Macquarie

Sydney Metro Martin Place integrated station development

North Tower, SSD DA Stage 2: Transport, Traffic, Pedestrian and Parking Report

CSWSMP-MAC-SMN-TF-REP-999901

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Job number 247838

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Contents

Appendices

Amendments following authority submissions

This report is the version of the Transport, Traffic, Pedestrian and Parking report that was submitted with the EIS for the **North Site** Over Station Development (OSD). It has been augmented, having regard to the submissions received to the exhibition of the EIS.

The table below provides a summary of the relevant comments received, along with the sections where they have been addressed in the report. Where sections of the report have been edited, or where new sections have been included, the relevant text is highlighted in *italics*.

Agency	Comment	Report Reference
Department of Planning and Environment	Clarify the detailed design and management of the proposed shared use of loading, EOT and other service facilities for the whole of the Precinct, including: • Efficiency of shared use of facilities with consideration of security, capacity and user experience (ease of use and safety) • Detailed design of the loading areas with respect to relevant Australian Standards • Comparison with Sydney DCP 2012 requirements • Details of any necessary agreement/covenants to support on-going shared use and management.	• See 4.4 for detail of shared use facilities and agreements. • See 4.6 for comparison with DCP requirements. • See 4.7 for design of loading dock and Appendix B for swept path analysis
City of Sydney Council	• The applications include the provision of bicycle parking, loading and end of trip facilities for the south site within the basement of the north site (literally an entire street block away). • The provision of the bicycle parking and end of trip facilities in a different building a block away is not supported. The City recommends that the southern basement be redesigned to fully accommodate the required parking and facilities. Bicycle parking and end of trip facilities should be provided in accordance with Sydney DCP 2012. • In regards to the sharing of the loading dock, this arrangement could potentially be supported subject to the provision of a dedicated service corridor directly connecting the north and south basements, and subject to the creation of the appropriate easements to benefit the south site. • Otherwise, it is noted that the small loading dock on the south site does not appear to have sufficient clearance heights.	• See 4.4 for detail of shared use facilities and description of internal travel routes. • See 4.6 for comparison with DCP requirements • South site loading dock has a height clearance of 3.6m which is typical for commercial CBD loading docks and vehicle types expected. Waste collection will be by a private contractor. • See Appendix A for management of loading

TfNSW	**Point to Point Services** **Comment** • The Transport, Traffic, Pedestrian and Parking Report prepared to support the development application does not include details in relation to point to point transport services for the proposed development. **Recommendation** • It is requested that further details be provided in consultation with the Sydney Coordination Office as part of the applicant's response to submissions for the following: • Likely demand for point to point transport (particularly during peak periods) and how point to point transport services accessing the proposed development will be catered for on the surrounding transport network; and • Potential kerbside locations that are available to accommodate future demand for point to point transport services.	See section 4.9 for estimated demand for Point to Point services. Existing taxi ranks are highlighted along with zones where pick-up and drop-off are permitted. In addition, Sydney Metro are developing an Interchange Access Plan in satisfaction of the conditions of the CSSI approval, which will set out any proposals for point to point services. Development of this plan is on-going. Anticipated features are described.
	Freight and Servicing **Comment** It is noted that a draft Loading Dock Management Plan (LDMP) has been prepared to support the development application. The LDMP identifies that the development's servicing requirements cannot be accommodated solely within the development's loading dock without the implementation and use of the following measures: • Supply chain consolidation; • Operation of an off-site consolidation centre; and • Providing resilience in contingency situations through the North Tower loading dock. TfNSW advises that it has previously discussed the use of these measures with the applicant to ensure that the freight and servicing requirements of the development can be accommodated entirely within the on-site loading dock. TfNSW strongly supports and encourages the use of these measures which provide numerous benefits for the traffic and transport network. These include • reducing the number of vehicles entering the CBD and using the road network, • reducing the number of vehicles entering the loading dock, • ensuring all freight and service activity is accommodated within the onsite loading dock; and • reducing the likelihood of vehicles servicing the development contributing to traffic queues and congestion. To ensure the development is adequately serviced now and into the future, TfNSW recommends the	A LDMP has been prepared for the site and is presented in Appendix A.

	applicant be conditioned to implement and maintain these measures for the life of the development, or until such time as alternative arrangements are approved by TfNSW which continue to ensure that the freight and servicing task is accommodated wholly within the on-site loading dock. It is also advised that the LDMP needs to include management of conflicts between pedestrians and service vehicles using the loading bays, including the provision of signage/marked walkways. **Recommendation** It is requested that (as stated in TAB B): • The applicant be conditioned to prepare the final LDMP; and • The applicant be conditioned to implement and use supply chain consolidation and off-site consolidation in conjunction with the on-site loading dock, and provide resilience through the North Tower in contingency situations, for the life of the development or until such time as alternative arrangements are approved by TfNSW which continue to ensure that the freight and servicing task is accommodated wholly within the on-site loading dock; and • The LDMP is implemented once the development is operational in order to manage the freight and servicing associated with the proposed development. **TAB B conditions:** **Prior to the Issue of the Occupation Certificate** • The Applicant shall prepare the final Loading Dock Management Plan (LDMP) in consultation with Sydney Coordination Office within TfNSW and submit the final LDMP for the review and endorsement of the Coordinator General, Transport Coordination within TfNSW prior to the issue of the Occupation Certificate. **Post Occupation** • The Applicant shall implement the Loading Dock Management Plan in order to manage the freight and servicing associated with the development. • The Applicant shall implement and use supply chain consolidation and off-site consolidation in conjunction with the development's on-site loading dock, and provide resilience in contingency situations through the North Tower loading dock, to adequately accommodate the development's servicing requirements, in consultation with the Sydney Coordination Office within TfNSW. The use of all these measures shall be maintained for the life of the development, or until such time as alternative arrangements are approved by TfNSW which continue to ensure that the freight and servicing	

	task is accommodated wholly within the on-site loading dock.	
	TAB B condition: **Construction Pedestrian and Traffic Management** **Prior to the Commencement of Works** The Applicant shall update the draft Construction Pedestrian and Traffic Management Plan (CPTMP) in consultation with the Sydney Coordination Office within TfNSW and provide a copy of the final CPTMP for the review and endorsement of the Coordinator General, Transport Coordination, prior to the commencement of any works on site. The CPTMP shall include, but not be limited to, the following: • Consistency with the Construction Traffic Management Framework prepared as part of the Sydney Metro City and Southwest; • Loading and unloading details, including the locations of all proposed work zones; • Haulage routes; • Construction vehicle access arrangements; • Proposed construction hours; • Estimated number and type of construction vehicle movements including morning and afternoon peak and off peak movements, distinguishing concrete pours from other construction activity and noting that construction vehicles would be restricted from using work zones on Castlereagh Street and Elizabeth Street during certain times of the day; • Construction program, highlighting details of peak construction activities and proposed construction 'Staging'; • Details of specific measures to ensure the arrival of construction vehicles to the site does not cause additional queuing on Elizabeth Street, Hunter Street, Castlereagh Street and King Street; • Details of construction vehicle marshalling areas outside the CBD; • Details of pedestrian and traffic management measures; • The staging of works and simultaneous construction with other projects in the precinct including the Sydney Light Rail Project, Sydney Metro City and Southwest and private development to mitigate the cumulative construction impacts of projects; • Any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works; and • Measures proposed to mitigate any associated general traffic, public transport, pedestrian and	A revised CPTMP has been prepared and is presented in Appendix D.

	cyclist impacts should be clearly identified and included in the CPTMP.	
Roads and Maritime Services	Roads and Maritime has reviewed the submitted application and whilst raises no objection to the proposed development, has provided some advisory comments in regards to the application's, Transport, Traffic, Pedestrian and Parking report in Annexure A. Annexure A: Transport Assessment Section 4.2 'Future Mode Share' • "The removal of the majority on-site car parking is anticipated to reduce the car driver mode share to just 3% with a subsequent increase in the public transport and active travel mode shares as result", however in Section 8: Conclusion "No car parking is being provided as part of the development". Confirmation is required as to which of the above statement is accurate.	• It is confirmed that no parking is being provided as part of the development (note four existing spaces at 50 Martin Place are being retained). • See section 4.2 for clarity on car driver mode share.

1 Introduction

This report supports a State Significant Development (SSD) Development Application (DA) (SSD DA) submitted to the Minister for Planning (Minister) pursuant to Part 4 of *the Environmental Planning and Assessment Act 1979* (EP&A Act) on behalf of Macquarie Corporate Holdings Pty Limited (Macquarie), who is seeking to create a world class transport and employment precinct at Martin Place, Sydney.

The SSD DA seeks approval for the detailed design and construction of the **North Site** Over Station Development (OSD), located above and integrated with Metro Martin Place station (part of the NSW Government's approved Sydney Metro project). The northern entrance to Metro Martin Place station will front Hunter Street, Elizabeth Street and Castlereagh Street, with the North Site OSD situated above.

This application follows the approval granted by the Minister for a Concept Proposal (otherwise known as a Stage 1 SSD DA) for two OSD commercial towers above the northern and southern entrances of Metro Martin Place station (SSD 17_8351). The approved Concept Proposal establishes building envelopes, land uses, Gross Floor Areas (GFA) and Design Guidelines with which the detailed design (otherwise known as a Stage 2 SSD DA) must be consistent. This application does not seek approval for elements of the Metro Martin Place Precinct (the Precinct) which relate to the Sydney Metro City and Southwest project, which is subject to a separate Critical State Significant Infrastructure (CSSI) approval. These include:

- Demolition of buildings on the North Site and South Site;
- Construction of rail infrastructure, including station platforms and concourse areas;
- Ground level public domain works; and
- Station related elements in the podium of the North Tower.

However, this application does seek approval for OSD areas in the approved Metro Martin Place station structure, above and below ground level, which are classified as SSD as they relate principally to the OSD. These components are within the Sydney Metro CSSI approved station building that will contain some OSD elements not already approved by the CSSI Approval. Those elements include the end of trip facilities, office entries, office space and retail areas, along with other office/retail plant and back of house requirements that are associated with the proposed OSD and not the rail infrastructure.

This report describes the transport, traffic, parking and access features of the North Site OSD and the associated impacts. The report includes background information, the existing and likely estimated future traffic and transport conditions, a description of the proposed OSD development and an assessment of the transport and traffic impact. The report also includes mitigation measures where required. Appended to this report is a 'Loading Dock Management Plan'

for the development, as well as a Green Travel Plan and Framework Construction Traffic Management Plan.

Context

The New South Wales (NSW) Government is implementing Sydney's Rail Future (Transport for NSW, 2012), a plan to transform and modernise Sydney's rail network so that it can grow with the city's population and meet the needs of customers in the future.

Sydney Metro is a new standalone rail network identified in Sydney's Rail Future. The Sydney Metro network consists of Sydney Metro Northwest (Stage 1) and Sydney Metro City and Southwest (Stage 2).

Stage 2 of Sydney Metro entails the construction and operation of a new metro rail line from Chatswood, under Sydney Harbour through Sydney's CBD to Sydenham and onto Bankstown through the conversion of the existing line to metro standards. The project also involves the delivery of seven (7) new metro stations, including Martin Place.

This step-change piece of public transport infrastructure once complete will have the capacity for 30 trains an hour (one every two minutes) through the CBD in each direction catering for an extra 100,000 customers per hour across the Sydney CBD rail lines.

On 9 January 2017 the Minister approved the Stage 2 (Chatswood to Sydenham) Sydney Metro application lodged by Transport for NSW (TfNSW) as a Critical State Significant Infrastructure (CSSI) project (reference SSI 15_7400). Work is well underway under this approval, including demolition of buildings at Martin Place.

The OSD development is subject to separate applications to be lodged under the relevant provisions of the EP&A Act. One approval is being sought for the North Site – this application – and one for the South Site via a separate application.

Site Description

The Metro Martin Place Precinct relates to the following properties (refer to Figure 1):

- 50 Martin Place, 9 – 19 Elizabeth Street, 8 – 12 Castlereagh Street, 5 Elizabeth Street, 7 Elizabeth Street, and 55 Hunter Street (North Site);
- 39 – 49 Martin Place (South Site); and
- Martin Place (that part bound by Elizabeth Street and Castlereagh Street).

This application relates **only to the North Site**, being the city block bounded by Hunter Street, Castlereagh Street, Elizabeth Street, and Martin Place (refer to Figure 1).

The South Site (39 – 49 Martin Place) is the subject of a separate Stage 2 SSD DA.

Figure 1: Aerial Photo of the North and South Site of the Metro Martin Place Precinct

Background

Sydney Metro Stage 2 Approval (SSI 15_7400)

The Sydney Metro CSSI Approval approves the demolition of existing buildings at Martin Place, excavation and construction of the new station (above and below ground) along with construction of below and above ground structural and other components of the future OSD, although the fit-out and use of such areas are the subject of separate development approval processes.

On 22 March 2018, the Minister approved Modification 3 to the Sydney Metro CSSI Approval. This enabled the inclusion of Macquarie-owned land at 50 Martin Place and 9-19 Elizabeth Street within Metro Martin Place station, and other associated changes (including retention of the opening to the existing MLC pedestrian link).

Concept Proposal (SSD 17_8351)

On 22 March 2018, the Minister approved a Concept Proposal (SSD 17_8351) relating to Metro Martin Place Precinct. The Concept Proposal establishes the

planning and development framework through which to assess the detailed Stage 2 SSD DAs.

Specifically, the Concept Proposal encompassed:

- Building envelopes for OSD towers on the North Site and South Site comprising:
    - 40+ storey building on the North Site (see
    - Figure 2)
    - 28+ storey building on the South Site
    - Concept details to integrate the North Site with the existing and retained 50 Martin Place building (the former Government Savings Bank of NSW)
- Predominantly commercial land uses on both sites, comprising office, business and retail premises
- A maximum total GFA of 125,437m^2 across both sites
- Design guidelines to guide the built form and design of the future development
- A framework for achieving design excellence
- Strategies for utilities and services provision, managing drainage and flooding, and achieving ecological sustainable development
- Conceptual OSD areas in the approved Metro Martin Place Metro station structure, above and below ground level[1]

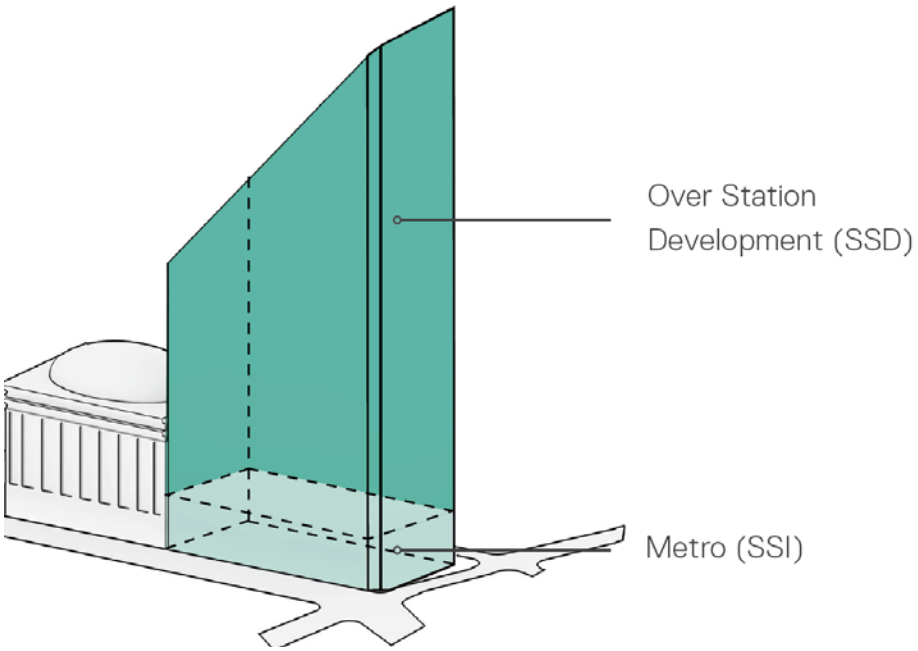

Figure 2: North Site Approved OSD Building Envelope

[1] *Refers to those components within the Metro CSSI approved station envelope that will contain some OSD elements not approved in the CSSI consent. Those elements include the end of trip facilities, office entries, office space and retail areas, along with other office/retail plant and back of house requirements that are associated with the proposed OSD and not the rail infrastructure.*

Planning Proposal (PP_2017_SYDNE_007_00) - Amendment to Sydney LEP 2012

The Planning Proposal (PP_2017_SYDNE_007_00) sought to amend the development standards applying to the Metro Martin Place Precinct through the inclusion of a site-specific provision in the Sydney Local Environmental Plan (LEP) 2012. This site-specific provision reduced the portion of the **South Site** that was subject to a 55 metre height limit from 25 metres from the boundary to Martin Place, to 8 metres, and applies the Hyde Park North Sun Access Plane to the remainder of the South Site, forming the height limit of the tower. It also permits a revised FSR of 22:1 on the South Site and 18.5:1 on the North Site. These amendments were gazetted within Sydney LEP 2012 (Amendment No. 46) on 8 June 2018 and reflect the new planning controls applying to the Precinct.

Overview of the Proposed Development

The subject application seeks approval for the detailed design, construction and operation of the North Tower. The proposal has been designed as a fully integrated station and OSD project that intends to be built and delivered as one development, in-time for the opening of Sydney Metro City and Southwest in 2024. This application seeks consent for the following:

- The design, construction and operation of a new 39 storey commercial OSD tower (plus rooftop plant) within the approved building envelope for the North Site, including office space and retail tenancies.
- Physical connections between the OSD podium and the existing 50 Martin Place building, to enable the use of the North Site as one integrated building.
- Vehicle loading areas within the basement levels.
- Extension and augmentation of physical infrastructure / utilities as required.
- Detailed design and delivery of 'interface areas' within both the approved station and Concept Proposal envelope that contain OSD-exclusive elements, such as end of trip facilities, office entries, office space and retail areas not associated with the rail infrastructure.

Planning Approvals Strategy

The *State Environmental Planning Policy (State and Regional Development) 2011* (SEPP SRD) identifies development which is declared to be State Significant. Under Schedule 1 and Clause 19(2) of SEPP SRD, development within a railway corridor or associated with railway infrastructure that has a capital investment value of more than $30 million and involves commercial premises is declared to be State Significant Development (SSD) for the purposes of the EP&A Act. The proposed development (involving commercial development that is both located within a rail corridor and associated with rail infrastructure) is therefore SSD.

Pursuant to Section 4.22 of the EP&A Act a Concept DA may be made setting out concept proposals for the development of a site (including setting out detailed proposals for the first stage of development), and for which detailed proposals for

the site are to be the subject of subsequent DAs. This SSD DA represents a detailed proposal and follows the approval of a Concept Proposal on the site under Section 4.22 of the EP&A Act.

Submitted separately to this SSD DA is a SSD DA for the South Site (Stage 2 South Site SSD DA). A Stage 1 Amending SSD DA to the Concept Proposal (Stage 1 Amending DA) has also been submitted that has the effect of aligning the approved South Site envelope with the new planning controls established for the South Site (achieved through the site specific amendment to the Sydney LEP 2012).

Figure 3 below is a diagrammatic representation of the suite of key planning applications undertaken or proposed by Macquarie and their relationship to the subject application (the subject of this report).

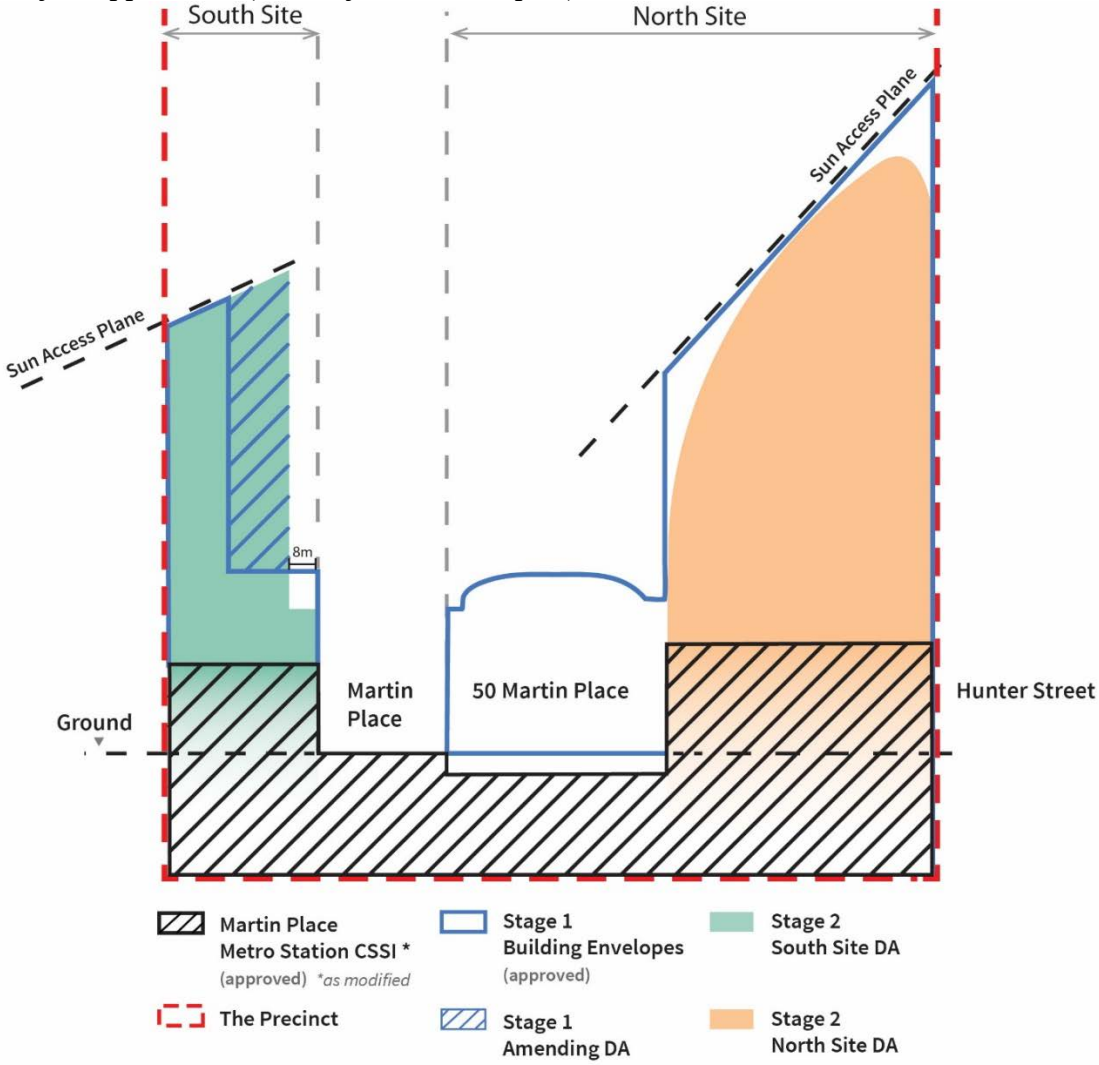

Figure 3: Relationship of key planning applications to the Stage 2 North Site DA (this application)

The Department of Planning and Environment have provided Secretary's Environmental Assessment Requirements (SEARs) to the applicant for the

preparation of an Environmental Impact Statement for the proposed development. This report has been prepared having regard to the SEARs as follows:

The EIS shall include a traffic, parking and access assessment that includes:

- details of the current and likely estimated future mode share resulting from the proposed development, including a comparison against the mode share assessed in the stage 1 SSD - (see Section 4.2)
- details of the current and likely estimated future daily and peak hour vehicle, public transport, pedestrian and bicycle movements from the site, including an indication of whether related to the station or OSD, and any associated impacts and/or mitigation measures required - (see Section 4.3)
- measures to encourage users of the development to make sustainable travel choices, including a green travel plan, walking, cycling, public transport and car sharing, adequate provision of bicycle parking and end of trip facilities and minimum car parking provision – (see Section 4.4, 4.6 and the Green Travel Plan)
- modelling and analysis of pedestrian and cyclist access to the proposed development in consultation with TfNSW, together with an assessment of pedestrian and cyclist safety and consideration of the relationship with design and operation of the station - (see Section 4.4, 4.6 for description of access and Section 5.3 and 5.4 for analysis).
- details of existing and proposed vehicle access arrangements, including parking and loading dock access, with consideration given to combing vehicle entrances with any required for the station, and include an assessment of any potential impacts, such as potential pedestrian, cyclist and transport conflicts - (see Section 3.2 for existing and Section 4.7 for future access arrangements).
- loading dock servicing and management arrangements, including consideration of precinct wide shared loading docks and/or remote or off-site loading zone hub facilities – (see Section 4.7 and Loading Dock Management Plan).

The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the EP&A Regulation 2000. Provide these as part of the EIS rather than as separate documents.

In addition, the EIS must include the following:

- Transport, traffic and parking assessment, with public transport accessibility level assessment and draft green travel plan.

Table 1 Relevant Conditions of the Stage 1 Concept Proposal (SSD 8351) to be met as part of future development applications for Stage 2

No.	Condition	See Section
B7	Future Development Application(s) for the construction of new buildings shall be accompanied by an assessment of the traffic and transport impacts on the surrounding road network and intersection capacity, and demonstrate sufficient loading / unloading and access provision. The traffic and transport assessment shall have specific regard for the scope and timing of public transport upgrade infrastructure works in the surrounding road network.	See Section 3, 4, 5 and Loading Dock Management Plan
B8	Future Development Application(s) shall identify, through green travel plans, opportunities to maximise the use of sustainable transport choices, such as incentives and provision of cycle parking and end of trip facilities in the detailed design.	See Section 4, 5 and Green Travel Plan
B9	The Applicant shall provide a loading dock management plan, prepared in consultation with the Council and Sydney Coordination Office of TfNSW, with any Future Development Application(s). The loading dock management plan shall include, but not limited to, the following: a) Detailed swept path analysis of service vehicles accessing the loading docks b) Confirmation that vehicular access is located as far as reasonably practical away from the traffic control signals on Castlereagh Street and will not result in queuing on Castlereagh Street c) Sufficient capacity exists for the service vehicle demands of the development and Sydney Metro d) Management of incidents at the access to the loading docks e) Loading bay management details, including service vehicle movements during peak periods f) Management of conflicts between pedestrians and the service vehicles using the loading bays g) Arrangements to accommodate the development's servicing requirements, including consideration of off-site consolidation h) Identification of the precinct logistics infrastructure and activities that form part of the development i) Details of pre-booking system j) Details of certification with relevant standards, including relevant Australian Standards.	See Loading Dock Management Plan appended to report
B13	The Applicant shall provide a Construction Pedestrian and Traffic Management Plan (CPTMP), prepared in consultation with the Sydney Coordination Office of TfNSW, with any Future Development Application. The CPTMP shall be consistent with the Construction Traffic Management Framework prepared as part of the Sydney Metro City and Southwest and include, but not be limited to, the following: a) Loading and unloading, including the locations of all proposed work zones b) Haulage routes c) Construction vehicle access arrangements d) Proposed construction hours e) Estimated number and type of construction vehicle movements, including morning and afternoon peak and off peak movements, distinguishing concrete pours from other construction activity, and noting that construction vehicles would be restricted from using	See Draft CPTMP appended to report

	work zones on Castlereagh Street and Elizabeth Street during certain times of the day f) Construction program, highlighting details of peak construction activities and proposed construction staging g) Details of specific measures to ensure the arrival of construction vehicles to the site does not cause additional queuing on Elizabeth Street, Hunter Street, Castlereagh Street and King Street h) Details of any construction vehicle marshalling areas i) The staging of works and simultaneous construction with other projects in the area, including the Sydney Light Rail Project, Sydney Metro and other developments nearby, and identify mitigation measures to ensure the proposal can be constructed while the impacts to rail users (and their connections) are appropriately managed j) Any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works k) Measures proposed to mitigate any associated impacts of traffic, public transport, pedestrians and cyclists should be clearly identified and included in the draft CPTMP.	

2 Regulatory Transport Context

The following is a brief description of the transport planning provisions, goals and strategic planning objectives which are relevant to this Stage 2 application.

2.1 Sydney Local Environmental Plan 2012

The Sydney LEP 2012 applies to most of the City's local area and is made up of a written instrument and maps. It identifies the maximum number of on-site car parking spaces that can be provided for new developments based on their location and level of transport accessibility. The objective of the car parking rates is to minimise the amount of vehicular traffic generated because of the proposed development.

Clause 7.6 of Sydney LEP 2012 provides that the maximum number of car parking spaces for office and business premises.

No additional car parking spaces are proposed to be provided as part of the proposed development.

2.2 State Environmental Planning Policy (Infrastructure) 2007

The aim of this policy document is to facilitate the effective delivery of infrastructure across NSW. Clauses relevant to the development include:

Clause 88B: Development near proposed metro stations; and

Clause 104: Traffic generating development

The proposed development is aligned with these clauses.

2.3 Greater Sydney Region Plan

The Greater Sydney Region Plan, *A Metropolis of Three Cities* aims to align infrastructure and growth to restructure economic activity and access across the three cities:

- The established Eastern Harbour City – building on its recognised economic strength and addressing liveability and sustainability.
- The developing Central River City – investing in a wide variety of infrastructure and services and improving amenity.
- The emerging Western Parkland City – establishing the framework for the development and success of an emerging new city

In terms of connectivity, a key concept in the Plan is that of a 30-minute city that connects people to jobs, businesses, schools and services and supports the economic efficiency of trade gateways.

This proposal is consistent with the objectives of this Plan, improving the connectivity of the CBD and catering for additional employment needs.

2.4 Future Transport Strategy 2056

The Future Transport Strategy is an update of the 2012 Long Term Transport Master Plan for NSW. It is a 40-year strategy, supported by plans for regional NSW and for Greater Sydney.

The strategy outlines that transport is an enabler of economic and social activity and contributes to long term economic, social and environmental outcome.

The vision for the strategy is built on six outcomes which are

- Customer Focused
- Successful Places
- Growing the Economy
- Safety and Performance
- Accessible Services
- Sustainability

The proposed development is consistent with and helps to achieve these outcomes.

2.5 Sustainable Sydney 2030

The Vision for The City of Sydney is to be a green, global and connected city, leading the world in all three of these fields. Among the ten strategic directions for Sustainable Sydney are ‘integrated transport for a connected city’ and ‘a city for walking and cycling’. The proposed development is aligned with this vision, through its central location above a Metro and Train station as well as its provision of high quality end of trip facilities for pedestrians and cyclists.

2.6 Sydney’s Bus Future

Sydney’s Bus Future (Transport for NSW, 2013) provides the framework for improving and delivering more frequent and reliable bus services throughout Sydney. The core aim of the strategy is to provide an integrated bus network with seamless connections to other transport services.

The strategy also aims to tailor bus services to customer needs. In this vein, bus services will be focused into three key types, with associated priority and infrastructure investment:

- Rapid routes, which will use priority infrastructure, connect regionally throughout the city and have stops every 800m-1km
- Suburban routes, which will have stops every 400m and have mix of frequent ‘turn up and go’ and timetabled services

- Local routes, which will complete the network using local streets.

Employees of the proposed development will take advantage of these improved connections.

2.7 Sydney's Walking Future

Sydney's Walking Future (Transport for NSW, 2013) sets out a strategy to encourage people in Sydney to walk more through actions that make it a more convenient, better connected and safer mode of transport.

Key points to emerge from the strategy that are relevant to the proposed development include:

- NSW Government commitment to invest in new walking links that connect people to public transport.
- Prioritisation of investment in walking infrastructure to be prioritised within 2km of centres and public transport interchanges.
- Commitment to invest in walking facilities as part of the Transport Access Program, including improved circulation spaces around station precincts and safer walking links.

2.8 Sydney's Cycling Future

Sydney's Cycling Future (Transport for NSW, 2013) provides a framework for the way cycling is planned and prioritised in Sydney. It aims to grow the number of people cycling for transport by investing in safe, connected networks, making better use of existing infrastructure and fostering the formation of partnerships to develop cycling infrastructure. Key points to emerge from the strategy that are relevant to the proposed development include:

- A safe and connected bicycle network benefits the wider transport network by improving access to towns and centres, reducing congestion and increasing capacity on the public transport system.
- The promotion of safe separation of cyclists from motor vehicles and pedestrians where possible.
- Investment in bicycle infrastructure should be prioritised within 5km of public transport interchanges to provide improved connections.
- Promoting 'bike-and-ride' at major public transport interchanges including secure parking facilities integrated with public transport access.

The City of Sydney is moving towards a well-connected cycle network to improve accessibility for workers and visitors to the CBD. The development will encourage people to cycle by providing high quality End of Trip Facilities (EoTF) for employees and visitors.

2.9 Sydney's Light Rail Future

Sydney's Light Rail Future (Transport for NSW, 2012) provides a framework for the way light rail is planned and prioritised in Sydney. The plan identifies four stages for the future of light rail, including the provision of the CBD and South East Light Rail.

This line will be an attractive option to employees and visitors of the development, with Wynyard being the nearest stop.

2.10 Relevant Policies and Guidelines

The following documents have been considered in the development of this report:

- Sydney Streets Design Code and Sydney Streets Technical Specification used to inform any modifications to the street network.
- Roads and Maritime Services (RMS) Guide to Traffic Generating Developments used to inform the traffic assessment undertaken for the project.
- EIS Guidelines – Road and Related Facilities used to inform the preparation of the transport strategy, in particular the assessment of transport impacts.
- NSW Planning Guidelines for Walking and Cycling and NSW Bicycle Guidelines. These documents have been used to inform the development of the walking and cycling measures proposed in this strategy.
- Guide to Traffic Management – Part 12: Traffic Impacts of Developments (AUSTROADS). This guide has been referenced for the appropriate methodology to be used for traffic impact assessment of the development.

3 Existing Transport Conditions

This section of the report provides the transport context in which the development exists, describing the existing travel patterns of employees in the vicinity of the development site, the accessibility of the development site by various travel modes, the availability of on-street and off-street parking and the kerbside lane controls in place surrounding the North Site.

The North Site OSD site is located in the Sydney CBD and is predominantly surrounded by other commercial developments as shown in Figure 4. To the north is 66 Hunter Street and 1 Chifley Square (both commercial buildings). To the west are commercial buildings 1, 9 and 15 Castlereagh Street which have a small amount of ground floor retail. To the east is 8-12 Chifley Square while to the south is 50 Martin Place (the existing Macquarie Building).

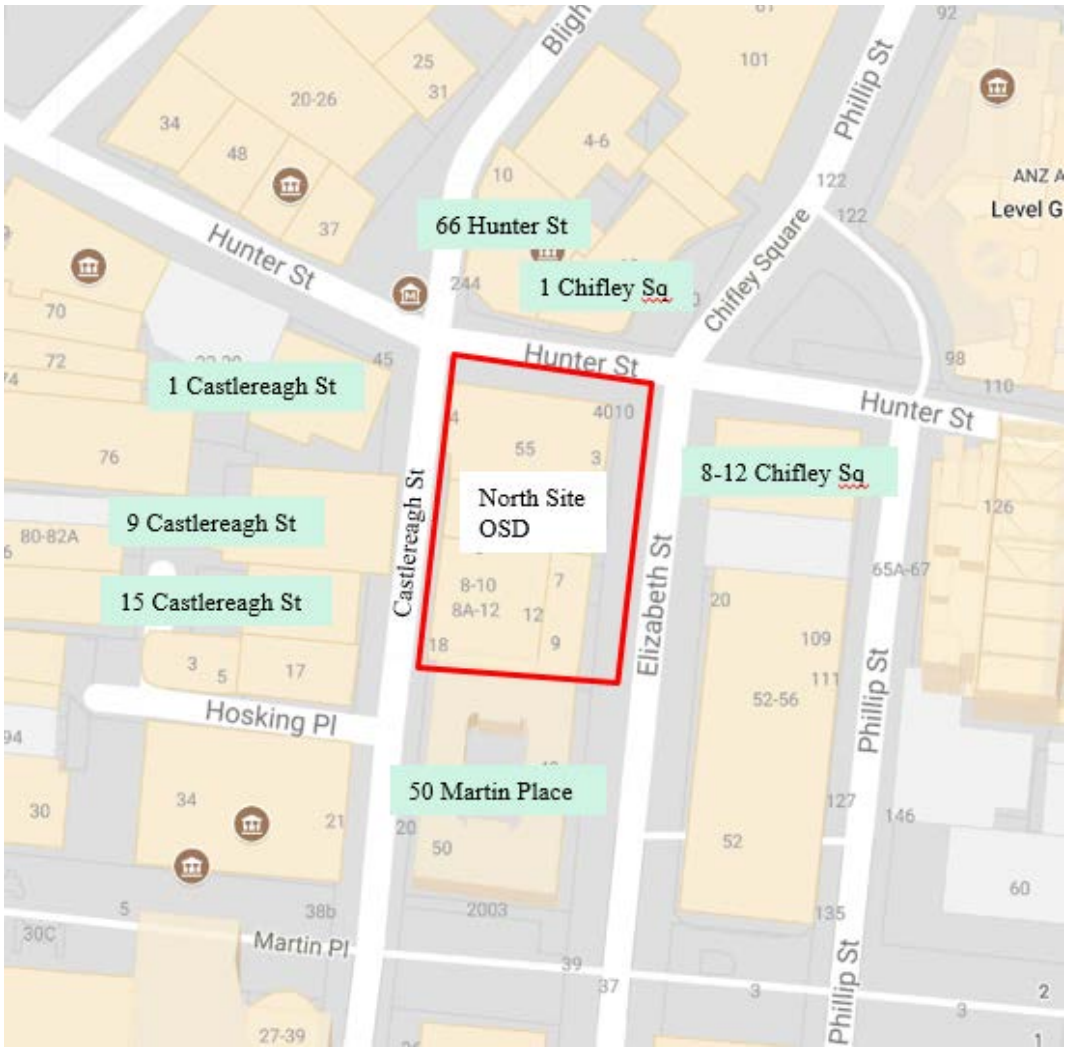

Figure 4: Site location and surrounding development

3.1 Existing Travel Patterns / Mode Share

Census Journey to Work (2016) data has been used to analyse the existing commuter travel behaviour in the area and characterise the public transport conditions in the vicinity of the proposed development site.

The 'Destination Zone' (DZN[2]) to which these statistics apply is the block bounded by Hunter Street, Elizabeth Street, Castlereagh Street and Martin Place, allowing for high quality data in relation to travel patterns (see Figure 5). This is the same area defined as the North Site.

At the time of the Census (and prior to demolition works), this zone had an employment population of approximately 3,000 people. Their main mode of travel is summarised in Figure 6. Over half of all commuters working in the area travel by train (51%) and a further 24% travel by bus. Travel by private car accounts for 11% of all trips (9% as car driver and 2% as car passenger). This indicates that the vast majority of employees in the area are using public transport for their commute. Walking trips account for 6% of the commuting trips with 2% of trips made by bicycle.

Figure 5: DZN utilised for analysis

[2] DZN 113371056 utilised for the analysis

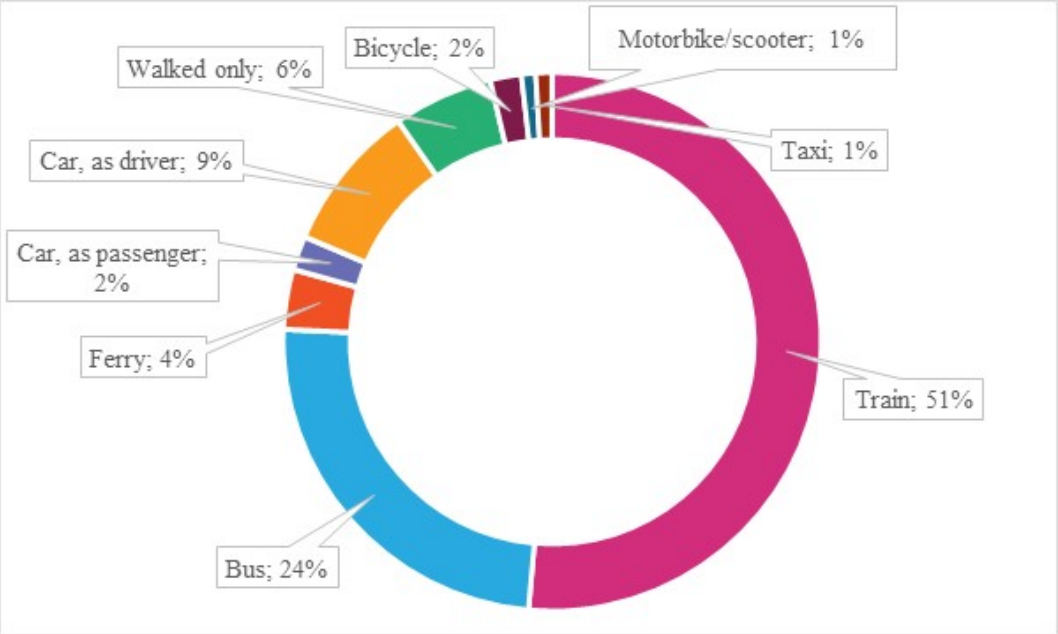

Figure 6: Mode Share

The largest proportion of employees commute from North Sydney (19%) followed by Inner City (15%), and Sydney Eastern Suburbs (14%).

3.2 Existing Vehicular Access and Kerbside Uses

The North Site has three trafficable street frontages. A brief description of these streets in the vicinity of the North Site is described below:

1) Castlereagh Street – (between Hunter Street and Martin Place)

- Castlereagh Street is a one-way street southbound and consists of one bus lane and one traffic lane. On the both sides of the road, there are parking lanes which are mainly designated as loading bays or bus zones on weekdays, with on-street parking permitted at weekends.
- The street forms a signalised intersection with Hunter Street with pedestrian crossings on all arms of the intersection while there is also a wide pedestrian crossing at the intersection with Martin Place.
- Prior to the demolition works for the Sydney Metro Martin Place Station Integrated Station Development there were three vehicular access points to the North Site from Castlereagh Street as shown in Figure 7. Since demolition and construction works related to Sydney Metro have taken place, only the vehicular access to 50 Martin Place remains in operation.

2) Elizabeth Street – (between Hunter Street and Martin Place)

- Elizabeth Street is a two-way street and generally consists of one bus lane and one traffic lane in each direction. Northbound, north of Martin Place, there are three traffic lanes and no bus lanes.
- On both sides of the road, the kerbside lanes are mainly designated as loading bays or bus zones on weekdays, with on-street parking permitted at weekends.

Northbound for 50m on approach to the intersection with Hunter Street, the kerbside lane is a left-turn traffic lane during the day (i.e. 'no stopping').

- Elizabeth Street forms a signalised intersection with pedestrian crossings on all arms at its intersection with Hunter Street while there is also a wide pedestrian crossing at the intersection with Martin Place. There are no existing vehicle access points to the North Site from Elizabeth Street.

3) Hunter Street – (between Castlereagh Street and Elizabeth Street)

- Hunter Street is a two-way road with two general traffic lanes in both directions. Adjacent to the development, there is a no-stopping zone during the day on weekdays with parking permitted at weekends and at night. The opposite side of the road is also a no-stopping zone.
- Hunter Street forms a signalised intersection with Elizabeth Street and Castlereagh Street, with pedestrians crossing facilities on all arms of both intersections. There is no existing vehicle access to the North Site from Hunter Street.

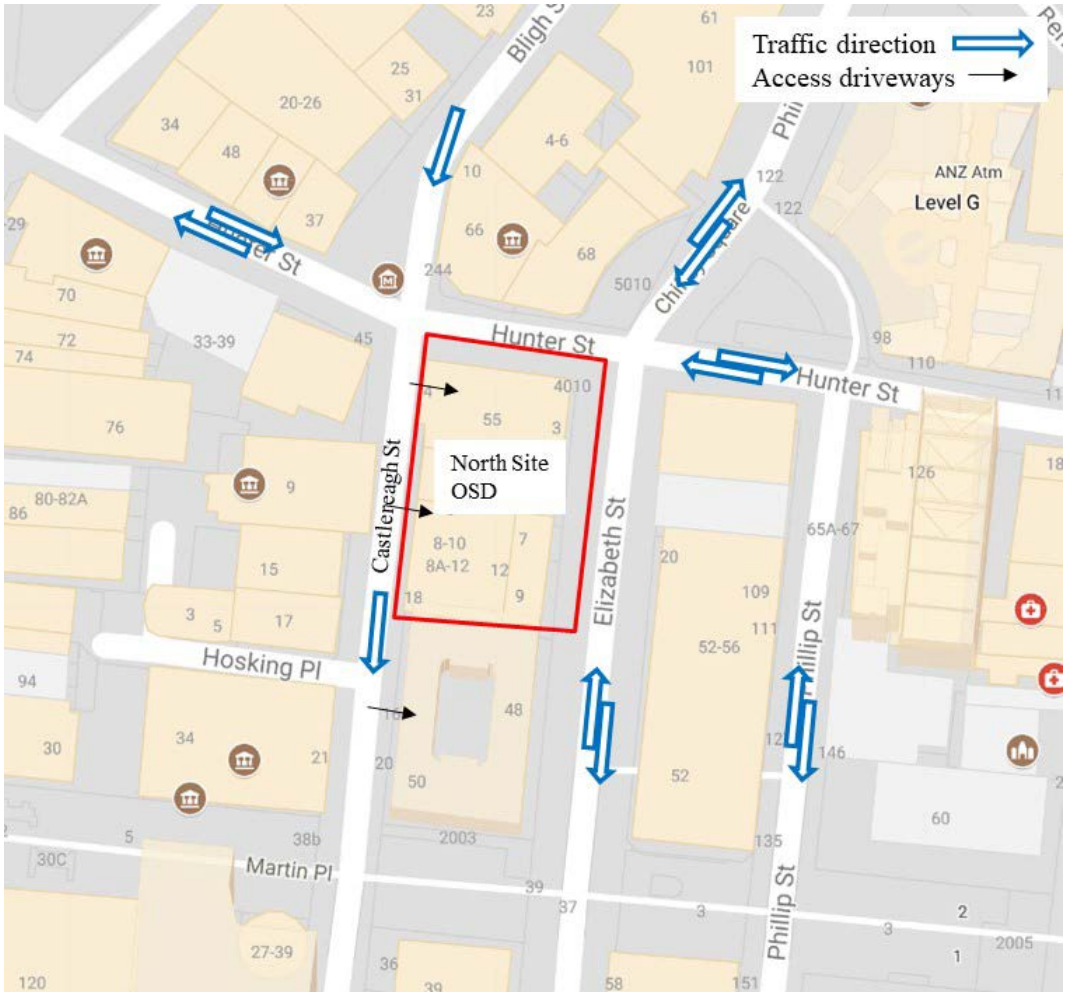

Figure 7: North Site existing vehicle access points

The on-street kerbside parking controls along Castlereagh Street and Elizabeth Street in the vicinity of Metro Martin Place station are heavily focused on bus and loading zones. On-street vehicle parking in the vicinity of Metro Martin Place

Precinct is heavily restricted and is generally only permitted overnight and on weekends. Hunter Street has parking controls that permit 4P parking in the evening time on weekdays and all day at weekends. The weekday, daytime kerbside uses of the streets surrounding the North Site are shown in Figure 8.

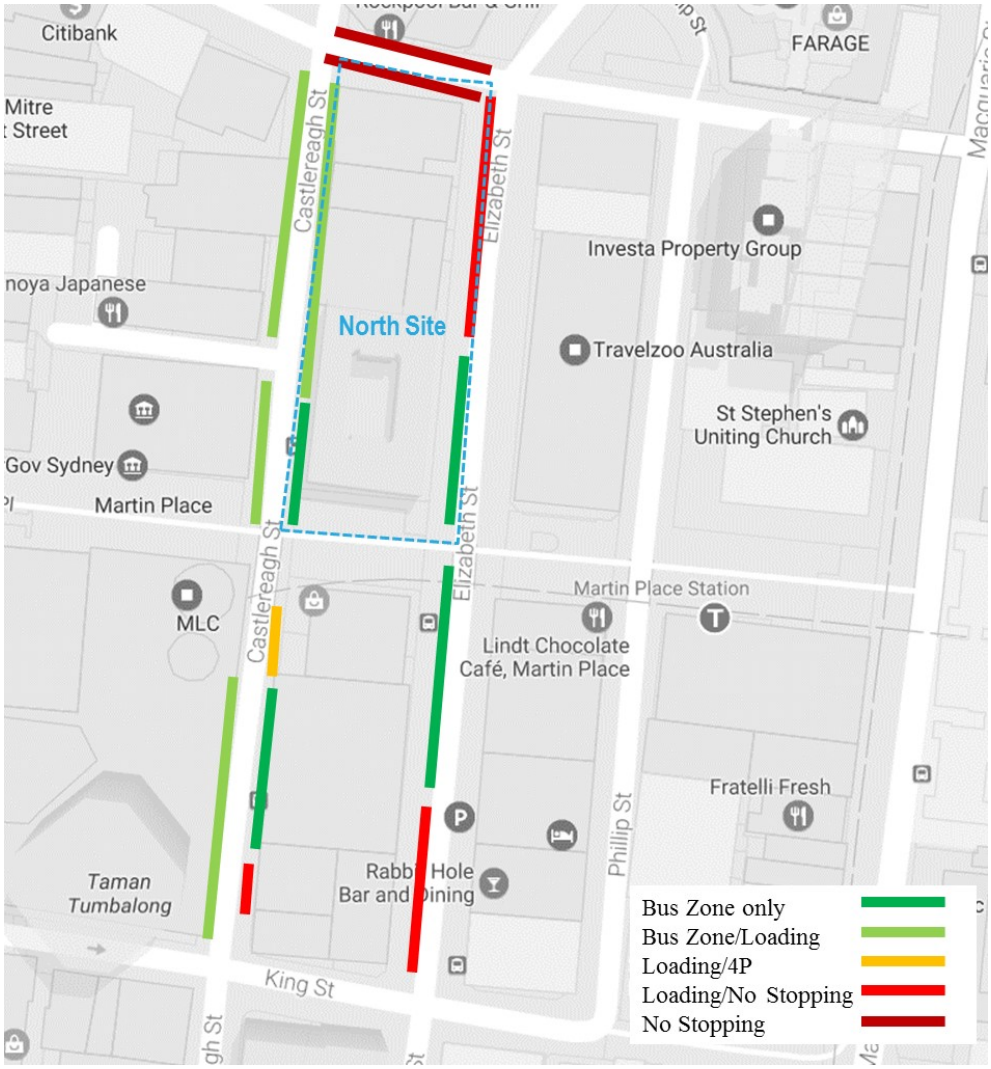

Figure 8: Weekday daytime kerbside uses

3.3 Traffic Volumes

The existing traffic volumes on the surrounding road network in the vicinity of the precinct have been extracted from the Sydney Metro (Chatswood to Sydenham) Critical State Significant Infrastructure (CSSI) EIS ('CSSI EIS') and are presented in Table 2. The following commentary was made in the CSSI EIS in relation to traffic in the local area.

"*Elizabeth Street northbound experiences heavy traffic volumes during both peak periods. There is a strong movement from Macquarie Street (southbound) in the east to Castlereagh Street (southbound) via Hunter Street, which contributes to relatively heavy westbound traffic on Hunter Street.*

Currently, the Macquarie Street / Bent Street / Eastern Distributor ramps intersection is extremely congested during the AM and PM peaks with the intersection performing above its theoretical capacity at level of service F. Long delays are caused by conflict between high volumes of traffic on the Eastern Distributor ramps (westbound) and Macquarie Street (southbound).

All other intersections near the Martin Place Station construction sites currently operate at level of service B or better. However, at the Elizabeth Street / Phillip Street / Hunter Street intersection, signal coordination along Elizabeth Street causes delays for conflicting right turn movements and vehicles on side-streets.[3]*"*

Table 2 Martin Place Station existing traffic volumes

Road	**Direction**	**AM peak hour (veh's per hour)**	**PM peak hour (veh's per hour)**
Castlereagh St (between King St and Hunter St)	Southbound	380	510
Elizabeth Street (between King St and Hunter St)	Northbound	1,130	1,110
	Southbound	410	590
Hunter Street (between Castlereagh St and Elizabeth St)	Eastbound	190	190
	Westbound	790	630

(Source: Sydney Metro (Chatswood to Sydenham) EIS, Chapter 8)

3.4 On-site Parking

The North Site *had* a small number of underground car parks (approximately 48 spaces) which are accessible off Castlereagh Street, including:

- 55 Hunter Street (44 spaces) – (removed during of the Metro demolition works); and
- 50 Martin Place (4 spaces) – (still operational)

3.5 Public Transport Access

The area is highly accessible by public transport as reflected by the high usage of trains, buses and ferries as a travel mode to work (approx. 75%). The North Site has some of the highest public transport accessibility in Sydney, with the location of the main rail and ferry transport nodes within 800m walking catchment of the North Site as shown in Figure 9. The future 'Wynyard' light rail stop on George Street will also be within walking distance. A summary of the existing and planned future public transport options are summarised below.

[3] Sydney Metro (Chatswood to Sydenham) EIS, Chapter 8

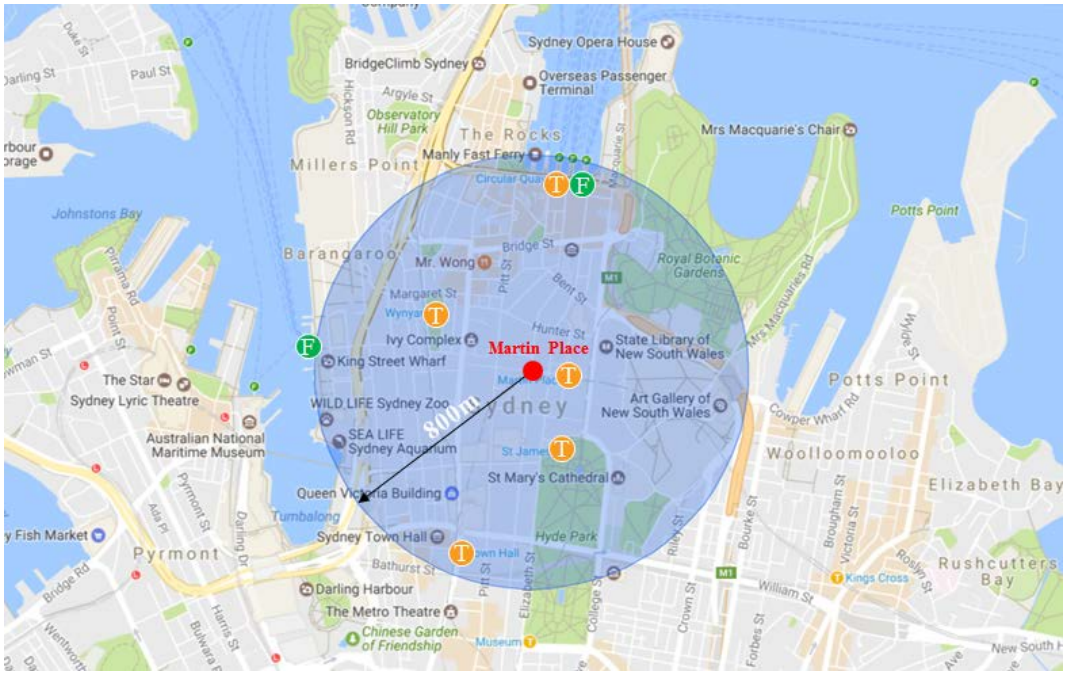

Figure 9: Main public transport nodes surrounding the precinct

3.5.1 Trains & Metro

Metro Martin Place station has a direct pedestrian access to Martin Place, with the station having seven operational pedestrian access points at present. Train services operating at this station include the T4 Eastern Suburbs and Illawarra Lines, offering high frequency services between Bondi Junction and areas in southern Sydney, including Hurstville, Sutherland, Cronulla, Waterfall and Wollongong.

These trains stop at Town Hall (next stop west of Martin Place) which offers direct interchange to most destinations on the Sydney Trains network. At peak times trains are operating at 3-4-minute frequencies in both directions, *decreasing* to 10-minute frequencies in the evening time.

St James Station's entrance on the north side of St James Road is approximately 200m from Martin Place. This station is on the City Circle line offering services to the T3 Airport and East Hills Line, as well as to the Inner West via Circular Quay, Wynyard and Town Hall.

Wynyard Station's George Street entrance is approximately 500m from Martin Place. There are a number of rail services operating from this station including the T1 North Shore & Northern line and the T8 Airport & South Line

The Sydney Metro City and Southwest line, when operational, will have a station at Martin Place with trains every 4-minutes at peak times operating between Epping and Sydenham and in the future to Bankstown. Furthermore, at full capacity, the City and Southwest line is capable of accommodating trains every two minutes during peak periods.

3.5.2 Buses

The CBD is supported by extensive bus networks, which cover most of the area within approximately 10km of the CBD, as well as some longer distance services from the Northern Beaches, Upper North Shore and the Northwest. This network comprises primarily direct services which serve particular suburbs at their outer extent and then converge on corridors as they approach the CBD. The combined service frequencies on a number of these corridors, such as Oxford Street, Broadway and Victoria Road are in the range of 50 to 120 buses per hour.

Sydney Buses

A number of buses stop on Castlereagh and Elizabeth Street in the vicinity of the site (see Figure 10). Services originate from

- Inner West including Ashfield, Burwood, Lilyfield, Abbottsford and Chiswick via Broadway and George Street;
- North West via Victoria Road corridor including areas such as Ryde and Eastwood; and
- South West (Tempe, Kingsgrove, Canterbury, Dulwich Hill).

When leaving the City most services use Castlereagh Street. Services from the Eastern Suburbs generally run along Elizabeth Street.

Another major transport interchange is Wynyard, which has services from the Northern Beaches (B-Line) and Lower North Shore, and the Victoria Road Corridor. The B-line is a ‘turn up and go’ service while other bus services vary in frequency throughout the day.

Private Bus Operators

In addition to the above Sydney Buses services, a number of private operators offer services to the City. These include services from:

- Sydney’s North West (Hillsbus) which generally use the M2 Motorway alignment and Gore Hill Freeway, connecting at Wynyard and then Town Hall and Railway Square; and
- Sydney’s Upper North Shore (Forest Coach Lines and Shorelink) connecting Belrose, North Turramurra, East Wahroonga and Terry Hills stopping at Wynyard and Town Hall.

Convenient bus stops are in the Wynyard area and some inbound services stop at York Street, which is marginally closer to Metro Martin Place Precinct.

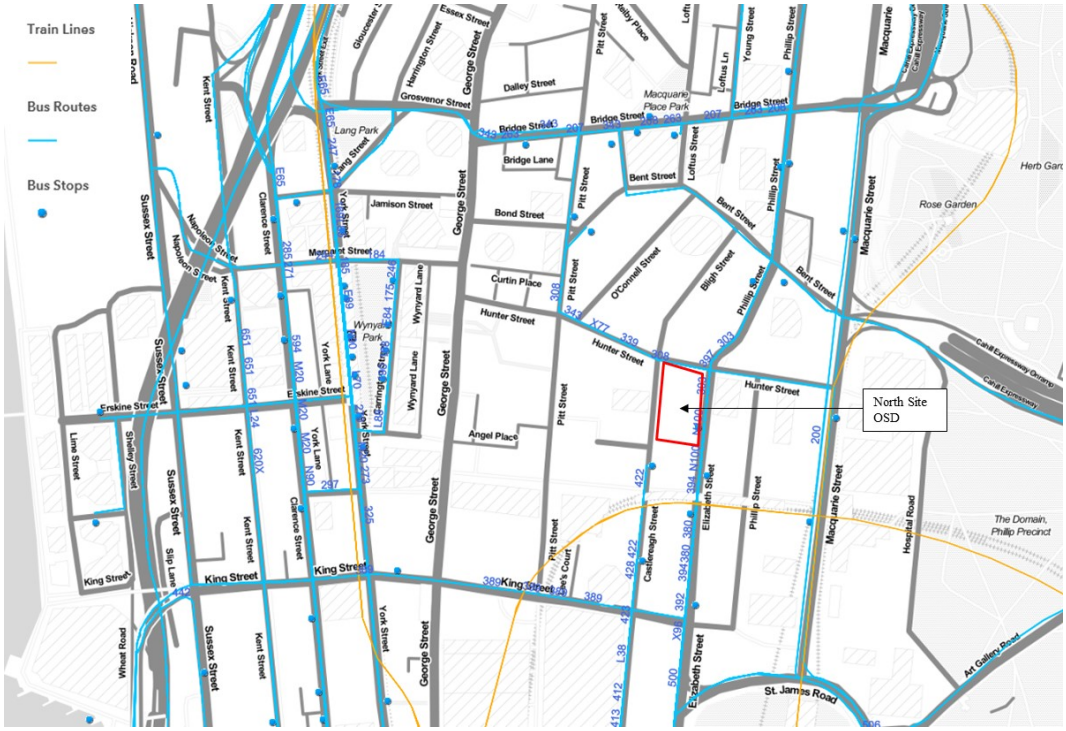

Figure 10: Bus routes and stops in the vicinity of the North Site OSD

3.5.3 Ferry

Circular Quay Ferry Wharves are approximately 700m from the northern boundary of the North Site, walking via Bligh Street and Young Street. From Circular Quay, there are regular ferry connections to Manly, Taronga Zoo, Parramatta, Darling Harbour, Neutral Bay, Mosman Bay and Eastern Suburbs. The Sydney Ferry Network is presented in Figure 11.

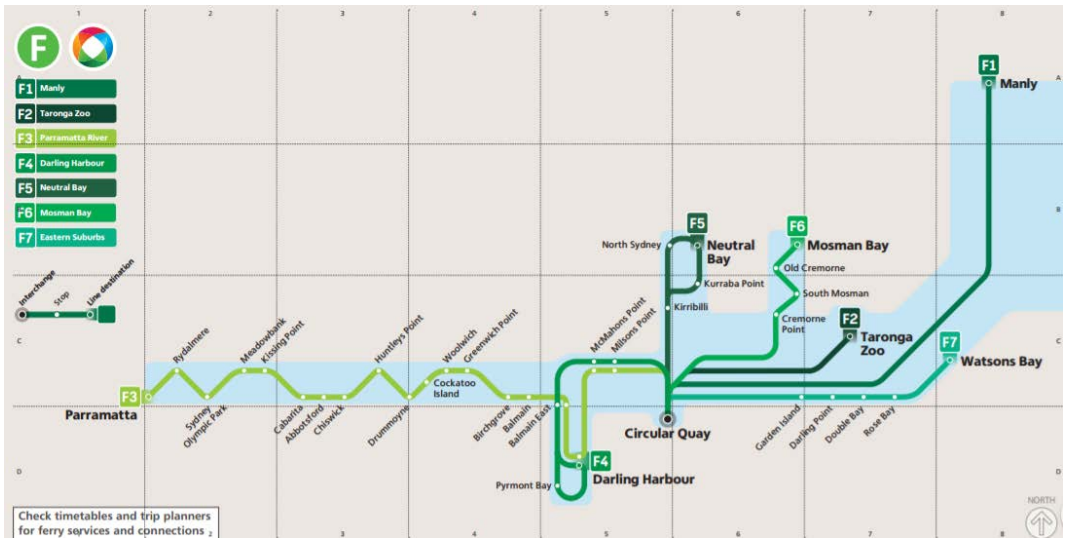

Figure 11: Sydney Ferry Network

3.5.4 Light Rail

The CBD and South East Light Rail is a 12km light rail network currently under construction. When completed, it will operate between Circular Quay and Kingsford/Randwick with 19 stops (including Central Station). The nearest stop to the precinct will be the Wynyard stop on Georges Street, approximately a 5-minute walk.

Construction is expected to be completed with services operational in 2020.

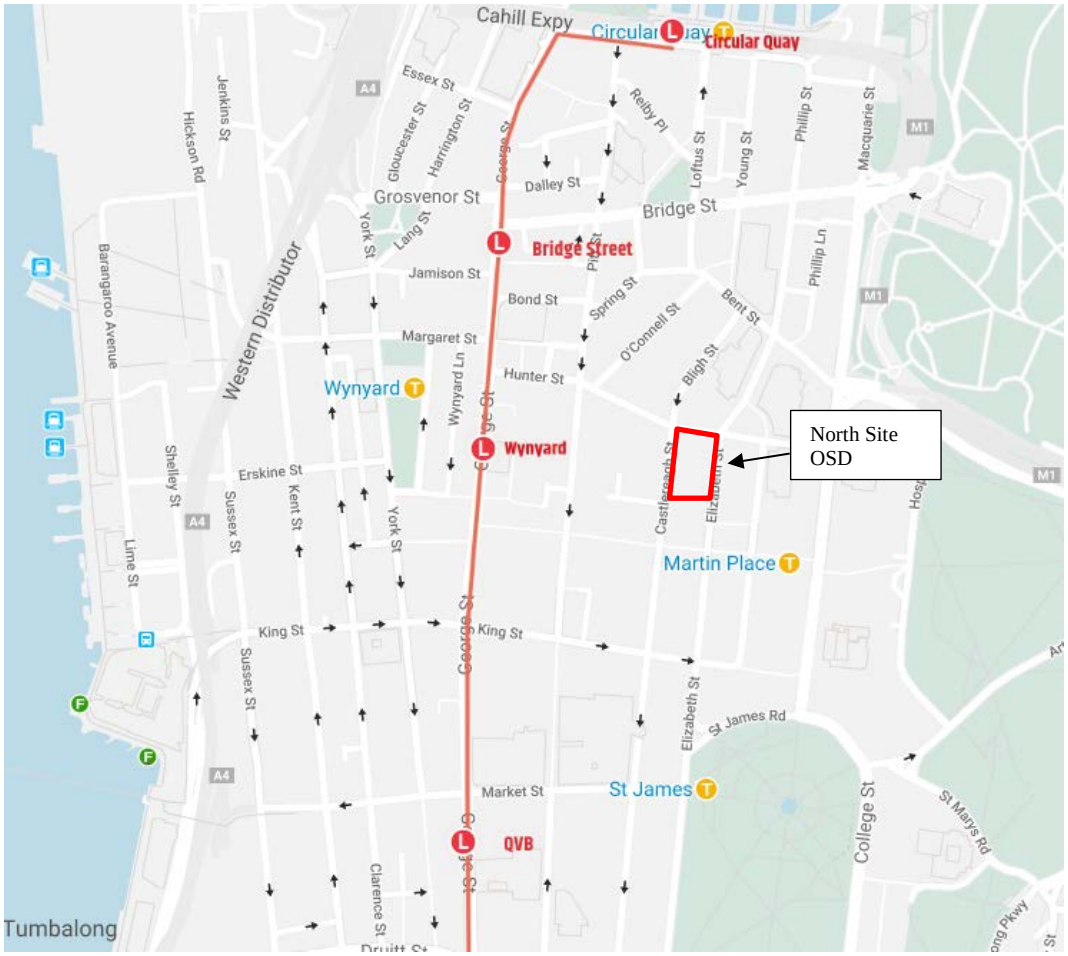

Figure 12: Light rail in vicinity of the OSD

3.6 Pedestrian Access

Prior to the demolition and construction works associated with Sydney Metro, the main pedestrian access points to the existing North Site buildings were as presented in Table 3.

Much of the ground floor space on Castlereagh Street and Elizabeth Street is occupied by retail units, each with individual entrances from street level for pedestrians.

Table 3 Pedestrian Access Points

Building Address	Primary access points	Status
55 Hunter Street	Hunter Street, Castlereagh Street and Elizabeth Street	Demolished/to be demolished as part of Metro
5 Elizabeth Street	Castlereagh Street and Elizabeth Street	
7 Elizabeth Street	Elizabeth Street	
9-19 Elizabeth Street	Elizabeth Street	*Vacant since October 2018 and to be demolished*
8-12 Castlereagh Street	Castlereagh Street	Demolished as part of Metro
50 Martin Place	Martin Place and Elizabeth Street	Operational

3.7 Pedestrian Volumes

As part of the CSSI EIS, pedestrian surveys were undertaken in December 2015 at the Martin Place, Castlereagh Street and Elizabeth Street pedestrian crossings.

The surveys showed:

- Around 44,300 pedestrians crossed at Castlereagh Street throughout the day, with around 20,950 travelling eastbound and 23,350 travelling westbound. In the AM period the dominant pedestrian movement was westbound towards commercial buildings and George Street, whilst in the PM period the dominant movement was eastbound towards the Sydney Trains Martin Place station.
- Around 33,900 pedestrians crossed at Elizabeth Street throughout the day, with around 13,700 travelling eastbound and 17,200 travelling westbound. As with Castlereagh Street, the majority of pedestrians travel westbound in the AM period and eastbound in the PM period.[4]

It is noted that these counts were undertaken prior to the recent demolition of buildings in this precinct as part of Sydney Metro works.

3.8 Cycling Network

There are a number of key cross-city cycle routes in the CBD which form part of City of Sydney cycling network. These routes are as follows:

- Kent Street (separated, bi-directional cycleway to Liverpool Street)
- Liverpool Street (separated, bi-directional cycleway between Sussex Street and Castlereagh Street)
- Castlereagh Street (separated, bi-directional cycleway between Liverpool Street and Belmore Park)
- King Street (separated, bi-directional cycleway between Pyrmont Bridge and Clarence Street)

[4] Extract from Sydney Metro, Chatswood to Sydenham EIS, Chapter 8

- Pyrmont Bridge (shared cycle path)

The draft City of Sydney Cycle Strategy and Action Plan (2018-2030) identifies the completed and planned bike network for the CBD, including regional, local and recreational routes (see Figure 13). In the vicinity of the site, a local bike network on Bent Street and Macquarie Street is planned, connecting to planned regional networks on Pitt Street and Park Street.

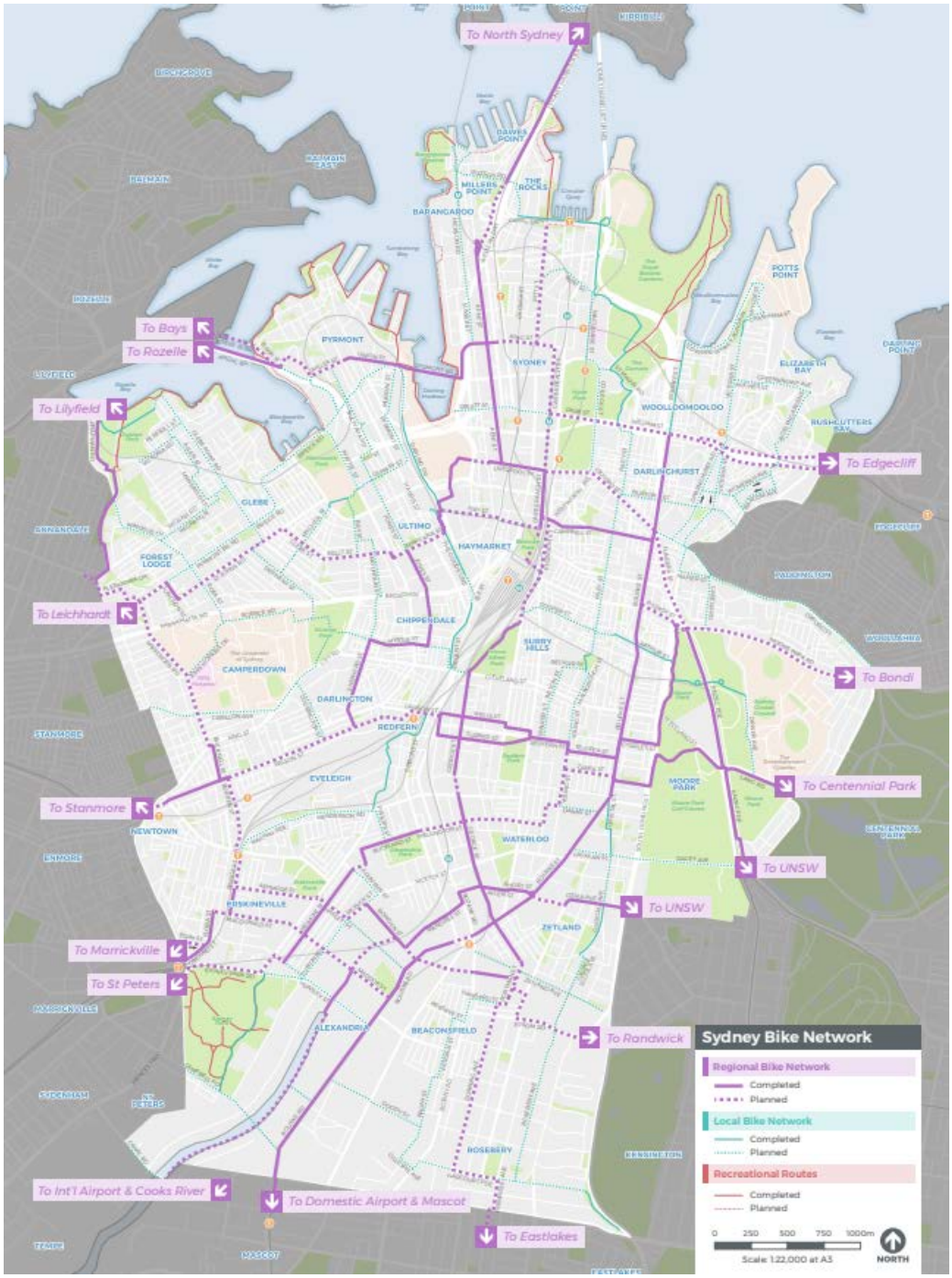

Figure 13 Sydney Future Bike Network

Source: City of Sydney Cycle Strategy and Action Plan (2018-2030)

4 Development Proposal

4.1 Description

An overview of the proposed OSD development is outlined earlier in this report in Section 1. The North Site OSD commercial tower is proposed to have a GFA of 75,498m^2. *The number of regular building occupants is calculated on the basis of a 1/10m^2 NLA, equating to approximately 6,230 regular building occupants.*

This will be in addition to the approximate 2,000 employee population at 50 Martin Place, increasing the overall regular occupants of the North Site in the future to approximately *8,230.* The employment population of the North Site was estimated to be 3,000, prior to the demolition of buildings as part of the Metro works.

4.2 Future Mode Share – North Site

A future mode share for the North Site has been estimated based on existing and predicted travel patterns to the development site and is presented in Figure 14.

The removal of on-site car parking (*with the exception of existing spaces at 50 Martin Place*) is anticipated to *significantly* reduce the car driver mode share. *A future car driver mode share of 3% is estimated, with subsequent increases in the public transport and active travel as a result.*

The 3% car driver mode share includes trips made by staff to off-site locations (e.g. for meetings), parking in nearby parking lots or when staff travel by car for the longest part of the journey[5]. As no on-site parking is provided, the proportion of staff driving to the North Site itself will be close to 0%.

Given the North Site will be accessible directly from Metro Martin Place station, more than half of employment trips to the development site will be by Train/Metro (53%, a slight increase from existing), with travel by bus having the second highest mode share (25%, a slight increase from existing).

Walking and cycling are anticipated to have a mode share of 6% and 5% respectively, with the provision of high quality of end of trip facilities encouraging travel by these active modes. The End of Trip Facilities (EoTF) have been designed to accommodate for 7.5% of *regular occupants* cycling.

The nearest light rail stop to the development site will be the Wynyard stop on George Street, just a 5-minute walk to Martin Place and will be attractive travel option, in particular for those commuting from the Eastern Suburbs.

[5] *These trips allow for a direct comparison with Census journey to work data*

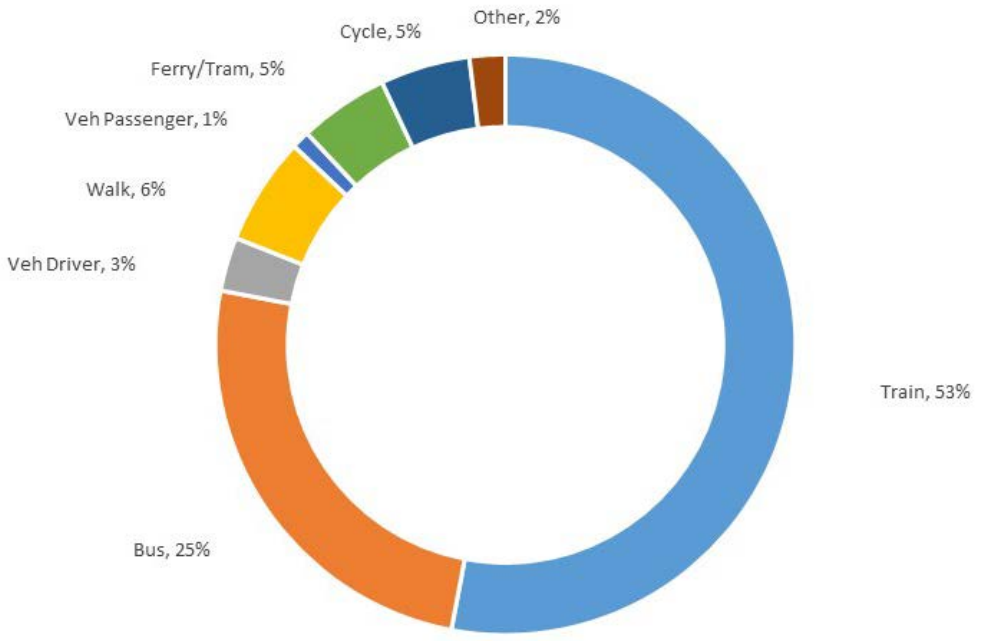

Figure 14: North Site OSD Target Mode Split

The mode split targets for the North Site OSD have changed slightly from that estimated as part of the Stage 1 SSD DA given the availability of 2016 Census data. The 2016 census data showed that travel by train had increased and travel by car had reduced since 2011 at this location. This trend is reflected in the mode split targets for the North Site, with the changes presented in Table 4.

Table 4 Comparison of estimated mode share in Stage 1 and Stage 2 SSD

Mode	Stage 1 SSD	Stage 2 SSD	Change
Train / Metro	51%	53%	+2%
Bus	25%	25%	0%
Car Driver	5%	3%	-2%
Walk	5%	6%	+1%
Car Passenger	1%	1%	0%
Ferry/Tram	5%	5%	0%
Cycle	6%	5%	-1%
Other	2%	2%	0%

4.3 Future Daily and Peak Hour Movements

The daily person trip profile for a typical office development in the CBD is presented in Figure 15. It is based on survey data obtained for two office developments in Sydney CBD (on Kent Street and Alfred Street). The profile is based as percentage of the busiest movement in a one-hour period.

The busiest movement occurs during the AM Peak hour (8am-9am), with people entering the development. The PM peak hour 'exit' movement is approximately 80% of that which occurs in the AM peak hour 'entry' movement.

The mid-day peak of 12:30-13:30 typically consists of local pedestrian trips (e.g. to shops, cafes etc.). In terms of volumes, it is approximately 65% of the AM peak hour 'entry' movement and occurs in both directions. While these trips are generally people leaving and returning during their lunch break, the AM and PM peak hour person trips are closely associated with commuting and the use of public transport. The AM peak hour is therefore considered to be most critical and been used to assess the impact to the transport network as a result of the North Site OSD.

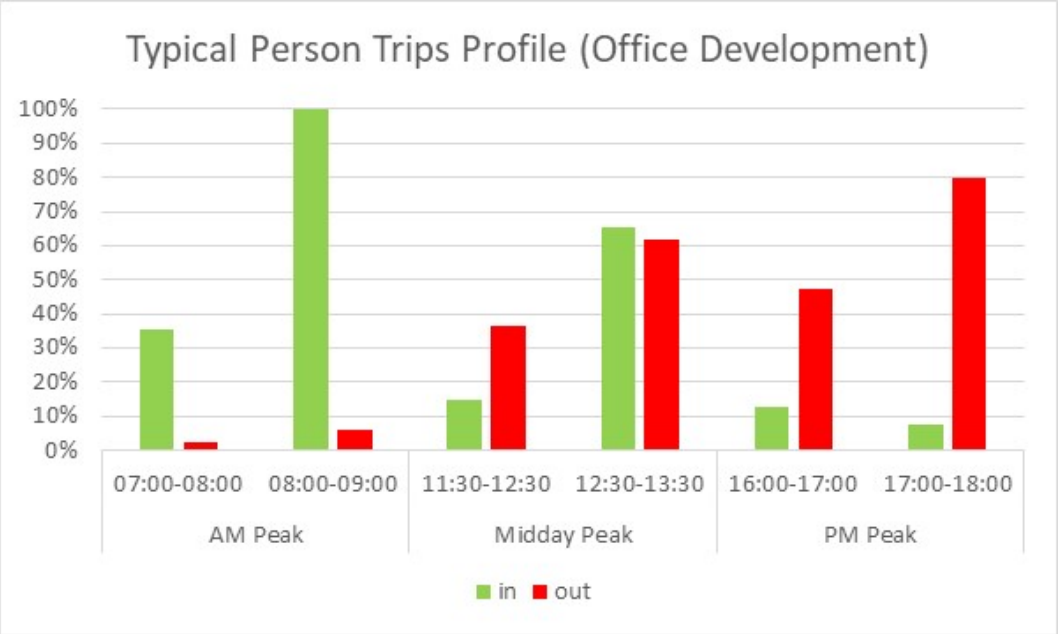

Figure 15: Person trips (as a percentage of the peak hourly movement)

The North Site is anticipated to generate the number of employment arrival trips shown in Table 5 based on a typical working day. These trips would take place over a 3-hour morning peak period, with approximately 50% of trips taking place during the morning peak hour (8am-9am).

Both the 'existing' and 'future' trips listed in Table 5 include those generated by 50 Martin Place, with the 'increase' reflecting the impact of the North Site OSD only.

Table 5 North Site generated person trips (AM peak hour)

Mode	Existing Mode Share (pre-demo)	Existing peak hour trips (3,000 occupants)	Future Mode Share	Future peak hour trips (8,230 occupants)	Increase in peak hour trips due to OSD
Train/Metro	51%	765	53%	2,181	1,416
Bus	24%	360	25%	1,029	669
Vehicle Driver	9%	135	3%	123	-12
Walk	6%	90	6%	247	157
Vehicle Passenger	2%	30	1%	41	11
Tram/Ferry	4%	60	5%	206	146
Cycle	2%	30	5%	206	176
Other	2%	30	2%	82	52
Total	**100%**	**1,500**	**100%**	**4,116**	**2,616**

As shown in Table 5, the increase in the AM peak hour person trips generated by the OSD (in comparison to the 'existing scenario', i.e. before buildings were demolished for Sydney Metro) will be accommodated using sustainable modes with little change in the total number of trips by private car. As a result, the impact to the road network is considered negligible.

The estimated future daily trips generated by the OSD is presented in Table 6. It is based on office block surveys[6] which indicates that trips generated during the AM peak hour account for approximately 15% of the daily number of person trips. Similar to the AM peak hour findings, trips over the course of the day will generally be accommodated using sustainable modes with negligible impact to the road network as a result of trips taken by private car.

Table 6 North Site OSD generated person trips (Daily)

Mode	Existing daily trips (pre-demo) (3,000 occupants)	Future daily trips (8,230 occupants)	Increase in daily trips due to OSD
Train/Metro	5,100	14,542	9,442
Bus	2,400	6,859	4,459
Vehicle Driver	900	823	-77
Walk	600	1,646	1,046
Vehicle Passenger	200	274	74
Tram/Ferry	400	1,372	972
Cycle	200	1,372	1,172
Other	200	549	349
Total	**10,000**	**27,437**	**17,437**

[6] Source: RMS Guide to Traffic Generating Developments (td13-04a)

4.4 Shared precinct facilities

It is proposed to share a number of facilities across the precinct, including bike parking, end of trip facilities and the loading dock. This section sets out the reasons for this (compared to the traditional approach) with examples of other developments, details of the proposal and how these facilities are intended to be managed along with any agreements required.

4.4.1 South site constraints

The South Tower site has a relatively small footprint at ground level considering it must facilitate the following at street level:

- *pedestrian access to the new Metro station and existing Eastern Suburbs line station and a through site link;*
- *a small loading dock;*
- *main entrance and lobby for the south tower development providing street level access for employees and visitors; and*
- *activation at street-level along its frontages with retail.*

Station plant and the unpaid station concourse occupy the majority of the space on basement levels B1 and B2, with the Eastern Suburbs rail-line running beneath the site on the lower levels adding an additional constraint.

Bike parking, end of trip facilities and loading docks are typically provided either at ground level or within the basement levels of developments in the CBD, however given the above constraints it is not feasible to provide them within the building footprint at this location (with the exception of a small loading dock).

4.4.2 Proposed shared facilities

*A centralised bike parking and end of trip facility located on level B2 of the North Tower is proposed. This proposal enables **fully internal access** between the North Tower end of trip facilities (on B2) and the South Tower, via the B3 (unpaid) concourse (a walk distance of approximately 140m). This route is described in further detail in section 4.6.*

The provision of end of trip facilities at a centralised location to serve a precinct is not uncommon in the Sydney CBD. One example of this is at Barangaroo, where there is a central bike parking (>1,000 bike racks) and end of trip facilities area for workers in the Barangaroo International Towers. Walk distances between the end of trip facilities and towers in Barangaroo are of similar scale to that proposed at this location (i.e. 100-150m).

The trip time between the South Tower lobby and EoTF is approximately 2 minutes, which given the high quality of the facilities being provided, will not have an adverse effect on the user experience. Wayfinding and signage will ensure the areas are marked, with tours of the facilities provided as part of employee inductions to allow for familiarisation of the most convenient route.

Macquarie have also successfully implemented this type of arrangement in the past, with off-site EoTF facilities currently being provided at 20 Martin Place for staff working at 50 Martin Place. The facility is approximately 80m from 50 Martin Place and is well used by staff.

4.4.3 Security and agreements

It is expected that Macquarie will be the majority of North Tower tenant, while the South Tower will likely consist of a mix of tenants.

It will be necessary to ensure that the South Tower employees have access to the bike parking end of trip facilities in the North Tower (on level B2) through a formal agreement/covenant. The agreement will need to be formed between Macquarie and any future owner/tenants of the South Tower ensuring access to the North Tower B2 bike parking and end of trip facilities. The agreement will remain in place unless alternative facilities are made available for the use of South Tower tenants at a later date.

The agreement will ensure South Tower employees have both internal and external access to the facilities. This will be in the form of a security credential providing access to the North Tower EoTF lobby on Castlereagh Street as well as the North Tower EoTF lifts on Lower Ground Level, B2 and B3.

An agreement will also be in place regarding the use of the North Tower loading dock by the South Tower tenants.

4.5 Pedestrian Access

There are three main access points to the North Tower OSD, with one main access from Castlereagh Street, Hunter Street and Elizabeth Street as shown in Figure 16. The access points off Castlereagh and Elizabeth Streets also connect to provide a through site connection. The main station access via the North Tower is from Hunter Street where escalators and station lifts are located.

An additional access point from off Castlereagh Street provides access to end of trip facilities as well as accommodating DDA access from Castlereagh Street (see Figure 17).

In addition to the access points, a significant amount of additional space is created at the corner of Hunter Street and Castlereagh Street which will accommodate pedestrians queuing and waiting to cross the road. A Station Pedestrian Planning Report has been prepared which considers the cumulative impacts of pedestrian movements generated by the North Site OSD and the station.

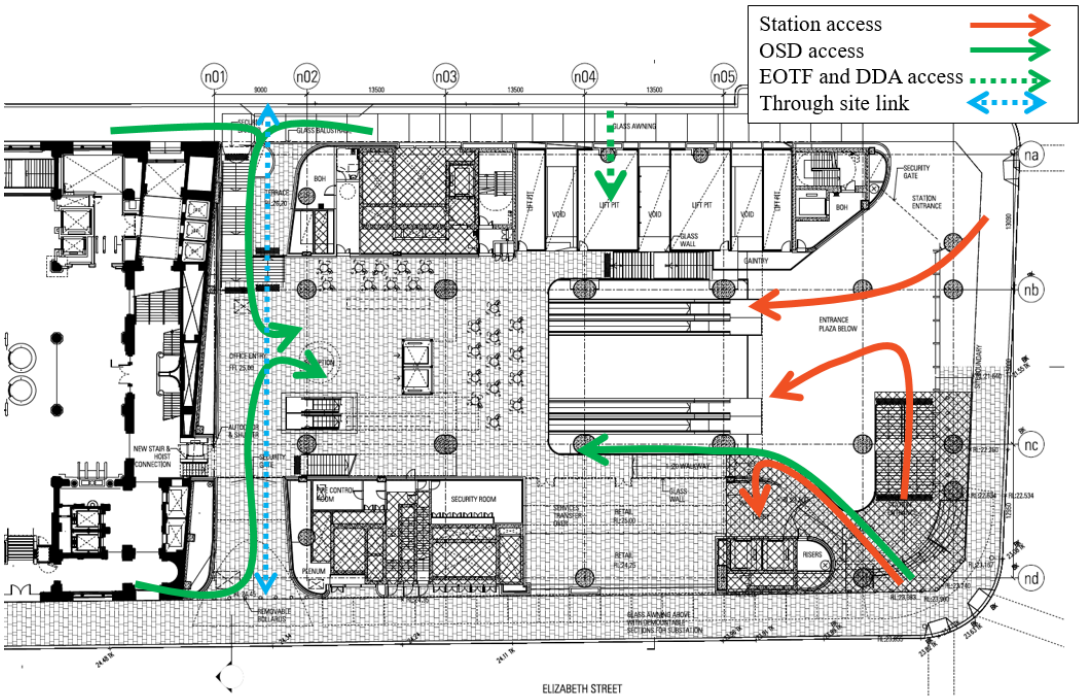

Figure 16: North Tower pedestrian access points

4.6 Bicycle Parking and Access

The main access to the end of trip facilities for the North Site OSD will be from Castlereagh Street via a set of lifts *or* stairs *(with an integrated bike ramp)*. The main bike parking facilities are located on Level B2 for the North Site (including 50 Martin Place). The end of trip facilities for the South Site and retail employees will also be located on Level B2 of the North Site. Shower and locker facilities are also located at this level.

The bicycle spaces required to be provided as part of the Metro will be located at Lower Ground level (accessed directly from Castlereagh Street, see Figure 17). *Signage at the entrance will ensure the spaces are visible and accessible to the public.*

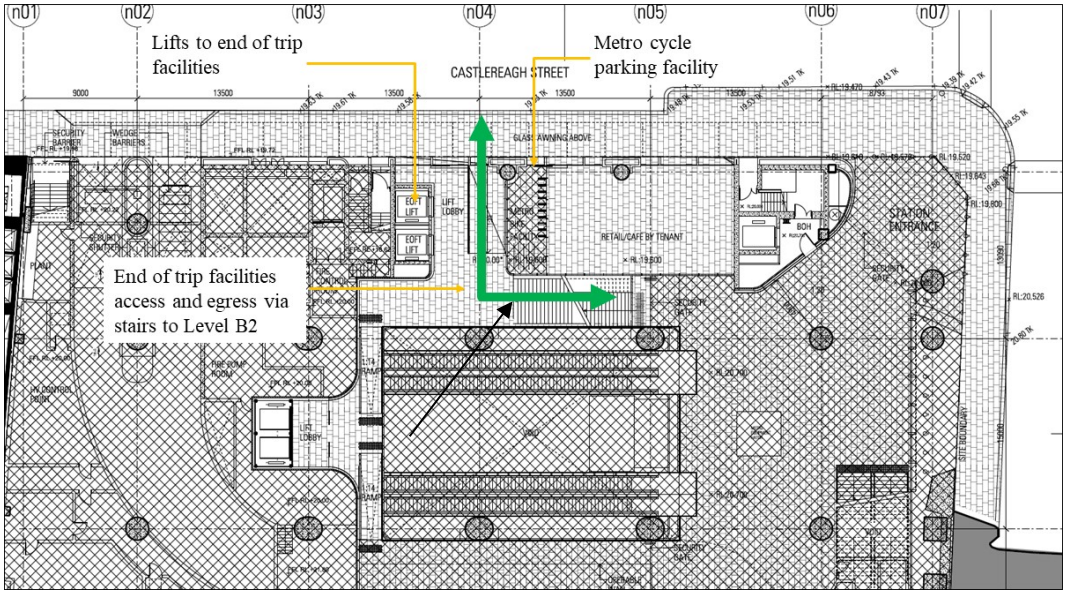

Figure 17: End of trip facilities access route and Metro bike parking

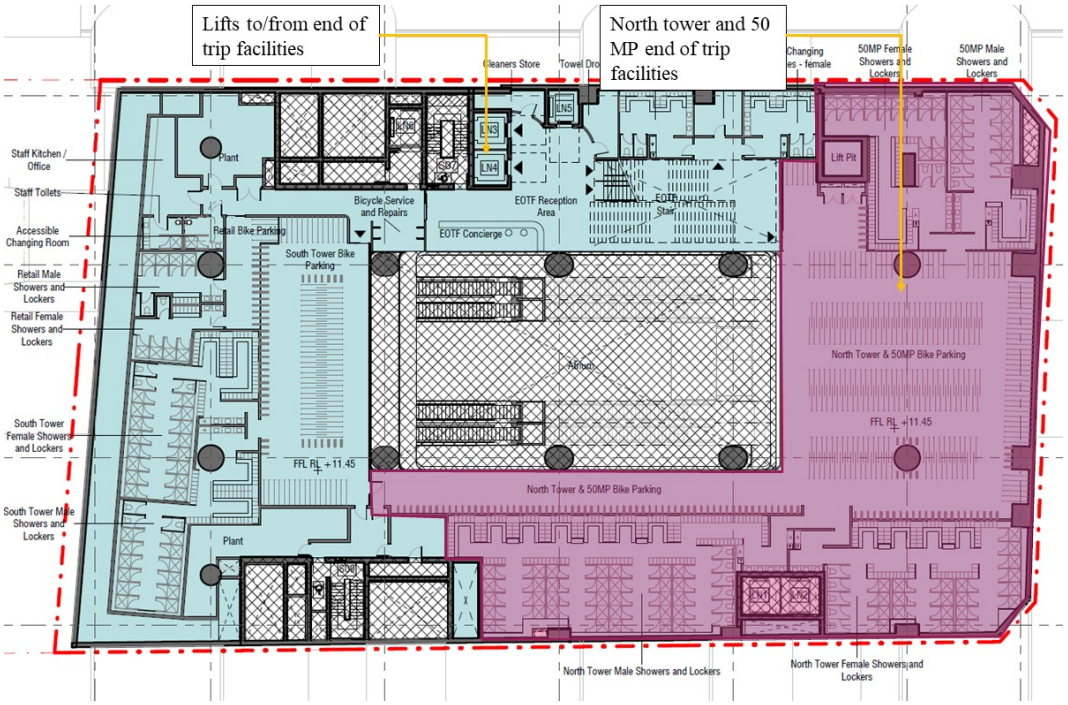

Figure 18: Basement level 2 end of trip facilities

End of trip facilities and bicycle parking will be provided for employees and visitors of the new development in accordance with GBCA 6 Star Green Star requirements. A comparison of the required amount of bike parking based on Green Star and City of Sydney DCP requirements are presented in Table 7.

The number of employee bike parking spaces proposed are relatively similar to the DCP requirements, while the number of visitor bike parking spaces are considerably less. The proposed provision is considered appropriate given the central location of the development in the CBD and the very high levels of

accessibility by public transport (i.e. Metro, rail, bus and light rail). The existing cycling mode share in the CBD is approximately 2% and therefore the provision of bike parking for 7.5% of staff is considered to sufficiently meet the anticipated demand while also futureproofing for any increase in cycling in the future.

It is also anticipated that the majority of visitors to the commercial towers will travel by public transport or by foot, with many of the trips originating from within the CBD. In consideration of the above, the lower number of visitor bike parking spaces proposed (when compared with DCP rates) are considered appropriate.

To calculate the number of 'regular occupants', a rate of 1 per 10m^2 NLA has been used. Regular occupants are those considered to be present on site on a typical day.

Table 7 North Tower bike parking requirements

Standard	Staff Bike Parking Requirement	Visitor Bike Parking Requirement	North Tower Regular Occupants /GFA	Staff bike parking required	Visitor bike parking required	Total
Green Star	7.5% of total regular occupants	5% of peak visitors[7]	*6,231 regular occupants*	*468*	*16*	*484*
2012 DCP	1 per 150sqm GFA	1 per 400sqm GFA	75,498m^2 GFA	503	189	692

The development will also provide end of trip facilities such as lockers and showers/changing cubicles in line with Green Star requirements. A comparison of the required amount of showers and lockers based on Green Star and City of Sydney DCP requirements are presented in Table 8. The proposed provision exceeds the DCP requirements.

Table 8 North Tower end of trip facilities requirements

Standard	Showers	Lockers	North Tower Regular Occupants /bike parking	Showers	Lockers
Green Star	8 for first 500 regular occupants plus 2 per extra 250 occupants	1.2 per bike parking space	*6,231 regular occupants and 468 staff bike parking*	*54*	*562*
2012 DCP	2 showers per 20 bike parking spaces or part thereof	1 personal locker for each bike parking space	503 staff bike parking spaces (using DCP bike parking rates)	50	503

Bike parking and end of trip facilities associated with the South Tower, 50 Martin Place and Retail will also be provided on basement level 2 of the North Tower. A summary of the overall end of trip provision proposed for the precinct is provided in Table 9.

[7] Peak visitors assumed to be 5% of peak regular occupants

Table 9 Summary of precinct end of trip facilities

Location	Bikes (tenant and visitor)	Lockers	Showers
North Tower	*484*	*562*	*54*
South Tower	*232*	*269*	*28*
50 Martin Place[8]	*162*	*162*	*18*
Retail	*28*	*34*	*7*
Total	***906***	***1027***	***107***
Metro[9]	*20*	*0*	*0*

Of the total spaces provided, 484 are allocated for the North Tower with 162 provided for 50 Martin Place. Bike parking for Metro customers will be provided in accordance with Sydney Metro requirements.

Class 2 secure bicycle parking spaces will be provided for the employees of the building while Class 3 bicycle racks for visitors and Metro users will be provided (i.e. easily accessible and clearly signposted).

From the End of Trip facilities on basement level 2, North Tower employees will be able to take the lifts or stairs back to the Lower Ground Floor, before changing to another lift or escalator to access the office lobby on level 1.

The pedestrian link under 50 Martin Place can be used for walking between the South Tower and the end of trip facilities, ensuring fully internal access is provided between the North Tower end of trip facilities (on B2) and the South Tower, via the B3 (unpaid) concourse

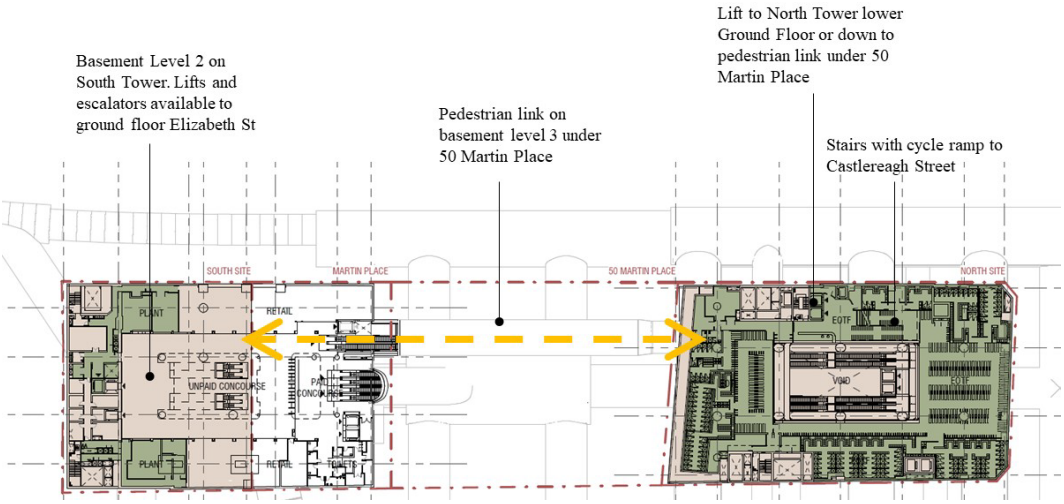

Figure 19 Internal pedestrian connection between South Tower and end of trip facilities

[8] *Requirements as per condition 9A of application D/2011/733/H for 50 Martin Place*
[9] *Requirements as per the Sydney Metro SWTC*

4.7 Vehicular Site Access and Loading Dock

Vehicular access to the North Site will be limited to service vehicles accessing the loading dock along with the existing vehicular access to 50 Martin Place. No on-site car parking spaces are proposed, with 44 parking spaces removed from 55 Hunter Street as part of the Metro demolition works.

The loading dock access point for the North Tower is presented in Figure 20 (on Castlereagh Street). It is adjacent to the boundary of 50 Martin Place and approximately 60m from the intersection of Castlereagh Street and Hunter Street and is not expected to cause any queuing on Castlereagh Street.

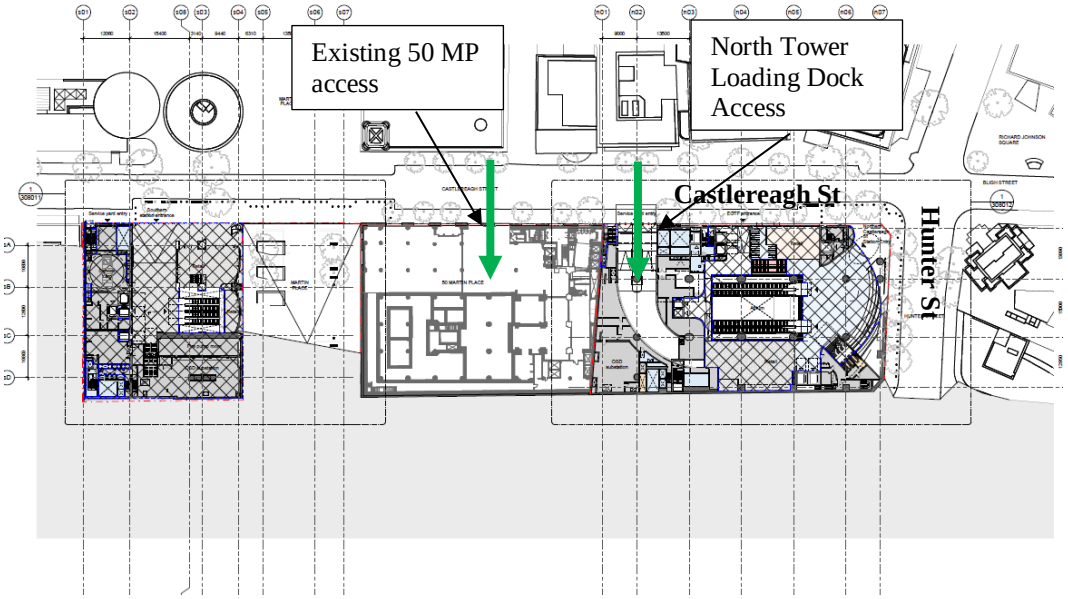

Figure 20: Access points to North Tower Loading Dock and 50 Martin Place

The North Tower will be serviced using the North Tower Loading dock located at Level B1 in the North Tower (3 MRV bays and 4 SRV bays). One of these bays is dedicated for use by Sydney Metro. 50 Martin Place will continue to be serviced as per existing arrangements.

The North Tower loading dock has been designed in accordance with Australian Standard AS2890.2 -2002 Off-street commercial parking facilities, apart from the ramp width. The facilities have been designed for use by 8.8m long MRV delivery vehicles with a travel and operational height clearance of 3.6m.

A separate Loading Dock Management Plan has been prepared which discusses the internal layout, capacity and day to day operations of the loading dock for the North and South Site. This is appended to this report as **Appendix A**.

4.7.1 Loading Dock Driveway and Layout

As noted above, the loading dock ramp width is not sufficient to accommodate two-way movements along its entire length due to the spatial constraints of the site and the need to fit within the constraints of the tower structure. Therefore, a traffic control system is proposed to ensure only one vehicle at a time passes the

narrowest section of the ramp. This will take the form of a combined boom gate/traffic light system for vehicles entering and a traffic light for vehicles exiting.

The gradient of the main ramp is 1 in 6.5 which is in accordance with AS2890.2, with 1 in 9 transitions for 5m at both ends of the ramp. This will ensure that the clearance for the design vehicle (3.6m) is achieved.

The driveway is approximately 10m in width (12.5m at the edge of roadway) with the footpath gradient 1 in 40 up to the property line. The first 2.3m of the driveway has a 1 in 9 gradient before levelling for 3m. The vehicle swept paths and vertical clearance are attached in **Appendix B**.

The loading dock ramp and layout is presented in Figure 21 and Figure 22.

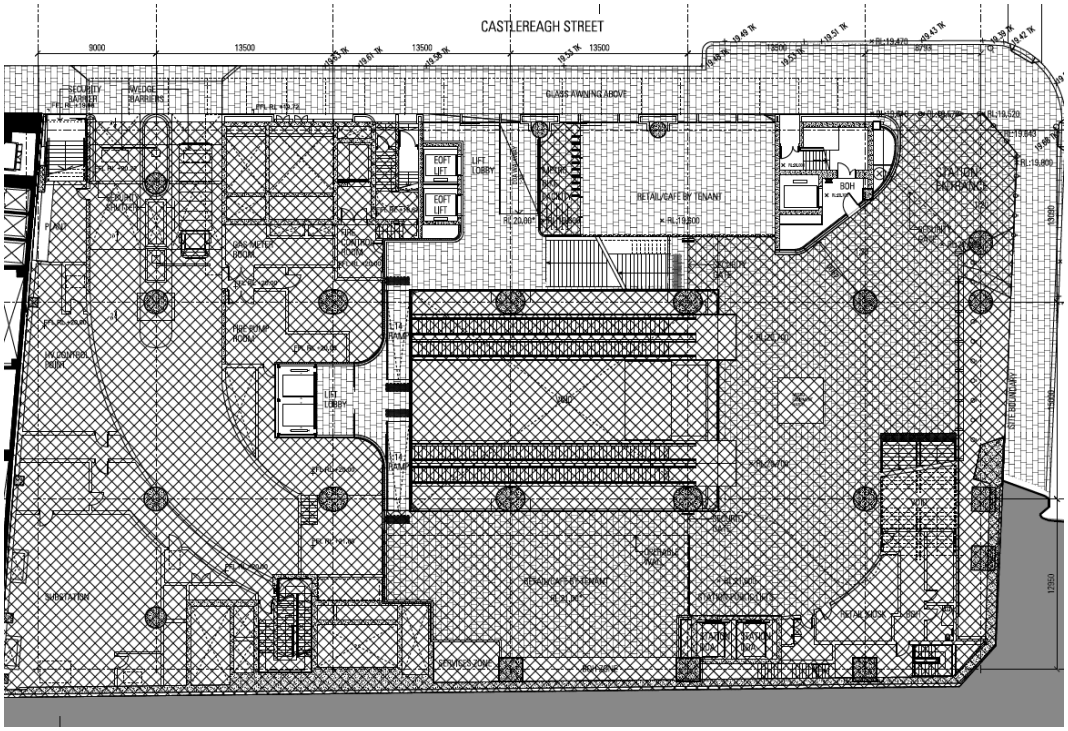

Figure 21: North Tower loading dock ramp from lower ground level

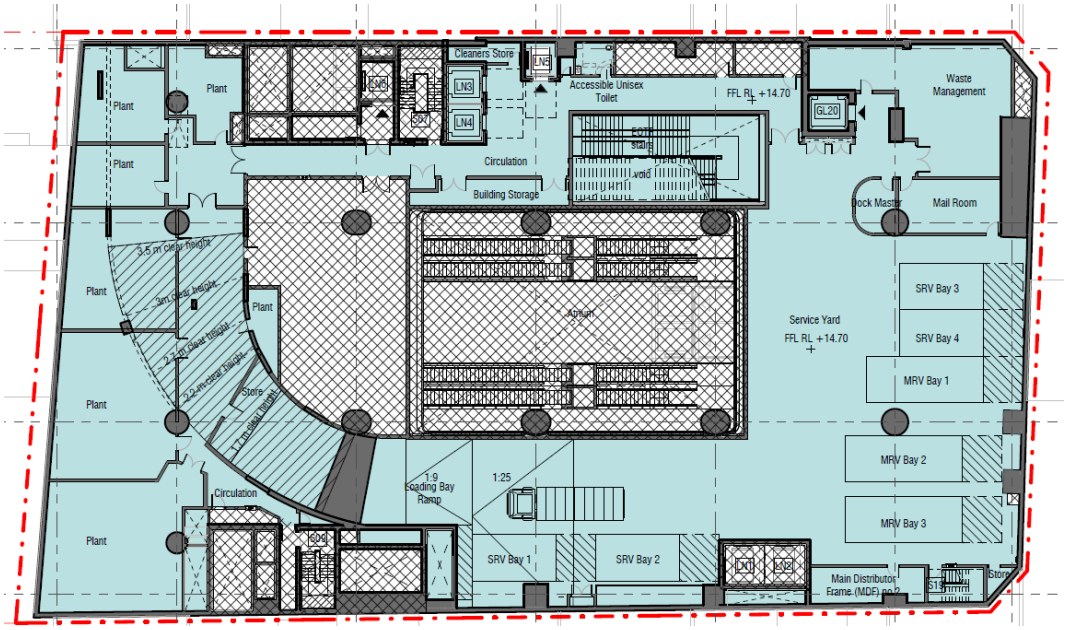

Figure 22: North Tower loading dock layout at Level B1

4.8 Emergency Vehicle Access

In the case of emergency, ambulances and fire tenders will be able to use the kerbside lanes along both Castlereagh Street and Elizabeth Street which are designated as bus lane/loading bays depending on the time of the day.

4.9 Point to Point Services

There are a number of existing taxi ranks/stops in the vicinity of the precinct as presented in Figure 23*. There are two taxi ranks along Philip Street which are suitable for serving any demand associated with the North Tower. There is also a rank along Hunter Street.*

For ride-hail services such as Uber, customers can be picked-up and dropped-off in loading zones or other 'no-parking' zones, as per NSW Road Rule No. 179. The kerbside lane along Castlereagh Street (east-side) is a loading zone from 6am-3pm (Mon-Fri), with the west-side of the street a loading/parking zone from 6am-6pm (Mon -Fri). There is also a taxi stop on the west-side of Castlereagh Street.

Approximately 0.5% of commuting trips to the CBD are by taxi which would indicate a North Tower OSD demand for approximately 20 trips/hour during peak periods. In addition to this, station users will also generate a demand for 'point to point' services. Demand throughout the day can also be expected for travel to and from meetings by tower tenants.

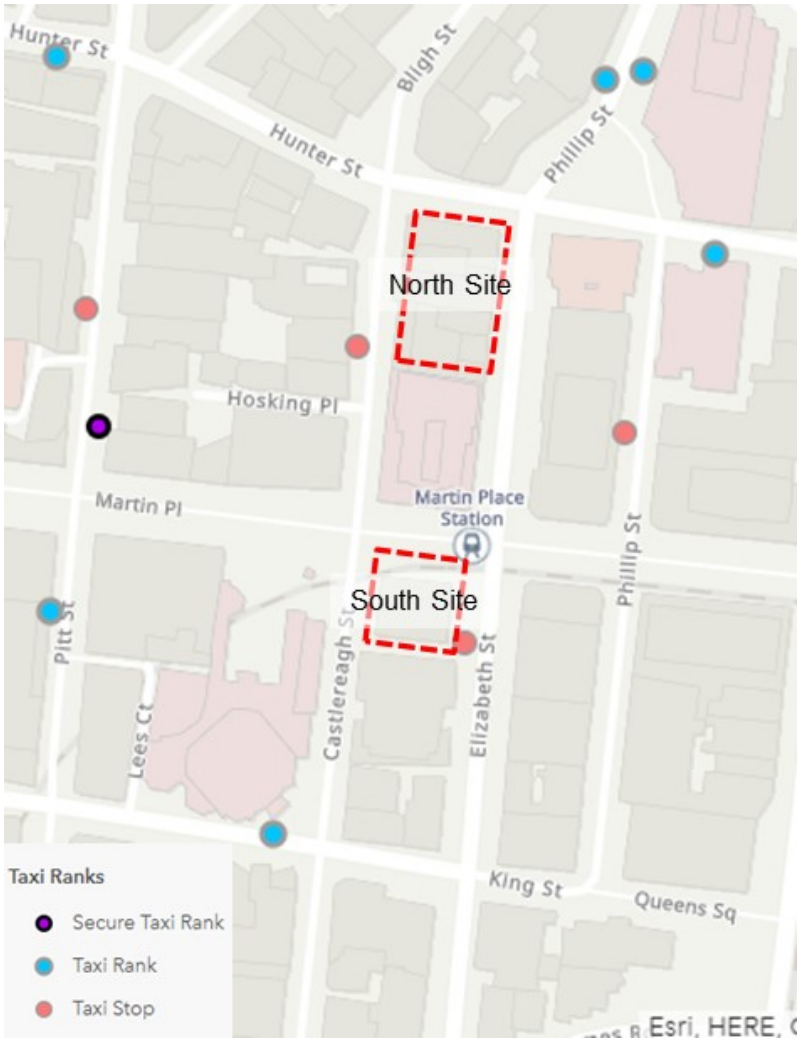

Figure 23 Taxi ranks and stops (source: City of Sydney)

In addition to existing facilities for 'point to point' services, Sydney Metro are preparing an Interchange Access Plan (IAP) for the precinct which will detail kerbside uses throughout the day as well as the extent of any kerb buildouts and footpath widening proposed.

The development of the IAP is on-going as additional studies as being undertaken, however it is likely to consist of the following elements:

- *Kerb build-out at the intersection of Martin Place and Castlereagh Street, reducing the roadway to two lanes – this is similar to the present temporary arrangement;*
- *No change to uses along Castlereagh Street, with the exception of a 'no parking' zone in front of the two loading dock driveways; and*
- *No change to uses along Elizabeth Street.*

Any additional provision for point to point services within the precinct will be included in the IAP. The IAP will be developed by Sydney Metro and be informed by technical studies and consultation with key stakeholders and authorities.

5 Transport Assessment

5.1 Traffic Generation and Road Network Impact

As no car parking spaces are proposed to be provided, traffic generation will be mainly related to servicing and delivery trips. It is estimated that 3% of staff will commute by car, resulting in a similar number of car trips during peak times compared to the existing situation. *This includes trips made by staff to off-site locations (e.g. for meetings), parking in nearby parking lots or when staff travel by car for the longest part of the journey. As no on-site parking is provided, the proportion of staff driving to the North Site itself will be close to 0%.* The impact is therefore considered to be negligible.

The North Tower OSD is expected to generate 162 deliveries per day. Delivery vehicle movements will need to be managed throughout the day due to the limited number of bays available. A pre-booking system is proposed to be utilised to assist in managing delivery arrival times and ensuring efficient use of the loading dock in the North Tower. The capacity of the loading dock will be 12 vehicles per hour based on 30-minute pre-booked slots. Refer to the Loading Dock Management Plan for further details.

In consideration of the estimated number of servicing and delivery trips, the provision of a pre-booking system and the timing of deliveries throughout the day, the impact to the road network is considered to be negligible.

5.2 Public Transport

The Sydney Metro and the Eastern Suburbs railway at Martin Place will provide a very high level of accessibility by train. Bus stops and taxi ranks in Castlereagh Street and Elizabeth Street will provide good opportunities for other modes of access. The location also takes advantage of being 350m from George Street for LRT access and 700m from Circular Quay for ferry access. The station and supporting intermodal facilities will create a highly accessible public transport precinct.

As outlined in Section 4.2, the North Site will generate approximately 1,400 additional Train/Metro trips, 670 additional bus trips and 150 additional Tram/Ferry trips during the morning peak hour (when compared to the office developments that were in place prior to the demolition works for Sydney Metro, including 50 Martin Place). This increases to approximately 1,950 additional Train/Metro trips, 920 additional bus trips and 200 additional Tram/Ferry trips during the morning peak hour when considering the cumulative impact with the South Site OSD.

The Sydney Metro, along with signalling and infrastructure upgrades across the existing Sydney rail network is anticipated to increase the capacity of train services entering the CBD – from about 120/hr today to 200 services beyond 2024. Considering the significant increase in capacity, the impact of the development on Train/Metro capacity is considered acceptable.

Similarly, the existing extensive bus network and the proposals set out in Sydney's Bus Future to increase services, capacity and journey times across the network, the impact on bus capacities is considered to be acceptable.

5.3 Walking

The footpath network provides a range of routes for access to Martin Place which acts as an important spine for pedestrian movement in this part of the CBD. As outlined in Table 5, the North Site OSD is expected to generate an approximately 2,600 additional trips during the AM peak hour (when compared to the office developments that were in place prior to the demolition works for Metro, including 50 Martin Place).

Of these additional trips, approximately 1,400 would be by train/metro and 180 by bike, and therefore not likely to impact the surrounding footpaths.

It is therefore expected that there will be approximately 1,020 additional trips by foot on the surrounding footpaths (including those walking from buses etc.) that are generated by the North Tower OSD. This increases to approximately 1,400 when considering the cumulative impact with the South Tower OSD.

Based on the 2026 AM peak hour flows pedestrian volumes using in the CSSI EIS, seven footpath locations surrounding the site have been assessed and compared with a 'with OSD' scenario to understand the impact. The assessment is based on the Fruin Level of Service (LoS) for walkways. The locations are assessed are shown in Figure 24.

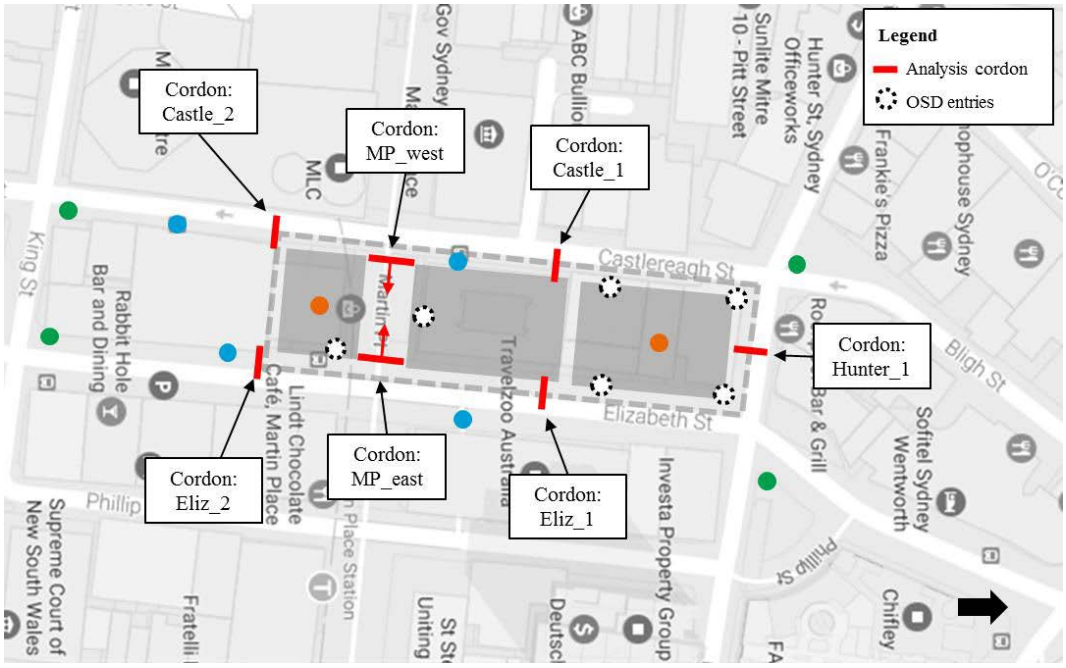

Figure 24: AM precinct distribution for OSD for arrival demand

Key assumptions made as part of the analysis are:

- Nominal footpath width of 2m is adopted throughout the precinct. This is considered a conservative assumption and a minimum expected across the pedestrian network.
- Width of 16m is adopted for the Martin Place entrances from Castlereagh Street and Elizabeth Street.
- Cumulative OSD population of 14,400 (this is higher than the expected OSD population).

The Fruin LoS at these seven locations is presented in Table 10 and Table 11 for the 'CSSI EIS base' and the 'CSSI EIS base + total OSD population' respectively.

Table 10 CSSI EIS pedestrian flows and level of service at cordon locations

Cordon	Castle_1	Castle_2	Eliz_1	Eliz_2	Hunter_1	MP_east	MP_west
People per metre/min	10.3	19.7	11.6	9.7	18.4	2.5	5
LoS (walkways)	A	A	A	A	A	A	A

Table 11 Pedestrian flows and level of service for OSD (proposed population) + CSSI EIS base demand

Cordon	Castle_1	Castle_2	Eliz_1	Eliz_2	Hunter_1	MP_east	MP_west
OSD	11	7.6	30.7	9.2	0	0.9	1.6
CSSI EIS (base)	10.3	19.7	11.6	9.7	18.4	2.5	5
Sum (people per metre/min)	21.3	27.3	42.3	18.9	18.4	3.4	6.7
LoS (walkways)	A	B	C[10]	A	A	A	A

When comparing the LoS results, Elizabeth Street west (Eliz_1) is subjected to increased flows that is likely to perform at LoS C (for a given width of 2m) but LoS B for a given width of 3m (which is more accurate). All other locations are expected to perform with a LoS A or B.

Based on the findings of the Fruin LoS analysis (indicating LoS A or B), the impact of the increase in pedestrian flows on Elizabeth Street and Castlereagh Street as a result of the OSD is considered acceptable.

[10] further analysis shows that the pavement width in this location is greater than the 2m assumed, which results in an estimated performance of LoS B (walkways).

5.4 Cycling

The location of the EoTF access on Castlereagh Street is away from the main station access points and mid-way between Martin Place and Hunter Street along Castlereagh Street, reducing potential conflicts between cyclists and the pedestrians.

As the North and South Site share the same bicycle access point, cumulatively 240 additional trips by bicycle are expected in the AM peak hour period (when compared to the office developments that were in place prior to the demolition works for Metro, including 50 Martin Place).

From the north, cyclists will be able to access the *bike parking and* end of trip *facilities* via Castlereagh Street, dismounting before entering the building. From the south, cyclists will either route, such that they approach via Hunter Street and Castlereagh Street or will need to dismount and walk with their bike from Martin Place. Some cyclists may dismount on Elizabeth Street and walk via the through site connection to the facility also, however the presence of a stairs is likely to discourage this.

The provision of a kerb build-out, outside of the access to the facility on Castlereagh Street, is a potential measure which would assist cyclists to safely dismount and access and egress the building without conflicting with traffic or pedestrians.

This access point on Castlereagh Street is expected to be busy for a short period of time in the peak periods, however it is considered to be manageable.

This development will provide bicycle parking for commercial employees, in line with GBCA 6 Star Green Star requirements as well as providing for retail staff and visitors. In total, approximately *906* bicycle parking spaces will be provided in addition to Metro bike parking requirements.

5.5 Green Travel Plan

A Green Travel Plan has been prepared for the North Tower and is appended to this report as **Appendix C**. The plan details specific measures to encourage workers to use more sustainable modes to and from the development.

Given the lack of staff parking, central location, high levels of public transport accessibility and quality of proposed end of trip facilities, the development is ideally placed to achieve the future travel mode share targets set out in this document.

6 Construction Pedestrian Traffic Management Plan

A CPTMP has been prepared for the North Site and is appended to this report as **Appendix D**. The CPTMP considers the Construction Traffic Management Framework prepared as part of the Sydney Metro City and Southwest and includes the following:

- Loading and unloading, including the locations of all proposed work zones
- Haulage routes
- Construction vehicle access arrangements
- Proposed construction hours
- Estimated number and type of construction vehicle movements, including morning and afternoon peak and off-peak movements, distinguishing concrete pours from other construction activity, and noting that construction vehicles would be restricted from using work zones on Castlereagh Street and Elizabeth Street during certain times of the day
- Construction program, highlighting details of peak construction activities and proposed construction staging
- Details of specific measures to ensure the arrival of construction vehicles to the site does not cause additional queuing on Elizabeth Street, Hunter Street, Castlereagh Street and King Street
- Details of any construction vehicle marshalling areas outside the CBD
- *Details of pedestrian and traffic management measures*
- The staging of works and simultaneous construction with other projects in the area, including the Sydney Light Rail Project, Sydney Metro and other developments nearby, and identify mitigation measures to ensure the proposal can be constructed while the impacts to rail users (and their connections) are appropriately managed
- Any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works
- Measures proposed to mitigate any associated impacts of traffic, public transport, pedestrians and cyclists should be clearly identified and included in the draft CPTMP.

Consultation with the Sydney Coordination Office (SCO) on the development of this plan is on-going.

7 Agency Consultations

A brief on the upcoming SSDA stage 2 submission was given to the agencies listed below, and the contents of this report were discussed, as well as the Loading Dock Management Plan (LDMP). All designs presented were agreed to in principle.

The Metro Martin Place team met with the following agencies on the following dates:

1. Roads and Maritime Services (RMS), Sydney Coordination Office (SCO), Sydney Buses, and Sydney Metro on 18 April 2018, to discuss this report
2. SCO on 30 April 2018 to discuss the LDMP in further detail
3. SCO on 08 May 2018 to discuss the Construction Traffic Management Plan in further detail
4. SCO on 17 May 2018 to discuss the LDMP in further detail and close out comments
5. Sydney Trains and Sydney Metro on 04 June 2018 to discuss this report
6. City of Sydney on 30 July 2018 to discuss the LDMP

8 Conclusions

This transport traffic pedestrian and parking report supports the Stage 2 SSD DA for the North Tower. It confirms the SEARs and Stage 1 conditions of consent have been met through the design.

The North Site OSD commercial tower is proposed to have up to 6,230 regular occupants. This will be in addition to the approximate 2,000 employee population at 50 Martin Place, increasing the overall regular occupants of the North Site in the future to approximately 8,230. The employment population of the North Site was estimated to be 3,000, prior to the demolition of buildings as part of the Sydney Metro works.

A basement loading dock is proposed which will be accessible from Castlereagh Street. It will have 3 MRV bays and 4 SRV bays, one of which will be dedicated for use by Sydney Metro. The dock will be managed with a pre-booking system in place. A loading dock management plan has been prepared for the North and South site.

Given the spatial constraints at the South Tower site, it is proposed to have a centralised the bike parking and end of trip facilities for the precinct in the North Tower. For the North Tower, high quality end of trip facilities are proposed, with bicycle parking, showers and lockers located on Level B2. On the same level, dedicated facilities for the South Tower, 50 Martin Place and retail employees will also be provided.

The end of trip facilities will be accessible from Castlereagh Street via stairs (with an integrated bike ramp) and lifts. The pedestrian link under 50 Martin Place can be used for walking between the South Tower and the end of trip facilities, ensuring fully internal access is provided between the North Tower end of trip facilities (on B2) and the South Tower, via the B3 (unpaid) concourse.

Approximately 906 cycle parking spaces will be provided (in addition to Sydney Metro bike parking requirements), with 484 of these allocated for the North Tower tenant and visitors.

No car parking is being provided as part of the development and therefore the traffic impact will be negligible, with the main traffic generation related to servicing and deliveries.

A Construction Pedestrian and Traffic Management Plan has also been prepared, describing how it is proposed to manage the impacts to traffic, pedestrians, cyclists and public transport users during the construction stage.

The analysis undertaken shows the impact of increased North Tower Site population due to the development can be accommodated without negatively impacting existing transport or pedestrian infrastructure and systems.

Further, whilst not subject to approval under this SSD DA, the design of the Sydney Metro station has been designed to specifically incorporate the increased OSD pedestrian demand.