, east and west. The network is well linked to residential areas as well as other services such as entertainment, recreation facilities and retail. The introduction of the new metro station at Martin Place in 2024 will further improve the public transport connectivity.

b. Dedicated, high quality cycle routes around Chifley Square

Cycle routes are provided around Chifley Square to connect the development with residential areas, public transport and other facilities. As part of the City of Sydney Cycling strategy and action plan 2018 – 2030, the city council has committed to improve the existing cycling infrastructure through additional shared paths, separated cycleways and improved connections between existing infrastructure. In addition, the City also provides public bicycle parking spaces in the area. The routes will be a dedicated bicycle network which provides high quality infrastructure designed to make bicycle travel attractive, convenient, safe and efficient. In this way bicycle travel can be a realistic alternative, especially for local travel.

c. Bicycle facilities

To maximise cycle usage throughout the site and the wider precinct, the provision of sufficient end of trip facilities, such as bicycle parking, at key locations is essential and will be provided in the Proposal. The facilities will also include lockers, shower and changerooms. The facilities will be clearly marked, and signage will be provided.

d. A highly permeable and safe pedestrian network around Chifley Square

A high-quality pedestrian network is provided around Chifley Square through continuous pedestrian footpaths and pedestrian crossing facilities at key locations. The design of a high quality, highly permeable pedestrian network with limited delays to walk trips and which is pleasant, convenient, direct and integrated with land uses will encourage and facilitate pedestrian accessibility.

In addition to the factors described above, the pedestrian network provides well-lit pedestrian links which can be observed from local land uses and as such provide pedestrians with a perception of safety and ambience which can encourage pedestrian travel.

e. No parking provided for retail areas

The Chifley Square development does not include any parking provisions for retail areas. Therefore, customers wanting to access the retail areas via private vehicles must park elsewhere. This would generally include parking in paid parking locations which are very limited in number within the Sydney CBD. This measure will actively reduce the car dependence and encourage the uptake of other more sustainable modes.

f. Reduced parking rates for commercial areas

The Chifley Square development will reduce the number of parking spaces provided, despite an increase in commercial area. Not only would this discourage any vehicular trips to be generated from the additional commercial area, but it would also discourage some of the existing commercial tenants currently travelling by private car to and from the site to alter to more sustainable travel patterns. This measure will actively reduce the car dependence and encourage the uptake of other modes, aligning with the City of Sydney's active encouragements to reduce car parking bays in new developments.

8.0 Summary and Conclusion

A traffic and transport assessment has been prepared to determine the potential traffic, transport and pedestrian impacts as a result of the Planning Proposal. The following elements were assessed:

- A review of existing traffic and transport conditions
- A qualitative assessment of the impact of the proposed planning controls on the surrounding road network, public transport infrastructure and active transport infrastructure
- A quantitative assessment of the impact of additional pedestrian demand on the surrounding street network generated from potential future increased density on the site resulting from the proposed planning controls
- Measures to promote sustainable transport.

Existing traffic and transport conditions:

- A comprehensive public transport network services Chifley Square. The public transport network facilitates movements to most of Sydney. Services are frequent, particularly during the peak hours. Bus and rail stations are located within 200 metres of the site and light rail and ferry stations are located within 500 metres of the site.
- Chifley Square is well connected with cycle routes and is surrounded with comprehensive pedestrian infrastructure, including an internal north-south link connecting Bent St and Hunter St. Shared paths are located next to the site which connect the development with bicycle routes to the east and north. Separated cycle paths are located near the site which facilitate movements to the south and west.

Traffic Impact Assessment:

- The existing basement parking levels contains 361 car parking spaces. In line with the objectives of the City, Charter Hall is committed to reducing the number of car parking spaces provided on the site by up to 50% despite the increase in development yield on the site. Therefore, the result of this would likely mean a reduction in the number of vehicular trips generated by the combined development.
- The proposed loading dock arrangements will service both the existing building and the proposed additional development. The reference design loading dock contains a total of 21 service vehicle spaces provided in the proposed loading dock area and basement car park. This includes six medium rigid vehicles spaces, two of which will be accessed via a turntable, five small rigid vehicles spaces and 10 courier spaces. Due to the complementary land uses of the development and the existing spaces being sufficient for the existing building operation, the proposed 21 service vehicle spaces is considered acceptable. An additional 18 spaces are reserved as overflow spaces which could be converted to courier spaces if required.
- A Loading Dock Management Plan will be prepared which will include information on which vehicles are able to access the loading zone and will organise the service vehicle demand such that there is no queuing of service vehicles. The Plan will ensure that all vehicles accessing the loading dock fit within the low 3.4 metre vertical clearance.
- Charter Hall is committed to providing sufficient bicycle parking spaces and associated facilities, which will be determined at a later stage through the Development Application process.
- Using the *RMS Guide to Traffic Generating Developments (TDT 2013/04)*, it is estimated that the proposal will generate demand for an additional 70 vehicles to the surrounding road network during the PM peak period. These additional vehicles will be generated by the new commercial tower. There is a reduction in the retail area in the proposed development compared to the existing site, and so zero additional trips have been designated to the retail areas. It is not expected that the development will negatively impact the performance of the surrounding road network.

Pedestrian Impact Assessment

- The development does not significantly affect performance outcomes for the surrounding street network in 2026. Pedestrian performance issues which were identified during this assessment were still present without development related demands. The key driver of increased pedestrian demands in the street network is anticipated to be the introduction of Sydney Metro.
- The pedestrian impact assessment identified the following issues, which occur in scenarios both with and without the proposed development:
 - The Phillip Street eastern side footpath is estimated to perform at PCL D. However, there is additional circulation space available in the adjacent colonnade which would allow for acceptable pedestrian comfort to be maintained. Additional pedestrian demand from the proposed new development was found to have only a minor impact to PCL, and hence this footpath performance is considered acceptable / comfortable for pedestrians.
 - For the Hunter Street / Elizabeth Street intersection, some crossing legs were found to perform at PCL C or worse, indicating capacity constraints at the crossings. Additional pedestrian demand from the proposed new development was found to have only a minor impact to crossing performance, and therefore the new development does not impact the overall outcome of the performance assessment.
 - For the Hunter Street / Elizabeth Street intersection, some pedestrian crossing storage areas were found to perform at LoS D, indicating risk of excessive queueing and conflicts between waiting and circulating pedestrians. Additional pedestrian demand from the proposed new development was found to have only a minor impact to queueing performance, and therefore the new development does not impact the overall outcome of the performance assessment.
- Although pedestrian performance issues are not driven by the development, a reconfiguration of Chifley Square would provide an opportunity to increase the pedestrian storage space at the northeast corner of the Hunter Street / Elizabeth Street intersection.
- Other measures to improve the Hunter Street / Elizabeth Street intersection would require involvement by the City of Sydney and other stakeholders. These solutions include adjusting the signal phase timings for more pedestrian green time, increasing the marked pedestrian crossing line widths, increasing the pedestrian storage space for other the corners and demand management through providing more attractive alternative routes for pedestrians.

Measures to promote sustainable travel

- Implementing a Sustainable Travel Strategy (STS) will assist Chifley Square in achieving its strategic direction of becoming a commercial precinct which provides for healthy and active lifestyles, does not negatively adversely impact on the environment, seeks to address sustainability and climate change objectives, and does not lead to unnecessary vehicle trip generation and highway network congestion.
- Measures to promote sustainable travel include:
 - Travel behaviour measures – Initiatives to encourage sustainable travel.
 - Services measures – Service delivery standards to maximise potential uptake of sustainable modes
 - Infrastructure measures – Provision of infrastructure designed to facilitate sustainable travel

Appendix A

Detailed Pedestrian Analysis Outputs

Criteria

TfL PCL

Lower Limit (ppl/min/m)	Upper Limit (ppl/min/m)	LoS
0	3	A+
3	6	A
6	9	A-
9	12	B+
12	15	B
15	18	B-
18	21	C+
21	24	C
24	27	C-
27	35	D
36		E

Fruin Walkways

Lower Limit (ppl/min/m)	Upper Limit (ppl/min/m)	LoS
0	23	A
23	33	B
33	49	C
49	66	D
66	82	E
82		F

Fruin Queuing

Lower Limit (ppl/sqm)	Upper Limit (ppl/sqm)	LoS
0	0.83	A
0.83	1.08	B
1.08	1.54	C
1.54	3.59	D
3.59	5.38	E
5.38		F

Inputs

	Footpath Width (m)	Building & Curb Edge Effect (m)	Furniture Width & Buffer (m)
Hunter St North Side	3.6	0.4	0.6
Phillip St East Side	4.5	0.4	1.5

	Crossing Arm Width (m)	Pedestrian Green Time (s)	Total Cycle Time (s)	Northbound/ Eastbound Queuing Area (sqm)	Southbound/ Westbound Queuing Area (sqm)
Hunter/Elizabeth North Arm	3.6	28	83	25	20
Hunter/Elizabeth East Arm	3.6	22	83	40	15
Hunter/Elizabeth South Arm	4.5	28	83	20	30
Hunter/Elizabeth West Arm	4.5	22	83	20	20

TfL Guidance

Footpaths

	HIGH STREET		OFFICE AND RETAIL		RESIDENTIAL		TOURIST ATTRACTION		TRANSPORT INTERCHANGE	
	Peak	Ave of Max	Peak	Ave of Max	Peak	Ave of Max	Peak	Ave of Max	Peak	Ave of Max
A	COMFORTABLE		COMFORTABLE		COMFORTABLE		COMFORTABLE		COMFORTABLE	
B+	ACCEPTABLE				ACCEPTABLE		ACCEPTABLE			
B-	AT RISK		ACCEPTABLE				AT RISK		ACCEPTABLE	
C+	UNACCEPTABLE/ UNCOMFORTABLE				AT RISK		UNACCEPTABLE/ UNCOMFORTABLE			
C-			AT RISK	AT RISK					AT RISK	AT RISK
D					UNACCEPTABLE/ UNCOMFORTABLE					
E										
	Peak and Average of Maximum Activity levels have similar guidance as people visiting retail areas stated they were particularly sensitive to crowding.		The "at risk" level is set at a lower PCL during the Average of Maximum Activity than peak flows. This is because of the greater number of single travellers and the short duration of maximum activity.		The "at risk" level is set at a lower PCL than peak flows in Residential Areas to reflect the short time this is likely to occur. A site visit to Residential sites is particularly important to check if there is school activity or a bus stand in the area.		Peak and Average of Maximum Activity levels have similar guidance as people visiting tourist areas are likely to be particularly sensitive to crowding		The "at risk" level is set at a lower PCL during the Average of Maximum Activity than peak flows. This is because of the greater number of single travellers and the short duration of maximum activity.	

Crossings

The crossing continues to be comfortable at PCL B+ to B-. PCL B- is the recommended level of comfort for crossing arm and the space required for people to cross on an island (if present).

Pedestrian Comfort Level on the Crossing arm is C-, D or E

The Pedestrian Comfort Level could be improved by adjusting the signal timings, increasing the width of the crossing or a combination of these two measures.

The crossing should then be re-assessed to ensure the solution will be comfortable for users.

Footpaths - Hunter St

Scenario	Peak Minute Multiplier	Peak Hour Flow (ppl/h)	Total Footpath Width (m)	Edge Effect (m)	Furniture Width & Buffer (m)	Clear Footpath Width (m)	Peak Hour Average Flow (ppl/min/m)	Peak Hour Average TfL PCL	Peak Hour Average Fuin	Peak Minute Flow (ppl/min/m)	Peak Minute TfL PCL	Peak Minute Fuin	TfL Classification (Office & Retail)
North Side - AM													
2026 No Development	1.72	375	3.6	0.4	0.6	2.6	2	A+	A	4	A	A	Comfortable
2026 With Development	1.72	1379	3.6	0.4	0.6	2.6	9	A-	A	15	B-	A	Acceptable
North Side - MID													
2026 No Development	2.01	375	3.6	0.4	0.6	2.6	2	A+	A	5	A	A	Comfortable
2026 With Development	2.01	1054	3.6	0.4	0.6	2.6	7	A-	A	14	B	A	Comfortable
North Side - PM													
2026 No Development	1.76	375	3.6	0.4	0.6	2.6	2	A+	A	4	A	A	Comfortable
2026 With Development	1.76	1210	3.6	0.4	0.6	2.6	8	A-	A	14	B	A	Comfortable

Footpath - Phillip St

Scenario	Peak Minute Multiplier	Peak Hour Flow (ppl/h)	Total Footpath Width (m)	Edge Effect (m)	Furniture Width & Buffer (m)	Clear Footpath Width (m)	Peak Hour Average Flow (ppl/min/m)	Peak Hour Average TfL PCL	Peak Hour Average Fuin	Peak Minute Flow (ppl/min/m)	Peak Minute TfL PCL	Peak Minute Fuin	TfL Classification (Office & Retail)
East Side - AM													
2026 No Development	1.72	2500	4.5	0.4	1.5	2.6	16	B-	A	28	D	B	At Risk
2026 With Development	1.72	2500	4.5	0.4	1.5	2.6	16	B-	A	28	D	B	At Risk
East Side - MID													
2026 No Development	2.01	2525	4.5	0.4	1.5	2.6	16	B-	A	33	D	B	At Risk
2026 With Development	2.01	2525	4.5	0.4	1.5	2.6	16	B-	A	33	D	B	At Risk
East Side - PM													
2026 No Development	1.76	2550	4.5	0.4	1.5	2.6	16	B-	A	29	D	B	At Risk
2026 With Development	1.76	2550	4.5	0.4	1.5	2.6	16	B-	A	29	D	B	At Risk

Crossing Flow - Hunter/Elizabeth St

Scenario	Peak Hour Flow (ppl/h)	Crossing Arm Width (m)	Pedestrian Green Time (s)	Total Cycle Time (s)	Pedestrian Green %	Peak Hour Average Flow (ppl/min/m)	Relative Peak Hour Average Flow (ppl/min/m)	Relative Peak Hour Average Tfl PCL	Relative Peak Hour Average Fuin	Meets Tfl Suggested PCL for Crossings?
North Arm - AM										
2026 No Development	1475	3.6	28	83	34%	7	20	C+	A	No
2026 With Development	1977	3.6	28	83	34%	9	27	D	B	No
East Arm - AM										
2026 No Development	2175	3.6	22	83	27%	10	38	E	C	No
2026 With Development	2677	3.6	22	83	27%	12	47	E	C	No
South Arm - AM										
2026 No Development	2600	4.5	28	83	34%	10	29	D	B	No
2026 With Development	2956	4.5	28	83	34%	11	32	D	B	No
West Arm - AM										
2026 No Development	2575	4.5	22	83	27%	10	36	D	C	No
2026 With Development	2931	4.5	22	83	27%	11	41	E	C	No
North Arm - MID										
2026 No Development	1463	3.6	28	83	34%	7	20	C+	A	No
2026 With Development	1802	3.6	28	83	34%	8	25	C-	B	No
East Arm - MID										
2026 No Development	2188	3.6	22	83	27%	10	38	E	C	No
2026 With Development	2527	3.6	22	83	27%	12	44	E	C	No
South Arm - MID										
2026 No Development	2375	4.5	28	83	34%	9	26	C-	B	No
2026 With Development	2488	4.5	28	83	34%	9	27	D	B	No
West Arm - MID										
2026 No Development	2338	4.5	22	83	27%	9	33	D	B	No
2026 With Development	2451	4.5	22	83	27%	9	34	D	C	No
North Arm - PM										
2026 No Development	1450	3.6	28	83	34%	7	20	C+	A	No
2026 With Development	1867	3.6	28	83	34%	9	26	C-	B	No
East Arm - PM										
2026 No Development	2200	3.6	22	83	27%	10	38	E	C	No
2026 With Development	2617	3.6	22	83	27%	12	46	E	C	No
South Arm - PM										
2026 No Development	2150	4.5	28	83	34%	8	24	C	B	No
2026 With Development	2446	4.5	28	83	34%	9	27	C-	B	No
West Arm - PM										
2026 No Development	2100	4.5	22	83	27%	8	29	D	B	No
2026 With Development	2396	4.5	22	83	27%	9	33	D	C	No

Queuing Space - Hunter/Elizabeth St

Scenario	Peak Hour Flow (ppl/h)	Queuing Space (sqm)	Pedestrian Green Time (s)	Total Cycle Time (s)	Pedestrian Green %	Cycles per Hour	Pedestrians Crossing per Cycle	Queue Density (ppl/sqm)	Queuing Fruin LoS	Relative Queue Density (ppl/sqm)	Relative Queuing Fruin LoS
North Arm Eastbound - AM											
2026 No Development	1200	25	28	83	34%	43.37	28	1.11	C	0.73	A
2026 With Development	1554	25	28	83	34%	43.37	36	1.43	C	0.95	B
North Arm Westbound - AM											
2026 No Development	275	20	28	83	34%	43.37	6	0.32	A	0.21	A
2026 With Development	423	20	28	83	34%	43.37	10	0.49	A	0.32	A
East Arm Northbound - AM											
2026 No Development	1900	40	22	83	27%	43.37	44	1.10	C	0.80	A
2026 With Development	2254	40	22	83	27%	43.37	52	1.30	C	0.95	B
East Arm Southbound - AM											
2026 No Development	275	15	22	83	27%	43.37	6	0.42	A	0.31	A
2026 With Development	423	15	22	83	27%	43.37	10	0.65	A	0.48	A
South Arm Eastbound - AM											
2026 No Development	1575	20	28	83	34%	43.37	36	1.82	D	1.20	C
2026 With Development	1826	20	28	83	34%	43.37	42	2.10	D	1.39	C
South Arm Westbound - AM											
2026 No Development	1025	30	28	83	34%	43.37	24	0.79	A	0.52	A
2026 With Development	1130	30	28	83	34%	43.37	26	0.87	B	0.58	A
West Arm Northbound - AM											
2026 No Development	2375	20	22	83	27%	43.37	55	2.74	D	2.01	D
2026 With Development	2626	20	22	83	27%	43.37	61	3.03	D	2.22	D
West Arm Southbound - AM											
2026 No Development	200	20	22	83	27%	43.37	5	0.23	A	0.17	A
2026 With Development	305	20	22	83	27%	43.37	7	0.35	A	0.26	A
North Arm Eastbound - MID											
2026 No Development	788	25	28	83	34%	43.37	18	0.73	A	0.48	A
2026 With Development	942	25	28	83	34%	43.37	22	0.87	B	0.58	A
North Arm Westbound - MID											
2026 No Development	675	20	28	83	34%	43.37	16	0.78	A	0.52	A
2026 With Development	860	20	28	83	34%	43.37	20	0.99	B	0.66	A
East Arm Northbound - MID											
2026 No Development	1088	40	22	83	27%	43.37	25	0.63	A	0.46	A
2026 With Development	1242	40	22	83	27%	43.37	29	0.72	A	0.53	A
East Arm Southbound - MID											
2026 No Development	1100	15	22	83	27%	43.37	25	1.69	D	1.24	C
2026 With Development	1285	15	22	83	27%	43.37	30	1.97	D	1.45	C
South Arm Eastbound - MID											
2026 No Development	1138	20	28	83	34%	43.37	26	1.31	C	0.87	B
2026 With Development	1189	20	28	83	34%	43.37	27	1.37	C	0.91	B
South Arm Westbound - MID											
2026 No Development	1238	30	28	83	34%	43.37	29	0.95	B	0.63	A
2026 With Development	1299	30	28	83	34%	43.37	30	1.00	B	0.66	A
West Arm Northbound - MID											
2026 No Development	1338	20	22	83	27%	43.37	31	1.54	D	1.13	C
2026 With Development	1389	20	22	83	27%	43.37	32	1.60	D	1.18	C
West Arm Southbound - MID											
2026 No Development	1000	20	22	83	27%	43.37	23	1.15	C	0.85	B
2026 With Development	1062	20	22	83	27%	43.37	24	1.22	C	0.90	B
North Arm Eastbound - PM											
2026 No Development	375	25	28	83	34%	43.37	9	0.35	A	0.23	A
2026 With Development	494	25	28	83	34%	43.37	11	0.46	A	0.30	A
North Arm Westbound - PM											
2026 No Development	1075	20	28	83	34%	43.37	25	1.24	C	0.82	A
2026 With Development	1373	20	28	83	34%	43.37	32	1.58	D	1.05	B
East Arm Northbound - PM											
2026 No Development	275	40	22	83	27%	43.37	6	0.16	A	0.12	A
2026 With Development	394	40	22	83	27%	43.37	9	0.23	A	0.17	A
East Arm Southbound - PM											
2026 No Development	1925	15	22	83	27%	43.37	44	2.96	D	2.17	D
2026 With Development	2223	15	22	83	27%	43.37	51	3.42	D	2.51	D
South Arm Eastbound - PM											
2026 No Development	700	20	28	83	34%	43.37	16	0.81	A	0.53	A
2026 With Development	784	20	28	83	34%	43.37	18	0.90	B	0.60	A
South Arm Westbound - PM											
2026 No Development	1450	30	28	83	34%	43.37	33	1.11	C	0.74	A
2026 With Development	1662	30	28	83	34%	43.37	38	1.28	C	0.85	B
West Arm Northbound - PM											
2026 No Development	300	20	22	83	27%	43.37	7	0.35	A	0.25	A
2026 With Development	384	20	22	83	27%	43.37	9	0.44	A	0.33	A
West Arm Southbound - PM											
2026 No Development	1800	20	22	83	27%	43.37	42	2.08	D	1.53	C
2026 With Development	2012	20	22	83	27%	43.37	46	2.32	D	1.70	D

Appendix B

TfL PCL Spreadsheet Guidance

Footpaths: Peak Hour Average PCL	TfL Spreadsheet Guidance
A+, A, A-, B+	The footway on this site should be comfortable for its intended use at most times. However, you may need to reassess the site in future.
B, B-	Location width should be increased. If this is not possible, it is important that the footway is kept as clear as possible.
C+, C, C-	Location width should be increased. If this is not possible, it is important that the footway is kept as clear as possible. If this is a retail area, note that visitors will start to think about avoiding the area.
D	This footway is likely to be very uncomfortable. If it is an existing footway and it is not possible to increase the width it is important that the footway is kept as clear as possible. If it is a design, it is very important to increase the footway width.
E	This footway is likely to be extremely uncomfortable. If it is an existing footway and it is not possible to increase the width it is important that the footway is kept as clear as possible. If it is a design, it is very important to increase the footway width.

Footpaths: Average of Maximum Activity PCL	TfL Spreadsheet Guidance
A+, A, A-, B+	Even when under additional stress, the footway on this site should be comfortable.
B, B-	This level of comfort is appropriate for periods of additional stress for all Area Types
C+, C, C-	This level of comfort is appropriate for periods of additional stress in Office and Retail and Transport Interchange sites.
D	This footway is likely to be very uncomfortable. If possible, the footway width should be increased. If this is not possible, it is important that the footway is kept as clear as possible.
E	This footway is likely to be extremely uncomfortable. If possible, the footway width should be increased. If this is not possible, it is important that the footway is kept as clear as possible.

Crossings: Peak Hour Average PCL	TfL Spreadsheet Guidance
A+, A, A-, B+, B, B-	The crossing should be comfortable for its intended use, at most times. However you may need to re-assess the crossing in future if significant changes occur in land use or pedestrian activity.
C+, C, C-, D, E	There is not enough space for people to use the crossing arm comfortably. This could be improved by adjusting the signal times, increasing the width of the crossing or a combination of these two measures.