

WATERLOO OVER STATION  
DEVELOPMENT

**ENVIRONMENTAL  
IMPACT  
STATEMENT**





# Sydney Metro City & Southwest: Waterloo Over Station Development

Environmental Impact Statement

<b>Applicable to:</b>	Sydney Metro City & Southwest
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<b>Owner</b>	Sydney Metro
<b>Status:</b>	FINAL
<b>Version:</b>	02
<b>Date of issue:</b>	14 November 2018
<b>Review date:</b>	14 November 2018

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C	Building Envelope Drawings
D	Architectural Drawings
E	Indicative Concept Proposal Amenity Summary
F	SEPP 65 Design Verification and Better Placed Assessment
G	Urban Design and Public Domain Report
H	Solar Access Report
I	CPTED Report
J	Design Excellence Strategy
K	Design Guidelines
L	Pre-submission Consultation Report
M	Visual Impact Assessment Report
N	Transport Impact Assessment
O	Housing Affordability and Diversity Study
P	Utilities and Infrastructure Servicing Report
Q	Heritage Impact Assessment
R	Biodiversity Assessment Waiver
S	Ecologically Sustainable Development (ESD) Report
T	Water Quality, Flooding and Stormwater Report
U	Reflectivity Impact Assessment Report
V	Acoustic and Vibration Impact Assessment Report
W	Air Quality Impact Assessment
X	Pedestrian Wind Environment Impact Assessment Report
Y	Aeronautical Impact Assessment
Z	Geotechnical and Contamination Report
AA	Economic Impact Assessment
BB	Accessibility and DDA Impact Statement
CC	Preliminary Construction Management Statement

## Glossary and Abbreviations

Term	Definition
Concept SSD Application	A concept development application as defined in section 4.22 of the EP&A Act – a development application that sets out concept proposals for the development of a site, and for which detailed proposals for the site or for separate parts of the site are to be the subject of a subsequent development application or applications. Note: Also refer to definition for State significant development (SSD)
Council	Council of the City of Sydney
CSSI	Critical State Significant Infrastructure
CSSI Approval	The approval under the EP&A Act for the construction of the Sydney Metro City & Southwest Chatswood to Sydenham project, as amended by subsequent modification applications. The CSSI project (application number SSI 15_7400) was approved by the Minister for Planning on 9 January 2017 and has been amended on 18 October 2017 (Modification 1), 21 December 2017 (Modification 2), 22 March 2018 (Modification 3), 13 December 2017 (Modification 4) and 2 November 2018 (Modification 5). Any reference to the CSSI Approval is a reference to the most current version of that approval as amended by any subsequent modification application.
Detailed SSD Application	The SSD Application(s) made after the concept SSD Application that seeks consent for the design and to physically construct the development.
DPE	Department of Planning and Environment
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000 (NSW)</i>
EIS	Environmental Impact Statement
Heritage item	An item of environmental heritage listed in Schedule 5 of <i>Sydney Local Environmental Plan 2012</i> or on the State Heritage Register under the <i>Heritage Act 1977</i> .
Integrated station development	integrated station development – combined station, OSD and public domain works.
LAHC	NSW Land and Housing Corporation
Over Station Development (OSD)	Over station development as defined in the CSSI Approval – includes non-rail related development that may occupy land or airspace above, within or in the immediate vicinity of the Sydney Metro CSSI but excluding spaces and interface works such as structural elements that may be constructed as part of the CSSI Approval to make provision for future developments
Preferred Infrastructure Report (PIR)	The Submissions and Preferred Infrastructure Report submitted as part of Sydney Metro City & Southwest Chatswood to Sydenham project, application no. SSI 15_7400
SDCP 2012	<i>Sydney Development Control Plan 2012</i>



Term	Definition
Secretary	Secretary of the NSW Department of Planning and Environment, or their delegate
SSP SEPP 2005	<i>State Environmental Planning Policy (State Significant Precincts) 2005</i>
SLEP 2012	<i>Sydney Local Environmental Plan 2012</i>
SSD	State significant development as defined by section 4.36 of the EP&A Act
SSP	State significant precinct
Station box	The volumetric area of the Waterloo Station development approved under the CSSI Approval – includes below and above ground elements up to the ‘transfer slab’ level, within and above which would sit each OSD. Waterloo OSD is also located within the Metro Quarter site adjacent to the station box.
Sydney Metro City & Southwest – Chatswood to Sydenham project	<p>The Chatswood to Sydenham component of Sydney Metro City &amp; Southwest involves the construction and operation of a 16.5- kilometre metro line from Chatswood, under Sydney Harbour and through Sydney’s CBD out to Sydenham.</p> <p>This section of the Sydney Metro City &amp; Southwest will deliver metro stations at:</p> <ul style="list-style-type: none"> <li>• Crows Nest</li> <li>• Victoria Cross</li> <li>• Barangaroo</li> <li>• Martin Place</li> <li>• Pitt Street</li> <li>• Central (new underground platforms)</li> <li>• Waterloo</li> <li>• Sydenham</li> </ul> <p>This part of the project will operate between Chatswood and Sydenham Stations.</p>
Sydney Metro City & Southwest – Sydenham to Bankstown Upgrade	<p>Upgrading of the T3 Bankstown Line to Sydney Metro standards between Sydenham and Bankstown, including the upgrade of all 10 stations.</p> <p>These works are the subject of a separate Critical State Significant Infrastructure project (reference SSI 17_8256) which was lodged with DPE in September 2017. This application has yet to be determined.</p>
Sydney Metro	The applicant for the concept SSD Application.
Sydney Metro CSSI	Sydney Metro City & Southwest – Chatswood to Sydenham project.
UrbanGrowth NSW	UrbanGrowth NSW Development Corporation

## Statement of Validity

Item	Details
<b>Development application details (SSD 18 9393)</b>	
<b>Applicant name</b>	Sydney Metro
<b>Responsible person</b>	Fil Cerone, Director Sustainability Environment & Planning, Sydney Metro City & Southwest, Sydney Metro Level 43, 680 George Street, Sydney
<b>Applicant address</b>	PO Box K659 Haymarket NSW 1240
<b>Land to be developed</b>	<p>In Sydney:</p> <ul style="list-style-type: none"> <li>• Lot 4 DP 215751</li> <li>• Lot 5 DP 215751</li> <li>• Lot 1 DP814205</li> <li>• Lot 1 DP228641</li> <li>• Lot 2 DP228641</li> <li>• SP75492</li> <li>• Lot 12 DP399757</li> <li>• Lots A-E DP108312</li> <li>• Lot 1 DP27454</li> <li>• Lot 2 DP27454</li> <li>• Lot 1 DP996765</li> <li>• Lot 1 DP433969 &amp; Lot 1 DP738891</li> <li>• Lot 31 DP805384</li> <li>• Lot 32 DP805384 &amp; Lot A DP408116</li> <li>• Lot 1 DP205942 &amp; Lot 1 DP436831</li> <li>• Lot 2 DP205942</li> </ul>
<b>Proposed development</b>	<p>Sydney Metro Waterloo Metro Quarter Over Station Development. A concept State Significant Development Application for over station development at the approved Waterloo Station, Sydney. The application seeks consent to the broad development concept for the future development including the maximum building envelope, maximum gross floor area, land uses, pedestrian and vehicle access, car parking, signage, subdivision and structural, servicing and space provisioning integration with Waterloo Station which was approved as Critical State Significant Infrastructure (SSI 15_7400) by the Minister for Planning on 9 January 2017 (as modified). The application also seeks approval for strategies for design excellence, affordable housing, stormwater management, ecological sustainable development, and public art.</p>

**Environmental Impact Statement prepared by:**

<b>Name</b>	Paul Robilliard Director, Planning Ethos Urban
<b>Qualifications</b>	Bachelor of Town Planning (UNSW) Master of Environmental Management (Macquarie University)
<b>Address</b>	173 Sussex Street, Sydney
<b>Declaration</b>	<p>I declare that I have prepared the contents of this Environmental Impact Statement and to the best of my knowledge:</p> <ul style="list-style-type: none"> <li>• it is in accordance with Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i></li> <li>• it includes all available information that is relevant to the environmental assessment of the development to which the Statement relates</li> <li>• the information contained in the Statement is neither false nor misleading.</li> </ul>

**Signature**



**Date** 9/11/2018

## Executive Summary

### Introduction

Sydney Metro is Australia's biggest public transport project. A new standalone metro railway system, this 21st century network will deliver 31 metro stations and 66km of new metro rail for Australia's biggest city — revolutionising the way Sydney travels. Services start in the first half of 2019 on Australia's first fully-automated railway.

Sydney Metro was identified in *Sydney's Rail Future*, as an integral component of the *NSW Long Term Transport Master Plan*, a plan to transform and modernise Sydney's rail network so it can grow with the city's population and meet the future needs of customers. In early 2018, the *Future Transport Strategy 2056* was released as an update to the *NSW Long Term Transport Master Plan* and *Sydney's Rail Future*. Sydney Metro City & Southwest is identified as a committed initiative in the *Future Transport Strategy 2056*.

Sydney Metro is comprised of three projects:

- **Sydney Metro Northwest** — formerly the 36 kilometre North West Rail Link. This \$8.3 billion project is now under construction and will open in the first half of 2019 with a metro train every four minutes in the peak.
- **Sydney Metro City & Southwest** — a new 30 kilometre metro line extending the new metro network from the end of Sydney Metro Northwest at Chatswood, under Sydney Harbour, through the CBD and south west to Bankstown. It is due to open in 2024 with an ultimate capacity to run a metro train every two minutes each way through the centre of Sydney.
- **Sydney Metro West** — a new underground railway connecting the Parramatta and Sydney central business districts. This once-in-a-century infrastructure investment will double the rail capacity of the Parramatta to Sydney CBD corridor and will establish future capacity for Sydney's fast growing west. Sydney Metro West will serve five key precincts at Westmead, Parramatta, Sydney Olympic Park, The Bays and the Sydney CBD. The project will also provide an interchange with the T1 Northern Line to allow faster connections for customers from the Central Coast and Sydney's north to Parramatta and the Sydney CBD.

Sydney's new metro, together with signalling and infrastructure upgrades across the existing Sydney suburban rail network, will increase the capacity of train services entering the Sydney CBD — from about 120 an hour currently to up to 200 services beyond 2024. That's an increase of up to 60 percent capacity across the network to meet demand.

### Waterloo Integrated Station Development

Waterloo Station is part of the Central to Eveleigh area — a vibrant part of Sydney, built upon an enriched history and a diverse collection of neighbourhoods.

The new station will support the continued growth of the area, providing access to Central Sydney in a highly accessible and central location.

Bound by Botany Road and Raglan, Cope and Wellington Streets, the proposed Metro Quarter over station development (OSD) would provide for additional mixed use capacity which responds to the station at the site and would become a new local centre for residents of the Metro Quarter, adjoining

Waterloo Estate and the surrounding Waterloo/Alexandria area. Waterloo Station and the Metro Quarter OSD project would together be a key catalyst for change in the Redfern-Waterloo area, providing residents, workers and visitors access to the Sydney Metro network, connecting to surrounding Metropolitan and strategic centres, such as Central Sydney, St Leonards and Macquarie Park. The extent of change in urban form would be most noticeable immediately around the station (in the Metro Quarter) and in the adjacent Waterloo Estate. In other parts of the locality, particularly the nearby Heritage Conservation Areas (HCAs), the focus would be on retaining the existing urban form, while ensuring residents and workers still benefit from access to new public transport and the services, jobs and amenity of the new centre at the Metro Quarter.

The Metro Quarter, as part of the broader Waterloo Precinct, was nominated as an area of State planning significance, by the Minister for Planning (the Minister). Investigations have been undertaken to determine new planning controls through a State Significant Precinct (SSP) Study, in accordance with the *State Environmental Planning Policy (State Significant Precincts) 2005* (the SSP SEPP). The Metro Quarter SSP Study was submitted to the Department of Planning & Environment (DPE) in July 2018. The Study includes proposed statutory planning controls and a Development Control Plan (DCP) to guide future development within the Metro Quarter. Following the consideration of the SSP Study, amendments to the SSP SEPP would be sought to formally designate the proposed planning controls. This concept SSD Application for the Metro Quarter OSD has been prepared in response to the proposed planning controls of the Waterloo Metro Quarter SSP Study.

The proposal comprises a mixed use residential, retail and commercial and community development. The proposed envelope of the Metro Quarter OSD comprises three taller building forms situated above a podium that integrates with the Waterloo station boxes. The development would comprise a range of compatible uses, with residential, retail and commercial, supported by community uses. This opportunity to provide transit-oriented development above and around Waterloo Station supports government objectives to achieve a more sustainable and efficient use of land to meet Sydney's growth.

The proposed residential component of the development would contain approximately 700 dwellings, including social and affordable housing. This residential land use would assist in activating the precinct after business hours, and has been located within buildings above the podium to provide the optimum amenity outcome for future residents.

Non-residential uses would be designed to cater to local needs such as community services and convenience needs (e.g. cafes). These uses are located at the ground and podium levels, clustered around pedestrian desire lines associated with Waterloo Station. The concept proposal has been designed to activate the public domain areas, whilst integrating with the Waterloo Station to provide for convenient metro customer experience. The design has also responded to constraints of the site including Botany Road and its associated amenity impacts.

To achieve the best quality outcomes, Sydney Metro is seeking to integrate its stations into active precincts. The Waterloo Station is a key catalyst in the ongoing transformation of inner Sydney, supporting the role of Sydney CBD as the heart of global Sydney. Sydney Metro provides a new railway spine through the CBD, the likes of which has not occurred for 40 years in Sydney, and accordingly needs to be supported as primary transport infrastructure for the future.

As new metro stations are built underground, the opportunity exists for the procurement of the stations and OSDs as a single integrated station development package which would encourage delivery at the same time and provide the flexibility for the OSD to be delivered in line with market conditions.

Concurrent construction of the station, public domain works and OSD would help to reduce community impacts and would allow for the whole development (or at a minimum key OSD stages that interface directly with the Waterloo Station) to be completed close to when Sydney Metro services start in 2024.

Other opportunities to deliver station and public domain works as part of integrated station developments have been identified at Victoria Cross (North Sydney), Crows Nest, Martin Place and Pitt Street Stations (including both the north and south portals of Pitt Street Station).

Sydney Metro is progressing the concept State significant development (SSD) Application for the Metro Quarter OSD, which seeks approval for a building envelope (i.e. volumetric parameters), maximum gross floor area (GFA), land uses, future subdivision (if required), future signage and general development strategies to inform the future detailed design of the OSD. The building envelope has been designed to allow future mixed use buildings to sit above and adjacent, and be fully integrated with Waterloo Station, forming a single integrated station development.

This concept SSD Application is the first stage in the development assessment process for the OSD. Consent is not sought for any construction or other physical work as part of this application, although a high level assessment of potential construction related impacts is provided. These aspects of the development would be subject to detailed SSD Application(s).

## Sydney Metro City & Southwest planning approval

In January 2017, the construction of the initial portion of Sydney Metro City & Southwest (Chatswood to Sydenham) was approved by the Minister for Planning under Part 5.1 (now Division 5.2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as a Critical State Significant Infrastructure project (SSI 15\_7400). The project (hereafter referred to as the CSSI Approval) includes the delivery of six new metro stations, including at Waterloo, together with new underground platforms at Central.

Since its determination, five modifications have been lodged to modify various aspects of the CSSI Approval. These modification applications relate to Victoria Cross and Artarmon Substation, Central Walk, Martin Place Station (associated with changes proposed by Macquarie Group in their Unsolicited Proposal), Sydenham Station and Sydney Metro Trains Facility South, and [Blues Point acoustic shed](#). Further detail in respect to each application is provided in Chapter 1.2 of this EIS.

The remainder of the City & Southwest project (Sydenham to Bankstown) proposes the conversion of the existing heavy rail line and the upgrade of the existing railway stations along this alignment to metro standards. This portion of the project, referred to as the Sydenham to Bankstown Upgrade, is the subject of a separate CSSI Application (No. SSI 17\_8256) for which an Environmental Impact Statement (EIS) was exhibited between September and November 2017. A Response to Submissions and Preferred Infrastructure Report was submitted to the DPE in June 2018 for further exhibition and assessment. This application is subject to assessment and determination by DPE, taking into consideration a further Response to Submissions Report which was submitted to DPE in September 2018.

As indicated above, early planning is also underway for the next stage of the Sydney Metro alignment, Sydney Metro West.

## Waterloo Metro Quarter State Significant Precinct

State Significant Precincts (SSPs) are areas that the Minister has determined to be matters of state or regional planning significance. State or regional planning significance relates to social, economic or environmental characteristics that enable a precinct to play a particularly important role in achieving government policy objectives, including increasing the supply of housing and improving housing choice and affordability.

SSPs are declared and planned in accordance with the SSP SEPP. Potential SSPs are assessed against the following criteria to determine their State or regional planning significance:

- be a large area of land within a single ownership or control, typically government owned
- be of state or regional importance in achieving government policy objectives, particularly those relating to increasing delivery of housing and jobs
- be of state or regional importance for environmental or natural resource conservation
- be of state or regional importance for heritage or historical significance.

Following the decision to locate a metro station in Waterloo, the Minister determined that parts of Waterloo are of State planning significance which should be investigated for urban renewal through the SSP process. SSP study requirements for such investigations were issued by the Minister on 19 May 2017.

Investigation of the Precinct is being undertaken by UrbanGrowth NSW Development Corporation (UrbanGrowth NSW), in partnership with Sydney Metro and the Land and Housing Corporation (LAHC). The outcome of the SSP process would be new planning controls that would enable future development applications for renewal of the Precinct.

The Precinct includes two separate but contiguous and inter-related parts:

- The Waterloo Metro Quarter (the Metro Quarter)
- The Waterloo Estate (the Estate)

An SSP Study for the Metro Quarter was lodged in July 2018, in advance of the SSP Study for the Estate. The Metro Quarter SSP Study has progressed ahead of, but coordinated with, investigations for the Estate to provide a planning framework for the construction of the Metro Quarter OSD. The staged submission of the Metro Quarter SSP Study also facilitates the proposed development to be delivered concurrently with the metro station, as an integrated station development.

As this concept SSD Application relies upon the planning framework proposed in the Metro Quarter SSP Study, it is anticipated that the SSP Study and the EIS for the concept SSD Application would be exhibited concurrently.

## Planning relationship between Waterloo Station and Metro Quarter OSD

While the Waterloo Station and OSD would form a single integrated station development, the planning pathways defined under the EP&A Act require separate assessment for each component of the development. In this regard, the approved station works are subject to the provisions of Part 5.1 of the EP&A Act (now referred to as Division 5.2) and the OSD component is subject to the provisions of Part 4 of the EP&A Act.

The station works under the CSSI Approval include the construction of below and above ground structures necessary for delivering the station and enabling construction of the integrated OSD. This includes but is not limited to:

- demolition of existing development
- excavation required for the station structures
- station structures including concourse and platforms
- lobbies
- spaces for retail uses within the station
- public domain improvements associated with the station
- access arrangements including vertical transport such as escalators and lifts
- structure and service elements and relevant space provisioning necessary for constructing the OSD, such as columns and beams, space for lift cores, plant rooms, access, parking, and building services

### Planning context

This EIS has been prepared by Sydney Metro for submission to DPE in support of a concept SSD Application for OSD comprising mixed use buildings integrated with the station box of Waterloo Station, which is part of the new standalone Sydney Metro rail network.

*State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)* identifies State Significant Development. Under the criteria in clause 19(2) of Schedule 1 of the SRD SEPP, this proposal is SSD, as it is within a rail corridor, is associated with railway infrastructure for the purposes of residential or commercial premises and has an estimated capital investment value in excess of \$30 million. Accordingly, it also qualifies as SSD for the purposes of section 4.36 of the EP&A Act.

In accordance with clause 8(2) of the SRD SEPP, 'if a single proposed development the subject of one development application comprises development that is only partly State significant development declared under subclause (1), the remainder of the development is also declared to be State significant development...'. Any aspects of the development that are not within the scope of residential or commercial development, but which are proposed (conceptually) as part of this SSD Application, are therefore also taken to be SSD.

This application is made under Part 4 of the EP&A Act and comprises a 'concept application' under section 4.22 of the EP&A Act. It forms the first stage of the Metro Quarter OSD project and, along with



the Waterloo Metro Quarter SSP Study, sets the planning framework (height, setbacks, floor space, carparking, access and land use) against which future detailed SSD Application(s) will be assessed.

The proposed framework outlined within the Waterloo Metro Quarter SSP Study includes:

- **Amending the SSP SEPP** – This would include a new set of planning objectives, zoning and key development standards applied to the Metro Quarter
- **A Waterloo Metro Quarter SSP Development Control Plan (WMQ DCP)** – This would include detailed controls to inform future development of the precinct. The WMQ DCP provides detailed planning and design guidelines to support the planning controls in SSP SEPP. The Sydney DCP 2012 (SDCP 2012) will not apply to Metro Quarter, except where specifically referred to in the WMQ DCP.

The concept proposal for the OSD has been designed to be fully integrated with the current stage of station design for Waterloo Station. No physical works are proposed under this application.

The EP&A Act requires that an EIS be prepared for SSD, including particulars of the location, nature and scale of the development and an assessment of the development's environmental impact under section 4.15. The EIS must be prepared in accordance with the requirements referred to in the EP&A Act and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). This includes the Secretary's Environmental Assessment Requirements (SEARs) (Appendix A).

This EIS has been prepared by Sydney Metro for exhibition and assessment by DPE. The Minister for Planning or his delegate is the consent authority for the proposed development.

## Project aims

The following aims have been identified for the proposed development following an assessment of the site opportunities and constraints:

- support the NSW Government's planning strategies and objectives, including the *Greater Sydney Region Plan (2018)* and the *Eastern City District Plan (2018)*
- enable the development of a mixed use precinct at the site which caters to a range of different uses and works to create a fully integrated station precinct at Waterloo
- support a range of spaces that would cater for the special social and economic needs of the current and future Waterloo Precinct, including community facilities
- enhance customer experience and urban amenity through the development of an integrated design concept that ensures delivery of a quality public domain area with strong connections to the site's surroundings
- create an urban environment that drives high usage of the Sydney Metro network responding directly to the principle of transit oriented development
- provide opportunity for the OSD to be delivered as early as possible with the aim of opening much of the OSD concurrently with or shortly following completion of the Waterloo Station
- enable a building form which works to minimise (to the maximum extent possible) overshadowing on public open spaces and nearby residential areas, in accordance with the Waterloo Metro Quarter SSP Study

- provide a sensitive relationship between the proposed development of the Metro Quarter and its surrounding heritage context
- create a framework which works to achieve design excellence in the final integrated station development
- enable a new transport interchange that prioritises public and active transport
- establish new publicly accessible open space in the form of plazas that would provide access to the station entries, connect the Metro Quarter with surrounding streets, and function as spaces for passive recreation and social interaction
- support the provision of affordable and social housing
- embrace sustainability initiatives in the Metro Quarter, including through lower levels of on-site carparking, stormwater re-use and water-sensitive design, and measures intended to improve the environmental performance of buildings

## Project needs and benefits

Waterloo Station is a key new station on the Sydney Metro network, comprising one of five metro stations in City of Sydney LGA, alongside Barangaroo Station, Martin Place Station, Pitt Street Station and Central Station (new underground platforms). The new Waterloo Station would be a key catalyst for change in the Redfern-Waterloo area, providing residents, workers and visitors access to the Sydney Metro network, connecting to surrounding Metropolitan and strategic centres, such as Central Sydney, St Leonards and Macquarie Park.

The *Eastern City District Plan* recognises the role of the new station in supporting urban renewal in Waterloo. The Metro Quarter OSD would be a key element of the renewal process for Waterloo that would be centred around the Waterloo Station. The OSD would be integrated with the construction of the station and is a prime opportunity to create a new precinct where transport and land use are truly integrated.

Beyond the Metro Quarter OSD, the surrounding community within the walking catchment of the metro station would benefit from improved public transport, new shops, employment opportunities and social services. Residents of the Waterloo Estate in particular would have better access to high frequency and high quality public transport.

The concept proposal seeks to build upon the opportunities afforded by Sydney Metro through the provision of a mixed use OSD which is integrated with Waterloo Station. The various uses of the OSD, being residential accommodation, retail premises, entertainment facilities, business and commercial premises and community and indoor recreation facilities, respond to a number of different in demand land uses in the Redfern-Waterloo area and wider Eastern City District.

The Metro Quarter is therefore ideally positioned to be an emerging centre of activity that offers new homes and a diversity of land uses that provide the local community day-to-day access to community services – with shops, services, cultural places and work environments promoting activity around the new Waterloo Station.

## The concept proposal

The concept SSD Application seeks concept approval in accordance with section 4.22 of the EP&A Act for the OSD above and adjacent to the approved Waterloo Station. The concept development proposal, if approved, would inform the detailed design of the future OSD and specifically seeks development consent for:

- maximum building envelopes, including maximum building heights, street-wall heights and ground and upper level setbacks
- a maximum GFA of approximately 68,750 square metres comprising:
  - approximately 56,200 square metres GFA of residential accommodation, providing for approximately 700 dwellings, including 5 to 10 percent affordable housing and 70 social housing dwellings
  - approximately 3,905 square metres of GFA for retail premises and entertainment facilities
  - approximately 8,645 square metres GFA for business and commercial premises and community and recreation facilities (indoor), including a minimum 2,000 square metres for community uses
- a three storey podium and a free standing building located within a public plaza, accommodating non-residential land uses
- residential uses above podium level in various building forms including three taller buildings of 23, 25 and 29 storeys (Reduced Level (RL) 96.9, 104.2 and 116.9 metres Australian Height Datum (AHD) respectively)
- use of OSD space provisioning within the footprint of the CSSI Approval
- public domain works, including open space, through-site links, footpaths, provision for cycle facilities and enhanced pedestrian crossings and roads
- car parking for up to 427 vehicles
- cycle parking to support residential and non-residential land uses and visitors to the Metro Quarter. Approval is also being sought for space within the future basement for a bike hub which would also support future bike parking for Waterloo Station
- loading, vehicular and pedestrian access arrangements
- strategies for utilities and services provision
- strategies for managing stormwater and drainage
- a strategy for the achievement of ecologically sustainable development
- a public art strategy
- provision for future signage zones
- a design excellence framework
- the future subdivision of parts of the OSD footprint (if required)

As this is a concept SSD Application pursuant to section 4.22 of the EP&A Act, separate development applications (or one application) would follow for detailed proposals including the design and construction of the OSD. A concept indicative design, showing a potential building form outcome at the

site, has been provided as part of this concept SSD Application at Appendices C and D. Figure 1 and Figure 2 show key elements of the concept proposal.

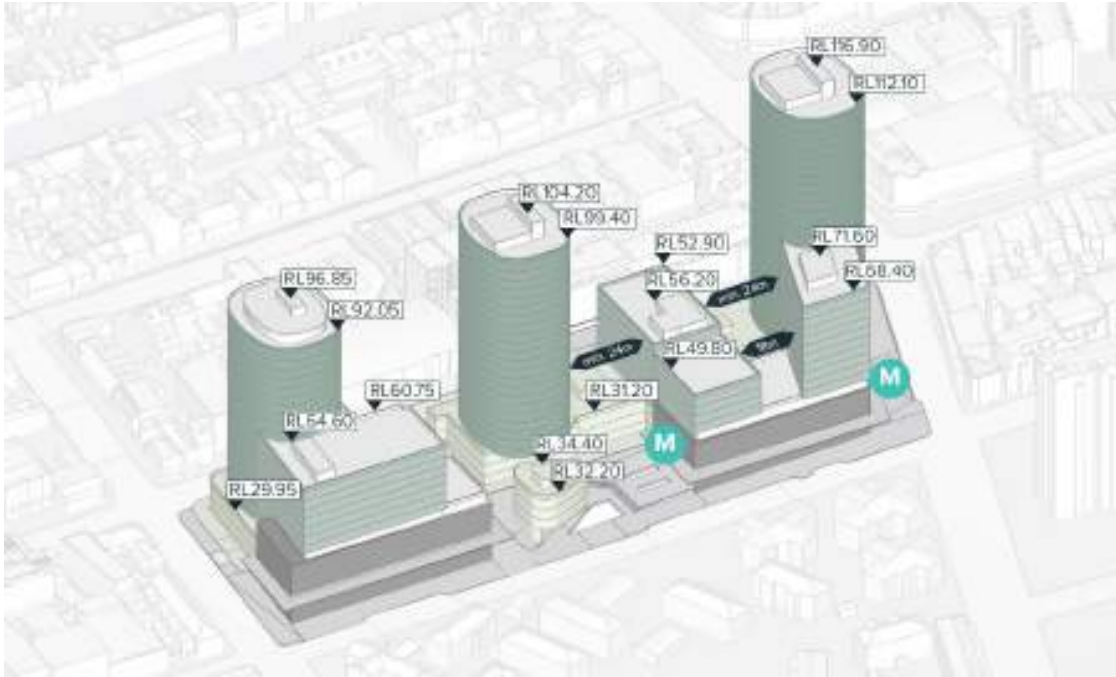


Figure 1 – The concept proposal



Figure 2 – Plan view of proposed building envelopes

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## Assessment of impacts and mitigation measures

This EIS has been prepared in accordance with the provisions of Part 4 of the EP&A Act, including key requirements to address the SEARs issued for the project.

Key environmental issues have been examined throughout the design and development process. Consultation has been carried out with key stakeholders to identify potential impacts at an early stage. Where possible, measures to avoid or mitigate impacts have been recommended.

An overview of the impacts and measures proposed to minimise and/or address these impacts is provided below. More detailed assessment is provided in Chapter 8 of this EIS, supported by a range of technical papers, included as appendices to this EIS. Measures proposed to manage impacts are addressed in Chapter 12 of this EIS.

### Built form and urban design

The proposed building envelope has been designed to provide an appropriate response to the surrounding context, while also enabling the delivery of a high quality development at the site. The proposed built form has been informed by the provisions of the proposed Metro Quarter planning framework under the SSP SEPP, WMQ DCP, Sydney Development Control Plan 2012 (SDCP 2012) and consideration of potential solar access and heritage impacts.

At the building podium, the proposed envelopes provide a three-storey street wall along Botany Road, Raglan and Wellington Streets. Front setbacks range between 2.5 metres and 10 metres to facilitate the provision of widened footpaths, public domain and maintain view lines to and from the Waterloo Congregational Church.

The mid-rise envelopes reference the building typologies of recent residential infill buildings throughout the locality and provide a transition between podium and taller building typologies. The mid-rise envelopes range between 4 storeys and 10 storeys. Upper level setbacks minimise overshadowing impacts to residential properties to the south of the site. The positioning of mid-rise envelopes complies with minimum building separation requirements in the Apartment Design Guide (ADG).

Three taller building forms of 23, 25 and 29 storeys would act as destination markers for the metro station and the new activity centre. The heights of these buildings are consistent with the maximum number of storeys outlined within the WMQ DCP and have been designed to minimise overshadowing and facilitate a transition of building scale to surrounding developments. The curvature of the taller building envelopes would visually soften the buildings, mitigate potential wind downwash and reduce the floor plate size. The positioning of taller building envelopes would also comply with minimum building separation requirements outlined within the ADG.

The future detailed SSD Application for the OSD would need to propose buildings consistent with the building envelope prescribed in this concept SSD Application. The detailed design of the OSD would also be guided by the Design Guidelines and Design Excellence Strategy prepared by Sydney Metro.

### Solar access

The proposed building envelopes have been designed to maintain direct solar access to Alexandria Park and to minimise overshadowing of adjacent residential properties.

In accordance with the SDCP 2012 and the WMQ DCP, the proposal maintains solar access to Alexandria Park in excess of the required 50 percent for four hours between 9am and 3pm on 21 June. The eastern part of the park, which is used for passive recreation, maintains in excess of 50 percent solar access at all times between 9am and 3pm on 21 June. Only limited overshadowing occurs to the Park, near the eastern boundary, between 9am to 10am, on 21 June. After 10am, the proposed development would result in no overshadowing to the Park. As such the overshadowing impacts of the proposed development to Alexandria Park are considered negligible.

The overshadowing impacts of the proposal were assessed at existing and approved residential buildings within the vicinity of the site, including those within the Alexandria Park HCA. With the exception of 74-88 Botany Road, in accordance with the WMQ DCP and the ADG the proposed envelopes would not result in less than 2 hours of direct solar access to private open space and living areas between 9am and 3pm on 21 June at these properties.

74-88 Botany Road, located to the west of the site, is subject to an approved development application for mixed use development. Residential living areas are proposed to face Botany Road. As a result, the proposed envelopes would overshadow a significant portion of the living room windows. The proposed envelopes have been designed to mitigate this impact, including curved built form and reduced north-south building depths. Further, it is understood the landowner is currently investigating alternative massing options. Sydney Metro and UrbanGrowth NSW intend to work with the landowner through this process to further mitigate overshadowing impacts.

### **Residential amenity**

The residential component of the proposed development has been assessed against the provisions of the ADG. The assessment concludes that applications for detailed development proposals, consistent with the concept development proposal, would be capable of achieving the minimum provisions of the ADG, including those relating to solar access, cross ventilation, building separation and privacy, internal separation and communal open space. It is noted that the current OSD design is indicative in nature, commensurate with the level of detail required for a concept SSD Application. A detailed assessment against the provisions of the ADG would be provided as part of a future detailed SSD Application(s).

### **Visual and view impacts**

A Visual Impact Assessment Report has been prepared to assess the impact of the proposed envelopes on views to and from adjoining developments, key vantage points and streetscape locations. A total of 11 local views (i.e. from within and around the Waterloo SSP) and 10 regional views (i.e. from key open space including Waterloo Park, Alexandria Park, Redfern Park and Sydney Park) were selected.

For each of the selected views, a qualitative assessment of the following has been provided:

- the existing visual environment (as viewed from the agreed critical viewing points)
- the capacity of the visual environment to absorb change (as viewed from the agreed critical viewing points)
- the amount of change that would be experienced as a result of the implementation of the proposal (carried out with the aid of survey accurate photomontages prepared from agreed critical viewing points)

- the visual quality of the changed visual environment in comparison with the environment prior to development.

The assessment has been informed by relevant planning principles set by the Land and Environment Court of NSW, specifically in *Rose Bay Marina Pty Ltd v Woollahra Council and Anor [2013] NSWLEC 1046*.

The assessment has concluded that the visual catchment of the selected local view points, particularly those from within the Waterloo Estate, would change significantly as a result of the proposed envelopes. However, due to the existing built form context i.e. the existing taller buildings in the Estate, the visual environment is considered to have a high capacity to absorb this change. Subject to high quality architectural outcomes, the level of change to these views would be acceptable.

From locations outside the Waterloo SSP, including those within the Alexandria Park HCA, the proposed envelopes would only be partially visible, due to existing built form and vegetation. The proposed envelopes would have an acceptable impact on all local HCAs, including the Redfern Estate HCA, the Alexandria Park HCA and the Waterloo HCA. The proposed building envelopes have been found to be consistent with the visual quality Planning Principles for the development of the Metro Quarter, identified as part of the Waterloo SSP Study.

To mitigate additional visual impacts the Report recommends the buildings subject to detailed SSD Application(s) be contained entirely within the building envelopes proposed in this concept SSD Application. This would enable the view and visual impacts to be the same or less than those contemplated under this assessment. Detailed SSD Application(s) should investigate whether there are opportunities to vary and articulate the building form within the envelopes in order to minimise view and visual impacts. The detailed design of the future Waterloo Metro OSD would also be guided by the Design Guidelines and Design Excellence Strategy prepared by Sydney Metro.

## **Heritage**

A Heritage Impact Statement has been prepared to address the extent of impact on heritage items in the vicinity of the site including built and landscape items, conservation areas, views and settings.

Design responses have been implemented for the local heritage items (identified within the *Sydney Local Environmental Plan 2012 (SLEP 2012)*) located immediately adjacent or near the site including the Waterloo Congregational Church, Cauliflower Hotel, former CBC Bank Building, Cricketers Arms Hotel and Alexandria Park HCA. The proposed built form provides sufficient setbacks, aligns with existing street setbacks, integrates the Church within the proposed public domain and maintains visual linkages to the heritage items.

The Statement concludes that the proposed envelopes would have an acceptable impact on adjacent heritage items. Key recommendations have been incorporated within the mitigation measures outlined in Chapter 12.0.

## **Transport and accessibility**

A Transport Impact Assessment has been prepared to assess the transport, traffic and pedestrian implications and mitigation measures associated with the proposal. The transport demand generated

by the Metro Quarter OSD has been calculated based on the future mode share targets and an analysis of total travel demand based on trip generation surveys.

In response to constrained and restricted road network around Waterloo Precinct, the proposal seeks to reduce car usage, promoting public transport and active transport. Waterloo Station, and the Sydney Metro project as a whole, are anticipated to lead to substantial changes in travel choices, assisting to reduce pressure on the road network from traffic growth. The proposed Metro Quarter OSD will assist to encourage public transport, walking and cycling by locating residents and services directly above and adjacent to Waterloo Station.

The Sydney Metro service, once operational would have a capacity of 46,000 customers per hour in one direction. In combination with the existing heavy rail network, there is sufficient capacity within the metro service to accommodate the forecast demand (approximately 199 peak hour trips) generated by the Metro Quarter OSD.

Current bus routes, including the 309 and 355 services, typically have capacity available. Opportunities to further improve bus services are recommended to be investigated in the future.

Substantial cycling infrastructure is proposed to support Waterloo Station, including infrastructure already approved by as part of the CSSI Approval and additional facilities proposed as part of the Metro Quarter OSD. This infrastructure, which includes bicycle parking and end-of-trip facilities, would greatly improve the safety and efficiency of cycling trips to and from the Metro Quarter and accommodate the increased demand.

Pedestrian movements to and from Waterloo Station are anticipated to increase significantly once the metro station is operational. To accommodate additional pedestrians, a widened pedestrian crossing and footpaths are to be provided at the Botany Road/Raglan Street intersection as part of the CSSI Approval. Pedestrian crossings are also identified as being required across Cope Street to cater to pedestrians travelling between the Waterloo Estate and Waterloo Station. Pedestrian crossings are incorporated into the concept proposal at the intersection of Cope Street and Raglan Street, and Cope Street/Wellington Street, to facilitate safe pedestrian crossings in these locations. Cope Street is also proposed to be a slow speed shared zone environment in the block adjacent to the Metro Quarter to encourage safe pedestrian connections between the Estate and Metro Quarter and Waterloo Station.

The proposal accommodates up to 427 car parking spaces, in accordance with the Category A maximum rates for residential uses and Category D formulas for non-residential uses as outlined within SLEP 2012 and the Waterloo Metro Quarter DCP. The distribution of car parking spaces for each of the proposed uses would be further investigated as part of the detailed SSD Application(s). Parking for bicycles (1,140 parking spaces), motorcycles (36 parking spaces) and service vehicles (8 parking spaces) are included in the proposed concept in line with the SDCP 2012 and WMQ DCP requirements. Further detailed design of the parking spaces would be subject to the detailed SSD Application(s).

The Transport Impact Assessment provides a number of recommendations to be incorporated as part of the future detailed design and use of the OSD buildings.

### **Ecologically sustainable development**

An Ecologically Sustainable Development (ESD) Report (Appendix S) has been prepared to define principles that would be incorporated into the future design, construction and operation of the OSD.



This framework would work to establish the manner in which a future detailed design would need to address a number of different environmental targets and performance measures, to reflect best practice sustainable building principles including for energy and water efficiency and the use of renewable energy.

### **Prescribed airspace for Sydney Airport**

The potential impact of the development has been considered having regard to the 'Prescribed Airspace' for Sydney Airport. The proposed envelopes would support the construction of future buildings which would exceed the height of the Obstacle Limitation Surface (OLS) for Sydney Airport at the site, by a maximum of 47 metres. The OLS does not, in itself, limit the height of the proposed buildings, but triggers the need for approval by the Commonwealth Department of Infrastructure, Regional Development and Cities (DIRD) under the *Commonwealth Airports (Protection of Airspace) Regulations* (APARs). An approval under the APARs would be sought following the preparation of future detailed SSD Application(s).

Notwithstanding, the proposed envelopes would not contribute any measurable adverse effect to the safety, regularity or efficiency of air traffic. The Aeronautical Impact Assessment concludes there is no technical impediment to approval of the proposed envelopes.

### **Wind impacts**

A Pedestrian Wind Environment Impact Assessment has been prepared to provide a qualitative assessment of the likely impacts of the proposed OSD on local pedestrian-level, private balcony, podia and communal space wind conditions in accordance with the relevant criteria.

Following detailed wind tunnel testing, the Report finds that most locations within the ground level public domain, including at the northern and southern metro station entrances, the Cope Street Plaza, Raglan Street Plaza and the Botany Road southbound bus stop, meet the pedestrian comfort criteria. Notwithstanding, as a result of limited shielding and wind down-washing and wrapping around the proposed building envelopes, without the inclusion amelioration devices, some locations within the public domain would not meet the criteria. These locations include the pedestrian through-site link and new internal road off Cope Street. As such, recommended wind amelioration devices, including impermeable awnings, have been incorporated within the concept proposal to mitigate wind impacts in these locations. These elements would be further developed during detailed design. With the inclusion of such devices it is expected that the wind conditions for all outdoor trafficable areas within and around the development would be suitable for their intended uses.

A desktop analysis of the wind effects relating to the elevated balcony areas has been carried out in the context of the local wind climate, building morphology and land topography. No wind tunnel tests have been undertaken for these areas. The Report concludes that subject to the implementation of ameliorative measures, it is expected that the private and communal spaces would have acceptable wind conditions.

### **Stormwater and flooding**

The Metro Quarter has been modelled to consider the 100 year average recurrence interval (ARI) and probable maximum flood (PMF) events, as well as the probable maximum flood hazard levels. There is an area of high flood hazard around the Cope Street and Wellington Street intersection. During

significant rainfalls, flood water depths in this area can exceed one metre. The depth of ponding in the southern portion of the Metro Quarter is up to one metre for the 100 year ARI and 1.6 metres for the PMF events.

To mitigate the consequence of this ponding, the flood planning level (FPL) at the southern end of the Metro Quarter has been set to approximately 1.5 metres above street level, while at the northern end it is up to 0.9 metres above the street level. The raising of proposed ground levels is to ensure there are no floodwater breaches from significant storm events. Entrances to underground areas such as carparks are also required to be flood free in the PMF event. A Flood Evacuation Plan has been prepared to mitigate against flood risk. The FPL and emergency response measures would be considered as part of the detailed design of the Metro Quarter.

The proposed stormwater drainage and runoff system for the Metro Quarter development would comply with the design requirements of the SDCP 2012 and the *City of Sydney Interim Floodplain Management Policy*. The stormwater quality management approach would involve integrating Water Sensitive Urban Design (WSUD) techniques in the proposed stormwater drainage system and intends to achieve the City of Sydney's stormwater quality reduction targets. Further details would be provided as part of the detailed SSD Application(s).

### **Noise and vibration**

An Acoustic and Vibration Impact Assessment Report has been prepared to assess the potential construction and operation noise and vibration impacts associated with the OSD, and to consider the amenity of future occupants of the buildings.

The highest construction noise levels were predicted at the closest receivers surrounding the site during the 'earthworks and basement construction' scenario. Noise sources in this scenario may include an excavator, pile driver and trucks. The predicted noise levels at these receivers during the 'worst case scenario' (i.e. during both the 'Earthworks / Basement Construction' scenario and 'Building Construction' scenario, when all construction noise sources are in use), without the implementation of noise mitigation measures (i.e. localised screening or site hoarding) would be significantly higher than the required criteria.

However, as the findings represent a worst-case assessment, it is expected that the construction noise levels would frequently be lower than predicted at the most exposed receivers. Further, with appropriate noise mitigation it is expected to achieve the required criteria. Such mitigation measures would be incorporated as part of a comprehensive Construction Noise and Vibration Management Plan once more specific information regarding the proposed construction methodology, equipment and staging is known. This would be undertaken as part of the detailed design and future SSD Application(s).

Noise intrusion into the future OSD during operation, from noise sources such as mechanical equipment, road traffic, and the Sydney Metro, would be able to be sufficiently mitigated and would be subject to further detailed design works. It is considered that the proposal is capable of achieving compliance with the relevant acoustic criteria.

### **Construction management**

A Preliminary Construction Management Statement (PCMS) has been prepared by Sydney Metro to address how construction of the project would be managed to surrounding residents,

pedestrians, existing road network and public transport and Sydney Metro users. The potential impacts associated with the three potential staging scenarios for construction of the integrated station development are considered, with the PCMS providing mitigation measures for the impacts of each stage. Detailed consideration of construction related impacts would occur as part of the detailed SSD Application(s).

### **Other issues**

A number of other issues have been assessed in this EIS including:

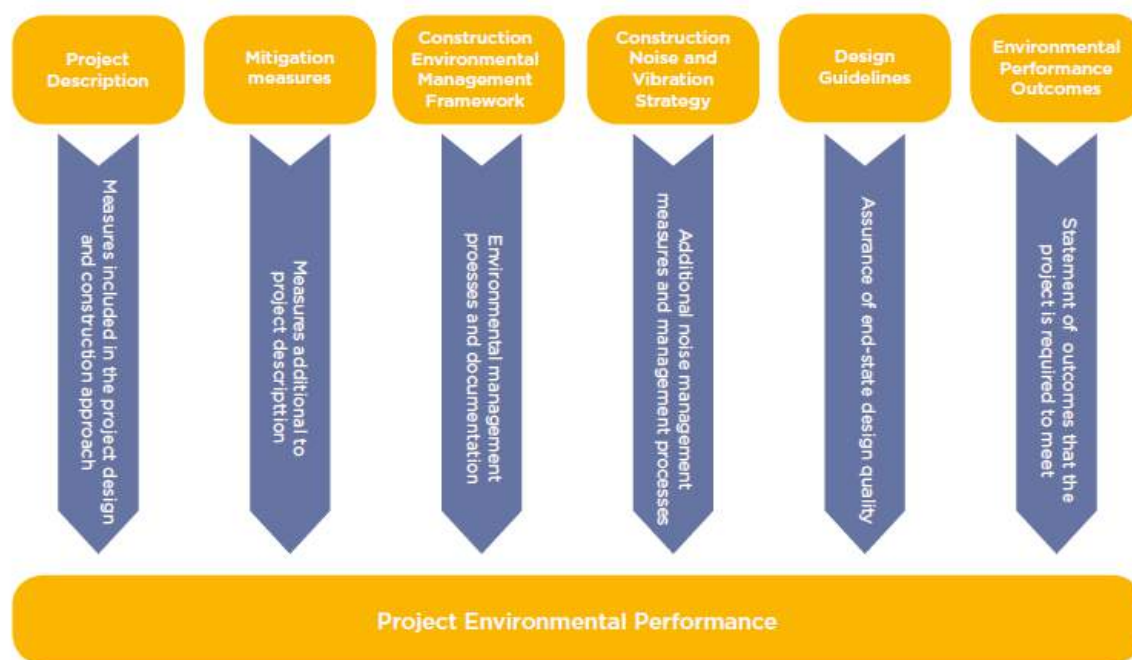
- streetscape and public domain
- integration with Sydney Metro station infrastructure
- air quality
- reflectivity
- utilities, infrastructure and services
- geotechnical and contamination
- crime prevention through environmental design (CPTED)
- accessibility
- social and economic impacts

No issues, major risk or consequences were identified. Management and mitigation measures have been identified to minimise any potential impacts.

## **Framework for the management of design and environmental impacts**

Given the integration of the delivery of the metro station with the OSD development, Sydney Metro has considered the management of impacts associated with the project. The project approach to environmental mitigation and management identified for the CSSI is illustrated in Figure 3 and includes:

- project design – measures which are inherent in the design of the project to avoid and minimise impacts
- mitigation measures – additional to the project design which are identified through the environmental impact assessment
- construction environmental management framework – details the management processes and documentation for the project
- construction noise and vibration strategy – identifies measures to manage construction noise and vibration
- design guidelines – provides an assurance of end-state quality
- environmental performance outcomes – establishes intended outcomes which would be achieved by the project



**Figure 3 – Project approach to environmental mitigation and management**

Sydney Metro proposes to implement a similar environmental management framework where the integrated delivery of the CSSI station works and the OSD occur concurrently. This would ensure a consistent approach to management of design interface and construction-related issues.

Sydney Metro proposes this environmental management framework would apply to the OSD until completion of the station and public domain components of the integrated station development delivery contract (i.e. those works under the CSSI Approval). Should the OSD construction period extend beyond the practical completion and opening of the station, standard practices for managing construction related environmental impacts would apply in accordance with the relevant guidelines and Conditions of Approval (CoA) for the detailed SSD Application(s).

Further detail regarding this framework and how it would be applied is included at Chapter 13.0 of this EIS.

## Community consultation

As part of the preparation of this application, consultation was undertaken with a range of stakeholders. Key consultation activities included:

- an industry briefing, held in April 2018 in Sydney. This event provided detailed information on integrated station development and was attended by over 600 representatives from Australian and international firms.
- community information sessions (advertised by letterbox drop and newspaper advertisements) held between 30 May and 20 June 2018 and was attended by a total of 188 community members.

- engagement with State and local government agencies and public authorities prior to submission to brief them on the project, including, but not limited to, the City of Sydney, RMS, NSW Police, NSW Ambulance, SES and DPE
- Place Managers engaged by Sydney Metro to build relationships and act as a feedback mechanism. Place Managers have been engaged with nearby residents, tenants and businesses near the Metro Quarter site throughout the preparation of this application

Feedback received from consultation has been incorporated into the design of the concept proposal where appropriate.

The DPE will place this concept SSD Application on public exhibition during which time community members and other stakeholders will be able to review the application and make a written submission.

Should this application be approved, Sydney Metro would continue engagement activities throughout the course of the project.

## Conclusion and justification

The Metro Quarter OSD would provide for a new mixed use precinct integrated with the metro station. The various uses of the OSD, being residential accommodation, retail premises, entertainment facilities, business and commercial premises and community and indoor recreation facilities, respond to a number of different in demand land uses in the Redfern-Waterloo area and wider Eastern City District. Through the combination of uses proposed, the development would enable the provision of a vibrant station precinct throughout the day and night.

Beyond the Metro Quarter OSD, the surrounding community within the walking catchment of the metro station would benefit from improved public transport, new shops, employment opportunities and social services. Residents of the Waterloo Estate in particular would have better access to high frequency and high quality public transport. The EIS demonstrates that the development takes into account and is consistent with the objects of the EP&A Act and addresses ecologically sustainable development considerations. The development is considered to best meet the objects when compared to other alternatives considered.

A detailed environmental assessment has been undertaken for the concept SSD Application, and has influenced the design evolution of the proposal. Consultation has been carried out with key stakeholders to identify potential impacts and to develop mitigation measures where required. Using the measures and commitments specified in this EIS, the identified environmental impacts are considered to be acceptable and manageable.

## Next steps

Sydney Metro is seeking concept approval from the Minister for Planning, for a mixed use development over and adjacent to Waterloo Station. Subsequent steps in the process include:

- exhibition of the concept SSD Application and EIS in accordance with the relevant statutory requirements and invitation to the community and stakeholders to make submissions
- consideration of submissions received by the Secretary of DPE. Submissions received would be placed on DPE's website and a copy would be provided to Sydney Metro

- Sydney Metro may then be required to prepare and submit:
  - a submissions report, responding to the issues raised in the submissions
  - a preferred project report, outlining any proposed changes to the concept proposal to minimise its environmental impacts or to deal with any other issue raised
- determination of the concept SSD Application by the Minister or their delegate (if approved, the determination may include modifications to the development and / or CoA)

## 1.0 Introduction

### 1.1. Purpose of this Statement

This Environmental Impact Statement (EIS) is submitted by Sydney Metro to the NSW Department of Planning and Environment (DPE) in support of a concept State Significant Development Application (concept SSD Application or concept proposal).

The concept SSD Application is made under section 4.22 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and seeks approval for over station development (OSD) comprising mixed use buildings integrated with the future Waterloo Station. Waterloo Station is part of the new standalone Sydney Metro rail network.

Sydney Metro is Australia’s biggest public transport project. It presents a major opportunity to shape Sydney for generations to come and would be a legacy for our evolving global city. Sydney Metro would move more people than ever before in a safe and reliable way; facilitating Sydney as a growing global city by providing opportunities to strengthen existing centres, revitalise communities and create great places.

The OSD seeks to maximise the land use opportunities associated with Sydney Metro, drive a high level of patronage on the new metro rail and contribute to the creation of a single integrated station development. The OSD would form a new destination and focal point for the Central to Eveleigh Corridor that would complement surrounding development.

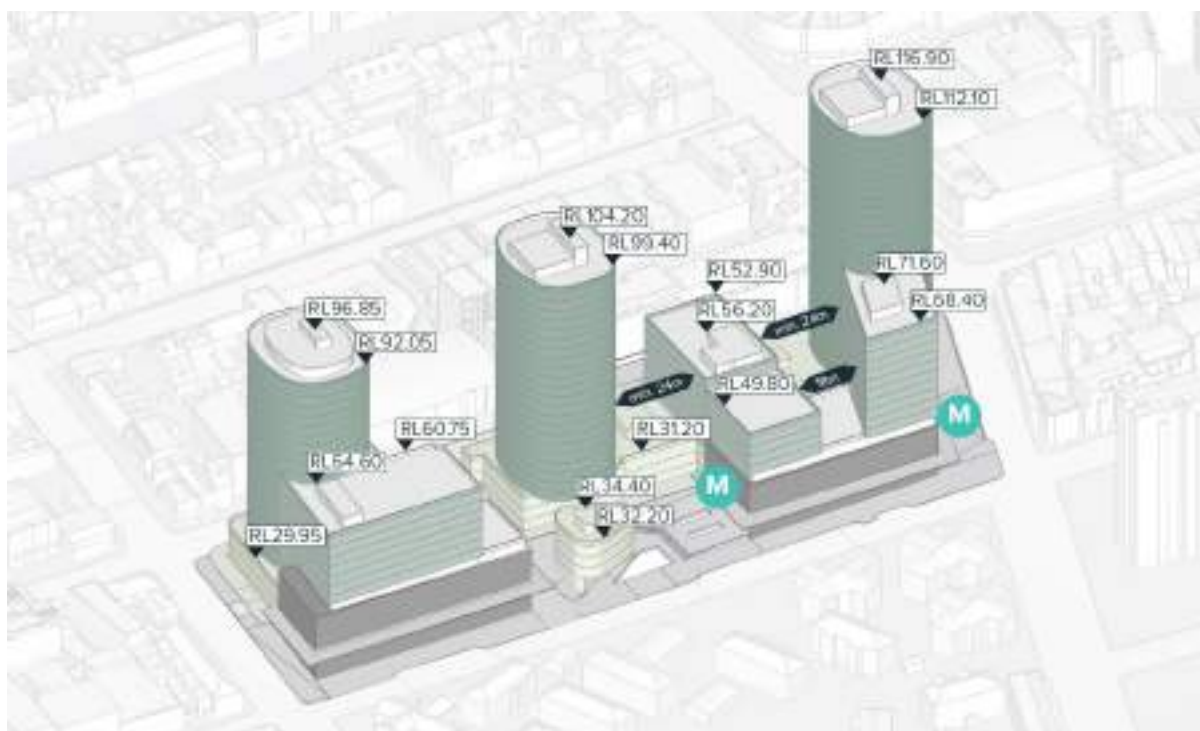


Figure 4 –The concept proposal

This concept SSD Application is the first stage of the Metro Quarter OSD project. The next stages would be detailed SSD Application(s) for the design and construction of the OSD.

The concept proposal seeks approval for building envelopes (i.e. volumetric parameters), maximum gross floor area (GFA), land uses (indicative yields and allocation of GFA to different land use types, but not approvals for specific uses of buildings or land), future subdivision (if required) and general development strategies to inform the future detailed design of the OSD. The building envelope has been designed to allow for future mixed use buildings to sit above, adjacent and be fully integrated with the station box of Waterloo Station, forming a single integrated station development. No physical works are proposed as part of this concept SSD Application.

The proposed building envelopes provide an appropriate design response to the site and its key constraints. In particular, minimisation of overshadowing to Alexandria Park and Alexandria Heritage Conservation Area (HCA), responding to surrounding heritage items, mitigating amenity impacts from Botany Road, aeronautical constraints and the loading capacity of station boxes have been key factors in the development of the proposed envelopes.

The concept proposal is classified as State significant pursuant to clause 19(2) of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), as it is within a rail corridor, is associated with railway infrastructure for the purposes of residential or commercial premises and has an estimated capital investment value in excess of \$30 million. Additionally, clause 8(2) of the SRD SEPP states that *'if a single proposed development the subject of one Development Application comprises development that is only partly State significant development declared under subclause (1), the remainder of the development is also declared to be State significant development'*. On this basis, all elements of the development, including the community facilities component can be considered as State significant for the purposes of Section 4.36 of the EP&A Act, noting that consent is not sought for specific uses of buildings at this stage.

## 1.2. Sydney Metro City & Southwest – Chatswood to Sydenham

### 1.2.1. Overview

Sydney Metro consists of two stages – Sydney Metro Northwest, which is due for completion in 2019 and Sydney Metro City & Southwest which is due for completion in 2024 (refer to Figure 5). Once complete, Sydney Metro would have ultimate capacity for a train every two minutes through the Sydney CBD in each direction – a level of service never seen before in Sydney. Early planning is also underway for the next stage of the Sydney Metro system, Sydney Metro West.

The application for Sydney Metro City & Southwest – Chatswood to Sydenham was lodged by Sydney Metro as a Critical State Significant Infrastructure project (reference SSI 15\_7400) and was approved by the Minister for Planning in January 2017. The project is described in the approval (hereafter referred to as the CSSI Approval) as follows:

*Construction and operation of a metro rail line, approximately 16.5 kilometres long (of which approximately 15.5 kilometres is located in underground rail tunnels) between Chatswood and Sydenham, including the construction of a tunnel under Sydney Harbour, links with the existing rail network, seven new metro stations, and associated ancillary infrastructure.*



The six stations identified in the approval are at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, and Waterloo, together with new underground platforms at Central.



**Figure 5 – Sydney Metro alignment map**

Since the Chatswood to Sydenham CSSI Approval was issued, Sydney Metro has lodged four modification applications to amend the approval as outlined below:

- Modification 1 – Victoria Cross and Artarmon Substation which involves relocation of the Victoria Cross northern services building in North Sydney from 194-196A Miller Street to 50 McLaren Street together with the inclusion of a new station entrance at this location. 52 McLaren Street would also be used to support construction of these works. The modification also involves the relocation of the substation at Artarmon from Butchers Lane to 98–104 Reserve Road. This modification application was approved on 18 October 2017.
- Modification 2 – Central Walk which involves additional works at Central Railway Station including construction of a new eastern concourse, a new eastern entry, and upgrades to suburban platforms. This modification application was approved on 21 December 2017.
- Modification 3 – Martin Place Station which involves changes to the Sydney Metro Martin Place Station to align with the Unsolicited Proposal by Macquarie Group Limited (Macquarie) for the development of the station precinct. The proposed modification involves a larger reconfigured station layout, provision of a new unpaid concourse link and retention of the existing MLC

pedestrian link and works to connect into the Sydney Metro Martin Place Station. It is noted that if the Macquarie proposal does not proceed, the original station design remains approved. This modification application was approved on 22 March 2018.

- Modification 4 – Sydenham Station and Sydney Metro Train Facility South which incorporates Sydenham Station and precinct works, the Sydney Metro Trains Facility South, works to Sydney Water's Sydenham Pit and Drainage Pumping Station and ancillary infrastructure, and track and signalling works into the approved project. This modification application was approved on 13 December 2017.
- Modification 5 - Blues Point acoustic shed which involves the installation of a temporary acoustic shed at Blues Point construction site and retrieval of all parts of the tunnel boring machines driven from the Chatswood dive site and Barangaroo through the shaft at the Blues Point temporary site. This modification application was approved on 2 November 2018.

The CSSI Approval as modified allows for all works to deliver and operate Sydney Metro between Chatswood to Sydenham Stations and also includes the upgrade of Sydenham Station.

The remainder of the City & Southwest project proposes the conversion of the existing heavy rail line from west of Sydenham Station to Bankstown to metro standards and the upgrading of the existing railway stations along this alignment to metro standards. This part of the project, referred to as the Sydenham to Bankstown upgrade, is the subject of a separate CSSI Application (reference SSI 17\_8256) for which an EIS was exhibited between September and November 2017. A Response to Submissions and Preferred Infrastructure Report was submitted to DPE in June 2018 for further exhibition and assessment. This application is subject to assessment and determination by DPE, taking into consideration a further Response to Submissions Report which was submitted to DPE in September 2018.

### **1.2.2. Integrated Station Development**

The construction of the Sydney Metro stations presents an exciting opportunity to incorporate global best practice for place-making and environmentally sustainable development, and to apply innovative thinking to create new city icons. The new metro stations would contribute to Sydney's reputation for design excellence and leave a lasting legacy.

To help ensure success, the metro rail service would be integrated into activated integrated station developments featuring station, OSD, station retail opportunities and public domain improvements. These integrated station developments would be welcoming and inclusive, serving as focal points for local communities. They would provide new places for people to work, live, shop and play, with public spaces designed to encourage walking, cycling and social interaction. This approach would support the NSW Government's planning strategies and objectives to grow high-value jobs, provide workers with better access to employment, and create liveable and sustainable centres.

In the period since the issue of the CSSI Approval, Sydney Metro has undertaken further design work in relation to Waterloo Station to determine the space planning and general layout of the station and to identify spaces within the station area (defined under the CSSI Approval) that would be available for OSD use. Additionally, design work has been undertaken to determine the technical requirements for the structural integration between the OSD and station. This design work, which has been undertaken in consultation with UrbanGrowth NSW Development Corporation (UrbanGrowth NSW), has informed the concept proposal for Metro Quarter OSD as described within this EIS.

Ongoing design development of the works to be delivered under the CSSI Approval will continue with a view to developing an Interchange Access Plan (IAP) and Station Design Precinct Plan (SDPP) for Waterloo Station to satisfy Conditions E92 and E101 respectively of the CSSI Approval.

The Waterloo integrated station development would be a key catalyst for change in the Redfern-Waterloo area, providing residents, workers and visitors access to the Sydney Metro network, connecting to surrounding Metropolitan and strategic centres, such as Central Sydney, St Leonards and Macquarie Park. The extent of change in urban form would be most noticeable immediately around the metro station (in the Metro Quarter) and in the adjacent Waterloo Estate. In other parts of the locality, particularly the nearby conservation areas, the focus would be on retaining the existing urban form, while ensuring residents and workers still benefit from access to new public transport and the services, jobs and amenity of the new centre at the Metro Quarter.

The transition from a new, integrated urban centre to the established character of Redfern Street village and the Alexandria Park Conservation Area would occur over a relatively short distance. The proposal responds sensitively to this transition to ensure the transit-oriented focus of land use in Metro Quarter doesn't impact negatively on existing character areas, while providing residents of those surrounding areas access to all the Metro Quarter would offer.



Figure 6 – Waterloo Station concept map

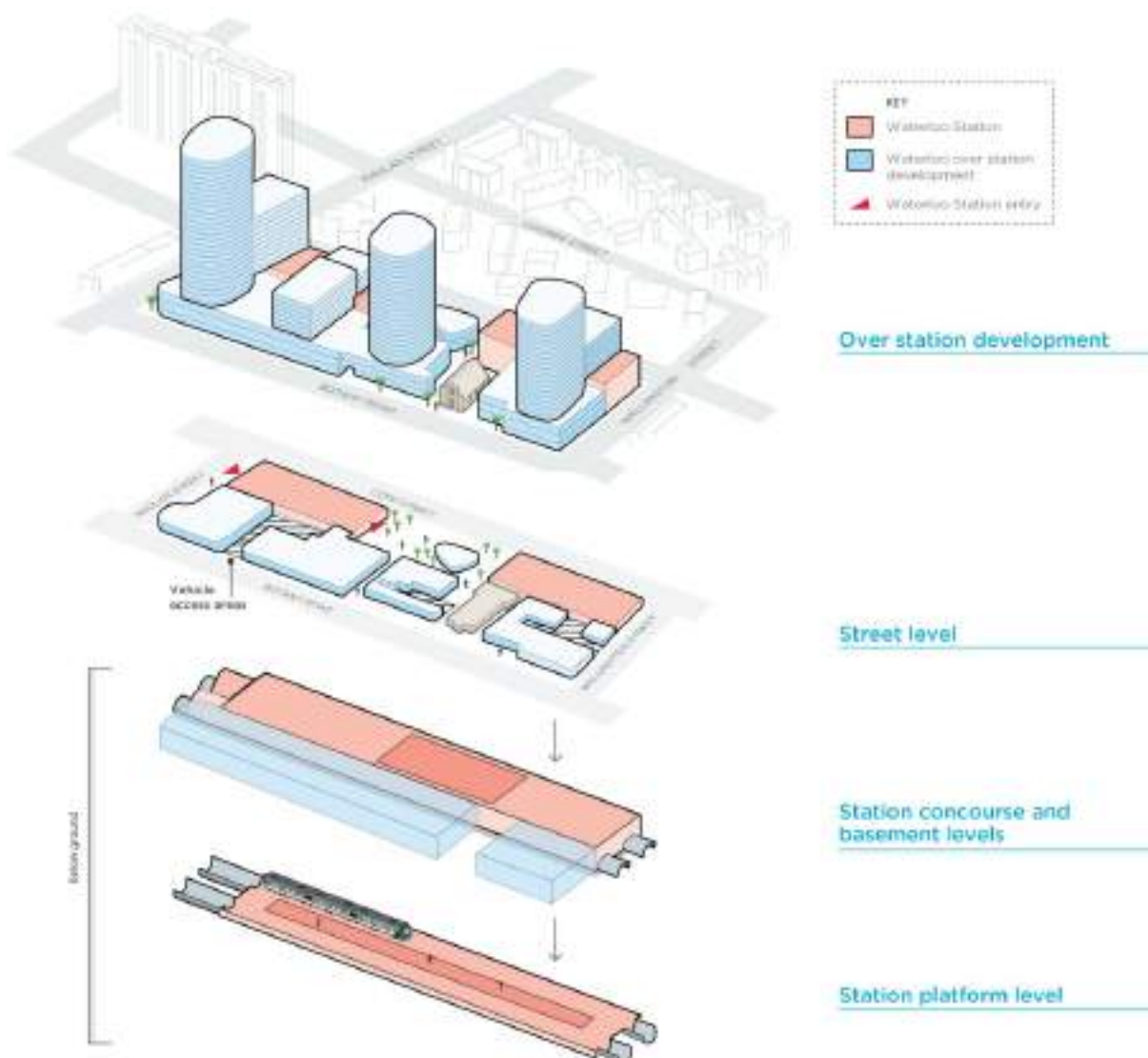


Figure 7 – Relationship between Metro Quarter OSD and Waterloo Station

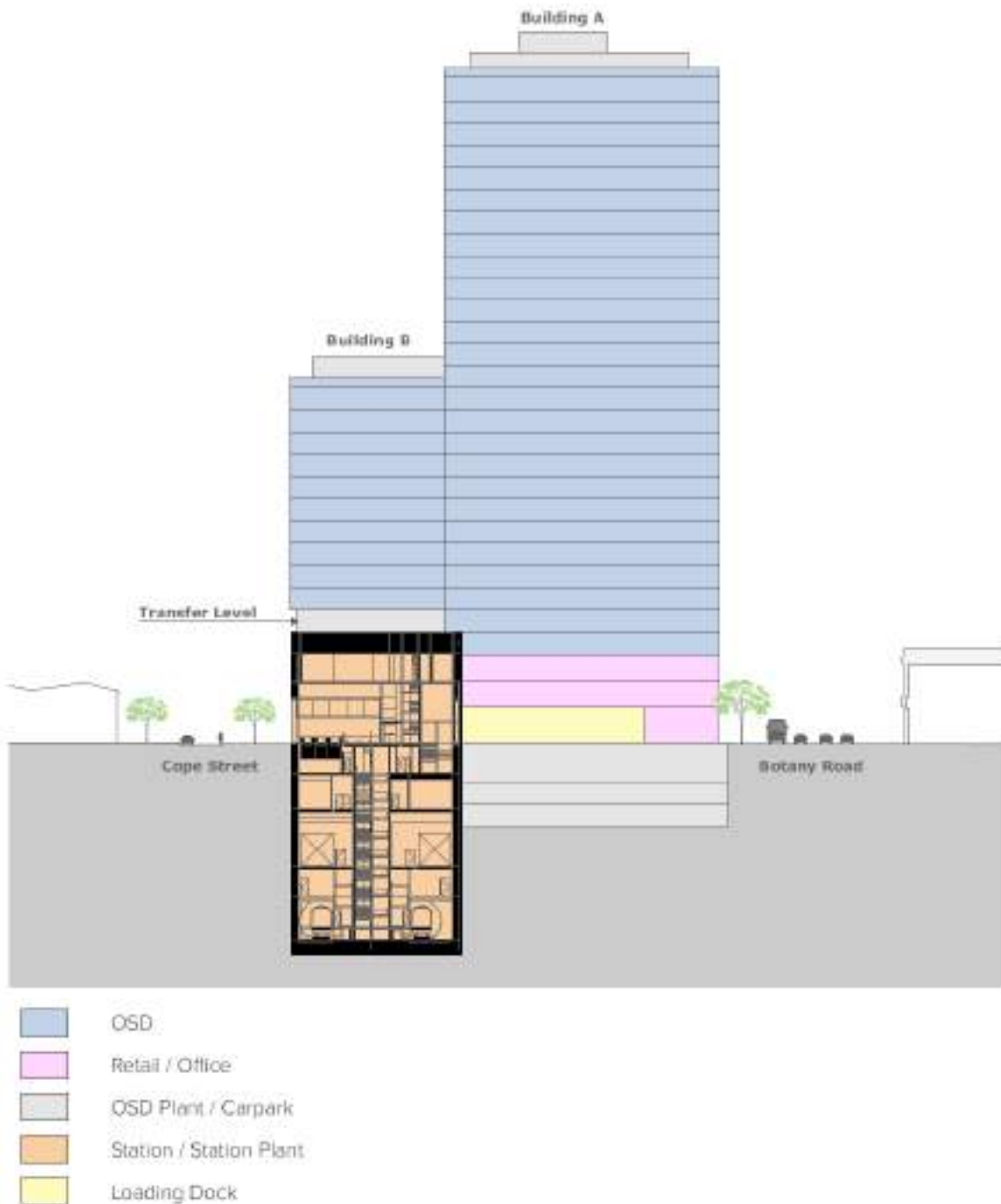
### 1.2.3. Planning relationship between Waterloo Station and Metro Quarter OSD

Whilst the Waterloo Station and Metro Quarter OSD would form part of an integrated station development, the planning pathways defined under the EP&A Act require separate approval for the two components. The approved station works (CCSI Approval) are subject to the provisions of Division 5.2 of the EP&A Act (formally referred to as Part 5.1) and the OSD component is subject to Part 4 of the EP&A Act.

The approved station works under the CCSI Approval include the construction of below and above ground structures necessary for delivering the station and also enabling construction of integrated OSDs. This includes but is not limited to:

- demolition of existing development
- excavation
- station structure including concourse and platforms
- lobbies
- retail spaces within the station
- public domain improvements from the station entry to transport interchange facilities in the immediate vicinity of the station (as described in the approval)
- access arrangements including vertical transport such as lift cores and escalators
- structure and service elements and relevant space provisioning necessary for constructing OSDs, such as columns and beams, space for lift cores, plant rooms, access, parking, and building services. Not all structure and service elements described are included in the current indicative design for the station, but could be contemplated as the design further progresses.

The rationale for this delivery approach, as identified within the CSSI application (for the Sydney Metro project), is to enable OSD to be more efficiently built and appropriately integrated into the metro station construction. An example of the delineation between Waterloo Station and OSD is illustrated in Figure 8.



**Figure 8 –Delineation between station and OSD**

The EIS for the Chatswood to Sydenham component of the Sydney Metro City & Southwest project identified that future OSD would be subject to a separate assessment and approvals process, being a concept SSD Application under section 4.22 of the EP&A Act. The planning and approvals pathway for the OSD is further discussed at Chapter 2.0.

#### 1.2.4. Planning relationship between Metro Quarter OSD and the Waterloo Metro Quarter State Significant Precinct

During May 2017, the Minister for Planning (the Minister) determined that parts of Waterloo are of State planning significance and should be investigated for rezoning through the State Significant Precinct (SSP) process. The DPE issued study requirements on 19 May 2018 for the Metro Quarter, which provides the criteria upon which the DPE's evaluation of the state and regional significance of the precinct.

A SSP Study for the Metro Quarter was submitted to the DPE in July 2018. The Study includes proposed statutory planning controls and a Development Control Plan (WMQ DCP) for the Metro Quarter precinct.

Following approval from the Minister, Schedule 3 of the SSP SEPP would be amended to insert a new Part relating to the Metro Quarter. The new Part would identify the Metro Quarter as a SSP (by reference to a land application map) and would include the proposed statutory planning controls. This includes but is not limited to:

- land use zoning
- subdivision and demolition
- principal development standards, including:
  - maximum building height
  - floor space ratio (FSR)
- miscellaneous provisions, including:
  - architectural roof features
  - heritage conservation
- local provisions relating to:
  - design excellence
  - active street frontages
  - requirement to prepare a development control plan (DCP)
  - flood planning
  - airspace operations.

The proposed amendments to the SSP SEPP would commence only when they are published in the NSW Government Gazette. Once gazetted, the *Sydney Local Environmental Plan 2012* (SLEP 2012) would no longer apply to Metro Quarter. All future development applications pertaining to the site would be required to demonstrate consistency with these controls.

Despite not being formally adopted, this concept SSD Application has been assessed against the proposed planning controls (refer to Chapter 7.6). In accordance with section 3.39 of the EP&A Act, a consent authority may consider this concept SSD Application, despite it being reliant on an amendment to an environmental planning instrument i.e. an amendment to the SSP SEPP. It is noted that the SSP Study and subsequent amendment to the SSP SEPP is required to be finalised prior to consent being granted for the concept SSD Application.

Further, Section 3.40 of the EP&A Act allows for the concurrent exhibition of the SSP Study and concept SSD Application.

### 1.3. Overview of proposed Metro Quarter OSD

The concept SSD Application seeks concept approval in accordance with Section 4.22 of the EP&A Act for the OSD above and adjacent to the approved Waterloo Station. The land subject of this concept SSD application is located wholly within the rail corridor. This application establishes the planning framework and strategies to inform the detailed design of the future OSD and specifically seeks planning approval for:

- maximum building envelopes, including maximum building heights, street-wall heights and ground and upper level setbacks
- a maximum GFA of approximately 68,750 square metres comprising:
  - approximately 56,200 square metres GFA of residential accommodation, providing for approximately 700 dwellings, including 5 to 10 percent affordable housing and 70 social housing dwellings
  - approximately 3,905 square metres of GFA for retail premises and entertainment facilities
  - approximately 8,645 square metres GFA for business and commercial premises and community and recreation facilities (indoor), including a minimum 2,000 square metres for community uses
- a three storey podium and a free standing building located within a public plaza, accommodating non-residential land uses
- residential uses above podium level in various building forms including three taller buildings of 23, 25 and 29 storeys (Reduced Level (RL) 96.9, 104.2 and 116.9 metres Australian Height Datum (AHD) respectively)
- use of OSD space provisioning within the footprint of the CSSI Approval
- public domain works, including open space, through-site links, footpaths, provision for cycle facilities and enhanced pedestrian crossings and roads
- car parking for up to 427 vehicles
- cycle parking to support residential and non-residential land uses and visitors to the Quarter. Approval is also being sought for space within the future basement for a bike hub which would also support future bike parking for Waterloo Station
- loading, vehicular and pedestrian access arrangements
- strategies for utilities and services provision
- strategies for managing stormwater and drainage
- a strategy for the achievement of ecologically sustainable development
- a public art strategy
- provision for future signage zones
- a design excellence framework
- the future subdivision of parts of the OSD footprint (if required).



The concept SSD Application also seeks approval for future subdivisions (if required) and the strategies to guide the detailed design of the future OSD, including pedestrian and vehicular access, utilities service provision, signage, management of stormwater and drainage, public art and the achievement of ecologically sustainable development. The application is also accompanied by a Design Excellence Strategy and Design Guidelines to which future detailed design would need to respond.

The indicative concept proposal for Metro Quarter OSD is illustrated in Figure 9 below. Building envelope and architectural drawings illustrating the proposed building envelope are provided at Appendix C and Appendix D.

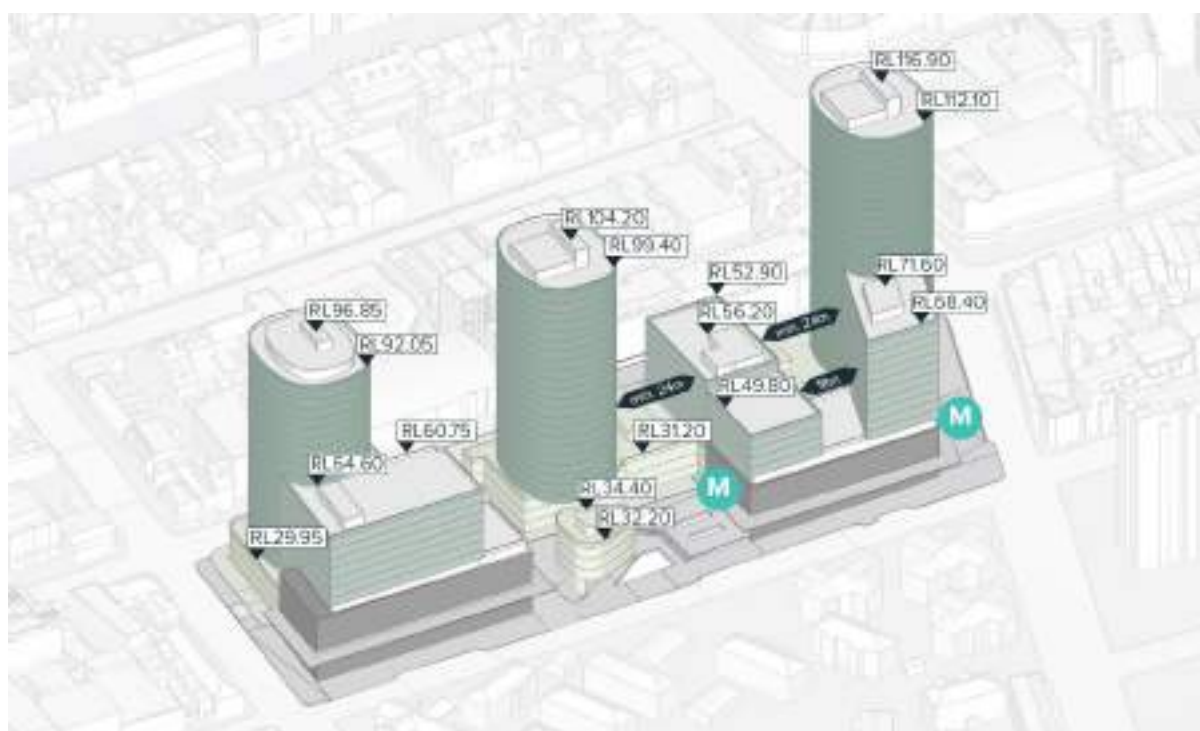


Figure 9 –Metro Quarter OSD indicative concept proposal

## 1.4. Need for the project

As identified in the *Greater Sydney Region Plan (2018)*, Sydney's population is forecast to grow to eight million people by 2056. Sydney Metro responds to the transport demand that would accompany this growth with its plan to deliver a new standalone railway with 31 stations and more than 66 kilometres of new rail. Once completed, Sydney Metro, along with other signalling and infrastructure upgrades across the existing networks, would increase the capacity of Sydney's train services from approximately 120 per hour today up to 200 services beyond 2024 – a 60 percent increase resulting in an extra 100,000 train customers per hour in the peak. The project has been endorsed by the NSW Government as a key component of *Sydney's Rail Future: Modernising Sydney's Trains*.

Waterloo Station is a key new station on the Sydney Metro network, comprising one of five metro stations in City of Sydney LGA, alongside Barangaroo Station, Martin Place Station, Pitt Street Station and Central Station (new underground platforms). The new Waterloo Station would be a key catalyst for change in the Redfern-Waterloo area, providing residents, workers and visitors access to the Sydney

Metro network, connecting to surrounding Metropolitan and strategic centres, such as Central Sydney, St Leonards and Macquarie Park.

The *Eastern City District Plan* recognises the role of the new station in supporting urban renewal in Waterloo. The Metro Quarter OSD would be a key element of the renewal process for Waterloo that would be centred around the Waterloo Station. The OSD would be integrated with the construction of the station and is a prime opportunity to create a new precinct where transport and land use are truly integrated.

Beyond the Metro Quarter OSD, the surrounding community within the walking catchment of the metro station would benefit from improved public transport, new shops, employment opportunities and social services. Residents of the Waterloo Estate in particular would have better access to high frequency and high quality public transport.

The concept proposal seeks to build upon the opportunities afforded by Sydney Metro through the provision of a mixed use OSD which is integrated with Waterloo Station. The various uses of the OSD, being residential accommodation, retail premises, entertainment facilities, business and commercial premises and community and indoor recreation facilities, respond to a number of different in demand land uses in the Redfern-Waterloo area and wider Eastern City District.

The Metro Quarter is therefore ideally positioned to be an emerging centre of activity that offers new homes and a diversity of land uses that provide the local community access day-to-day to community services – with shops, services, cultural places and work environments promoting activity around the new Waterloo Station.

## 1.5. Objectives of the development

The aims of this concept SSD Application are to:

- support the NSW Government's planning strategies and objectives, including the *Greater Sydney Region Plan (2018)* and the *Eastern City District Plan (2018)*
- enable the development of a mixed use precinct at the site which caters to a range of different uses and works to create a fully integrated station precinct at Waterloo
- support a range of spaces that would cater for the special social and economic needs of the current and future Waterloo Precinct, including community facilities
- enhance customer experience and urban amenity through the development of an integrated design concept that ensures delivery of a quality public domain area with strong connections to the site's surroundings
- create an urban environment that drives high usage of the Sydney Metro network responding directly to the principle of transit oriented development
- provide opportunity for the OSD to be delivered as early as possible with the aim of opening much of the OSD concurrently with or shortly following completion of the Waterloo Station
- enable a building form which works to minimise (to the maximum extent possible) overshadowing on public open spaces and nearby residential areas, in accordance with the Waterloo Metro Quarter SSP Study
- provide a sensitive relationship between the proposed development of the Metro Quarter and its surrounding heritage context

- create a framework which works to achieve design excellence in the final integrated station development
- enable a new transport interchange that prioritises public and active transport
- establish new publicly accessible open space in the form of plazas that would provide access to the station entries, connect the Metro Quarter with surrounding streets, and function as spaces for passive recreation and social interaction
- support the provision of affordable and social housing
- embrace sustainability initiatives in the Metro Quarter, including through lower levels of on-site carparking, stormwater re-use and water-sensitive design, and measures intended to improve the environmental performance of buildings

## 1.6. Analysis of alternatives

This chapter should be considered with reference to the floor plate and building envelope options included in the Urban Design and Public Domain Report (Appendix G) and the broader delivery framework for the Sydney Metro project (Chapter 1.2).

### 1.6.1. Alternative option – do nothing

The 'do nothing' option (no OSD above and adjacent to Waterloo Station) is considered impractical and fails to meet the Government's aspirations for a Sydney Metro project which maximises land use opportunities. Sydney Metro is well advanced in planning and construction and the OSD forms a key component of the integrated station development, while also delivering upon outcomes of urban renewal as part of the Waterloo Metro Quarter SSP Study. The 'do nothing' option would forego a genuine and exciting opportunity to create a new Metro Quarter integrated station precinct which is a new hub of activity and destination for the wider Waterloo area. The opportunity cost of not pursuing the OSD would be significant, given the multitude of benefits to the city which would be forgone if no OSD is pursued (further discussed at Chapter 8.0).

This option would also be inconsistent with NSW transport policy direction by missing a major opportunity to create new homes and jobs, promote public transport usage and encourage walking and cycling. This option would also fail to promote public transport use and contribute to the residential and employment targets in the *Eastern City District Plan (2018)*.

### 1.6.2. Alternative option – alternative building envelope designs

In accordance with the Secretary's Environmental Assessment Requirements (SEARs) issued for the project, the following is required to be undertaken as part of this concept SSD Application:

Include options analysis of the proposed built envelopes illustrating the consideration of the benefits and potential impacts of each option. This shall include design options to protect solar access on Alexandria Park and neighbouring residential developments, including consideration of any cumulative impacts of the proposal together with the likely future development on the western side of Botany Road.

Accordingly, an assessment of five different potential building envelopes has been undertaken to confirm the potential environmental impacts arising from different designs at the site. The key features of each considered envelope option have been discussed in Table 1.

**Table 1 – Key components of different envelope options**

Envelope Option	Approximate Podium height	Setbacks above podium / station box	Maximum building heights	Envelope above podium
Envelope Option 1	14.50 - 14.75 metres (Approximately 3 storeys)	Building A – 1 metre (Botany Road) Building B – 3 metres (Cope Street) Building C – nil Building D – nil Building E – 4 metres from Wellington Street and 3 metres from Cope Street	Building A – 29 storeys Building B – 4 storeys above station box Building C – 27 storeys Building D – 24 storeys Building E – 4 storeys above station box Building F – 3 storeys	Three bar-form taller buildings which orient east to west with the long edge facing Botany Road.  Two 4 storey mid-rise buildings located above station boxes along the eastern edge of the site and orientated east to west.
Envelope Option 2	14.50 - 14.75 metres (approximately 3 storeys)	Building A – nil (Botany Road) Building B – nil (Cope Street) Building C – nil Building D – nil Building E – nil Building F – nil (Botany Road) and 5 metres (Wellington Street) Building G – nil (Cope Street) and 7 metres (Wellington Street)	Building A – 29 storeys Building B – 10 storeys above station box Building C – 4 storeys above station box Building D – 27 storeys Building E – 17 storeys Building F – 15 storeys Building G – 6 storeys above station box Building H – 3 storeys	Four bar-form taller buildings which orient north to south with the short edge facing Botany Road.  Three mid-rise buildings located above station boxes along the eastern edge of the site orientated north to south. These buildings range between 4 to 10 storeys, responding to the built form of new development within the Waterloo area.
Envelope Option 3	14.50 - 14.75 metres (approximately 3 storeys)	Building A – 0.5 metre Building B – nil Building C – nil Building D – nil Building E – nil Building F – 4.5 metres (Botany Road) Building G – nil	Building A – 29 storeys Building B – 10 storeys above station box Building C – 4 storeys above station box Building D – 8 storeys Building E – 27 storeys Building F – 24 storeys Building G – 5 storeys above station box Building H – 3 storeys	Three shaped taller buildings with a curvature form along western edge of the site. The two corner taller buildings are orientated east to west, with the central taller building orientated north to south. Building heights transition to a lower scale further south to respond to overshadowing of Alexandria Park.

Envelope Option	Approximate Podium height	Setbacks above podium / station box	Maximum building heights	Envelope above podium
				Three mid-rise buildings located above station boxes along the eastern edge of the site, predominately orientated north to south, with exception to Building E. These buildings range between 4 to 10 storeys, responding to the built form of new development within the Waterloo area.
Envelope Option 4	14.50 - 14.75 metres (approximately 3 storeys)	Building A – nil (Botany Road) Building B – nil Building C – nil Building D – 2 metres Building E – nil Building F – nil (Botany Road) and 4 metres (Wellington Street) Building G – nil (Cope Street) and 4 metres (Wellington Street)	Building A – 29 storeys Building B – 10 storeys above station box Building C – 4 storeys above station box Building D – 10 storeys Building E – 25 storeys Building F – 23 storeys Building G – 7 storeys above station box Building H – 3 storeys	Three slender taller buildings with curvature form along western edge of the site. Tallest buildings marking the north-west corner of the site, with building heights transitioning further south to respond to overshadowing of Alexandria Park. All taller buildings are orientated north-south.  Three mid-rise buildings located above station boxes along the eastern edge of the site. These buildings range between 4 to 10 storeys, responding to the built form of new development within the Waterloo area.
Envelope Option 5	14.50 - 14.75 metres (approximately 3 storeys)	Building A – nil (Botany Road) Building B – nil Building C – nil Building D – 2 metres Building E – nil Building F – nil (Botany Road) and 2.5 metres (Wellington Street)	Building A – 29 storeys Building B – 10 storeys above station box Building C – 4 storeys above station box Building D – 19 storeys Building E – 17 storeys Building F – 23 storeys Building G – 7 storeys above station box	Four taller buildings comprising a mix of shaped and bar form taller buildings. The tallest buildings mark the north-west and south-west corners of the site.  Three mid-rise buildings located above station boxes along the eastern

Envelope Option	Approximate Podium height	Setbacks above podium / station box	Maximum building heights	Envelope above podium
		Building G – nil (Cope Street) and 4 metres (Wellington Street)	Building H – 3 storeys	edge of the site ranging between 4 to 10 storeys

These options have been further discussed below, as well as in the Urban Design and Public Domain Report provided at Appendix G.

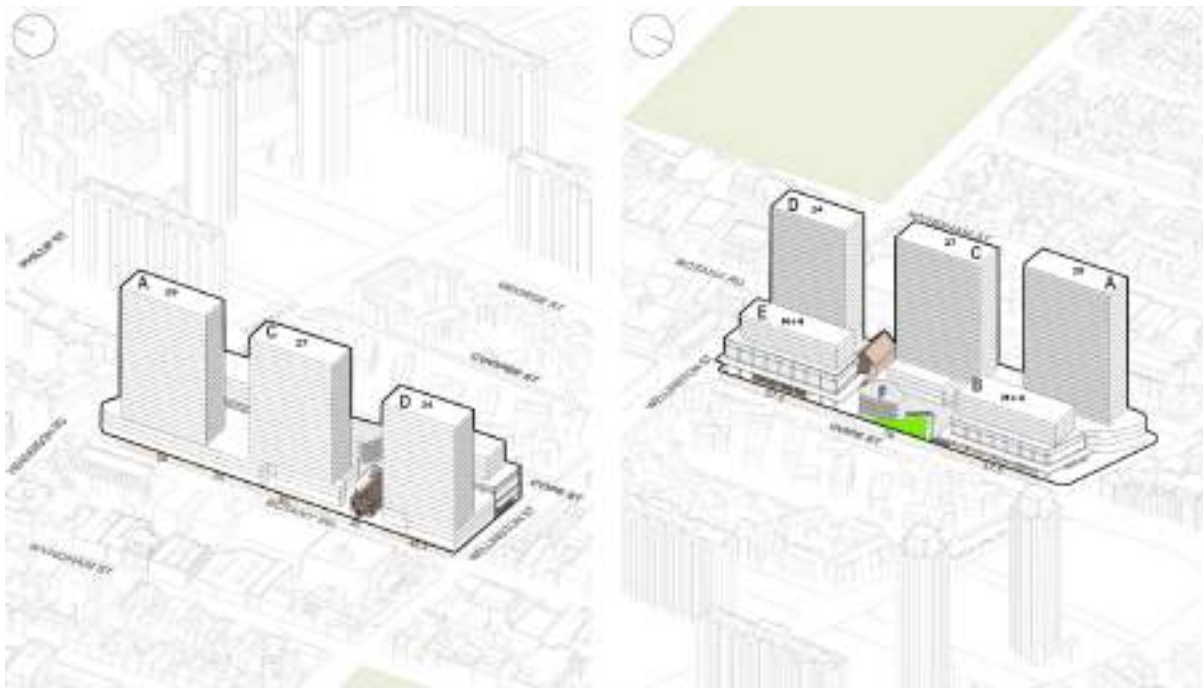
### Envelope Option 1 – North-south taller buildings

#### Description of building envelope

The first option considered comprises a building envelope which orients east-west to maximise solar access to apartments and outlooks to Moore Park and the Bays Precinct. Taller buildings of this option are three bar-form buildings with the long edge facing Botany Road. With its relatively consistent heights between 24 and 29 storeys, together with its siting and orientation, its composition does not provide a prominent visual marker.

The extent of the street walls range between 42.5 metres and 50 metres and achieve the minimum Apartment Design Guide (ADG) building separation (24 metres), with building separation distances between the taller buildings ranging between 25 metres and 35 metres. The option allocates a podium separation of 35 metres to integrate the church within the proposed development and to provide relief to and enhance the church’s visual presence in the public domain.

Option 1 has been illustrated at Figure 10.



**Figure 10 – Envelope option 1 – North-south**

*Evaluation of building envelope*

Due to the expansive street wall interface to Botany Road, noise mitigation measures are not possible for the large number of apartments solely facing Botany Road. However, noise mitigation is possible for corner apartments. The east-west orientation of tall buildings maximises solar access to apartments.

Given its significant street wall height, which extend to the heights of 24 to 29 storeys, the visual permeability and outlook from an east-west direction is limited, while solar access is significantly compromised. The large surface area of the taller buildings also creates downdraft of wind that decreases pedestrian amenity on Botany Road (refer to Figure 11).

Increased podium setbacks are applied along Botany Road along with building separation to Waterloo Congregational Church in order to provide relief and enhance the church's visual presence in the public domain.

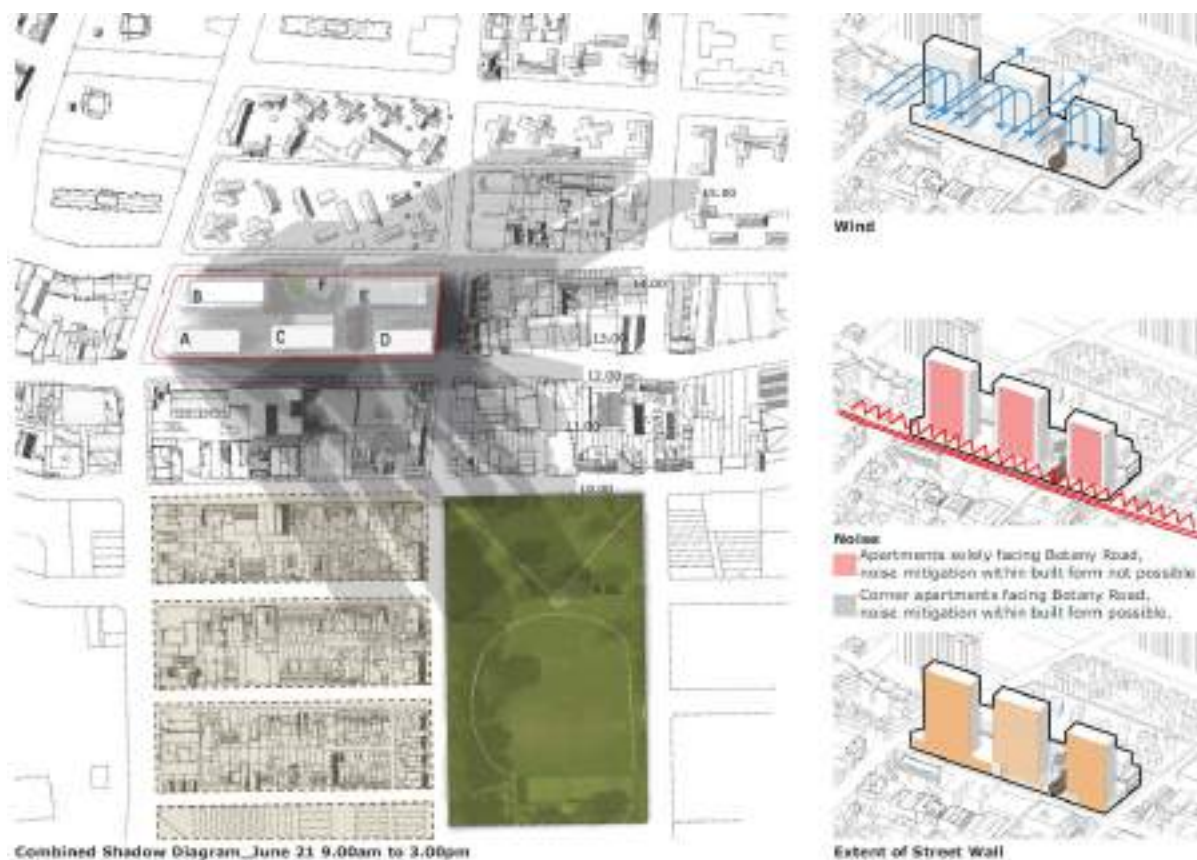


Figure 11 – Amenity evaluation of envelope option 1

## Envelope Option 2 – East-west taller buildings

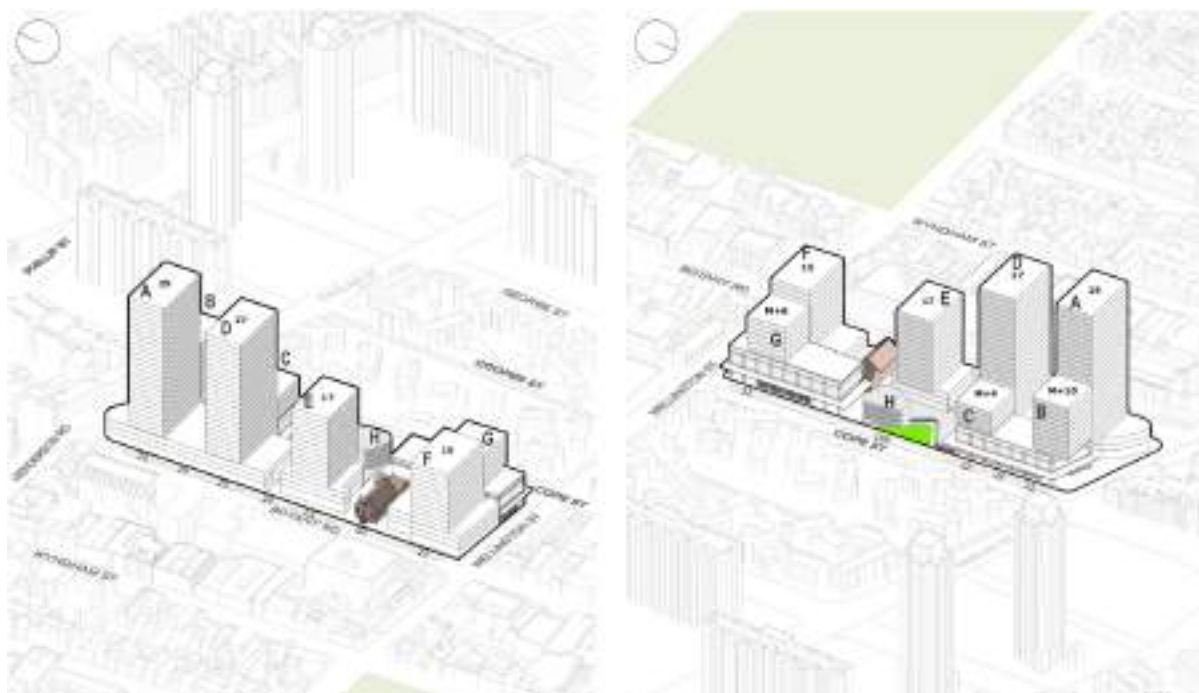
### Description of building envelope

The second option comprises a building envelope that orientates taller buildings north-south maximising outlooks to CBD and Harbour. The taller buildings of this option are four bar-form buildings with the short edge facing Botany Road. The built form incorporates transitions in building height (from 15 to 29 storeys) to avoid overshadowing of Alexandria Park to the west, and focuses taller buildings toward the Botany Road and Raglan Street intersection, which provides a prominent visual marker at this location.

The extent of the street walls are 22 metres, with taller buildings achieving the minimum ADG building separation (24 metres), with building separation distances between the taller buildings ranging between 25 metres and 50 metres. Increased podium setbacks are applied along Botany Road along with building separation to Waterloo Congregational Church in order to provide relief and enhance the church’s visual presence in the public domain.

Option 2 has been illustrated at Figure 12.





**Figure 12 – Envelope option 2 – East-west**

*Evaluation of building envelope*

Under this option, noise mitigation measures are not possible for apartments solely facing Botany Road but are possible for corner apartments. The proposed orientation of taller buildings, which increase apartments facing north and south, prevents the ability to maximise solar access to apartments.

This built form option would not overshadow Alexandria Park, achieving the current SDCP 2012 and proposed WMQ DCP provision to maintain at least 50 percent of the total area public parks for sunlight for 4 hours from 9am to 3pm on 21 June (3.1.4(3)(a) of SDCP 2012).

Increased podium setbacks are applied along Botany Road along with building separation to Waterloo Congregational Church in order to provide relief and enhance the church's visual presence in the public domain.

Compared to Option 1, the proposed built form of Option 2 provides a smaller surface area of the taller buildings that reduces downdraft to Botany Road (as shown in Figure 13). However, the visual permeability and outlook from an east-west direction is limited, while and solar access is significantly compromised.

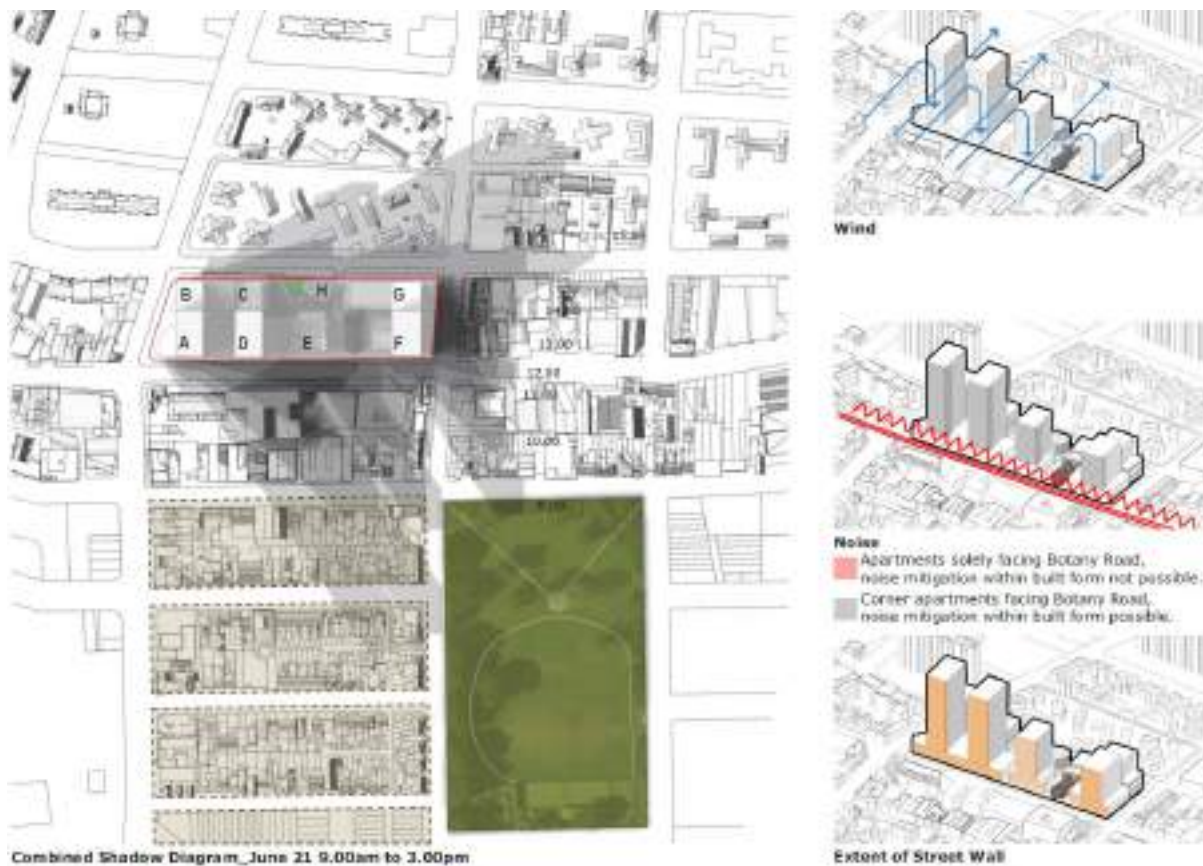


Figure 13 – Amenity evaluation of envelope option 2

### Envelope Option 3 – Shaped taller buildings

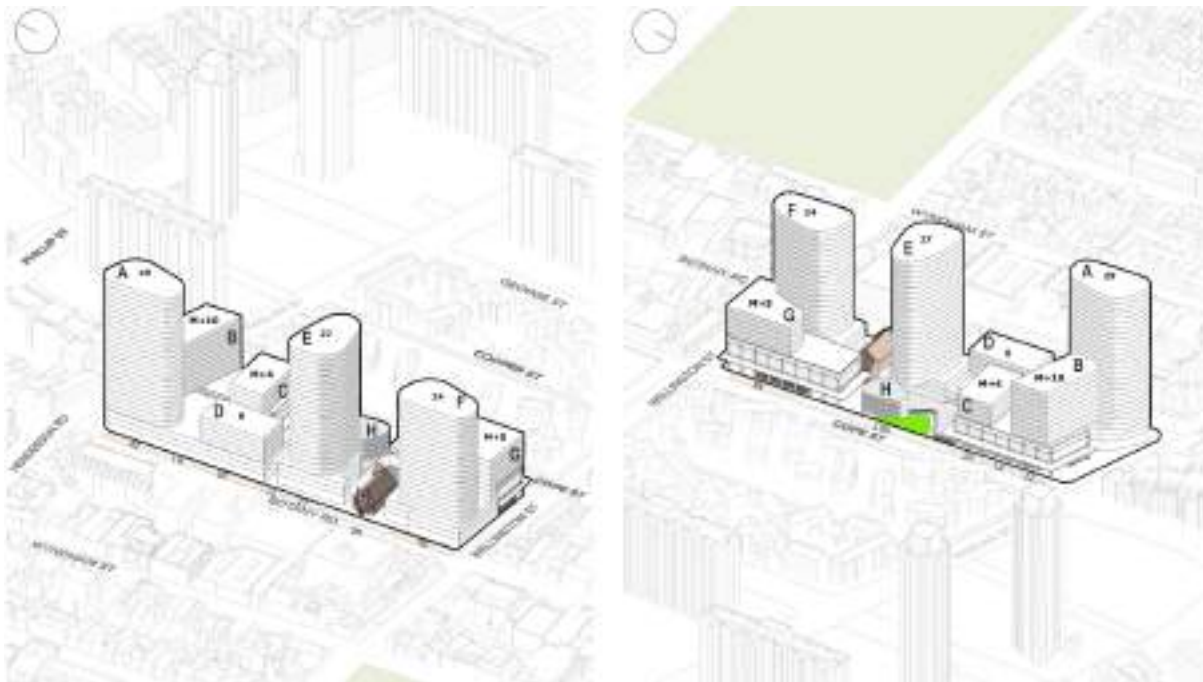
#### Description of building envelope

The building envelope for Option 3 comprises shaped taller building forms, with edges of various lengths to reduce the surface area to Botany Road, maximising outlooks to all directions and aims to enrich the streetscape along Botany Road.

The taller building forms of this option are three shaped buildings with the edges of varying lengths facing Botany Road, and a consistent height between 24 and 29 storeys. The tallest building is located on the Botany Road and Raglan Street intersection, providing a prominent visual marker at this location. The siting and orientation of taller buildings minimise overshadowing of Alexandria Park between the hours of 9am to 10am.

The extent of the street walls range between 27 metres and 42 metres, with taller buildings providing adequate building separation to achieve the minimum ADG requirements. Increased podium setbacks are applied along Botany Road along with building separation to Waterloo Congregational Church in order to provide relief and enhance the Church’s visual presence in the public domain.

Option 3 has been illustrated at Figure 14.



**Figure 14 – Envelope option 3 – Shaped taller buildings**

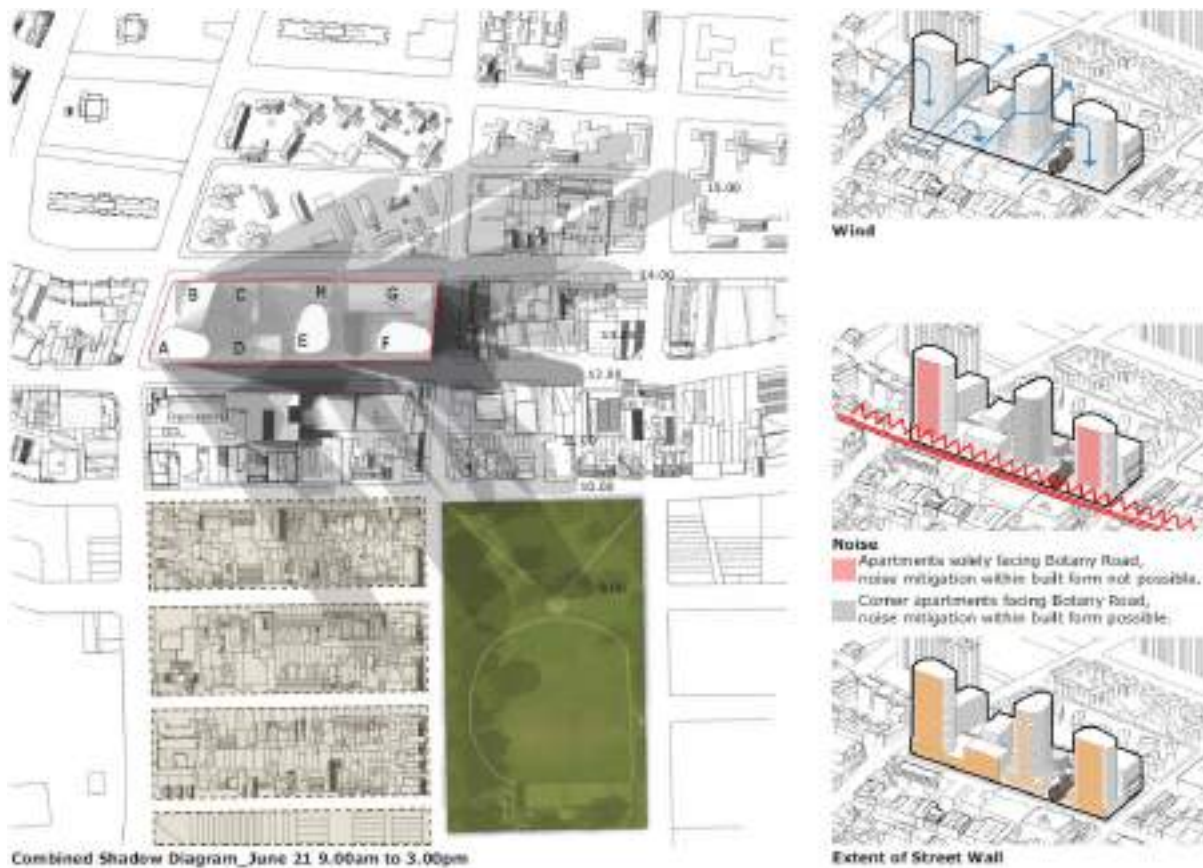
Evaluation of building envelope

Noise mitigation of this built form is not possible for the large number of apartments solely facing Botany Road at the two corner buildings, however is possible for corner apartments for the central building. The orientation of the northern and southern taller buildings maximise solar access to apartments, while the shaped building form aims to increase outlooks to all directions.

The building envelope’s shaped taller buildings transition in height between 24 and 29 storeys and are adequately separated to meet ADG building separation requirements. This built form option would partly overshadow Alexandria Park from hours 9am and 10am, achieving the current SDCP 2012 and proposed WMQ DCP provision to maintain at least 50 percent of the total area public parks for sunlight for 4 hours from 9am to 3pm on 21 June (3.1.4(3)(a) of SDCP 2012).

Increased podium setbacks are applied along Botany Road along with building separation to Waterloo Congregational Church in order to provide relief and enhance the church’s visual presence in the public domain.

Compared to Options 1 and 2, the proposed built form of Option 3 provides a smaller surface area through curved taller building forms to reduce downdraft to Botany Road, allowing for greater pedestrian comfort within the public domain (as shown in Figure 15).



**Figure 15 – Amenity evaluation of envelope option 3**

### **Option 4 – Slender and shaped taller buildings**

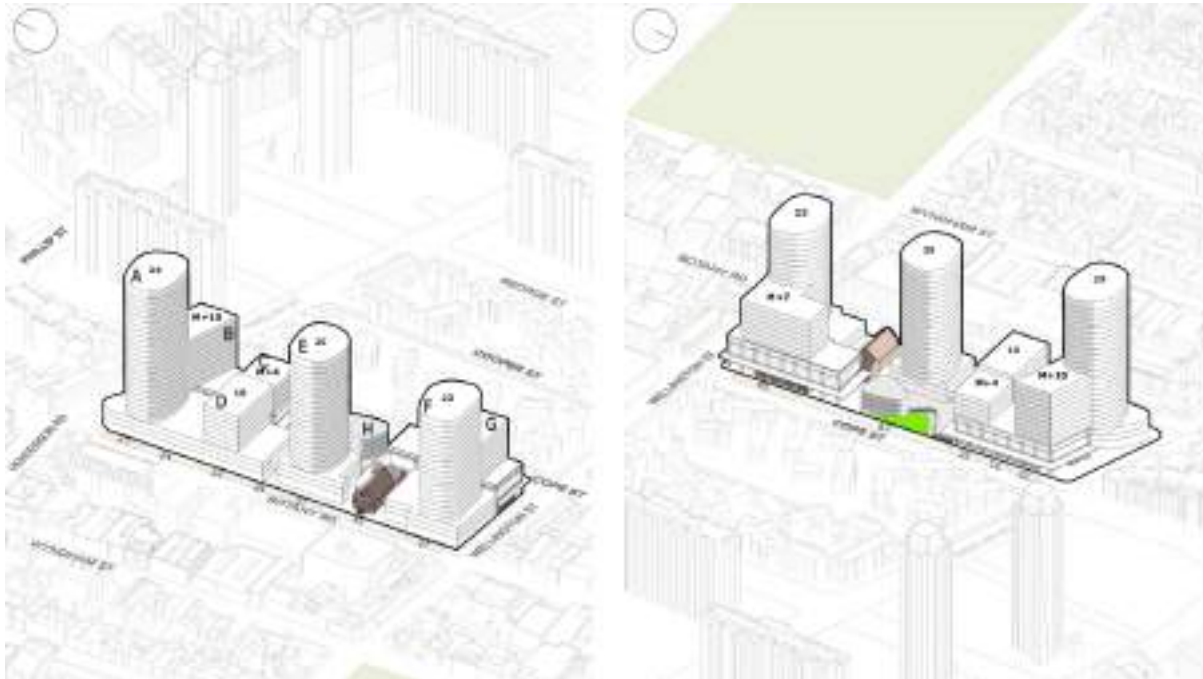
#### Description of building envelope

Option 4 comprises three shaped taller building forms, with edges of various lengths and orientated north to south to reduce the surface area to Botany Road, maximising outlooks to all directions and enriching the streetscape along Botany Road.

With its north to south orientation, the taller buildings maximise outlooks to CBD and Harbour. The taller buildings of this option comprise three shaped buildings with the short, rounded edge facing Botany Road and a relatively consistent height between 23 and 29 storeys. Similar to Option 3, the tallest building of Option 4 is located on the Botany Road and Raglan Street intersection, providing a prominent visual marker for Waterloo Station. While the siting and orientation of taller buildings minimise overshadowing of Alexandria Park (below 50 percent of total area) between the hours of 9am to 10am.

The extent of the street walls range between 22 metres and 27 metres, with taller buildings providing adequate building separation to achieve the minimum ADG requirements. Increased podium setbacks are applied along Botany Road along with building separation to Waterloo Congregational Church in order to provide relief and enhance the Church’s visual presence in the public domain.

Option 4 has been illustrated at Figure 16.



**Figure 16 – Envelope option 4 – Slender and shaped taller buildings**

Evaluation of building envelope

Under this option, noise mitigation measures are not possible for apartments solely facing Botany Road but are possible for corner apartments. The proposed orientation of taller buildings, which increase apartments facing north and south, prevents the ability to maximise solar access to apartments. The impact of Botany Road on the residential amenity of the apartments is further minimised by preventing apartments from having direct address to the road, allowing noise mitigation measures to be possible for corner apartments facing Botany Road

The building envelope's shaped taller buildings transition in height between 23 and 29 storeys and are adequately separated to meet ADG building separation requirements. This built form option would partly overshadow Alexandria Park from hours 9am and 10am, achieving the current SDCP 2012 and proposed WMQ DCP provision to maintain at least 50 percent of the total area public parks for sunlight for 4 hours from 9am to 3pm on 21 June (3.1.4(3)(a) of SDCP).

The separation of taller buildings is greater than the minimum building separation requirements of the ADG, providing greater visual permeability from an east to west direction. The shaping of taller buildings also allows a smaller surface area to reduce downdraft to Botany Road, minimising the impact on pedestrian amenity within the public domain (as shown in Figure 17).

Increased podium setbacks are applied along Botany Road along with building separation to Waterloo Congregational Church in order to provide relief and enhance the Church's visual presence in the public domain.

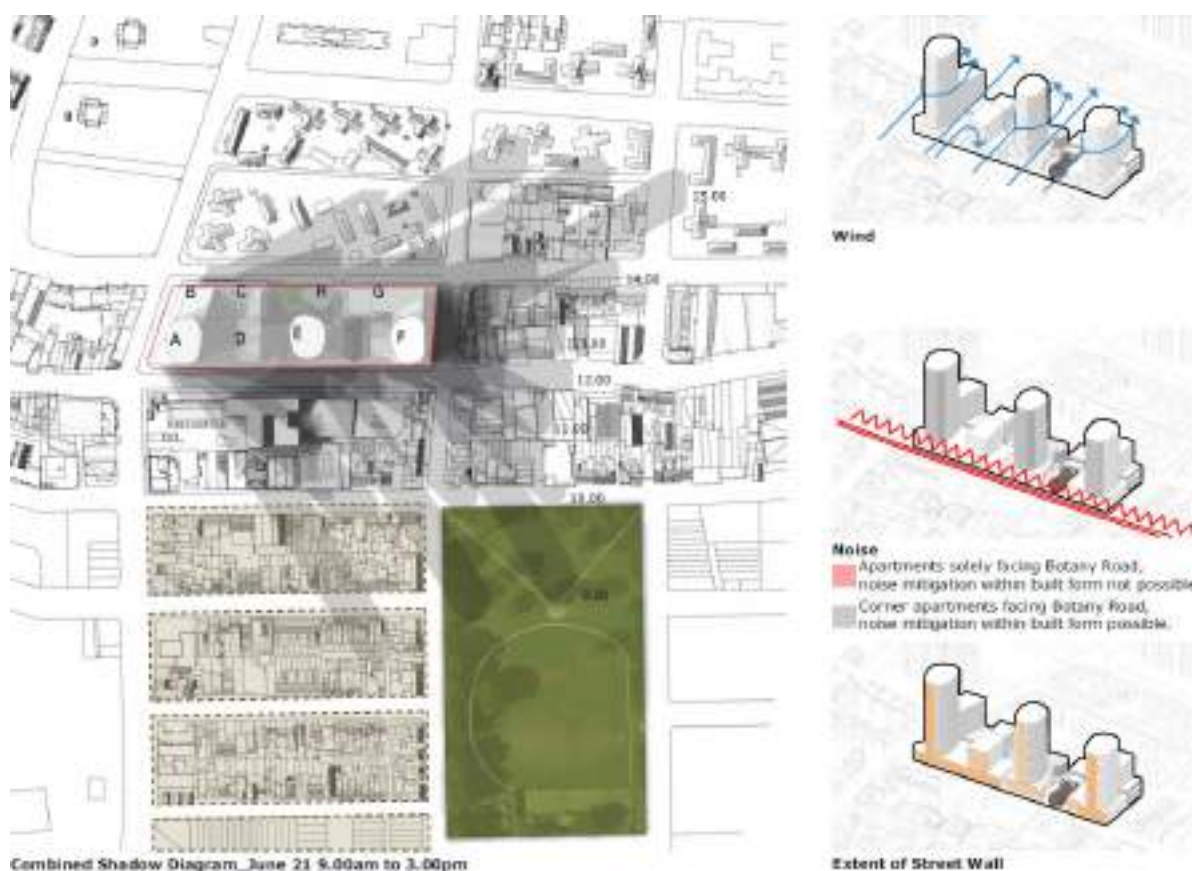


Figure 17 – Amenity evaluation of envelope option 4

### Option 5 – Corner taller buildings

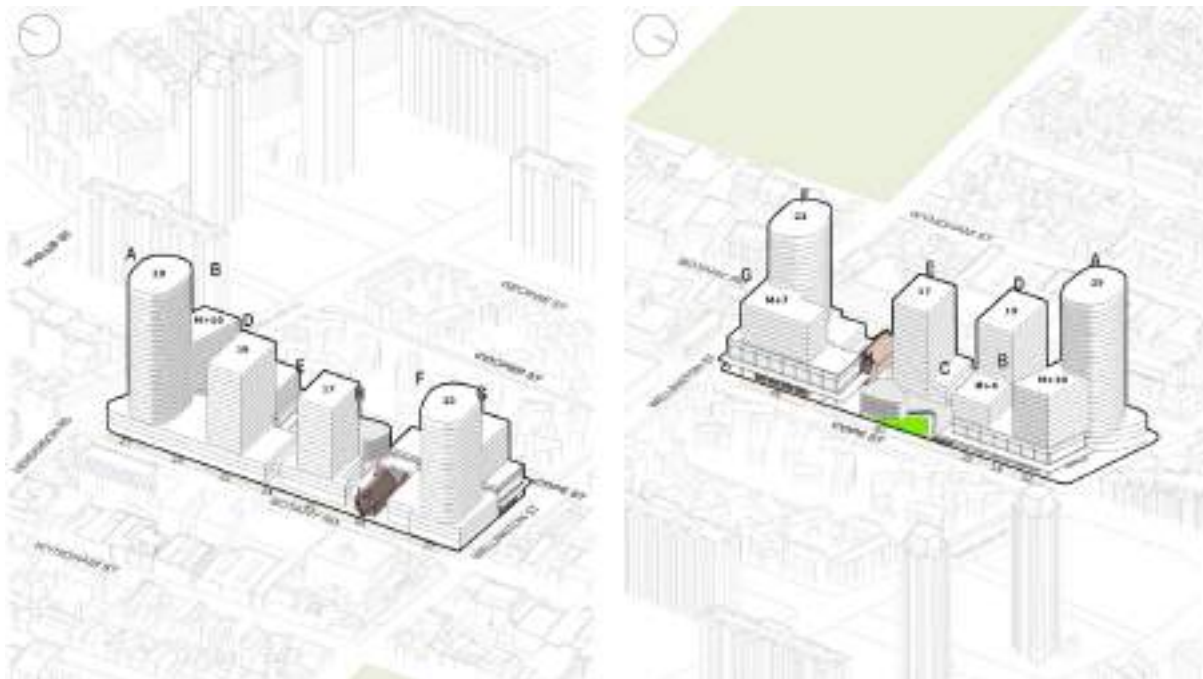
#### Description of building envelope

Option 5 comprises two shaped taller building forms of 29 and 23 storeys on the north-west and south-west corners, respectively, and two bar tower forms within the central portion of the site of 19 and 17 storeys. All taller building forms are of a north to south orientation, which maximise outlooks to the CBD and Sydney Harbour.

Similar to Option 3 and 4, the tallest building of Option 5 is located on the Botany Road and Raglan Street intersection, providing a prominent visual marker for Waterloo Station. The siting and orientation of taller buildings aims to limit overshadowing of Alexandria Park (below 50 percent of total area) between the hours of 9am to 10am.

The extent of the street walls range between 22 metres and 27 metres, with taller buildings providing adequate building separation to achieve the minimum ADG requirements. Increased podium setbacks are applied along Botany Road along with building separation to Waterloo Congregational Church in order to provide relief and enhance the Church’s visual presence in the public domain.

Option 5 has been illustrated at Figure 18.



**Figure 18 – Envelope option 5 – Corner taller buildings**

Evaluation of building envelope

The building envelope's shaped taller buildings transition in height between 23 and 29 storeys. This built form option would partly overshadow Alexandria Park from hours 9am and 10am, achieving the current SDCP 2012 and proposed WMQ DCP provision to maintain at least 50 percent of the total area public parks for sunlight for 4 hours from 9am to 3pm on 21 June (3.1.4(3)(a) of SDCP).

The four taller buildings achieve the minimum ADG building separation (24 metres), however, the east-west permeability, outlook and solar access is compromised. The shaping of taller buildings also allows a smaller surface area to reduce downdraft to Botany Road, minimising the impact on pedestrian amenity within the public domain. However, this is with exception to the two lower bar buildings, which may cause additional down drafting to Botany Road, when compared to Option 4 (as shown in Figure 19).

Increased podium setbacks are applied along Botany Road along with building separation to Waterloo Congregational Church in order to provide relief and enhance the Church's visual presence in the public domain.

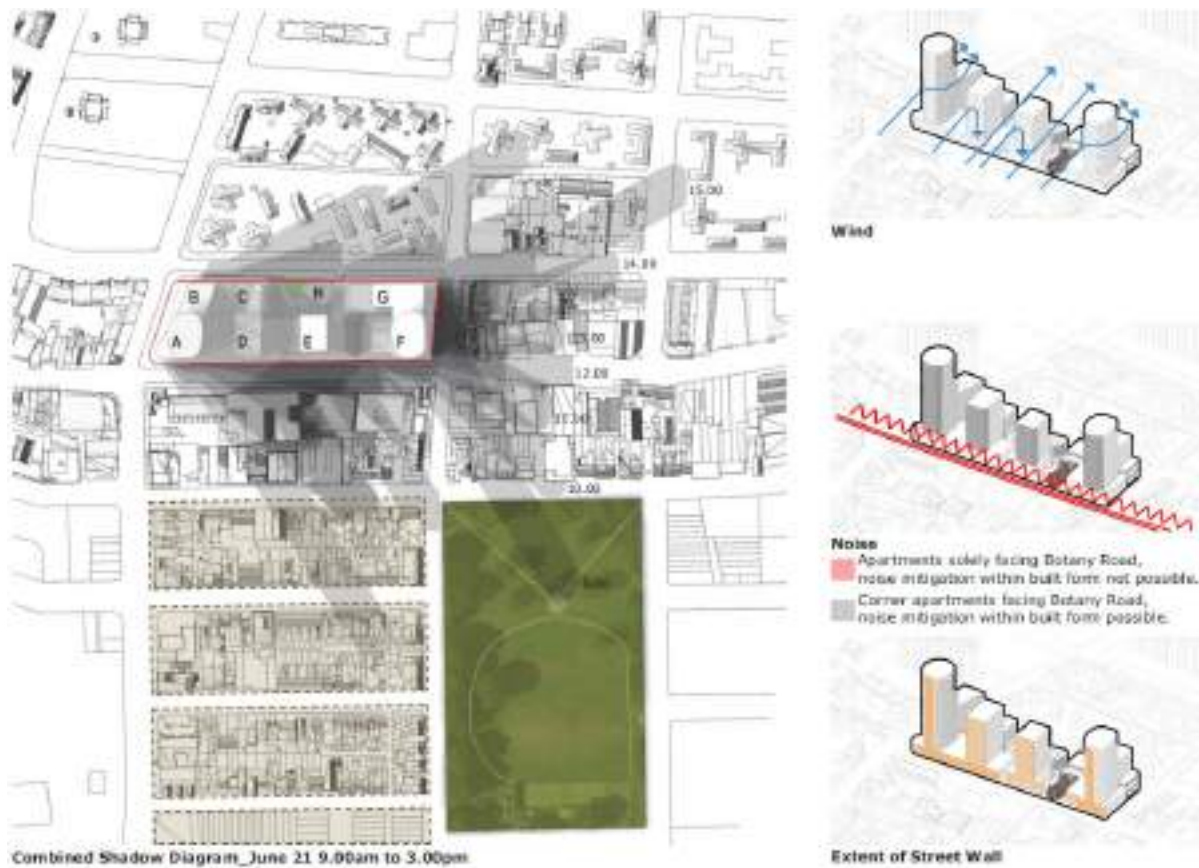


Figure 19 – Amenity evaluation of envelope option 5

### 1.6.3. Preferred option

The preferred building envelope design was the slender taller building option (Option 4). This option had the highest performance amongst the options in responding to the site’s environmental constraints and urban design principles, as described within section 7.6 of the Urban Design and Public Domain Study (Appendix G).



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## 2.0 Planning context

### 2.1. State significant precinct

SSPs are areas that the Minister has determined to be matters of State or regional planning significance.

SSPs are declared and planned in accordance with the SSP SEPP. To support the SSP SEPP, DPE has published the *State Significant Precincts Guidelines 2016*. These guidelines set out the process for planning for SSPs. The guidelines require detailed investigations and preparation of a proposed planning framework.

Potential SSPs are assessed against the following criteria to determine their state or regional planning significance:

- be a large area of land within a single ownership or control, typically government owned
- be of state or regional importance in achieving government policy objectives, particularly those relating to increasing delivery of housing and jobs
- be of state or regional importance for environmental or natural resource conservation
- be of state or regional importance for heritage or historical significance.

Following the decision to locate a metro station in Waterloo, and having regard to the consideration of the above criteria, the Minister determined that parts of Waterloo are of State planning significance and should be investigated for urban renewal through the SSP process.

DPE issued study requirements on 19 May 2017 for the Metro Quarter. The study requirements are critical to the SSP process and outcomes, providing the criteria upon which DPE's evaluation of the State and regional significance of the precinct would be based and intended to inform a decision by the Minister to amend the SSP.

Investigation of the Precinct is being undertaken by UrbanGrowth NSW, in partnership with Sydney Metro and the Land and Housing Corporation (LAHC). The outcome of the SSP process would be new planning controls that would enable future development applications for renewal of the Precinct.

The Waterloo SSP includes two separate but contiguous and inter-related parts:

- The Waterloo Metro Quarter (the Metro Quarter)
- The Waterloo Estate (the Estate)

A separate SSP Study for the Metro Quarter was lodged in July 2018 in advance of the SSP Study for the Estate to provide a planning framework for the construction of OSD within the Metro Quarter. The staged submission of the Metro Quarter SSP Study also facilitates the proposed development to be delivered concurrently with the metro station, as an integrated station development.

The Study included proposed statutory planning controls and a draft DCP for Metro Quarter OSD (WMQ DCP). If approved by the Minister, Schedule 3 of the SSP SEPP would be amended to insert a new

Part relating to the Metro Quarter. The new Part would identify the Metro Quarter as a SSP (by reference to a land application map) and would include the proposed land use zoning and development standards.

As previously noted within Chapter 1.2.4, the proposed amendments to the SSP SEPP would commence only when they are published in the NSW Government Gazette. Once gazetted, the SLEP 2012 would no longer apply to the Metro Quarter. All future development applications pertaining to the site would be required to demonstrate consistency with the development controls established under the SSP SEPP and WMQ DCP. Despite not yet being formally adopted, the proposed OSD has been assessed against these controls (refer to Chapter 7.6).

In accordance with Section 3.39 of the EP&A Act, a consent authority may consider this concept SSD Application, despite it being reliant on an amendment to an environmental planning instrument i.e. an amendment to the SSP SEPP. It is noted that the SSP Study and subsequent amendment to the SSP SEPP is required to be finalised prior to consent being granted for the concept SSD Application.

Further, Section 3.40 of the EP&A Act allows for the concurrent exhibition of the SSP Study and concept SSD Application.

### **2.1.1. Relationship between the Metro Quarter OSD and Waterloo Estate SSP**

As highlighted, the Metro Quarter forms part of the Waterloo SSP, which also includes Waterloo Estate (the Estate), a separate but contiguous and inter-related part of the precinct to the east (refer to Figure 20). The Precinct, as a whole, has an approximate area of 20.03 hectares, with the Estate making up an approximate gross site area of 18.12 hectares. The majority of the Estate is owned by the NSW Government (NSW LAHC) and the balance owned by others, including Ausgrid and private land owners. Overall, the Estate includes 2,012 social housing dwellings that are home to approximately 2,600 tenants.



**Figure 20 – Site aerial photograph – Waterloo State Significant Precinct**

While there are important relationships between the Metro Quarter and the Estate, each Precinct has distinct drivers and anticipated timeframes for renewal. As such, a separate but inter-related SSP Study would be prepared for the Estate.

In the context of the overall renewal program for the Waterloo SSP Study Area, the Metro Quarter is the first priority because:

- Waterloo Station and the Sydney Metro City & Southwest project would substantially improve accessibility and the capacity of the public transport network, and is the catalyst for renewal of the Estate
- there is an immediate need to progress development that would activate the station entry and surroundings to make it attractive and safe for station users and ensure access to complementary services from day one of operations (in 2024)
- integrated design and construction of the station and over-station development would improve efficiencies and result in better outcomes for the station precinct as a whole. As Waterloo Station is already approved and Sydney Metro intends to release integrated station development contracts to support the required delivery of the metro project in conjunction with the OSD, the planning framework for OSD needs to be established to facilitate coordination of the design and construction tender processes, while planning for the Estate continues
- the Metro Quarter would include services and amenities (including retail, employment, community services, health care, etc) that would benefit the surrounding community
- the Metro Quarter would include social and affordable housing to support low to middle income households.

As the first stage of the wider renewal of Waterloo SSP, the Metro Quarter OSD would provide new opportunities to the residents of the Waterloo Estate. This includes the establishment of a new activity centre accommodating a diverse range of uses that serve the needs of the local population, such as retail, entertainment and community services. Furthermore, the concept proposal for the Metro Quarter opens toward the Estate, with its eastern edge accommodating a new Cope Street Plaza and southern entry point to Waterloo Station to create an inviting presence to the Waterloo Estate and its residents. Improved connectivity is also proposed through the Metro Quarter to the bus stop on Botany Road by the provision of a through site link.

The Metro Quarter has a significant role in the supporting the future renewal of Waterloo Estate, with 70 dwellings within the indicative concept proposal provided as social housing.

At least 2,000 square metres of floorspace in the podium levels of new buildings would be allocated to community uses. This space could be delivered or occupied in a number of formats and locations across the Metro Quarter, depending on the needs of community groups, and the City of Sydney. Community uses that specifically service residents of the Estate and the broader suburb could choose to locate in the Metro Quarter.

As the design of the Estate is still undergoing options testing, a clear and definitive assessment of the cumulative impacts between the proposals cannot be undertaken as part of this concept SSD Application. It is anticipated that the cumulative impacts of both proposals will be considered as part of the Waterloo Estate SSP Study and future development applications within the Estate.

## 2.2. State significant development

The SRD SEPP identifies development which is considered to be State significant. Clause 19(2) of Schedule 1 of the SRD SEPP provides that the following development is SSD:

*Development within a rail corridor or associated with railway infrastructure that has a capital investment value of more than \$30 million for any of the following purposes:*

- (a) commercial premises or residential accommodation;*
- (b) container packing, storage or examination facilities;*
- (c) public transport interchanges.*

Additionally, clause 8(2) of the SRD SEPP states the following:

*If a single proposed development the subject of one development application comprises development that is only partly State significant development declared under subclause (1), the remainder of the development is also declared to be State significant development, except for:*

- (a) so much of the remainder of the development as the Director-General determines is not sufficiently related to the State significant development, and*
- (b) coal seam gas development on or under land within a coal seam gas exclusion zone or land within a buffer zone (within the meaning of clause 9A of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007), and*
- (c) development specified in Schedule 1 to State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.*

On this basis, the OSD development meets the criteria for SSD.

Development for concept proposal applications is also able to be considered State significant by virtue of clause 12 of the SRD SEPP, which states that:

*If:*

- (a) Development is specified in Schedule 1 or 2 to this Policy by reference to a minimum capital investment value, other minimum size or other aspect of the development, and*
- (b) Development the subject of a staged development application under Part 4 of the Act is development so specified,*

*any part of the development that is the subject of a separate development application is development specified in the relevant Schedule (whether or not that part of the development exceeds the minimum value or size or other aspect specified in the Schedule for such development.*

As the concept proposal comprises a development within a rail corridor and associated with railway infrastructure for the purposes of residential accommodation and commercial premises and has a Capital Investment Value in excess of \$30 million, it is SSD for the purposes of the EP&A Act. By virtue of clause 8(2), all other components of the proposed development are considered State significant.

Section 4.12(8) of the EP&A Act requires a development application to be accompanied by an EIS. Accordingly, this EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the EP&A Regulation, and the SEARs (provided at Appendix A).

The application is made as a concept application pursuant to section 4.22 of the EP&A Act. It sets out the concept proposal for the development of the site and seeks consent for a maximum building envelope, maximum GFA, a range of land uses, pedestrian and vehicular access, car parking, signage, subdivision (if required) and its integration with Waterloo Station. This application also seeks approval for strategies for stormwater management, ecologically sustainable development, public art and design excellence. As this is a first stage concept application only, consent is not sought for any construction or other physical work, although a high-level assessment of potential construction related impacts is provided.

Other supporting documents are appended to this EIS (see Table of Contents). All images used to support this concept SSD Application are indicative / representative only and are subject to normal planning processes, including stakeholder engagement, approval and design development as part of the future detailed design SSD Application(s).

### 2.3. Secretary’s Environmental Assessment Requirements

In accordance with section 4.39 of the EP&A, the Secretary of DPE issued the SEARs for the preparation of this EIS for SSD on 29 June 2018. The SEARs are included in Appendix A.

Table 2 below provides a detailed summary of the individual matters listed in the SEARs and identifies where each requirement has been addressed in this EIS and the accompanying supporting technical studies.

**Table 2 – Secretary’s Environmental Assessment Requirements**

Requirement	Chapter of EIS	Technical report
<b>General Requirements</b>		
The EIS must address the <i>Environmental Planning and Assessment Act 1979</i> and meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000.	Chapters 2.4, 7.1 and 7.2 and Statement of Validity	Appendix A
Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.	Chapter 13.0	
Where relevant, the assessment of the key issues below, and any other significant issues identified in the assessment, must include:	Chapter 8.0	

Requirement	Chapter of EIS	Technical report
<ul style="list-style-type: none"> <li>justification of impacts</li> <li>consideration of potential cumulative impacts due to other development in the vicinity</li> <li>measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risk to the environment</li> </ul>		
<p>The EIS must also be accompanied by a report from a qualified quantity surveyor providing:</p> <ul style="list-style-type: none"> <li>a detailed calculation of the capital investment value (CIV) of the development (as defined in clause 3 of the Environmental Planning and Assessment Regulation 2000), including details of all assumptions and components from which the CIV calculation is derived</li> </ul>		Submitted under separate cover
<ul style="list-style-type: none"> <li>a close estimate of the jobs that would be created by the development during construction and operation</li> </ul>	Chapter 9.2	
<ul style="list-style-type: none"> <li>verification that the CIV was accurate on the date that it was prepared.</li> </ul>		Submitted under separate cover
<b>Key Issues</b>		
<p><b>1. Environmental Planning Instruments, Policies and Guidelines</b></p> <p>Address the relevant statutory provisions applying to the site contained in the relevant EPIs, including:</p> <ul style="list-style-type: none"> <li><i>State Environmental Planning Policy (State and Regional Development) 2011</i></li> </ul>	Chapter 7.5	
<ul style="list-style-type: none"> <li><i>State Environmental Planning Policy (Infrastructure) 2007</i></li> </ul>	Chapter 7.5	
<ul style="list-style-type: none"> <li><i>State Environmental Planning Policy No. 55 – Remediation of Land</i></li> </ul>	Chapter 7.5	Appendix Z
<ul style="list-style-type: none"> <li><i>State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004</i></li> </ul>	Chapter 7.5	
<ul style="list-style-type: none"> <li><i>State Environmental Planning Policy (State Significant Precincts) 2005</i></li> </ul>	Chapter 7.6	
<ul style="list-style-type: none"> <li><i>State Environmental Planning Policy (Urban Renewal) 2010</i></li> </ul>	Chapter 7.5	
<ul style="list-style-type: none"> <li><i>State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development and accompanying Apartment Design Guide</i></li> </ul>	Chapter 7.5	Appendix F
<ul style="list-style-type: none"> <li><i>State Environmental Planning Policy No. 64 – Advertising and Signage</i></li> </ul>	Chapter 7.5	
<ul style="list-style-type: none"> <li><i>State Environmental Planning Policy No. 70 – Affordable Housing (Revised Schemes) or a new housing SEPP released by the Greater Sydney Commission and/or Department</i></li> </ul>	Chapter 7.5	
<ul style="list-style-type: none"> <li><i>State Environmental Planning Policy (Affordable Rental Housing) 2009</i></li> </ul>	Chapter 7.5	
<ul style="list-style-type: none"> <li><i>Sydney Local Environmental Plan 2012</i></li> </ul>	Chapter 7.8	

Requirement	Chapter of EIS	Technical report
<ul style="list-style-type: none"> <li>City of Sydney Affordable Housing Review (PP_2017_SYDNE_006_00) and any other relevant planning proposals</li> </ul>	Chapter 7.8.1	
<ul style="list-style-type: none"> <li>Exhibited Planning Proposal for the Metro Quarter State Significant Precinct.</li> </ul>	Chapter 7.6 and Chapter 7.7	
Address the relevant provisions, goals and objectives in the following:	Chapter 6.1	
<ul style="list-style-type: none"> <li>NSW State Priorities</li> </ul>		
<ul style="list-style-type: none"> <li>Premier's Priorities</li> </ul>	Chapter 6.2	
<ul style="list-style-type: none"> <li>A Metropolis of Three Cities</li> </ul>	Chapter 6.3	
<ul style="list-style-type: none"> <li>Eastern City District Plan</li> </ul>	Chapter 6.4	
<ul style="list-style-type: none"> <li>Future Transport 2056</li> </ul>	Chapter 6.5	
<ul style="list-style-type: none"> <li>State Infrastructure Strategy 2018</li> </ul>	Chapter 6.6	
<ul style="list-style-type: none"> <li>Development near Rail Corridors and Busy Roads – Interim Guideline</li> </ul>	Chapter 6.10	Appendix V
<ul style="list-style-type: none"> <li>Guide to Traffic Generating Developments, Roads and Maritime Services</li> </ul>	Chapter 6.10	Appendix N
<ul style="list-style-type: none"> <li>Heritage Council Guideline on Heritage Curtilages 1996</li> </ul>	Chapter 6.10	Appendix Q
<ul style="list-style-type: none"> <li>Design in Context – guidelines for infill development in the Historic Environment (Heritage Office 2005)</li> </ul>	Chapter 6.10	Appendix Q
<ul style="list-style-type: none"> <li>Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW 2011)</li> </ul>	Chapter 6.10	Appendix Q
<ul style="list-style-type: none"> <li>Better Placed – an integrated design policy for the built environment of NSW 2017 and relevant policy documents public by the Government Architect NSW</li> </ul>	Chapter 6.7	
<ul style="list-style-type: none"> <li>Director General's Design Excellence Guidelines, 2011 or Government Architect NSW's Design Excellence Competition Guidelines once adopted</li> </ul>	Chapter 6.10	
<ul style="list-style-type: none"> <li>NSW Government's Future Directions for Social Housing in NSW</li> </ul>	Chapter 6.8	
<ul style="list-style-type: none"> <li>Relevant City of Sydney policies, codes and guidelines (where required pursuant to relevant Local Environmental Plan)</li> </ul>	Chapter 6.10	-
<p><b>2. Land Use and Infrastructure</b></p> <p>The EIS shall:</p>		Appendix C, D & G
<ul style="list-style-type: none"> <li>include details and justifications for the proposed mix of land uses and floor space.</li> </ul>	Chapter 1.6, Chapter 4.4, Chapter 4.5, Chapter 4.6 and Chapter 8.2	
<ul style="list-style-type: none"> <li>detail the permissibility of the proposal and any components of the proposal that may only be carried out if an environmental planning instrument is amended.</li> </ul>	Chapter 1.2.4 and Chapter 7.6	
<ul style="list-style-type: none"> <li>demonstrate that the proposal would meet the strategic objectives as identified in the relevant government policies and the</li> </ul>	Chapter 1.4, Chapter 6.0,	



Requirement	Chapter of EIS	Technical report
<p>environmental, social and economic needs of the Waterloo State Significant Precincts (including M8.0etro Quarter and Waterloo Estate Precincts) and the wider area. This shall include an assessment of the proposal's economic and social impacts to:</p> <ul style="list-style-type: none"> <li>○ demonstrate retail, services and employment needs of future residents and workers of the development would be met.</li> <li>○ illustrate the social and economic impacts of the development to the wider area, including nearby local centres.</li> <li>○ consider the social housing and affordable housing needs of the precinct.</li> </ul>	Chapter 8.0, Chapter 9.0 and Chapter 10.0	
<ul style="list-style-type: none"> <li>• demonstrate that the proposal would be supported by adequate infrastructure and services, including the provision of open spaces, recreation facilities, community and social services, drainage, road, transport and social infrastructure.</li> </ul>	Chapter 8.0	
<ul style="list-style-type: none"> <li>• provide details on the implementation of infrastructure and services required to support the delivery of the proposal and relationship to the staging of the proposal. This may include demonstrating satisfactory arrangement is made to deliver required infrastructure to support the development such as any infrastructure schedule and contributions framework that would be implemented for the precinct.</li> </ul>	Chapter 8.18 and Chapter 11.0	Appendix P
<p><b>3. Built Form and Urban Design</b></p> <p>The EIS shall:</p> <ul style="list-style-type: none"> <li>• describe the design process leading to the Concept Proposal including urban design analysis demonstrating how the proposed building forms, typologies, orientation, height, setbacks, bulk, scale, and massing of the proposed development fit within the context of the site and the existing and future desired character of the Waterloo State Significant Precincts and the wider Waterloo area. This must include justifications for the proposed building heights and forms.</li> </ul>	Chapter 4.3, Chapter 8.2 and Chapter 8.3	Appendix G
<ul style="list-style-type: none"> <li>• provide comparative analysis of proposed built forms with respect to applicable development standards and development controls.</li> </ul>	Chapter 7.10	
<ul style="list-style-type: none"> <li>• demonstrate built forms would facilitate appropriate transition of building scale to surrounding developments and the wider Waterloo area, including heritage conservation areas.</li> </ul>	Chapter 8.2, Chapter 8.4 and Chapter 8.6	Appendix G
<ul style="list-style-type: none"> <li>• include options analysis of the proposed built envelopes illustrating the consideration of the benefits and potential impacts of each option. This shall include design options to protect solar access on Alexandria Park and neighbouring residential developments, including consideration of any cumulative impacts of the proposal together with the likely future development on the western side of Botany Road.</li> </ul>	Chapter 1.6	Appendix E, G & H
<ul style="list-style-type: none"> <li>• provide indicative design plans illustrating potential built forms within the proposed building envelopes, including demonstration of feasibility of proposed dwelling density and floor space.</li> </ul>	-	Appendix C, D, F, G
<ul style="list-style-type: none"> <li>• include design quality guidelines, for endorsement by the Government Architect or its endorsed design review panel, for the</li> </ul>	Chapter 4.9	Appendix K

Requirement	Chapter of EIS	Technical report
<p>future stage(s) of development and built forms with specific guidance on:</p> <ul style="list-style-type: none"> <li>○ public and private space</li> <li>○ integration with the Metro station</li> <li>○ building articulation, materials, massing and setbacks</li> <li>○ connectivity, including any through site links</li> <li>○ public domain, open space and landscaping</li> <li>○ street activation</li> <li>○ land uses</li> <li>○ microclimate conditions</li> <li>○ overshadowing</li> <li>○ public art</li> <li>○ building entrances</li> <li>○ parking, loading/services arrangements</li> </ul>		
<ul style="list-style-type: none"> <li>• consider the relevant design guidelines in the draft Waterloo State Significant Precinct Investigation and how the proposed development would integrate with future developments in the Waterloo State Significant Precincts and the wider Waterloo area.</li> </ul>	Chapter 7.7	
<p><b>4. Design Excellence Strategy</b></p> <p>The EIS shall:</p> <ul style="list-style-type: none"> <li>• provide a design excellence strategy for the future stage(s) of the development which demonstrates how design excellence would be achieved. The strategy must be prepared in consultation with the Government Architect NSW and must include details on: <ul style="list-style-type: none"> <li>○ any required competitive design excellence processes, including design competitions.</li> <li>○ a schedule for regular design review throughout the planning process by the State Design Review Panel or alternative endorsed by the Government Architect NSW, including an outline of how feedback would be documented and addressed.</li> </ul> </li> <li>• The strategy must be supported by evidence of consultation with the Government Architect, including a record of the issues raised during the consultation and how the proposed strategy responds to those issues.</li> </ul>	Chapter 4.9	Appendix J
<p><b>5. Prescribed airspace for Sydney Airport</b></p> <p>The EIS shall identify any impacts of the proposal on the prescribed airspace for Sydney Airport.</p>	Chapter 8.12	
<p><b>6. Integration with Sydney Metro Station infrastructure</b></p> <p>The EIS shall:</p> <ul style="list-style-type: none"> <li>• identify the extent of the proposal that is State Significant Development (SSD) and how this relates to the approved Critical State Significant Infrastructure (CSSI 7400) and any modifications to the CSSI.</li> <li>• show how the proposed over station development would integrate in design terms and structurally with the Waterloo Station infrastructure, and identify any specific requirements of the CSSI</li> </ul>	Chapter 4.7 Chapter 4.8 Chapter 4.10, Chapter 4.11, Chapter 4.13 and Chapter 4.19	Appendix C, D & G

Requirement	Chapter of EIS	Technical report
Approval that has influenced the design of the over station development.		
<ul style="list-style-type: none"> <li>illustrate a site design which is responsive to the existing and/or proposed land uses with linkages to key destination points such as station entrance, community facilities, and recreation areas.</li> </ul>		
<ul style="list-style-type: none"> <li>show how the proposal (being the SSD components) would integrate with the Sydney Metro station infrastructure such as design, access, way finding and construction.</li> </ul>		
<p><b>7. Staging and relationship with adjoining State Significant Precinct</b></p> <p>The EIS shall:</p> <ul style="list-style-type: none"> <li>set out the staging and delivery options of the proposed development, the relationship with the delivery of the Sydney Metro stations, timing of public domain works and any other relevant work such as interim precinct activation and access to transport.</li> </ul>	Chapter 2.1 Chapter 4.12	
<ul style="list-style-type: none"> <li>identify the delivery of social/affordable housing and any proposed public benefits and contribution as relevant to each stage.</li> </ul>	Chapter 4.12 and Chapter 8.18	
<ul style="list-style-type: none"> <li>demonstrate how the Metro Quarter and the Waterloo Estate State Significant Precincts would proceed and illustrate the relationship and any cumulative impacts between the proposals.</li> </ul>	Chapter 2.1.1	-
<p><b>8. Amenity</b></p> <p>The EIS shall:</p> <ul style="list-style-type: none"> <li>demonstrate consistency with the requirements of SEPP 65 and the Apartment Design Guide.</li> </ul>	Chapter 7.5 and Chapter 8.5	Appendix F
<ul style="list-style-type: none"> <li>address solar access, acoustic impacts, visual privacy, views and visual impacts, reflectivity, overshadowing and noise and vibration impacts to the surrounding area, including neighbouring properties and the public domain.</li> </ul>	Chapter 8.4, Chapter 8.5, Chapter 8.6, Chapter 8.17 and 8.20	Appendix E, H, M, U & V
<ul style="list-style-type: none"> <li>include a detailed solar access and overshadowing analysis outlining impacts on adjoining developments and the public domain. The analysis must include, at a minimum, shadow diagrams at hourly intervals in mid- mid-winter and additional diagrams to detail impacts on any affected public open space and private open space.</li> </ul>	Chapter 8.4	Appendix E & H
<ul style="list-style-type: none"> <li>provide a view analysis to and from the site from adjoining developments, key vantage points and streetscape locations including photomontages or perspectives of the proposed development. The view locations and methodology for the analysis must be prepared in consultation with DPE and the City of Sydney.</li> </ul>	Chapter 8.6	Appendix M
<ul style="list-style-type: none"> <li>provide wind analysis (including wind tunnel modelling) outlining the impacts, in particularly any impacts to existing and proposed public domain areas and open space. The wind impact assessment must identify the existing wind characteristics of the site and its</li> </ul>	Chapter 8.12.1	Appendix X

Requirement	Chapter of EIS	Technical report
locality, significant locations for wind sensitivity and mitigating measures.		
<ul style="list-style-type: none"> <li>provide an air quality assessment report for the proposal. The assessment shall address the relevant policy guidelines.</li> </ul>	Chapter 8.14	Appendix W
<b>9. Noise and Vibration</b> The EIS shall include a noise impact assessment identifying: <ul style="list-style-type: none"> <li>measures to minimise and mitigate potential noise and vibration impacts of the proposal on surrounding developments.</li> </ul>	Chapter 8.17	Appendix V
<ul style="list-style-type: none"> <li>the impacts of likely noise and vibration from surrounding land uses, such as noise from the operation of the rail line and surrounding road networks and mitigation measures to protect the amenity of residents/ visitors/ employees.</li> </ul>	Chapter 8.17	Appendix V
<b>10. Heritage</b> The EIS shall provide: <ul style="list-style-type: none"> <li>a detailed heritage impact statement (HIS) that identifies and addresses the extent of heritage impact of the proposal on the site, site curtilage and surrounding area, including any built and landscape items, conservation areas, views and settings, and in particular the impact of the proposal on heritage items of local and State significance, including the locally listed Waterloo Congregational Church, the Cauliflower Hotel, Former Waterloo Pre-school and locally listed terrace houses as well as impacts to the heritage conservation areas in the vicinity of the site.</li> </ul>	Chapter 8.8	Appendix Q
<ul style="list-style-type: none"> <li>consider any endorsed conservation management plans for heritage items and conservation areas in the vicinity of the site and the surrounding area</li> </ul>	Chapter 8.8	Appendix Q
<ul style="list-style-type: none"> <li>include a heritage interpretation strategy.</li> </ul>	Chapter 8.8	Appendix Q
<ul style="list-style-type: none"> <li>considers any archaeological impacts if relevant.</li> </ul>	Chapter 8.8	Appendix Q
<b>11. Aboriginal Heritage</b> The EIS shall: <ul style="list-style-type: none"> <li>provide a detailed Aboriginal heritage impact statement (AHIS) that identifies and addresses the extent of Aboriginal heritage impacts of the proposal on the site and the surrounding area, including objects, places or features (including biological diversity) of cultural value within the landscape. If Aboriginal Cultural Heritage is found at the site, a full Aboriginal Cultural Heritage Assessment Report together with document of required consultation must be provided.</li> </ul>	Chapter 8.9	Appendix Q
<b>12. Transport, Traffic, Parking and Access</b> The EIS must include a Transport and Traffic Impact Assessment that provides, but is not limited to, the following: <ul style="list-style-type: none"> <li>accurate details of the current daily and peak hour vehicle, public transport, point to point transport services, pedestrian and bicycle movements from existing buildings/ uses on the site using the adjacent and surrounding road network.</li> </ul>	Chapter 8.10.1 and 8.10.2	Appendix N
<ul style="list-style-type: none"> <li>forecast total daily and peak hour trips likely to be generated by the proposed development including vehicle, public transport, point to</li> </ul>	Chapter 8.10.3	Appendix N

Requirement	Chapter of EIS	Technical report
point transport services, pedestrian and bicycle trips, together with cumulative impacts of existing, proposed and approved developments in the area and any transport/ traffic upgrade.		
<ul style="list-style-type: none"> <li>detailed assessment of the existing and future performance of key intersections providing access to the site, supported by appropriate modelling and analysis to the satisfaction of RMS and TfNSW.</li> </ul>	Chapter 8.10.4	Appendix N
<ul style="list-style-type: none"> <li>measures to mitigate impacts of the proposed development on the operation of existing and future traffic, public transport, pedestrian and bicycle networks including any required upgrades.</li> </ul>	Chapter 8.10.5	Appendix N
<ul style="list-style-type: none"> <li>measures to be implemented to encourage users of the development to make sustainable travel choices, including walking, cycling, public transport and car sharing, such as the integration with rail and bus infrastructure and provision of adequate bicycle parking and end of trip facilities.</li> </ul>	Chapter 8.10.6	Appendix N
<ul style="list-style-type: none"> <li>proposed car and bicycle parking provision for residents, workers and visitors, including consideration of the availability of public transport and the requirements of the relevant parking codes and Australian Standards</li> </ul>	Chapter 8.10.7	Appendix N
<ul style="list-style-type: none"> <li>proposed provision of bus service infrastructure and pedestrian connections to support the bus/rail interchange function of the metro station, including an assessment of the public domain surrounding the site to accommodate the future pedestrian demands safely and adequately and mitigation measures identified.</li> </ul>	Chapter 8.10.8	Appendix N
<ul style="list-style-type: none"> <li>proposed vehicle access arrangements, including for service and loading activities and measures to mitigate impacts to bus services and passengers interchanging between bus and rail.</li> </ul>	Chapter 8.10.7	Appendix N
<ul style="list-style-type: none"> <li>describe preliminary construction traffic arrangements and management measures, including consideration of the cumulative construction traffic impacts from infrastructure works in the surrounding road/transport network, including Waterloo station and other developments including the Waterloo Estate State Significant Precincts.</li> </ul>	Chapter 11.0	Appendix CC
<p><b>13. Ecologically Sustainable Development (ESD)</b></p> <p>The EIS shall:</p> <ul style="list-style-type: none"> <li>detail how ESD principles (as defined in clause 7(4) Schedule 2 of the EP&amp;A Regulation 2000) would be incorporated in the design, construction and ongoing operation of the development.</li> </ul>	Chapter 8.11	Appendix S
<ul style="list-style-type: none"> <li>include a framework for how the proposed development would reflect best practice sustainable building principles to improve environmental performance, including energy and water efficient design and technology and use of renewable energy. This shall include commitments to relevant ESD benchmarks.</li> </ul>	Chapter 8.11	Appendix S
<p><b>14. Flooding and Stormwater</b></p> <p>The EIS shall:</p> <ul style="list-style-type: none"> <li>undertake a concept flood study and flood management plan to inform a detailed flood impact assessment in accordance with the NSW Floodplain Development Manual (2005) and demonstrate</li> </ul>	Chapter 8.16	Appendix T

Requirement	Chapter of EIS	Technical report
consideration of the Alexandra Canal Floodplain Risk Management Study and other existing flood studies for the catchment area.		
<ul style="list-style-type: none"> <li>identify minimum floor levels for buildings and recommend flood management and/or evacuation plan as relevant to the concept proposal.</li> </ul>	Chapter 8.16	Appendix T
<ul style="list-style-type: none"> <li>include a stormwater management strategy which must consider the relevant local council stormwater management policy and Water Sensitive Urban Design Principles.</li> </ul>	Chapter 8.16	Appendix T
<p><b>15. Geotechnical and Contamination</b></p> <p>The EIS shall provide an assessment of:</p> <ul style="list-style-type: none"> <li>the site's conditions, outlining the site's suitability for the proposed uses with respect to soil erosion, salinity and acid sulphate soil.</li> </ul>	Chapter 8.21	Appendix Z
<ul style="list-style-type: none"> <li>the proposal in accordance with State Environmental Planning Policy No 55 - Remediation of Land and relevant guidelines.</li> </ul>	Chapter 7.5 and Chapter 8.21	Appendix Z
<p><b>16. Biodiversity</b></p> <p>The EIS shall provide an assessment of the proposal's biodiversity impacts in accordance with the <i>Biodiversity Conservation Act 2016</i>, including the preparation of a Biodiversity Development Assessment Report (BDAR) where required under the Act, except where a waiver for preparation of a BDAR has been granted.</p>	Chapter 7.4	Appendix R
<p><b>17. Public Benefits, Contributions and/or Voluntary Planning Agreement</b></p> <p>The EIS shall address:</p> <ul style="list-style-type: none"> <li>the proposed method of calculating developer contributions payable.</li> </ul>	Chapter 8.18	
<ul style="list-style-type: none"> <li>any additional contributions proposed or material public benefits associated with any proposed floor space above existing planning controls</li> </ul>	Chapter 8.18	
<ul style="list-style-type: none"> <li>any proposed Voluntary Planning Agreement or other legally binding instrument agreed between relevant public authorities.</li> </ul>	Chapter 8.18	
<ul style="list-style-type: none"> <li>the EIS shall address the applicable s94 Contribution Plan and the provision of public benefit, land dedication, services and infrastructure in consultation with key stakeholders and provide details of any voluntary planning agreement (VPA) or other legally binding instrument agreed between relevant public authorities and the applicant.</li> </ul>	Chapter 8.18	
<p><b>18. Utilities</b></p> <p>The EIS shall identify the existing capacity of the site to service the development proposed and any augmentation requirements for utilities, including arrangements for electrical network requirements, drinking water, waste water and recycled water.</p>	Chapter 8.15	Appendix P
<p><b>19. Consultation</b></p>	Chapter 5.0	Appendix L

Requirement	Chapter of EIS	Technical report
<p>During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers and community groups. In particular, you must consult with:</p> <ul style="list-style-type: none"> <li>• Government Architect of NSW</li> <li>• Roads and Maritime Services</li> <li>• City of Sydney</li> <li>• Heritage Council NSW</li> <li>• Sydney Airport Corporation Limited and the Civil Aviation Safety Authority</li> <li>• NSW Police</li> <li>• Sydney Coordination Office</li> <li>• Fire and Rescue NSW</li> <li>• State Emergency Services</li> <li>• Surrounding residents, businesses and local community groups</li> </ul> <p>The EIS must include a report describing pre-submission consultation undertaken, including a record of the stakeholders consulted, the issues raised during the consultation and how the proposal responds to those issues. Where amendments have not been made to address an issue, a short explanation should be provided.</p>		
<b>Plans and Documents</b>		
<ul style="list-style-type: none"> <li>• The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Environmental Planning and Assessment Regulation 2000. Provide these as part of the EIS rather than as separate documents.</li> </ul>		Appendix B, C & D
<p>In addition, the EIS must include the following:</p> <ul style="list-style-type: none"> <li>• clause 4.6 variation written request (if required)</li> </ul>		NA
<ul style="list-style-type: none"> <li>• site title diagrams and survey plan, showing existing levels, location and heights of existing and adjacent structures/ building</li> </ul>		Appendix B
<ul style="list-style-type: none"> <li>• site analysis plan</li> </ul>		Appendix D
<ul style="list-style-type: none"> <li>• schedule of proposed gross floor area per land use</li> </ul>		Appendix E
<ul style="list-style-type: none"> <li>• building envelopes showing the relationship with proposed and existing buildings in the locality</li> </ul>		Appendix C & G
<ul style="list-style-type: none"> <li>• architectural drawings (to a useable scale at A3)</li> </ul>		Appendix D
<ul style="list-style-type: none"> <li>• architectural and urban design statement</li> </ul>		Appendix F
<ul style="list-style-type: none"> <li>• physical and 3D digital model (in accordance with City of Sydney Council requirements)</li> </ul>		Submitted separately
<ul style="list-style-type: none"> <li>• visual and view impact analysis and photomontages</li> </ul>		Appendix M
<ul style="list-style-type: none"> <li>• assessment of economic and social impacts</li> </ul>	Chapter 9.0	Appendix O & AA

Requirement	Chapter of EIS	Technical report
• infrastructure impact assessment		Appendix P
• staging plan	Chapter 4.12	Appendix C
• design guidelines and design excellence strategy		Appendix J & K
• heritage impact assessment		Appendix Q
• transport traffic and parking assessment		Appendix N
• solar access analysis report and diagrams:		Appendix E & H
• wind impact assessment (including a wind tunnel study)		Appendix X
• flood assessment / stormwater management plan		Appendix T
• geotechnical and contamination report		Appendix Z
• ESD statement (incorporating a sustainability framework)		Appendix S
• access/ DDA impact statement		Appendix BB
• services and utilities impact assessment		Appendix P
• signage details (if proposed)	Chapter 4.18	
• flight path report	-	Appendix Y
• noise and vibration report	-	Appendix V
• construction noise and vibration report	-	Appendix V
• CPTED assessment	-	Appendix I
• preliminary construction management statement	-	Appendix CC
• pre-submission consultation report	-	Appendix L



## 2.4. Environmental Planning and Assessment Regulation 2000 requirements for the EIS

This EIS has been prepared in accordance with the requirements of Schedule 2 of the EP&A Regulation, which prescribes the information and content that must be submitted with a concept SSD Application. Table 3 below outlines these requirements and identifies where each of the requirements have been addressed in this EIS.

**Table 3 – Schedule 2 of EP&A Regulation**

Requirement for Content of EIS	Chapter of EIS
6. Form of the environmental impact statement An environmental impact statement must contain the following information:	
a) The name, address and professional qualifications of the person by whom the statement is prepared	Statement of Validity
b) The name and address of the responsible person	Statement of Validity
c) The address of the land: <ul style="list-style-type: none"> <li>i. In respect of which the development application is to be made, or</li> <li>ii. On which the activity or infrastructure to which the statement relates is to be carried out</li> </ul>	Statement of Validity
d) A description of the development, activity or infrastructure to which the statement relates	Statement of Validity
e) An assessment by the person by whom the statement is prepared of the environmental impact of the development, activity or infrastructure to which the statement relates, dealing with the matters referred to in this Schedule	Statement of Validity
f) A declaration by the person whom this statement is prepared to the effect that: <ul style="list-style-type: none"> <li>i. The statement has been prepared in accordance with this Schedule, and</li> <li>ii. The statement contains all information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and</li> <li>iii. That the information contained in the statement is neither false or misleading</li> </ul>	Statement of Validity

Requirement for Content of EIS	Chapter of EIS
7. Content of environmental impact statement (1) An environmental impact statement must also include each of the following:	
a) a summary of the environmental impact statement,	Executive Summary
b) a statement of the objectives of the development, activity or infrastructure,	Chapter 1.5
c) an analysis of any feasible alternatives to the carrying out of the development, activity or infrastructure, having regard to its objectives, including the consequences of not carrying out the development, activity or infrastructure,	Chapter 1.0
d) an analysis of the development, activity or infrastructure, including:	Throughout EIS
i. a full description of the development, activity or infrastructure, and	Chapter 4.0
ii. a general description of the environment likely to be affected by the development, activity or infrastructure, together with a detailed description of those aspects of the environment that are likely to be significantly affected, and	Chapter 3.4, Chapter 8.0 and appendices
iii. the likely impact on the environment of the development, activity or infrastructure, and	Chapter 8.0 appendices
iv. a full description of the measures proposed to mitigate any adverse effects of the development, activity or infrastructure on the environment, and	Chapter 13.0
v. a list of any approvals that must be obtained under any other Act or law before the development, activity or infrastructure may lawfully be carried out,	Chapter 2.5
a) a compilation (in a single section of the environmental impact statement) of the measures referred to in item (d)(iv),	Chapter 12.0
b) the reasons justifying the carrying out of the development, activity or infrastructure in the manner proposed, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development set out in subclause (4).	Chapter 14.0
Note. A cost benefit analysis may be submitted or referred to in the reasons justifying the carrying out of the development, activity or infrastructure.	

## 2.5. Other Approvals

In addition to the approvals noted elsewhere in this document, other approvals would be required in the future to permit the construction of the OSD. These approvals may include, but are not limited to, the following:

- An approval for Obstacle Limitation Surface (OLS) protrusion under the *Airports (Protection of Airspace) Regulations 1996* (Cth) – to ensure construction and the proposed building would not interfere with operations and safety of Sydney Airport.
- Approvals under the *Roads Act 1993* (NSW) (including section 138 approvals).
- A compliance certificate under section 73 of the *Sydney Water Act 1994* (NSW) for connection of water supply for the new buildings.

It is noted that some works to the public domain and to provide access to elements of Waterloo Station are being undertaken under the terms of the CSSI Approval. The necessary approvals for CSSI related work would be obtained under the terms of that approval, and include the requirement for an environment protection licence under the provisions of the *Protection of the Environment Operations Act 1997* (NSW) (POEO Act).

### 3.0 The site

#### 3.1. Location

The site is located within the City of Sydney Local Government Area (LGA).

The Metro Quarter comprises land to the west of Cope Street, east of Botany Road, south of Raglan Street and north of Wellington Street. The heritage listed Waterloo Congregational Church located at 103–105 Botany Road is within this block but is not part of the site.

The site has an approximate area of 1.287 hectares (refer to Figure 21).

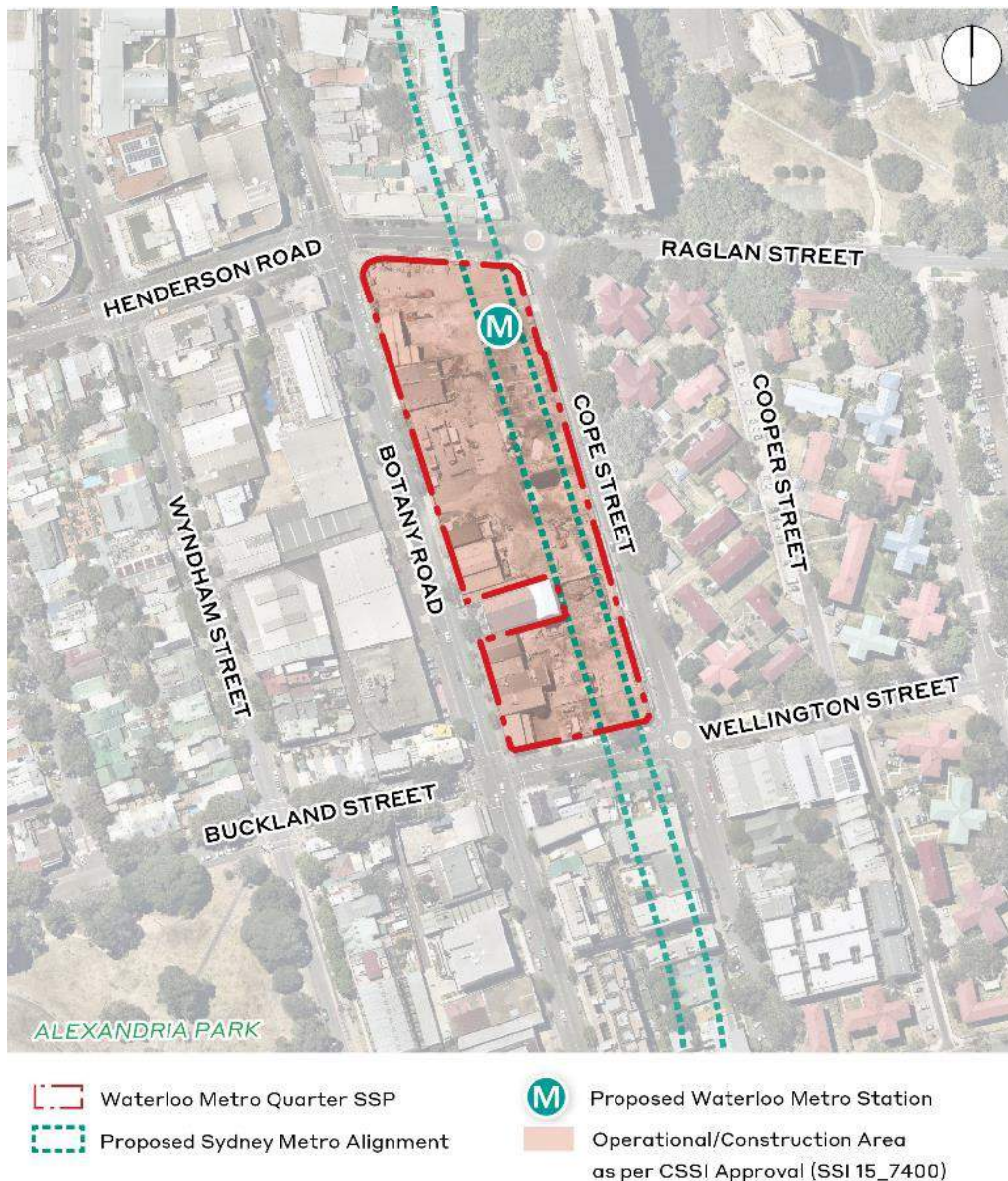


Figure 21 – The Metro Quarter (the site)

Photographs of the site and surrounding development are provided below.



**Figure 22 – The Site looking north-east along Botany Road (north of the Wellington Street intersection)**



**Figure 23 – The Site looking east across Botany Road (north of the Wellington Street intersection)**



**Figure 24 – Within the Site looking north toward Waterloo Congregational Church (north of the Wellington Street intersection)**

### 3.2. Legal Description of the site

Formerly privately owned, the site was purchased by Sydney Metro to facilitate the construction of the Waterloo Station, with the rights for OSD subsequently acquired by UrbanGrowth NSW.

The site comprises 23 lots as detailed at Table 4. A site survey has been provided at Appendix B.

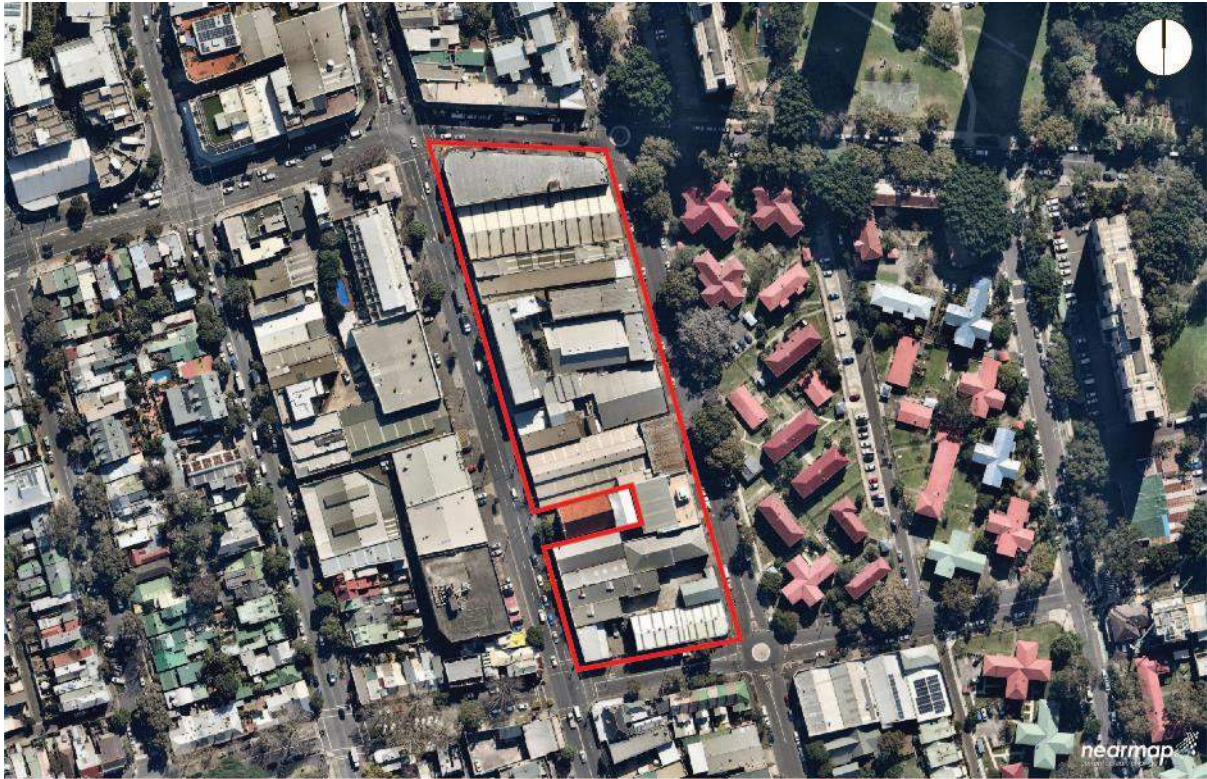
**Table 4 – Legal description of site**

Address	Lot and DP
136B Raglan Street	Lot 4 DP 215751
59 Botany Road	Lot 5 DP 215751
65 Botany Road	Lot 1 DP814205
67 Botany Road	Lot 1 DP228641
124-128 Cope Street	Lot 2 DP228641
69-83 Botany Road	SP75492
130-134 Cope Street	Lot 12 DP399757
136-144 Cope Street	Lots A-E DP108312
85 Botany Road	Lot 1 DP27454
87 Botany Road	Lot 2 DP27454
89-91 Botany Road	Lot 1 DP996765
93-101 Botany Road	Lot 1 DP433969 & Lot 1 DP738891
156-160 Cope Street	Lot 31 DP805384
107-117A Botany Road	Lot 32 DP805384 & Lot A DP408116
119-121 Botany Road	Lot 1 DP205942 & Lot 1 DP436831
170-174 Cope Street	Lot 2 DP205942

### 3.3. Development on the site pre-demolition

All existing buildings and structures on the site have been demolished under the terms of the CSSI Approval, with the exception of one building being used to support construction. These structures comprised a mix of low rise commercial and residential buildings, ranging from 2-3 storeys and occupied for a range of uses including shops, light industry and residential apartments (as shown in Figure 25).

Following the demolition under the terms of the CSSI Approval, construction of the station has commenced with the site occupied by a construction compound. Whilst most of the station would be located beneath finished ground level, once construction is complete, two substantial entry and plant structures, with heights up to 20 metres (approximately 5-storeys), would protrude above the finished ground level. One component of the station box is located in the north-eastern part of the site (adjacent to the Cope Street/Raglan Street intersection), while the other is located in the south-eastern part (adjacent to the Cope Street/Wellington Street intersection).



 Waterloo Metro Quarter OSD

**Figure 25 – Aerial photograph of the site pre-demolition**





**Figure 26 – View of Waterloo Congregational Church from Botany Road prior to demolition of adjacent lands**



**Figure 27 – View facing south from corner of Raglan Street and Cope Street pre-demolition**



**Figure 28 – View facing south on Botany Road pre-demolition**

### **3.4. Surrounding development**

The neighbourhoods adjoining the site are composed of a layered urban fabric, containing a mix of commercial, residential, civic uses and open space.

#### **3.4.1. To the north**

To the immediate north of the site is the suburb of Redfern. Redfern is characterised by primarily residential uses. The civic and commercial centre is Redfern Street, part of Redfern Village, which cuts across the area and contains key civic, religious, commercial, retail buildings and services.

Redfern Park, including Redfern Oval, is located 800 metres north-east of the site and provides active and passive open space. The National Centre for Indigenous Excellence is located to the north and provides a multi-purpose facility that contains an outdoor playing field, gym and undercover 25 metre swimming pool.

To the north-west of the site adjacent to the railway line is the Australian Technology Park (ATP), which is undergoing progressive redevelopment for commercial, retail, educational, entertainment and civic uses. This includes the adaptive reuse of the existing State heritage listed Locomotive Workshops.

Redfern Station is also one of Sydney's largest transport interchanges, providing direct access to numerous suburban and intercity lines feeding to Central Station and the City Circle line.

### **3.4.2. To the east**

As indicated above, to the immediate east of the site, within the suburb of Waterloo, is the Waterloo Estate, which comprises 18.12 hectares of largely state government owned land, containing 2,012 social housing dwellings and a small number of privately owned sites. The buildings range from single storey attached dwellings to apartment buildings up to 30 storeys. The Estate has been identified for renewal.

### **3.4.3. To the south**

The area to south of the site, within the suburb of Waterloo, is characterised by a mix of low to mid rise industrial, commercial and residential buildings. Immediately adjacent the site, at 123 Botany Road, is the Cauliflower Hotel, a locally listed heritage item (Item 2070) under SLEP 2012. To the east of the Cauliflower Hotel is a group of low rise residential terraces which front Wellington Street and the southern boundary of the site.

Further to the south of the site is the suburb of Green Square. Green Square is evolving into a new town centre, with a mix of low, mid and high rise buildings containing retail, commercial, civic and residential uses. The site is connected to Green Square via the Botany Road Growth Corridor.

### **3.4.4. To the west**

To the west of the site, on the other side of Botany Road is the suburb of Alexandria. Alexandria comprises a mix of industrial, commercial and residential land uses, including low-rise terrace housing within the Alexandria Park HCA. The suburb is undergoing progressive renewal with the introduction of medium to high density residential dwellings.

Alexandria Park, located approximately 200 metres west of the site, is significant provider of open space within the area. The western part of the park is primarily used for active recreation associated with the oval. The eastern part of the park is primarily used for passive recreation. The park is listed as a locally significant heritage item under the SLEP 2012.

### **3.4.5. New and forthcoming development near the site**

The site is located in an area of ongoing change and redevelopment, with a number of envisaged, approved and under construction buildings, particularly along Botany Road between Redfern and Green Square. In addition to the developments described in the above sections, of direct relevance to the proposed OSD development is the development of 74-88 Botany Street, directly adjacent the site to the west.

A development application for the construction of a part 5, part 6 storey mixed use development at 74-88 Botany Road, was approved by the City of Sydney Council (CoS) on 21 November 2016. The building contained 2 commercial tenancies and 63 'Affordable Housing' dwellings. Construction has not commenced on the site. Consultation with the landowner has identified that investigations of alternative

built form options for the site are being undertaken, including consideration of a taller building form with reconfigured dwellings to achieve better amenity.

### **3.5. Transport and accessibility**

#### **Public transport**

##### Sydney Metro

Waterloo Station is part of the Sydney Metro City & Southwest alignment, with connections to the suburban rail network at interchange locations including Central Station, Martin Place and Sydenham Station (see Figure 29). Planned to commence operations in 2024, Sydney Metro City & Southwest would connect Chatswood through the Sydney CBD to Bankstown. Services would run every 4 minutes in each direction during peak times, but with capacity to increase to trains every 2 minutes carrying up to 40,000 people per hour. Preliminary forecasts from the Sydney Metro Chatswood to Sydenham EIS indicate that approximately 3,700 people would access Waterloo Station in the 2036 AM peak hour and 2,350 would exit.

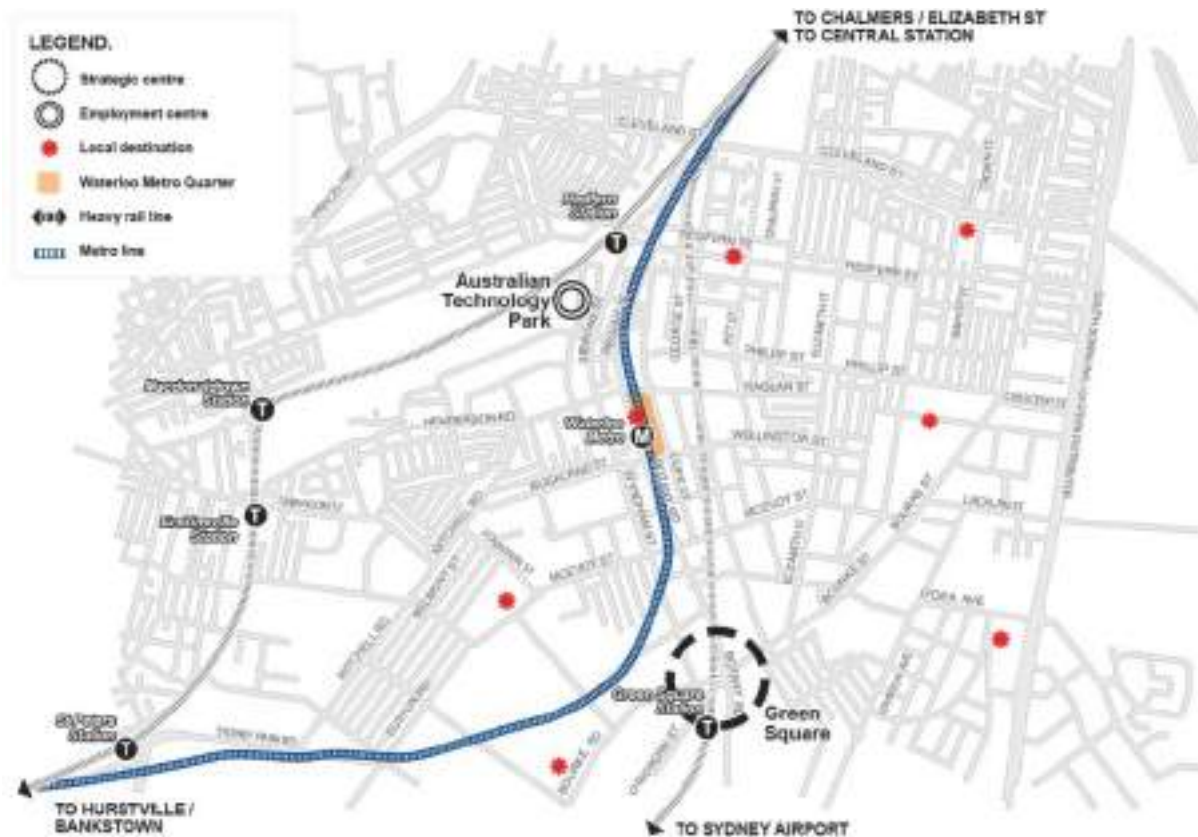
##### Heavy rail

The closest heavy rail stations are Redfern (approximately 1 kilometre to the north) and Green Square (approximately 1 kilometre to the south) (see Figure 29).

Four suburban rail lines are accessible via Redfern Station, giving direct access to a large number of Sydney's strategic centres, including major employment locations such as the Sydney CBD, North Sydney and Macquarie Park. Services to the Sydney CBD are frequent during on and off-peak periods. During the one-hour AM peak, 43 suburban trains heading towards Central Station stop at Redfern Station.

Waterloo Station would provide alternative access to the rail network, reducing pressure on Redfern Station to accommodate growth in passenger demand, particularly for residents and workers south of Redfern Station.

Green Square station is located on the T2 airport, Inner West and South Line. While providing direct access to the Sydney CBD and Sydney Airport, access to other strategic centres requires interchange with other lines. During the one hour AM peak, 10 suburban trains heading towards the CBD stop at Green Square Station.



**Figure 29 – Existing heavy rail line and proposed Metro line network map**

### Bus

The bus network in and around Waterloo is heavily focussed on north-south travel, particularly for access to the Sydney CBD. Botany Road is a key bus corridor for these services connecting the Sydney CBD with Redfern, Waterloo, Alexandria, Green Square, Mascot and Botany (see Figure 30). These north-south routes are typically frequent and operate during a wide span of hours.

Bus services also operate east-west routes, linking Randwick, Coogee, Bondi Junction, Moore Park and Kingsford to the east with Glebe, Newtown, Marrickville and Sydenham to the west. These routes serve an important cross-regional function.

Botany Road in particular is a key bus route that offers opportunities for interchange with the Waterloo Station, and for residents from around the area to access the retail, community facilities, entertainment and community events planned to occur within the site.

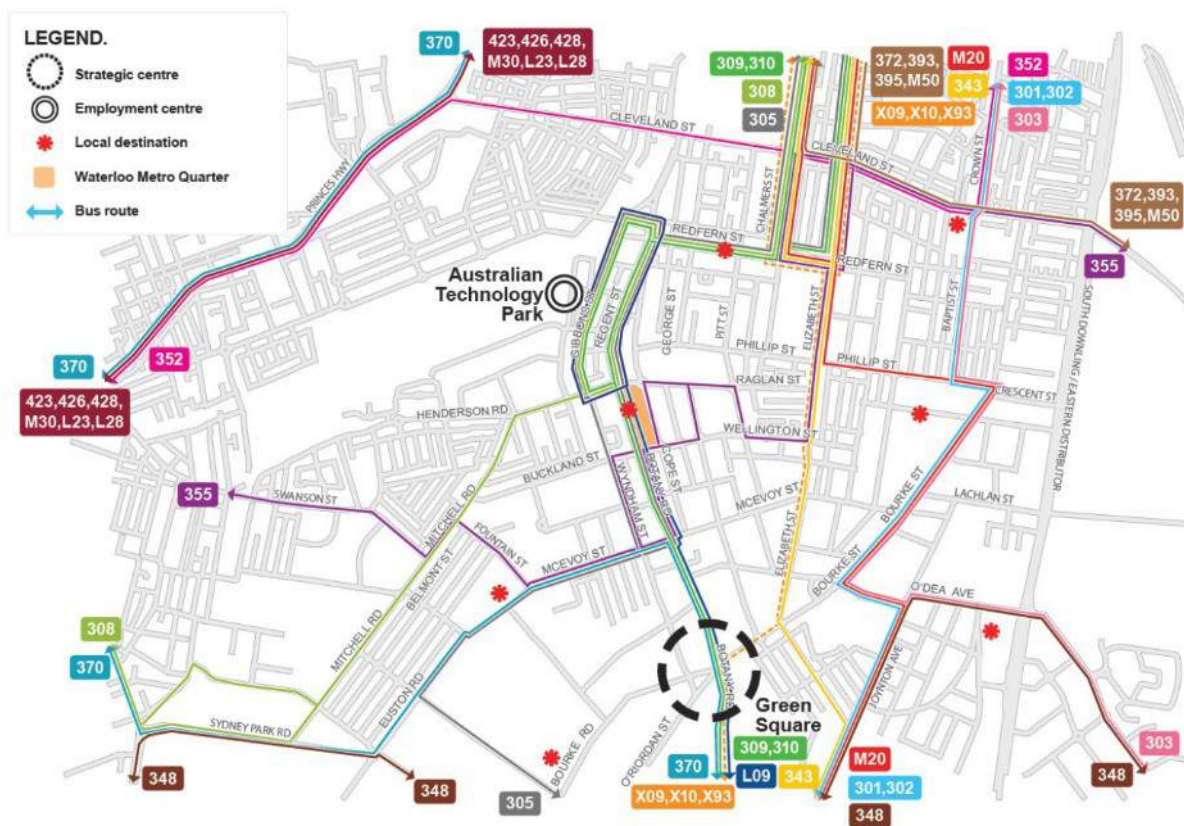


Figure 30 – Existing bus route network map

### Light Rail

The CoS has identified a potential light rail corridor to the east of the site (the Eastern Transit Corridor). Its main purpose is to connect Green Square Town Centre with Central Station, to provide improved transport for the densely developed northern and eastern parts of Green Square, parts of which are located more than a 10 minute walk from Green Square Station. While an exact route has yet to be determined, the CoS has purchased key land required for the corridor and has negotiated with developers to deliver parts of the Eastern Transit Corridor as a developer contribution.

### Roads

As shown in Figure 31, the site is well connected by a number of key regional roads. Major roads include Botany Road, Wyndham Street, McEvoy Street and Henderson Road. Botany Road and Wyndham Street operate as a north-south one-way pair between Cleveland Street and Henderson Road. This provides a key link between Sydney airport and its surrounding suburbs to the Sydney CBD and inner west. McEvoy Street and Henderson Road both run east-west, providing links between the inner west and the Sydney CBD or eastern suburbs.

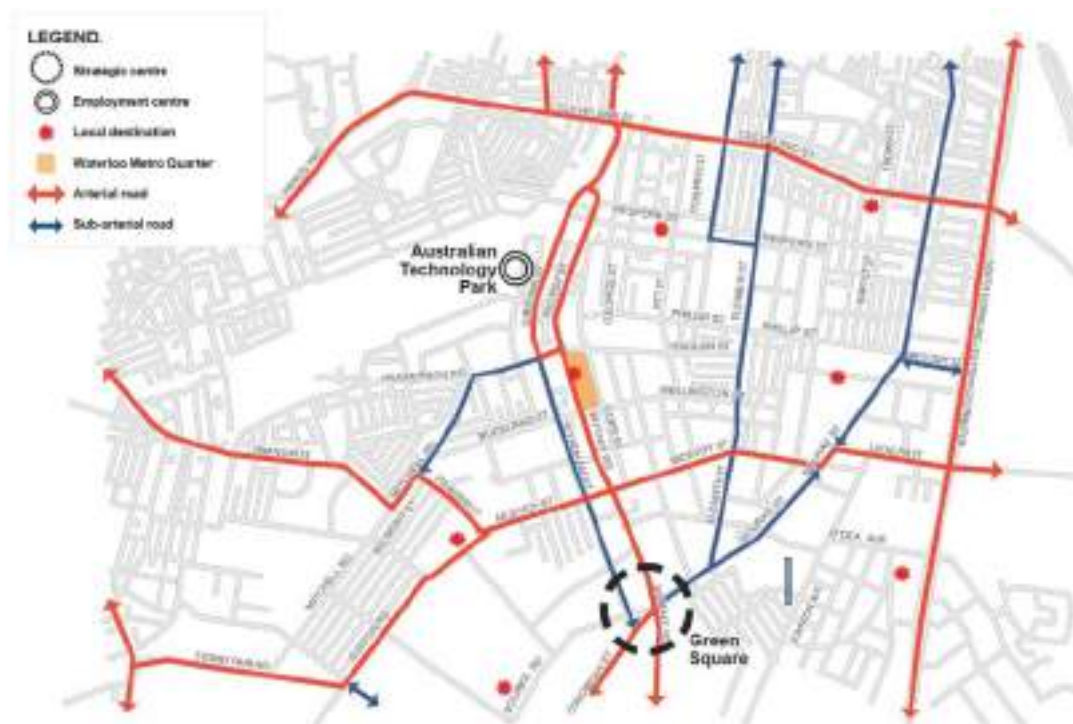


Figure 31 – Arterial road network map

## Active transport

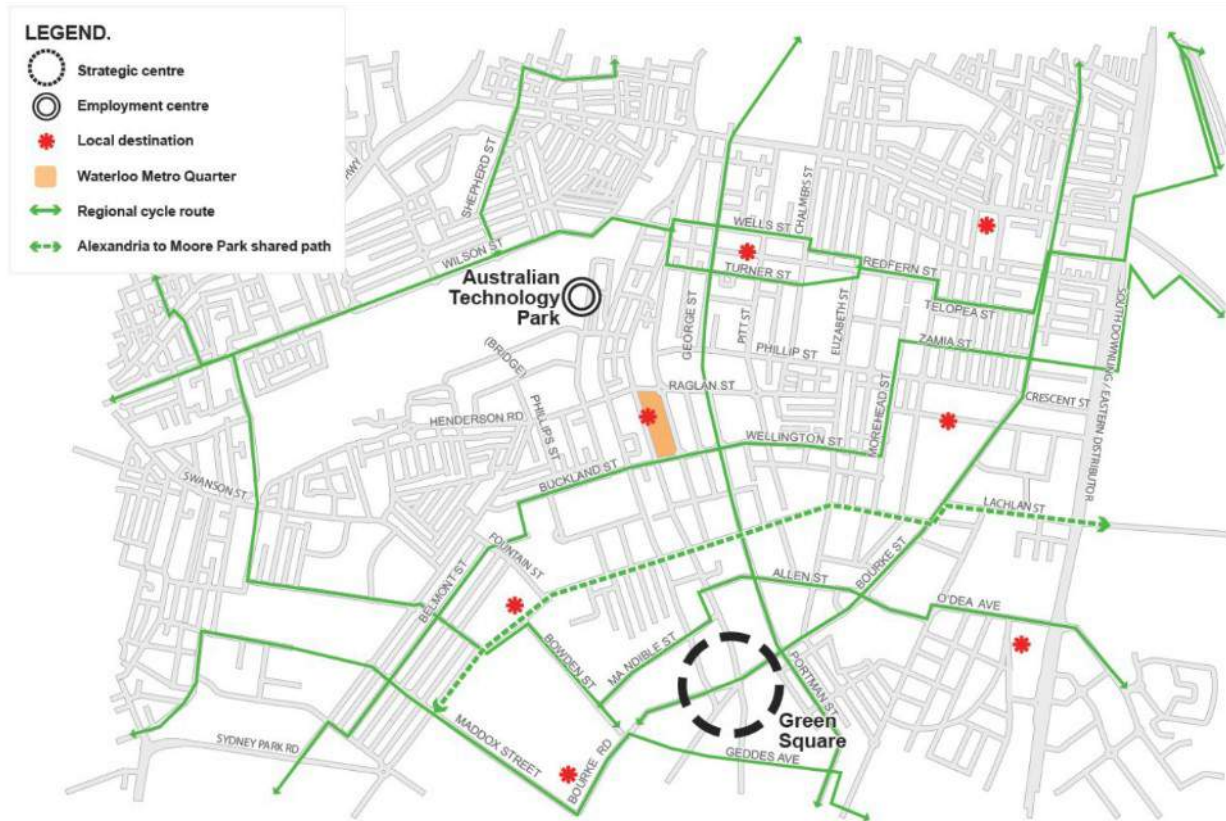
### Cycling

The cycling network currently provides access to a range of key destinations including the University of Sydney, Redfern Station, Sydney CBD, Newtown and Moore Park (refer to Figure 32). East-west movement is constrained by the existing heavy rail corridor to the west, which limits access particularly to Carriageworks and the University of Sydney. There are limited and sparsely located crossing opportunities, including Lawson Street at Redfern Station.

CoS, as part of its cycle network strategy, has identified 10 priority cycle routes across the inner city including through Waterloo Precinct. Key routes include:

- **City North to Green Square:** Running north-south through Waterloo Precinct, complete as far as Green Square with a separated cycleway on George Street, Waterloo.
- **Sydney Park to Central Park:** Running east-west through Waterloo Precinct, upgrades are identified on Buckland, Wellington, Morehead and Phillip Streets, Waterloo.
- **Newtown to Bondi Junction:** Running east-west through Redfern on Wells and Turner Streets, upgrades currently in progress.
- **Sydney University to University of NSW:** Running east west through Alexandria.
- **Sydney Harbour to Botany Bay:** Running north-south along Bourke Street, complete with separated cycleway for much of its length.

There are opportunities to enhance or deliver parts of these cycle routes as part of the contributions levied by Council as part of the Waterloo Metro Quarter OSD. They would be important parts of the active transport network providing access to the Waterloo Station for residents of the surrounding area.



**Figure 32 – Existing and planned cycle network map**

### Walking

On-street pedestrian paths are provided along the sides of each local street surrounding the site. The quality of paths is variable, and includes some relatively narrow, uneven bitumen paved surfaces. While local pedestrian permeability is facilitated by the grid street pattern, due to their traffic volumes Botany Road and McEvoy Street create barriers to east-west and north-south pedestrian movement between the site and adjacent communities, in particular restricting connections south to Green Square and west to Alexandria Park and ATP.

The site is located at the intersection of primary walking routes along Botany Road and Wellington Street/Buckland Street, and is well located for local residents to walk to Waterloo Station and to access retail, community facilities and the public spaces at the site, as well as Redfern Station to the north and Green Square Station to the south (see Figure 33).



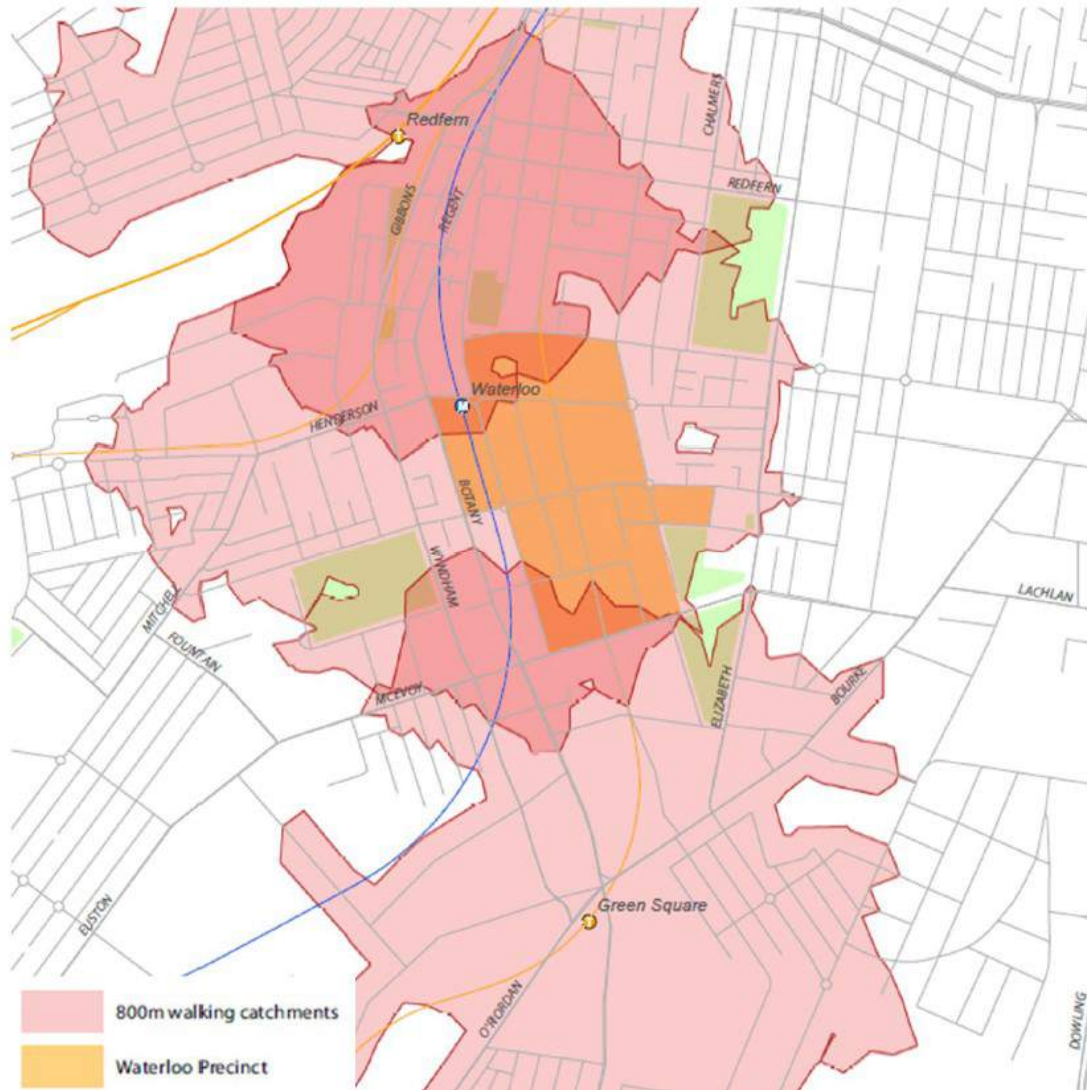


Figure 33 – 800 metre walking catchment from Redfern Station, Waterloo Station and Green Square Station

### 3.6. Open Space

The site is located within walking distance of a number of local and regional public open space areas. Key open spaces within the surrounding catchment area are outlined in Table 5 below.

**Table 5 – Nearby public open spaces**

Public Open Space	Location	Area (approx.)	Use	Key features
<b>Waterloo Park</b>	South east of Metro Quarter	1.4 hectares	The northern part of the park is primarily used for passive recreation. The southern part of the park is primarily used for active recreation associated with the oval and skate park	<ul style="list-style-type: none"> <li>Flexible use (can cater for a variety of sports) grassed playing field</li> <li>Night lighting</li> <li>Small grandstand</li> <li>Changing facilities and public toilets</li> <li>Skate park</li> <li>Seating</li> <li>Avenue of Moreton Bay</li> <li>Figs along McEvoy Street</li> <li>Steep topography in northern part of park</li> </ul>
<b>Redfern Park</b>	North east of Metro Quarter	4.82 hectares	The southern part of the park is primarily used for active recreation and sporting events associated with the oval and grandstand. The northern part of the park is primarily used for passive recreation	<ul style="list-style-type: none"> <li>Grassed playing field catering for rugby</li> <li>Night lighting</li> <li>Grandstand and associated player facilities</li> <li>Seating</li> <li>Exercise stations</li> <li>Historic features including a fountain, gates and memorial</li> <li>Walking paths</li> <li>Major local cultural associations as the traditional home ground of the South Sydney Rabbitohs rugby league team</li> </ul>

Public Open Space	Location	Area (approx.)	Use	Key features
<b>Alexandria Park</b>	South west of Metro Quarter	4.08 hectares	The western part of the park is primarily used for active recreation associated with the oval. The eastern part of the park is primarily used for passive recreation	Flexible use (can cater for cricket or rugby) grassed playing field Night lighting Changing facilities and public toilets Two tennis courts One basketball/netball court Dog off-leash area Seating
<b>Vice Chancellors Oval</b>	North west of Metro Quarter	1.01 hectares	The central part of the park is primarily used for active recreation associated with the oval. The eastern, southern and western edges of the park is primarily used for passive recreation	Barbeque and picnic areas Space for sporting activities Dog off-leash area Seating

Further, the following public parks and recreation facilities are proposed to be provided within the catchment:

- Perry Park and Recreation Centre – a new multi-purpose sports centre in Perry Park, Alexandria, would be delivered by CoS, replacing the current outdated facility. It would consist of two indoor and two outdoor multipurpose courts for sports such as netball, basketball and futsal
- Gunyama Park Aquatic and Recreation Centre - with a 50 metre outdoor pool, 25 metre indoor pool and gym, and a multipurpose sports field including an outdoor synthetic playing field of approximately 6,500 square metres, public amenities, playground and park of 20,000 square metres. The aquatic centre would be delivered by CoS and is due for completion mid-2019
- Other Green Square public open spaces, including:
  - The Drying Green
  - Matron Ruby Grant Park
  - Mulga Park
  - Dyuralya Park
  - Ropewalk Park
  - Wulaba Park.

In addition to public open space, the National Centre for Indigenous Excellence is located to the immediate north of the Waterloo Estate on George Street. It is a large multi-purpose facility that contains an outdoor playing field, gym and undercover 25 metre swimming pool.

The site also benefits from nearby existing regional open spaces, including Moore Park, Centennial Parklands, Sydney Park and Prince Alfred Park (with its playing courts, swimming pool and community facilities).

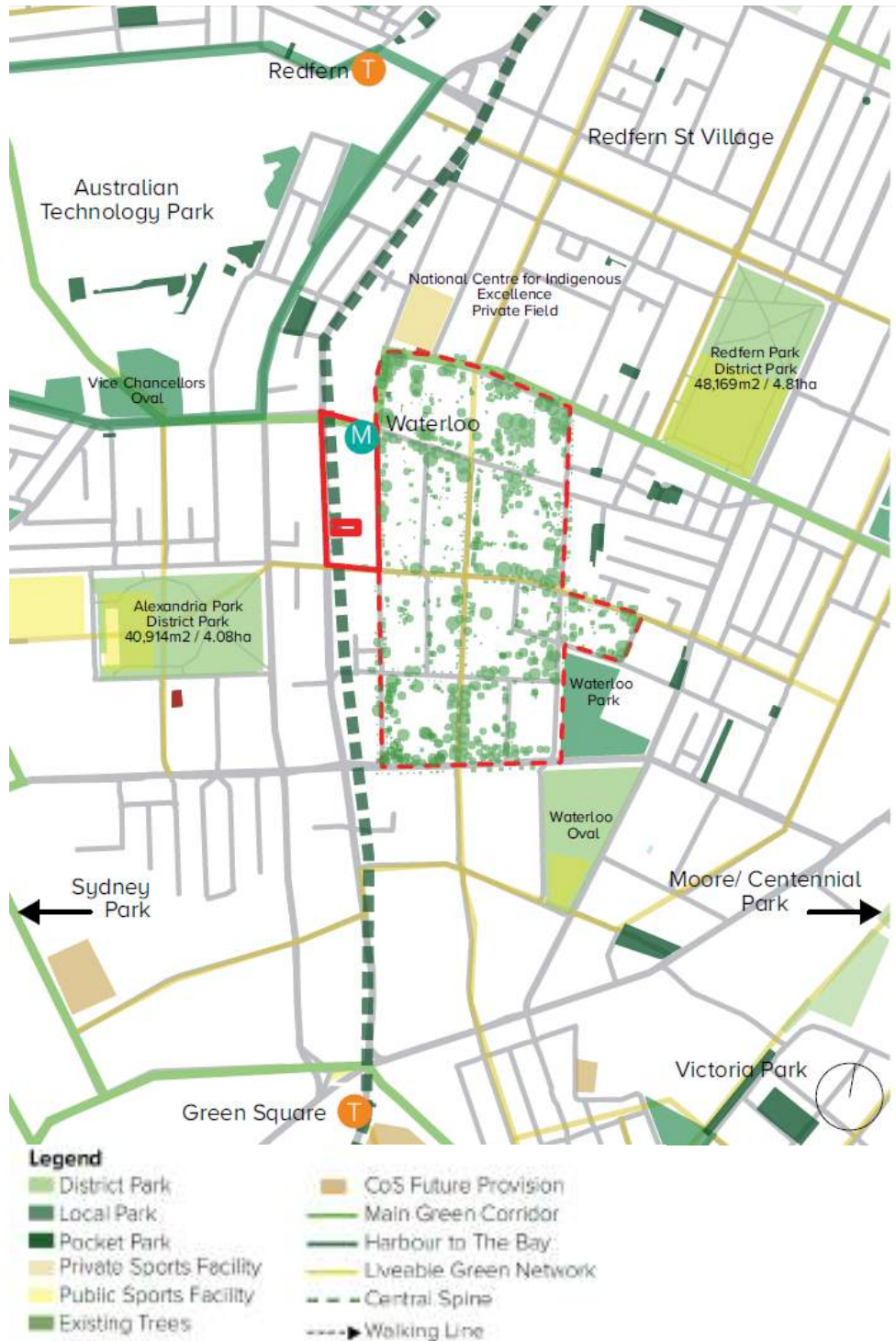


Figure 34 – Surrounding open space map

### 3.7. Heritage

The site is located directly adjacent to the Waterloo Congregational Church, at 103-105 Botany Road. The church is listed as an item of local significance under the SLEP 2012 (Item 2069 – including interiors) (refer to Figure 35), and is described in the NSW Heritage Inventory as a:

*“Two storey Victorian Gothic style church with cedar pulpit, gallery and staircase. The building is symmetrical in plan and elevation. The main hall is 6-bay deep as demonstrated by engaged piers and lacent windows on the side wall. The gable facing the street, features rendered finishes, large central lacent window and two projecting bellcotes. The building sets back from Botany Road and presents a garden, fence entrance steps to the front.”*

There are also a number of listed heritage items within proximity to the site including:

- The Cauliflower Hotel (Item 2070).
- The Former CBC Bank (Item 5).
- Cricketer’s Arms Hotel including interior (Item 1540).

Further, the site is also located one block east of the C1 Alexandria Park HCA, locally significant for its:

*‘ability to demonstrate the growth of the Municipality of Alexandria...in association with the industrial growth of Waterloo and the establishment of Eveleigh Railway and Goods Yard’.*

Photos of the above items and conservation area are provided within Figure 36.

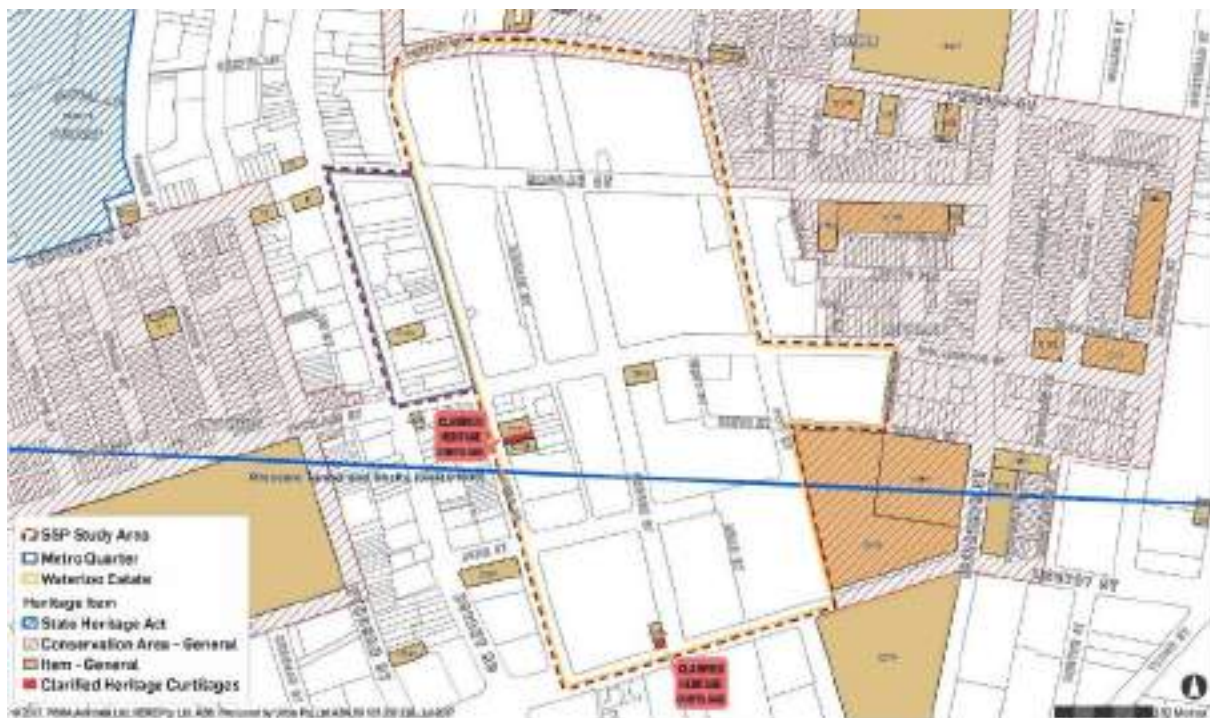


Figure 35 –Heritage items in surrounding area of Metro Quarter OSD



**Figure 36 – Waterloo Congregational Church (top left), the Cauliflower Hotel (top right), the Former CBC Bank (bottom left) and Alexandria Park HCA (bottom right)**

### 3.8. Topography / finished levels

The site generally slopes to the south with the northern portion at 18 metres AHD and the southern portion at 16 metres AHD. Given the generally flat nature of the site, erosion is unlikely to be a significant issue assuming excavated material is appropriately managed during construction.

The surrounding landscape is also relatively flat, although some mounding is noted approximately 350 metres east of the site.

### 3.9. Flooding and stormwater

The site forms part of the Sheas Creek sub-catchment of the Alexandra Canal Catchment area. The Alexandra Canal catchment covers 1,141 hectares or 43 percent of CoS LGA, and includes most of the south Sydney area. Alexandra Canal discharges into the Cooks River, and eventually Botany Bay.

Drainage systems around the site consist of overland flow paths through road kerb and gutter systems, a local piped drainage system (owned and maintained by the CoS) and a trunk drainage system (owned by Sydney Water Corporation).

There is an area of high flood hazard around the Cope and Wellington Street intersection. As shown in Figure 37, during significant rainfall events, flood water depths in this area can exceed one metre. The

primary cause of this is constrained capacity of the Sheas Creek open channel, which results in water backing up.

A Water Quality, Flooding and Stormwater Report is included at Appendix T.



**Figure 37 – Existing flood depths for 100yr average rainfall intensity (ARI) (left) and probable maximum flood (PMF) (right)**

### 3.10. Community services, arts and culture

Waterloo has a rich tapestry of fine-grain community, cultural and arts services including community cultural organisations, event spaces, public art, youth services, creative enterprises and natural heritage. The location of these services is illustrated in Figure 38. Waterloo also hosts a series of annual local festivals and events which attract a range of local and community participants.

Waterloo’s existing arts and cultural resources are highly valued by the community and contribute to the area’s sense of place and local identity. Key elements of the social and economic history that contribute to the present-day character of Waterloo are:

- the industrial and manufacturing history
- pubs and hotels as community meeting spaces
- name origins attached to spaces and places
- cycles of urban renewal
- important role of local schools

- cultural and ethnic diversity.

Within the Waterloo area, the night time economy remains restricted to a small collection of local pubs. The main entertainment, artistic and cultural offerings within proximity to the Metro Quarter are distributed around Redfern Village along Regent and Redfern Streets. Whilst these services and amenities are within proximity to Metro Quarter, the gradient towards Redfern Village in the north impedes mobility and access.

Development of the site is an opportunity to address gaps in the cultural and community fabric of Waterloo, and to provide opportunities for cultural and artistic expression, community gathering, entertainment that is accessible to residents of the Estate, Metro Quarter OSD and surrounding areas.



Figure 38 – Community services, arts and culture within 2 km radius of Metro Quarter



### 3.11. Utilities and infrastructure

The site is capable of being serviced by a full range of utilities and services, including potable drinking water, waste water, sewerage, gas, electrical infrastructure and telecommunications. The locations of these respective services are indicated in the existing combined services plan as shown in Figure 39.

Appropriate utility and service connections would be sought under this concept SSD Application to meet the servicing requirements of the OSD.



Figure 39 – Existing combined utilities and servicing plan

### 3.12. Easements and covenants

No major easements have identified by Property Boundary & Topographic Data (as presented in the Lotsearch Report) or during the site inspection on 10 April 2017 within Metro Quarter.

## 4.0 The development

This chapter provides a detailed description of the concept proposal and sets out the planning and development framework for detailed SSD Application(s). It articulates what Sydney Metro is seeking to achieve for the future OSD at the site, including integration with Waterloo Station.

This chapter is informed by the Envelope and Architectural Drawings at Appendix C & D and the Urban Design and Public Domain Report at Appendix G, as well as other supporting information appended to this EIS.

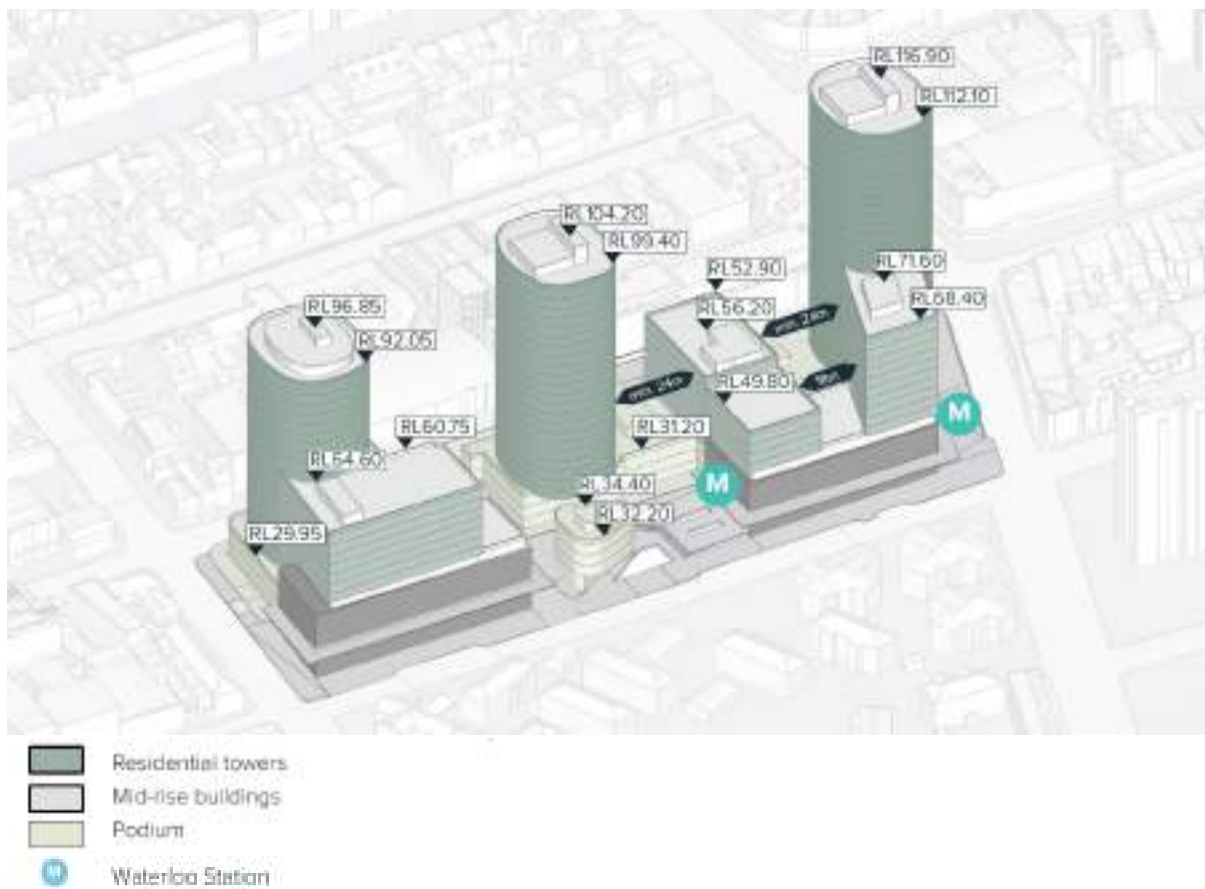
### 4.1. Description of the proposal

This concept SSD Application seeks approval for the following:

- maximum building envelopes, including maximum building heights, street-wall heights and ground and upper level setbacks
- a maximum GFA of approximately 68,750 square metres comprising:
  - approximately 56,200 square metres GFA of residential accommodation, providing for approximately 700 dwellings, including 5 to 10 percent affordable housing and 70 social housing dwellings
  - approximately 3,905 square metres of GFA for retail premises and entertainment facilities
  - approximately 8,645 square metres GFA for business and commercial premises and community and recreation facilities (indoor), including a minimum 2,000 square metres for community uses
- a three storey podium and a free standing building located within a public plaza, accommodating non-residential land uses
- residential uses above podium level in various building forms including three taller buildings of 23, 25 and 29 storeys (approximately RL 96.9, 104.2 and 116.9 metres AHD respectively)
- use of OSD space provisioning within the footprint of the CSSI Approval;
- public domain works, including open space, through-site links, footpaths, provision for cycle facilities and enhanced pedestrian crossings and roads
- car parking for up to 427 vehicles
- cycle parking to support residential and non-residential land uses and visitors to the Quarter. Approval is also being sought for space within the future basement for a bike hub which would also support future bike parking for Waterloo Station
- loading, vehicular and pedestrian access arrangements
- strategies for utilities and services provision
- strategies for managing stormwater and drainage
- a strategy for the achievement of ecologically sustainable development
- a public art strategy
- provision for future signage zones
- a design excellence framework

- the future subdivision of parts of the OSD footprint (if required).

As this concept SSD Application is a staged development pursuant to section 4.22 of the EP&A Act, separate approvals would be sought for detailed design and construction of the OSD, potentially in several stages. A concept indicative design, showing a potential building form outcome at the site, has been provided to illustrate potential built form and public domain outcomes possible under the proposed concept SSD Application, as shown in Figure 40.



**Figure 40 – The concept proposal**

## 4.2. Key development information

The key numeric details of the proposal are summarised in Table 6:

**Table 6 – Key development information**

Item	Details
<b>Developable site area</b>	1.287 hectares
<b>GFA</b>	<ul style="list-style-type: none"> <li>68,750 square metres (proposed OSD component)</li> <li>77,165 square metres (entire integrated station development including station operations space of approximately 8,415 square metres)</li> </ul>
<b>FSR</b>	<ul style="list-style-type: none"> <li>5.34:1 (proposed OSD component only)</li> <li>6.00:1 (entire integrated station development)</li> </ul>
<b>Height</b>	<ul style="list-style-type: none"> <li>Up to RL116.9 metres (AHD)</li> <li>Maximum taller building heights vary from RL116.9 (Building A), RL104.2 (Building E) and RL96.85 (Building F)</li> <li>Podium height ranging between approximately RL31.2 (Raglan Street) to approximately RL29.95 (Wellington Street), being equivalent to approximately 14.5 metres above ground level or approximately 3 storeys above ground level (note that approval for the station elements is approved under the CSSI Approval and does not form part of this application)</li> <li>Note: for the purpose of this concept SSD Application, the maximum height of the building envelopes does not make provision for the following items, which would be resolved as part of the future detailed SSD Application: <ul style="list-style-type: none"> <li>Communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like, which are excluded from the calculation of building height pursuant to the standard definition under the SLEP 2012 and proposed planning framework under SSP SEPP 2005</li> <li>Architectural roof features, which are subject to compliance with the provisions of Clause 5.6 of the SLEP 2012 (to be incorporated within the proposed planning framework under SSP SEPP 2005), and may exceed the maximum building height subject to development consent</li> </ul> </li> </ul>
<b>Setbacks</b>	<p><b>Podium</b></p> <ul style="list-style-type: none"> <li>Raglan Street – ranges between 5 metres and 10 metres from site boundary</li> <li>Botany Road – ranges between 2.5 metres to 6.5 metres from site boundary</li> <li>Cope Street – Building H setback 0 metres. Metro station setback subject to CSSI Approval</li> <li>Wellington Street – 3.5 metres setback from site boundary</li> </ul> <p><b>Mid-rise and taller buildings forms</b></p> <ul style="list-style-type: none"> <li>Building A – nil setback from podium (Botany Road)</li> <li>Building B – nil setback from station box (Cope Street and Raglan Street)</li> <li>Building C – nil setback from station box (Cope Street)</li> <li>Building D – 2 metres from podium (Botany Road)</li> <li>Building E – nil setback from podium (Botany Road)</li> </ul>

Item	Details
	<ul style="list-style-type: none"> <li>• Building F – nil setback from podium (Botany Road) and 2.5 metre setback from podium (Wellington Street)</li> <li>• Building G – nil setback from station box (Cope Street) and 4 metre setback from station box (Wellington Street)</li> </ul>
<b>Car spaces</b>	<ul style="list-style-type: none"> <li>• OSD: Maximum of 427 spaces</li> <li>• Station (CSSI Approval): 2 spaces</li> </ul>
<b>Bicycle spaces</b>	<ul style="list-style-type: none"> <li>• OSD: 1,140 spaces</li> <li>• Station (CSSI Approval): 180 spaces</li> </ul>
<b>Loading docks</b>	<ul style="list-style-type: none"> <li>• 8 off-street service vehicle parking spaces.</li> <li>• 1 loading dock shared with Station (CSSI Approval)</li> <li>• Access provisions for:               <ul style="list-style-type: none"> <li>○ 8.8 metres Vehicle (Medium Rigid Vehicle)</li> <li>○ 9.25 metres CoS Garbage Truck</li> </ul> </li> </ul>

### 4.3. Design influences

The spatial layout and design of the concept proposal responds to site opportunities and constraints as described within the Urban Design and Public Domain Report (refer to Appendix G). In particular, the low rise, linear podium form has been located to provide for non-residential uses of sufficient scale in a manner that shields new publicly accessible open spaces in the form of the Cope Street Plaza from noise and other adverse amenity impacts from Botany Road. In addition, it enables more sensitive uses such as apartments and ancillary private communal open space to be elevated above Botany Road, and sets a desired future built form character that does not replicate the high, long street walls of places such as the nearby Lachlan Precinct, with curved tower forms.

Building typologies are located to respond to the major development constraints posed by the location of the metro station boxes, with more yield and taller buildings located on the unconstrained western parts of the site (adjacent to the station box rather than over it), and to minimise visual impact on established residential communities to the west of the Precinct by orienting their longer faces east-west. Building heights generally transition down from north to south.

Key design influences on the concept proposal are discussed below.

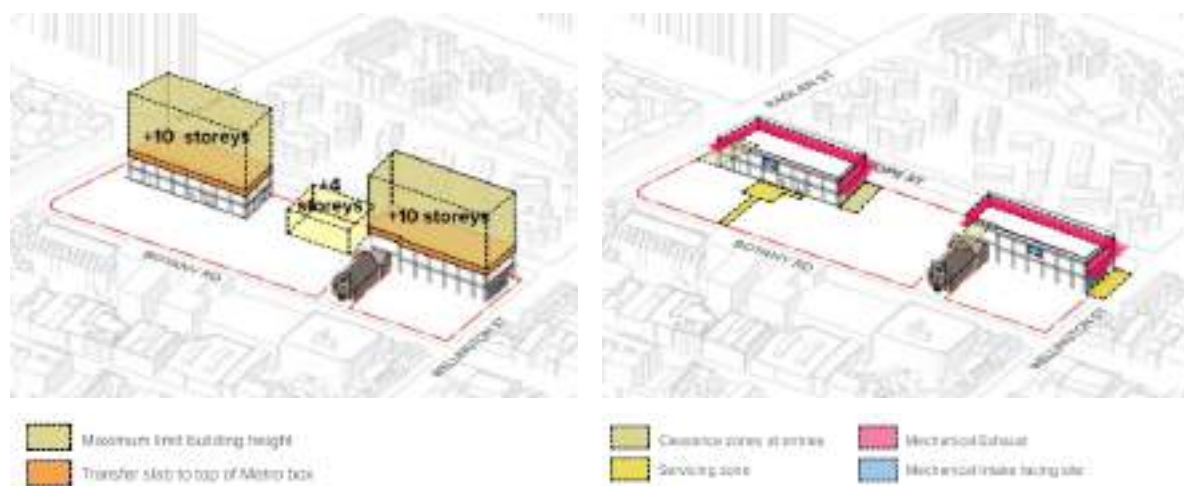
#### Integration with Waterloo Station

The new metro station would comprise of two above ground station boxes on the north-east and south-east corners of the precinct, with concourse and platforms approximately 17 and 25 metres below ground, respectively. The north-east station box would become the main entrance to the station platforms, while the south-east station box would support the mechanical and servicing operations for the station. It is noted that the station design has continued to be developed having regard to its integration with the Metro Quarter OSD and as a result, a second entrance to the station (within the northern station box) is to be provided from a proposed public plaza adjacent to Cope Street. The station

design would be further refined through detailed design work, including preparation of a SDPP as required by Condition E101 of the CSSI Approval.

The building envelope has been designed to allow for future mixed use buildings to sit above, adjacent and be fully integrated with the station boxes of Waterloo Station, forming a single integrated station development. The location of the station boxes along with Waterloo Congregational Church effectively bisect the site into two development parcels. As there is no link between these separate parcels, separate servicing and site access points are required to be incorporated in the concept proposal for the Metro Quarter.

The loading capacity of the station boxes at Waterloo constrain development above these structures to a maximum building height of 10 storeys, while a loading capacity over the ground plane above the station concourse cannot exceed 4 storeys, assuming a conventional concrete structure. The height and loading of proposed buildings must respect these limitations.



**Figure 41 – Loading capacity and servicing and operational components of Waterloo Station boxes**

The upper levels of the station boxes would house mechanical grilles for exhaust and smoke discharge in the event of a fire. Air supply louvres would be located within the central area of the precinct, which would require adjacent development to provide clearance zones to openings or fire-rated construction. It is intended that the detailed design of buildings with a direct interface to these louvres would integrate these design features.

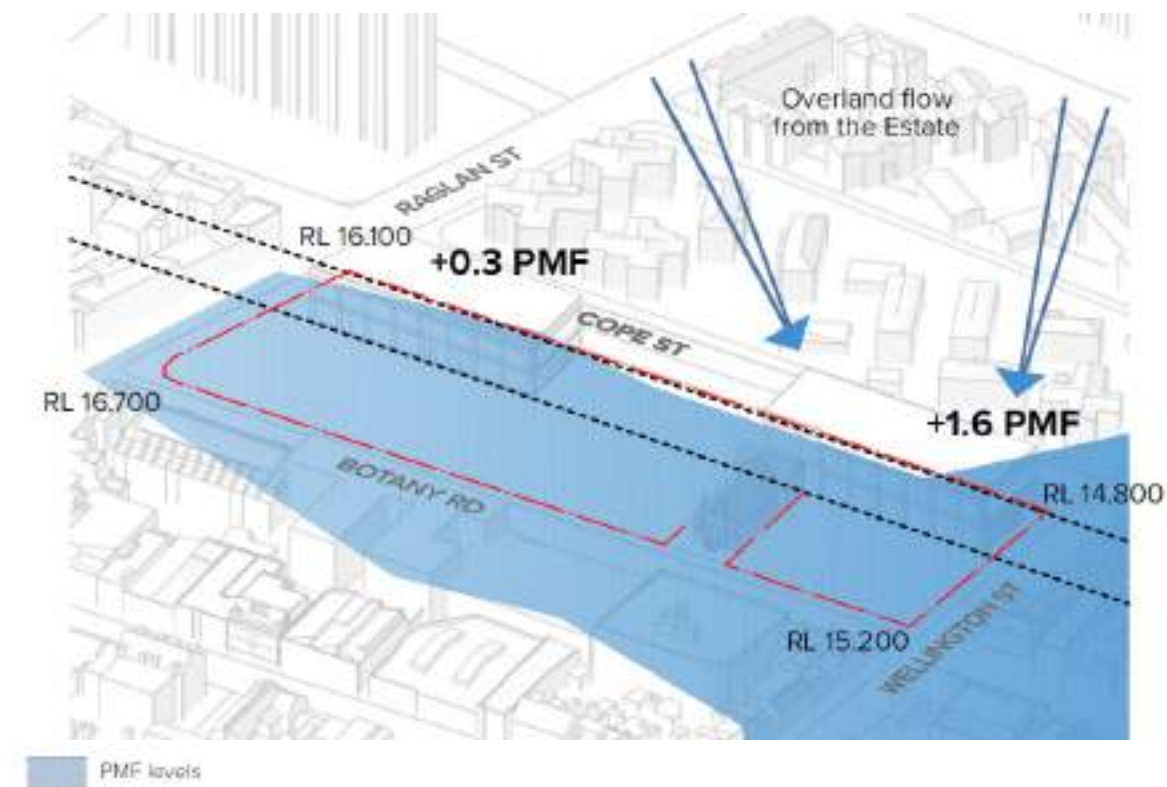
Service vehicular access is required for the station, to support its ongoing operations. The indicative concept proposal incorporates the required service vehicle access to the northern station box by providing a common wall and a service and manoeuvring zone connecting from Botany Road. Service vehicle access for the southern station box, if required, could be provided from Wellington Street, Cope Street or via the proposed service road.

### Topography and flooding

The site is located at a local depression and is subject to flooding. The site falls approximately 1.5 metres from north to south, but due to the site length of 220 metres, this fall is subtle in perception with a gradient 1:150.

The PMF levels across the site range from +0.3 metres at Raglan Street to +1.6 metres along Wellington Street. These levels dictate the required floor level of habitable uses across the site and the resultant transitions required to the entry points of the buildings. As a consequence of this flooding constraint, FPLs have been set between maximum of PMF and 100 year ARI +0.5 metres.

Detailed discussion of flooding and constraints and proposed FPLs are provided within Chapter 8.16.



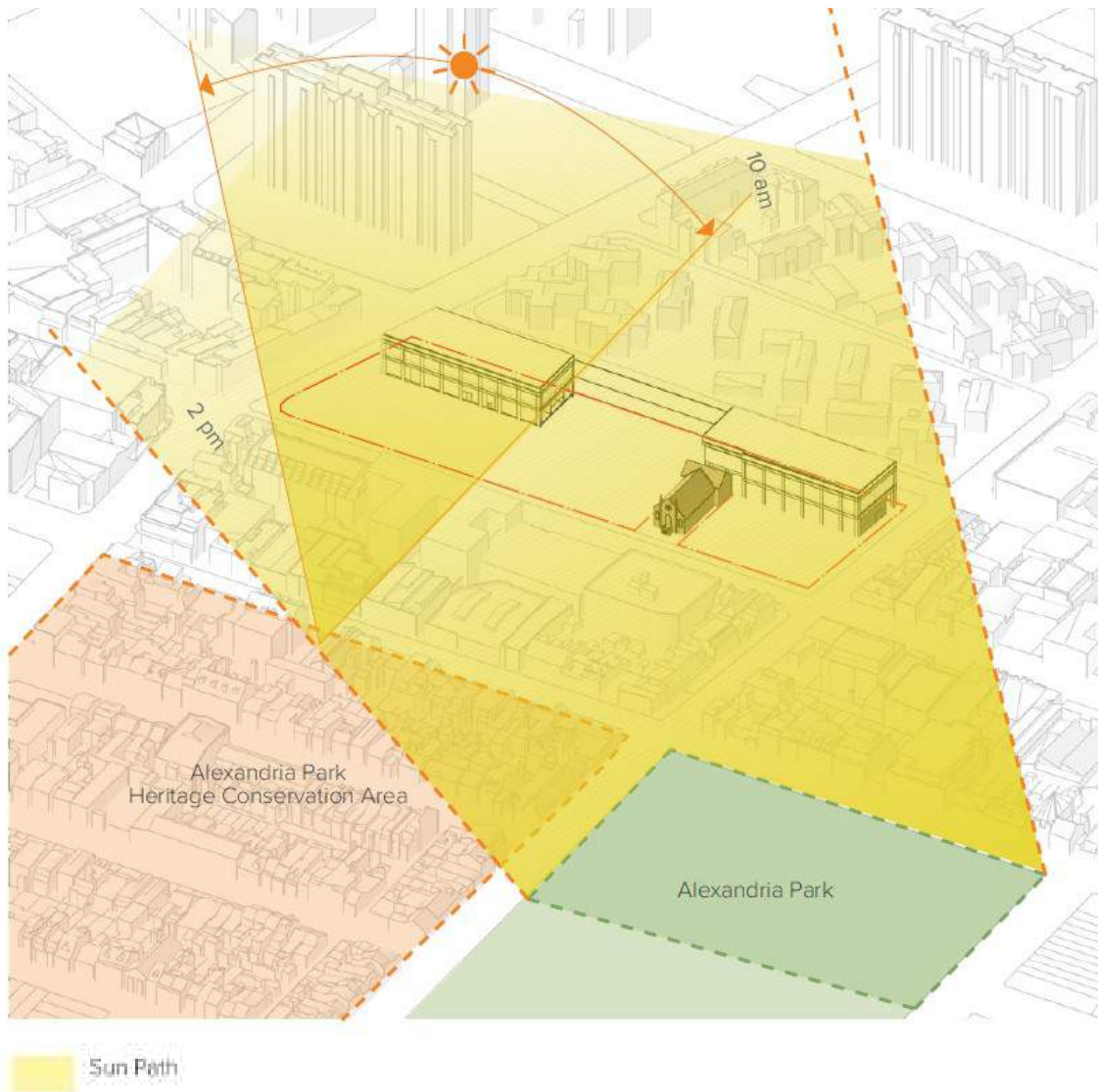
**Figure 42 – Existing flood affectation and topography of the Metro Quarter**

### Wind and solar access

The site is prone to predominantly westerly and, to a lesser extent, southerly winds. These wind impacts may be felt at both ground and upper levels, with the potential for downdraft from proposed buildings with significant unarticulated facades to these orientations. The proposed built form aims to reduce the flat facade area to the west, with built forms articulated to respond to wind paths.

With Alexandria Park and the Alexandria Park HCA being located west of the Metro Quarter, the proposed building heights of the envelopes aim to achieve solar access requirements for public open space and neighbouring dwellings. The proposed building envelopes would maintain solar access to these between 10am and 2pm during winter solstice.

Detailed discussion of solar access to Alexandria Park, Alexandria Park HCA and surrounding properties are provided within Section 8.4.



**Figure 43 – Solar access requirements to Alexandria Park and Alexandria Park HCA**

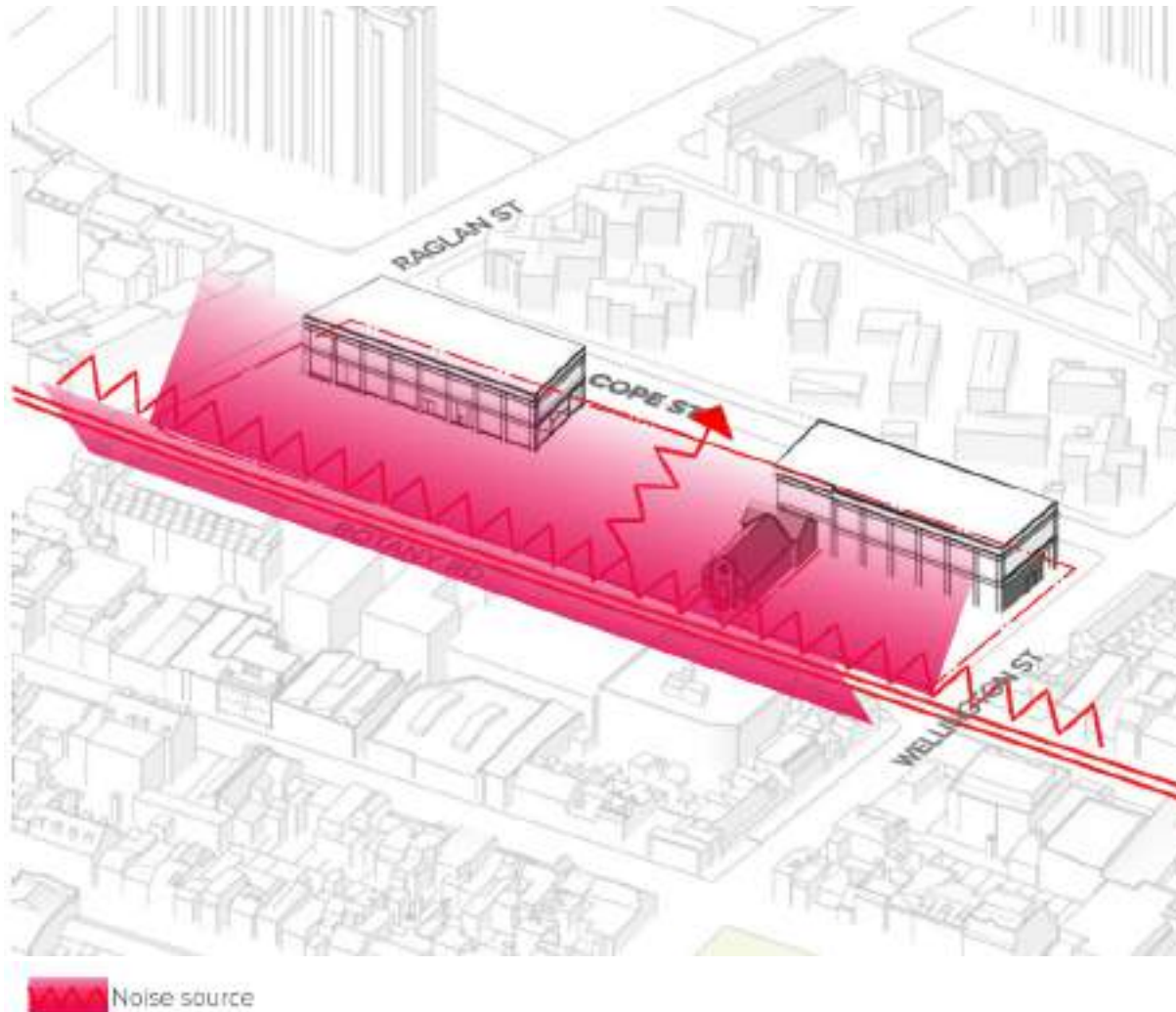
### Existing noise environment

Botany Road is a significant transport corridor that carries light and heavy vehicles in and out of the city. It typically generates a background noise source of 70dB, which is higher than the 55dB and 45dB levels required within apartment living and bedrooms respectively. This noise level has the potential to permeate through the site to Cope Street and beyond without the introduction of suitable built form barriers.

The proposed public domain for the Metro Quarter would enhance the Botany Road experience and the proposed built form intends to actively reduce noise penetration both to the apartments and the proposed publicly accessible plazas along Cope Street and Raglan Street.



Detailed discussion of noise and vibration impacts and mitigation strategies are provided within Section 8.17.

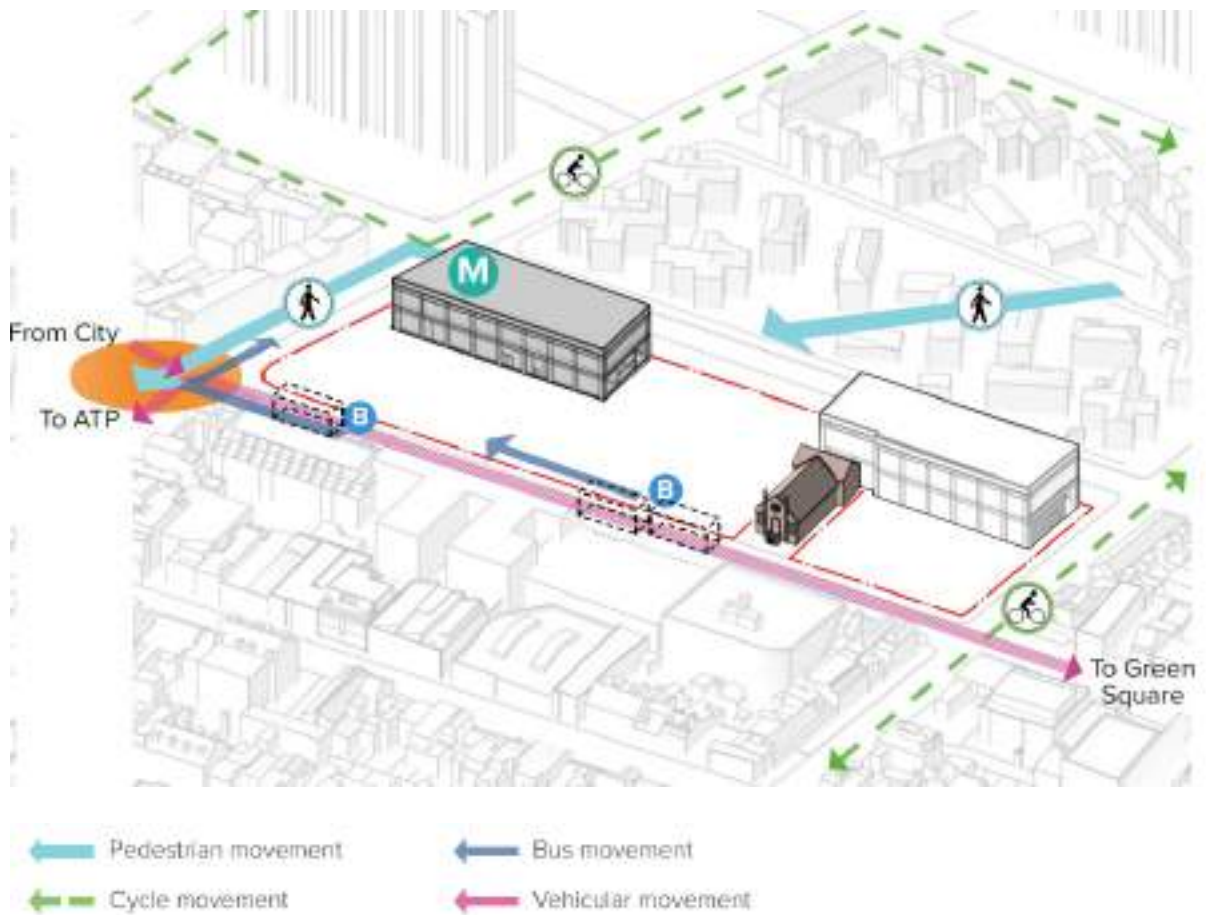


**Figure 44 – Noise source environment of the Metro Quarter**

### **Transport interchange**

Delivery of Waterloo Station would increase pedestrian flows throughout the Metro Quarter and surrounding area. These would connect with bus services along Botany Road and Wellington Street and existing cycleways that flank the south and west of the site. The Metro Quarter's proximity to ATP would also draw high pedestrian flows from the station. The concept proposal aims to seamlessly integrate these transport modes through a new intermodal interchange that provides clear, direct, sheltered, safe movement between modes.

Detailed discussion of transport and accessibility is provided within Section 8.10.



**Figure 45 – Transport integration of the Metro Quarter**

### Views and vistas

The concept proposal provides an opportunity to establish a visual marker for the location of Waterloo Station to improve local way-finding and legibility. The station structures themselves will be integrated with the current relatively low-scale urban character, and will not assist to clearly define the station location. The Waterloo Metro Quarter OSD should therefore be visible from the key pedestrian routes to the Waterloo Station, in particular from ATP to the west, along Botany Road from the south and north, Raglan Street from the east and Wellington Street and Cope Street from the south-east. The site also presents the opportunity to maximise district views from the site.

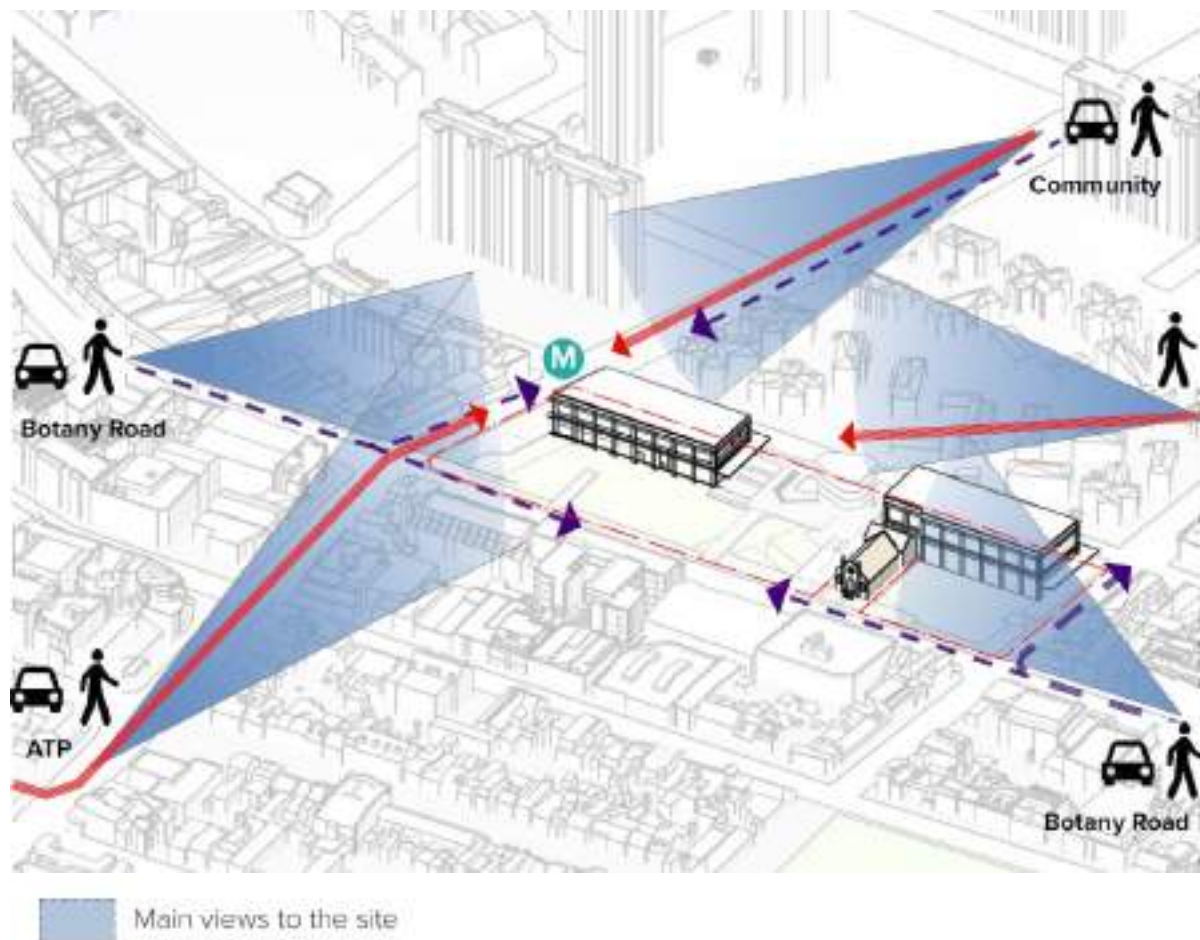


Figure 46 – Views and vistas to the Metro Quarter

## Density and scale

One of the primary challenges for the Metro Quarter is balancing the opportunity for growth and renewal around new transport infrastructure with the existing character of the locality. The *Greater Sydney Region Plan* and *Eastern City District Plan* both emphasise the city shaping influence of new transport infrastructure, and the ability to transform quality of life by enabling renewal, so diverse and innovative communities can grow in locations that are well served by high quality public transport. While these objectives and outcomes are critical to the functioning of Sydney as a whole, Metropolitan and District strategic plans also recognise the importance of character, community cohesion and a human scale as determinants of liveability, amenity, and sustainability.

The Metro Quarter is located on Botany Road which sits between the low scale Alexandria Park HCA and the Waterloo Estate renewal, which is currently under investigation.

The site, along with the blocks adjoining and opposite on Botany Road, can serve as a transition to mediate the differing heights and scale.

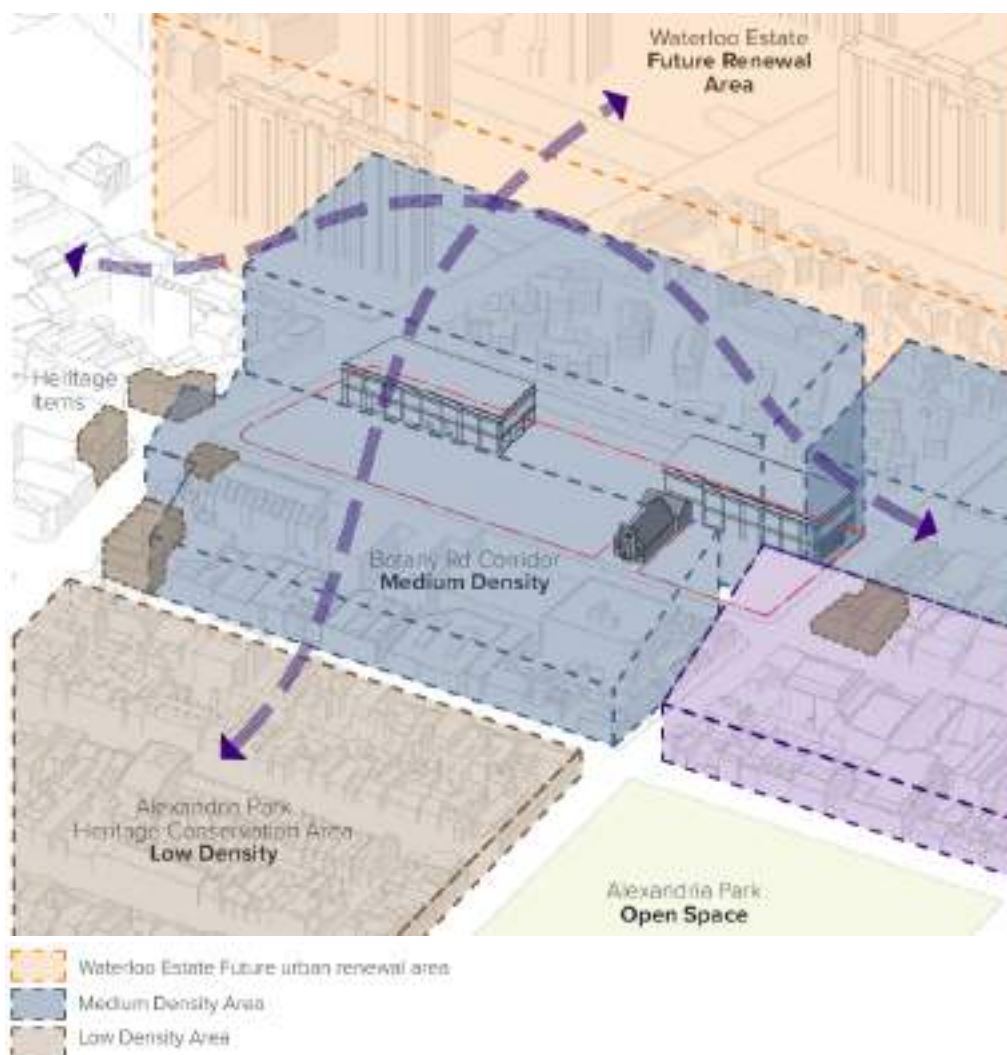


Figure 47 – Density and scale of surrounding area

## 4.4. Building envelope

The proposed building envelope defines the three-dimensional volume within which future OSD can occur. The built form of the Metro Quarter OSD consists of three building components, being:

- Podiums
- Mid-rise buildings
- Taller buildings

These elements have been considered to respond to the design influences described in Chapter 4.3 above, and are further detailed below.

The building envelope has also been designed to enable full integration of the OSD with Waterloo Station. Figure 48 below shows the proposed OSD envelope (Green) within the approved Waterloo Station (grey), and the surrounding built form context, providing a view of the development in the existing context of the locality.

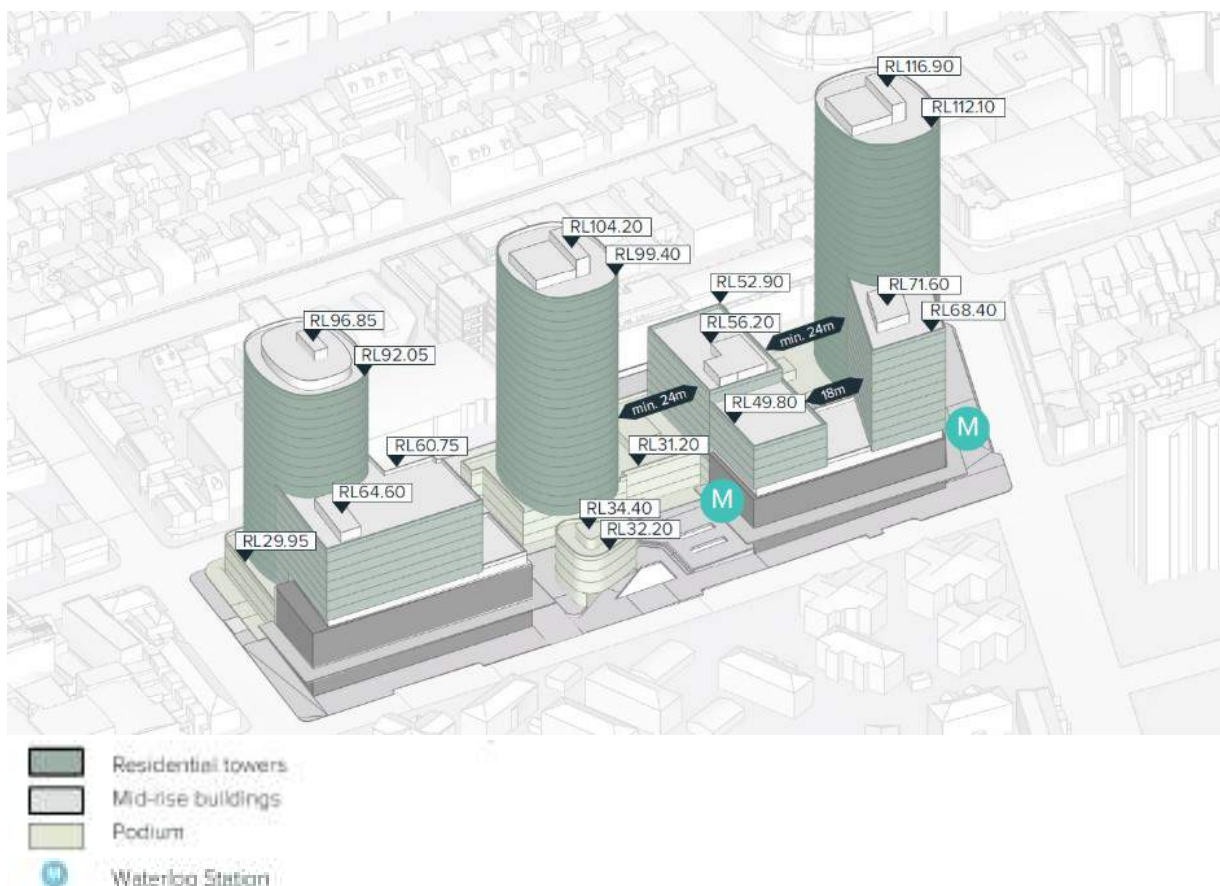


Figure 48 – Three-dimensional view of proposed building envelopes from south east



**Figure 49 – Plan view of proposed building envelopes**

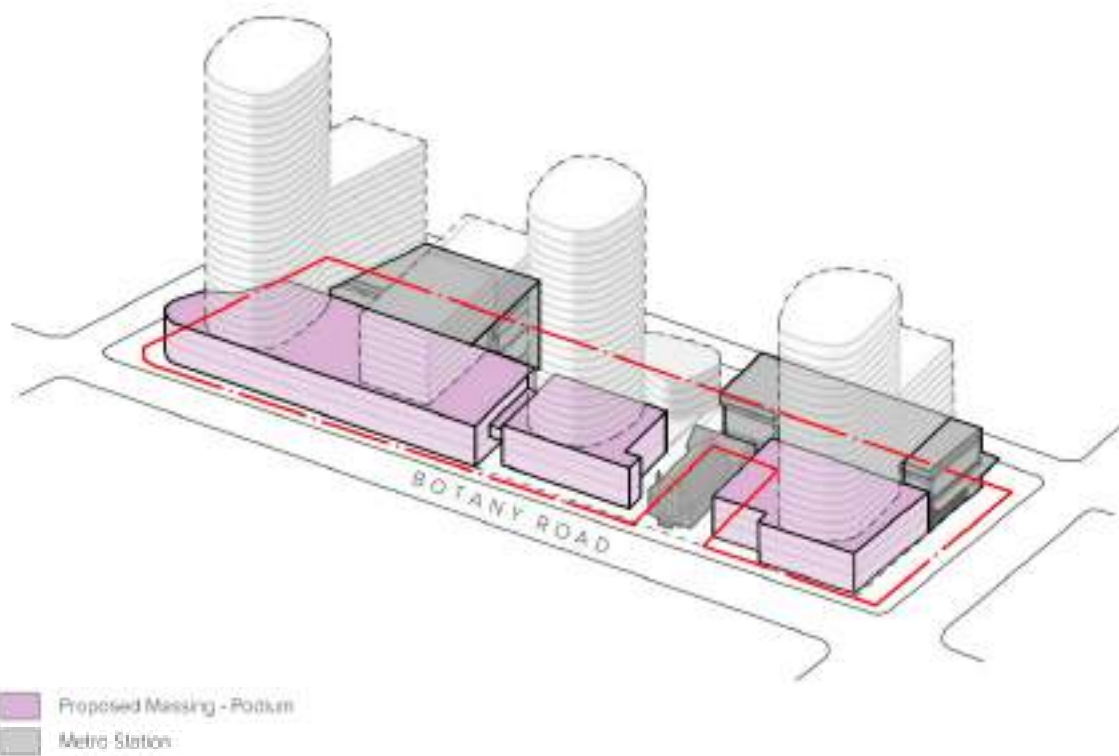
#### 4.4.1. Podium

A three-storey podium is proposed to respond to the scale and character of the existing streetscape along Botany Road and the built form that was present on the site pre-demolition. This has been particularly critical to appropriately manage interfaces of new buildings with the existing Waterloo Congregational Church and other heritage items adjacent to the site on Botany Road.

As a major arterial road, the existing character of Botany Road does not represent a functional, coherent or attractive urban environment. As a result, the concept plan developed for the Metro Quarter incorporates several design responses to mitigate amenity impacts for future residents, workers and visitors and to encourage a pedestrian and place focused environment. These include:

- the podium acting as a shield to the publicly accessible plazas on Cope street and Raglan Street from noise and wind impacts
- providing a generous podium setback from Botany Road to increase the available public space at the bus interchange

The podium facade is intended to be broken down to reflect the retail street approach and the existing fine-grain retail across Raglan Street.

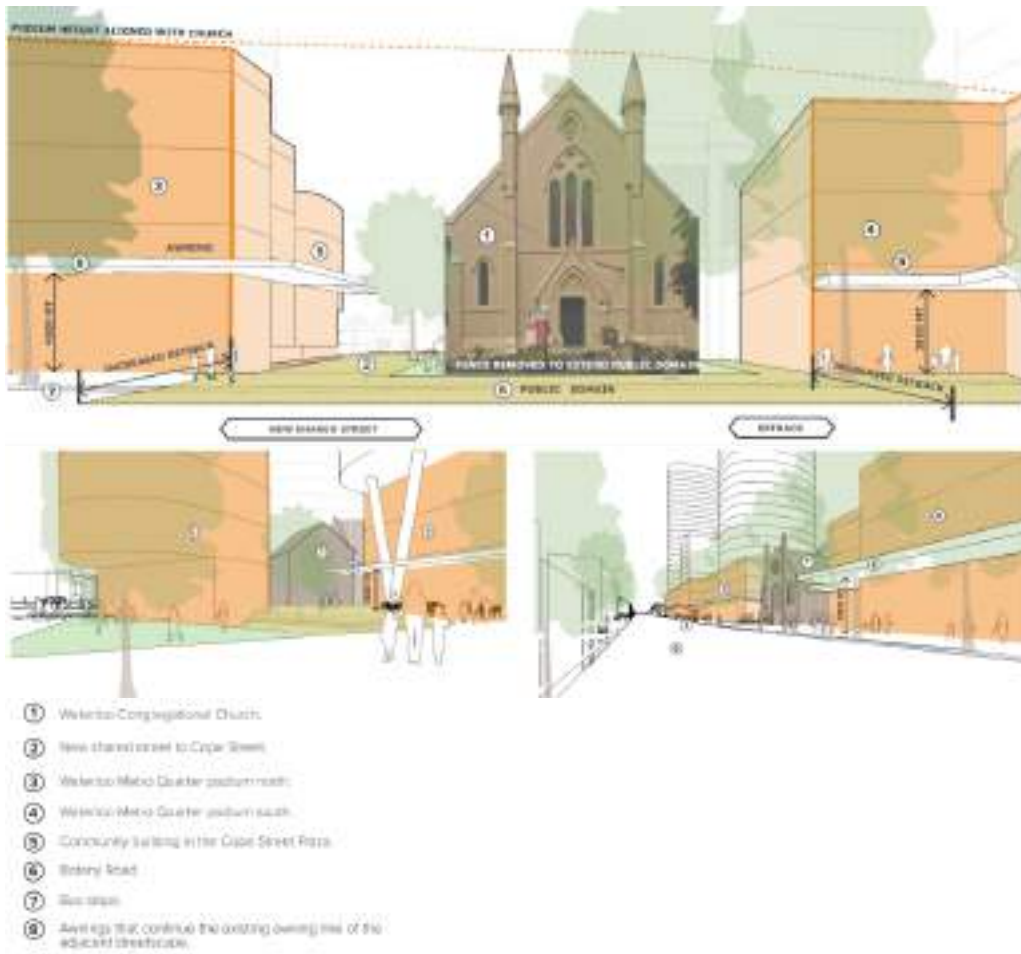


**Figure 50 – Podium typology**

The podium aims to establish a setting that responds to the Waterloo Congregational Church to reconnect it as a social anchor within the community and reflect the historical context of Waterloo (refer to Figure 51). To better establish the church within the Metro Quarter OSD, the podium design has implemented the following design responses:

- aligning the podium setback with the existing setback condition of the church to enhance its presence within the streetscape and increase view lines to and from the church along Botany Road
- relating the podium heights with the height of the church along Botany Road
- introduction of a shared zone along the northern edge of the church to liberate and create a new setting for the church
- engaging the rear of the church within the community square (Cope Street Plaza) to establish a destination marker within the precinct
- introducing a setback on the southern side of the church, with potential to be activated by adjacent retail tenancy

The WMQ DCP also includes a provision (subject to landowner's consent) to remove the existing fence and vegetation at the front of the Waterloo Congregational Church site enable greater visibility from the Botany Road public domain. However, this is outside the scope of this concept SSD Application.



**Figure 51 – Continuation of podium height alignment and increased setback with Congregational Church**



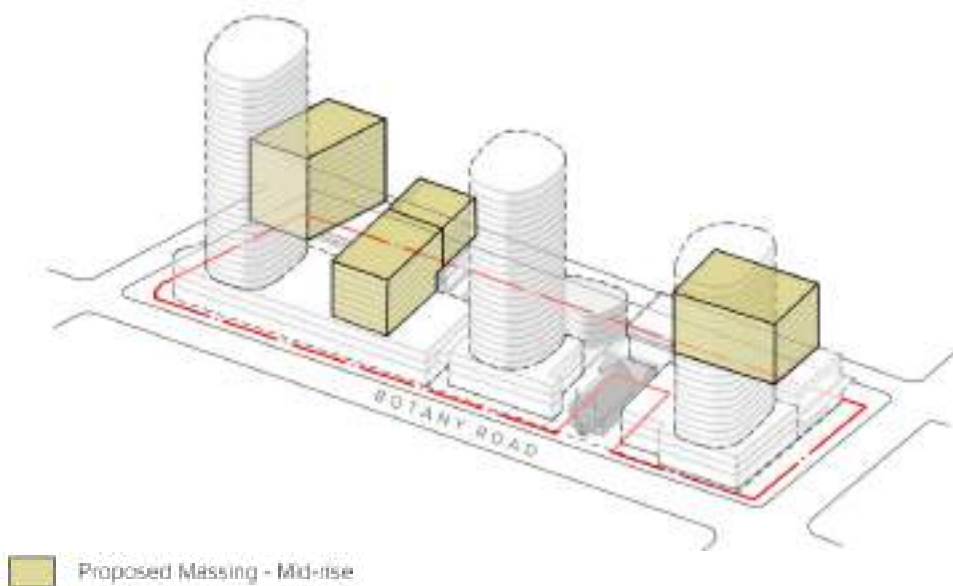
**Figure 52 – Proposed podiums setting and shared zone adjacent to Waterloo Congregational Church**



#### 4.4.2. Mid-rise buildings

The mid-rise buildings (as shown in Figure 53) range between 4-10 storeys and are located above the metro station boxes and the podium. The mid-rise buildings make reference to the building typologies of recent residential infill buildings throughout the locality and provide a transition between podium and tower typologies. This typology also serves to scale down toward Cope Street and the proposed publicly accessible plaza on Cope Street.

These mid-rise buildings also meet the loading capacity requirements of the station boxes, with the OSD buildings not to exceed 10 storeys.

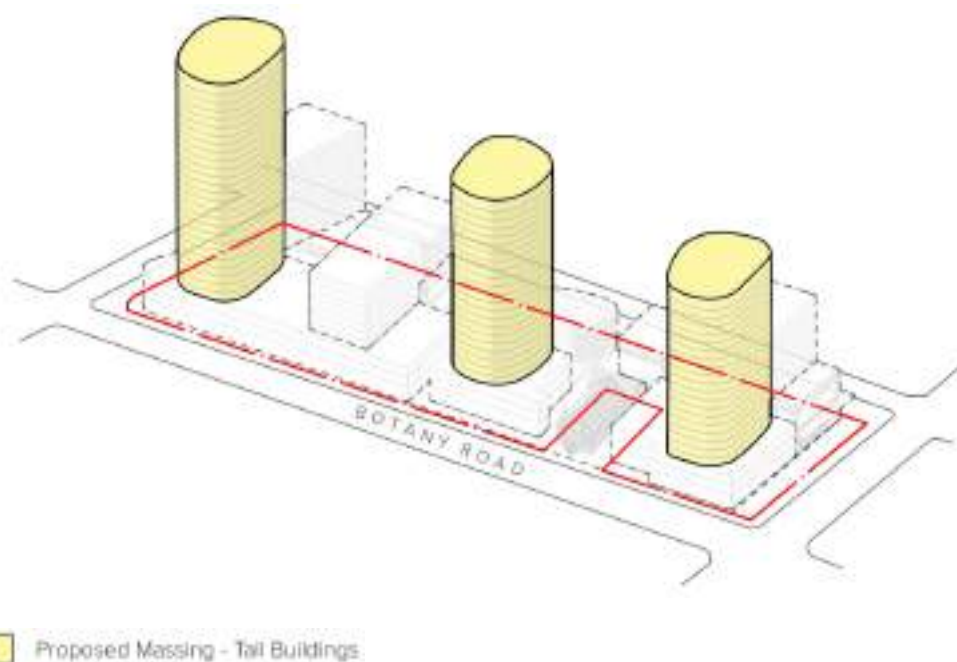


**Figure 53 – Mid-rise typology**

#### 4.4.3. Taller buildings

Three taller building forms of 23, 25 and 29 storeys would act as a destination marker for Waterloo Station and the new activity centre. The curved shape of the taller building forms and reduced floor plate sizes aim to visually soften the buildings, reduce the flat facade area facing west to respond to wind paths to mitigate potential wind downwash that could impact on pedestrian amenity within the public domain. This form also aims to maximise residential amenity by allowing apartments to orient away from the noise and traffic of Botany Road, by minimising frontage lengths facing Botany Road. Provisions in the WMQ DCP preclude operable window openings on the noise sensitive interfaces along Botany Road.

With its north to south orientation, the taller buildings maximise outlooks to the CBD and Sydney Harbour. The siting and orientation of taller buildings would minimise overshadowing of Alexandria Park (below 50 percent of total area) to between the hours of 9am to 10am, thereby meeting the SDCP 2012 (and WMQ DCP) requirements for 50 percent of the total [park] area to receive sunlight for 4 hours from 9am to 3pm on 21 June (mid-winter) (refer Section 8.4 for more information). The separation of taller buildings is greater than the minimum building separation requirements of the ADG, providing increased visual permeability from an east to west direction.



**Figure 54 – Tall buildings typology**

## 4.5. Land use

A diverse range of conceptual land uses would be accommodated as part of the indicative design proposal. This would include non-residential uses in the three-storey podium to deliver upon the urban design principle of creating a diverse and commercially thriving mix of uses that activate the precinct. Taller buildings would accommodate residential uses to enliven the precinct after business hours, and would be located at higher elevations to manage impacts from potential noise and other impacts from Botany Road and a highly trafficked public domain. Combined, this would establish a liveable, high quality environment for residents through easy access to local retail and community services, improved transport infrastructure provided by the Sydney Metro and new publicly accessible open spaces.

The land uses accommodated by the concept proposal are further described below.

### 4.5.1. Non-residential podium

The podium of Metro Quarter OSD is proposed to accommodate approximately 13,000 square metres of non-residential uses such as retail, office, entertainment facilities, recreation and community uses.

Non-residential uses catering to local need such as community services and convenience needs (e.g. cafes) have been located at the ground level, clustered around pedestrian desire lines (i.e. areas through which pedestrians are expected to move) associated with Waterloo Station to enliven the adjoining public domain, provide for a comfortable and convenient Metro customer experience and mitigate adverse amenity impacts from Botany Road.

Opportunities to deliver a diverse range of activities for the local community, would develop a vibrant day and night economy that would align with the opening hours of Waterloo Station, integrate with and activate the public domain. Potential land uses of the podium are outlined within **Table 7**.

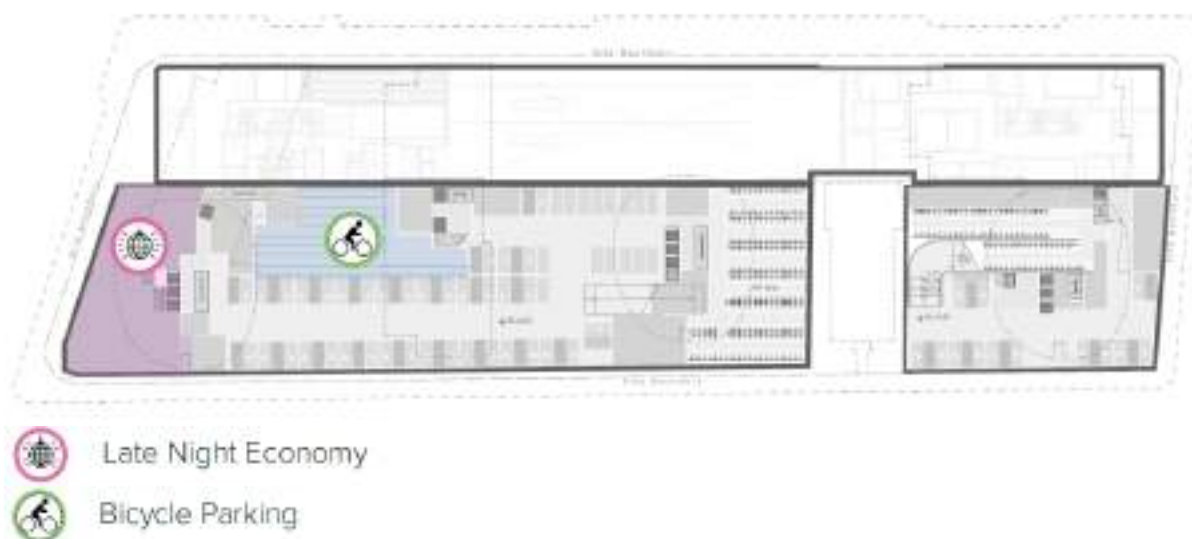
**Table 7 – Podium land uses**

Land use category	Indicative land uses
<b>Retail uses</b>	<ul style="list-style-type: none"> <li>• retail premises</li> </ul>
<b>Community uses</b>	<ul style="list-style-type: none"> <li>• library</li> <li>• information and education facility</li> <li>• multi-purpose community facility</li> <li>• health services facility</li> <li>• emergency services facilities</li> <li>• centre based child care facilities</li> <li>• creative arts space</li> <li>• recreation facility (indoor)</li> </ul>
<b>Other non-residential uses</b>	<ul style="list-style-type: none"> <li>• office premises,</li> <li>• business premises</li> <li>• entertainment facility</li> </ul>

The following sections provide a concept layout of non-residential uses within the podium.

**Metro Quarter Basement Level**

The basement level of the Metro Quarter OSD would support approximately 400 bicycle parking spaces for a bike hub under this concept SSD Application. This would be accessible from the proposed publicly accessible plaza via a ramp and would also include end of trip facilities including showers and lockers. There are also opportunities to accommodate entertainment uses that can support late night / live music venues.



**Figure 55 – Indicative concept layout of basement level land uses**

### Metro Quarter Ground Level

As shown in **Figure 55**, the ground level of the Metro Quarter OSD would accommodate uses that engage with and activate adjoining public domain spaces. Smaller format retail tenancies and cafes have been located at the ground level, clustered around pedestrian desire lines associated with Waterloo Station to enliven the adjoining public domain, provide for a comfortable and convenient Metro customer experience. There is also opportunity to support a small scale supermarket to cater to the convenience needs of commuters and residents of the Metro Quarter and surrounding area.



**Figure 56 – Indicative concept layout of ground level land uses**

### Metro Quarter Level 1 and 2

The upper levels of the podium are intended to accommodate a range of commercial uses, such as business and office premises that would support a local employment uses. At least 2,000 square metres of floorspace in the podium levels of new buildings would be allocated to community uses. This space could be delivered or occupied in a number of formats and locations across the Metro Quarter, depending on the needs of community groups, and the CoS (should it identify a need for a Council-run community centre).



Figure 57 – Indicative concept layout of land uses for Level 1 (above) and Level 2 (bottom)

#### 4.5.2. Residential mid-rise and taller buildings

The mid-rise and taller building typologies of the indicative concept proposal would accommodate residential apartments. This would yield approximately 700 dwellings when the following indicative bedroom mix is applied:

- **Studio:** 22 (3 percent)
- **1 bed:** 294 (42 percent)
- **2 bed:** 314 (45 percent)
- **3 bed:** 70 (10 percent)

Of the approximate 700 dwellings, a minimum of 5 percent and up to 10 percent would be affordable housing, with another 70 dwellings provided as social housing.

Residential uses are provided to enliven the precinct after business hours, and have been located at higher building levels to be separated from potential noise and other impacts from Botany Road and a highly trafficked public domain. The design of taller buildings aims to maximise views and access to daylight, while minimising wind and noise impacts for residents and pedestrians on the ground plane. Through the implementation of ameliorative measures during the detailed design of the Metro Quarter OSD, it is expected that the private and communal spaces of the residential mid rise and taller buildings would have acceptable wind conditions.

The urban design analysis by Turner Studio also demonstrates that the indicative concept proposal is capable of achieving minimum solar access and cross ventilation requirements under the ADG.

Refer to Chapter 8.12.1 for further discussion.

#### 4.6. Gross Floor Area

This application proposes a maximum GFA of 68,750 square metres for the OSD component, which in addition to the station GFA (approximately 8,415 square metres) results in a maximum overall integrated station development GFA of 77,165 square metres. A breakdown of the different elements which contribute to this GFA has been provided at Table 8, while a detailed schedule of GFA based on the indicative design has been provided at Appendix E.

Importantly, the only GFA proposed under this application is the OSD component. The CSSI Approval components in the table below are provided for information purposes only, and because they in part contribute to assessing compliance with relevant maximum FSR controls.

The proposed OSD GFA is the maximum that can be delivered through detailed SSD Application(s). It is noted that the final GFA for each use may be subject to change at the detailed design phase, given the FSR implications that different uses carry in accordance with the SLEP 2012 and the proposed SSP planning controls.

**Table 8 – Gross floor area summary**

Component of integrated station development	Development Component	Indicative OSD design GFA (square metres)
<b>OSD (concept SSD Application)</b>	Residential	56,200
	Retail	3,905
	Community uses, that may include the following uses: <ul style="list-style-type: none"> <li>library</li> <li>information and education facility</li> <li>multi-purpose community facility</li> <li>health services facility</li> <li>emergency services facilities</li> <li>centre based child care facilities</li> <li>creative arts space</li> <li>recreation facility (indoor)).</li> </ul>	2,000 (minimum)
	Other non-residential uses that may include the following uses: <ul style="list-style-type: none"> <li>office premises,</li> <li>business premises</li> <li>entertainment facility</li> </ul>	6,645
	<b>Total OSD</b>	<b>68,750</b>
<b>Sydney Metro (station uses) (CSSI Approval)</b>	Ground Level	1,499
	Basement levels	6,756
	Plant Level	160
	<b>Total Waterloo Station</b>	<b>8,415</b>
<b>Entire integrated station development</b>		<b>77,165</b>

The indicative design provided at Appendices C and D has been designed to demonstrate that a future development form that delivers the indicative floor space allocations above can occur within the proposed envelope.

## 4.7. Pedestrian access and connectivity

The anticipated high pedestrian population, community function and layered movements in the Metro Quarter have driven a pedestrian-focused public domain and movement network. In developing an integrated design outcome for the Metro Quarter, including those elements being delivered as part of Waterloo Station, the following key elements of the movement network are provided:

- the new publicly accessible plaza on Cope Street as a pedestrian focused space
- generous circulation widths and active frontages to support movement and moments for respite and pause, including widened footpaths of 6-10 metres on Botany Road and 15 metres on Raglan Street
- new pedestrian through site links that create direct and legible links between a new community arrival station entry and the bus interchange on Botany Road
- redefining Cope Street as a slow street with considered design of kerb alignments, bicycle parking and street furniture
- limiting vehicular movement within the site through the application of a single-access shared zone off Cope Street
- positioning vehicle entrance points for servicing and loading zones toward precinct edges and on vehicular priority streets of Botany Road and Wellington Street to minimise conflict with pedestrians

The public domain has been designed to encourage pedestrian movement throughout the Metro Quarter by providing an environment that is accessible universally from key public transport connections. Walkways with 1:20 gradients would be integrated to allow for universal access into the Waterloo Station 'Community Entry', whilst accessible routes from the Botany Road bus interchange, from Cope Street kiss and ride and along Raglan Street provide direct access to Waterloo Station.

It is noted that CoA E92 of the CSSI Approval requires the preparation of an IAP to address interchange requirements, including pedestrian access between transport modes (including to new and relocated bus stops, bike parking on Cope Street, and taxi and kiss-and-ride bays on Cope Street) . In this regard, pedestrian footpaths along the Cope Street frontage of the Metro Quarter and footpaths of sufficient width to support station generated pedestrian movements along the Raglan Street and Botany Road frontages connecting to the bus interchange are provided for under the provisions of the CSSI Approval. The detailed design of the final requirements would be explained under the IAP, with remaining footpath widths/setbacks to buildings being part of this OSD application.

The indicative concept proposal does not preclude the future provision of new dedicated cycleways on Wellington Street to connect with the existing active transport network and support connections to surrounding regional open space, include Sydney Park and Centennial Parklands. The concept proposal includes the following on-street and secure cyclist parking facilities:

- approximately 700 residential bike spaces within the basement
- 70 bike spaces for visitors
- 150 spaces for non-residential uses



Approval is also being sought for space within the future basement for a bike hub to accommodate up to an additional 220 bike parking spaces to support future needs of Waterloo Station. In this regard, approval is sought for a total of 920 spaces to support the OSD together with space provisioning to support additional station demand for bikes (up to a total 220 spaces). This brings the potential cycle provision within the OSD footprint to 1140.

Separate to this, it is intended to deliver a total of 180 spaces (comprising 100 spaces within a bike storage room within the station box and 40 bike rails within public domain areas equating to 80 spaces) as part of the CSSI Approval. The location of bike parking spaces as part of the OSD and those associated with the CSSI Approval are shown within Figure 98.



**Figure 58 – Proposed locations of Metro Quarter OSD bicycle parking provision and Sydney Metro bicycle parking provision**

The proposed movement network for the Metro Quarter is illustrated on Figure 59 below.



**Figure 59 – Movement network of The Metro Quarter**

Table 9 below provides a breakdown of the planning pathway relationship of the pedestrian access and connectivity elements of the Metro Quarter integrated station development and identifies those elements for which concept approval is being sought as part of this application. The detailed design of the public domain works under this concept SSD Application is expected to be contained within the IAP which is yet to be finalised and approved under the CSSI Approval. The final SDPP under the CSSI Approval could also influence some of the public domain works such as the Cope Street Plaza.

**Table 9 – Indicative Pedestrian access and connectivity elements**

Component	Concept SSD Application	CSSI Approval
<b>New Cope Street Plaza</b>	Part within concept SSD Application (adjacent to southern station box, and subject to finalisation of SDPP and IAP)	Part within CSSI Approval (adjacent to station entry/northern station box required to provide access to community door and to accommodate skylights to provide access to daylight to station below)

Component	Concept SSD Application	CSSI Approval
<b>Footpaths</b>	<p>Wellington Street footpaths (with exception of footpath adjacent to southern station box)</p> <p>Botany Road footpaths from bus interchange to Wellington Street</p> <p>Footpaths/setback areas beyond the functional requirements of the CSSI Approval to support pedestrian movements along Raglan Street and Botany Road to bus interchange (as detailed in the IAP)</p>	<p>Cope Street footpaths including their widening, between Raglan and Wellington Streets</p> <p>Raglan Street footpaths to meet the functional requirements of the CSSI Approval to support pedestrian movements along Raglan Street (as detailed in the IAP). Note the footpaths/setback areas beyond the functional requirements of the CSSI Approval are under the SSD application.</p> <p>Botany Road footpath from intersection with Raglan Street to bus interchange, to the extent necessary to meet the functional requirements of the CSSI Approval to support pedestrian movements along Botany Road (as detailed in the IAP). The footpaths/setback areas beyond the functional requirements of the CSSI Approval are under the SSD Application.</p> <p>Wellington Street footpath adjacent to southern station box. The remaining footpath to the intersection with Botany Road falls under the SSD Application.</p>
<b>New community arrival station entry</b>	<p>N/A</p>	<p>Part of detailed station design</p>
<b>New pedestrian through site links</b>	<p>Pedestrian through site link from Cope Street Plaza to bus interchange</p> <p>Entire through site link/road from Cope Street to Botany Road adjacent to southern station box and Waterloo Congregational Church</p>	<p>N/A</p>
<b>Redefining Cope Street as a slow street</b>	<p>Changes to road</p>	<p>Footpath widening.</p>
<b>Pedestrian crossings</b>	<p>Provide a mid-block crossing on Cope Street between Raglan Street and Wellington Street.</p>	<p>Provision of pedestrian crossings at the Cope and Raglan Street intersection on the southern and western approaches</p> <p>Provision of pedestrian crossing at the Cope and Wellington Street intersection on the western and northern approaches.</p>

Component	Concept SSD Application	CSSI Approval
<b>Single-access shared zone off Cope Street</b>	Part of OSD proposal	N/A
<b>Vehicle entrance points for servicing and loading zones off Botany Road and Wellington Street to minimise conflict with pedestrians.</b>	Botany Road shared servicing and loading zone to support OSD Wellington Street to support OSD	Botany Road shared servicing and loading zone to support CSSI Approval
<b>Bicycle facilities</b>	700 resident spaces 70 visitor spaces 150 non-residential spaces Space provisioning within bike hub to support up to 220 spaces for Waterloo Station	100 spaces within southern station box 40 bike rails (80 spaces) within public domain, anticipated to be along Cope Street, and along Raglan Street and Wellington Street adjacent to the station boxes  Up to 220 spaces within bike hub (space provided for as part of OSD proposal)

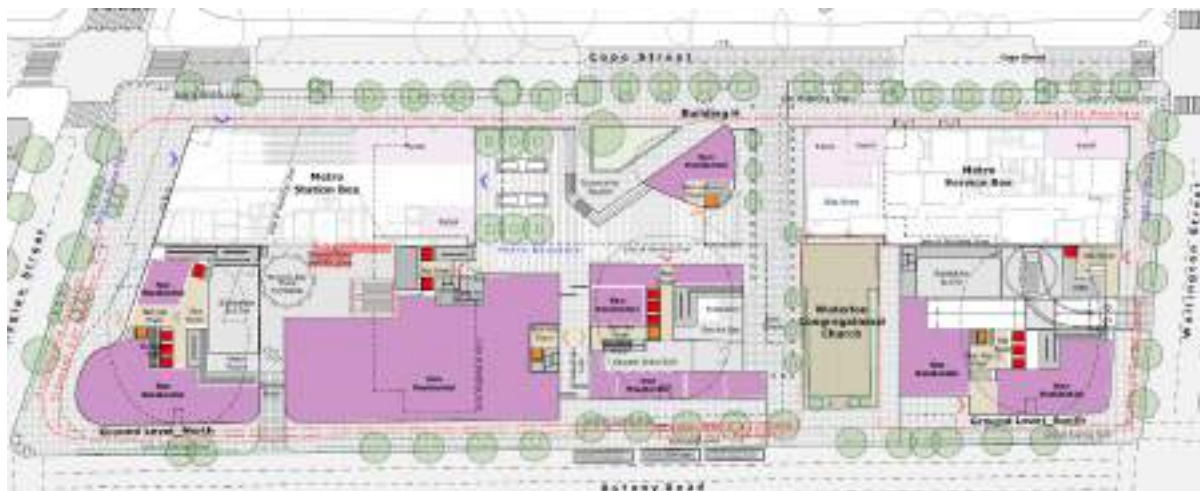
Aspects such as landscaping and provision of street furniture and the like required under the SDPP would generally be delivered under the CSSI Approval consistent with the above delineation of public domain areas. Details of these elements to be delivered under the CSSI Approval would be confirmed as part of the SDPP with landscaping and street furniture for the OSD reflected in future detailed SSD Application(s).

## 4.8. Vehicular access and parking

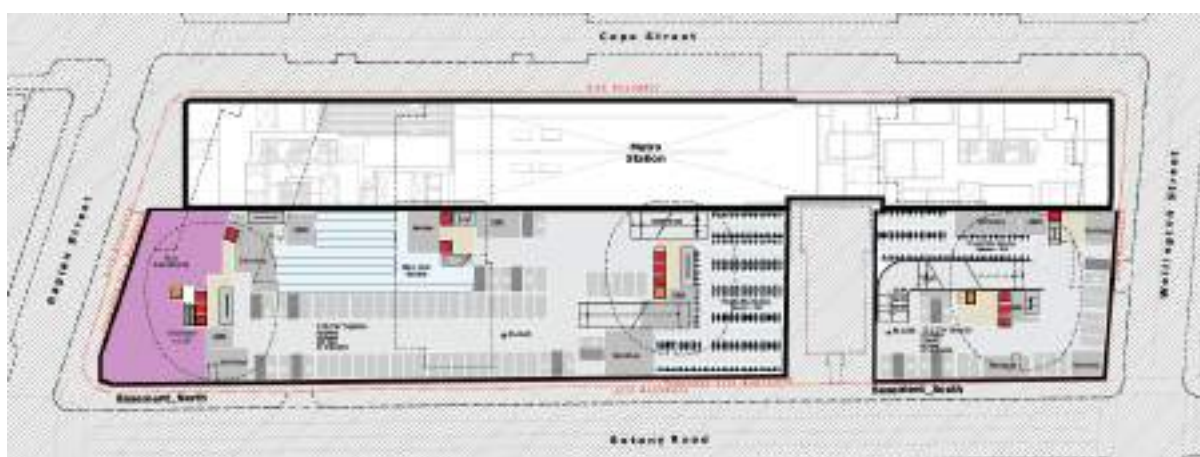
### Car parking provision

Under the OSD application, up to 427 car parking spaces within up to four basement levels are to be accommodated (in addition to the provision of 2 car parking spaces under the CSSI Approval for the station). The distribution of car parking spaces for each of the proposed uses would be further investigated as part of the detailed SSD Application(s). Residential and retail vehicle access points are proposed from Wellington Street and a shared zone off Cope Street. A vehicular access point is also located on Botany Road to support service vehicle access for retail tenancies and to the northern station box to support ongoing rail operations. A concept layout for this has been provided at Figure 60 below, which illustrates loading at the ground floor to service the commercial ground floor.

An example floor plate at the basement levels of car parking has been demonstrated at Figure 61.



**Figure 60 – Indicative concept layout of residential vehicle access and loading zones**



**Figure 61 – Indicative basement car park layout**

### **Service vehicles**

Service vehicular access is required for the northern station box to support ongoing rail operations. The indicative concept proposal incorporates the required service vehicle access to the northern station box via an at grade service and manoeuvring zone connecting from Botany Road. Service vehicle access for the southern station box, if required, could be provided from Wellington Street, Cope Street or via the proposed service road.

Service vehicle volumes for the Metro Quarter OSD are expected to be in the order of 10-15 per day, including both 8.8 metre medium rigid vehicles and 9.25 metre garbage trucks. It is anticipated that these movements would be restricted to outside of peak periods where possible. Furthermore, both service vehicle access locations are proposed as left-in/left-out to minimise impacts to the road network. Service vehicle impacts are therefore considered to be negligible assuming both are designed to ensure sufficient sight lines and widths for all expected vehicle types.

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## 4.9. Design guidelines and design excellence strategy

Sydney Metro has prepared guidelines and a Design Excellence Strategy (Appendix J) to guide the design of the future OSD. These documents would ensure a high quality design would be achieved across the three potential staging scenarios described at Chapter 4.12 below, including a potential scenario whereby the OSD is built at an undetermined stage in the future beyond the practical completion of the station.

Details of the design guidelines and strategy are further discussed below.

### 4.9.1. Design guidelines

Design Guidelines (Appendix K) have been prepared as part of this concept SSD Application and design to respond to the SEARs. The guidelines are informed by the detailed site analysis set out in the Urban Design and Public Domain Report (Appendix G) and the strategic planning and development objectives for the OSD, which have been defined by Metro Quarter SSP Study. The guidelines provide a reference document for the assessment of future detailed design outcomes, and include parameters for built form, heritage, integration with the Sydney Metro station, public domain and place, movement and connectivity and legacy outcomes of the development. The fundamental principles for the OSD contained in the guidelines are to:

- Deliver a high quality built form that:
  - exhibits design excellence
  - is identifiable as a landmark building
  - is architecturally integrated with the overall Metro Station design, yet distinctly identifies the Metro Station and the OSD entries at the ground plane
  - responds sympathetically to the existing character of neighbouring buildings, including surrounding heritage items
  - provides a podium that responds to and integrates with the public domain and the Metro Station
  - minimises privacy and solar access impacts on the surrounding residential uses
- Protect and enhance the surrounding public domain by:
  - minimising any additional overshadowing from the building or any associated plant, lift overruns, or architectural roof feature
  - ensuring pedestrian comfort in and around the building through managing the potential for wind impacts
  - providing appropriate setbacks along street frontages in recognition of the established and emerging urban context
- Provide for high quality mixed use development comprising residential accommodation, hotel and office space to revitalise and activate the public domain

Any future detailed SSD Application(s) for OSD would need to respond to these Design Guidelines to ensure that future development achieves the vision for the site as expressed in this concept SSD Application.

#### 4.9.2. Design excellence strategy

A Design Excellence Strategy (Appendix J) has been prepared to establish a consistent framework for how Sydney Metro would deliver design excellence to all its integrated station developments. The Strategy builds on Sydney Metro's existing design development and review processes and has been developed in consultation with the NSW Government Architect.

The strategy draws from the NSW Government Architect's Better Placed and is consistent with the underlying principles of the NSW Government Architect's Design Excellence Competition Guidelines.

The Strategy provides an objective and structured design process that would ensure high quality architectural, urban and landscape designs are achieved in SSD Application(s). The process is tailored to respond to the complexity of integrated station development projects and assures that design excellence expectations are upheld in each stage of the design process.

The strategy provides three phases to support high quality design of integrated station developments:

- Phase 1 – the establishment of design quality expectations
- Phase 2 – competitive selection involving an open Expression of Interest process and Request for Tender process
- Phase 3 – design integrity during the detailed SSD Application stage through to construction

The process involves a Design Excellence Evaluation Panel (DEEP), that would perform the role of the Jury in the competitive selection process including to provide objective and independent advice and review of design submissions. Their role would also include:

- confirming the capability of the proposed teams to achieve design excellence during the Expression of Interest process
- participation in interactive workshops with each short-listed tenderer prior to lodgement of formal tender submissions
- writing a Design Excellence Report documenting the elements of each submission that achieve design excellence and those elements that require further refinement. It is noted that the design excellence elements of the successful tenderer's submission would be incorporated into the contract document

The DEEP members would be constituted from Sydney Metro's Design Review Panel (DRP) with the addition of nominee(s) from UrbanGrowth NSW and the City of Sydney. The DEEP members would be determined in consultation with the NSW Government Architect and UrbanGrowth NSW.

The Sydney Metro DRP would provide ongoing design review post appointment of the successful delivery contractor. The Sydney Metro DRP would ensure design excellence and integrity are not compromised post contract award and would also be responsible for reviewing any future proposed changes to the planning approval. The Sydney Metro DRP members would be reviewed and adjusted (as required) in consultation with the NSW Government Architect and UrbanGrowth NSW to ensure appropriate representation and skills.

The design integrity obligations would be handed over to the State DRP following the determination of the detailed SSD Application.

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## 4.10. Planning pathway relationship between station and OSD

### 4.10.1. Extent of approved development under CSSI Approval

The station works approved under the CSSI Approval (i.e. those works *not proposed* under this concept SSD Application) are described in this chapter.

#### Primary station works

The CSSI Approval includes construction of all below and above ground works necessary for Waterloo Station. As per Condition A1 of the CSSI Approval, the station must be constructed generally in accordance with the description of the project provided in the EIS, as amended by the description in the PIR and modifications. This description identifies Waterloo Station as a single station, with the station entry point located on the corner of Raglan and Cope Streets. The station design has continued to be developed having regard to its integration with the Metro Quarter OSD and as a result, a second entrance to the station is to be provided from a proposed public plaza adjacent to Cope Street. The station design would be further refined through detailed design work, including preparation of a SDPP as required by Condition E101 of the approval.

The vertical extent of the approved station entry is defined by the transfer slab level (as explained at page 139 of the CSSI EIS and at pages 15-17 of the PIR), above which would sit the OSD.

#### Structural and Service Elements/Spaces for OSD within Station Envelope

The CSSI Approval also approves the structural and service elements/spaces necessary for constructing the OSD where it is integrated. The CSSI EIS, which the CSSI Approval calls up in Condition A1, states that *'The metro stations would be designed to take into account, and make physical provision for, any design or other requirements associated with possible future over station development'* (p. 139). The CSSI PIR clarifies these requirements on Page 15 as follows:

- *Structural elements, building grids, column loadings and building infrastructure, and services to enable the construction of future over station development*
- *Space for future lift cores, access, parking and building services for the future over station development*

It is noted that the requirements vary from station to station. For example, based on the current level of design, Waterloo Station is not expected to provide for OSD lobbies, end of trip facilities and plant rooms. However, the detailed design may be amended to incorporate these elements as part of the integrated station development.

The integrated structural approach enables work on the OSD to begin while station construction is still underway. Sydney Metro's preferred scenario for construction is to deliver a single Waterloo integrated station development by 2024 when metro services are planned to begin, although given the size of the Metro Quarter, this may not occur depending on market conditions.



## Demolition

The demolition of all existing buildings on the Metro Quarter is covered by the CSSI Approval, and this concept proposal accordingly does not seek consent for demolition. As outlined in Chapter 3.3, demolition of the former buildings at the site is now complete with the exception of one building which is being used to support construction.

## Excavation and bulk earthworks

Excavation and bulk earthworks to support construction of the station have been approved on the eastern portion of the Metro Quarter site.

## Public Domain Works

Some of the public domain works within and surrounding the site are being designed and delivered under the CSSI Approval (as described in Section 4.7). This includes the areas immediately adjacent to the station boxes along Raglan, Cope and Wellington Streets, and footpaths and bus stops to support interchange from Waterloo Station. Details of these CSSI works would be resolved through the SDPP and IAP, which must be prepared prior to the commencement of aboveground works in order to satisfy Conditions E101 and E92 of the CSSI Approval. The full extent of footpaths/setback areas along Raglan and Botany Streets may not be required to support the functional requirements for pedestrians to move to the bus stops for interchange. In this regard, these other parts of the public domain area are part of this SSD Application, with final design detail to be provided with the detailed SSD Application(s) following finalisation of the SDPP and IAP for the CSSI Approval.

### 4.10.2. Extent of proposed development under this concept SSD Application

Condition A4 of the CSSI Approval explicitly excludes OSD:

*'Except to the extent described in the EIS or any document listed in A1, any over station development or any development above or within the Sydney Metro Trains Facility South, including associated future uses, does not form part of this CSSI and would be subject to the relevant assessment pathway prescribed by the EP&A Act.'*

'Over station development' is defined in the CSSI Approval as follows:

*'Includes non-rail related development that may occupy land or airspace above, within or in the immediate vicinity of the CSSI but excluding spaces and interface works such as structural elements may be constructed as part of the CSSI to make provision for future developments.'*

Accordingly, this concept SSD Application seeks consent for the concept stage of OSD as defined in the CSSI Approval. This includes building envelopes above the transfer level, on land adjacent to the metro station (but within the site) and the quantum of floorspace allocated to various proposed uses (residential accommodation, retail, commercial and community uses).

The fit-out and use of the OSD space provisioning within the station are not covered by the CSSI Approval. In this regard the CSSI PIR states at Page 16:

*‘The Environmental Impact Statement further indicates that over station development above the transfer slab would be subject to a separate assessment process. For clarity, the specific use and fit out of the spaces below the transfer slab (above ground level, at ground level and below ground level – refer Figure 2-3) does not form part of the project and would be subject to a separate approval process.’*

As such this concept SSD Application seeks concept approval for use of the OSD spaces within the CSSI Approval footprint. The details of specific uses and fit out of OSD spaces provisioned for in the CSSI Approval is not set out in this document but would be addressed in subsequent detailed SSD Application(s) or through local planning approvals (e.g. for use and occupancy of retail tenancies). Similarly, the specific use and fitout of other parts of the OSD (i.e. those parts not provisioned for in the CSSI Approval) will also the subject of detailed SSD Application(s) or local planning approvals.

#### 4.10.3. Summary of planning pathway relationship between CSSI Approval and concept SSD Application

This chapter summarises the planning pathway relationship between the works proposed under this concept SSD Application and those works covered under the CSSI Approval. The illustrative drawings of the indicative building envelope (Appendix C) demarcate between the parts of the Waterloo integrated station development proposed under the concept SSD Application and those covered under the existing CSSI Approval.

**Table 10 – Planning pathway relationship between concept SSD Application and the CSSI Approval**

Component	Concept SSD Application	CSSI Approval
Building envelope above station (i.e. above transfer slab)	X	
Uses within OSD envelope (residential apartments, retail, commercial office premises and community uses)	X	
Use of OSD spaces conceptually approved within the station (below and above ground) with possible examples being : <ul style="list-style-type: none"> <li>• OSD lobby</li> <li>• OSD end-of-trip facilities</li> <li>• back-of-house facilities including building plant, waste and service rooms</li> </ul>	X	
Demolition		X
Excavation	X	X
Station and OSD structure (i.e. structural elements, building grids, column loadings, building infrastructure and services up to the transfer level)		X
Non-OSD uses within the station including station retail		X
Public domain works and landscaping (as described within Chapter 4.7 )	X	X

Component	Concept SSD Application	CSSI Approval
Future lift cores, access, parking and building services for OSD	X	X
Provision for the connection of OSD utilities	X	X

## 4.11. Physical integration between station and OSD

### 4.11.1. Envelope footprint

The footprints of the proposed buildings located over the northern and southern station boxes (i.e. Buildings B, C and G) have been designed with regards to the design parameters set under the CSSI Approval. The base of the proposed building envelope for Buildings B and C over the northern station box begins at RL 33.1 (AHD), while the base of the building envelope for proposed Building G situated over the southern station box begins at RL 35.1(AHD). Details of the envelope are provided in Chapter 4.4.

### 4.11.2. Interface levels

The CSSI PIR sets out an indicative physical interface between the station and OSD components situated immediately over the station boxes at the Metro Quarter.

This indicative interface has been refined by a further detailed, yet still indicative scheme (Appendix C and D), which reflects the potential built form outcome at the site. Section drawings included within the PIR demonstrating the connection between the station and those parts of the OSD situated over the station boxes are provided at Figure 63, Figure 64 and Figure 65. Figure 62 illustrates the delineation of indicative uses at the ground plane based on the current indicative concept design.

The ultimate design of the interface would be further resolved through detailed design work, including preparation of an IAP and SDPP as required by CoA E92 and E101 respectively, of the CSSI Approval.

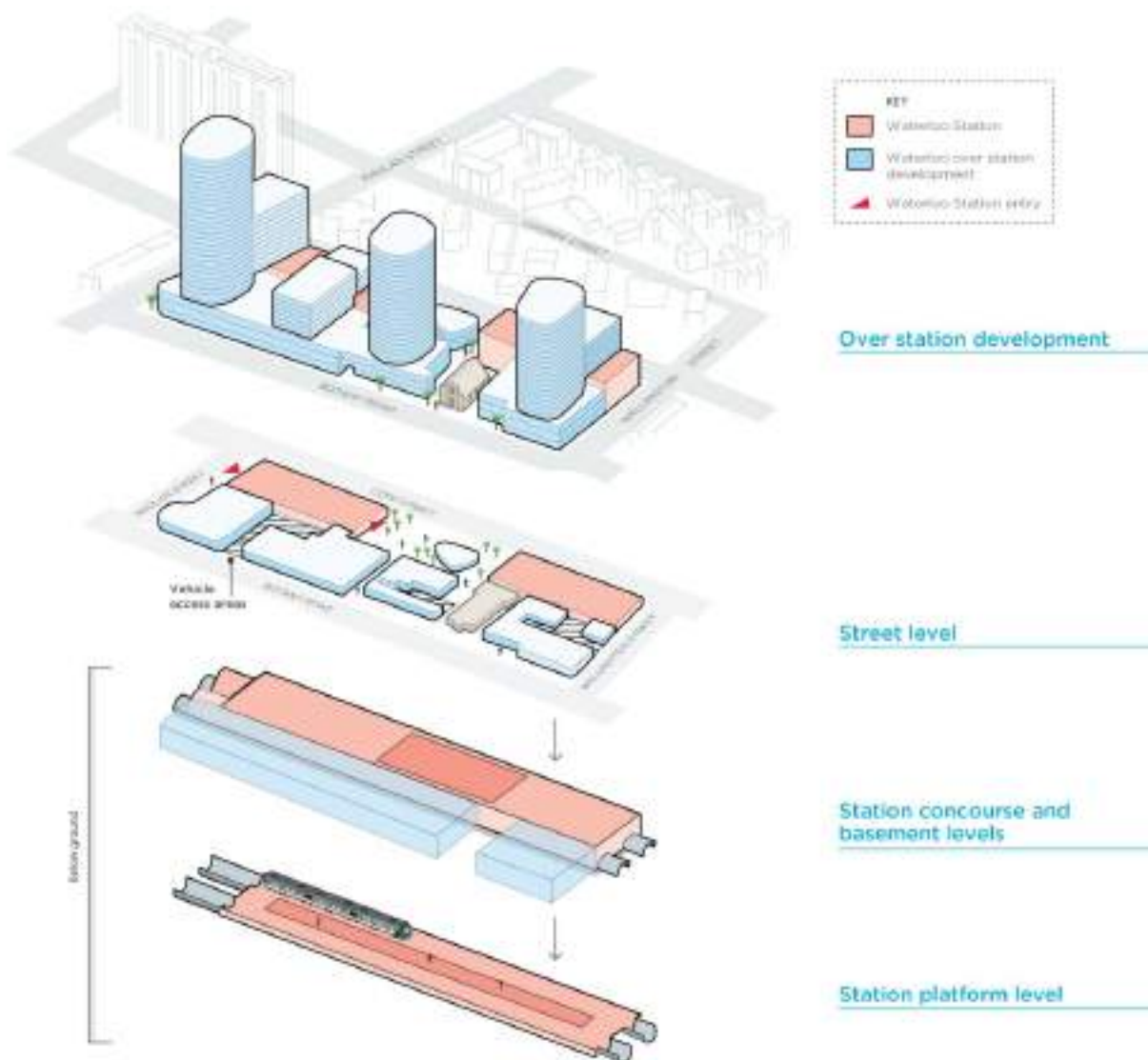


Figure 62 – Three dimensional delineation between station and OSD

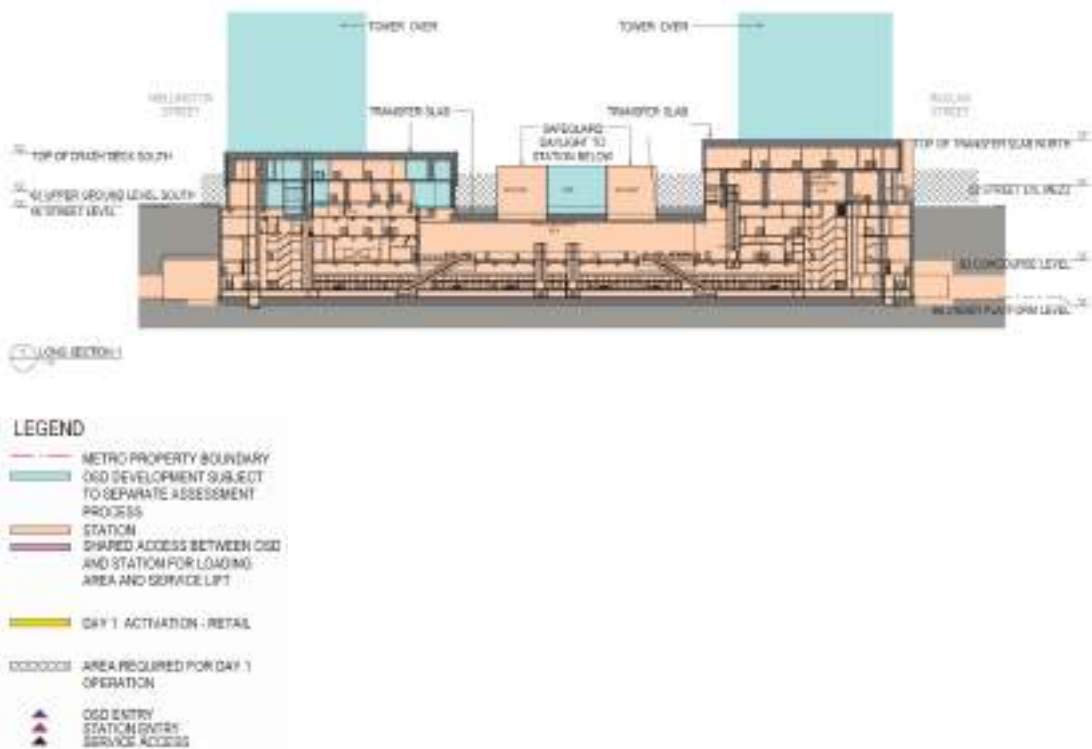


Figure 63 – Indicative interface set out under the CSSI PIR for Waterloo (North-South Section)

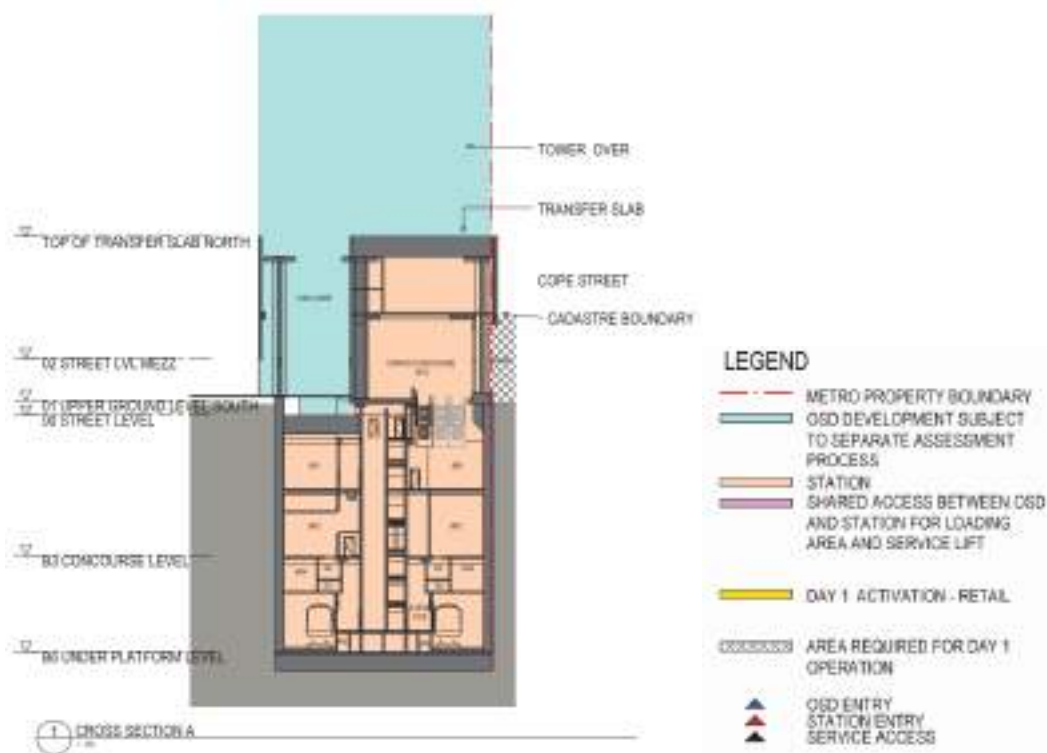


Figure 64 – Indicative interface set out under the CSSI PIR for Waterloo (East-West Section)

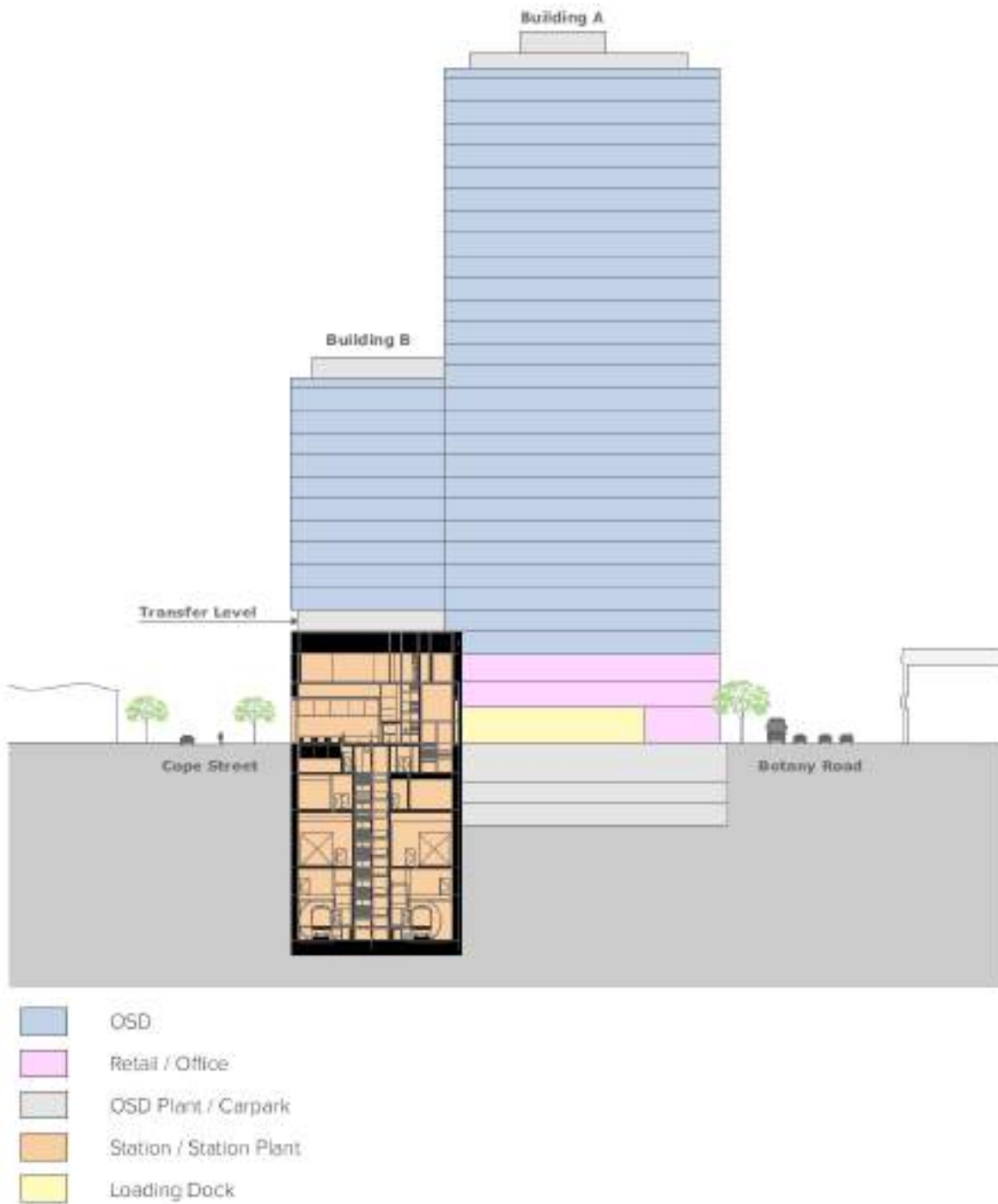


Figure 65 –Indicative cross section of delineation between station and OSD

## 4.12. Staging

Through Sydney Metro, the State proposes to procure the delivery of the Waterloo integrated station development in one single package, which would entail the following physical works:

- station structure and fit-out, including mechanical and electrical
- OSD structure and fit-out, including mechanical and electrical

The contractual obligation to complete the station has been separated from the contractual obligation to complete the OSD to allow the delivery of the OSD to respond to property market conditions.

Separate delivery packages are also proposed by Sydney Metro to deliver the excavation of the station boxes / shafts ahead of the integrated station development works, line-wide systems (e.g. track power, ventilation) and operational readiness works prior to the Sydney Metro City & Southwest metro system being able to operate.

For the purposes of the concept SSD Application, the following three possible staging scenarios have been identified for delivery of the integrated station development.

- **Scenario 1** – The station and OSD are constructed concurrently by constructing the transfer slab first and then building in both directions. Both the station and OSD would be completed by the date for station opening (currently estimated to be 2024).
- **Scenario 2** – The station is constructed first and ready for operation in 2024. OSD construction may still be incomplete or ready to commence after station construction is completed. This means that some or all OSD construction would likely still be underway upon opening of the station in 2024.
- **Scenario 3** – The station is constructed first and ready for operation in 2024. The OSD is built at a later stage, with timing and construction program yet to be determined. This creates distinct construction periods for the station and OSD.

In Scenarios 2 and 3 the contractor may undertake excavation of the basement areas of the OSD between 2021 and 2024 alongside construction of the station, however above ground OSD works could occur post 2024 after station opening.

It is noted that the SSP Study submitted to DPE in July 2018 by UrbanGrowth NSW for the Metro Quarter provided an indicative staging plan for the delivery of the Metro Quarter, as illustrated in Figure 66 below. This plan provides for the station to be delivered as Stage 1A, buildings with a direct interface with the station buildings and significant public domain areas as Stage 1B, and remaining parts of the development provided as Stages 2 and 3.



**Figure 66 – Location of ground floor uses of the Metro Quarter OSD**

Scenario 1 represents Sydney Metro's preferred option, as it would provide for completion of the full integrated station development, and therefore the optimum public benefit, at the earliest date possible (i.e. on or near 2024 when the station is operational). In this scenario, all stages would be delivered by the time Waterloo Station is operational in 2024. However, given that the delivery of the OSD could be influenced by property market forces, scenarios 2 or 3 could also occur, where there is a time lag between the completion of the station component of the integrated station development (station open and operational), and a subsequent development. This is reflected in the indicative staging plan at Figure 66 by clearly identifying the station elements required to enable operation of the Sydney Metro station (i.e. Stage 1A) as distinct from remaining stages within the development. As part of the integrated station development delivery strategy proposed, Sydney Metro would be encouraging Scenario 1 through its contractor, however, if delivery of the full Metro Quarter development is unable to be achieved by station opening, Sydney Metro would be seeking to have a scenario 2/3 option implemented with delivery of Stages 1A and 1B by station opening to provide for an optimal customer



experience whilst delivering parts of the public domain that provide broader community benefit. Depending on the final scenario for delivery and its associated timing, Sydney Metro may seek to provide an interim solution to delivery of public domain and access works under the CSSI Approval to meet the functional requirements, with final end state delivery of elements under the CSSI Approval delivered at the time of construction of the OSD (refer also Section 8.19).

The planning process and indicative timing for the various works streams under Scenario 1 are outlined in Table 11. The final staging for the delivery and subdivision of the OSD would be resolved as part of the detailed SSD Application(s).

**Table 11 – Preferred staging and indicative timing**

Works stream	Planning process	Indicative timing
Waterloo demolition works	CSSI Approval (CSSI_7400)	2017-2018
Waterloo tunnel and excavation works	CSSI_7400	2018-2020
Waterloo Station fit-out works (below and above ground, including building grids, column loading, building infrastructure and services to enable the construction of future OSD)	CSSI_7400 Interchange Access Plan (required under CSSI_7400)	2020-2023 – prior to the commencement of works
Metro Quarter OSD works (above station) and works associated with space provisioning within the CSSI Approval footprint (e.g. egress stairs)	Detailed SSD application	2021-2024
Metro testing and commissioning	CSSI_7400	2021-2023
Metro Quarter OSD fit-out works	Development applications / exempt or complying development (if relevant)	2023-2024
Public domain works	CSSI_7400 and detailed SSD Application	Prior to station opening
Access	CSSI_7400 and detailed SSD Application	Prior to station opening
Metro operations commence	CSSI_7400	2024
Interim precinct activation	Exempt development under proposed SEPP Amendment	2024

### 4.13. Excavation

Excavation and bulk earthworks would be required to accommodate the proposed Metro Quarter basement levels. The number of basement levels, and subsequent extent of excavation would be subject to the final car parking provision, to be confirmed during detailed design. Details of the extent and methodology of the earthworks and excavation would be provided as part of the detailed SSD Application(s).

#### 4.14. Infrastructure and services

The services upgrades to the site would be undertaken to service the OSD based on the maximum services demand generated by the concept proposal (i.e. as determined by the land uses and the maximum GFA proposed).

The service reticulation throughout the OSD would be the responsibility of the OSD developer and use of this additional service capacity would form part of the future detailed SSD Application(s). This is discussed in further detail at Chapter 8.15 of the EIS. It is however noted however that stormwater and sewer for the buildings located directly over the station boxes may be delivered as part of the CSSI works to provide both integration and efficiencies in delivery.

Also refer to the Utilities and Infrastructure Servicing Report at Appendix P.

#### 4.15. Ecologically sustainable development strategy

An ESD Report (Appendix S) has been prepared to set out an ESD framework to guide the future detailed SSD Application(s) for OSD. The report identifies minimum ESD requirements and world best practice sustainability opportunities for future OSD.

The *Sydney Metro City & Southwest Sustainability Strategy* has identified that all relevant buildings are to seek to achieve high benchmarks using rating systems. Sydney Metro is seeking to ensure that the future detailed design achieves appropriate high environmental ratings for each relevant land use component of the future OSD. The ESD Report sets out options in detailed design that are capable of supporting the attainment of these targets. The proposal also includes the ability for a residential component to achieve compliance with the requirements of *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004* (SEPP (BASIX)).

**Table 12 – Outline of sustainability targets**

ESD Category	Commercial Office	Apartment
Energy/Greenhouse	NABERS 5.0 Star	BASIX
Water	NABERS 3.0 Star	BASIX
Management	6 star Green Star communities rating 5 star Green Star buildings rating	6 star Green Star communities rating 5 star Green Star buildings rating
Indoor Environment		
Material		
Transport		
Land Use and Ecology		
Emissions		
Innovation		

## 4.16. Economic development, retail and local services

In order to provide an analysis of the various land uses options at the site, an Economic Development, Local and Retail Services study for the Metro Quarter has been undertaken (Appendix AA). The assessment takes into account the opportunities and constraints imposed by the OSD, its integration with the station, and retail and service needs within the local trade area. This includes an assessment of the potential for retail and office uses, and community services to be contained at the site.

It has been determined through this assessment that a mixed use scheme would be best suited given the site's characteristics, with residential, retail, office, and community uses all being suitable in the context of the site.

## 4.17. Public art plan

A Public Art Plan has been prepared as part of the Waterloo Metro Quarter SSP Study to ensure the delivery of public art and associated activation as part of the OSD project. The plan sets a platform to activate the site, and give creative voices to the local community, its artists and diverse audiences as part of the future redevelopment of the site.

The Public Art Plan outlines the principles, objectives and opportunities for the future delivery of public art and place activation. The plan also broadly identifies the types of public art and activation activities that should be considered for the site. These include:

- permanent artwork
- ephemeral artworks
- performance artworks
- integrated and embedded artworks
- community events
- cultural activities and programs
- live entertainment / street performances.

A methodology for the selection, commission and the delivery of public art has also been outlined that would inform a detailed Public Art Plan to support subsequent SSD Application(s) for the OSD.

The CSSI Approval included Design Guidelines to guide the detailed design of the Sydney Metro City & Southwest project. Section 3.2.5 of the Design Guidelines set out guidelines for the delivery of public art under the CSSI Approval. Sydney Metro has subsequently developed a Public Art Strategy for that part of the integrated station development that falls under the CSSI Approval, which provides the framework for procuring artists and delivering public art as part of the Sydney Metro City & Southwest project. The detailed planning and design of public art to support the OSD part of the Metro Quarter would need to be coordinated with the planning and delivery of public art under the CSSI Approval.

It is anticipated that art locations within the Metro Quarter integrated station development would be coordinated with high movement corridors, sight lines and key entry and activation areas. Final locations would be developed in collaboration with Sydney Metro and the Public Artists, with details of public art for the OSD provided as part of the detailed SSD Application(s).

#### **4.18. Signage**

Signage, including building and business identification signage, associated with the residential, retail and commercial components of the Metro Quarter, is proposed as part of this concept SSD Application. The type, location and size, informed by a comprehensive signage strategy, would be provided as part of the future detailed SSD Application(s).

#### **4.19. Mechanical services**

The OSD building envelopes include space provisioning for the mechanical plant required to service the future OSD. These spaces are separate from the station plant/mechanical services requirements. The final location and design of the mechanical plant for the OSD including the external façade treatment would be refined as part of the detailed SSD Application.

The indicative OSD design includes plant zones for the OSD at Levels 29, 25 and 23, demonstrating one example of how plant could form part of a future design at the site. The Architectural drawings of the indicative design (Appendix D) provide further detail of potential plant areas.

#### **4.20. Subdivision**

The CSSI Approval included approval of subdivision of the station and the airspace for the future OSD. This is currently proposed to occur on or prior to the station date of completion in 2024.

This concept proposal seeks approval for further subdivision of the OSD lot, if required, once the subdivision requirements of the CSSI project are known. This may include subdivision of the OSD lot to create separate OSD lots. Details in relation to the subdivision of the OSD lot would be submitted with the future detailed SSD Application. At a minimum, strata subdivision of buildings is anticipated as part of detailed Development Applications.

## 5.0 Stakeholder and community engagement

Community consultation and stakeholder engagement have played a key role in the preparation of this concept SSD Application. This chapter provides a description of who has been consulted, how the consultation was carried out, the issues raised and how those issues have been addressed in the design resolution of the concept proposal.

### 5.1. Secretary's Environmental Assessment Requirements

The SEARs for this application include the following requirements in relation to consultation:

*“During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers and community groups. In particular, you must consult with:*

- *Government Architect of NSW*
- *Roads and Maritime Services*
- *City of Sydney*
- *Heritage Council NSW*
- *Sydney Airport Corporation Limited and the Civil Aviation Safety Authority*
- *NSW Police*
- *Sydney Coordination Office*
- *Fire and Rescue NSW*
- *State Emergency Services*
- *Surrounding residents, businesses and local community groups*

*The EIS must include a report describing pre-submission consultation undertaken, including a record of the stakeholders consulted, the issues raised during the consultation and how the proposal responds to those issues. Where amendments have not been made to address an issue, a short explanation should be provided.”*

The Pre-submission Consultation Report (Appendix L) provides a detailed explanation of the stakeholder and community engagement activities undertaken prior to the lodgement of the concept SSD Application. This includes a description of the pre-submission consultation process, the issues raised by each consulted party and how the Metro Quarter OSD has been amended to respond to those issues. If the Metro Quarter OSD has not been amended regarding a certain comment, justification has been provided to this respect.

### 5.2. Consultation with Community

Stakeholder and community consultation for Sydney Metro is an ongoing process that commenced with the release of *Sydney's Rail Future* in 2012. Consultation undertaken since June 2014 for the Sydney

Metro City & Southwest project has played an important role in informing and scoping the design of the project.

The concept of integrated station development was formally announced to the community in November 2017 and a range of early engagement activities were undertaken prior to lodgement of this concept SSD Application to engage with industry, the local community and stakeholders about integrated station development at Waterloo Station. The consultation aimed to keep the community informed and to provide opportunities for feedback. In addition, UrbanGrowth NSW and LAHC have undertaken significant levels of consultation during the development of the SSP Study and the indicative concept proposal for the Metro Quarter.

The level of consultation undertaken prior to the lodgement of this concept SSD Application by Sydney Metro in conjunction with UrbanGrowth NSW and LAHC satisfies, if not exceeds, the minimum requirements as set out in DPE's *Major Project Community Consultation Guidelines* (October 2017) and the SEARs (Appendix A).

### **5.2.1. Consultation during development of Sydney Metro City & Southwest**

Consultation for Sydney Metro City & Southwest relating to Waterloo Station prior to the announcement of integrated station development has included:

- early stakeholder consultation between June 2014 and June 2015
- project scope consultation following the announcement of Sydney Metro City & Southwest in June and July 2015, and design development for Sydney Metro City & Southwest
- Consultation during preparation and exhibition of the EIS for the Sydney Metro City & Southwest Chatswood to Sydenham project (CSSI EIS), between June 2015 and June 2016. The CSSI EIS and its summary document both outlined multiple stations, including Waterloo Station, which had been identified for potential property development including above and associated with, the proposed metro stations. The CSSI EIS also outlined the planning approvals process for OSD
- consultation with industry in June and December 2015 and on 1 September 2016
- engagement following the project update announcement in November 2015

### **5.2.2. Early engagement and community visioning at Waterloo**

Between 2014 and 2017 ongoing community engagement was undertaken by UrbanGrowth NSW and the LAHC about the Central to Eveleigh corridor, and the Waterloo masterplan. Place making insights from these engagements have helped to shape the concept proposal for the Metro Quarter. More than 500 people participated in face-to-face activities including:

- community workshops and briefings
- a community panel
- interviews
- study nights
- online feedback

- market stall
- doorknocking
- a business breakfast
- key stakeholder information sessions.

The preferred plan was informed by the visioning engagement held by LAHC in late 2017. During LAHC's visioning engagement process, more than 1,570 people provided feedback across more than 40 consultation events. Through that engagement process, UrbanGrowth NSW received feedback that the Metro Quarter should provide a range of shops and services, including affordable fresh food, spaces for health and wellbeing, a community facility, and a mix of social and affordable housing.

### 5.3. Consultation during preparation of this SSD Application

The following community engagement was undertaken specifically in relation to OSD at Waterloo Station.

#### Industry engagement

Sydney Metro has held seven industry briefings since 2015 with over three thousand attendees in total. An industry briefing was held in April 2018 in Sydney providing detailed information on integrated station development and early consultation. This event was attended by over 600 representatives from Australian and international firms. Attendees to the sessions were invited via:

- Sydney Metro website
- Advertisements in The Australian newspaper
- Direct invitations

The briefing provided the industry with information on:

- Integrated station development including at Waterloo Station
- Progress with the development of Sydney Metro City & Southwest
- Details of the updated project delivery strategy
- Timing of next steps, including upcoming procurement processes

Attendees received a copy of a booklet titled *Sydney Metro City & Southwest Industry Briefing* (April 2018) which is also published on the Sydney Metro website. Sydney Metro will continue to engage with the industry in the development of the wider Sydney Metro project.

#### Community engagement

During the most recent engagement in May and June 2018, Sydney Metro and UrbanGrowth NSW conducted early engagement to seek feedback on the Metro Quarter proposal. This occurred at the same time that the formal planning process commenced with the request for the SEARs from DPE.

#### Engagement Approach

The community engagement process for the Metro Quarter aimed to:

- Provide accurate information about the SEARs lodgement and the concept proposal and the overall vision for the Metro Quarter.
- Invite feedback through a range of channels, to inform the ongoing design and planning.
- Inform the finalisation of the proposed concept plan and the preparation of the concept SSD Application for lodgement.
- Collate feedback and prepare a summary of consultation outcomes, to be made available to DPE and the general public.
- To ensure a meaningful and informative process of communication to the community was provided through a variety of channels. This included:
  - Written feedback (via surveys) was available by mail, online and at all engagement activities and at local organisations, including Waterloo Connect and Counterpoint Community Services. All information material and feedback forms were translated in to the main community languages on the Estate, being Russian and Chinese.
  - A dedicated email address.
  - A 1800 hotline.
  - Social media.
  - Face-to-face discussion at engagement activities.
  - Notes of briefings.

### **Engagement Activities**

The engagement activities were held jointly between Sydney Metro and UrbanGrowth NSW, with the support of LAHC. The activities were designed to respond to the different needs and interest of the communities impacted by the project.

The target audience included local residents, private and social housing tenants, Russian and Chinese speaking communities, Aboriginal people, business owners, local organisations, service providers, and covered a wide range of people by age, background and interest in the project.

Early community engagement followed the industry briefing between 30 May and 20 June 2018. The community were invited to participate in early engagement via the following communication methods, as detailed in the Pre-submission Consultation Report at Appendix L:

- A flyer promoting the engagement events letterbox dropped to 14,000 homes and businesses in the Waterloo area advertising of the community information Sessions. The flyer was also made available at Waterloo Connect and Waterloo Library.
- Advertisements promoting the engagement events in the Sydney Courier (23 May 2018) and the Inner West Courier (24 May 2018).
- Two drop-in community information and feedback sessions which were attended by all stakeholders, including relevant target groups comprising housing tenants, tenants with complex needs, Aboriginal and Torres Strait Islander communities, linguistically and culturally diverse communities, neighbouring residents, landowners, workers and students, local businesses, local community organisations and local service providers through appropriate, independent, safe and culturally respectful channels.



- One community information and feedback session on the Waterloo Estate, promoted to all stakeholders.
- Seven targeted information and feedback sessions: Attended by members of the Aboriginal community, Russian and Chinese-language groups who live on the Estate, as well as non-government organisations and service providers who operate in the Waterloo area, such as:
  - Groundswell: Coalition of local organisations including Inner Sydney Voice and REDWatch, Counterpoint, Redfern Legal Centre, Shelter NSW and the Tenant’s Union
  - REDWatch: resident, business and community organisation representatives the suburbs of Redfern Eveleigh Darlington and Waterloo
  - Alexandria Residents Action Group (ARAG)
  - Waterloo Redevelopment Group: comprises representatives of residents of the Waterloo Estate, local resident groups and service providers. The group was formed under the Waterloo Neighbourhood Advisory Board to provide advice to LAHC on engagement for the Estate renewal.

The community information sessions were attended by a total of 188 community members. They were invited to provide feedback on the concept proposal for the Metro Quarter and to meet expert members of the project team. Information material available to the community at the session is provided in the Pre-submission Consultation Report at Appendix L and included the following:

- Waterloo Metro Quarter Integrated Station Development booklet
- Newsletter
- Sydney Metro Chatswood to Sydenham EIS summary
- Information display boards

The above information was also made available on the project website.

### **Stakeholder consultation**

Sydney Metro, in conjunction with UrbanGrowth NSW engaged with the following stakeholders to brief them on the proposal:

- Greater Sydney Commission
- City of Sydney
- Government Architect of NSW
- Heritage Council NSW
- Sydney Airport Corporation Limited and the Civil Aviation Safety Authority
- NSW Police, Fire and Rescue NSW, State Emergency Services
- Transport for NSW’s Sydney Coordination Office
- Transport for NSW’s Design Review Panel
- Roads and Maritime Services

- Sydney Airport Corporation Limited and the Civil Aviation Safety Authority
- Ausgrid
- Sydney Water
- Jemena
- Department of Planning and Environment

### Community contact and information points

The table below outlines community contact and information points in use for the project.

**Table 13 – Community contact and information points**

Activity	Detail
Community information line (toll free)	1800 171 386
Community email address	sydneymetro@transport.nsw.gov.au
Website	www.sydney metro.info
Postal address	Sydney Metro City & Southwest, PO Box K659, Haymarket, NSW 1240
Transport for NSW community information centre	388 George Street, Sydney

### Place Managers

Sydney Metro has engaged Place Managers to build relationships and act as a feedback mechanism to help ensure community and stakeholder aspirations are consistently considered in the planning process. Their role is to be a direct point of contact between members of the community and the project team and they play a vital role in maintaining close and ongoing contact with local communities and stakeholders during the design and delivery of the wider Sydney Metro project.

Place Managers have been engaging with neighbouring residents, tenants and businesses (by phone, email, newsletter or doorknock) around the Waterloo Station site to ensure they are aware of the project, invite them to community information sessions and stalls and inform them about the project to date.

### 5.3.1. Summary of community feedback

Feedback was received via feedback forms at the community information sessions, through the Sydney Metro project email address or via established relationships with Place Managers. The issues and design responses are outlined in the table below.

**Table 14 – Stakeholder feedback summary - community**

Community Feedback	Response by Sydney Metro and UrbanGrowth NSW
<b>Culture, Community Life and Safety</b>	
<ul style="list-style-type: none"> <li>• Support for the creation of a new transport hub and village centre.</li> <li>• Support for a cultural space that is accessible to, and brings together, existing and new residents.</li> <li>• A small-scale library, a gallery, and an entertainment centre that celebrates the different cultures in the area.</li> <li>• An Aboriginal art shop that displays Aboriginal art and history.</li> </ul>	<p>The preferred plan includes a range of uses at the Metro Quarter including:</p> <p>Approximately 700 new homes, including 70 social housing dwellings and 5-10 percent affordable housing.</p> <p>8,645 square metres of floor space (including at least 2,000 square metres for community uses) that could be used for a range of commercial, shared office, health services and other uses, providing jobs close to home.</p> <p>3,905 square metres of ground level retail space, which could include a small-scale supermarket, pharmacy, cafes or a number of speciality shops or entertainment facilities</p> <p>Enhanced and active public domain spaces consistent with the site's role as a new village centre and transport hub.</p>
<ul style="list-style-type: none"> <li>• The metro station to be well-lit and for better street lighting around the station.</li> <li>• Safety is a key consideration.</li> <li>• Support for design that prioritises community safety, including the inclusion of CCTV and easy access for emergency vehicles, as well as an increased Police presence.</li> </ul>	<p>Through the design and planning phase of the Metro Quarter integrated station development, CPTED principles have been incorporated, including, lighting in and around the station, providing natural surveillance and a smart urban design approach (people can see and be seen) would provide a sense of security. The installation of new, wide footpaths through the site, lower speed limits for local roads and new street crossings at Raglan and Wellington Streets prioritise pedestrians and their safety. The metro station will have safety features such as video help points on platforms, CCTV cameras and customer service assistants moving throughout the network.</p>
<b>Transport, Streets and Connections</b>	
<ul style="list-style-type: none"> <li>• Pressure on existing public transport.</li> <li>• A need for an integrated transport strategy approach.</li> <li>• A more affordable transport and frequent transport connections to the rest of Sydney.</li> <li>• Separation of paths for cyclists and pedestrians in the proposal.</li> <li>• A free shuttle bus to service the local area and the estate.</li> </ul>	<p><i>Future Transport 2056</i>, the transport plan for Greater Sydney, has identified the need for improved connectivity and public transport options from and to the Green Square area. Further investigations will take place on how best to meet this and support the growth of the Eastern City (Sydney City) including the areas around Green Square and Waterloo. A range of multi-modal options will be considered to improve connectivity from Green Square and Waterloo to the public transport network.</p>

Roads and Maritime Services is also investigating intersection improvements to reduce travel time, improve connectivity and support urban renewal on the southern outskirts of the CBD.

The Metro Quarter would facilitate a pedestrian priority approach with slower traffic speeds on roadways, local and district bike routes and facilities, and improved walkability.

### Walkability and pedestrian safety

- Pedestrian safety along Botany Road and the Botany Road and Raglan Street intersection.
- Queries as to whether a pedestrian tunnel under Botany Road is being considered.
- Support for the inclusion of “slow streets” in the streets surrounding the Waterloo Metro Quarter.
- Ideas for further reduction of speed limits around the Metro Quarter.

The Metro Quarter OSD is being built over and adjacent to a new metro railway station and would prioritise the use of public transport, walking and cycling.

New, wider footpaths would be provided through the Metro Quarter, including increasing the footpath width of Botany Road from 3.5 metres to at least 6.0 metres, and up to 10 metres in heavily trafficked section next to the bus stop. The footpath/setback on the southern side of Raglan Street would be 15 metres wide for a large portion of the building length.

Lower speed limits would be provided on local roads and new street crossings at Raglan and Wellington Streets have been designed to prioritise pedestrians and their safety. In particular, the section of Cope Street between Raglan and Wellington Streets would be redesigned as a 20km/hour ‘slow street’.

Preliminary analysis undertaken as part of the development of the IAP (under the CSSI Approval) and this application indicates that pedestrian queueing at the Botany Road, Henderson Road and Raglan Street intersection can be accommodated within the proposed setbacks. The analysis has also shown that traffic generated due to the Metro Quarter is anticipated to be low.

A below ground crossing for Botany Road was investigated and found to not be required.

Further investigations will be undertaken as the design evolves to ensure that the pedestrian movements around and through the site are planned effectively.

### Access

- Support for the fully accessible metro station, which has lifts, escalators and roll on roll off platforms.
- Comments regarding additional access and egress points to and from the metro station.

All Sydney Metro stations are fully accessible with lifts and level access between the trains and the platforms. Metro trains have three double doors per carriage for faster loading and unloading and platform screen doors will keep people and objects away from the tracks.

The metro station will have entry points at the corner of Raglan and Cope Street, and from the public plaza.

The gradients of ramps and footpaths across the precinct to the metro station will comply with the relevant requirements under the *Disability Discrimination Act 1992*, relevant Australian Standards and *Disability (Access to Premises – Buildings) Standards 2010*.

### Traffic and parking

- Increase in traffic congestion in local and regional streets.
- Pressure on local streets and parking.
- More parking spaces to be allocated.
- Provision of disabled parking and carers parking for residents.
- Provision of parking for emergency vehicles, motorcycle parking, car share and more loading zones and taxi or Uber pick-up areas.
- Queries about the type of cycling facilities that will be provided.

The Metro Quarter provides an opportunity to demonstrate how transit orientated development can lower car ownership rates in the longer term.

The Metro Quarter is aligned with the CoS Category A and D parking rates, being the most restrictive rates, to further encourage the use of public and active transport.

Accessible parking will be provided in accordance with relevant requirements under Australian Standards.

Traffic modelling has shown that the traffic generation of the concept proposal would not have a significant impact on the surrounding road network.

The CoS limits both the amount of on-site parking and access to street parking. Under existing NSW regulations, new residential flat buildings are not eligible for resident, visitor or business parking permits.

Motorcycle and service vehicle parking will be provided in accordance with the relevant rates. There will be a new taxi rank provided on Raglan Street and kiss-and-ride parking provided on Cope Street as part of the CSSI Approval.

The concept proposal provides road frontage to all areas of the Metro Quarter site. Access for emergency vehicles has therefore not been precluded and will be considered as part of the detailed design.

### Housing and Neighbourhood Design

- Concerns about the height and scale of proposed buildings.
- Concern about the potential for overshadowing.
- Concern about the potential for overcrowding.
- Queries as to how was the proposed 700 apartments figure reached,
- Calls to ensure the design of buildings allows for adequate solar access and sightlines.

The proposed building envelopes have been developed through a thorough urban design process to determine the proposed building heights, envelopes and GFA controls for the development.

Depending on the final apartment mix to be outlined in future detailed SSD Applications, it is anticipated that the number of apartments would be approximately 700 based upon the proposed building envelopes.

The proposal seeks to balance community impacts, while still maximising community benefits, and allows for the inclusion of up to 70 social housing dwellings and 5-10 percent affordable housing.

For context, the two taller buildings on the neighbouring social housing estate are both 29 storeys. The heights of proposed buildings above podium level are similar to those

	<p>at nearby centres such as Redfern, Zetland, Moore Park and Green Square Town Centre. They are also consistent with housing proposed for other metro stations in Sydney, including Victoria Cross and at existing rail stations, including St Leonards.</p> <p>The building separation of buildings would be consistent with the ADG, to provide sufficient space between each building and minimise overshadowing and privacy to adjoining dwellings and surrounding public open space.</p>
<ul style="list-style-type: none"> <li>• Desire for a higher percentage of affordable and social housing than proposed in the plan.</li> <li>• Queries as to the staging of delivery of social housing and whether existing social housing estate residents would be able to relocate to the Metro Quarter.</li> </ul>	<p>The proposal allows for the potential to deliver approximately 700 dwellings, including 5 to 10 percent affordable housing and 70 social housing dwellings. The exact number of social and affordable housing apartments will be subject to detailed design.</p> <p>The CoS <i>Sustainable Sydney 2030 Housing Strategy</i> sets a target of 7.5 percent affordable housing for new development by 2030. The Greater Sydney Commission's <i>Sydney Region Plan</i> recommends an affordable housing target of 5-10 percent for new development.</p>

**Community Facilities, Services and Shops**

<ul style="list-style-type: none"> <li>• A desire for more open space at the Metro Quarter.</li> <li>• A desire for a shared cultural facility</li> <li>• Desires for a shop run by Aboriginal people, selling items made by communities.</li> <li>• A desire for the community facility to house a small library.</li> <li>• Plaza to provide plenty of seatings with backs. Seating areas to have phone chargers, free Wi-Fi and charge points.</li> <li>• A mix of shops and services, including affordable retail.</li> <li>• A desire for the Metro Quarter to include a supermarket, cafes, arts space, a health food shop, a pharmacy, a childcare facility, post office, banks and ATMs, medical and dental centre, outdoor gyms, hairdressing salon, fruit and vegetable markets, and an Asian grocery store.</li> </ul>	<p>The Metro Quarter would be integrated with the new Waterloo Station and would deliver new homes, including social and affordable housing, a mix of shops and services, community services, health facilities and a new public plaza. The new metro station will make Waterloo one of the most connected inner-city places to live, work and visit.</p> <p>Concerns about the proposed plan to close the Waterloo Library were expressed, however, the CoS has recently made the decision to maintain the Waterloo Library in recognition of the cultural significance and diversity of services that it offers to the community.</p> <p>Further statutory engagement will be undertaken on detail design through future SSD Application(s) when the Metro Quarter moves to design and construction.</p>
<ul style="list-style-type: none"> <li>• Community involvement in the planning for human services across the Waterloo Metro Quarter and social housing estate.</li> </ul>	<p>Human services planning will feed into the potential use of future community facilities located on both the Waterloo Estate and the Metro Quarter. While plans for the Metro Quarter will be lodged ahead of the social housing estate, work will still continue to ensure government and non-government agencies continue to be engaged in the delivery of the services needed in the short, medium and longer term.</p>

### Environment and Open Space

- Public space to be bigger.
- Include native trees and flora.
- Provide spaces that are dog-friendly.

The Metro Quarter would provide public domain consistent with its role as a new village centre and transport hub, as well as communal open space for residents' enjoyment. This provision is in line with the benchmarks for urban renewal areas set in the City of Sydney's *Open Space, Sports and Recreation Needs Study 2016* and the ADG. Street furniture would be included in the public plazas and streetscapes. Street tree planting would support the CoS *Urban Forest Strategy*.

The program for the open space in the area would support uses and programming for the whole community, including dog-friendly public domain areas.

Further statutory engagement will be undertaken on detail design through future SSD Application(s).

### 5.3.2. City of Sydney Council

Regular consultation has been undertaken by both Sydney Metro and UrbanGrowth NSW with CoS in relation to the CSSI project, the development of the indicative concept proposal to support the SSP and concept SSD Application processes (refer also Project Review Panel (PRP) discussion at 5.3.5 below) and the integration of both elements. Sydney Metro led meetings have generally been conducted on a fortnightly basis to co-ordinate design development, the preparation of both the IAP and the SDPP, and to discuss construction related issues arising from early works at the site. In addition to these recurring meetings, targeted meetings have also been held specifically to discuss Metro Quarter specific issues. Key issues identified during this consultation and the responses are summarised in **Table 11**.

**Table 15 – Stakeholder feedback summary – City of Sydney Council**

Issue	Response
<b>City of Sydney Council</b>	
Delivery between UGNSW and Sydney Metro, who delivers what aspects of public domain	Areas of responsibility for public domain between Sydney Metro and UGNSW were presented to CoS on 28 August 2018. Queries raised from CoS were responded to in a follow up meeting held on 11 September 2018, and are generally reflected in Section 4.10 of this EIS.
High Voltage (HV) cable position on Cope Street and impact on tree plantings	HV cable positioning in Cope Street is part of the Waterloo Station works which falls under the CSSI Approval. Workshop with CoS was held on 20 September 2018 to discuss options to be considered in the next design stage for the station works. No issues were raised on Botany Road with regard to trees and services coordination.

Pedestrian level of service for operations. Council would like to see modelling to ensure footpaths, signalling are adequate to meet demand	Waterloo Interchange Planning Technical Note was presented to CoS Officers on 11 September 2018 addressing queries raised by CoS on the level of service of pedestrian movements and queueing areas. It is noted that these issues relate to the CSSI Approval, however a technical note on the matter was also presented to DPE and CoS and submitted to DPE as part of the Metro Quarter SSP Study.
Concerns regarding building form including pedestrian weather and wind protection	Concerns on the built form and wind protection have been addressed in the Wind Impact Report. The report provided mitigation measures to be implemented in the detailed design, and will need to be considered in terms of interface with the CSSI Approval and development of the SDPP. A subsequent Wind Impact Assessment will be carried out as part of the detailed SSD Application.

### 5.3.3. Transport for NSW/Roads Maritime Services/Sydney Coordination Office

Meetings with the Roads and Maritime Services and Sydney Coordination Office in relation to the concept proposal have been undertaken throughout 2018. The primary focus of the meetings has been to brief on the work undertaken by UrbanGrowth NSW in relation to the Metro Quarter SSP, outline the updated planning approvals strategy for the site, provide updates on the development of the IAP (under the CSSI Approval) and its relationship with the concept proposal, and understand issues relevant for consideration as part of the SSD Application. Key issues raised during this consultation and the responses are summarised in Table 12.

**Table 16 – Stakeholder feedback summary – Transport for NSW/Roads Maritime Services/Sydney Coordination Office**

Issue	Response
<b>Transport for NSW / RMS / Sydney Coordination Office</b>	
The loading and servicing needs of the station and OSD development needs to be addressed so impacts on the road network and surrounding streets are minimised	Meetings with key transport agencies are ongoing. Loading and servicing strategies are discussed in the EIS at 8.10.7.
The relationship of the development to kerbside uses and transport facilities	Meetings with key transport agencies are ongoing. Kerbside uses and transport facilities are discussed at Appendix 8.10.
Need to manage access points from Botany Road and their relationship with the bus interchange	Meetings with key transport agencies are ongoing. Access is discussed at Appendix 8.10.8.



### 5.3.4. Design Review Panel

The Sydney Metro Design Review Panel (DRP) is an advisory body that is chaired by the NSW Government Architect. The objectives of the DRP are to provide independent, high-level design advice, ensure quality design outcomes and support the delivery of the Sydney Metro program. With respect to OSD, the primary role of the DRP is to review, critique and advise on the application of design objectives to key design elements, including such themes as place making, activation, architecture, heritage, urban design, landscape design and artistic elements and more specifically, to review the OSD designs to facilitate the achievement of design excellence.

Consultation with the DRP in relation to the concept proposal for the Waterloo Metro Quarter has been ongoing. The project team has presented to the DRP throughout the design development and has taken their comments on board in the concept design, as demonstrated in Appendix L of this EIS.

**Table 17 – Stakeholder feedback summary – DRP**

Feedback	Response
<p><b>Sydney Metro Design Review Panel</b></p>	
<p>The panel notes that Sydney Metro is continuing to work with UrbanGrowth NSW to develop benchmarks and prepare procurement documentation.</p> <p>The Panel notes that the development above Waterloo Station is being delivered by UrbanGrowth NSW and may have more flexibility for alternative design processes than other Sydney Metro integrated station development sites.</p> <p>However, it is recognised that the development at Waterloo is subject the same limitations as other integrated station development sites in terms of integration of the development with the station and metro infrastructure with the consequent limitations on the potential to undertake a design competition</p> <p>The Panel encourages Sydney Metro to consider strategies to ensure the outcomes at Waterloo achieve design excellence. The Panel would like to continue to work with Sydney Metro on the proposed approach.</p>	<p>Sydney Metro noted the Panel’s ongoing interest in design excellence processes and outcomes.</p> <p>A design excellence strategy has been prepared to establish a consistent framework for how Sydney Metro will deliver design excellence to all its integrated station developments. Fundamental to the strategy is the establishment of Design Excellence Evaluation Panels that will provide objective and independent advice and review of design submissions (refer to Chapter 4.9.2 of the EIS).</p>
<p>The Panel encourages the involvement of a diversity of design practices, a good understanding of the design objectives and principles and the nomination of benchmark projects. Further development of the benchmarking principles and</p>	

Feedback	Response
<b>Sydney Metro Design Review Panel</b>	
<p>precedents is recommended for the plaza and community building to ensure precedents have relevance to site, scale and context.</p>	
<p>Support for elemental continuity between stations with the use of a locally inspired material at different station locations but cautions against being too prescriptive.</p> <p>The Panel expects the design teams to present a strong rationale for material selection and placement.</p>	<p>Sydney Metro investigated alternative finishes for the station claddings to be more specific and contextual to the Waterloo precinct.</p>
<p>Feedback about opportunities to draw from the Sydney Metro Northwest stations for examples of the successful use of skylights in the public domain.</p>	<p>Sydney Metro benchmarked the Northwest skylights in their detail design of the proposed station skylights in the community plaza.</p>
<p>Comments about the rationale behind the triangular plaza configuration opposite the station entrance. Concerns about potential CPTED issues due to lack of activation.</p>	<p>UrbanGrowth NSW developed a set of principles on the proposed community centre and plaza, including providing surrounding retail uses to support activation opposite the station entrance.</p>
<p>Recommendations to explore setbacks of the residential towers to create more space and privacy for tenants.</p>	<p>UrbanGrowth NSW continued to review setbacks of the residential towers to create more open space on top of the podiums, and to address noise, natural ventilation and sunlight requirements.</p>
<p>Comments about lack of housing diversity and advised they would like to see a mixture of lower sale terraces around the edges of the site.</p>	<p>UrbanGrowth NSW explored a diversity of residential typologies for the site.</p>
<p>Advice to review the location, size, and viability of retail for the site, especially on Cope Street.</p>	<p>A retail consultant has reviewed the retail strategy for Metro Quarter.</p>
<p>The Waterloo site cannot be planned in isolation. Needs to relate to wider precinct and be in sync with development to the east.</p>	<p>The Metro Quarter has been developed in collaboration with UrbanGrowth NSW to ensure that the proposal was synchronised with the broader precinct masterplan.</p>
<p>Requests to explore taller residential buildings over the station and requested to explore alternative footprints and heights, including consideration for more than one taller building facing the square.</p>	<p>The station structural design was developed to provide support for up to 10 metre high buildings above the station boxes.</p>
<p>Requests for more information on how servicing works for the station site as well as the surrounding retail.</p>	<p>The Metro Quarter concept proposal has been developed with consideration of servicing of the station and retail including a shared loading dock to be provided at the northern end of the site, with access off Botany Road.</p>

Feedback	Response
<b>Sydney Metro Design Review Panel</b>	
Concerns about overshadowing of the site and potential to limit opportunities for daylight into the station.	Sydney Metro in collaboration with UrbanGrowth NSW worked to maximise solar access to the community plaza, including opportunities for skylights to provide daylight into the station.
Questions about whether opportunities to activate the services spine [in the station entrance] with retail had been considered.	Sydney Metro re-planned the station entrance to include retail for activation of the space and entrance threshold.
The Panel commented that the concept of freeing up the ground plane [of ticket gateline and associated station rooms] is positive, but the station team needs to ensure the design has good visibility, access, activation, be flood resistant and have clear wayfinding.	Sydney Metro in collaboration with UrbanGrowth NSW developed a suite of project objectives for the Metro Quarter, including having a ground plane that is flexible and active.  Access and flooding issues impacting the site have been addressed and will continued to be addressed through the detailed design phase
Comments that the Panel needs to understand the OSD and broader Waterloo precinct outcomes, as this sets the constraints and opportunities for the development of the site.	UrbanGrowth NSW noted that the master planning of the Waterloo SSP was still underway, but agreed to continue engagement with the DRP on the work being undertaken on the Waterloo precinct.
Questions about vehicle access onto the Waterloo site.	Further transport and traffic work was undertaken. Sydney Metro and UrbanGrowth NSW developed a strategy for traffic access onto the site, through engagement with RMS and other key stakeholders.
Comments that curtilage of the Church is important and needs to be respected. Having an access point next to it (creating space) is not a bad outcome.	The concept proposal includes public space and access adjacent to the Church and a setback the Botany Road podium to be in line with the Church frontage.
Questions about whether introducing a public square around the whole of the Church is supported.	The concept proposal investigated options including appropriate public space next to the Church.

### 5.3.5. Project Review Panel (PRP)

As part of the governance arrangements for the SSP, a PRP was established and included representatives from Government Architects Office (chair), DPE, CoS and Transport for NSW. The PRP's scope included both the Waterloo Estate and the Metro Quarter and its role was to review the master planning at critical milestones. Sydney Metro and UrbanGrowth NSW presented to the PRP on the Metro Quarter proposal. The PRP was supported by a Project Working Group (PWG) which met 30 times throughout the development of the concept proposal and SSP Study to work through detailed planning, design and technical matters. The key issues raised by the PRP of relevance to the Metro Quarter SSD Application are summarised in the table below.

**Table 18 – Stakeholder feedback summary – PRP**

Feedback	Response
<b>SSP Project Review Panel (PRP)</b>	
<p>Discussion around the design rationale for the taller buildings, with a particular focus on the northern most building.</p> <p>The panel noted the design of the middle taller building creates the potential for microclimate and overshadowing impacts over the community space. The panel noted that the taller building should not overhang the community space, and avoid overshadowing on the community space and laneways.</p> <p>The building heights and locations should be informed by a clear rationale that considers all factors including overshadowing, amenity, urban transitions to conservation areas, wind impacts etc. rather than just the Procedures for Air Navigation Services Operations (PAN OPS) limitations.</p>	<p>A range of building envelope options has been considered through the development of the concept proposal. These are discussed further in Section 1.6 of this EIS. The preferred option provides for a 29 storey building at the northern most part of the site to act as a destination marker for Waterloo Station. The proposed building heights have been developed with the aim to minimise overshadowing impacts on Alexandria Park and nearby residential areas while capitalising on the significant public transport infrastructure being delivered at the Waterloo Station.</p> <p>The proposed rationale for the taller buildings that form part of the concept proposal is addressed in Section 4.0 of this EIS and the Urban Design and Public Domain Report (Appendix G). This includes analysis of the local character and context, overshadowing, amenity, heritage conservation areas, wind impacts, SEPP 65 Design Verification, Better Placed assessment, together with identifying PAN OPS constraints.</p> <p>The issues raised by the PRP have been worked through as part of the SSP process. This EIS has been prepared seeking approval for the concept proposal. It is supported by relevant technical assessments to address the concept design, and its impacts (refer Section 8.0).</p>
<p>Discussion focusing on setbacks to Botany Road, and potential wind impacts that could arise as a result of setbacks proposed across the site as a result of the proposed built form.</p>	<p>A range of building envelope options has been considered through the development of the indicative concept proposal, upon which the SSD Application is based. These are discussed further in Section 1.6 of this EIS. The preferred option, for which approval is being sought as part of this application, provides for a 2.5 metre setback to the podium along Botany Road, with an additional 2 metre setback to Building D. The taller buildings situated above podium level do not have</p>

Feedback	Response
SSP Project Review Panel (PRP)	<p>an additional setback to that proposed for the podium and Building D. Additional setbacks (6.5 metres) have been provided for along Botany Road in the vicinity of the Waterloo Congregational Church to provide relief and enhance the Church’s visual presence in the public domain.</p> <p>Assessment of the wind impacts associated with the proposed building envelopes (which incorporates consideration of setbacks) has been undertaken in the development of the concept proposal and as part of this EIS. Wind impacts are addressed in Chapter 8.13 and Appendix X. The assessment concludes that with wind amelioration devices, such as impermeable awnings, are to be developed as part of the detailed wind impacts can be mitigated.</p>
Comments about the proposed design excellence competitive design process.	<p>A Design Excellence Strategy has been prepared to establish a consistent framework for how Sydney Metro will deliver design excellence to all its integrated station developments.</p> <p>Fundamental to the strategy is the establishment of Design Excellence Evaluation Panel (DEEP) that will provide objective and independent advice and review of design submissions (refer to Chapter 4.9.2 of the EIS).</p>
Discussion on proposed floor plates of the taller buildings, noting that floor plates less than 800 square metres are supported.	<p>The floorplates of taller buildings in the concept proposal are all less than 800 square metres.</p>
Comments about the importance of considering local context in the urban design analysis. The Panel noted that the proposed development will place greater demand on existing open space, so sun access and amenity to Alexandria Park mid-winter and at the equinox should be preserved.	<p>The proposed rationale for the taller buildings that form part of the concept proposal is addressed in Chapter 4.4 of this EIS and the Urban Design and Public Domain Report (Appendix G). This includes analysis of the local character and context, SEPP 65 Design Verification, Better Placed assessment.</p> <p>A shadow analysis has been prepared as part of the Urban Design and Public Domain Report (Appendix G) and assesses potential shadow impacts on communal open space, neighbouring private properties and Alexandria Park.</p> <p>The issues raised by the PRP have been worked through as part of the SSP process. This EIS has been prepared seeking approval for the concept proposal, and is supported by relevant technical assessments to address the design, and its impacts including sun access and amenity to Alexandria Park (refer Sections 8.2, 8.4 and 8.5 and Appendices C, D, E, G and H).</p>

Feedback	Response
<b>SSP Project Review Panel (PRP)</b>	
<p>Discussions about the potential acoustic constraints on the development from noise on Botany Road. The criteria being applied for noise should be consistent with <i>Development Near Rail Corridors and Busy Roads – Interim Guideline</i>.</p>	<p>Acoustic constraints on the development, particularly from Botany Road noise, have been considered in the development of the concept proposal. An assessment of impacts is provided in Chapter 8.17 and Appendix V of this EIS.</p>
<p>Feedback that that further analysis of the proposed car parking spaces is required. The breakdown and rationale behind the visitor, non-residential, accessible and car share parking should be clearly articulated.</p> <p>Feedback encouraged low rates of car parking, with comments at stages through the process indicating that numbers of retail and visitor car parking spaces are not supported.</p> <p>Recommendations were also made that accessible car parking be available exclusively to adaptable apartments through title arrangements.</p>	<p>The issues raised by the PRP have been worked through as part of the SSP process.</p> <p>The car parking rates proposed through the SSP Study (in the WMQ DCP) reflect CoS lowest car parking rates. This EIS has been prepared seeking concept approval for the Metro Quarter OSD proposal, which incorporates up to 427 car parking spaces, reflective of the rates proposed through the SSP process. Relevant assessments of the design of basement levels where car parking would be located, together with the transport related impacts of the proposal are addressed in Chapter 8.10 and Appendix N of the EIS.</p> <p>Matters related to car parking titling will be investigated through in the detailed design phase.</p>
<p>Comments about the quantity of bicycle parking provided and access to the Bike Hub. Feedback about the need to consider share bike parking locations.</p> <p>Discussion that the quantity and type of parking should be fully justified and future proofed to ensure long term impacts on the public domain are managed.</p> <p>Suggestions that on street bicycle parking should be expanded.</p> <p>Feedback that bicycle parking locations should have line of sight to the Metro entrance so access on Botany Road is not recommended.</p>	<p>The amount of bicycle parking proposed has been significantly increased and is addressed in Chapter 8.10.7 of the EIS. Off-street bicycle parking to support the Metro Quarter OSD would be provided in line with the rates specified under the SDCP 2012 and the WMQ DCP, with final numbers to be confirmed through detailed design and SSD Application(s). This is in addition to bicycle parking requirements under the CSSI Approval.</p> <p>The proposal includes 700 bicycle spaces for residents, 400 spaces in a publicly accessible bike hub with end of trip facilities and 40 spaces at the street level for general public use. This equates to a total of 1,140 bicycle parking spaces (excluding the 180 as part of the CSSI Approval).</p> <p>End of trip facilities, including showers and change rooms, will also be provided in the bike hub in accordance with the SDCP 2012.</p> <p>The bike hub included in the concept proposal will be accessible from the public plaza and will be visible from the metro station entrance. No bicycle parking is proposed along Botany Road.</p>
<p>Comments relating to the current level of metro station design, in particular the height/locations of awnings.</p>	<p>It is noted the feedback relates to the station design, which sits under the CSSI Approval and will continue to be developed.</p>

Feedback	Response
<b>SSP Project Review Panel (PRP)</b>	
<p>The panel noted that the design requires refinement and integration with adjoining development, for example alignment of awnings to ensure consistent adequate weather protection to users of the footpath.</p>	<p>Awnings are proposed for shade and weather protection as part of the OSD and would continue the established pattern of awnings in the surrounding streetscape, in particular Botany Road and Raglan Street. The design of the awnings on the station and podiums will need to be coordinated and is addressed in the design guideline (Appendix X).</p>
<p>Comments relating to the interface of the Metro Quarter with Botany Road.</p> <p>Comments that design should address the interrelationship between the bus interchange, location of trees, awnings, footpaths podium widths, and design of the towers</p>	<p>Larger street setbacks to the podium will be provided along Botany Road in the vicinity of the bus stops to increase the footpath widths. A through site link between Botany Road and Cope Street provides safe and direct access for customers interchanging between metro and bus services.</p>
<p>Outdoor dining on Botany Road needs to be reconsidered given the constrained environment. Larger footpath widths may be required to ensure adequate space for pedestrian movement (including DDA compliant footpath widths), street trees and bus stop provision.</p>	<p>Detailed pedestrian analysis has been undertaken and factors in growth of the surrounding area as well as public transport customers.</p> <p>Figure 53 of the EIS provides an indicative concept layout of the ground level land uses and demonstrates that a variety of retail spaces are envisaged along the Botany Road frontage including larger format retail which could provide for a supermarket, convenience needs and dining. While outdoor dining is not included along Botany Road in the concept proposal, the final detail of these spaces would be provided as part of the future detailed SSD Application.</p>
<p>Preference to allow a green canopy along Botany Road.</p>	<p>There are health, amenity and ecology benefits from increasing tree canopy in urban areas. Discussions with RMS are ongoing in relation to tree planting along Botany Road as part of ongoing development of detailed design.</p>
<p>Comments that pedestrian movement patterns presented appear to only consider movement between metro and bus services. Further investigation is required to consider all pedestrian movements and to ensure safety and amenity of pedestrians</p>	<p>The issues raised by the PRP have been worked through as part of the SSP process. Pedestrian analysis has been undertaken to demonstrate that the through site link and footpath widths are satisfactory to provide for future safety of pedestrians. This includes work undertaken to support the development of the IAP under the terms of the CSSI Approval.</p> <p>This EIS has been prepared seeking approval for the concept proposal, and is supported by relevant technical assessments to address pedestrian impacts (refer Chapter 8.10 and Appendix N).</p>

Feedback	Response
<b>SSP Project Review Panel (PRP)</b>	
<p>Feedback about traffic and transport implications beyond and through the site including bus-to-metro interchange requirements, future design of Botany Road, zero car parking provision for potential residential development and pedestrian movements.</p>	<p>As indicated above, the traffic and transport implications of the site have been addressed through the SSP process, and have included additional information related to the transport interchange function of Waterloo Station, which sits under the CSSI Approval.</p> <p>Transport and parking issues are addressed in Chapter 8.10.8 of the EIS.</p>
<p>Feedback about the quality of public open space, noting that the proposed public space at the “community door” should demonstrate design excellence.</p>	<p>The proposed “community door” has been developed as part of design development of the station, having regard to its interrelationship with the Metro Quarter OSD. The design of the station, including this community door and the immediately adjacent open space (which forms part of Cope Street Plaza) will be subject to Sydney Metro’s design excellence process. DRP feedback on the Waterloo Station design and its relationship with the Metro Quarter OSD design is provided in Chapter 5.3.4 above.</p> <p>The Urban Design and Public Domain Report (Appendix G) includes indicative designs for the plaza spaces. The design excellence strategy proposed as part of the SSD Application (relating to the OSD) includes benchmarks for the plazas that can assist the evaluation of the design proposals.</p>
<p>Comments about station servicing areas including that different servicing locations all have potential conflicts with pedestrians, buses and traffic. Further comments that vehicle entry points should be shared and minimised due to traffic conflicts.</p>	<p>Vehicle entry points have been minimised to reduce potential conflicts with pedestrians and road users. Where possible, service and loading areas are shared by the metro and the integrated station development to reduce number of driveway crossings.</p>
<p>Comments about station structure loadbearing capacity including that the structural design should support soil volumes for canopy tree planting in the station forecourt.</p>	<p>This comment is noted. The station structure and its load-bearing capacity sit under the CSSI Approval, and will subject to ongoing design development. The final outcomes for the station forecourt area would be identified in the SDPP required by Condition E101 of the CSSI Approval. The SDPP is required to be developed in consultation with key stakeholders.</p>
<p>Feedback about the station interface with Cope Street including:</p> <p>Comments on the consideration of level changes for retail frontages.</p> <p>Comments that the design of the proposed plaza must address amenity constraints including levels, connection to street, pedestrian through traffic, sun access, wind, microclimate and noise.</p>	<p>These issues relate largely to the station design under the CSSI Approval, although it is recognises that there are interfaces with the OSD in certain locations, including the Cope Street Plaza. The station and its associated public domain areas will be subject to ongoing design development, with final outcomes identified in the IAP and SDPP required by Conditions E92 and E101 of the CSSI Approval.</p>



Feedback	Response
<b>SSP Project Review Panel (PRP)</b>	
<p>Discussion around the function and amenity of the proposed public plaza given its potential as a major thoroughfare given expected pedestrian flows.</p> <p>Comments that the retail mix may need curating as the staged development occurs.</p>	<p>Pedestrian analysis has been undertaken to inform the development of the IAP, as well as addressing issues raised through the SSP process.</p>
<p>Other matters:</p> <p>The Panel supported the consideration of alternative community-focussed uses for the building within the plaza such as a social enterprise café and community support services, for example: LAHC services, bulk billing health services, government service centre or consolidated bicycle parking and associated services.</p> <p>The Panel supports an appropriately located live music venue or similar use for the site with close attention to acoustic isolation for sensitive receivers.</p>	<p>These comments are noted.</p>

### 5.3.6. NSW Police

Sydney Metro and UrbanGrowth NSW met with NSW Police on 18 September 2018. Details of this consultation are contained in Table 13.

**Table 19 – Stakeholder feedback summary – NSW Police**

Issue	Response
<b>NSW Police</b>	
<p>NSW Police would like consideration of a police station included within the Metro Quarter development situated either above or adjacent to the Waterloo Station, noting the benefits of locating police stations strategically at different points around the Sydney CBD, particularly at public transport nodes.</p>	<p>The provision of a police station within the Metro Quarter would be further considered during the detailed design for the integrated station development, in consultation with NSW Police.</p>
<p>The number of car spaces inside the development was not of concern but limiting parking opportunities on surface streets was vital to discourage people from driving to the metro station. Providing on-street parking restricts other traffic movements and can impact safe emergency response.</p>	<p>On street parking is generally excluded in the streets adjoining the Metro Quarter, with the exception of a point-to-point facilities at the northern end of Cope Street, and a taxi rank on Raglan Street.</p> <p>New residents and businesses of the Metro Quarter would be ineligible for parking permits, in line with the CoS' <i>Neighbourhood Parking Policy</i>. The proximity of the Metro Station and urban context is expected to reduce the need for private vehicle use significantly, limiting parking needs.</p>
<p>NSW Police offered to continue to provide input throughout the planning process for the Waterloo Metro Quarter.</p>	<p>Further discussions with police will take place as part of the detailed design process and detailed SSD Application(s). This will include consideration of 'safer by design' principals to help reduce the opportunity for crimes.</p>

### 5.3.7. NSW Fire and Rescue

Sydney Metro and UrbanGrowth met with NSW Fire and Rescue on 13 September 2018. It was acknowledged that NSW Fire and Rescue will have more detailed advice at the detailed design phase, however details of the meeting are contained in Table 13.

**Table 20 – Stakeholder feedback summary – NSW Fire and Rescue**

Issue	Response
<b>NSW Fire and Rescue</b>	
A fire engineer will be required to prepare a Fire Safety Report as part of the detailed SSD Application.	Noted. A Fire Safety Report will be prepared as part of the detailed SSD Application(s).
The design of the basement arrangement will influence what fire safety measures, such as sprinkler systems, will be required for certain buildings, noting that the definition of a 'building' includes all built form elements connected to a common basement.	Noted. These issues will be considered as part of the detailed design and preparation of the Fire Safety Report for the detailed SSD Application(s).
Consideration should be made as to the street address and description of buildings to ensure emergency services can easily identify call points for emergencies.	Noted. This issue will be considered as part of detailed design and planning for the site in consultation with emergency services.

### 5.3.8. State Emergency Services

Sydney Metro offered to meet with State Emergency Services (SES) during the preliminary consultation process, however, SES did not choose to meet. Further opportunities for consultation will be available during the detailed design SSD Application(s).

### 5.3.9. NSW Ambulance

Sydney Metro offered to meet with NSW Ambulance during the preliminary consultation process. However, NSW Ambulance did not choose to meet. Further opportunities for consultation will be available during the detailed design SSD Application(s).

### 5.3.10. Heritage Council of NSW

Sydney Metro met with a representative from the Office of Environment and Heritage as delegate of the Heritage Council on 18 September 2018 to discuss the proposal and associated heritage impacts on the Waterloo Congregational Church and surrounding heritage items and heritage conservation areas.

Advice was received at that meeting that given there are no items of State significance that would be impacted upon by the proposal, a specific briefing of the Heritage Council prior to lodgement of the application was not required. Given the archaeological work undertaken for the CSSI Approval to date, and the preliminary findings from this work, it was proposed that a more streamlined approach to archaeology be undertaken. Details of this approach are included in the Heritage Impact Assessment (HIA) provided at Appendix Q.

### **5.3.11. Sydney Airport Corporation Limited and the Civil Aviation Safety Authority**

Consultation has been undertaken with Sydney Airport Corporation Limited (SACL) and the Civil Aviation Safety Authority (CASA) as part of the preparation of the Aeronautical Impact Assessment Report (Appendix Y). In addition, Sydney Metro and UrbanGrowth NSW met with SACL on 10 September 2018 to discuss the preparation of the EIS to support the SSD Application. Sydney Metro also offered to meet with CASA, however that offer was not taken up at this time.

SACL confirmed that because the proposed building envelopes would penetrate the OLS, the application is required to be referred (at the appropriate time) to Airservices Australia and CASA for assessment, prior to being sent to the DIRD for a determination (of an application for a height approval) under the *Airports (Protection of Airspace) Regulations*.

### **5.3.12. Utility Services Providers**

Consultation has been undertaken with the key utility services agencies; Ausgrid, Sydney Water and Jemena. The details of this consultation and the status of agreements with these providers are contained in the Utilities and Infrastructure Servicing Report at Appendix P of this EIS.

### **5.3.13. Department of Planning and Environment (DPE)**

Consultation has been ongoing with DPE since the second quarter of 2016. During this consultation, Sydney Metro and/or UrbanGrowth NSW have presented the design development of the concept proposal and outlined key issues raised during stakeholder engagement.

### **5.3.14. Office of the Government Architect**

Office of the Government Architect (OGA) has been consulted on a regular basis on the design development of Waterloo Station, given the Chair of the DRP is from OGA. In addition, a representative of the OGA has been part of the PWG and PRP for the SSP process, which involved the development of the indicative concept proposal which forms the basis of the concept SSD Application.

Sydney Metro has also directly consulted with OGA during the preparation of Sydney Metro's Design Excellence Strategy. The Strategy (Appendix J) has been refined to specifically address the following feedback and key issues raised during this consultation:

- To confirm the commitment to design excellence to showcase inspiring, ambitious and diverse architecture and design that is both globally and locally relevant and resonant
- To increase competition by encouraging the broadest range of participants as possible in the competitive selection process including investigating partnering strategies to reduce the apparent barrier of Authorised Engineering Organisation (AEO) status
- Formalising the use of benchmarks to set minimum performance requirements for tender responses
- Binding the design excellence elements of the selected tender design into the contract documents at execution in order to mandate elements that underpin excellence outcomes

## 5.4. Public Exhibition of the SSD Application

DPE would place this concept SSD Application on public exhibition in accordance with the relevant statutory requirements. During the exhibition period, government agencies, project stakeholders and the community would be able to review the concept SSD Application and make a written submission to the DPE for consideration in its assessment of the application.

Advertisements would be placed in newspapers to advise of the public exhibition, where the concept SSD Application can be viewed and details provided of community consultation activities and information sessions.

During the public exhibition period, Sydney Metro would also undertake further community and stakeholder engagement. Communication materials and activities to assist the community to understand the concept SSD Application and process for making a submission would include:

- SSD Application overview document
- Media releases
- Community information sessions
- Door knocks
- Newsletter letterbox drop
- Project website updates
- Newspaper advertising
- 3D model display at the City of Sydney
- Stakeholder meetings
- Local business engagement
- Government stakeholder engagement

At the completion of the public exhibition period and after reviewing the submissions, Sydney Metro would prepare a Response to Submissions Report and if required, a Preferred Project Report. This report would be made available to the public via both DPE and Sydney Metro websites.

## 5.5. Ongoing Consultation and Engagement

Sydney Metro would continue to work with stakeholders and the community to ensure they are informed about the project and have opportunities to provide feedback to the project team. A list of activities and their timing is provided in Table 21.

**Table 21 – Ongoing consultation and engagement activities**

Activity	Timing	Design	Delivery	Operation
Awareness and marketing campaign to engage future customers	Ongoing	•	•	•
Community events	Ongoing	•	•	
Community information centres	Ongoing	•	•	
Community information sessions	As required	•		
Community communications strategy	Prior to construction	•	•	
Construction complaints management system	Prior to construction	•	•	
Construction notifications	Seven days prior to construction starting		•	
Doorknocks	As required	•	•	•
Email updates	Relevant milestones	•	•	•
Enquiries and complaints hotline	Ongoing	•	•	•
Fact sheets	As required	•	•	•

Activity	Timing	Design	Delivery	Operation
Engagement with stakeholders including government, peak bodies and local businesses	As required; relevant milestones	•	•	•
Media releases	Relevant milestones	•	•	•
Newsletter	Relevant milestones	•	•	•
Newspaper advertising	Relevant milestones	•	•	•
Operation communications plan	Prior to operation			•
Place managers	Ongoing	•	•	
Project briefings and presentations	Relevant milestones	•	•	
Project overview document	Relevant milestones	•	•	
Site signage	Prior to construction		•	
Social media updates	As required; relevant milestones	•	•	•
Website, animations and online forums	Ongoing	•	•	

## 5.6. Next Steps

Sydney Metro would continue to engage with the community about the CSSI Approval and the concept SSD Application, including staging of works and the integrated relationship between the Waterloo Station and the OSD. The community would continue to be provided with opportunities to make enquiries and provide feedback.

## 6.0 Assessment of compliance with strategic plans, policies and guidelines

This chapter assesses the consistency of the proposal with the goals and planning objectives of the strategic land use, urban design and transport plans prepared by the relevant agencies and bodies. This assessment has been designed to align with the SEARs issued for the project (see Appendix A), whilst ensuring that all relevant policies and plans have been addressed as part of this concept SSD Application.

### 6.1. NSW State Priorities

The NSW State Government has identified 18 key priorities under five key categories, with the intention of improving a range of target fields. Categories relevant to the proposed development are addressed below.

#### **Strong budget and economy**

The proposed development would contribute to the strengthening of the NSW economy, by providing for additional investment at a key site in the Sydney metropolitan area. The integration of transport and land use in this manner would also improve the productivity benefits derived from the Sydney Metro project.

#### **Encouraging business investment**

This application comprises a prime opportunity to encourage investment by the private sector to facilitate the delivery of a mixed use building above and adjacent the station box to accommodate a future retail, commercial, community and residential mixed use development. The use of this air space is an innovative move by the NSW Government to facilitate private sector investment in an area which is surplus to the requirements of the future Waterloo Station whilst leveraging government investment for improved urban outcomes.

#### **Increasing housing supply**

Increased housing supply in suitable locations has been identified by the government as being a key solution to the issue of housing affordability, with a target of more than 50,000 dwelling approvals set by the government each year in order to respond to strong housing demand. The Metro Quarter OSD would substantially contribute to this comprising the delivery of approximately 700 dwellings in a suitable location.

#### **Accelerating major project assessment**

The government is aiming to minimise the assessment timeframes for SSD, a designation which applies to this development application. By preparing and submitting a concept SSD Application, Sydney Metro is fulfilling the statutory requirements and ensuring that key environmental issues are identified and assessed prior to detailed design, thereby streamlining the subsequent detailed SSD assessment process. This EIS addresses all relevant identified issues raised under the SEARs, with the intention of minimising, to the maximum extent possible, the required assessment timeframe following submission of the concept SSD Application.



### **Ensure on-time running for public transport**

The OSD at Waterloo would contribute to the long-term improvement of Sydney's public transport system, through appropriate integration with the future Waterloo Station to ensure that the integrated station development operates smoothly, as well as forming an integral part of the wider Sydney Metro project which would significantly cut travel and waiting times.

## **6.2. Premier's Priorities**

The NSW Premier's Priorities represent 12 key policy priorities for the NSW Government, and seek to replace the former NSW 2021 Plan. The priorities outline the NSW Government's vision and objectives for the State's future and are intended to guide all government action.

The priorities are specifically focused on the following key areas:

- creating jobs
- delivering infrastructure
- driving public sector diversity
- improving education results
- improving government services
- improving service levels in hospitals
- keeping our environment clean
- making housing more affordable
- protecting our kids
- reducing domestic violence reoffending
- reducing youth homelessness
- tackling childhood obesity

Further discussion of the development, as relevant to the Premier's Priorities, has been provided below.

### **Creating Jobs**

A key priority for the NSW State Government has been to facilitate the creation 150,000 new jobs in NSW by 2019, with the State Government noting that one in three new jobs in Australia has been created in NSW since 2015. The NSW Government has exceeded its target and is currently considered to be two years ahead of the initial target levels, having passed the 150,000 job creation target in May 2016. However, the NSW Government is continuing to develop key initiatives that assist in the creation of jobs to ensure that NSW achieves ongoing jobs growth to match the significant population growth predicted in the coming years.

The Metro Quarter OSD would work to provide substantial additional employment during the construction phase of the development, with the proposed works resulting in the provision of approximately 214 direct jobs during construction, for the equivalent of one year. The delivery of a

major construction project such as this also relies on a number of indirect inputs, with the indirect jobs creation from the Metro Quarter OSD estimated at 342 jobs.

Additionally, the various employment generating components of the Metro Quarter OSD, including the retail, commercial and community components, would provide estimated capacity for around 400 jobs on an ongoing basis.

Finally, the Metro Quarter OSD would increase residential capacity within the Central to Eveleigh Corridor, which would have a corresponding positive economic impact in the nearby CBD context, as well as Sydney more broadly. An increase in the population of Waterloo would increase activity in the surrounding area, with a particular focus on traditionally 'out of hours' services, such as late-night retail trading, food and drink premises, and local business services such as real estate agents, consumer banking services and the like.

### **Delivering Infrastructure**

Another key priority of the NSW Government has been the delivery of 10 major health and transport infrastructure projects. One of these key projects is Sydney Metro (City and Southwest), which is planned to start operating in 2024, and is key to unlocking additional rail capacity through the Sydney CBD. The Waterloo OSD comprises part of the overall Sydney Metro legacy, being an integrated component of Waterloo Station.

Additionally, it is noted that the Metro Quarter OSD has been designed to ensure that the OSD component of the site would not hinder the ability of Sydney Metro City and Southwest to commence operations in accordance with the NSW Government's timeframe.

## **6.3. Greater Sydney Region Plan 2018**

In March 2018, the Greater Sydney Commission finalised the *Greater Sydney Region Plan*. The Plan presents a strategy for managing growth and change and intends to guide infrastructure delivery over the next 40 years. The plan seeks to reposition Sydney as a metropolis of three cities – the western parkland, central river and eastern harbour cities and sets out key concepts for the future growth of Greater Sydney.

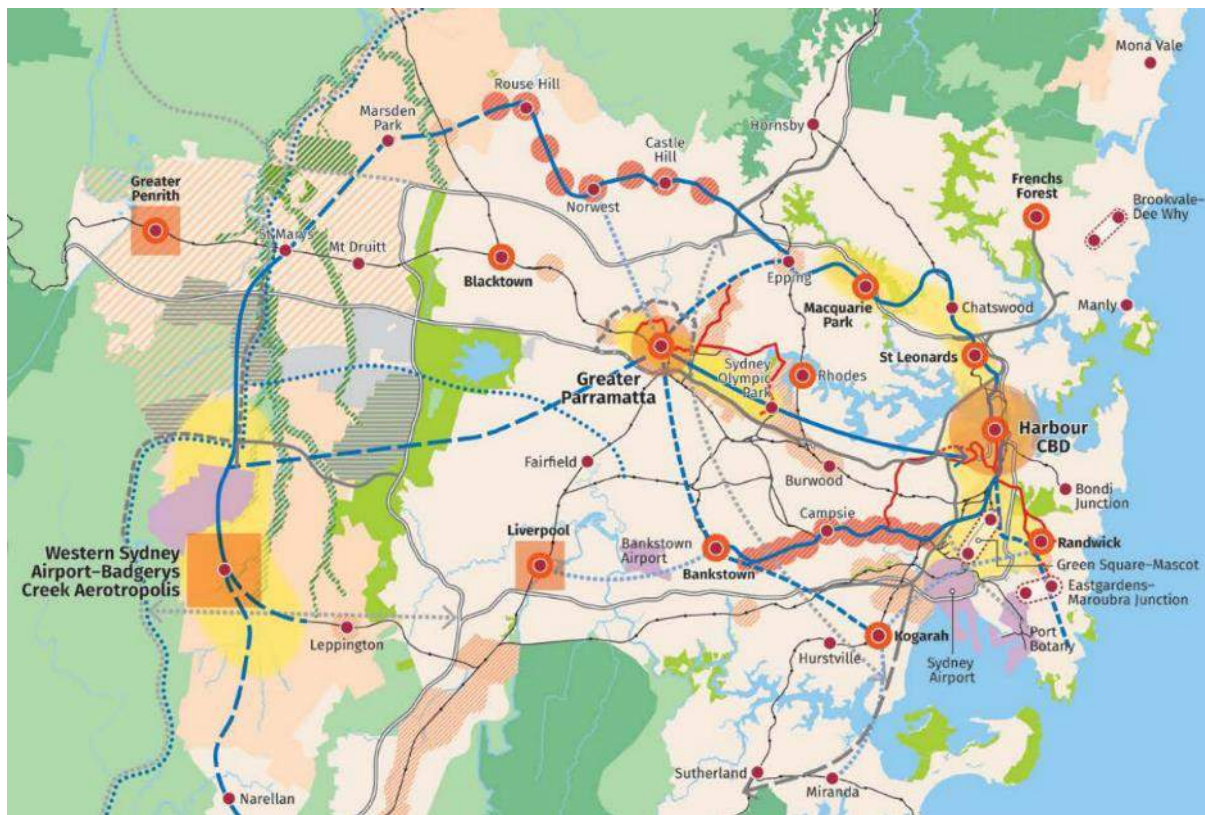


Figure 67 – Greater Sydney Structure 2056 map

The *Greater Sydney Region Plan 2018* structures the future strategic objectives for Sydney around four key themes: infrastructure and collaboration; liveability; productivity; and sustainability. The Metro Quarter OSD is consistent with the aims of the strategy, noting that specific objectives are achieved in accordance with Table 22 below.

**Table 22 – Consistency of the proposed concept against the objectives of A Metropolis of Three Cities**

Direction	Objective	Consistency
<b>A city supported by infrastructure</b>	1. Infrastructure supports the three cities	The Metro Quarter OSD is located immediately above and adjacent to transport infrastructure, in a location which would encourage use of the Sydney Metro project by future building occupants.
	4. Infrastructure use is optimised	The Metro Quarter OSD would provide for dwellings in a location where use of the future metro line can be optimised, as well as the broader Sydney public transport network as principal modes of transport.
<b>A collaborative city</b>	5. Benefits of growth realised by collaboration of governments, community and business	The Metro Quarter OSD comprises an initiative by Sydney Metro to ensure that the development of the site reflects the extensive collaboration undertaken through this project (Chapter 5.0).
<b>A city for people</b>	7. Communities are healthy, resilient and socially connected	The Metro Quarter OSD enables the provision of a mixed use activity centre within close proximity to the Waterloo Station which would populate the area both inside and out of traditional business hours. It is also noted that the proposal has been designed to align with the lowest City of Sydney car parking rates and car parking rates of the WMQ DCP, strongly encouraging the use of public transport, walking and cycling when making journeys.
<b>Housing the city</b>	10. Greater housing supply	The Metro Quarter OSD proposes a substantial boost to housing supply in City of Sydney LGA and the Eastern City District, delivering approximately 700 new homes at the site.
	11. Housing is more affordable and diverse	The Metro Quarter OSD proposes contribute to the provision of affordable (between 5-10 percent of total dwellings) and social housing dwellings (70 dwellings), and an array of different dwelling typologies, making provision for 1, 2 and 3 bedroom apartments. It would also deliver an increased housing supply in a highly accessible location.
<b>A city of great places</b>	12. Great places that bring people together	The proposal would play a key role in the creation of a high quality Metro Quarter precinct, and would contribute to the creation of a great future place in the Central to Eveleigh area.
	13. Environmental heritage is identified, conserved and enhanced	The Metro Quarter OSD has been designed to ensure that the development relates well to the surrounding heritage context. This has been further discussed at Chapter 8.8.
<b>A well-connected city</b>	14. A Metropolis of three cities – integrated land use and transport creates walkable and 30-minute cities	The proposal would contribute to the provision of a 30-minute Eastern City, co-locating housing and employment at a site which directly benefits from strong access to services and employment, seven days a week.

Direction	Objective	Consistency
<b>Jobs and skills for the city</b>	22. Investment and business activity in centres	The Metro Quarter OSD would facilitate business investment in Waterloo through the provision of retail, commercial and community services in a highly accessible and sought after location.
	24. Economic sectors are targeted for success	The proposal would contribute to the provision of additional visitor accommodation capacity in the Harbour CBD, which would assist in the continued development and expansion of the target tourism sector within Sydney.
<b>Valuing green spaces and landscape</b>	30. Urban tree canopy cover is increased	The Metro Quarter OSD would support this outcome through new street tree planting, wider and new and larger public spaces. The landscape strategy includes tree planting in all parts of the proposed public domain that would improve amenity for pedestrians, cyclists, Metro Station customers, residents, workers and visitors.

Overall, the Metro Quarter OSD comprises the provision of a mixed use precinct, which would contribute positively to the Central to Eveleigh Corridor, providing additional residential, retail, commercial and community capacity in a very accessible location. The OSD would work seamlessly with the station portal below to create a vibrant and functional development outcome.

## 6.4. Eastern City District Plan

The *Eastern City District Plan* sets out a 20-year plan, and 40-year vision for the Eastern City District, which comprises the Sydney CBD, as well as a number of other inner-city localities across the Eastern Suburbs, Sydney Airport, Port Botany, as well as the Inner South and Inner West.

The District Plan identifies housing and employment targets, as well as a series of priorities and actions for the growth and development of the district. The District Plan identifies Waterloo within the Eastern Economic Corridor in the context of Greater Sydney and identifies a set of key Planning Priorities to underpin the future growth of the Eastern City.



Figure 68 – Eastern City District Structure Plan

The Metro Quarter OSD is consistent with specific provisions of the *Eastern City District Plan*, which have been detailed at Table 23 below.

**Table 23 – Consistency of the proposed concept against the planning priorities of the Eastern City District Plan**

Eastern District Planning Priorities	Metro Quarter OSD response
<p><b>Priority E1: Planning for a city supported by infrastructure</b></p>	<p>The Waterloo Station is a key driver for the delivery of the Metro Quarter OSD. Sydney Metro City and Southwest is a city-shaping transport infrastructure project that creates new opportunities for integrated station precincts that deliver new homes, jobs, amenities and services in a highly accessible and high amenity location. The Metro Quarter OSD would unlock the urban renewal opportunity of lands above and adjacent to the new Waterloo Station. The indicative concept proposal would enable a new centre with key services and infrastructure that would become a focal point of activity within Waterloo.</p>
<p><b>Priority E2: Working through collaboration</b></p>	<p>Sydney Metro, UrbanGrowth NSW and NSW LAHC have collaborated to progress the Metro Quarter OSD. Other key government stakeholders, including the CoS, the DPE, and the OGA have also played important roles in guiding the proposal (refer to Chapter 5.0).</p>
<p><b>Priority E3: providing services and social infrastructure to meet people’s changing needs</b></p>	<p>The provision of high quality social infrastructure and services is particularly important for the Metro Quarter OSD. The local community at Waterloo has specific needs and the Metro Quarter OSD would have capacity for additional community services and facilities to support the elderly, those on lower incomes, the Indigenous community, and people from diverse cultural backgrounds.</p> <p>The Metro Quarter precinct would be a place for the local community to congregate, interact and access the services they require. New public spaces and community facilities would serve as a place for the community to connect, interact and engage with their surroundings to nurture an inclusive social network.</p>
<p><b>Priority E4: Fostering healthy, creative, culturally rich and socially connected communities</b></p>	<p>Planned recreation and community facilities would contribute positively to the social and physical well-being of Waterloo community. The Metro Quarter OSD would deliver new community facilities and public spaces, while supporting a diversity of uses that accommodate the needs of the wider population. The public domain would be expanded through new plazas, squares and pedestrian connections that encourage walking and cycling, community interaction and connections. The planned public spaces would be flexible to cater for multiple uses and activities that serve a wider population.</p>
<p><b>Priority E5: Providing housing supply, choice and affordability, with access to jobs, services and public transport</b></p>	<p>The concept proposal for the Metro Quarter OSD includes between 5-10 per cent of dwellings as affordable housing and 70 social housing dwellings. Private dwellings would also deliver a mix of dwelling sizes for different household types. The proposed mix of dwelling types and tenures is a direct response to the needs of the local community, in particular the need for social and affordable housing in an area of high housing stress and acute affordability pressures, and projected continued demand for dwellings that are suited to smaller households. The Metro Quarter OSD would deliver housing close to jobs and services within the precinct, and connections through Waterloo Station to other strategic job clusters like the Sydney CBD.</p>

Eastern District Planning Priorities	Metro Quarter OSD response
<p><b>Priority E6: Creating and renewing great places and local centres, and respecting the District's Heritage</b></p>	<p>Urban design principles have been established to provide direction for the delivery of the Metro Quarter precinct as an authentic, vibrant and successful place. The principles have shaped the indicative concept proposal, and include:</p> <ul style="list-style-type: none"> <li>• Housing: A fully, integrated urban village of social, private and affordable housing</li> <li>• Culture &amp; Design: A safe and welcoming place to live and visit</li> <li>• Open Space &amp; Environment: High quality public spaces and a sustainable urban environment</li> <li>• Transport and connectivity: A well connected inner city location</li> <li>• Services and Amenities: New and improved services, facilities and amenities to support a diverse community</li> </ul> <p>Nearby heritage items and conservation areas, most notably the Waterloo Congregational Church and the Alexandria Park HCA, have been considered in the indicative concept proposal for the Metro Quarter OSD, and the urban design strategy directly responds to the significance of these items to the character of Waterloo and understanding of its history.</p>
<p><b>Priority E8: Growing and investing in health and education precincts and the innovation corridor</b></p>	<p>Increased supply of housing and additional floorspace for commercial, retail and community uses would contribute to the diversity, amenity and economic opportunities in the innovation corridor. While locations like ATP and the Harbour CBD would continue to be the main focus of economic growth and diversity, Metro Quarter OSD has the potential to offer smaller scale spaces for innovative businesses and community activities to establish and grow.</p>
<p><b>Priority E10: Delivering integrated land use and transport planning and a 30 minute city</b></p>	<p>The Metro Quarter OSD is a key element of a new urban structure for Waterloo that would be centred around the Waterloo Station. Development of Metro Quarter OSD would be integrated with the construction of the metro station and is a prime opportunity to create a new precinct where transport and land use are truly integrated.</p> <p>Beyond the Metro Quarter OSD, the surrounding community within the walking catchment of Waterloo Station would benefit from improved public transport, new shops, employment opportunities and social services. An increased population within the Metro Quarter and nearby areas would increase the proportion of the population that benefits from the 30 minute city, with direct access to key employment centres including the ATP, Sydney CBD and the Eastern Economic Corridor, stretching from Sydney Airport to Macquarie Park and Norwest. The Metro Quarter OSD is in an ideal position to be an emerging centre of activity that offers new homes and a diversity of land uses that provide the local community with access to community services – with shops, services, cultural places and work environments promoting activity around the new Waterloo Station.</p>
<p><b>Priority E14: Protecting and improving the health and enjoyment of Sydney Harbour and the District's waterways</b></p>	<p>A Water Cycle Management Strategy has been prepared as part of the Water Quality, Flooding and Stormwater Report (Appendix T) which considers water, waste water and stormwater plus potential alternative water supply, demonstration of water sensitive urban design and any future water conservation measures to ensure the health of Sydney Harbour and the Eastern City's waterways are protected.</p>



Eastern District Planning Priorities	Metro Quarter OSD response
<b>Priority E16: Protecting and enhancing scenic and cultural landscapes</b>	<p>Waterloo has a rich diverse and sometimes troubled cultural history which is reflected in the diverse urban environment. The evolution of Waterloo from Aboriginal occupation and use of the land through early industrialisation, mid-20th century public housing, and more recent transition towards an inner city urban village is evident in the physical fabric of the locality. The Metro Quarter OSD would continue the evolution of character and the identity of Waterloo while respecting its past. While the indicative concept proposal would result in changes to the scenic and cultural landscape of Waterloo, these changes would reflect the positive progression (as a result of new infrastructure investment and government commitments to urban renewal) to a more connected, accessible, cultural and cohesive community.</p>
<b>Priority E17: Increasing urban tree canopy cover and delivering Green Grid connections</b>	<p>The Metro Quarter OSD provides a significant opportunity to contribute to the Green Grid, through the provision of new street tree planting and new publicly accessible private open spaces. The landscape strategy includes tree planting in all parts of the proposed public domain possible, in order to improve amenity for pedestrians, cyclists, metro station customers, residents, workers and visitors who would take advantage of the high quality publicly accessible spaces proposed as part of the Metro Quarter OSD.</p>
<b>Priority E18: Delivering high quality public open space</b>	<p>The Metro Quarter OSD would deliver new publicly accessible private open spaces for the community to connect, interact and engage with their surroundings to nurture an inclusive social network. These new public spaces would cater for multiple uses and activities that serve a wider population, such as community events, live music performances and markets.</p>
<b>Priority E19: Reducing carbon emissions and managing energy, water and waste efficiently</b>	<p>The planning, design and construction of the Metro Quarter has been and would continue to be informed by a series of ESD principles to achieve best practice sustainability outcomes. An integrated network of sustainable infrastructure and measures intended to reduce energy and water consumption and carbon emissions would also be integrated in the Metro Quarter OSD.</p>
<b>Priority E20: Adapting to the impacts of urban and natural hazards and climate change</b>	<p>A sustainability assessment has informed the concept proposal for the Metro Quarter which has addressed the potential social, environmental and economic effects of climate change on future communities and potential options for Metro Quarter OSD to deliver both net zero emission buildings and a net zero emission precinct.</p>

The revised draft District Plan also identifies a growth plan of 157,500 new dwellings by 2036, which the Metro Quarter OSD would contribute to the delivery of. This includes a target of 18,300 additional dwellings in the CoS LGA in the five years to 2021.

## 6.5. Future Transport Strategy 2056

The *Future Transport 2056* strategy comprises an update of the TfNSW 2012 *Long Term Transport Master Plan*. This update seeks to not only reflect and build upon the substantial transport infrastructure work undertaken across the State since 2012, but also seeks to align strategic transportation policy with planning policy with the intention of aligning the future strategic location of development near transport. This work has been planned for the coming forty years to 2056, in order to provide a range of short, medium and long-term transport objectives which would guide the future development of NSW.

Six key outcomes for transport in NSW are defined as the focus of the *Future Transport 2056* strategy, which comprise the following:

1. Customer focused
2. Successful places
3. Growing the economy
4. Safety and performance
5. Accessible services
6. Sustainability

The proposed development reflects each of the relevant key outcomes as discussed below:

- the proposed OSD would not interrupt the delivery of the Sydney Metro (City and Southwest) network, ensuring that the benefits of metro rail are delivered to customers as soon as possible following completion of the railway works.
- the proposed OSD would contribute to the creation of a sense of place at the site and would contribute to the overall legacy of the Sydney Metro project by creating interesting, iconic and functional spaces around and above the future Metro stations. The layout and function of the publicly accessible plazas on Raglan Street and Cope Street has been designed in the integrated station development to ensure that public domain space is increased, vehicle conflicts are reduced, and pedestrian amenity is improved. Wider footpaths, public domain landscaping and the like would work to ensure that the integrated station development improves the sense of space at the site, and leaves a lasting, high quality legacy of the Sydney Metro project for future users
- the Metro Quarter OSD would work to contribute to the Sydney and NSW economies, as further discussed at Chapter 9.2..
- the Metro Quarter OSD has been designed to be capable of being accessible, as further discussed at Chapter 0.
- the Metro Quarter OSD meets best practice sustainability objectives, as further discussed at Chapter 8.11.

Overall, the project strongly aligns with the above key transport outcomes, in that it would support the activation of Waterloo Station and delivery of a memorable station experience. This would be achieved through the successful integration of the OSD built form with the station boxes, design of public open space such as public plazas and pedestrian links and the provision additional amenities and services (i.e. retail and community uses).

## 6.6. Building Momentum: State Infrastructure Strategy 2018-2038

Building Momentum is a strategy for the future delivery of infrastructure prepared by Infrastructure NSW. This strategy sets out a number of key directions for NSW, which aim to assist with the development of high quality infrastructure which meets the needs of Sydney over the next 20 years.

The Metro Quarter OSD is aligned with the key recommendations of this strategy as it involves the efficient use of surplus development potential created through the Sydney Metro project. Specifically, the following points are noted:

- the Metro Quarter OSD is consistent with the Eastern Harbour City Geographical Objectives, with the OSD at the Metro Quarter being provided as part of the wider Sydney Metro project, which seeks to directly positively influence the quality of mass transit connections to the CBD.
- the Metro Quarter OSD is located in an area which benefits from a range of walking and cycling options, with the surrounding future environment being optimal for such options. Through an accessible and well connected public domain and the provision of bicycle storage and end-of-trip facilities, the proposal would assist in promoting alternative modes of transport.
- this proposal comprises a direct integration of land use with the transit infrastructure located at the site, achieving a direct objective of the policy.

## 6.7. Better Placed: An Integrated Design Policy for Built Environment of NSW

*Better Placed: An Integrated Design Policy for Built Environment of NSW* (Better Placed) was released in September 2017 as a strategic document to guide the future of urban environment planning such that it works towards the creation of better designed places throughout NSW. Better Placed comprises seven key objectives, which are considered at Table 24 below.

**Table 24 – Consistency of the proposed concept against the objectives of ‘Better Placed’**

Objective	Comment
<p><b>Objective 1 – Better Fit</b> Contextual, local and of its place</p>	<p>The Metro Quarter OSD has been strongly influenced by its context, ensuring that the various constraints and opportunities provided by the site’s surroundings are adequately responded to by the building form proposed (to a Concept level).</p> <p>The proposed concept has been designed to ensure that the ultimate building form at the site responds well to its context, as discussed further in Chapter 8.2.</p>
<p><b>Objective 2 – Better Performance</b> Sustainable, adaptable and durable</p>	<p>Environmental Sustainability has been a key component to the development of this proposal and is further discussed at depth in Chapter 8.11.</p>
<p><b>Objective 3 – Better for community</b> Inclusive, connected and diverse</p>	<p>Noting that the development comprises an over station development envelope for a mixed use building, which incorporates a diversity of land uses and public spaces that would make this site a new activity centre for the local area.</p>

Objective	Comment
	The proposal would also provide substantial additional residential, retail, commercial office and community capacity in an inner city context, contributing to the supply of different types of housing, retail and services and commercial spaces within the context of the Eastern City.
<p><b>Objective 4 – Better for people</b> Safe, comfortable and liveable</p>	The Metro Quarter OSD is a key part of the overall development of the wider Waterloo State Significant Precinct. The station and the OSD elements would work with one another in order to create a high quality space which is active and safe to move around within. The proposed envelope provides for a future mixed use building which would achieve a high level of liveability.
<p><b>Objective 5 – Better working</b> Functional, efficient and fit for purpose</p>	The proposed built form has been designed in a coordinated and integrated manner with the station development below. The built form outcome is function, efficient and fit to accommodate a number of mixed uses including retail, commercial and residential.
<p><b>Objective 6 – Better value</b> Creating and adding value</p>	The development would, through the delivery of high quality public domain and built form, varied land uses and increased access to amenities and services, result in a high quality environment for future residents, visitors and workers and at the site.
<p><b>Objective 7 – Better look and feel</b> Engaging, inviting and attractive</p>	When considered alongside the works to create the Waterloo Station portal under the CSSI Approval, the development would enable the provision of a very high quality development. The Design Excellence Strategy included at Appendix J would ensure that design quality remains a key factor throughout the design process, and the Public Art Plan prepared as part of the Waterloo Metro Quarter SSP Study would enable the provision of interesting public art at the ground floor. Overall, the proposal would contribute to the creation of a very interesting station precinct around the ground floor plane at the site.

## 6.8. Future Directions for Social Housing in NSW

*Future Directions for Social Housing in NSW* (Future Directions) was adopted by the NSW Government in 2016. It sets out the NSW Government’s vision for social housing over the next ten years. The policy is underpinned by three strategic priorities:

- more social housing
- more opportunities, support and incentives to avoid and/or leave social housing
- a better social housing experience.

A key objective of the Future Directions strategy is to achieve de-concentration of social housing within large redevelopment sites by targeting a ratio of 70:30 private and affordable dwellings to social housing. The development of the Metro Quarter OSD would support these objectives and strategic priorities for the adjoining Waterloo Estate, through the opportunity to deliver new social and affordable housing dwellings within a strategic, well connected inner city location, helping to address Sydney's housing supply challenge.

The Metro Quarter OSD would include a minimum of 5 percent and up to 10 percent of residential dwellings as affordable housing and 70 social housing dwellings.

## 6.9. Sustainable Sydney 2030

*Sustainable Sydney 2030* is the City of Sydney Council's vision for sustainable development through the City of Sydney to 2030 and beyond. The plan includes ten targets for the measurement of sustainability success, as well as ten strategic directions intended to guide the future direction of Sydney.

The Metro Quarter OSD has been designed so as to be capable of achieving the relevant targets, and consistent with the strategic directions contained within *Sustainable Sydney 2030*. Consistency of the proposal in this nature can be broken down into a number of key areas, as described in Table 25.

**Table 25 – Relevant targets and strategic directions contained within Sustainable Sydney 2030**

Area	Relevant Target / Strategic Direction
<b>Emissions and Utilities</b>	<p><b>Target 1</b> – The city would reduce greenhouse gas emissions by 70 per cent</p> <p><b>Target 2</b> – The city would have capacity to meet 100 per cent of the electricity demand by local electricity generation, 30 per cent of water supply by local water capture and increased canopy cover of 50 per cent by 2030</p> <p><b>Strategic Direction 2</b> – A Leading Environmental Performer</p> <p><b>Strategic Direction 9</b> – Sustainable Development, Renewal and Design</p>
<b>Housing Availability and Supply</b>	<p><b>Target 3</b> – There would be at least 138,000 dwellings in the city (including 48,000 additional dwellings compared to the 2006 baseline) for increased diversity of household types, including greater share of families</p> <p><b>Strategic Direction 8</b> – Housing for a Diverse Community</p>
<b>Employment Accessibility</b>	<p><b>Target 5</b> – The city would contain at least 465,000 jobs (including 97,000 additional jobs compared to the 2006 baseline) with an increased share in finance, advanced business services, education, creative industries and tourism sectors</p>
<b>Public Transport Accessibility</b>	<p><b>Target 6</b> – Trips to work using public transport would increase to 80 per cent, for both residents of the city and from elsewhere</p> <p><b>Strategic Direction 3</b> – Integrated Transport for a Connected City</p>

Area	Relevant Target / Strategic Direction
<b>Active Transport Accessibility</b>	<b>Target 7</b> – At least 10 percent of total trips made in the city are by bicycle and 50 per cent by pedestrian movement <b>Strategic Direction 4</b> – A City for Walking and Cycling
<b>Accessibility to Services, Open Space and Culture</b>	<b>Target 8</b> – Every resident would be within reasonable walking distance to most local services, including fresh food, childcare, health services and leisure, social, learning and cultural infrastructure <b>Target 9</b> – Every resident would be within a 3-minute walk (250 metres) of continuous green links that connect to the harbour foreshore, harbour parklands, Moore or Centennial or Sydney parks <b>Strategic Direction 7</b> – A Cultural and Creative City
<b>Social Interaction and Community Cohesion</b>	<b>Target 10</b> – The level of community cohesion and social interaction would have increased based on at least 65 per cent of people believing most people can be trusted <b>Strategic Direction 6</b> – Resilient and inclusive local communities

Where relevant, each of these areas of consideration has been further discussed below.

### Emissions and utilities

The proposal would work to achieve the relevant sustainability criteria at the site, as specified at Chapter 8.11. This includes satisfaction of the relevant requirements under SEPP (BASIX), as well as achieving the relevant targets set under the ESD Report provided at Appendix S.

### Housing supply and affordability

The Metro Quarter OSD would contribute significantly to the future supply of housing in the CoS LGA, including the provision of additional supply for social and affordable housing. The proposal would enable the future provision of a range of unit compositions, with 1, 2 and 3-bedroom units contemplated in the future development (subject to future assessment in the detailed SSD Application). This would enable the provision of dwellings to suit a range of household compositions including families.

### Employment accessibility

The Metro Quarter OSD would work to improve the availability of employment at the site through local retail and community services and commercial components of the development. This additional employment capacity would be located in a highly accessible location, which would benefit from excellent access to the surrounding public transport, walking and cycling networks.

### Public transport accessibility

The Metro Quarter OSD comprises the supply of additional residential dwellings, retail and community services and commercial space above and adjacent to the future station boxes of Waterloo Station. As such, the proposal focusses high density mixed use development in a location which provides an exceptional level of public transport accessibility.

The substantial opportunities provided by Sydney Metro must be noted, providing users a world class train services every few minutes to connect users to key employment destinations through the CBD, and Sydney's north and south-west. Future residents, visitors and employees would utilise Sydney Metro for transport needs. In addition, the site is located within walking distance of an array of existing and future transport options, as has been discussed previously at Chapter .

Finally, the proposed provision of 427 parking spaces is consistent with maximum parking rates under the most restrictive controls that apply in the CoS (Category A, parking rates in the SLEP 2012). These rates have been adopted to encourage the use of active and public transport. The majority of employees, visitors and residents would need to use the public transport network as their primary mode of transportation, with other modes such as taxis, car share vehicles, cycling and walking also informing the overall transportation profile of future residents. This is further discussed at Chapter 8.10.

### **Active transport accessibility**

The Metro Quarter OSD would also promote the use of active transport methods such as walking and cycling within the Waterloo area. Given the site's context to nearby employment hubs such as the Australian Technology Park and surrounding public open spaces, it is likely that many residents, employees and visitors would walk or cycle for many short trips for employment, services and leisure.

In addition to the pedestrian amenity improvements being undertaken as part of the Sydney Metro CSSI Approval, the proposal would contribute to the activation of the surrounding streets through the location of residents at the site. This is particularly relevant during the out of periods.

As has been previously discussed at Chapter 4.8, the cycling network currently provides access to a range of key destinations including the University of Sydney, Redfern Station, Sydney CBD, Newtown and Moore Park. The proposal seeks to enhance parts of these cycle routes as part of the contributions levied by Council as part of the Waterloo Metro Quarter OSD. These would be important parts of the active transport network providing access to the metro station for residents of the surrounding area.

### **Access to Services, Open Space and Culture**

As outlined in Chapter 3.10, the Metro Quarter OSD is located in close proximity to a number of surrounding public facilities, including:

- **Services:** The Metro Quarter OSD is within close proximity to a range of childcare facilities, public services, and fresh food and small goods retail. The proposed development would accommodate additional uses including retail, a range of community and commercial uses to meet resident needs and contribute to employment.
- **Open Space:** The site is located within close walking distance of Alexandria Park, Redfern Park and other local recreational facilities. Publicly accessible open spaces are proposed as part of the concept SSD Application, including a plaza adjacent to Cope Street. The site is also well connected to regional open space including Moore Park.
- **Culture:** Waterloo has a rich tapestry of fine-grain community, cultural and arts services, including community cultural organisation, event spaces, public art, youth services, creative enterprises and natural heritage. The main entertainment, artistic and cultural offerings within proximity to the Metro Quarter is around Redfern Street Village to the north.

## Social Interaction and Community Cohesion

The Metro Quarter OSD would increase the number of permanent residents at the site, contributing to the provision of a regular population in a Sydney CBD context. This would contribute positively to the overall social cohesion of the Sydney CBD, including providing a boost to the size and diversity of the night time economy.

Overall, the proposal would have a strong positive impact on delivering the future desired characteristics of the City of Sydney, and the development is highly compatible with the *Sustainable Sydney 2030 Strategy*. A full assessment of the proposal's sustainability has been provided at Chapter 8.11.

## 6.10. Other strategic policies and guidelines

Other relevant State and metropolitan strategies, policies and guidelines are discussed in Table 26.

**Table 26 – Consistency with other strategies, policies and guidelines**

Strategy / Policy / Guideline	Consistency
<b>SDCP 2012</b>	The SDCP 2012 is not applicable to SSD (in accordance with Clause 11 of the SRD SEPP, however, a draft DCP has been prepared for the Metro Quarter SSP (WMQ DCP) that adopts many of the provisions of DCP 2012, and which would be used to guide development outcomes for the concept SSD Application. This is further discussed at Chapter 7.8.
<b>Development Near Rail Corridors and Busy Roads</b>	Given the nature of the site above the future Sydney Metro rail corridor, as well as adjacent to a number of key roads and road corridors, the NSW ' <i>Development Near Rail Corridors and Busy Roads – Interim Guideline</i> ' has been considered in determining the appropriate internal noise criteria for the residential dwellings. This has been discussed further at Chapter 8.17 and Appendix V.
<b>RMS Guide to Traffic Generating Development</b>	Given that the Metro Quarter OSD comprises Traffic Generating Development, the RMS ' <i>Guide to Traffic Generating Developments</i> ' is a relevant consideration to the proposal. This has been further discussed at Appendix N.
<b>Heritage Council Guideline on Heritage Curtilages 1996</b>	The Heritage Council Guidelines, where relevant have been considered as part of the Heritage Impact Assessment (HIA) prepared (refer to Appendix Q).
<b>Design in Context – guidelines for infill development in the Historic Environment (Heritage Office 2005)</b>	The <i>Design in Context – guidelines for infill development in the Historic Environment</i> , where relevant has been considered as part of the HIA (refer to Appendix Q).



Strategy / Policy / Guideline	Consistency
<b>Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW 2011)</b>	<p>The <i>Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW</i>, has been addressed as part of the HIA (refer to Appendix Q).</p>
<b>Director General's Design Excellence Guidelines, 2011</b>	<p>The Director General's <i>Design Excellence Guidelines, 2011</i>, provide guidance on undertaking a design competition, as required by local environmental plans. These Guidelines have been revised and updated as part of the Draft Government Architect's <i>Design Excellence Competition Guidelines, 2018</i>. This Guideline would form part of a broader design excellence framework for NSW, bringing together the numerous State and local design excellence initiatives.</p> <p>In response to the Director General's <i>Design Excellence Guidelines, 2011</i> and the Draft Government Architect's <i>Design Excellence Competition Guidelines, 2018</i>, Design Guidelines and a Design Excellence Strategy has been prepared to govern future development of the Metro Quarter OSD.</p>
<b>NSW Planning Guidelines for Walking and Cycling</b>	<p>The concept proposal allows for the provision of an area to store up to 1,140 bicycles. Details regarding the provision of bicycle infrastructure would be further developed through subsequent detailed SSD Application(s).</p>
<b>NSW Bicycle Guidelines</b>	<p>Future detailed SSD Application(s) would ensure that future development meets the minimum requirements of this guideline, where relevant.</p> <p>As discussed above, the concept proposal allows for the provision of an area to store up to 1,140 bicycles spaces. This is in addition to the proposed 180 bicycle spaces to be provided as part of the CSSI Approval for the Waterloo Station.</p>
<b>City of Sydney Competitive Design Policy</b>	<p>Due to the unique nature of the propose Metro Quarter OSD and the need to integrate with the Sydney Metro station, the future detailed design would be developed in accordance with the Design Excellence Strategy for Sydney Metro OSD rather than the City of Sydney <i>Competitive Design Policy</i>. In accordance with the Sydney Metro policy framework, a Design Excellence Strategy is included as part of this application at Appendix J.</p>
<b>City of Sydney Policy for Waste Minimisation in New Development</b>	<p>The CoS <i>Policy for Waste Minimisation in New Development</i> has been addressed within the submitted Utilities and Infrastructure Servicing Report, which is included at Appendix P. Waste management is further discussed at Chapter 8.15.6 below.</p>

Strategy / Policy / Guideline	Consistency
<p><b>City of Sydney Public Art Policy and Guidelines for Public Art in Private Development</b></p>	<p>Public art is intended to be provided as part of the Metro Quarter OSD site in accordance with Public Art Plan prepared as part of the Waterloo Metro Quarter SSP Study and is further discussed at Chapter 4.17.</p>
<p><b>Sydney's Rail Future</b></p>	<p>The proposal would not have any adverse impact on Sydney's future rail network but does comprise part of the wider Sydney Metro project, which occupies land adjacent and air space above one of the future Sydney Metro station. Any future detailed SSD Application would ensure that a detailed design scheme at the site would supports <i>Sydney's Rail Future</i>.</p>
<p><b>Sydney's Cycling Future</b></p>	<p>The proposal comprises the provision of over station development above and adjacent to the future Waterloo Station. Any future detailed SSD Application would ensure that a detailed design scheme at the site would meet any relevant requirements of <i>Sydney's Cycling Future</i>.</p>
<p><b>Sydney's Bus Future</b></p>	<p><i>Sydney's Bus Future</i> is the NSW Government's long-term plan to redesign the city's bus network to meet customer needs. Transport planning for Metro Quarter OSD has been informed by a guiding set of principles which are consistent with the aspirations of the plan. The development of the Waterloo Station and the Botany Road bus interchange would also support a modal interchange which would allow visitors to transfer from rail to bus services.</p> <p>Any future detailed SSD Application would ensure that a detailed design scheme at the site would meet any relevant requirements of <i>Sydney's Bus Future</i>.</p>
<p><b>Sydney's Walking Future</b></p>	<p><i>Sydney's Walking Future 2013</i> is the NSW Government's strategy to promote walking for transport and connecting people and places through safe pedestrian networks. The proposal is consistent with this strategy as it would deliver a high quality, pedestrian network that facilitates walking to and from the site with improved connections to the wider local area, such as the ATP and Redfern Street Village.</p> <p>Any future detailed SSD Application would ensure that a detailed design scheme at the site would meet any relevant requirements of <i>Sydney's Walking Future</i>.</p>

## 7.0 Assessment of compliance with statutory provisions

This chapter addresses compliance with the applicable planning legislation to the project, in accordance with the SEARs:

- *Environmental Planning and Assessment Act 1979 (EP&A Act) (NSW)*
- *Environmental Planning and Assessment Regulation 2000 (NSW)*
- *Airports Act 1996 (Cth)*
- *Biodiversity Conservation Act 2016 (NSW)*
- relevant environmental planning instruments (EPIs) including:
  - *State Environmental Planning Policy (State and Regional Development) 2011*
  - *State Environmental Planning Policy (State Significant Precincts) 2005*
  - *State Environmental Planning Policy (Urban Renewal) 2010*
  - *State Environmental Planning Policy (Infrastructure) 2007*
  - *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004*
  - *State Environmental Planning Policy No. 55 – Remediation of Land*
  - *State Environmental Planning Policy No. 65 – Design of Residential Flat Buildings*
  - *State Environmental Planning Policy No. 64 – Advertising and Signage*
  - *State Environmental Planning Policy No. 70 – Affordable Housing (Revised Schemes)*
  - *State Environmental Planning Policy (Affordable Rental Housing) 2009*
  - *Sydney Local Environmental Plan 2012*
- relevant proposed EPIs that have been the subject of public consultation under the EP&A Act including:
  - *Draft State Environmental Planning Policy (Environment) 2017*
  - *Draft State Environmental Planning Policy (Remediation of Land) 2018*
  - *City of Sydney Affordable Housing review (PP\_2017\_SYDNE\_006\_00)*

This chapter also provides an assessment of the proposal against the provisions of the SDCP 2012, noting that in accordance with Clause 11 of the SRD SEPP DCPs do not apply to SSD.

## 7.1. Environmental Planning and Assessment Act 1979

### 7.1.1. Objects (section 1.3)

The proposal is consistent with the objects of the EP&A Act, as demonstrated in Table 27 below.

**Table 27 – Consistency with objects of EP&A Act**

Object	Consistency
(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,	The proposal comprises land uses, built form and public domain elements which would promote the social and economic welfare of the community and a better environment, through the provision of a vibrant mixed-use precinct, designed to be compatible with the surrounding environment while creating a new community focus at the Waterloo Station. As is further discussed in Chapter 9.0, the proposal would deliver substantial social and economic benefits whilst also ensuring that there would not be any adverse environmental impacts.
(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	The proposal has been designed in accordance with the principles of ESD, and has addressed the relevant economic, environmental and social considerations. This is discussed in detail at Chapter 8.11.
(c) to promote the orderly and economic use and development of land,	The concept proposal comprises the orderly and economic use of land, and has been subject to a robust alternatives analysis which has resulted in the progression of the proposed mixed use development. The staged planning process would ensure the identification and resolution of key planning issues at an early stage, allowing the detailed design for the future OSD to be coordinated to deliver an integrated station development which responds to the scale and complexity of the project.
(d) to promote the delivery and maintenance of affordable housing,	The concept proposal would provide (in part) for the timely delivery of housing opportunities and would deliver a variety of residential apartment typologies, including 70 social housing dwellings and 5 to 10 percent affordable dwellings.
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,	Protection of the environment has been considered as part of this proposal, with a detailed environmental impact assessment and mitigation identification undertaken as described in this EIS.  The concept proposal relates to land within an existing urban context, on a site which has been cleared and is currently being used for construction of the Sydney Metro City & Southwest project. In this regard, the project would not have an impact on threatened or other species or their habitat. Refer to Chapter 7.4.

Object	Consistency
<p>(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),</p>	<p>Appropriate management of the heritage interface between the site and its surroundings has been considered as part of this assessment, including</p> <ul style="list-style-type: none"> <li>• Waterloo Congregational Church (Item 2069 – including interiors),</li> <li>• The Cauliflower Hotel (Item 2070)</li> <li>• The Former CBC Bank (Item 5)</li> <li>• Cricketer’s Arms Hotel including interior (Item 1540)</li> <li>• Alexandria Park HCA</li> </ul> <p>Assessments undertaken as part of the CSSI Approval conclude that no Aboriginal sites have been identified in the site or would be impacted by the proposed works at Waterloo Station. However, there remains the potential for Aboriginal objects to occur in the sub-surface archaeological deposits. The Heritage Impact Assessment submitted with the concept SSD Application (Appendix Q) includes recommendations for archaeology, which are summarised in Chapter 8.9.</p> <p>The Public Art Plan prepared as part of the Waterloo Metro Quarter SSP Study is further discussed at Chapter 4.17 and encourages the recognition and celebration of Aboriginal cultural heritage as part of future public art installations on the site. Details of public art for the OSD will be provided as part of future detailed SSD Application(s).</p>
<p>(g) to promote good design and amenity of the built environment,</p>	<p>A pathway to the achievement of design excellence is included as part of this proposal, ensuring that the buildings proposed in the detailed SSD Application(s) to follow would achieve a high standard of architectural design. Design Guidelines (Appendix K) and a Design Excellence Strategy (Appendix J) have been prepared to ensure future development contributes to a well-designed built environment.</p>
<p>(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,</p>	<p>The proposal is a concept only and proposes no physical works. Nonetheless, a Preliminary Construction Management Statement has been prepared (Appendix CC) to outline the methods for ensuring future construction impacts are managed and mitigated. The future maintenance of the building and the protection of the health and safety of the occupants would be addressed through National Construction Code compliance at the detailed SSD Application stage and be supported by a Building Management Statement.</p>
<p>(i) to promote the sharing of the responsibility for environmental planning and assessment</p>	<p>The proposal comprises a single concept SSD Application, which has been developed by Sydney Metro with</p>

Object	Consistency
between the different levels of government in the State,	UrbanGrowth NSW in consultation with the relevant government bodies and CoS Council.
(j) to provide increased opportunity for community participation in environmental planning and assessment.	Sydney Metro is committed to a broad and inclusive public consultation process as outlined in the EP&A Act. Engagement with the local community has been ongoing as part of the Waterloo SSP planning process, which forms the basis of planning controls for Metro Quarter. The building envelopes proposed as part of this concept proposal have been developed as part of the development of the SSP Study. For further details, refer to Chapter 5.0 of this EIS.

### 7.1.2. Evaluation (section 4.15)

Section 4.15 of the EP&A Act sets out the matters for a consent authority to take into consideration in determining a development application. These matters have been addressed throughout this EIS.

**Table 28 – Section 4.15 of the EP&A Act**

Matter for consideration	Location in EIS
(a). the provisions of:	
(i). any environmental planning instrument, and	Chapters 7.5 and Chapter 7.8.
(ii). any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and	Chapter 7.5
(iii). any development control plan, and	Chapters 7.7 and 7.8
(iiia). any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and	N/A
(iv). the regulations (to the extent that they prescribe matters for the purposes of this paragraph)	Chapter 7.2
that apply to the land to which the development application relates,	
(b). the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	Chapters 8.0 and 9.0

Matter for consideration	Location in EIS
(c). the suitability of the site for the development,	Chapter 10.1
(d). any submissions made in accordance with this Act or the regulations,	To be considered following exhibition.
(e). the public interest.	Chapter 10.2

### 7.1.3. State significant development (Division 4.7)

The Metro Quarter OSD is consistent with the requirements of Division 4.7 of the EP&A Act particularly for the following reasons:

- the development is of State significance as it relates to residential accommodation and/or commercial premises within a rail corridor, associated with railway infrastructure and has a capital investment value of more than \$30 million (refer to further discussion at Chapter 2.2 of this EIS).
- the development is not prohibited by an environmental planning instrument, although the bulk and scale of proposed buildings which could be accommodated by the building envelopes requires amendment to some development standards (proposed as part of the Waterloo SSP process).
- the development has been evaluated against the relevant heads of consideration of section 4.15 of the EP&A Act.

## 7.2. Environmental Planning and Assessment Regulation 2000

This EIS has been prepared in accordance with the EP&A Regulation, including the requirements of Schedule 2, which are a relevant factor in the preparation of EIS. This includes the incorporation of SEARs as part of this application (see Chapter 2.3), and the provision of a statement in a format which addresses the relevant content requirements of the statement (see Chapter 2.4).

## 7.3. Airports Act 1996 (Cth)

The proposed building envelopes would support the construction of future buildings which would breach the Obstacle Limitation Surface, which is prescribed at a height between 63-73 metres AHD at the site, triggering a controlled activity under the *Airports Act 1996* (Airports Act). Under section 183 of the Airports Act, a 'controlled activity' (as defined in section 182) cannot be undertaken unless that carrying out of the activity is in accordance with an approval granted under the relevant regulations.

Preliminary consultation has occurred with Sydney Airport Corporation Limited (SACL) and the Civil Aviation Safety Authority (CASA). SACL and CASA have confirmed that the approval process for any breach to restricted airspace will occur at the future detailed development stage when final building and crane heights are known.

For further detail refer to Chapter 8.12 and the Aeronautical Impact Assessment Report at Appendix Y.

## 7.4. Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) commenced on 25 August 2017, and is a relevant consideration to the Metro Quarter OSD. Section 7.9 of the BC Act requires preparation of a biodiversity assessment for SSD that is assessed under Part 4 of the EP&A Act. This concept SSD Application would be assessed under Part 4 of the EP&A Act, and, therefore, would normally be required to include a biodiversity development assessment report. However, section 7.9(2) of the BC Act allows for exemption from the requirement where the development is not likely to have any significant impact on biodiversity values.

A request for a Biodiversity Assessment Requirement (BDAR) Waiver was submitted to DPE and the Office of Environment and Heritage. The waiver included an assessment against the relevant Biodiversity Values contained at clause 1.5 of the BC Act and clauses 1.4 and 6.1 of the *Biodiversity Conservation Regulation 2017*.

Subsequently, a waiver under section 7.9(2) of the *Biodiversity Conservation Act* was issued on 27 June 2018, and is available at Appendix R. Accordingly a full biodiversity assessment has not been submitted with this EIS.

## 7.5. State Environmental Planning Policies

The relevant State Environmental Planning Policies (SEPPs) are detailed in Table 29. Overall, it is considered that the development is consistent with the provisions contained within the relevant SEPPs (and draft SEPPs).

**Table 29 – Consistency with State Environmental Planning Policies**

SEPP	Consistency
<p><i>State Environmental Planning Policy (State and Regional Development) 2011</i> (SRD SEPP)</p>	<p>Clause 19(2) of Schedule 1 of the SRD SEPP identifies development which meets the following criteria as being State significant development:</p> <p><i>(2) Development within a rail corridor or associated with railway infrastructure that has a capital investment value of more than \$30 million for any of the following purposes:</i></p> <ul style="list-style-type: none"> <li><i>(a) commercial premises or residential accommodation</i></li> <li><i>(b) container packing, storage or examination facilities</i></li> <li><i>(c) public transport interchanges</i></li> </ul> <p>Further to the above, clause 8(2) of the SRD SEPP states that:</p> <p><i>If a single proposed development the subject of one development application comprises development that is only partly State significant development declared under subclause (1), the remainder of the development is also declared to be State significant development, except for:</i></p> <ul style="list-style-type: none"> <li><i>(a) so much of the remainder of the development as the Director-General determines is not sufficiently related to the State significant development,</i></li> </ul> <p>As the proposed concept SSD Application is within a rail corridor, is associated with railway infrastructure and is for residential accommodation and/or commercial premises with a Capital Investment Value of more than \$30 million,</p>



SEPP	Consistency
	<p>the project is identified as SSD under Schedule 1, 19(2)(a) of the SRD SEPP. The proposed concept development is therefore able to be considered as State significant.</p> <p>Clause 12 of the SRD SEPP enables a concept development application to be SSD, as follows:</p> <p><i>If:</i></p> <p><i>(a) Development is specified in Schedule 1 or 2 to this Policy by reference to a minimum capital investment value, other minimum size or other aspect of the development, and</i></p> <p><i>(b) Development the subject of a staged development application under Part 4 of the Act is development so specified,</i></p> <p><i>any part of the development that is the subject of a separate development application is development specified in the relevant Schedule (whether or not that part of the development exceeds the minimum value or size or other aspect specified in the Schedule for such development.</i></p> <p>It is noted that SSD applications are assessed differently to development applications that are not State significant, with the following differences particularly noted:</p> <ul style="list-style-type: none"> <li>• Section 4.41 and 4.46 of the EP&amp;A Act do not apply. This relates to approvals, legislation and provisions relating to integrated development that are not required for SSD</li> <li>• Section 4.42 needs to be applied consistently with terms of any SSD consent</li> <li>• DCPs are explicitly excluded from application to SSD, in accordance with clause 11 of the SRD SEPP</li> </ul> <p>The Minister for Planning is the consent authority for SSD in accordance with section 4.5 of the EP&amp;A Act.</p>
<p><i>State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)</i></p>	<p>The relevant clauses of within the ISEPP are:</p> <ul style="list-style-type: none"> <li>• the referral requirements for development within or adjacent to a rail corridor (clause 85 of Division 15 Railways).</li> <li>• excavation in, above, below or adjacent to rail corridors (clause 86 of Division 15 Railways).</li> <li>• residential development on land in or adjacent to a rail corridor (clause 87 of Division 15 Railways).</li> <li>• development in or adjacent to an interim rail corridor (clause 88 of Division 15 Railways).</li> <li>• major development within the Interim Metro Corridor (clause 88A of Division 15 Railways).</li> <li>• development near proposed metro stations (clause 88B of Division 15 Railways).</li> <li>• development with a frontage to a classified road (clause 101 of Division 17 Roads and Traffic).</li> <li>• impact of road noise or vibration on non-road development (clause 102 of Divisions 17 Roads and Traffic)</li> <li>• traffic generating development (Schedule 3).</li> </ul>



**Figure 69 – ISEPP Metro zone identification map (site identified in red)**

As set out in clause 85 of the ISEPP, ‘development on land that is in or adjacent to a rail corridor’ must be referred to the relevant rail authority for the corridor for their consideration prior to the determination of the application. The concept SSD Application is located within the Sydney Metro City & Southwest Corridor and therefore would need to be referred to Sydney Metro for comment.

Clause 86 of the ISEPP requires development that involves penetration of ground to a depth of at least 2 metres below ground level (existing) on land within, below or above a rail corridor, or within 25 metres (measured horizontally) of a rail corridor, to be referred to the relevant rail authority for the corridor for their consideration prior to the determination of the application. The concept SSD Application is located within the Sydney Metro City & Southwest Corridor and therefore would need to be referred for comment.

The proposal comprises development that would be used for residential accommodation purposes, and therefore clause 87 applies. Clause 87 identifies key considerations for the consent authority in determining whether the site is acoustically suitable for residential development, in proximity to railway infrastructure. Notwithstanding that the rail corridor at this site is located underground, acoustic impact has been a key consideration of the development, including an assessment against the *Development near Rail Corridors and Busy Roads Interim Guideline*. This has been further discussed at Chapter 6.10, with

the Acoustic and Vibration Impact Assessment provided at Appendix V. It is noted that the requirements set out in this clause are the same as those set out by clause 102, which the proposal has been designed as being capable of complying with.

Clause 88 applies to the Metro Quarter OSD, as it involves both the penetration of ground to a depth of at least 2 metres below ground level (existing), and has a CIV exceeding \$200,000 and involves the provision of a building which would result in a height increase of more than 10-metres above the existing approved station height. However, given the status of the development as SSD, concurrence required by this clause is not required to be obtained in accordance with section 4.13 of the EP&A Act.

Clauses 88A and 88B apply to land within the CoS that is within the Interim Metro Corridor. As at the date of this application, the rail corridor maps identifying the Interim Metro Corridor do not capture the CSSI Approval, and, therefore, clauses 88A and 88B do not apply to the site. Regardless, given the nature of the proposal located above and adjacent to a future metro station, these provisions have been considered. The Metro Quarter OSD would not have any adverse impacts on the viability of the proposed Metro, with minimisation of impacts on the Metro being a core priority of the OSD design. Impacts arising from the interface of the OSD and the station have been further discussed at Chapter 8.7.

Clause 101 and Clause 102 are relevant to the proposal as the site fronts a classified road (Botany Road), which has an annual average daily traffic volume of more than 20,000 vehicles. Vehicular access to or from Botany Road would be limited to service vehicles only. A detailed assessment regarding the impact of the Metro Quarter OSD on the function of Botany Road has been undertaken at Chapter 8.10. Additionally, a review of noise impacts has been undertaken at Chapter 8.17.

The concept SSD application also requires consultation with NSW Roads and Maritime Services under the provisions of clause 104 (Traffic Generating Development) and Schedule 3 of the ISEPP as it would generate over 700 dwellings and would have access to a classified road.

**Development near Rail Corridors and Busy Roads – Interim Guideline**

*Development Near Rail Corridors and Busy Roads – Interim Guideline* (DIPNR, December 2008) is the guideline that must be taken into account where development is proposed in or adjacent to specific railway corridors under clauses 85, 86 and 87 of the ISEPP.

As discussed above, the proposal is located immediately adjacent to and above the future Waterloo Station, meaning that this guideline is a relevant consideration in this assessment. The Acoustic and Vibration Impact Assessment (refer to Appendix V) demonstrates that the proposal, at the Concept Stage, is capable of meeting the requirements of the Guideline. This would be further detailed during the future design and assessment stages.

**Guide to Traffic Generating Development**

The proposal is defined as ‘traffic generating development’ in accordance with the provisions of the ISEPP, as it would include more than 700 dwellings and

SEPP	Consistency
	<p>would have access to a classified road. On this basis, the <i>Guide to Traffic Generating Developments</i> is a relevant consideration and is addressed in the Transport Impact Assessment provided at Appendix N. Further discussion regarding traffic impacts has been provided at Chapter 8.10.</p>
<p><i>State Environmental Planning Policy No. 55 – Remediation of Land</i> (SEPP 55)</p>	<p>SEPP 55 provides a State-wide approach to the remediation of contaminated land, and primarily promotes the remediation of contaminated land for the purpose of reducing risk of harm to human health.</p> <p>Clause 7 of SEPP 55 states that a consent authority must not consent to the carrying out of development on land unless it has considered whether the land is contaminated and, if the land is contaminated, whether it is suitable or can be made suitable for the Metro Quarter OSD.</p> <p>Contamination over that portion of the site on which the Sydney Metro City &amp; Southwest project including Waterloo Station is located has previously been considered under the CSSI Approval.</p> <p>A Geotechnical and Contamination Study (Appendix Z) has been prepared to identify potential contamination risks and recommendations that would inform a Stage 2 contamination assessment to be undertaken as part of detailed SSD Application(s) to demonstrate that the remaining part of the Metro Quarter site is suitable for the development proposed under this application. This has been further discussed at Chapter 8.21.</p>
<p><i>State Environmental Planning Policy No. 64 – Advertising and Signage</i> (SEPP 64)</p>	<p>SEPP 64 aims to ensure that signage is compatible with the desired character of the area, provides effective communication in suitable locations and is of high quality design and finish.</p> <p>Clause 13 of SEPP 64 requires that a consent authority must not grant consent to an application to display signage unless the advertisement is consistent with the objectives of the SEPP and the criteria in Schedule 1 of the SEPP.</p> <p>Future signage is proposed for the OSD for the purposes of the business and building identification, relating to the residential, retail and commercial uses. Signage would be designed to meet the provisions of Schedule 1 to ensure consistency with the objectives of this policy by being comparable to other signage in the area and by effectively communicating the future OSD.</p> <p>Details of the proposed signage, including type, location, size and materiality would be determined at the detailed SSD Application stage. A detailed assessment against Schedule 1 of the SEPP would be prepared for all detailed SSD Applications which include signage.</p>
<p><i>State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Buildings</i> (SEPP 65)</p>	<p>The proposed building envelope and indicative floor layouts demonstrate that a future residential flat building detailed design would be capable of achieving the relevant provisions of SEPP 65, and the ADG. This is further discussed at Chapter 8.5 and within the Urban Design and Public Domain Report included at Appendix G.</p>
<p><i>State Environmental Planning Policy No. 70 Affordable Housing</i></p>	<p>The purpose of SEPP 70 is to provide a framework that identifies the need for affordable housing in certain LGAs and allows specified councils to prepare an affordable housing contribution scheme for certain precincts, areas or developments within LGA.</p>

SEPP	Consistency
<p><i>(Revised Schemes) (SEPP 70)</i></p>	<p>Section 8 of SEPP 70 provides the definition for 'affordable housing', as outlined below:</p> <p>8 Definition of "affordable housing"</p> <p>For the purposes of the definition of affordable housing in section "1.4 (1) of the Act, very low income households, low income households and moderate income households are those whose gross incomes fall within the following ranges of percentages of the median household income for the time being for the Greater Sydney (Greater Capital City Statistical Area) according to the Australian Bureau of Statistics:</p> <ul style="list-style-type: none"> <li>• Very low income household – less than 50 percent</li> <li>• Low income household – 50 or more but less than 80 percent</li> <li>• Moderate income household – 80–120 percent</li> </ul> <p>SEPP 70 identifies that there is a need for affordable housing within CoS LGA. Currently, Council has affordable housing schemes operating in Ultimo/Pymont, Green Square and Southern Employment Lands.</p> <p>The CoS Council recently exhibited a planning proposal and draft Affordable Rental Housing Program that proposes to apply a contributions framework for the funding and delivery of affordable rental housing across the LGA (including the Metro Quarter).</p> <p>It is recognised that the affordable housing review planning proposal identifies the Metro Quarter within the 'residual lands', as the SLEP 2012 currently applies to the land. For clarity purposes, the Metro Quarter SSP Study proposes to amend the SSP SEPP 2005 to include a new Part in Schedule 3 of the SSP SEPP 2005 that would contain planning controls for the Metro Quarter. The proposed SEPP would, when finalised, mean that the SLEP 2012 (including the proposed affordable housing review planning proposal – if gazetted) would not apply to the Metro Quarter.</p> <p>Affordable housing has been dealt with through the provision of between 5 to 10 percent of residential dwellings to be affordable housing.</p>
<p><i>State Environmental Planning Policy (Affordable Rental Housing) 2009 (ARH SEPP 2009)</i></p>	<p>The ARH SEPP provides a planning regime that aims to increase the supply and diversity of affordable rental and social housing throughout NSW.</p> <p>The concept proposal includes 5 to 10 percent of the total dwellings as affordable housing (as defined under the EP&amp;A Act), together with 70 social housing dwellings. The affordable housing would provide for very low, low and moderate income households as defined by the ARH SEPP for a minimum of 10 years. These would also be managed by a Tier 1 Community Housing Provider and designed to be 'tenure blind'. The affordable dwellings would be delivered through 'in-kind' construction.</p> <p>This concept SSD Application does not seek to use incentives contained within the ARH SEPP by way of expanded zoning permissibility, FSR bonuses and non-discretionary development standards. It is also noted that the CoS proposes to expand the operation of its affordable housing scheme under SEPP 70 to include the Metro Quarter. The in-kind provision of affordable housing</p>

SEPP	Consistency
	<p>proposed in this application is consistent with Council's proposed affordable housing scheme under SEPP 70 (discussed above).</p>
<p><i>State Environmental Planning Policy (Building Sustainability Index) BASIX 2005 (SEPP(BASIX))</i></p>	<p>BASIX certification would be submitted as applicable for the development, as part of the detailed SSD Application(s). An ESD Report has been prepared as part of this application, at Appendix S. This report demonstrates that the proposed residential flat buildings would be capable of achieving the water and energy saving targets which are determined by SEPP (BASIX). BASIX Certificate/s will be prepared as part of the future SSD Application(s).</p>
<p><i>State Environmental Planning Policy (Urban Renewal) 2010 (Urban Renewal SEPP)</i></p>	<p>The Urban Renewal SEPP covers all land within the former Redfern – Waterloo Operational Area, which includes the Redfern Waterloo Authority (RWA) sites at North Eveleigh West and ATP, as well as the Metro Quarter and Waterloo Estate Precincts.</p> <p>The Urban Renewal SEPP functions to facilitate the development of a potential precinct, such as the Metro Quarter, to facilitate the orderly and economic development and redevelopment of sites in and around urban renewal precincts that are accessible by public transport, and protect further fragmentation of land through subdivision. The Urban Renewal SEPP also requires the preparation of a Study prior to the development of such precincts. The Waterloo Metro Quarter SSP Study fulfils this requirement for a study to revise the planning controls applicable to the Metro Quarter and facilitate renewal of the site.</p> <p>This concept SSD Application intends to support the objects of the Urban Renewal SEPP by seeking approval of the concept proposal that is consistent with proposed SEPP Amendment for the Metro Quarter.</p>
<p>Draft Remediation of Land SEPP 2018</p>	<p>In January 2018, the DPE exhibited the draft Remediation of Land SEPP, which seeks to provide an updated framework for the management of contaminated land in NSW.</p> <p>Specifically, it is proposed that the draft Remediation of Land SEPP would:</p> <ul style="list-style-type: none"> <li>• provide a state-wide planning framework for the remediation of land</li> <li>• require consent authorities to consider the potential for land to be contaminated when determining development applications</li> <li>• clearly list the remediation works that require development consent</li> <li>• introduce certification and operational requirements for remediation works that can be undertaken without development consent.</li> </ul> <p>Contamination over that portion of the site on which the Sydney Metro City &amp; Southwest project including Waterloo Station is located has previously been considered under the CSSI Approval.</p> <p>A Geotechnical and Contamination Study (Appendix Z) has been prepared to identify potential contamination risks and recommendations that would inform a Stage 2 contamination assessment to be undertaken as part of detailed SSD Application(s) to demonstrate that the remaining part of the Metro Quarter site is suitable for the development proposed under this application. This has been further discussed at Chapter 8.21.</p>

SEPP	Consistency
<p>Draft State Environmental Planning Policy (Environment) 2017</p>	<p>The <i>Draft State Environmental Planning Policy (Environment) 2017</i> (draft Environmental SEPP) intends to provide a consolidated legislative framework to manage development and conservation of natural resources and the environment..</p> <p>The Explanation of Intended Effect for the draft Environment SEPP, provided as part of the consultation package, was on exhibition from 31 October 2017 until 31 January 2018. The draft Environment SEPP seeks to consolidate and update the key elements of seven current SEPPs. One of these SEPPs is the Sydney Harbour REP.</p> <p>Pursuant to section 4.15(1)(a)(ii) of the EP&amp;A Act, a draft Environmental Planning Instrument that has been publicly exhibited is a relevant matter for consideration in the assessment and determination of this concept SSD Application.</p> <p>The Explanation of Intended Effect as well as the exhibited maps, demonstrates that the site would continue to be defined within the Urban Bushland Land Application Map (currently under <i>State Environmental Planning Policy No. 19 – Bushland in Urban Areas</i>), which applies to most of the Sydney Metropolitan Area, as well as Gosford.</p> <p>The concept proposal does not adjoin or propose to disturb bushland zoned or land reserved for public open space purposes. Therefore assessment against the draft Environmental SEPP is not required.</p>

## 7.6. State Environmental Planning Policy (State Significant Precincts) 2005

Schedule 3 of SSP SEPP 2005 is enacted by clause 7 of that SEPP and identifies and establishes planning controls for SSPs. Metro Quarter is part of the Waterloo Nominated SSP, and draft planning provisions have been prepared for the Metro Quarter as an outcome of the SSP Study. The SSP Study has defined built form, land use and public domain outcomes for the Metro Quarter OSD. The bulk and scale of development and intention to provide retail development requires amendments to the planning controls that currently apply to the site. Amendments to the SSP SEPP 2005 are proposed as the mechanism to establish new planning controls for the Metro Quarter.

The proposed amendments to the SSP SEPP 2005 would seek to insert a new Part in Schedule 3 to identify the Metro Quarter as a SSP (by reference to a land application map) and would include provisions relating to the carrying out of development (as described below). The proposed amendments to the SSP SEPP 2005 would commence when they are published in the NSW Government Gazette, and are required to be finalised prior to determination of the concept SSD Application.

**Table 30 – Consistency with the proposed provisions of the Metro Quarter State Significant Precinct**

Clause	Consistency with SSP SEPP 2005 Metro Quarter State Significant Precinct
<b>Aims of the Policy</b>	The concept proposal is consistent with the aims set out in clause 2 of the SSP SEPP 2005 in that it would facilitate the redevelopment a site of economic, environmental or social significance to the State, so as to facilitate the orderly use and development of the Metro Quarter SSP for the benefit of the State.
<b>Land use zone</b>	The proposed zoning of the Metro Quarter is B4 Mixed Use. The objectives of the proposed B4 Mixed Use zone under the SSP SEPP 2005 are intended to reflect the objectives of the B4 zone under the SLEP 2012 (which currently applies to the land). The Metro Quarter OSD is consistent with the objectives of the B4 Mixed Use zone as it: <ul style="list-style-type: none"> <li>would provide a mixture of compatible land uses, including residential, retail, commercial office and community uses.</li> <li>integrates suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage of Waterloo Station and encourage walking and cycling.</li> <li>would ensure uses support the viability of centres, through the appropriate quantum and location of non-residential uses within the Metro Quarter OSD, that are unlikely to seriously impact the viability of any of the nearby centres.</li> </ul>
<b>Subdivision and demolition</b>	The proposed amendments to the SSP SEPP would require development consent for the demolition of buildings. No demolition is proposed under this concept SSD Application, with demolition of buildings at the site previously considered as part of the CSSI Approval. Concept approval for subdivision is sought as part of this concept development application, with detail provided as part of the detailed SSD Applications.
<b>Temporary uses</b>	See below.
<b>Exempt and Complying Development</b>	In addition to development that is exempt development or complying development under any other planning instrument, a provision is proposed to be included in the SEPP amendment permitting temporary use of public spaces in Metro Quarter.



Clause	Consistency with SSP SEPP 2005 Metro Quarter State Significant Precinct
	<p>Exempt development within the proposed SEPP amendment includes the temporary use of public space for community events that are open to the general public with no entry charges, including public gatherings, ceremonies, celebrations, sporting events, events for community and outdoor exhibitions that may involve the installation of temporary structures having minimal visual impact (such as barricading) and temporary signage, that are otherwise ancillary to the event.</p> <p>Therefore, consent is not sought for these uses as part of this concept SSD Application.</p>
<p><b>Maximum building height</b></p>	<p>The proposed amendment to the SSP SEPP includes a Height of Buildings map, which identifies maximum building heights (AHD) of RL 116.9 metres (northern portion of the site), RL 104.2 metres (central portion of the site) and RL 96.9 metres (southern portion of the site).</p> <p>The building envelope proposes maximum heights of RL 116.9 metres (Building A), RL 104.2 metres (Building E) and RL 96.85 metres (Building F), resulting in compliance with the maximum heights shown on the proposed Height of Buildings map.</p>
<p><b>Maximum floor space ratio</b></p>	<p>The proposed SEPP includes a FSR map, which identifies maximum FSR of 6.1:1. All end of trip facilities, including those proposed as part of the Sydney Metro City &amp; Southwest project and the development of Metro Quarter, are proposed to be exempt from the calculation of FSR under the proposed SEPP provisions.</p> <p>The proposed OSD comprises 68,750 square metres of GFA, which equates to a proposed FSR of 5.34:1.</p> <p>Once the station floorspace is included in the calculations, a total GFA of 77,165 square metres results which equates to an FSR of 6.00:1. This would comprise of the following approximate elements:</p> <ul style="list-style-type: none"> <li>• 56,200 square metres of residential floor space</li> <li>• 3,905 square metres of retail space</li> <li>• 8,645 square metres of other non-residential floor space, including office premises, business premises, entertainment facilities and community uses (including at least 2,000 square metres of community uses). Community uses may include: <ul style="list-style-type: none"> <li>○ a library</li> <li>○ information and education facility</li> <li>○ multi-purpose community facility</li> <li>○ health services facility</li> <li>○ emergency services facilities</li> <li>○ centre based child care facilities</li> <li>○ creative arts space</li> <li>○ recreation facility (indoor)</li> </ul> </li> <li>• 8,415 square metres of station floor space</li> </ul> <p>On the basis of the above, the proposed FSR of 6.00:1 is less than the proposed maximum FSR of 6.1:1.</p>
<p><b>Balconies on certain residential flat buildings</b></p>	<p>The proposed amendment to the SSP SEPP includes a provision to enable balconies on certain residential flat buildings to feature winter gardens for protection from wind affectation, and which are exempt from the calculation of FSR. The</p>

Clause	Consistency with SSP SEPP 2005 Metro Quarter State Significant Precinct
	<p>proposed SEPP provision would translate the existing provisions of clause 4.5A of the SLEP 2012.</p> <p>At this concept proposal stage, no wintergardens are proposed. However, detailed SSD Application(s) may include winter gardens to address specific wind affectation issues, and if that does occur, the enclosed balconies would not be included in the calculation of GFA.</p>
<b>Architectural roof features</b>	<p>This proposed SSP SEPP amendment permits variations to maximum building height for architectural roof features of visual interest.</p> <p>Any architectural roof feature proposed for any future building on the site would be subject to assessment at the detailed SSD Application stage and would be required to address the provisions of the SEPP.</p> <p>It is noted that any architectural roof feature proposed as part of the Metro Quarter OSD would not be permitted to exceed the PANS-OPS height restriction for Sydney Airport at the site.</p>
<b>Heritage conservation</b>	<p>The proposed amendment to the SSP SEPP would include a clause where the consent authority may require a heritage report to be prepared for an application for works that would affect heritage items on the site or within the vicinity of the site.</p> <p>The site is in the vicinity of a number of local heritage items as detailed in Chapter 8.8.1 of this EIS. Accordingly, a Heritage Impact Assessment Report has been prepared to accompany this concept proposal (Appendix Q). Heritage impacts are discussed in detail at Chapter 8.8 of this EIS.</p>
<b>Additional floor space</b>	<p>The proposed amendment to the SSP SEPP would include provisions to exclude end of journey floor spaces from the calculation of GFA, and to enable a building to exceed the maximum FSR control by an amount equivalent to the end of journey floor space.</p> <p>All end of trip facilities, including those proposed as part of the Sydney Metro City &amp; Southwest project and the development of the Metro Quarter, have been excluded from the calculation of FSR.</p>
<b>Design excellence</b>	<p>The concept proposal would, if approved, guide detailed SSD Applications for a number of OSD buildings on the Metro Quarter site. The proposed amendment to the SSP SEPP and this concept SSD Application are supported by a Design Excellence Strategy that has been prepared to be applied consistently across Sydney Metro OSD projects, including Waterloo, Pitt Street North and South, Crows Nest and Victoria Cross, with minor variations to reflect the local circumstances of each station.</p> <p>The Design Excellence Strategy provides an alternative design excellence process to that under SLEP 2012 proposed to be undertaken to ensure design excellence is achieved through the detailed design stage. The Design Excellence Strategy has been previously discussed at Chapter 4.9.2.</p>
<b>Active street frontages</b>	<p>The proposed amendment to the SSP SEPP includes an Active Street Frontages map. This identifies frontages along Botany Road and parts of Raglan and Wellington Streets as requiring an active street frontage. Exceptions in this clause are made for parts of the building used for entrances and lobbies (including as part of mixed use development), access for fire services and vehicle access.</p> <p>The Metro Quarter OSD conceptually proposes retail uses along Botany Road and parts of Raglan Street and Wellington Street, which would comply with the proposed</p>

Clause	Consistency with SSP SEPP 2005 Metro Quarter State Significant Precinct
	<p>clause. The detailed design of retail spaces would be addressed in the detailed SSD Application(s) for buildings, and would be designed to comply with the active street frontages clause in the SEPP, including providing detail on glazed frontages and orientation of uses towards the street.</p>
<p><b>Requirement to prepare a Development Control Plan</b></p>	<p>The proposed amendment to the SSP SEPP includes a clause that requires the preparation of a DCP prior to consent being granted for any new building on the Metro Quarter.</p> <p>A draft DCP has been prepared as part of the Metro Quarter SSP Study, with key elements being incorporated into the Design Guidelines included within Appendix K. The proposed provisions of this clause are further discussed at Chapter 7.6.1 below.</p>
<p><b>Flood planning</b></p>	<p>A clause is proposed in the proposed SEPP amendment to ensure flooding risks are appropriately considered in the assessment and determination of development applications.</p> <p>Flooding considerations, including runoff from the site, are discussed further at Chapter 8.16. A Water Quality, Flooding and Stormwater Report has also been prepared as part of this application, and is at Appendix T. On the basis of the submitted assessment, it is concluded that the site is suitable for the proposed mixed use purpose, and flooding and stormwater impacts can be managed through design measures incorporated into the concept proposal.</p>
<p><b>Airspace operations</b></p>	<p>A clause is proposed in the proposed SEPP amendment requiring referral of development applications to the relevant Commonwealth body where impacts on airspace operations could potentially occur.</p> <p>The applicable OLS for the site ranges from RL 63 to RL 73 metres AHD, which would be penetrated by the proposed envelope. On this basis, the concept proposal would require airspace height approval in accordance with the Airports Act from the DIRD, which has been further assessed at Chapter 8.12.</p> <p>An Aeronautical Impact Assessment Report has been provided as part of this application at Appendix Y.</p>

### 7.6.1. Development requiring or authorising preparation of a development control plan (proposed clause under the SSP SEPP 2005)

In accordance with the proposed SSP SEPP Amendment clause, a site-specific DCP is required to be prepared for any new building in the Metro Quarter. A draft DCP has been prepared as part of the Metro Quarter SSP Study. The WMQ DCP (when adopted) would provide a basis for assessment of any development in Metro Quarter that is not SSD. As previously identified in this EIS, under clause 11(a) of the SRD SEPP, DCPs do not apply to SSD applications. In accordance with section 4.22 of the EP&A Act, a concept development application may be prepared in lieu of a DCP, and accordingly this concept SSD Application fulfils the requirements of this clause of the proposed SEPP Amendment. Sydney Metro has developed Design Guidelines (Appendix K) which include key elements of the WMQ DCP to guide the detailed design of the Metro Quarter OSD. Given the building envelopes proposed by this concept proposal are supported by the Design Guidelines at Appendix K, this concept SSD Application (if approved) would provide necessary guidance for the detailed design and assessment of subsequent detailed SSD application(s) for the Metro Quarter.

Additionally, the proposed clause specifies matters to be included in a DCP. Notwithstanding that DCPs are not applicable to a concept SSD Application, an assessment of the concept proposal against this provision of the proposed SEPP amendment is provided in **Table 31**, including where the relevant requirements have been addressed in this EIS.

**Table 31 – Summary of items required to be provided in accordance with clause of proposed SEPP Amendment requiring preparation of a Development Control Plan**

Requirement	Chapter of the EIS	Addressed
requirements as to the form and external appearance of proposed development so as to improve the quality and amenity of the public domain	Chapter 4.4	Yes
requirements to minimise the detrimental impact of proposed development on view corridors	Chapter 8.6	Yes
the proposed land uses and mix	Chapter 4.5	Yes
any heritage issues and streetscape constraints in particular the relationship of development to the Waterloo Congregational Church,	Chapter 8.8	Yes
the location of any taller buildings proposed, having regard to the need to achieve an acceptable relationship with other buildings (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form,	Chapter 8.5	Yes
the bulk, massing and modulation of buildings	Chapter 4.4	Yes
street frontage heights	Chapter 4.4	Yes
environmental impacts, such as sustainable design, overshadowing and solar access, visual and acoustic privacy, noise, wind and reflectivity, flooding and stormwater management	Chapter 8.0	Yes
the achievement of the principles of ecologically sustainable development	Chapter 8.11	Yes

Requirement	Chapter of the EIS	Addressed
pedestrian, cycle, vehicular and service access and circulation requirements, including the permeability of any pedestrian network	Chapter 4.7	Yes
the impact on, and any proposed improvements to, the public domain	Chapter 8.3	Yes
achieving appropriate interface at ground level between the building and the public domain	Chapter 8.3	Yes
the excellence and integration of landscape design	Chapter 8.3	Yes
the incorporation of high quality public art in the public domain or in other areas to which the public has access.	Chapter 4.17	Yes

## 7.7. Proposed Metro Quarter Precinct Development Control Plan

Clause 11 of the SRD SEPP states as follows:

*‘Development control plans (whether made before or after the commencement of this Policy) do not apply to... State significant development’*

Notwithstanding this provision, the Metro Quarter SSP Study includes the WMQ DCP.

The WMQ DCP is intended to be prepared under Division 3.6 of the EP&A Act and would provide detailed planning and design guidelines to support the planning controls in SSP SEPP 2005. Once the WMQ DCP is adopted, the SDCP 2012 would not apply to site, except where specifically referred to in the WMQ DCP.

Table 32 provides an assessment of the consistency of the Metro Quarter OSD against the provisions of the WMQ DCP.

**Table 32 – Relevant provisions of the draft Metro Quarter State Significant Precinct Draft Development Control Plan**

Provision	Comment	Consistency
<b>5.9.1 – Locality Statement</b>	<p>The OSD concept proposal is consistent with this provision as it:</p> <ul style="list-style-type: none"> <li>• provides an opportunity to renew the Metro Quarter as a new local centre and focal point of activity around Waterloo Station</li> <li>• would become a sustainable mixed use and transit-oriented place for living, working and recreation, with a particular focus on catering for the day to day needs of local residents, workers and users of the Waterloo Station.</li> <li>• would complement surrounding established neighbourhoods, the future character of the Waterloo Estate, and would form the foundation for the desired future character of potential urban renewal along Botany Road.</li> <li>• provides new publicly accessible open spaces with access to Waterloo Station and a new through block link which function as spaces for recreation and social interaction.</li> <li>• would reduce the amount and improve the quality of stormwater released into waterways such as Sheas Creek.</li> <li>• incorporates sustainable infrastructure would reduce Metro Quarter’s use of energy generated from non-renewable sources.</li> <li>• respects surrounding heritage items, in particular, the Waterloo Congregational Church which would be retained and its setting enhanced to enable greater appreciation from the public domain.</li> <li>• would support a range of spaces that would cater for the special social and economic needs of the current and future Waterloo Precinct, including community facilities.</li> <li>• presents a built form and scale that optimises public transport and land use integration, responds to the attributes of existing important buildings and surrounding neighbourhoods.</li> <li>• would provide a mix of land use activities, with retail uses at the ground floor, community and employment uses at lower levels and residential uses at upper levels.</li> </ul>	<p>Yes</p>

Provision	Comment	Consistency
<p><b>5.9.2 – Metro Quarter urban strategy</b></p>	<ul style="list-style-type: none"> <li>• would provide a diversity of private, affordable and social housing.</li> </ul> <p>The OSD concept proposal is consistent with the objectives of this provision as it:</p> <ul style="list-style-type: none"> <li>• would create a vibrant, mixed use local centre that is the gateway to the Waterloo Precinct and caters to the needs of Metro Quarter, Waterloo Estate and users of the Waterloo Station</li> <li>• would create a distinct and memorable urban quarter that reflects its role as a transport hub while responding to local character</li> <li>• would support the establishment of Waterloo Station and the new publicly accessible plaza on Cope Street as the focus of the Metro Quarter, providing an integrated public asset that draws together commuters and the local community</li> <li>• promotes land uses and activation that would create a vibrant, safe, high amenity and walkable public domain that caters for the different needs of a variety of users</li> <li>• promotes the use of the Waterloo Station as a key public transport hub and prioritises sustainable movement choices</li> <li>• provides opportunity for seamless interchange between transport modes, in particular rail, bus, walking and cycling</li> <li>• promotes the growth of the local economy as a technical, innovation and creative corridor linked with nearby metropolitan scale education and health facilities</li> <li>• contributes to meeting the economic and social needs of Metro Quarter and Waterloo Estate</li> <li>• incorporates infrastructure that promotes economic growth, community cohesion and sustainability</li> <li>• would become an inclusive community that is welcoming to all</li> <li>• provides more housing and more diverse housing choices, including affordable and social housing</li> <li>• respects and celebrates the significant Aboriginal and other heritage values of the Central to Eveleigh community, including the Waterloo Congregational Church. The Public Art Plan prepared as part of the Waterloo Metro Quarter SSP Study recognises these values in Waterloo and encourages the celebration of these cultural connections and identity that can contribute to Waterloo being a sustainable and vibrant cultural place.</li> <li>• would enable a degree of flexibility in the future detailed building design to enable further refinements to facilitate a high quality development</li> </ul>	<p>Yes</p>
<p><b>5.9.3.1 – Street, pedestrian and cycle network</b></p>	<p>Public domain elements of the Metro Quarter OSD are consistent with the Metro Quarter Local Infrastructure and Public Domain and Street Pedestrian and Cycle Network requirements in the provision of publicly accessible plazas, shared ways, pedestrian through site links, public footpaths and bicycle facilities.</p> <p>A Construction Environmental Management Plan and Travel Management Plan would be prepared as part of the detailed SSD Application.</p>	<p>Yes</p>

Provision	Comment	Consistency
<b>5.9.3.2 – Carparking, access and circulation</b>	<p>The Metro Quarter OSD is consistent with the Metro Quarter carparking, access and circulation requirements.</p> <p>The vehicular access points to the development are provided at Botany Road (service vehicles only), Wellington Street and the proposed shared way off Cope Street, and are consistent with the intended location provided in WMQ DCP.</p> <p>Up to 427 car parking spaces are proposed to be provided for the OSD by the concept proposal which would be consistent with the Category A maximum rates for residential uses and applicable formula for retail uses within the WMQ DCP.</p> <p>The proposed building envelope provides spatial requirements to meet the above provisions and the concept has been designed to comply with relevant flood levels.</p>	Yes
<b>5.9.3.3 – Public open space</b>	<p>Publicly accessible plazas are proposed on Raglan Street and Cope Street. While these spaces are not technically public open space (as they would remain in private ownership, such as body corporate), they would be accessible to the public at all times and would be designed in accordance with the requirements and guidelines for public open spaces.</p>	Yes
<b>5.9.3.4 – Stormwater management</b>	<p>Water Sensitive Urban Design (WSUD) measures are proposed to be incorporated into the Metro Quarter OSD and the surrounding street network to improve stormwater quality flowing into waterways such as Sheas Creek.</p> <p>Importantly, the proposed development would comply with Flood Planning Level requirements as stipulated by WMQ DCP.</p>	Yes
<b>5.9.3.5 – Public art</b>	<p>Public art is intended to be provided as part of the Metro Quarter OSD site in accordance with Public Art Plan prepared as part of the Waterloo Metro Quarter SSP Study and is further discussed at Chapter 4.17.</p>	Yes
<b>5.9.3.6 – Urban forest</b>	<p>The concept proposal demonstrates that the minimum requirement of 20 percent urban canopy cover identified in the WMQ DCP could be delivered. The Design Guidelines have incorporated this requirement of the WMQ DCP. The final outcome would be determined as part of the detailed SSD Application stage.</p>	N/A
<b>5.9.3.7 – Lighting</b>	<p>The design of lighting within the public domain would be the subject of detailed SSD Application(s).</p>	N/A
<b>5.9.4.1 – Height of building</b>	<p>The height of building envelopes proposed in this concept SSD Application complies with number of storeys shown within the WMQ DCP, with a three storey podium, three mid-rise buildings ranging from 4 to 10 storeys above the station boxes, and three taller buildings ranging from 23 to 29 storeys (incl. podium levels).</p>	Yes
<b>5.9.4.2 – Building setbacks</b>	<p>Primary and secondary setbacks of the concept proposal would comply with setback requirements of the WMQ DCP.</p>	Yes



Provision	Comment	Consistency
	Details of podium and upper levels setbacks are further discussed at Chapter 8.2.	
<b>5.9.4.3 – Building form and design</b>	Building form of the concept proposal is consistent with requirements of the WMQ DCP, comprising podium, mid-rise and taller building typologies. The design of the concept proposal has also been developed with consideration of the metro station box loading and clearance zones. Details of the proposed building form and design are further discussed at Chapter 8.2.	Yes
<b>5.9.4.4 – Building typologies and uses</b>	The Metro Quarter OSD seeks concept approval for a mix of land uses, including, residential, retail, office, community and entertainment uses that aim to support the activation of the Metro Quarter and support the service needs of residents and the local community.  Non-residential uses would be located within podium levels, and residential uses located above the podium. This would comply with provisions for building typologies and uses within the WMQ DCP.	Yes
<b>5.9.4.5 – Active frontages</b>	Retail tenancies are proposed to address the ground plane along Botany Road, Wellington Street and the publicly accessible plaza on Cope Street. Key pedestrian movement corridors would also have active frontages, such as between Waterloo Station and the south-bound bus interchange on Botany Road, and along Raglan Street. This would be consistent with ground plane activation requirements of the WMQ DCP.  Larger format retail is also proposed along the Botany Road frontage, which would comply with the location requirements for larger format retail of the WMQ DCP.	Yes
<b>5.9.4.6 – Acoustic and visual privacy</b>	Residential uses are proposed to be located above the podium, complying with the requirements of the WMQ DCP.  The detailed design of apartment layouts and design measures to attenuate noise to acceptable levels would be the subject of detailed SSD Application(s).	Yes
<b>5.9.4.7 – Development levels</b>	Details of flood planning levels and measures to maintain public-private domain engagement on the ground level are further discussed at Chapter 8.3 and Chapter 8.16.	Yes
<b>5.9.4.8 – Staging and implementation</b>	Details of development staging and integrated delivery with Waterloo Station are further discussed at Chapter 4.10 and Chapter 4.12.	Yes
<b>5.9.4.9 – Utilities</b>	The provision of utilities and infrastructure servicing delivery is further discussed at Chapter 8.15.	Yes
<b>5.9.4.10 – Solar access</b>	The concept proposal would comply with the solar access requirements for Cope Street Plaza, Raglan Street Plaza, Alexandria Park and Alexandria Park HCA.  Details of solar access impacts are further discussed at Chapter 8.4.	Yes
<b>5.9.4.11 – Wind</b>	Wind mitigation measures have been further discussed at Chapter 8.12.1, and a Pedestrian Wind Environment Impact Assessment is provided to this effect as part of Appendix X.	Yes

Provision	Comment	Consistency
5.9.5 – Sustainability infrastructure	The delivery of sustainable infrastructure is further discussed at Chapter 8.11 and Chapter 8.15.	Yes
5.9.6 – Community facilities	<p>The concept proposal allocates a minimum of 2,000 square metres for the purpose of community facilities, which could include one or more of the following uses:</p> <ul style="list-style-type: none"> <li>• library</li> <li>• information and education facility</li> <li>• multi-purpose community facility</li> <li>• health services facility</li> <li>• emergency services facility</li> <li>• centre based child care facility</li> <li>• creative arts space</li> <li>• recreation facility (indoor) (i.e. gymnasium)</li> </ul> <p>The community uses would be located within podium levels and/or the community building.</p> <p>The detailed design of community uses and location within the Metro Quarter OSD would be provided as part of the detailed SSD application.</p>	Yes
5.9.7 – Housing	<p>Noting that this application is a concept SSD Application, and the dwelling mix would be finalised during the detailed design, the concept proposal demonstrates that a dwelling mix compliant with Council's dwelling mix controls could be provided at the site, with the following mix incorporated:</p> <ul style="list-style-type: none"> <li>• <b>Studio:</b> 22 (3 percent)</li> <li>• <b>1 bed:</b> 294 (42 percent)</li> <li>• <b>2 bed:</b> 314 (45 percent)</li> <li>• <b>3 bed:</b> 70 (10 percent)</li> </ul> <p>Furthermore, 5 to 10 percent of residential dwellings would be for affordable housing, with another 70 dwellings as social housing. This would be consistent with targets set by the Greater Sydney Commission.</p> <p>Details on the design and residential amenity of social and affordable housing dwellings would be the subject of future detailed SSD Application(s).</p>	Yes
5.9.8 - Heritage	<p>The concept proposal aims to retain, respect and celebrate Waterloo's heritage through a series of design measures that have informed the proposed building envelopes and uses.</p> <p>These measures are further detailed as part of Chapter 8.8 of this EIS and have been detailed within the Design Guidelines within Appendix K.</p>	Yes

## 7.8. Sydney Local Environmental Plan 2012

While SLEP 2012 is currently the relevant planning instrument, proposed new controls under the SSP SEPP 2005 have been prepared and, as discussed in Chapter 7.6, the proposed development is reliant on finalisation of a new statutory planning framework under the SSP SEPP 2005.

The SEARs require consideration of the provisions of SLEP 2012, and for completeness, Table 33 summarises assessment of the proposed development against SLEP 2012. The proposal is generally consistent with the provisions of the SLEP 2012, with the exception of the maximum FSR and height controls that currently apply to the site, and clause 7.23: Large retail development outside of Green Square Town Centre and other planned centres. The SSP study and proposed SSP SEPP provisions include new height and FSR controls and permit retail development appropriate to the context of Waterloo Station as a new activity centre.

The urban design analysis and assessment of retail demand and impacts prepared for the SSP Study and this concept SSD Application demonstrate that the proposed scale of development and mix of land uses is appropriate in the context of a new community focus around Waterloo Station.

**Table 33 – Consistency with the provisions of the SLEP 2012**

Clause	Consistency
1.2 Aims of the Plan	<p>The concept proposal is consistent with the aims set out in clause 1.2 of the SLEP 2012 in that it:</p> <ul style="list-style-type: none"> <li>• provides for a high quality residential, retail, commercial and community mixed use precinct at the Waterloo Station, which is commensurate with the role of the City of Sydney as the primary centre for Sydney</li> <li>• facilitates cultural activities and employment generation</li> <li>• provides for employment growth at the site during both the construction and operation of the development</li> <li>• provides for additional residential capacity and growth along the Central to Eveleigh Corridor, providing for an increase in the out of hours population and locating homes closer to jobs</li> <li>• provides a high density mixed use development that is suitable in scale, proportion and use with the current and emerging inner city context</li> <li>• enables future detailed development to provide a range of residential apartment typologies to appeal to a diverse range of households, including studios, 1, 2 and 3+ bedroom dwellings, along with the provision 5 to 10 percent of residential dwellings as affordable housing, with another 70 dwellings as social housing</li> <li>• ensures that the future development would provide a range of services and infrastructure that meets the needs of residents, workers and visitors</li> <li>• has been proposed as a key part of a substantial public transport infrastructure upgrade for Waterloo, which would significantly improve the public transport capacity of the LGA</li> <li>• provides an envelope capable of achieving high levels of residential amenity for future dwellings on the site</li> <li>• provides future residents, visitors and employees with unmatched accessibility to the future Sydney transport network</li> <li>• includes an appropriate framework to deliver design excellence</li> </ul>

Clause	Consistency
	<ul style="list-style-type: none"> <li>respects the surrounding environment and heritage at the site, with a detailed review of the heritage impact of the proposal undertaken at Chapter 8.8.</li> </ul>
1.6 Consent authority	In accordance with Chapter 1.0 above, the Minister for Planning is the consent authority for the concept SSD Application.
2.3 Zone objectives and Land Use Table	<p>The site is located in the B4 Mixed Use zone, and the proposed uses are permissible with development consent in this zone.</p> <p>The Metro Quarter OSD is consistent with the objectives of the B4 Mixed Use zone as it:</p> <ul style="list-style-type: none"> <li>comprises new buildings in the Waterloo which would serve as the gateway to the future Waterloo Station, providing a memorable station experience for passengers and positively contributing to the Sydney skyline</li> <li>makes provision for additional retail and commercial floor space and new public spaces in the context of Waterloo and the Central to Eveleigh Corridor, whilst also providing for additional residential accommodation in an appropriate location to maximise public transport patronage and encourage walking and cycling</li> <li>makes efficient use of the site through a high density building envelope, commensurate with an inner city location, benefitting from excellent access to high frequency public transport, goods, services and open space</li> <li>contributes to the overall diversity of land uses in Sydney, providing for additional out of hours activation at the site, with consideration of viability of surrounding centres</li> <li>encourages the use of alternate transport uses by providing low rates of car parking in conjunction with excellent access to surrounding transport networks</li> </ul>
2.7 Demolition requires development consent	Clause 2.7 of the SLEP 2012 requires development consent for the demolition of buildings. No demolition is proposed under this concept SSD Application, with demolition of buildings addressed as part of the CSSI Approval.
4.3 Height of Buildings	<p>Under the SLEP 2012, the majority of the site is identified as 'O', with the southernmost portion of the site identified as 'M', on the Height of Buildings Map. On this basis, the maximum height at the site is either 12 metres or 15 metres from existing ground level.</p> <p>The indicative concept proposal for the site exceeds the maximum height limit of the SLEP 2012, however is reflective of the proposed maximum building heights in the proposed SEPP amendment, as described in Chapter 7.6.</p>
4.4 Flood space ratio	<p>The site has a mapped FSR of 1.75:1 under the SLEP 2012.</p> <p>The proposed OSD comprises the provision of 68,750 square metres of GFA, which equates to a proposed FSR of 5.34:1.</p> <p>Once the station floorspace is included in the calculations, a total GFA of 77165 square metres results which equates to an FSR of 6.00:1. This would comprise of the following approximate elements:</p> <ul style="list-style-type: none"> <li>56,200 square metres of residential floor space</li> <li>3,905 square metres of retail space</li> <li>8,645 square metres of other non-residential floor space, including office premises, business premises and at least 2,000 square metres for community uses</li> <li>8,415 square metres of station floor space</li> </ul>

Clause	Consistency
	<p>The indicative concept proposal for the site, with a proposed FSR of 6.00:1 exceeds the maximum FSR of 1.75:1 under the SLEP 2012, however is reflective of the FSR in the proposed SEPP amendment, as described previously in Chapter 7.6.</p>
<p>4.5A Balconies on certain residential flat buildings</p>	<p>The SLEP 2012 includes a provision to enable balconies on certain residential flat buildings to feature wintergardens which are exempt from the calculation of FSR. This provision is also intended to be included within the proposed SEPP amendment.</p> <p>The detailed design of wind affected balconies would be the subject of separate future applications.</p>
<p>5.10 Heritage conservation</p>	<p>The site is located within close proximity to a number of Local heritage items listed under the SLEP 2012. This includes</p> <ul style="list-style-type: none"> <li>• Waterloo Congregational Church (Item 2069)</li> <li>• The Cauliflower Hotel (Item 2070)</li> <li>• The Former CBC Bank (Item 5)</li> <li>• Cricketer's Arms Hotel including interior (Item 1540)</li> <li>• Alexandria Park HCA (C1)</li> </ul> <p>Analysis undertaken as part of this EIS concludes that the Metro Quarter concept proposal would not result in any adverse impacts to heritage items and conservation areas in the vicinity of the proposed development. Further discussion has been provided to this respect at Chapter 8.8, and a Heritage Impact Assessment has been provided at Appendix Q.</p>
<p>6.6 End of journey floor space</p>	<p>This clause excludes end of journey floor spaces, for the purposes of commercial premises, from the calculation of gross floor area, and enables a building to exceed the maximum FSR control by an amount equivalent to the end of journey floor space. This provision is also intended to be included within the proposed SEPP amendment.</p> <p>All end of trip facilities, including those proposed as part of the Sydney Metro City &amp; Southwest project and the development of the Metro Quarter, have been excluded from the calculation of FSR.</p>
<p>6.19 Overshadowing of certain public places</p>	<p>The proposal does not overshadow any of the nominated public spaces during any of the specified time periods.</p>
<p>6.21 Design excellence</p>	<p>The concept proposal would, if approved, guide detailed SSD Application(s) for a number of OSD buildings on the Metro Quarter site. The proposed amendment to the SSP SEPP and this concept SSD Application are supported by a Design Excellence Strategy that has been prepared to be applied consistently across Sydney Metro OSD projects, including Waterloo, Pitt Street North and South, Crows Nest and Victoria Cross, with minor variations to reflect the local circumstances of each station.</p> <p>The Design Excellence Strategy provides an alternative design excellence process to that under SLEP 2012 proposed to be undertaken to ensure design excellence is achieved through the detailed design stage. The Design Excellence Strategy has been previously discussed at Chapter 4.9.</p>

Clause	Consistency
6.3 Car parking spaces not to exceed maximum set out in this division	<p>A total of up to 427 car parking spaces are proposed for the Metro Quarter OSD, which is further discussed at Chapter 8.10.7. The proposed car parking is a maximum rate based on the GFA of various land uses. Changes to the GFA allocated to various land uses may occur as part of detailed SSD Application(s) (while maintaining consistency with the concept SSD Application) and may result in some adjustments to the number of parking spaces in accordance with the maximum rates.</p>
7.14 Acid Sulfate Soils	<p>In accordance with clause 7.14 of the SLEP 2012, the site is classified as 'Class 5' on the relevant Acid Sulfate Soils Map, which comprises the lowest class of risk for acid sulfate soils. Acid sulfate soil risk at the site was previously assessed as part of the CSSI Approval.</p> <p>A Geotechnical and Contamination Study has been included at Appendix Z. The assessment concluded that the site has a low potential for salinity, erosion and acid sulfate soils and that commercial and residential development with basements should be practicable for the site with conventional structural elements and normal construction techniques.</p>
7.15 Flood planning	<p>Flooding considerations, including runoff from the site and flood risks to development on the Metro Quarter site, are discussed further at Chapter 8.16, supported by a Water Quality, Flooding and Stormwater Report, included at Appendix T. On the basis of the assessment, it is concluded that the site is suitable for the proposed development.</p>
7.16 Airspace operations	<p>The applicable OLS ranges from 63 metres AHD, at the south-west corner of the site, to 73 metres AHD at the north-east corner of the site, which would be penetrated by the proposed envelope.</p> <p>On this basis, the concept proposal would require airspace height approval in accordance with the Airports Act from the Commonwealth DIRD. Impacts on airspace operations are further assessed at Chapter 8.12. An Aeronautical Impact Assessment Report has been provided as part of this application at Appendix Y.</p>
7.20 Development requiring or authorising preparation of a development control plan	<p>Under clause 7.20(2) of the SLEP 2012, a site-specific development control plan is required to be prepared for development over 25 metres in height on a site greater than 5,000 square metres and on land outside of Central Sydney, which would include the site.</p> <p>The proposed planning framework under the Metro Quarter SSP Study intends to include a clause requiring the preparation of a DCP for the Metro Quarter. The WMQ DCP has been prepared to satisfy this proposed provision (see Chapter 7.7).</p> <p>It is noted that under section 4.22 of the EP&amp;A Act, a Concept DA may be prepared in lieu of a site-specific DCP.</p>
7.23 Large retail development outside of Green Square Town Centre and other planned centres	<p>The site is identified as Restricted Retail Development on the Retail Premises Map. This limits development for the purposes of shops or markets to a GFA of no greater than 1,000 square metres.</p> <p>The concept proposal has approximately 3,905 square metres of retail GFA, which would not comply with this clause of the SLEP 2012. However, the concept proposal is reflective of the proposed SEPP amendment, which does not include this provision, and would essentially remove this provision from applying to the Metro Quarter.</p>

### 7.8.1. Affordable Housing Review Planning Proposal (PP\_2017\_SYDNE\_006\_00)

As outlined in Chapter 7.5, Council has affordable housing schemes operating in Ultimo/Pyrmont, Green Square and Southern Employment Lands. The schemes demonstrate the need for affordable housing in these areas and establish a basis for contributions to be applied to new residential development.

These schemes require a private developer proposing a new development to make an affordable housing contribution. A contribution can be made by dedicating affordable housing dwellings, or by making a monetary contribution to the CoS. Monetary contributions are allocated to a registered community housing provider and used to purchase or construct affordable housing.

Council has an active Planning Proposal (PP\_2017\_SYDNE\_006\_00) intending to make significant amendments to its affordable housing framework. This includes applying a new affordable housing scheme to 'residual lands' in the LGA (including the Metro Quarter), as shown in Figure 70. The purpose of these changes is to deliver on Council's objective for 7.5 percent of all dwellings to be affordable rental dwellings in 2030.



**Figure 70 – Metro Quarter Precinct identified as 'Residual Lands' under CoS Planning Proposal**

The key changes to the current affordable housing schemes that apply in the City of Sydney include:

- Expansion of the affordable housing contributions to all land in the SLEP 2012, including the Metro Quarter (noting that it applies to developments where Council is the consent authority).
- Establishment of a universal monetary contribution amount per square metre (this amount was nominated as \$9,788.00 per square metre for the first half of 2017).

- Establishment of a framework under the SLEP 2012 to allow higher contributions for new floor space accessed through planning proposals.
- Reduction to the size of affordable housing dwellings aligning with the ADG.
- Establishment of the ability for Council to direct funds straight to City West Housing, which remains the only affordable housing provider eligible for funding.

The affordable housing review planning proposal was given Gateway Determination by DPE during January 2018, and publicly exhibited between 25 June 2018 and 23 July 2018.

If the proposed affordable housing strategy and LEP amendments are finalised, the proposed affordable housing contributions would apply to Metro Quarter OSD. As the scheme would be the first time affordable housing contributions have applied to residual land areas, the contribution requirement is proposed to be introduced over four years to allow for market adjustment.

The proposed SSP planning controls would repeal the SLEP 2012 in relation to the Metro Quarter, and the concept SSD Application is proposed to be determined when the SSP provisions come into effect. This means that the City of Sydney's affordable housing provisions would not apply to the proposed development. However, Sydney Metro and UrbanGrowth NSW have committed to the delivery of affordable housing within the 5-10 percent target range set by the Greater Sydney Commission as part of the concept proposal. The SSP Study includes a commitment to affordable housing being secured through a Planning Agreement if necessary.

## 7.9. Sydney Development Control Plan 2012

Clause 11 of the SRD SEPP states as follows:

*'Development control plans (whether made before or after the commencement of this Policy) do not apply to... State significant development'*

Notwithstanding this provision, an assessment has been provided at Chapter 7.7 against the provisions of the WMQ DCP, which demonstrates the consistency of the proposed concept SSD Application with these provisions. As the proposed development is reliant on finalisation of a proposed planning framework under the SSP SEPP 2005, including the WMQ DCP, further assessment against the provisions of the SDCP 2012 has not been undertaken.



## 7.10. Comparative analysis of built form against SEPP (State Significant Precinct) 2005 and SLEP 2012

As required by the SEARs, a comparative analysis of the proposed built form has been provided with respect to applicable development standards and development controls. This includes the current planning framework under SLEP 2012 together with the planning provisions under the proposed SSP SEPP 2005 (refer to Table 34). It is noted that the bulk and scale of development and the extent of proposed retail use are reliant on the finalisation of the proposed amendment to the SSP SEPP.

**Table 34 – Assessment against the relevant provisions of the SSP SEPP 2005 and SLEP 2012**

Provision	Comment	SLEP 2012	SEPP (SSP) 2005 Waterloo Metro Quarter Precinct
<b>Aims of the Policy</b>	The concept proposal is generally consistent with the aims of both the SLEP 2012 and the SEPP (State Significant Precinct) 2005.	✓	✓
<b>Land use zone</b>	The site is currently zoned B4 Mixed Use under the SLEP 2012.  A B4 Mixed Use zone is proposed to apply under the proposed SEPP amendment.  The proposed land uses as part of this concept SSD Application are permissible land uses under both B4 Mixed Use zones.	✓	✓
<b>Subdivision and demolition</b>	Both the SLEP 2012 and proposed SEPP amendment include clauses that require development consent for the demolition of buildings. No demolition is proposed under this concept SSD Application, with demolition of buildings at the site previously considered as part of the CSSI Approval.	N/A	N/A
<b>Temporary uses</b>	No temporary uses are proposed as part of this concept SSD Application.	N/A	N/A
<b>Exempt and Complying Development</b>	In addition to development that is exempt development or complying development under any other planning instrument, a provision is proposed to be included in the SEPP amendment permitting temporary use of public spaces in Metro Quarter.  Exempt development within the proposed SEPP amendment includes the temporary use of public space for community events that are open to the general public with no entry charges, including public gatherings, ceremonies, celebrations, sporting events, events for community and outdoor exhibitions that may involve the installation of temporary structures having minimal visual impact (such as barricading) and	X	✓

Provision	Comment	SLEP 2012	SEPP (SSP) 2005 Waterloo Metro Quarter Precinct
	<p>temporary signage, that are otherwise ancillary to the event.</p> <p>Therefore consent is not sought for these uses as part of this concept SSD Application.</p>		
<b>Maximum building height</b>	<p>The building envelope proposes maximum heights of RL 116.9 metres (Building A), RL 104.2 metres (Building E) and RL 96.85 metres (Building F).</p> <p>This would not comply with the current maximum building height of 12-15 metres under the SLEP 2012. However, the proposed height would comply with the maximum building heights proposed in the SEPP amendment.</p>	X	✓
<b>Maximum FSR</b>	<p>The proposed FSR of the building envelope is 6.00:1. This would not comply with the current maximum FSR of 1.75:1 under the SLEP 2012.</p> <p>However, this would be below the maximum FSR of 6.1:1 of the proposed SEPP amendment.</p>	X	✓
<b>Heritage conservation</b>	<p>Through the analysis undertaken as part of this EIS, it has been determined that the Metro Quarter OSD would not result in any adverse impacts to the surrounding heritage context of the site. Further discussion has been provided to this respect at Chapter 8.9, and a Heritage Impact Assessment has been provided at Appendix Q.</p>	✓	✓
<b>End of journey floor space</b>	<p>Both the SLEP 2012 and the proposed SEPP amendment include provisions to exclude end of journey floor spaces for the purposes of commercial premises from the calculation of GFA, and enable a building to exceed the maximum FSR control by an amount equivalent to the end of journey floor space.</p> <p>All end of trip facilities, including those proposed as part of the Sydney Metro City &amp; Southwest project and the development of the Metro Quarter, have been excluded from the calculation of FSR.</p>	✓	✓
<b>Design excellence</b>	<p>The concept proposal would, if approved, guide detailed SSD Applications for a number of OSD buildings on the Metro Quarter site. The proposed amendment to the SSP SEPP and this concept SSD Application are supported by a Design Excellence Strategy that has been prepared to be applied consistently across Sydney Metro OSD projects, including Waterloo, Pitt Street North and South, Crows</p>	✓	✓

Provision	Comment	SLEP 2012	SEPP (SSP) 2005 Waterloo Metro Quarter Precinct
	<p>Nest and Victoria Cross, with minor variations to reflect the local circumstances of each station.</p> <p>The Design Excellence Strategy provides an alternative design excellence process to that under SLEP 2012 proposed to be undertaken to ensure design excellence is achieved through the detailed design stage. The Design Excellence Strategy has been previously discussed at Chapter 4.9.</p>		
<b>Active street frontages</b>	<p>The proposed SEPP amendment includes an Active Street Frontages map identifying frontages along Botany Road and parts of Raglan and Wellington Streets as requiring an active street frontage.</p> <p>Exceptions in this clause are made for parts of the building used for entrances and lobbies (including as part of mixed use development), access for fire services and vehicle access.</p> <p>The Metro Quarter OSD proposes retail uses along Botany Road and parts of Raglan Street and Wellington Street, which would comply with the proposed clause.</p> <p>The SLEP 2012 does not contain provisions requiring active street frontages.</p>	N/A	✓
<b>Requirement to prepare a DCP</b>	<p>In accordance with clause 7.20(2) of the SLEP 2012, a site-specific DCP is required to be prepared for development over 25 metres in height on a site greater than 5,000 square metres and on land outside of Central Sydney, which would include the subject site.</p> <p>The proposed SEPP amendment also required a site-specific DCP to be prepared for any new building in the Metro Quarter.</p> <p>In accordance with section 4.22 of the EP&amp;A Act, a concept DA may be undertaken in lieu of a site specific DCP, and accordingly this concept SSD Application fulfils the requirements of clause 7.20(2) and the proposed SEPP amendment requiring a site-specific DCP.</p>	✓	✓
<b>Flood planning</b>	<p>Flooding considerations, including runoff from the site, have been discussed further at Chapter 8.16. A Flood Study has also been prepared as part of this application, which has been provided at Appendix T. On the basis of the submitted assessment, it is concluded that the site is suitable for the proposed residential purpose.</p>	✓	✓

Provision	Comment	SLEP 2012	SEPP (SSP) 2005 Waterloo Metro Quarter Precinct
<b>Airspace operations</b>	<p>The applicable OLS ranges from 63 metres AHD, at the south-west corner of the site, to 73 metres AHD at the north-east corner of the site, which would be penetrated by the proposed envelope.</p> <p>On this basis, the concept proposal would require airspace height approval in accordance with the Airports Act from the Commonwealth DIRD, which has been further assessed at Chapter 8.12. An Aeronautical Impact Assessment Report has been provided as part of this application at Appendix Y.</p>	✓	✓
<b>Large retail development outside of Green Square Town Centre and other planned centres</b>	<p>Clause 7.23 of the SLEP 2012 limits development for the purposes of shops or markets to a GFA of no greater than 1,000 square metres.</p> <p>The concept proposal has approximately 3,905 square metres of GFA for the purposes of the retail premises, which would not comply with this clause of the SLEP 2012.</p> <p>However, the proposed SEPP amendment does not intend to include this provision, essentially removing this provision from applying to the Metro Quarter.</p>	X	N/A

## 8.0 Assessment of environmental impacts

This chapter discusses the key environmental impacts of the proposal and how these impacts are justified and/or mitigated. Technical reports underpinning the assessment and providing further detail are included in the Appendices.

As required by the SEARs, the assessment of each issue informs the environmental risk assessment (where relevant to that issue) at Chapter 13.0 based on:

- adequate baseline data
- consideration of cumulative impacts due to other development in the vicinity
- measures to avoid, minimise and if necessary offset the predicted impacts including contingency plans for managing significant risks to the environment.

### 8.1. Secretary's Environmental Assessment Requirements

Table 2 in Chapter 2.3 sets out the individual matters listed in the SEARs and identifies where each of the relevant requirements have been assessed throughout this EIS and / or in the appended technical studies.

### 8.2. Built form and urban design

DCPs do not apply to SSD pursuant to clause 11 of the SRD SEPP, and accordingly are not applicable to this concept SSD Application. The WMQ DCP and SDCP 2012 have, however, been considered as guidance documents which have informed the proposed built form and other aspects of the proposed OSD.

It is noted that the proposed envelope has also been separately assessed in regard to the various potential impacts which may arise from the built form, including:

- visual and view impact – Further discussed at Chapter 8.6
- outlook and solar access impact– Further discussed at Chapter 8.4 and Chapter 8.5
- noise and vibration impact – Further discussed at Chapter 8.17
- reflectivity impact – Further discussed at Chapter 8.20
- wind impact – Further discussed at Chapter 8.13

Built form impacts have also been assessed as part of the options analysis, discussed in Chapter 1.0.

#### 8.2.1. Podium element

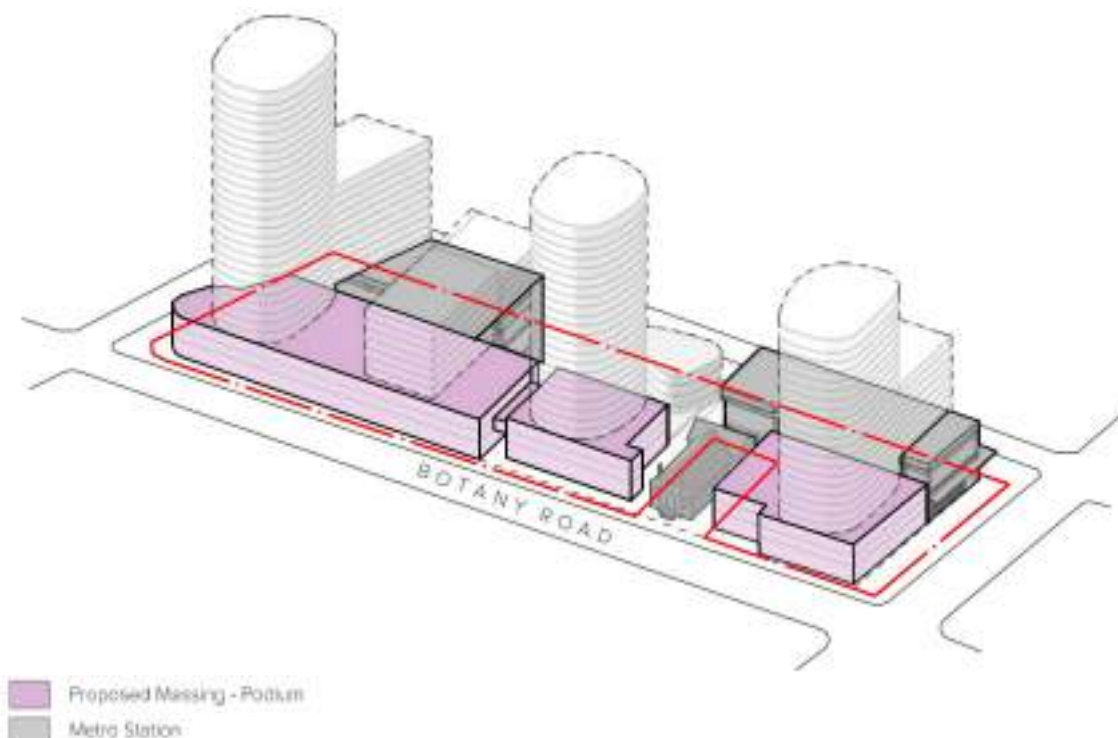
At the building podium, the WMQ DCP enables the provision of three storey street wall along Botany Road and Raglan and Wellington Streets (as shown in Figure 71). Front setbacks ranging between 2.5 metres and 10 metres are required to facilitate the provision of widened footways and a new publicly accessible plaza on Raglan Street.

The setback treatment proposed on the corner of Raglan Street and Botany Street provides a distinct change from a setback of 5 metres to 10 metres once entering the Raglan Street Plaza. This treatment provides a level of wind protection for pedestrians along Raglan Street which is set to accommodate increased pedestrian volumes as a result of Waterloo Station.

The proposed envelope results in the provision of setbacks consistent with the WMQ DCP to Botany Road and Raglan and Wellington Streets up to a height of RL 31.20 metres AHD. This represents a maximum street wall height of three storeys at the site, complying with the WMQ DCP.

The widened setback and podium height on Botany Road establishes a setting that responds to the Waterloo Congregational Church and would enhance its presence within the streetscape and increase view lines to and from the church along Botany Road. This aims to reconnect it as a social anchor within the community and reflect the historical context of Waterloo.

Further, given the development of the station boxes up to a height of RL 33.10 AHD (northern station box) and RL 35.10 metres AHD (southern station box), the proposed podium effectively serves as a continuation of the approved station box envelopes, providing an integrated design approach to the streetscape. This is illustrated at Figure 71 below.



**Figure 71 – Podium element of the Metro Quarter OSD**

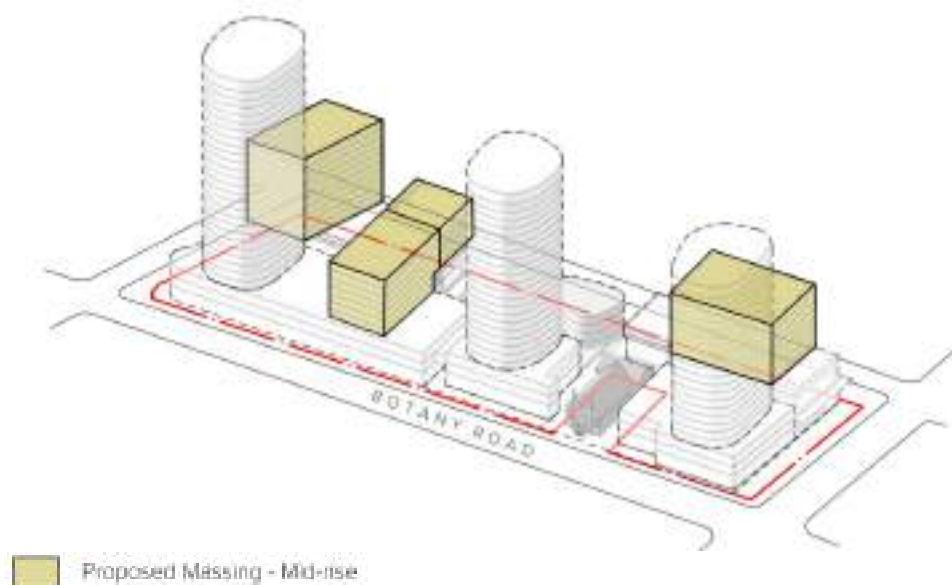
### 8.2.2. Mid-rise buildings

The Metro Quarter OSD proposes for three mid-rise buildings above the station boxes that would range from 4 storeys (RL 56.20 AHD), 7 storeys (RL 64.06 AHD) and 10 storeys (RL 71.60 AHD) and would be compliant with the number of storeys identified by the WMQ DCP.

The mid-rise envelopes reference the building typologies of recent residential infill buildings throughout the locality and provide a transition between podium and tower typologies. The location and heights of envelopes also scale down toward Cope Street and the proposed Cope Street Plaza to provide adequate amenity for pedestrians and recreational users (as shown Figure 72).

The mid-rise envelopes would continue the setback of the metro station boxes from Raglan Street and Cope Street to better integrate the scale of development with the streetscape and public domain. A 2 metre upper level setback has been provided from Wellington Street for the mid-rise envelopes to minimise overshadowing impacts to residences south of the site.

The positioning of mid-rise envelopes complies with minimum building separation requirements in the ADG.



**Figure 72 – Mid-rise element of the Metro Quarter OSD**

### 8.2.3. Taller buildings

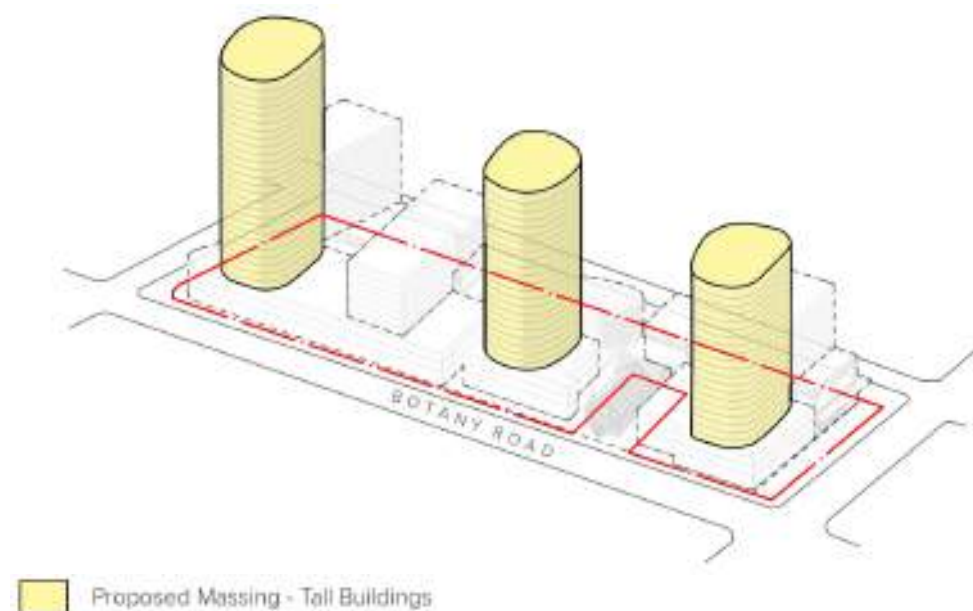
Three taller building forms of 23, 25 and 29 would act as destination markers for Waterloo Station and the new activity centre (as shown in Figure 73). The heights of the tower envelopes comply with the maximum number of storeys outlined within the WMQ DCP to minimise overshadowing impacts to Alexandria Park (west of the site) and facilitate a transition of building scale to surrounding developments, and the wider Waterloo area.

The curvature of the taller building envelopes would visually soften the buildings, mitigate potential wind downwash and reduce the floor plate size. This form also aims to maximise residential amenity by

allowing apartments to orient away from the noise and traffic of Botany Road, while maximising views from apartments in all directions.

Locating the taller building envelopes in the west of the site allows the OSD to maintain development potential without impacting on the proposed publicly accessible plaza on Cope Street, and responds to structural limitations of the metro station boxes. The positioning of taller building envelopes would also comply with minimum building separation requirements outlined within the ADG.

The taller buildings would be flush with the primary setback of the podium on Botany Road. At the southern boundary of the site on Wellington Street, the southernmost taller building envelope has a 2.5 metre upper level setback from the primary podium setback. This is consistent with the WMQ DCP controls.



**Figure 73 – Taller buildings of the Metro Quarter OSD**

### 8.2.4. Recommendations

The future detailed SSD Application for the OSD would need to propose a building that is consistent with the maximum building envelope prescribed in this concept SSD Application (other than a potential architectural roof feature or other rooftop devices, which would be assessed separately on merit).

The detailed design of the future OSD would also be guided by the Design Guidelines prepared by Sydney Metro (Appendix K). The design excellence of the future OSD would be ensured through adherence to the Design Excellence Strategy (Appendix J) prepared by Sydney Metro, which provides an objective and structured process that ensures that design excellence is maintained throughout the design, procurement and delivery process of the integrated station development.



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## 8.3. Streetscape and public domain

### 8.3.1. Streetscape impacts

Delivery of the public domain works would be split, with areas surrounding the metro station boxes and providing for interchange delivered under the CSSI Approval and remaining areas delivered as part of the OSD (refer Chapter 4.10.2).

The concept development proposal facilitates a detailed design which would provide a positive outcome for the adjoining streetscape through design excellence and ground plane activation (as shown within Figure 74). Frameworks have been prepared which seek to ensure that design excellence is achieved and that public art is included and integrated into the final design.

The public domain plan identifies the following changes to surrounding streets:

- the new Cope Street Plaza as a pedestrian focused space
- generous circulation widths and active frontages to support movement and moments for respite and pause, including widened footpath widths to 6 metres -10 metres on Botany Road and 15 metres on Raglan Street
- new pedestrian through site links that create direct and legible links between a new community arrival station entry (as part of the CSSI Approval) and the bus interchange on Botany Road
- redefining Cope Street as a slow street with considered design of kerb alignments, bicycle parking, street furniture
- limiting vehicular movement across the precinct through the application of a single-access shared zone off Cope Street
- positioning vehicle entrance points for servicing and loading zones toward precinct edges and on vehicular priority streets of Botany Road and Wellington Street to minimise conflict with pedestrians

Non-residential uses catering to local need such as community services and convenience needs such as cafes have been located at the ground level, clustered around pedestrian desire lines associated with the metro station to enliven the adjoining public domain, provide for a comfortable and convenient Metro customer experience and mitigate adverse amenity impacts from Botany Road.



**Figure 74 – Ground floor presentation of the OSD to the surrounding public domain**

Furthermore, as shown in Figure 75, publicly accessible (privately owned) open spaces would receive 50% direct sunlight to the principal usable part of these spaces for over 2 hours between 9 am and 3 pm on the winter solstice (21 June).



**Figure 75 – Solar access for publicly accessible plazas and communal open space (Note: times signalled with tick comply with ADG)**

The future detailed SSD Application for the OSD would include further detail regarding the final streetscape presentation of the OSD components of the site.

During the detailed design development of the OSD, compliance with the proposed building envelopes should be adhered to, to ensure that overshadowing impacts of publicly accessible open space in the form of plazas comply with the relevant DCP provisions.

### 8.3.2. Recommendations

Compliance with the proposed building envelope would ensure that the future OSD has an acceptable impact on the public domain. The ground level interface of the development is to be consistent with the Design Guidelines (Appendix K).

## 8.4. Solar access

### 8.4.1. Solar access to Alexandria Park

The SDCP 2012 and the WMQ DCP include controls to reduce additional overshadowing of public open space, during certain periods of the year. Specifically, the controls require “50 percent of the total [park] area is to receive sunlight for 4 hours from 9am to 3pm on 21 June” (mid-winter).

The proposed development, including the proposed heights and locations of the taller building form, has been informed by a solar access plane (refer to Figure 76) which protects 50 percent of the primary area of the passive recreation area in the eastern part of Alexandria Park from overshadowing between 10am and 2pm on 21 June.

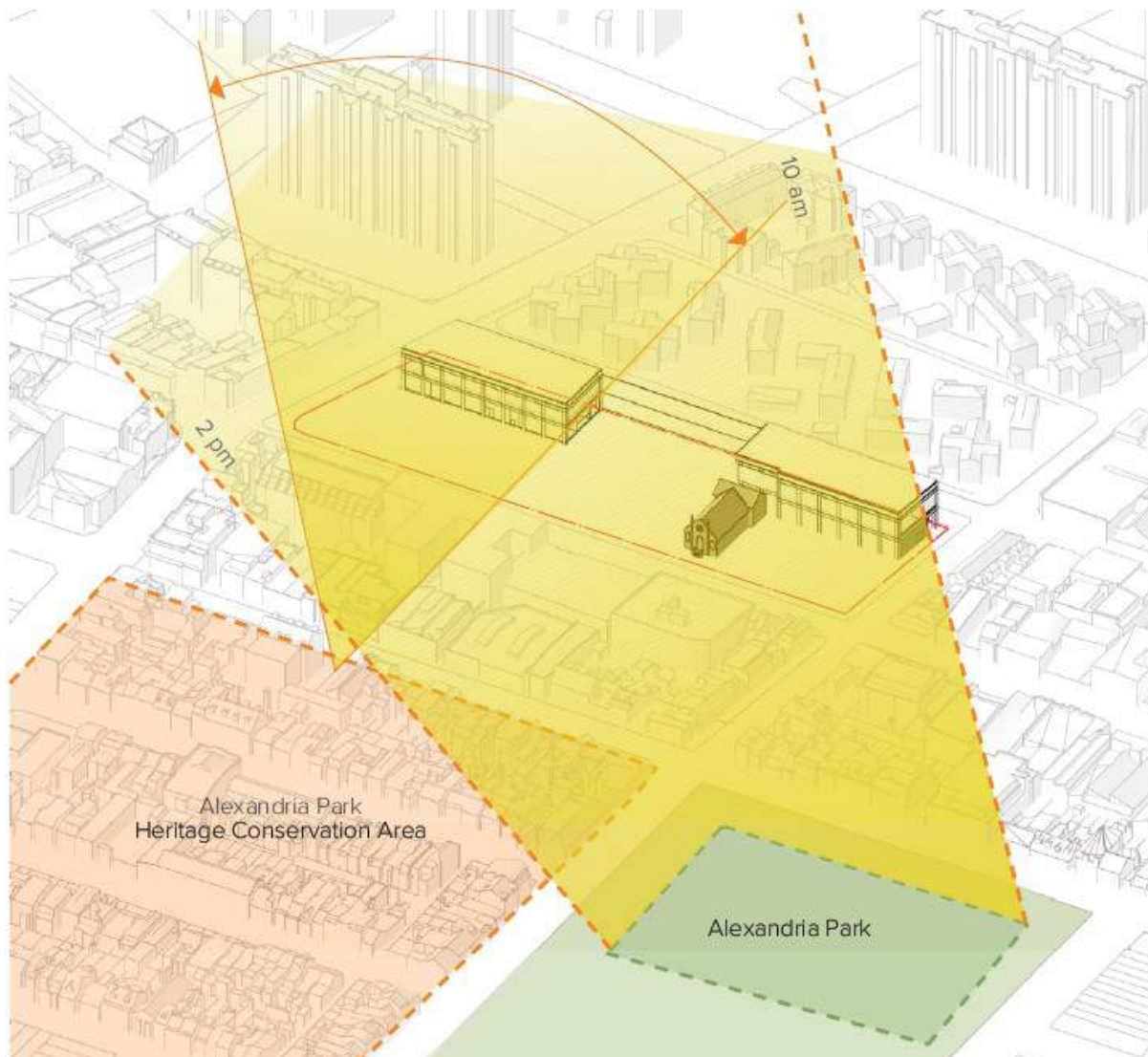


Figure 76 – Solar access planes for Alexandria Park and the Alexandria Park Conservation Area

As shown in Figure 76, the proposal maintains solar access to Alexandria Park in excess of the required 50 percent for 4 hours between 9am and 3pm on 21 June. The analysis of overshadowing impacts has excluded the sports field that occupies the western part of the park, which is not impacted by overshadowing from the proposed development. The eastern part of the park, which is used for passive recreation, maintains in excess of 50 percent solar access at all times between 9am and 3pm on 21 June. Only limited overshadowing occurs to the Park, near the eastern boundary, between 9am to 10am, on 21 June. After 10am, the proposed development would result in no overshadowing to the Park. As such the overshadowing impacts of the proposed development to Alexandria Park are considered negligible.



Figure 77 – Solar access for Alexandria Park (times signalled with a tick maintain solar access to 50 percent of the park)

#### 8.4.2. Solar access to surrounding properties

The proposed development has been designed to ensure that overshadowing of adjacent residential properties, is minimised. A solar access analysis has been undertaken (refer to Appendices E and H) to consider the impacts of the proposed envelopes in accordance with the provisions of the WMQ DCP and the ADG.

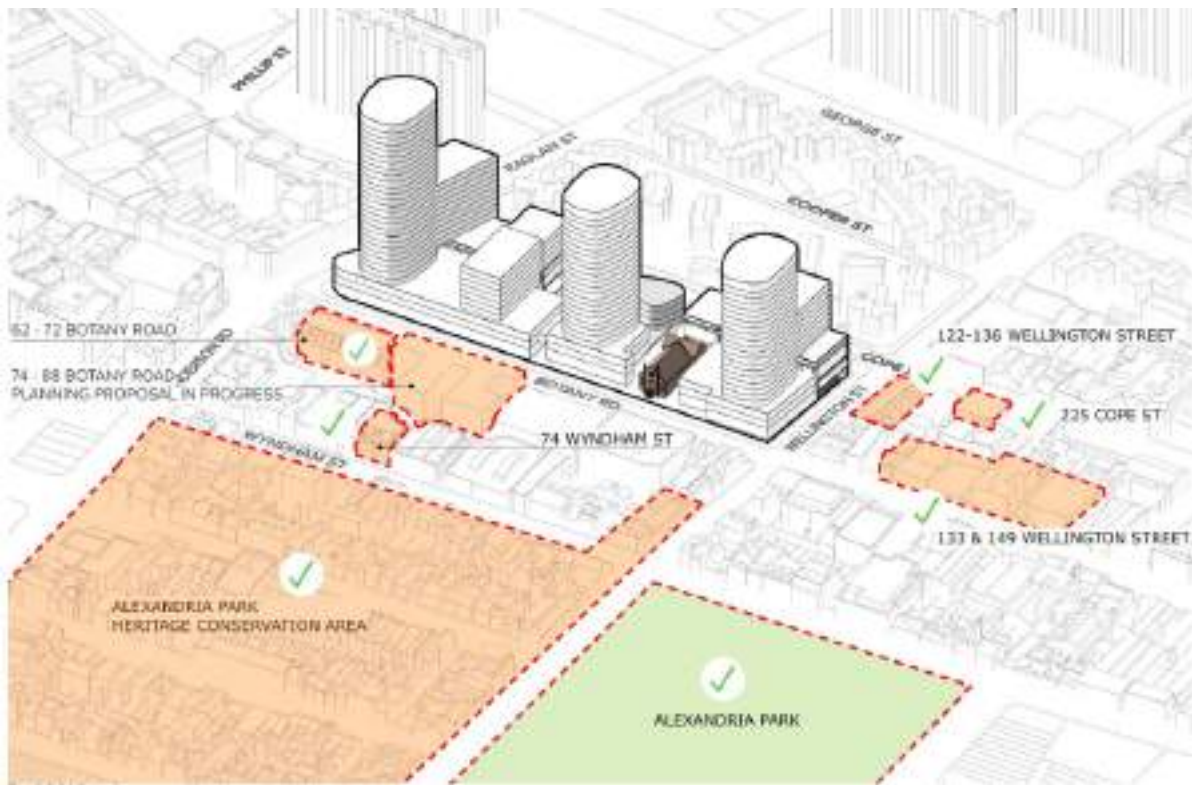
Specifically, the analysis is based upon a methodology of calculating existing and future solar access to the relevant building facades of the affected buildings, in accordance with:

- **Section 4.1.3.1 and Section 4.2.3.1 Solar access of the SDCP 2012:** Development sites and neighbouring dwellings are to achieve a minimum of 2 hours direct sunlight between 9am and 3pm on 21 June onto at least 1 square metres of living room windows and at least 50 percent of the minimum amount of private open space.
- **Objective 4A-1 Design Criteria 1 of ADG:** Living rooms and private open spaces of at least 70 percent of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid-winter.

The following section outlines the findings of this analysis with respect to the properties and areas assessed (shown in Figure 78), which include:

- Alexandria Park Heritage Conservation Area
- 74 Wyndham Street (Living areas)
- 62-72 Botany Road (Living areas)
- 74-88 Botany Road (Living areas)
- 133 and 149 Botany Road (Living areas)
- 122-136 Wellington Street (Living area and private open space)
- 180-184 Cope Street (Living areas)

These properties are reflective of existing and approved residential buildings within the vicinity of the site.



**Figure 78 – Solar access for neighbouring dwellings and Alexandria Heritage Conservation Area**

### **Alexandria Park Heritage Conservation Area**

The Alexandria Park HCA is located directly west of the site. The proposed envelopes have been informed by a solar access plane (refer to Chapter 8.4.1 above).

As shown in Figure 79, envelopes would result in additional overshadowing of properties along Wyndham Street and Garden Street between 9am and 10:30am on 21 June (mid-winter). Notwithstanding, the properties would maintain the minimum solar access provision in accordance with the controls outlined above.

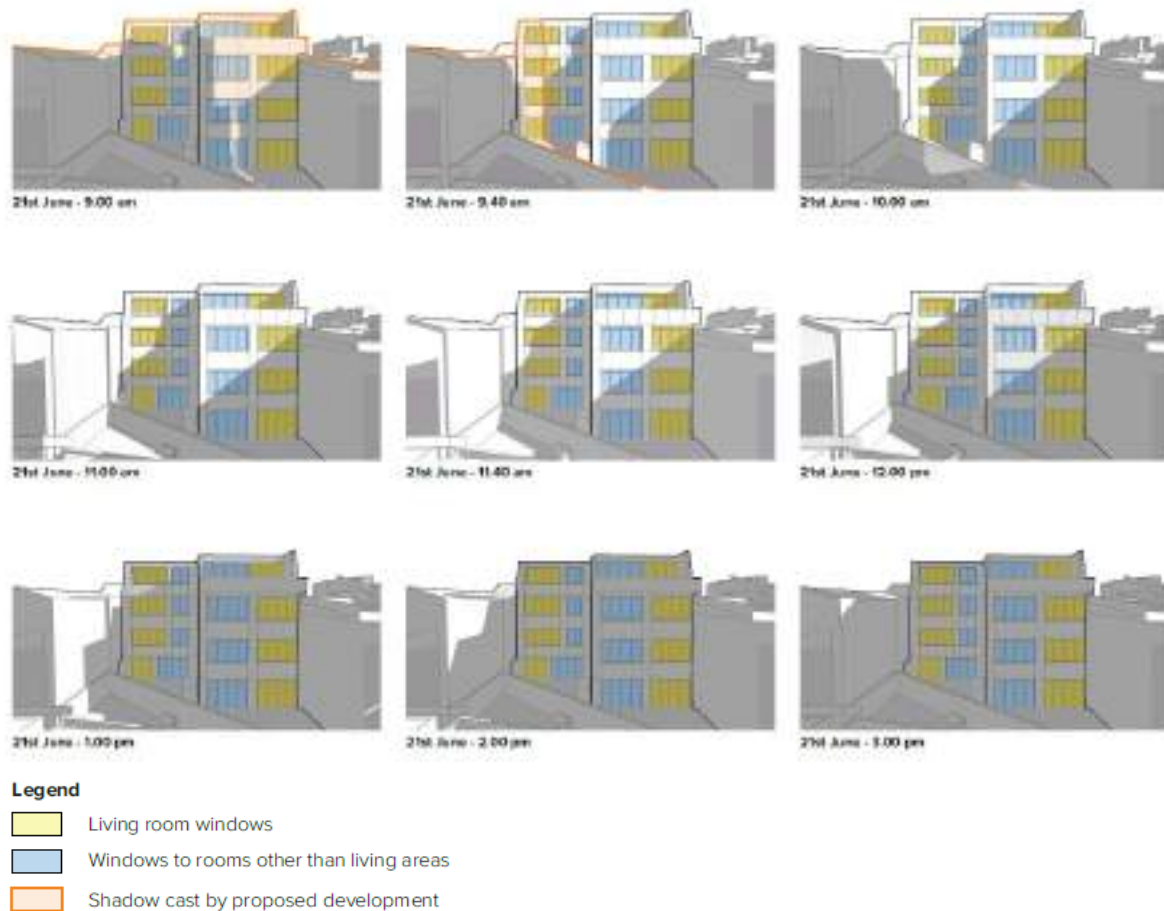


**Figure 79 – Solar access for Alexandria Park Heritage Conservation Area between 9am to 11am (Note: There is no additional overshadowing between 11am and 3pm)**



## 74 Wyndham Street

74 Wyndham Street is located to the west of the site. As shown in Figure 80, the proposed envelopes would result in minor additional overshadowing to the living areas on the eastern façade of the building between 9am and 10am on 21 June. Notwithstanding, the living areas would receive the minimum solar access in accordance with the controls outlined above.



**Figure 80 – Solar access for 74 Wyndham Street 9am to 3pm**

## 62-72 Botany Road

62-72 Botany Road is located directly west of the site. The development has bedrooms facing the Botany Road frontage. All living room windows and private open space are orientated to the west, away from Botany Road. Subsequently, the proposed envelopes would have no impact on the solar access provision to living room windows or balconies at the development.

## 74-88 Botany Road

74-88 Botany Road is located directly west of the site. An approved development application for mixed use development at 74-88 Botany Road includes living rooms fronting Botany Road. As a result, the proposed envelopes of Metro Quarter OSD would overshadow a significant portion of the living room

windows, resulting in a non-compliance with the above controls. It is understood the landowner is currently investigating alternative massing options involving a taller building with north facing apartments that would achieve solar compliance to at least 70 percent of the apartments.

### 133-149 Botany Road

133-149 Botany Road is located to the south of the site. The proposed development would result in minor overshadowing of living room windows on the eastern façade at the north-eastern corner of the development (as shown in Figure 81). Notwithstanding, the development would maintain the minimum solar access as required by the controls.

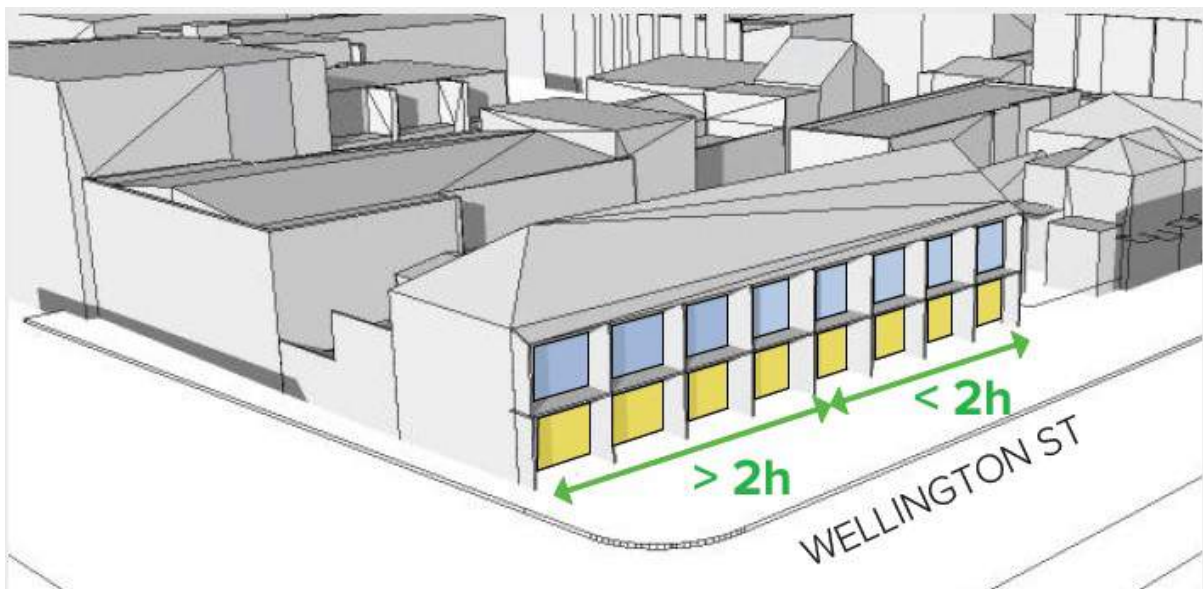


**Figure 81 – Solar access for 133-149 Botany Road 9am to 3pm**

### 122-136 Wellington Street

122-136 Wellington Street, a collection of two-storey residential terraces, is located directly south of the site. As shown in Figure 82, living room windows front Wellington Street at the ground level. Dwellings 130-136 currently do not achieve the minimum solar access requirements as a result of the approved southern metro station box. The proposed envelopes would not create any additional overshadowing impacts to the living rooms of these dwellings. Dwellings 122-128 would maintain a minimum of 2 hours direct solar access in accordance with the above controls.

Further, given the southern orientation and narrow dimensions of the lots at 122-136 Wellington Street, the private open spaces are currently overshadowed by the existing dwellings. The proposed envelopes would have no additional overshadowing impacts on the private open space.

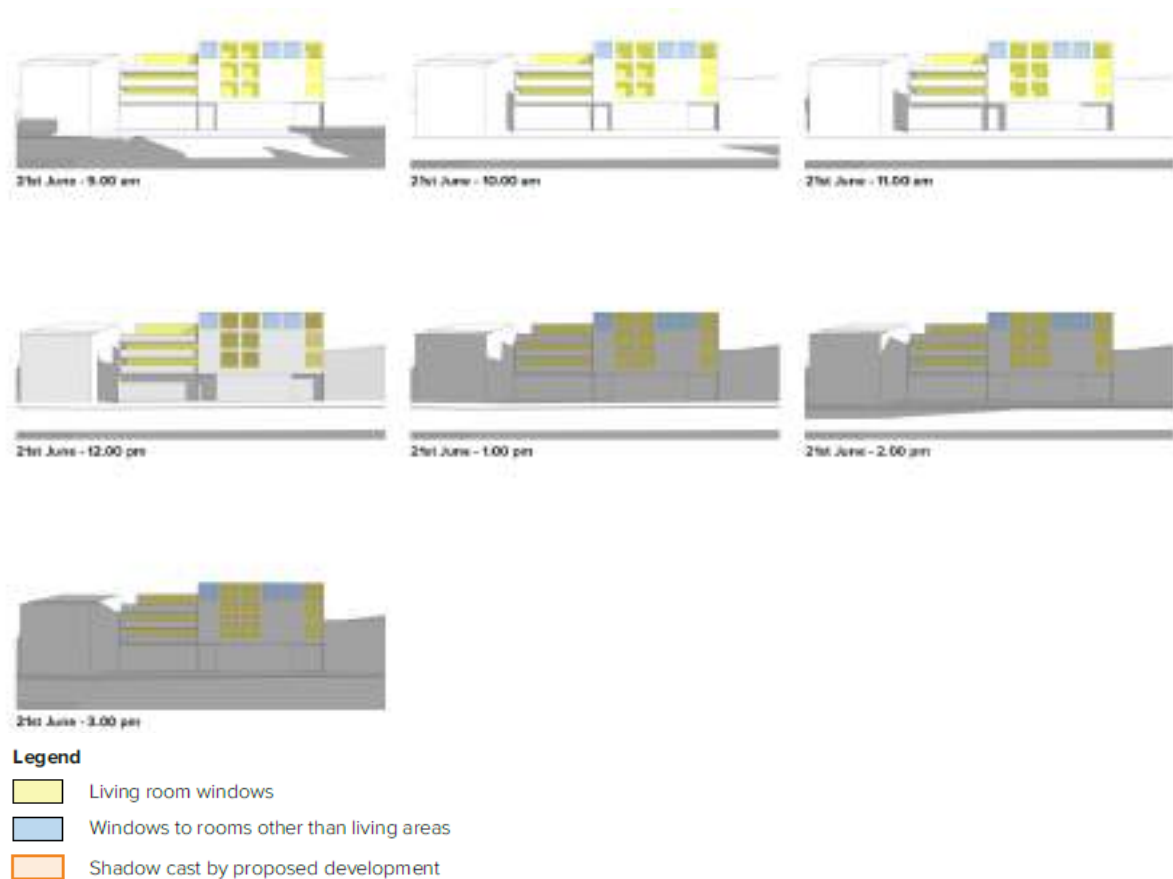


- Legend**
-  Living room windows
  -  Windows to rooms other than living areas
  -  Achieves Solar Access

**Figure 82 – Solar access for 122-136 Wellington Street**

### 180-184 Cope Street

180-184 Cope Street is located to the south of the site. As shown in Figure 83, the proposed envelopes would not reduce solar access to the living room windows located on the eastern façade of the development.



**Figure 83 – Solar access for 180-184 Cope Street 9am to 3pm**

### 8.4.3. Recommendations

During the detailed design development of the OSD, compliance with the proposed building envelopes should be adhered to, to ensure that overshadowing impacts of the proposed buildings comply with the relevant DCP provisions. Specifically, the proposed envelopes should be maintained to ensure overshadowing to Alexandria Park does not occur after 10am on 21 June and that the proposed development continues to have a negligible overshadowing impact.

Detailed shadow diagrams are to be submitted as part of future detailed SSD Application(s).

No other mitigation measures have been identified.

## 8.5. Residential amenity

The Urban Design and Public Domain Report at Appendix G and the Indicative Concept Proposal Amenity Summary at Appendix E includes an assessment of the potential for a future detailed building design to achieve an adequate level of amenity for residential apartments. It is noted that the concept proposal is supported by an indicative concept design, commensurate with the level of detail required for a concept SSD Application, and a complete assessment against the provisions of the ADG would be provided as part of a future detailed SSD Application.

Key aspects of the proposal's compliance with the ADG are outlined below, with further detail provided at Appendix E. The SEPP 65 Design Verification and Better Placed Assessment at Appendix F also demonstrates how each of the nine Principles which underpin SEPP 65 have been addressed as part of the concept SSD Application.

### Solar Access

In relation to the provision of solar access to future apartments at the site, the following criteria are relevant for the purposes of this concept SSD Application:

#### Design Criteria 4A-1

1. Living rooms and private open spaces of at least 70 percent of apartments in a building receive a minimum of 2 hours direct sunlight between 9.00am and 3.00pm at midwinter in the Sydney Metropolitan Area
3. A maximum of 15 percent of apartments in a building receive no direct sunlight between 9.00am and 3.00pm at midwinter

The indicative concept design has been tested against the solar access criteria in the ADG (refer Appendix E). In accordance with Design Criteria 4A-1(1), the indicative design proposed would result in 76 percent of apartments for Podium North (Buildings A to E) and 71 percent of apartments for Podium South (Buildings F and G) complying with the solar access requirements, which meets the requirement.

Additionally, in accordance with Design Criteria 4A-1(3), the indicative design results in 15 percent of apartments for Podium North and 15 percent of total apartments for Podium South receiving no sunlight. This complies with the maximum 15 percent requirement under the ADG. Apartment planning and orientation would be subject to further design development and assessment as part of the separated detailed SSD Application(s).

### Cross Ventilation

In relation to the provision of natural cross ventilation, the following criteria are relevant for the purposes of this concept SSD Application:

#### Design Criteria 4B-3

1. At least 60 percent of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only

if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed

2. Overall depth of a cross-over or cross-through apartment does not exceed 18 metres, measured glass line to glass line

A base case scheme demonstrates that the concept proposal is capable of meeting the minimum 60 percent of apartments being naturally ventilated in the first nine storeys, with 67 percent of apartments for Buildings A to E and 60 percent of apartments for Buildings F & G being naturally ventilated.

While Botany Road facing apartments would ordinarily achieve cross ventilation compliance through their corner location, the preclusion of operable openings to minimise noise impacts would remove the ability for these apartments to be counted. The resulting cross ventilation percentage of a 'noise responsive' scheme would be lower than the ADG requirement. This minor numerical variation under a 'noise responsive' scheme is considered acceptable, given the need to balance the amenity of the residential apartments with regard to attenuating the noise from Botany Road to acceptable levels.

The detailed design of a future scheme, including testing to determine the proportion of apartments which are able to be naturally ventilated, would be subject to a separate detailed SSD Application(s).

### **Building Separation and Privacy**

Under the ADG, residential buildings which are higher than eight storeys are subject to the following minimum separation distances:

- 24 metres between habitable rooms / balconies
- 18 metres between habitable and non-habitable rooms
- 12 metres between non-habitable rooms

The Metro Quarter is bounded by Botany Road and Raglan, Cope and Wellington Streets (excluding Waterloo Congregational Church), which provide a substantial buffer to any development outside the site, and results in the provision of separation distances that are significantly larger than the minimum specified distance.

### **Internal Separation**

As shown in Figure 84 below, the internal separation of building envelopes within the Metro Quarter concept proposal complies with the minimum separation distances between residential buildings under the ADG. Separation distances between buildings A, D, E and F (above 8 storeys) would be greater than 24 metres, allowing for habitable rooms to be located on each side. The separation distance between Building B (10 storeys above station box) and Building C (4 storeys above station box) reduces toward Cope Street to 18 metres. This would provide adequate separation to comply with ADG requirements.

It is noted that this is for the purposes of indicative scheme testing only, with the final design subject to further detailed planning and assessment. Floor plan layout, fenestration and balconies may require

some treatments, such as louvres or blank walls, in the event that ADG minimum separation distances are not fully complied with.



**Figure 84 – Internal building separation**

### Communal open space

Under the ADG, a minimum area of communal open space equal to 25 percent of the site is required. In addition, a minimum of 50 percent direct sunlight to the principal useable part of the communal open space is required for a minimum of 2 hours between 9am and 3pm on 21 June (mid winter).

As shown in Figure 85 below, the concept proposal demonstrates compliance with this requirement, providing approximately 3,200 square metres of communal open space as podium and rooftop gardens. These areas would have direct sunlight to at least 50 percent of the principal useable space between 9am and 11am, complying with this requirement.



Figure 85 – Solar access to communal open space and publicly accessible open spaces

### 8.5.1. Recommendations

The future detailed SSD Application would need to provide a detailed assessment and justification of the level of amenity provided within future residential apartments, including a more detailed assessment of the proposal against the relevant provisions of SEPP 65 and the ADG.

## 8.6. Visual and view impacts

A Visual Impact Assessment Report is provided at Appendix M. The report has been prepared to assess the proposed envelope's visual effects on views to and from adjoining developments, key vantage points and streetscape locations, with particular regard to:

- close views from surrounding and nearby suburban streets
- views from significant local open space, notably Waterloo Park, Alexandria Park and Redfern Park
- regional views including from Sydney Park

A total of 11 local views (refer to Figure 86) and 10 regional views (refer to Figure 87) were selected. For each of the selected views, the report provides a qualitative assessment of:

- the existing visual environment (as viewed from the agreed critical viewing points)



- the capacity of the visual environment to absorb change (as viewed from the agreed critical viewing points)
- the amount of change that would be experienced as a result of the implementation of the proposal (carried out with the aid of survey accurate photomontages prepared from agreed critical viewing points)
- the visual quality of the changed visual environment in comparison with the environment prior to development

The assessment has been informed by relevant planning principles set by the Land and Environment Court of NSW, specifically in *Rose Bay Marina Pty Ltd v Woollahra Council and Anor [2013] NSWLEC 1046*. A review of the assessment conclusions against the Court planning principles is provided at Chapter 5.7 of the Visual Impact Assessment Report.

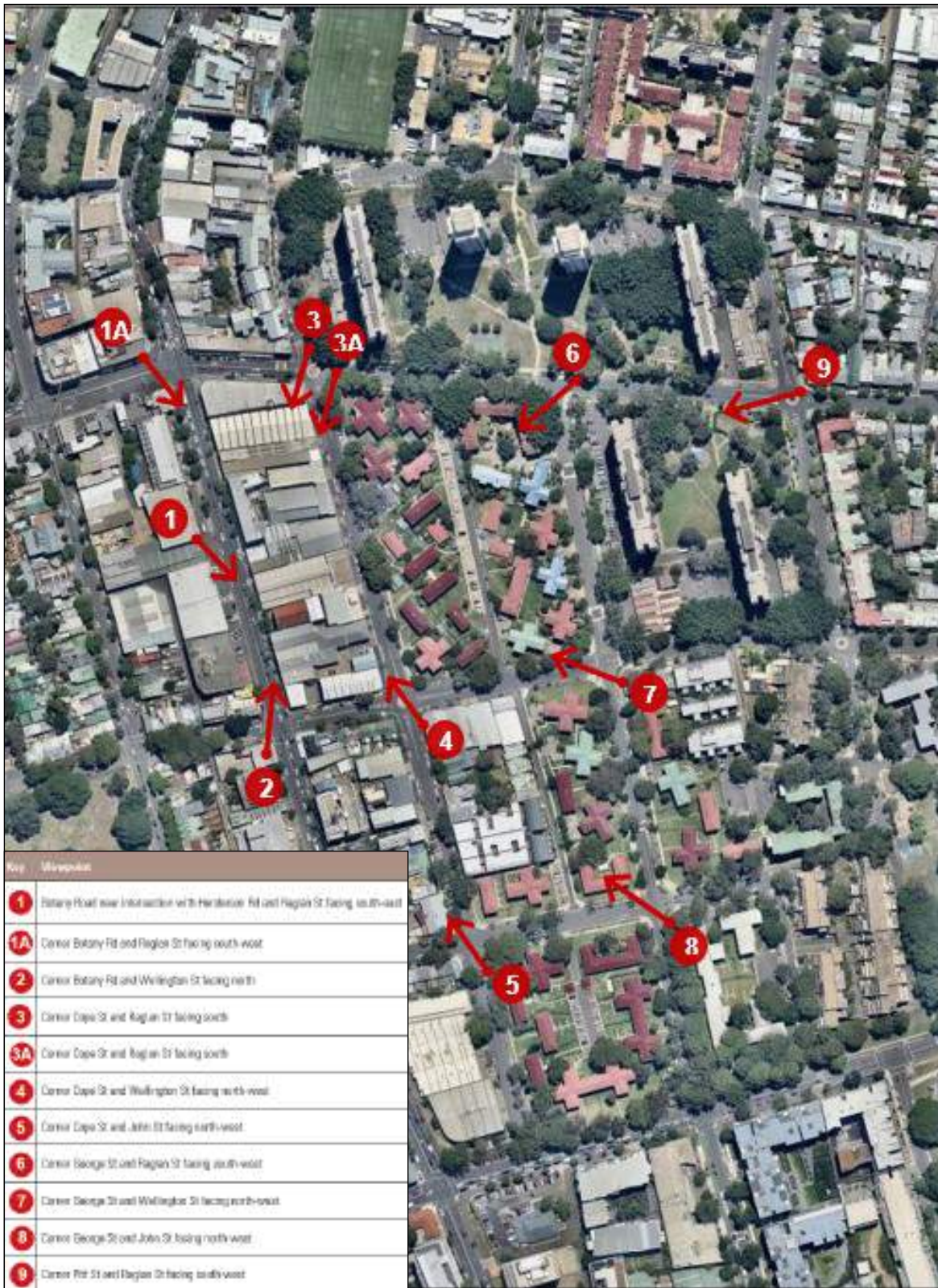


Figure 86 – Local viewpoints



Key	Viewpoint
A	Redfern Oval (adjacent to north eastern edge of oval)
B	Redfern Oval (south western edge of oval)
C	Waterloo Oval
D	Alexandria Park (south western corner of park)
D1	Alexandria Park (western side of playing fields)
E	Sydney Park (ball top)
F	Hills Park, Erskineville
G	Henders Road / (landmark) (view from the carriageway)
H	Alexandria Park (north eastern edge)
I	Redfern Park (north eastern edge)

Figure 87 – Regional viewpoints

### 8.6.1. Local views

Local view points were selected, in consultation with UrbanGrowth and CoS, from areas adjacent the site and within the overall Waterloo Precinct. These views were categorised as:

- Close views – streets adjacent the site; or
- Medium distant views – streets and open spaces within the Waterloo Precinct.

An assessment of these views is provided below.

### **Close views**

The visual environment surrounding the site is characterised by Botany Road, Raglan Street, Cope Street and Wellington Street. The visual environment of Botany Road, between Raglan Street and McEvoy Street is of low quality, dominated by private and industrial vehicular traffic, buildings of low architectural quality and low pedestrian quality. The other surrounding streets present a higher quality visual environment, having a higher proportion of residential uses and a higher level of pedestrian amenity.

Botany Road has a high capacity for change and the proposed development represents an opportunity for major improvement to visual quality at street level, whilst responding appropriately to the heritage values of the Waterloo Congregational Church. The other surrounding streets display built form and landscape elements that contribute to a visual character of medium quality. The streets are considered to have a moderate capacity to absorb change.

Photomontages of the proposed envelopes from the selected viewpoints are shown in Figure 88.

The visual catchment of the selected viewpoints would change significantly as a result of the proposed envelopes. The podium height adjacent to Botany Road remains generally consistent with the former buildings. The new towers would read as a continuous and coherent built form from this angle to the south, addressing the street. The Waterloo Congregational Church would become a more visible element in the Botany Road streetscape. As a result, the assessment concludes that the proposed envelopes would result in a positive change to the Botany Road visual catchment.

The development would be in significant contrast to the existing relatively open residential precinct on the eastern side of Cope Street. Allowance for the successful planting of street trees along Cope Street and to the new public domain would be critical to maintaining a human scale in the existing residential environment. Details would be submitted as part of the detailed SSD Application(s).



Viewpoint 1 – Botany Road near the intersection with Henderson Road and Raglan Street, facing south-east



View 1A – Corner Botany Road and Raglan Street, facing south-east



Viewpoint 2 – Botany Road near the intersection with Henderson Road and Raglan Street, facing south-east



Viewpoint 3 – Corner Cope Street and Raglan Street, facing south



Viewpoint 4 – Corner Cope Street and Wellington Street, facing north-west

**Figure 88 – Local viewpoints (close views)**

### **Medium distant views (within the Waterloo Estate)**

The medium distant views towards the OSD are largely available in and around the existing Estate to the east of the site. The Estate incorporates a number of elements including residential towers (up to 29-storeys), wide streets, many of which are tree-lined and with substantial street setbacks. Within views from the eastern area of the Estate, looking towards the OSD, the existing taller estate buildings are prominent, which provides a foreground setting that integrates with the proposed OSD.. As a result of the existing Estate built form, there is an opportunity to develop tall, slender buildings within the Metro Quarter that would continue the established theme of dramatic sculptural elements in the local and regional townscape.

Based on the existing characteristics of the visual environment it is considered that the view catchment (within the Waterloo Estate) has a moderate capacity to absorb change.

Photomontages of the proposed envelopes from the selected viewpoints are shown in Figure 89.

The montages illustrate that only the proposed taller building envelopes would be visible in the visual catchment of and around the Estate. The form and separation of the proposed buildings results in them reading as distinct and separate elements in these views. Podium and lower built form elements would only be visible above existing foreground buildings.

The proposed envelopes would result in a moderate level of change to the visual environment of the Estate. Subject to high quality architectural outcomes, the assessment concludes that the resulting level of change to these views would be acceptable.



Viewpoint 7 – Corner George Street and John Street, facing north-west



Viewpoint 5 – Corner Cope Street and John Street – facing north-west



Viewpoint 8 – Corner George Street and John Street, facing north-west



Viewpoint 6 – Corner George Street and Raglan Street, facing south-west



Viewpoint 9 – Corner Pitt Street and Raglan Street, facing south-west

**Figure 89 – Local viewpoints (medium distant views)**

## 8.6.2. Regional views

Regional views were selected, in consultation with UrbanGrowth NSW and CoS, as a representative sample of regional viewpoints within 2 kilometres of the site, on the following basis:

- They are from broad open public places where it would be expected that views and visual quality would be highly valued by visitors; and
- They include views towards the site that would be representative of the types of views that would be available from private places in the same vicinity.

The views are categorised as:

- Medium distant views – streets and parks outside of the Waterloo Precinct and between 200 metres and 700 metres of the site; or
- Distant views – significant viewpoints up to 2 kilometres from the site.

An assessment of the selected views is provided below.

### **Medium distant views (outside the Precinct)**

Medium distant views, outside the Precinct, largely consist of views from key areas of open space, being Redfern Oval and Park, Waterloo Park and Alexandria Park. The visual catchment is characterised by medium density suburban environments, including the existing taller buildings in the Estate, broken by the areas of open space.

Due to the visual dominance of the existing development, being taller buildings within the Estate, the visual environment is considered to have a high capacity to absorb change.

Photomontages of the proposed envelopes from the selected viewpoints are shown in Figure 90.

In views from the north (Viewpoints A, B and I), in and around Redfern Oval and Park, the proposed envelopes are primarily screened by the existing built form in the Estate, trees and topography changes. The wireframe overlay of the proposed envelopes in Viewpoints B and I and Viewpoint C, from the south, indicate that the development would not be visible at all from these viewpoints.

In views from the west (Viewpoints D and D1), in and around Alexandria Park and the Alexandria Park Conservation Area, the proposed envelopes are visible skyline elements appearing above a foreground of large trees. The taller building envelopes would be variably visible from the grid of streets within the Alexandria Park HCA. The existing built form of the Estate is dominant in these views and forms a precedent for the appearance of the additional taller building envelopes. As such, the impact of the proposed envelopes is considered acceptable, contingent on achievement of design excellence for future built form.

Due to the developed nature of the area, views of the proposed envelopes from the south are significantly screened. The assessment concluded that there are no views of the proposed envelopes available from the parks and streets to the south of the site.





Viewpoint A – Redfern Oval (north-eastern edge), facing south-west



Viewpoint B – Redfern Oval (south-western edge), facing south-west



Viewpoint I – Redfern Park (north-eastern edge), facing south-west



Viewpoint C – Waterloo Oval, facing north-west



Viewpoint D – Alexandria Park (south-western corner), facing north-east



Viewpoint D1 – Alexandria Park (western side), facing north-east



Viewpoint G – Corner of Henderson Road and Gerard Street, facing east

#### **Figure 90 – Regional viewpoints (medium distant views)**

##### **Distant views**

In the highly developed regional environment that surrounds the site, opportunities for panoramic long distance views towards the site are limited. Sydney Park (hill top) provides a relatively rare, publicly accessible view of the site towards Sydney CBD. Views from, Hollis Park, Newtown, have also been considered as part of this assessment.

The existing buildings of the Estate and surrounding developments are visible from this viewpoint, resulting in an almost continuous line of buildings as a prominent skyline element. This view constitutes a backdrop to the proposed envelopes. As such, this view is considered to have a high capacity to absorb change.

Photomontages of the proposed envelopes from Sydney Park and Hollis Park are shown in Figure 91.

From Sydney Park, the proposed taller building envelopes would be visible as foreground elements against the existing taller buildings in the Estate and further north-east in Redfern. Existing tree planting screens the lower portion of the proposed envelopes. In the context of the broad and expansive views available from Sydney Park, the assessment concludes that the proposed envelopes would be an acceptable addition to the view.

Hollis Park is a slightly elevated suburban park with an easterly aspect towards the site. The Park supports a continuous row of mature trees along its eastern and north eastern borders and these screen all skyline views in those directions. The wireframe overlay of the proposed envelopes in Viewpoint F indicates that the proposed building envelope would not be visible from Hollis Park.



Viewpoint E – Sydney Park (hill top), facing north-east



Viewpoint F – Hollis Park, Newtown, facing south-east

**Figure 91 – Regional viewpoints (distant views)**

### 8.6.3. Summary

The above provides an assessment of the visual effects of the proposed building envelope from surrounding local and distant viewpoints, including adjoining developments, key vantage points and streetscape locations. The report concludes that:

- The proposed building envelopes would impact on views from streets immediately surrounding the site and from street blocks to the east of the site within the Estate. Mitigation measures to address these impacts could include design development to achieve a high quality ground plane, including allowance for trees within the public domain.
- The proposed building envelopes would significantly improve the visibility (when compared with the pre-demolition context) of the Waterloo Congregational Church building by setting back the new built form from the northern and southern boundaries of the Church, creating a broad through site link on the northern side of the Church and increasing street setbacks to Botany Road on either side of the Church to align with the street building line of the Church. The net result of the proposed development would be to open up new view lines to the Church and provide it with an open curtilage that would enhance its heritage values.
- The proposed building envelope would be only moderately visible from other parts of the Waterloo Precinct and from the west. Its success as a new element in views from these locations would be contingent on achievement of design excellence in the completed development, with particular regard to the architectural design of the proposed taller buildings.
- From the north and south, at locations outside of the Waterloo Precinct, the proposed building envelopes would be almost completely screened from view by vegetation and existing buildings in the line of view.
- In distant regional views, the proposal would appear in the context of the existing tall and visually bulky buildings and the substantial tree canopy within and adjacent to the Waterloo Precinct. If designed in accordance with principles of design excellence, the taller building envelopes would potentially improve the quality of these existing views by creating architectural relief to the continuous building “walls” in these views.
- The proposed building envelopes would have an acceptable impact on the conservation values of all local HCAs including specifically, the Redfern Estate HCA, the Alexandria Park HCA and the Waterloo HCA.

- The proposed building envelopes have been found to be consistent with the visual quality Planning Principles for development of the Metro Quarter and are considered to be worthy of support with regard to effects on the existing visual environment of the site and its locality.

#### **8.6.4. Recommendations**

The building designs subject to detailed SSD Applications should be contained entirely within the building envelopes proposed in this concept SSD Application. This would enable the view and visual impacts to be the same or less than those contemplated under this assessment, which is considered appropriate. Detailed SSD Applications should investigate whether there are opportunities to vary and articulate the building form within the envelopes, as well as incorporate appropriate landscaping, in order to minimise view and visual impacts.

The detailed design of the future Waterloo Metro OSD would also be guided by the Design Guidelines prepared by Sydney Metro (Appendix K). The design excellence of the future OSD would also be ensured through adherence to the Design Excellence Strategy (Appendix J) prepared by Sydney Metro, which provides an objective and structured process that ensures that design excellence is maintained throughout the design, procurement and delivery process of the integrated station development.

### **8.7. Integration with Sydney Metro station infrastructure**

#### **8.7.1. Interrelationship of Uses**

Given the unique and complex nature of this project, it is important to delineate between the functioning of the metro station and associated elements (approved under the CSSI Approval) and the OSD for which approval is sought under this application. Chapter 4.10 distinguishes between the approved metro station elements on the subject site and those elements for which approval is sought in this Concept Proposal, with physical demarcation drawings provided at Appendices C & D.

The following sections assess key interface issues between the OSD and Waterloo Station and demonstrate that the future Sydney Metro line and station boxes would not result in any adverse impacts on future residential component:

- traffic and loading impacts – addressed at Chapter 8.10
- air quality – addressed at Chapter 8.14
- utilities, infrastructure and services – addressed at Chapter 8.15
- noise and vibration impacts – addressed at Chapter 8.17
- construction program impacts – addressed at Chapter 11.0

A detailed assessment of the various relevant clauses under the ISEPP has also been provided below, in order to demonstrate that the proposed OSD is an acceptable outcome in the context of Waterloo Station future operations.

#### **8.7.2. Impact on Rail Infrastructure**

The proposed OSD development would not result in any adverse impacts on existing or proposed railway infrastructure, including the northern portal to the Waterloo Station and the broader Sydney

Metro (City and Southwest) network. The nature and acceptability of the development with regard to potential impacts has been summarised in Table 35, having regard to the relevant provisions of the ISEPP (noting that these do not all strictly apply to the proposal).

**Table 35 – Assessment of the proposal against the relevant considerations for development requiring rail concurrence under the ISEPP**

Clause	Comment
Section 88 Development within or adjacent to interim rail corridor	
<i>(5) In determining whether to provide concurrence, the relevant rail authority is to take into account the likely effect of the development on:</i>	
<i>(a) the practicability and cost of carrying out rail expansion projects on the land in the future, and</i>	The proposed OSD has been designed to accommodate the transport needs of Sydney Metro. The proposal, on this basis, has been undertaken with extensive direct input from Sydney Metro to ensure that, while completely integrated, the components are able to be constructed, maintained and operated separately from each other, both currently and into the future.
<i>(b) without limiting paragraph (a), the structural integrity or safety of, or ability to operate, such a project, and</i>	Structural safety of potential OSD has been previously assessed under the CSSI Approval, and the infrastructure needs of the proposal have been assessed at Chapter 8.15.
<i>(c) without limiting paragraph (a), the land acquisition costs and the costs of construction, operation or maintenance of such a project.</i>	The proposal does not affect the land acquisition costs for transport, given that Sydney Metro has identified the OSD airspace as surplus to requirements.
Section 88B Development near proposed metro stations	
<i>(2) A consent authority must not grant consent to development on land to which this clause applies unless it has taken into consideration:</i>	
<i>(a) whether the proposed development would adversely affect the development and operation of a proposed metro station, including by impeding access to, or egress from, the proposed metro station, and</i>	The proposal would not adversely affect the operation of the future Waterloo Station as the spatial and functional requirements have been integrated into the concept proposal design with direct input from Sydney Metro.  Sydney Metro is currently developing an IAP which informs the interchange design of station. While the IAP is required to be finalised prior to the commencement of permanent above ground facilities at the metro station, the OSD design team has been working closely with Sydney Metro to ensure the concept proposal aligns with the desired future interchange functions of the metro station.
<i>(b) whether the proposed development would encourage the increased use of public transport.</i>	The proposal comprises a high density mixed use form located immediately above and adjacent to the future

Clause	Comment
	metro station, and proposes to apply the most stringent car parking rates under the SLEP 2012 and WMQ DCP in order to encourage public transport options. It is expected that future residents, visitors and employees would take advantage of the excellent public transport options for their future travel needs (further discussed at Appendix N).

### 8.7.3. Recommendations

The future detailed SSD Application would need to propose a building which is architecturally and structurally integrated with the Waterloo Station structure beneath and adjacent and would be guided by the Design Guidelines prepared by Sydney Metro (Appendix K).

## 8.8. Heritage impact

The SEARs require a Heritage Impact Assessment (HIA) be provided to address the extent of impact on heritage items in the vicinity of the site including built and landscape items, conservation areas, views and settings. A HIA has been provided at Appendix Q.

The HIA addresses the impacts of the development on locally listed heritage items. Items of local heritage significance are listed under Schedule 5 (Environmental heritage) of the SLEP 2012. The HIA identifies the following local heritage items that adjoin or which are located in proximity to the Metro Quarter OSD site:

- SLEP Item No. I4 – *Cricketer’s Arms Hotel including interior* (56-58 Botany Road)
- SLEP Item No. I5 – *The Former CBC Bank including interior* (60 Botany Road)
- SLEP Item No. I11 – *Alexandria Park including entrance gates, landscaping and grounds*
- SLEP Item No. I2069 – *Waterloo Congregational Church including interior* (103-105 Botany Road)
- SLEP Item No. I2070 – *The Cauliflower Hotel including interior* (123 Botany Road)

In addition, the Alexandria Park Heritage Conservation area (HCA) is located approximately 100m to the west of the Metro Quarter.

The locations of heritage items listed above are shown in Figure 92.

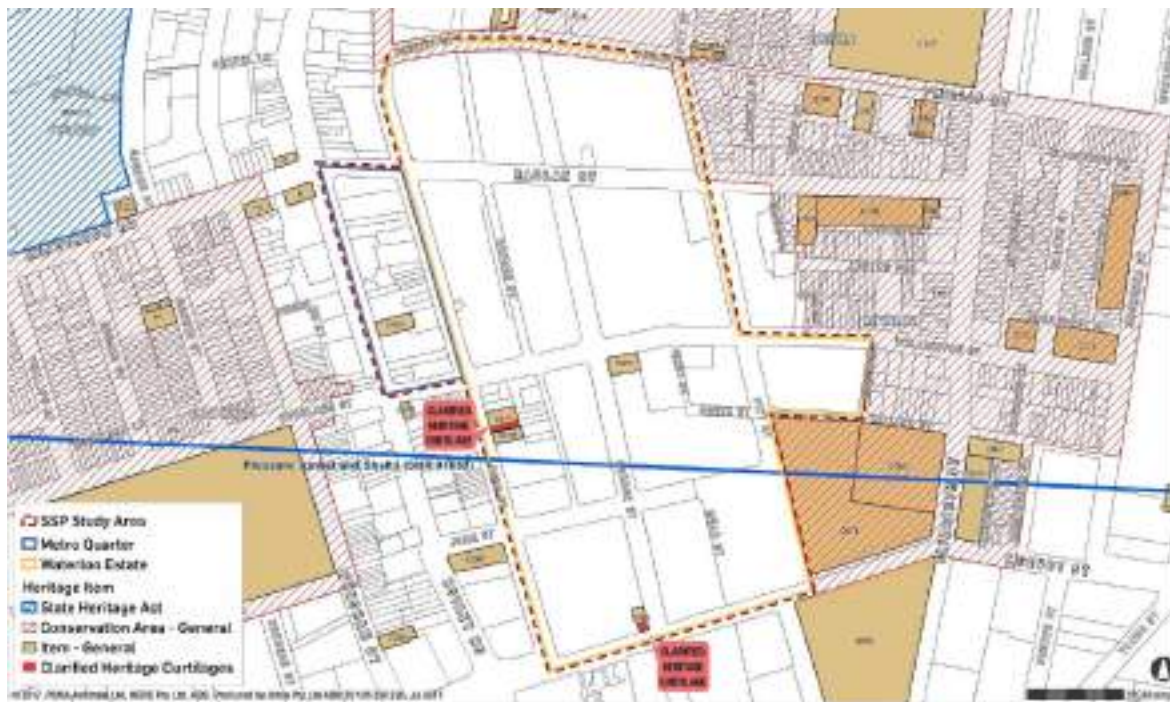


Figure 92 – Existing heritage items in surrounding area of the Metro Quarter

### 8.8.1. Heritage impact assessment findings

The proposal would introduce a larger scale of built form to Metro Quarter and would provide a new mixed use precinct that activates the station and optimises land use and public transport integration consistent with State and local government planning policy. While the scale of the development differs from much of the existing development, particularly to the west of the site, the concept design responds to the nearby heritage items and conservation areas in order to respect their values. Design responses for each of the nearby heritage items are discussed below.

#### Waterloo Congregational Church

The indicative concept proposal has been designed with reference to the heritage principles identified within the HIA. This is achieved through the design responses described below.

##### Increased setback and publicly accessible laneway

Appropriate setbacks are provided within the concept proposal to the Church, including a generous publicly accessible laneway along the northern boundary of the Church. The design of this laneway ensures that the Church would be accessible visually to as many people as possible, including residents, commuters and business operators within the Metro Quarter. The laneway also provides for the exposure of the northern elevation of the Church building by preventing built form from being developed to the property boundary, allowing for the users of the space to observe and appreciate this significant building from another angle.

##### Visual connection between the Church and Cope Street Plaza

A visual corridor linking the Church with the publicly accessible plaza adjacent to Cope Street would be established. This visual connection would enable more people to visually connect with and interpret the history of the site. This is a positive heritage outcome and demonstrates how the Church can be meaningfully integrated into a potential future development scenario, instead of being isolated and obscured in between new built form.

#### Low scale podium aligned with the church bellcotes

The indicative concept proposal incorporates a lower scale podium form, similar in height to the Church building. The street setback of the podium adjacent to the Church is also increased from 6 metres to 10 metres. to prevent the podium form along Botany Road from overwhelming and dominating the heritage listed Church.

#### Views to the Church

Views towards the Church would be improved as a result of proposal. The proposed podium forms and heights, retention of the air space over the Church, and adoption of appropriate setbacks and view lines, mean that potential future development would not obscure any existing views of the Church. Moreover, the provision of large setbacks from the Church, and the visual corridors proposed in the indicative concept plan, mean that new views and vistas towards the Church building would be introduced. This would increase the Church's visual exposure to the public and help to provide important historical layering to the site that can be accessed by site users and passers-by.

#### **Cauliflower Hotel**

The HIA stipulates that any potential future development at the Metro Quarter must respond appropriately to significant corner typologies in the vicinity of the site, including the Cauliflower Hotel at the south-west corner. The Metro Quarter OSD incorporates the following design measures to appropriately respond to the Cauliflower Hotel:

- aligning the height of the ground level of the Botany Road street wall generally in accordance with the ground level of the hotel
- aligning the overall height of the Botany Road street wall generally in accordance with that of the hotel
- setting the taller building built form back an additional 3 metres from the outermost southern edge of the podium to better mediate change in scale

Based on the above design response, the proposal is not considered to have any detrimental impacts on the heritage items near the southwest corner of the site, including the Cauliflower Hotel.

#### **Former CBC Bank building and Cricketers Arms Hotel**

The north-west corner of the Metro Quarter is located opposite two listed heritage items of local significance:

- Item 4 under the SLEP 2012, "Cricketers Arms Hotel including interior"
- Item 5 under the SLEP 2012, "Former CBC Bank, including interior"



The HIA identifies that the proposal would not obscure significant views and view corridors towards these heritage items.

The HIA recommends that the Metro Quarter concept proposal respond appropriately to significant corner typologies in the vicinity of the site, including the Cricketer's Arms Hotel and former CBC Bank building at the north-west corner. The Metro Quarter concept proposal incorporates the following design measures to appropriately respond to these heritage items:

- the proposed three-storey height of the podium to Botany Road responds to the traditional, lower height of heritage buildings in the vicinity, generally located on corners opposite the Metro Quarter OSD
- providing a distinct, landmark built form aligned with the south-east corner of Botany Road and Raglan Street / Henderson Road to 'partner' with the building as dual entry statements into the precinct when travelling from the north.

Overall, the HIS highlights that the scale and form of the proposed OSD would not have any detrimental impacts on the proximate heritage items at the northwest corner of the site.

### **Alexandria Park Heritage Conservation Area (C1)**

The HCA is identified as significant for its collection of nineteenth century terrace and cottage building stock. The conservation area generally consists of single and two storey small scale dwellings with minimal setbacks and street trees throughout. This small scale at pedestrian level creates an insular streetscape with minimal views beyond the immediate context.

The street orientation within the HCA is predominantly a north-south alignment. There are minimal opportunities for distant views towards the site along streets from within the conservation area, as the Metro Quarter OSD is located to the east. Existing buildings, while generally three storeys or less, block views to the proposed development from most locations. The proposed secondary setbacks of the taller building components on Raglan Street and Wellington Street further assist to screen views of the taller buildings when viewed from a west to east direction from the HCA. As such, the OSD would have a negligible, if any, visual impact on the HCA.

Further, a Visual Impact Assessment Report (Appendix M), confirms that while the future development which would be facilitated by the proposal would be visible from Alexandria Park itself, the views are distant and the new development would form part of an evolving urban skyline. Distant views of the upper portions of the future development would not impact on the significance of Alexandria Park as a heritage item and would not obscure significant views to or within the park. From the north eastern portion of the park, the OSD would be almost entirely screened by existing trees and buildings, likewise for views within the C1 Alexandria Park HCA.

### **Waterloo Heritage Conservation Area (C70)**

The HIA found there would be no impact resulting from the potential future development provided for by the Metro Quarter OSD on the C70 Waterloo HCA to the east, as it is substantially separated physically and visually from the Metro Quarter by the Waterloo Estate.

## 8.8.2. Recommendations

During the detailed design development of the OSD, compliance with the building envelope should be adhered to ensure the built form responds to surrounding heritage items. The street setbacks to Botany Road are to be designed to comprise a predominately 6 metre setback that increases to 10 metres alongside Waterloo Congregational Church to enhance its visual connection to the public domain. Furthermore, podium heights should be no higher than three storeys along Botany Road to respond to the traditional, lower height of heritage buildings in the vicinity, generally located on corners opposite the Metro Quarter OSD. It is noted that these measures have been incorporated within the Design Guidelines for the Metro Quarter (Appendix K).

No other mitigation measures have been identified.

## 8.9. Aboriginal and archaeological heritage impact

The SEARs require an Aboriginal Heritage Impact Statement (AHIS) be provided to address the extent of Aboriginal heritage impact of the proposal. Aboriginal cultural heritage, and the archaeological potential of the Metro Quarter, has been previously assessed in detail in the following studies:

- Archaeological & Heritage Management Solutions (AHMS) 2015, Central to Eveleigh Corridor: Aboriginal and Historical Heritage Review, Final Report
- Archaeological & Heritage Management Solutions (AHMS) 2015, Opportunities for Interpretation in the Central to Eveleigh Corridor, Final Report
- Artefact 2016, Sydney Metro City & Southwest, Chatswood to Sydenham: Historical Archaeological Assessment and Research Design
- Artefact 2016, Sydney Metro City & Southwest, Chatswood to Sydenham: Aboriginal Cultural Heritage Assessment
- Artefact 2016, Sydney Metro City & Southwest, Chatswood to Sydenham: Aboriginal Heritage – Archaeological Assessment

As such the HIA (Appendix Q) prepared for this EIS has reviewed the findings of the above studies and provides recommendations relating to Aboriginal cultural heritage and the archaeological potential of the Metro Quarter.

### 8.9.1. Aboriginal heritage impact

Assessments undertaken as part of the CSSI Approval conclude that no Aboriginal sites have been identified in the site or would be impacted by the proposed works at Waterloo Station. There remains the potential for Aboriginal objects to occur in the sub-surface archaeological deposits where there are surviving portions of A horizon sands that have not been impacted by construction of basements and underground car parks.

A review of the environmental context suggests that resources, including food (flora and fauna) and raw material sources, would have been available in and around the site in the past. Topographically, the site would have been easily accessed and navigated on foot.

It is known that natural sand profiles are present within the Metro Quarter, and that these profiles have the potential to be artefact bearing, including Aboriginal archaeological material. It is recommended that the conclusions and recommendations of the below reports are maintained for the western section of the Metro Quarter, unless contradicted by the post-excavation reporting and findings currently in preparation for the eastern section of the Metro Quarter by AMBS:

- Artefact 2016, Sydney Metro City & Southwest, Chatswood to Sydenham: Aboriginal Cultural Heritage Assessment
- Artefact 2016, Sydney Metro City & Southwest, Chatswood to Sydenham: Aboriginal Heritage – Archaeological Assessment

Furthermore, Aboriginal people have historically been attracted to Redfern and surrounds from regional NSW and other parts of Sydney by the possibility of jobs and by the potential to be part of a strong and vibrant community. Redfern and South Sydney have become an important centre of Aboriginal creativity, sports prowess and activism. The studies suggest there are a number of important overarching story lines which can be further developed, for example as part of an interpretation strategy, to highlight the importance of Redfern and Waterloo to Aboriginal people. This includes:

- Aboriginal diaspora histories
- Redfern and Waterloo as places of freedom, activity, achievement, activism and creativity
- the importance of the Eveleigh Railway Yards for employment generally, but particularly for Aboriginal workers
- the natural and cultural environment, pre-European settlement
- the locality being a place of multi-culturalism

The WMQ DCP prepared as part of the Waterloo Metro Quarter SSP Study requires that the public domain incorporates public art that celebrates the Aboriginal and other heritage values of Waterloo. A Public Art Plan has been prepared as part of the Waterloo Metro Quarter SSP Study and is further discussed at Chapter 4.17. This Plan is intended to guide future public art installations within the site and aims to recognise and celebrate Aboriginal cultural heritage. Any public art installations for the Metro Quarter OSD would be detailed within a subsequent detailed SSD Application that would be in accordance with this Public Art Plan.

### **8.9.2. Archaeological impact (non-Aboriginal)**

The Archaeological Assessment & Research Design (AARD) approved under the CSSI Approval includes both the eastern and western portions of the Metro Quarter. The recently completed archaeological program on the eastern portion of the site, where the station box is located, has provided a comprehensive schedule of salvaged artefacts and information.

The excavations undertaken within the eastern portion of the site were carried out in accordance with the Sydney Metro, City and Southwest Archaeological Method Statement (AMS) for Waterloo Station prepared by AMBS. This AMS addressed both the eastern section and the future western excavations of the Metro Quarter. As an AMS for the Metro Quarter in its entirety has already been prepared, it is recommended that the recommendations and archaeological investigation parameters of this AMS remain applicable to the western section of the Metro Quarter.

Further, the HIA (Appendix Q) identifies the following recommendations for the western section of the Metro Quarter:

- the post-excavation analysis and reporting currently in preparation by AMBS should be reviewed thoroughly prior to the commencement of any archaeological investigations within the western portion of the Metro Quarter. This should be undertaken whether this information is available in final format or draft
  - the nominated Excavation Director for the western section should make efforts to consult with AMBS prior to works commencing
- prior to any ground disturbance works being undertaken within the western portion of the Metro Quarter, consultation should be undertaken with the NSW Heritage Division to confirm the applicability of the current AMS prepared by AMBS
  - this should be informed by the above recommended post-excavation report review and consultation with AMBS
- the potential to limit archaeological investigation within the western portion of the Metro Quarter, so as to limit the duplication of results between the eastern and western sections, should be discussed with the NSW Heritage Division based on the outcomes of the AMBS post-excavation analysis and reporting, and depending on the final assessment of archaeological significance contained therein
- opportunities to incorporate any uncovered archaeological material into interpretive displays or media as part of the Metro Quarter should be considered

### 8.9.3. Recommendations

The following recommendations are made with regard to Aboriginal cultural heritage:

- the conclusions and recommendations of the below reports are maintained for the western section of the Metro Quarter, unless contradicted by the post-excavation reporting and findings currently in preparation for the eastern section of the Metro Quarter by AMBS:
  - Artefact 2016, Sydney Metro City & Southwest, Chatswood to Sydenham: Aboriginal Cultural Heritage Assessment
  - Artefact 2016, Sydney Metro City & Southwest, Chatswood to Sydenham: Aboriginal Heritage – Archaeological Assessment
- Public art proposed as part of any detailed SSD application within the Metro Quarter OSD would be in accordance with the Public Art Plan prepared as part of the Waterloo Metro Quarter SSP Study.

The following recommendations are made with regard to historical archaeology (non-Aboriginal):

- the recommendations and archaeological investigation parameters of Sydney Metro, City and Southwest Archaeological Method Statement (AMS) for Waterloo Station prepared by AMBS remain applicable to the western section of the Metro Quarter
- the post-excavation analysis and reporting currently in preparation by AMBS should be reviewed thoroughly prior to the commencement of any archaeological investigations within the western portion of the Metro Quarter. This should be undertaken whether this information is available in final format or draft

- the nominated Excavation Director for the western section should make efforts to consult with AMBS prior to works commencing
- prior to any ground disturbance works being undertaken within the western portion of the Metro Quarter, consultation should be undertaken with the NSW Heritage Division to confirm the applicability of the current AMS prepared by AMBS
  - this should be informed by the above recommended post-excavation report review and consultation with AMBS
- the potential to limit archaeological investigation within the western portion of the Metro Quarter, so as to limit the duplication of results between the eastern and western sections, should be discussed with the NSW Heritage Division based on the outcomes of the AMBS post-excavation analysis and reporting, and depending on the final assessment of archaeological significance contained therein
- opportunities to incorporate any uncovered archaeological material into interpretive displays or media as part of the Metro Quarter should be considered

## 8.10. Transport and accessibility

A Transport Impact Assessment has been prepared to assess the transport, traffic and pedestrian implications and mitigation measures associated with the proposal (Appendix N). This report has been designed to specifically respond to the relevant SEARS, previously discussed at Chapter 2.3. This report presents the findings of the assessment, identifies potential transport related impacts of the Metro Quarter OSD and outlines mitigation measures and management procedures to address identified impacts.

Key issues in relation to the proposal have been further discussed below.

### 8.10.1. Existing travel patterns

Three areas have been used to investigate existing and potential mode share for the Waterloo concept SSD:

- **Waterloo Precinct:** A single Travel Zone (TZ), representative of the Waterloo concept SSD
- **Waterloo Suburb:** The extent of the suburb of Waterloo
- **Waterloo-Redfern Wider Area:** A wider area for understanding travel patterns.

In all three areas listed above the highest proportion of work related trips are by public transport, ranging from 33 to 35 percent mode share. This is closely followed by private vehicles (30 to 35 percent), and walking (13 to 17 percent). Heavy rail and bus mode share are similar across all areas, while residents of the Waterloo Precinct were more likely to use heavy rail than in other areas. The high proportion of public transport use is likely to be influenced by all areas being within walking distance of either Green Square or Redfern station, and the frequency of bus services along key corridors like Botany Road.

Walking accounts for a relatively high proportion of trips to work; the walking mode share in Waterloo Precinct was similar to the wider Waterloo-Redfern Area (17 percent), while it was slightly lower in Waterloo Suburb (13 percent). Cycling trips (included in 'Other mode') accounted for up to 4 percent of work trips in Waterloo Precinct, and up to 6 percent of trips in other areas.

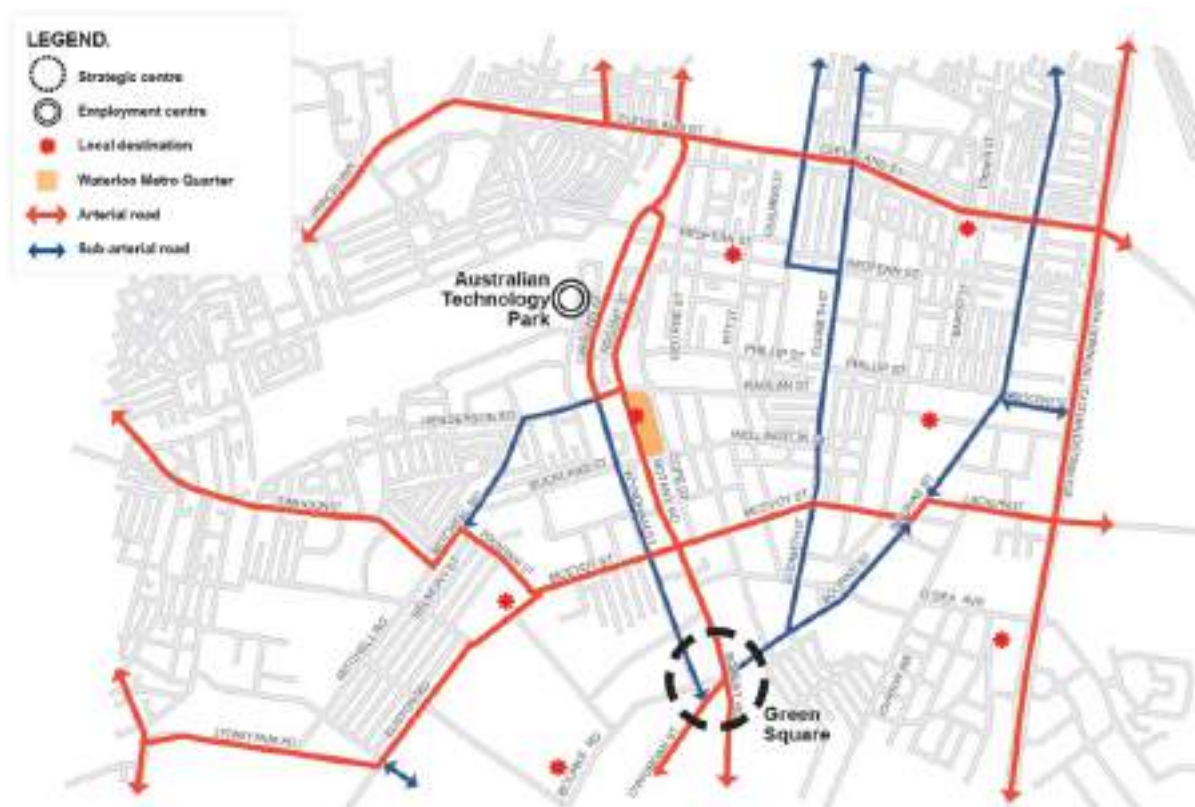
A significant proportion of people work at home (or did not travel to work on census day), ranging from 10 to 12 percent. This is highest in the Waterloo Precinct and lowest in Waterloo Suburb, which may be reflective of the types of jobs worked by residents in these areas.

The existing site contains no off-street parking and traffic surveys of surrounding intersections indicate that the site generates a negligible number of vehicle and point to point trips.

### 8.10.2. Existing road network traffic volumes and performance

Major arterial roads include Botany Road, Wyndham Street and Henderson Road. Botany Road (Regent Street) and Wyndham Street (Gibbons Street) operate as a north-south one-way pair between Cleveland Street and Henderson Road providing a key link between Sydney Airport and its surrounding suburbs to the Sydney CBD and inner west. McEvoy Street and Henderson Road both run east-west, providing links between the inner west and the Sydney CBD or eastern suburbs. Most local streets in the area have 50 kilometre/hour speed limits and are two lanes wide, with some streets having 40 kilometre/hour zones including George Street and Redfern Street.

Figure 93 shows the key regional roads surrounding Waterloo.



**Figure 93 – Arterial road network around Waterloo**

Key roads and current peak hour volumes are outlined in Table 36. Traffic data collected in May 2017 indicates traffic volumes greater than 1,000 vehicles per hour during the peak hour on Botany Road, Elizabeth Street, Henderson Road and McEvoy Street.



**Table 36 – Traffic volumes (bi-directional) and heavy vehicle proportions**

Road	Morning peak hour (8 9am)		Evening peak hour (5 6pm)	
	Volume (vehicles)	Proportion of heavy vehicles	Volume (vehicles)	Proportion of heavy vehicles
<b>Botany Road between Wellington Street and Raglan Street</b>	1,860	7 percent	1,820	5 percent
<b>Wyndham Street between Buckland Street and Henderson Road</b>	610	10 percent	590	3 percent
<b>Henderson Road between Wyndham Street and Botany Road</b>	1,950	5 percent	2,110	2 percent
<b>Raglan Street between Botany Road and Cope Street</b>	580	4 percent	580	1 percent
<b>McEvoy Street between Wyndham Street and Botany Road</b>	1,710	9 percent	1,690	3 percent
<b>McEvoy Street between Botany Road and George Street</b>	1,190	8 percent	1,050	2 percent
<b>Elizabeth Street between Raglan Street and Wellington Street</b>	1,660	8 percent	1,970	4 percent
<b>Wellington Street between Botany Road and Cope Street</b>	370	3 percent	330	3 percent
<b>Cope Street between Raglan Street and Wellington Street</b>	170	5 percent	160	3 percent



Furthermore, analysis of the base Aimsun model developed for the Waterloo Precinct and surrounding area indicates that the road network currently experiences congestion during both morning and evening weekday peak periods with vehicles travelling at low speeds compared to the speed limit. This is shown in Figure 94, which shows the speed ratio (average travel time speed versus sign-posted speed limit) along each section of road during both peak periods. Constrained intersections where this is particularly evident include:

- Botany Road / Henderson Street and Wyndham Street / Henderson Road
- Botany Road / McEvoy Street and Wyndham Street / McEvoy Street
- Botany Road / Bourke Street and O’Riordan Street / Wyndham Street / Bourke Road
- Elizabeth Street / Bourke Street

These results represent a constrained and congested road network around Waterloo Precinct. This supports the approach that future car mode share for Waterloo Precinct should be minimised as much as possible. The vast majority of new trips from the Precinct would be undertaken by public transport and active transport.



Figure 94 – Morning peak (left) and evening peak (right) 2017 base network Level of Service (Aimsun)

### 8.10.3. Trip generation

The transport demand generated by the Metro Quarter OSD has been calculated based on the future mode share targets and an analysis of total travel demand based on trip generation surveys.

The Metro Quarter demand as well as background movements have also been informed by an assessment of the cumulative impacts of known surrounding developments, such as the ATP, and

infrastructure interventions, including the Alexandria to Moore Park Connectivity Upgrade and WestConnex.

Roads and Maritime’s *Guide to Traffic Generating Developments – Updated traffic surveys (TDT 2013/04a)* provides data on the number of person trips per dwelling for 8 high density sites in the Sydney metropolitan area, within walking distance of mass transit. Additional trip surveys were undertaken for comparable high density developments at 40-46 McEvoy Street, Waterloo and 7-9 Gibbons Street, Redfern to provide a meaningful base trip generation rate for the Metro Quarter OSD.

Overall, the average trip generation rate of 0.71 person trips (all modes) per dwelling in the peak hour and 4.5 trips per dwelling across a total weekday were adopted.

Considering the 700 dwellings in Metro Quarter concept proposal and applying the assumed mode shares leads to the trip volumes shown in Table 37.

Proposed non-residential uses in the Metro Quarter precinct are small in scale. As such it is assumed that there would be limited associated vehicle traffic generation from these uses and that traffic generated would be outside the peak hour or undertaken as part of multi-purpose trips by residents.

It is noted that the new metro service and proposed bicycle infrastructure is forecasted to significantly increase the use of active and public transport options in the Waterloo area (walking and cycling from 22 to 30 percent, public transport use from 39 to 50 percent), and reduce car usage (from 40 to 20 percent). These improvements are also on the assumption that the maximum permissible car parking spaces under the WMQ DCP would be provided. If a lesser amount of car parking was provided, it is expected that car use would decrease further.

**Table 37 – Metro Quarter trip generation by mode**

	Trips per dwelling (all modes)	Metro Quarter dwellings	All modes	Rail (40 percent)	Bus (10 percent)	Cycling (5 percent)	Walk (25 percent)	Car (20 percent)
AM peak hour	0.71	700	497	199	50	25	124	99
Daily	4.5		3,150	1,260	315	158	788	630

#### 8.10.4. Intersection performance

The following key intersections around the Metro Quarter OSD have been modelled and assessed to compare existing and future level of service for vehicles and pedestrians, including:

- Cope Street/Raglan Street
- Botany Road/Henderson Road/Raglan Street
- Henderson Road/Wyndham Street
- Buckland Street / Wyndham Street

- Botany Road/ Buckland Street /Wellington Street
- Wellington Street / Cope Street

These intersections were chosen on the basis that they are adjacent to the proposed development. As such these intersections would experience the largest increase in pedestrian volumes. The following scenarios were modelled:

- 2017 Base
- 2036 Do Minimum – Includes Waterloo Station but no Metro Quarter development
- 2036 Metro Quarter – Includes Waterloo Station and Metro Quarter development

The modelled intersection performance indicated that:

- All intersections are expected to experience an increase in delay for both vehicles and pedestrians in the 2036 Do Minimum scenario compared to the 2017 Base scenario. This is generally due to Waterloo Station producing a large increase in pedestrian demands at these intersections.
- Intersection performance in 2036 with the Metro Quarter OSD is consistent with the 2036 Do Minimum scenario. This indicates that the OSD has negligible impact on the performance of the surrounding road network.
- Botany Road / Henderson Road / Raglan Street is forecast to operate at Level of Service F for vehicles during the morning and evening peak in all 2036 scenarios.
- Pedestrian delay time is also expected to increase in the 2036 scenarios compared to the 2017 base scenarios. However, this would have similar delay times to a 2036 Do Minimum scenario, indicating negligible impacts on the performance of the surrounding pedestrian network.

Options were investigated to improve safety and efficiency for all road users on the Botany Road/Henderson Road/Raglan Street intersection. Consultation with TfNSW in relation to the delivery of Waterloo Station confirmed that this intersection is considered to be adequately sized to support the current configuration to be delivered as part of the CSSI Approval (with improvements such as phased crossing and widened pedestrian crossing on the southern side being considered as part of the development of the IAP), but its usage would be monitored.

### 8.10.5. Mitigation measures

#### Rail

Existing customers at Redfern Station and Green Square Station would have the opportunity to use metro services at Waterloo Station, once operational. A service capacity of 46,000 customers per hour in one direction combined with the existing heavy rail network is therefore considered sufficient to cater for forecast demand (199 peak hour trips) generated by the Metro Quarter OSD, including the cumulative demand from future developments in the surrounding areas, such as the ATP.

As such, no further mitigation measures have been proposed in relation to rail services.

## Bus

Citybound route 309 services operating along Botany Road typically have capacity available once services reach the Waterloo area. The 355 route serving east-west trips in the area via Raglan / Wellington Street currently has spare capacity available on all services, and serves an important social function by providing access for many social housing tenants in the Estate; particularly those who are mobility impaired.

With the introduction of Waterloo Station, some localised changes to the bus network may be appropriate. These changes could also benefit the future residents within the Metro Quarter OSD. Two potential changes to be investigated could be:

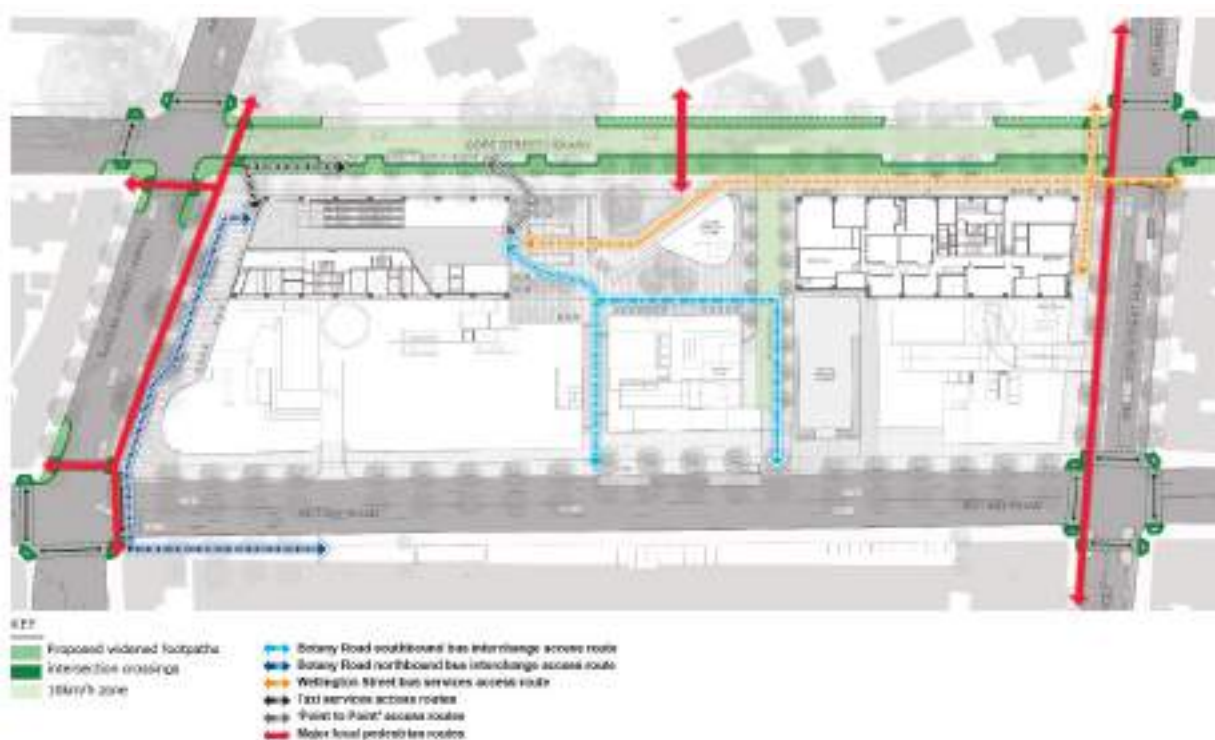
- Route 355: Bondi Junction to Marrickville Metro via Waterloo. Increase frequency / span of hours to match metro operation and re-route via Wellington Street to more directly serve the Waterloo Station.
- Route 309/310: Port Botany to Central, via Botany Road. Increase frequency and span of hours to match metro operation and serve significant bus-rail interchange demand, particularly in peak hours.

## Pedestrians

Pedestrian movements to and from Waterloo Station via Henderson Road and Raglan Street are anticipated to increase significantly once the metro station is operational. To accommodate these pedestrian movements, further investigation to improve footpaths along Henderson Road between ATP and Botany Road west of the site may be required. The key pedestrian movements within and surrounding the Metro Quarter are shown in Figure 95.

Furthermore, to accommodate additional pedestrians, a widened pedestrian crossing at the Botany Road/Raglan Street intersection on the southern leg and a pedestrian crossing at the Cope Street end of Raglan Street would be delivered as part of the CSSI Approval, with widened footpaths on the southern side of Raglan Street provided as part of the CSSI Approval and OSD by providing additional setbacks. Widening of the northern footpath on Raglan Street adjacent to the Botany Road/Raglan Street intersection would also be provided as part of the OSD to provide greater pedestrian storage at the intersection.

Pedestrian crossings are also identified as being required across Cope Street to cater to pedestrians travelling between the Waterloo Estate and Waterloo Station. Pedestrian crossings are incorporated into the concept proposal at the intersection of Cope Street and Raglan Street, and Cope Street/Wellington Street, to facilitate safe pedestrian crossings in these locations. Cope Street is also proposed to be a slow speed shared zone environment in the block adjacent to the Metro Quarter to encourage safe pedestrian connections between the Estate and Metro Quarter and Waterloo Station.



**Figure 95 – Key pedestrian access routes**

### Cycling

Substantial cycling infrastructure is proposed to support Waterloo Station, including infrastructure already approved as part of the CSSI project and additional facilities proposed as part of the Metro Quarter OSD. These include bike parking facilities provided around the Metro Quarter and end-of-trip facilities provided in a bike hub (refer to Chapter 8.10.7 below).

Furthermore, CoS has planned cycling upgrades, including a cycleway along a Wellington Street, which would greatly improve the safety and efficiency of cycling trips to and from the Metro Quarter. Spatial provisioning has been provided to allow for the construction of a cycleway along Wellington Street in the future.

### 8.10.6. Sustainable travel

Travel demand within the Metro Quarter would be managed to reduce car dependency by implementing workplace travel plans and green travel plans. These typically involve a set of practical initiatives that are put in place by employers or building managers before occupying a new or existing development that encourage staff and residents to choose alternatives to driving that are healthier and more sustainable. The provision of 1,320 bike parking spaces as part of the integrated station development would further support these decisions by residents and workers.

The future developers of the Metro Quarter OSD would be responsible for supporting the development, delivery and monitoring of travel plans within the development site; in accordance with CoS guidelines.

This may include information programs for sustainable transport, active transport initiatives, flexible working hours and other measures to encourage staff and residents to choose alternatives to driving.

### **8.10.7. Proposed parking and vehicular access arrangements**

#### **Off-street car parking**

The Metro Quarter development recognises the link between parking provision and travel behaviour, and that it is a critical element of the integrated transport strategy for the precinct. The very high levels of accessibility with a new metro service on the doorstep and alternate travel options available to future residents of the Metro Quarter would mean that the risks normally associated with low parking provision are minimised. The provisions of the WMQ DCP responds to this by requiring the future provision of on-site car parking to in accordance with rates specified for Category A for residential flat buildings under the SLEP 2012 (being the most restrictive car parking rate of the SLEP 2012), and the standard formula for non-residential uses.

As demonstrated by the indicative design, the Metro Quarter OSD could accommodate up to 427 car parking spaces within up to four basement levels as part of this concept SSD Application. The distribution of car parking spaces for each of the proposed uses would be further investigated as part of the detailed SSD Application(s).

Residential and retail vehicle access points are proposed from Wellington Street and a shared zone off Cope Street. The adopted traffic generation rate of 0.14 vehicles per dwelling indicates a demand of less than 100 vehicles per hour across both access point. This volume is identified as being unlikely to cause operational network issues.

Figure 96 shows an indicative basement car park layout for the Metro Quarter. The final design of the basement would be subject to confirmation of total parking to be provided.



### Motorcycle parking

The number of parking spaces for motorcycles has been based on the SDCP 2012 requirement rate of one space for every 12 car spaces. A total of up to 427 off-street car spaces is proposed for the Metro Quarter OSD, resulting in the provision of up to 36 motorcycle parking spaces. Motorcycle parking locations will be refined during detailed design.

### Service vehicles

The number of parking spaces for service vehicles has been based on the WMQ DCP and SDCP 2012 requirement rate of one space for the first 50 dwellings, plus 0.5 spaces for every 50 dwellings or part thereafter.

Given the 700 Metro Quarter dwellings in the concept proposal, this would result in the provision of eight service vehicle parking spaces. Service vehicle volumes for the Metro Quarter OSD are expected to be in the order of 10-15 per day, including both 8.8 metre medium rigid vehicles and 9.25 metre garbage trucks. It is anticipated that these movements would be restricted to outside of peak periods where possible. Two service vehicle accesses are located off Botany Road and Wellington Street and are proposed as left-in/left-out to minimise impacts to the road network. Service vehicle impacts are therefore considered to be negligible assuming both are designed to ensure sufficient sight lines and widths for all expected vehicle types.

Service vehicular access is also required for the northern station box to support ongoing rail operations. Service vehicle access to the northern station box would be supported through the shared function of the at grade service and manoeuvring zone connecting from Botany Road. Interim service vehicle access measures for the metro station should the OSD still be under construction when the metro opens will be investigated and included as part of the Construction Environmental Management Plan submitted with the detailed SSD application.



**Figure 97 – Proposed vehicular access**



## Bike parking

Off-street bicycle parking to support the Metro Quarter OSD would be provided in line with the rates specified under the Sydney DCP 2012 and WMQ DCP. However, as the exact future mix of commercial and community land uses within the ground floor and podium are to be further developed as part of the detailed SSD Application, an estimation of the required bike parking is provided below in order to understand indicative requirements. The bike parking requirements will be refined further in the detailed SSD Application.

An indicative breakdown of the bicycle parking based on the requirements of the OSD is provided in Table 38.

**Table 38 – Indicative Bike Parking Required**

Land Use	Apartments/GFA	Rate	Required Spaces
<b>Residential</b>	700 apartments	1 space per dwelling (residents)	700
		1 space per 10 dwellings (visitors)	70
<b>Shops, restaurants and cafes</b>	3,905m <sup>2</sup> GFA	1 space per 250m <sup>2</sup> GFA (employees)	16
		2 spaces plus 1 space per 100m <sup>2</sup> over 100m <sup>2</sup> GFA (customers)	41
<b>Office premises or business premises</b>	6,645m <sup>2</sup> GFA	1 per 150m <sup>2</sup> GFA	45
		1 per 400m <sup>2</sup> GFA	17
<b>Total</b>			<b>889</b>

The concept proposal is expected to generate bicycle parking requirements for approximately 889 spaces. Bicycle parking requirements for the Waterloo Station will be provided as part of the CSSI Approval within a bicycle storage room in the southern station box (accommodating 100 spaces), as well as 40 bike rails (accommodating 80 bikes) within the public domain along Raglan, Cope and Wellington Streets (180 spaces in total).

The concept proposal includes 700 basement spaces for residents, 400 spaces in the basement for a bike hub and an additional 40 spaces provided at street level along Raglan Street. This equates to a total of 1,140 bicycle parking spaces (excluding the 180 as part of the CSSI Approval), which satisfy the total number required for the Metro Quarter OSD.

The bike hub would be accessible from the proposed public plaza via a ramp and would also include end of trip facilities, including showers and lockers, consistent with the requirements of Sydney DCP 2012.

Overall, the bicycle parking provision of the integrated station development provides a total 1,320 spaces. The proposed locations of Metro Quarter OSD and CSSI Approval bicycle parking provision is shown in **Figure 98**.



**Figure 98 – Proposed locations of Metro Quarter OSD bicycle parking provision and Sydney Metro bicycle parking provision**

### On-street parking

City of Sydney's *Neighbourhood Parking Policy* manages on-street parking supply and demand using a range of parking controls and a parking permit scheme, applying throughout City of Sydney LGA. The Metro Quarter currently falls within the Redfern (Area 41) permit zone. The recommended controls and permit scheme conditions relevant to an urban renewal area outlined in this policy have been used to develop the on-street parking approach for Waterloo Precinct.

New developments are proposed to be ineligible for parking permits, including residents and businesses, in line with the City's *Neighbourhood Parking Policy*.

Within 400 metres of Waterloo Station, short stay parking on selected local streets may be permitted. This is to acknowledge the high pedestrian activity that would take place in the vicinity of the station and to limit unnecessary vehicle movements around the station precinct. Table 39 outlines the relevant aspects of the approach to on-street parking for the Metro Quarter.

**Table 39 – Proposed on-street parking approach, Waterloo Precinct**

Area	Land use characteristics	Parking controls	Permit scheme controls
<b>Within 400 metres of Waterloo Station</b>	<ul style="list-style-type: none"> <li>Mainly mixed-use with retail and related non-retail</li> <li>Residential</li> <li>Metro Station</li> </ul>	<ul style="list-style-type: none"> <li>'Point to point' and taxi drop-off / pick-up at Waterloo Station</li> <li>Restricted parking accommodating short stay users only on designated streets</li> </ul>	<ul style="list-style-type: none"> <li>No permits for new developments</li> <li>No permit holder exemptions (with exception of approved carers)</li> </ul>

### 8.10.8. Bus service infrastructure and pedestrian connections

The CSSI Approval incorporates a relocated southbound bus stop on Botany Road, which would improve commuter interchange between bus services and the Sydney Metro service. To support pedestrian interchange movements, the concept proposal incorporates a pedestrian through site link between the Botany Road interchange and the proposed southern entry point of Waterloo Station through Cope Street Plaza (as shown in Figure 99).

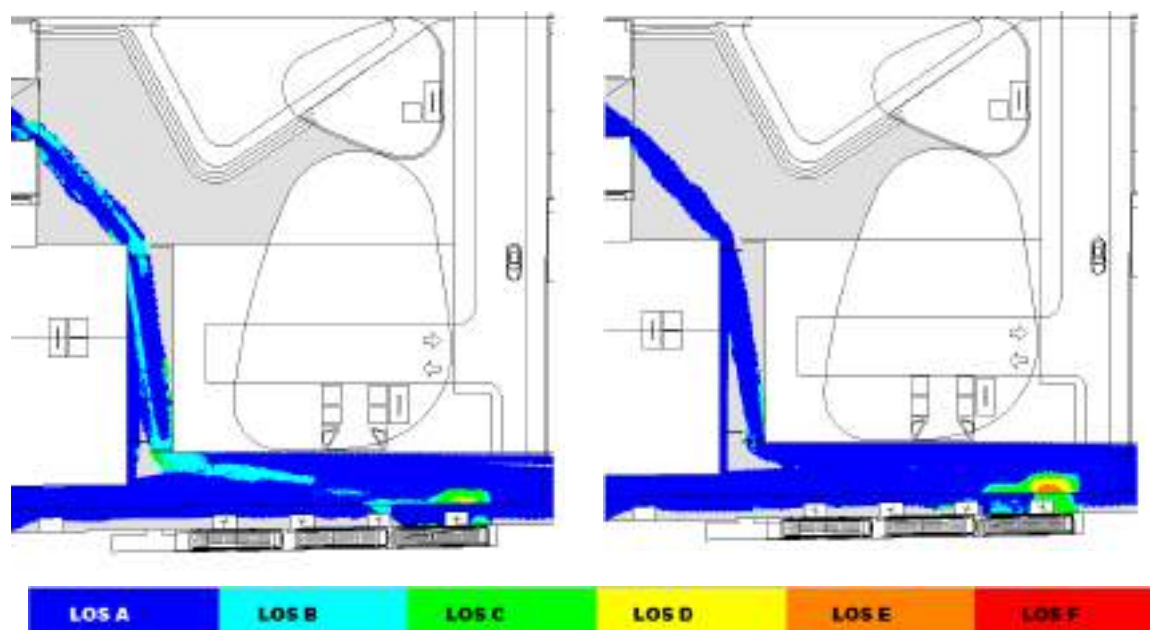


**Figure 99 – Botany Road bus interchange and key movements**

An assessment of the performance of the interchange and pedestrian movements during morning and evening peak periods has been undertaken via dynamic pedestrian modelling using Legion software. Analysis of the pedestrian level of service of the proposed pedestrian through site link show that the majority of footpath and bus waiting area would operate at Level of Service A or B (refer to Figure 100) indicating that the proposed footpath and bus waiting area is sufficiently wide to allow comfortable

queuing conditions for bus passengers whilst also allowing ‘through’ pedestrians to easily pass through the area.

Although some localised areas towards the head of the bus stand are shown to operate at Level of Service D and E, this represents a worst case scenario where all passengers queue and board buses at the head of stand without spreading further along the footpath, for example if multiple buses are loading passengers at once. In reality, buses may arrive at similar times and hence passengers would spread further out along the footpath and within the waiting area.



**Figure 100 – 2036 morning and evening peak cumulative mean density plots (Left: Morning; Right: Evening)**

### 8.10.9. Construction traffic arrangements

Refer to discussion in Chapter 11.0 of the EIS.

### 8.10.10. Recommendations

The Transport Impact Assessment makes the following recommendations to be incorporated as part of the future detailed design and use of the OSD building:

- servicing planning principles and commitment to develop servicing plans to manage loading dock operations are to be adopted as part of the detailed SSD Application process
- on site car parking is not to exceed the Category A parking rates and relevant retail parking formula outlined within SLEP 2012 as required by the WMQ DCP
- accessible parking spaces are to be included in accordance with SLEP 2012 as required by the WMQ DCP, and Australian Standard (AS) 2890 and would be situated within easy access of lifts
- all pedestrian access points and corridors are to be designed to comply with AS1428.1 and 1428.2 and are to form part of the detailed design of the project

- all parking areas are to be designed to comply with the relevant Australian Standards including AS 2890.1, 2890.2, 1428.1 and 1428.2 to help manage vehicle access and circulation in parking areas
- bike parking spaces are to be delivered in accordance with WMQ DCP requirements, which are easily accessible and are supported by end of trip facilities
- the detailed design of the site and vehicle access locations considers the needs of emergency service vehicles to ensure safe and easy access to all areas of the site
- the future developers of the Metro Quarter OSD would be responsible for supporting the development, delivery and monitoring of travel plans within the development site; in accordance with City of Sydney guidelines.

## 8.11. Ecologically Sustainable Development

The EP&A Regulation lists four principles of Ecologically Sustainable Development (ESD) to be considered in assessing a project, being:

- the precautionary principle
- intergenerational equity
- conservation of biological diversity and ecological integrity
- improved valuation and pricing of environmental resources

In considering how to effectively demonstrate an alignment with the principles of ESD outlined above, the project team has sought to align the design response with the Green Star Communities National Framework which broadly covers the following themes:

- enhance liveability
- create opportunities for economic prosperity
- foster environmental responsibility
- embrace design excellence
- demonstrate visionary leadership and strong governance

### Precautionary principle

The precautionary principle is to be utilised when uncertainty exists about potential environmental impacts. It ensures that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The precautionary principle requires careful evaluation of potential environmental impacts in order to avoid, wherever possible, serious or irreversible damage to the environment.

This EIS has not identified any serious threat of irreversible damage to the environment, and therefore the precautionary principle is not relevant to the proposal.

## **Intergenerational equity**

Intergenerational equity is concerned with ensuring that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. The proposal has been designed to benefit both the existing and future generations by:

- enabling the provision of an OSD built form that would contribute to the transformation of the precinct and serve as the centrepiece to the new Waterloo Station precinct with new residential, retail and commercial capacity in an appropriate context
- ensuring future development encourages public transport use, walking and cycling by integrating the provision of high density development with new public transport delivery
- providing for residential apartments with a high level of amenity for future residents, combining good internal amenity and design with immediate access to the Sydney CBD, including the substantial employment opportunities offered within the CBD context
- ensuring that the impacts of the development are adequately managed so that there would be no long term adverse impacts arising from the Metro Quarter OSD

The proposal has integrated short and long-term considerations in order to ensure that any foreseeable impacts are not left to be addressed by future generations. Issues with potential long-term implications such as waste disposal would be avoided and / or minimised through construction planning and the application of the safeguards and management measures described in this EIS and appended technical reports.

## **Conservation of biological diversity and ecological integrity**

The principle of biological diversity upholds that the conservation of biological diversity and ecological integrity should be a fundamental consideration. The proposal would not result in any significant effect on the biological diversity and ecological integrity of the study area. A BDAR Waiver has been sought in relation to the proposal as demonstrated at Appendix R.

## **Improved valuation, pricing and incentive mechanisms**

The principles of improved valuation and pricing of environmental resources requires consideration of all environmental resources which may be affected by a proposal, including air, water, land and living things. Mitigation measures for avoiding, reducing, reusing, recycling and managing waste during construction and operation can be implemented to ensure resources are used responsibly through the future development.

Additional measures can be implemented to ensure that no environmental resources in the locality are adversely impacted during the construction and operational phases.

### **8.11.1. Green Star certification**

Obtaining Green Star certification is a process during which the Green Building Council of Australia assesses the sustainable design, construction and operation of a building. Ratings are available at both the design ('Design' certification) and construction ('As Built' certification) phases of a development.

The Green Star rating system is scaled to a star level from 0 to 6 stars, where ratings of 4 stars or higher are able to be submitted for certification. The project is proposing to commit to the delivery of a 6 Star Green Star Communities rating (or similar) and also commits to delivering a 5 Star Green Star Design & As Built rating for the buildings within the precinct.

### **8.11.2. BASIX**

BASIX is a NSW Government initiative that ensures all new residential developments are sustainably designed and constructed through the implementation of measures to reduce water and energy consumption.

BASIX forms part of the development application process and is implemented under SEPP (BASIX). The SEPP outlines the minimum standards for all new dwelling types, including standards relating to potable water reductions, greenhouse gas reductions and thermal comfort improvements.

A BASIX certificate is obtained after completing a sustainability assessment using the online BASIX assessment tool. The certificate shows the commitments made in relation to water and energy consumption and confirms that a proposal would meet the NSW Government's sustainability requirements. A BASIX certificate must accompany any development application seeking approval to construct a new residential dwelling, for assessment by the relevant consent authority.

This SSD Application seeks concept approval only, including a maximum building envelope, maximum building height, total GFA and the proposed uses within the development. Construction of the residential component of the development is not sought as part of the concept application and therefore a BASIX certificate is not required to accompany this application.

Notwithstanding, the ESD Report demonstrates that the future multi-storey residential component of the development can achieve the objectives of BASIX. The detailed design of the building would be further refined as part of the detailed SSD Application.

### **8.11.3. ESD framework and sustainability strategies**

The ESD Report (Appendix S) has been prepared to review the applicable sustainability requirements, policies and rating tools that are relevant to the concept proposal, and to set out an ESD framework to guide the future detailed SSD Application for OSD.

The ESD Framework for the concept proposal is intended to enable incorporation of best practice sustainable building principles that respond to both policy and emerging market trends. The following key sustainability policies and regulatory requirements have informed the framework:

- EP&A Regulation 2000
- Building Code of Australia – Section J
- Sydney Metro City & Southwest sustainability objectives and proposed initiatives
- SDCP 2012
- Rating tools including:
  - BASIX

- Green Star Design & As-Built
- National Australian Built Environment Rating System (NABERS)

Based upon these policies and requirements, the ESD Framework sets out a series of initiatives to ensure that the future OSD achieves environmental performance outcomes which achieve and go beyond the project requirements.

#### 8.11.4. Mitigation measures

Subject to the implementation of the minimum targets set out above, the proposal is capable of complying with the applicable ESD requirements and statutory obligations.

In order to achieve a high level of ecological sustainability, detailed SSD Applications should comply with the sustainability framework and strategies, including the minimum targets identified. Where practicable, a future detailed SSD Application should also consider and implement world best practice / innovation strategies.

### 8.12. Prescribed airspace for Sydney Airport

An Aeronautical Impact Assessment Report (AIA) is provided at Appendix Y. The AIA considers the impact of the proposed envelope having regard to the Prescribed Airspace for Sydney Airport.

This assessment examines the current and forecasted regulated airspace height limits constraints overhead the Metro Quarter OSD that are related to aviation airspace protection requirements under the Commonwealth's *Airports Act 1996* and the *Airports (Protection of Airspace) Regulations 1996* (APAR). Specifically, the following areas have been assessed:

- Any infringement on the Obstacle Limitation Surface (OLS)
- Any infringement on the Procedure for Air Navigation Services – Aircraft Operations (PANS OPS)
- Impacts on Air Traffic Control Surveillance System performance
- Impacts on Navigation Aid performance
- Any other potential impacts on the operation of airspace around the site.

#### 8.12.1. Obstacle Limitation Surface

The relevant level of OLS applicable to the development varies from 63 metres AHD, at the south-west corner of the site, to 73 metres AHD at the north-east corner of the site. The proposed envelopes of tower buildings A, E and F would exceed the heights of the OLS by a maximum of 47 metres. Exceeding the heights of the OLS does not, in itself, limit the height of the proposed buildings, rather it requires approval by the Commonwealth DIRD under the APAR prior to construction.

#### 8.12.2. PANS OPS

The limiting PANS-OPS height restriction is that imposed by the Circling Procedure for Category A and B Aircraft, being a horizontal plane, at 126.4 metres AHD above the site. The proposed envelopes would not infringe on the PANS-OPS surface and are therefore acceptable. Furthermore, there would be sufficient room to allow for construction cranes to operate without penetrating the PANS-OPS plane.



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### 8.12.3. Navigation Infrastructure

The site is located too far from Sydney Airport to affect any navigation infrastructure.

### 8.12.4. Other Navigation Considerations

The site is located outside any airspace protection requirements related to Sydney Airport's Navigation and Airport Lighting and Visual Guidance facilities.

The proposed envelopes would not have any other impacts on navigation to or from Sydney Airport, having regard to external lighting constraints (as defined in the Civil Aviation Safety Regulations (CASR MOS Part 139)), reflectivity and contribution to wind turbulence.

### 8.12.5. Recommendations

The proposed envelopes would not contribute any measurable adverse effect to the safety, regularity or efficiency of air traffic. The AIA concludes that there is no technical impediment to approval of the proposed envelopes and that an application under the APAR, supported by a full aeronautical assessment and safety case could be approved by DIRD.

No mitigation measures have been identified at this preliminary stage. Following the formal assessment of the OLS, additional measures may be required.

## 8.13. Wind Impacts

A Pedestrian Wind Environment Impact Assessment has been provided at Appendix X. The report provides a qualitative assessment of the likely impacts of the proposed OSD on local pedestrian-level, private balcony, podia and communal space wind conditions.

### 8.13.1. Existing wind conditions

To enable a qualitative assessment of the surrounding wind environment, the Pedestrian Wind Environment Impact Assessment has used wind data, including wind frequency and wind direction, measured by the Bureau of Meteorology at a standard height of 10 metres above ground level at Sydney Airport. This is considered to be representative of the wind conditions at the site.

### 8.13.2. Wind tunnel testing

Wind tunnel testing has been undertaken in Windtech's boundary layer wind tunnel (3.0 metre wide test section with a fetch length of 14 metre) (refer to Figure 101 and Figure 102). The model of the proposed envelopes was tested in the wind tunnel without the effect of any forms of wind ameliorating devices such as screens, balustrades, awnings, etc. The effect of vegetation was also excluded from the testing.

Measurements were made at selected critical trafficable outdoor ground locations within and around the site for both the existing and proposed scenarios. These measurements are compared with the criteria for pedestrian comfort and safety, presented in the SDCP 2012.



**Figure 101 – Photograph of wind tunnel model (existing conditions), from the north-east**



**Figure 102 – Photograph of wind tunnel model (including the proposed OSD), from the north-west**

### 8.13.3. Wind impacts

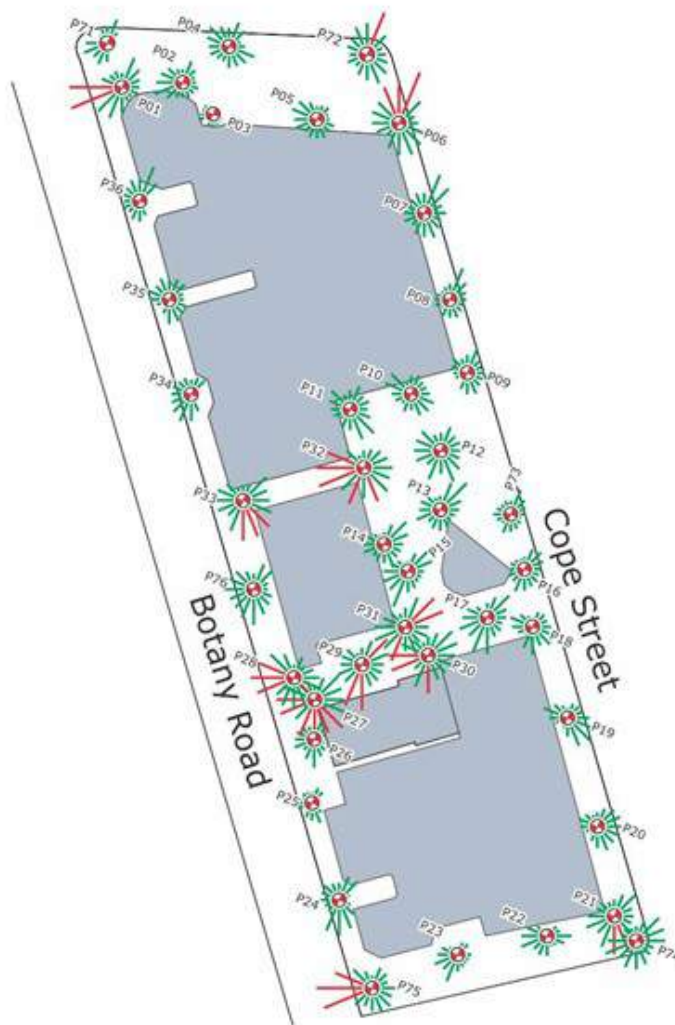
#### **Pedestrian level**

The site is exposed to the predominant north-easterly, westerly and southerly winds for the region, due to the mid to low-rise and scattered nature of the surrounding built form which provides limited shielding. Westerly winds, occurring mainly during winter, have the potential for a significant adverse impact on thermal comfort due to “wind chill” effects. Further, the orientation and open nature of surrounding streets facilitates the unobstructed flow of wind through the public domain.

As shown in Figure 103, most locations within the ground level public domain, including at the northern and southern metro station entrances, the Cope Street Plaza, Raglan Street Plaza and the Botany Road southbound bus stop, meet the pedestrian comfort criteria.

Notwithstanding, as a result of limited shielding and wind down-washing and wrapping around the proposed building envelopes, without the inclusion amelioration devices, some locations within the public domain would not meet the criteria. These locations include the pedestrian through-site link and new internal road off Cope Street. As such, wind amelioration devices, including impermeable awnings, have been incorporated within the concept proposal to mitigate wind impacts in these locations. These elements would be further developed during detailed design. With the inclusion of such devices it is expected that the wind conditions for all outdoor trafficable areas within and around the development would be suitable for their intended uses. Further, inclusion of landscaping and tree planting within the surrounding pedestrian footpaths, communal community square and wind sensitive areas, has the potential to further enhance the wind comfort conditions.

As some amelioration measures, such as awnings, may be required to be implemented on the metro station boxes, coordination with the station design team (under the CSSI Approval) will be undertaken to ensure the metro station and OSD achieve acceptable conditions. This would be reflected in the SDPP for the CSSI project and in the detailed SSD Application for the Metro Quarter OSD.



**Figure 103 – Wind source directions and speed magnitude (without ameliorative treatments)**

**Private balconies, podia and communal spaces**

A desktop analysis of the wind effects relating to the elevated balcony areas has been carried out in the context of the local wind climate, building morphology and land topography. No wind tunnel tests have been undertaken for these areas.

The wind conditions for the various private balconies are heavily dependent on their location and design. The majority of the potential residential balconies (noting that balcony locations and designed are not

confirmed in this concept application) are only exposed to winds on a single aspect and as a result are expected to be suitable for their intended use. The balconies would also benefit from the built form setback. However, future balconies exposed on two aspects (i.e. Buildings B, C and G) may experience accelerated winds. Wind amelioration devices, including screening and impermeable balustrades are recommended as part of detailed design of the OSD.

The communal open spaces on Buildings B, C, G and F are exposed to prevailing winds and funnelling of winds between the buildings. Winds impacting the façade can also upwash and cause adverse winds on the communal open space. Within these communal open spaces, landscaping and screening is recommended to reduce the adverse effect of the winds.

Subject to the implementation of ameliorative measures, it is expected that the private and communal spaces would have acceptable wind conditions.

#### **8.13.4. Recommendations**

It is recommended that further investigation of the wind conditions for the ground level and elevated areas within and around the development be undertaken during the design development for detailed development applications to verify the suitability of the relevant areas. This would include detailed wind tunnel testing of the future residential balconies and communal areas.

Detailed design of the OSD should consider the implementation of wind amelioration devices, including impermeable awnings, impermeable balustrades and screening as well as landscaping and tree planting.

If amelioration measures, such as awnings, are required to be implemented on the metro station components, coordination with the station design team is to be undertaken to ensure the metro station and OSD achieve acceptable conditions. This would be reflected in the SDPP for the CSSI project and in the detailed SSD Application for the Metro Quarter OSD.

### **8.14. Air Quality**

An Air Quality Impact Assessment (AQIA) has been provided at Appendix W. The assessment has been undertaken to assess the incremental and cumulative potential air quality impacts from and on the Waterloo Metro OSD. The AQIA has been prepared in general accordance with The Approved Methods (NSW EPA, 2017) with reference to the Infrastructure SEPP and the NSW Department of Planning document “*Development near Rail Corridors and Busy Roads – Interim Guideline*” (DoP, 2008) (the Guideline).

#### **8.14.1. Existing air quality conditions**

To enable a qualitative and quantitative assessment of the potential air quality impacts, the AQIA has used meteorological data, including wind frequency, wind direction and temperature measured by the Bureau of Meteorology at Sydney Airport and Canterbury Racecourse, as well as air quality data from the Randwick Air Quality Monitoring Stations (AQMSs).

### 8.14.2. Air quality impacts

The sources of emissions considered as part of the AQIA include:

- construction activities
- road traffic
- industrial sources
- other sources i.e. food and beverage outlets, services stations, automotive workshops

The key air pollutants associated with the identified emission sources include:

- airborne particulate matter
- products of combustion such as oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), sulphur dioxide (SO<sub>2</sub>) and volatile organic compounds (VOCs)
- odour

An assessment of the potential impacts, key emission sources and pollutants on the Waterloo Metro OSD is provided below.

#### **Qualitative assessment of construction impacts**

During the construction phase, potential air emissions include dust emissions from building construction and exhaust emissions from construction machinery.

The potential for off-site dust impacts was assessed using a qualitative risk-based approach prescribed by the Institute of Air Quality Management (IAQM). The results of this assessment indicate that dust impacts can be adequately managed with the implementation of site-specific mitigation measures, and that the residual impacts on human health for surrounding receptors are likely to be low for construction and earthworks activities and negligible for trackout activities. The residual dust soiling impacts for surrounding receptors are likely to be medium for construction and earthworks activities and low for trackout activities.

Due to the nature of the proposed development, the number and scale of construction plant and machinery, and road traffic vehicles is anticipated to be relatively small. Therefore, the potential for exhaust emissions during the construction phase is predicted to be correspondingly low. Further, given the relatively short-term nature of the construction works, emissions generated due to the combustion fuel in construction plant and machinery would be of limited duration and quantity. As such, they are considered unlikely to have any potential for significant impacts on local air quality.

#### **Quantitative assessment of traffic emissions**

Post-construction, the primary source of air emissions in the area immediately surrounding the site is expected to be vehicles travelling along Botany Road. Pollutants from combustion engines include NO<sub>x</sub>, CO and VOCs.

Detailed meteorological and air quality dispersion modelling of emissions from vehicles travelling on the surrounding road network was undertaken. Emissions of nitrogen dioxide (NO<sub>2</sub>) and particulate matter

(as PM<sub>10</sub> and PM<sub>2.5</sub>) were estimated using the 'Computer Programme to calculate Emissions from Road Transport' (COPERT) Australia software. The calculated emissions from the surrounding road network, based on the traffic surveys conducted by Jacobs (May 2017) were then modelled using the GRAMM/GRAL modelling system. It is noted that future impacts can be expected to be lower than those predicted for current conditions, due to improved vehicle emissions performance.

The results of the cumulative impact assessment indicate that existing traffic on the surrounding road network has the potential to result in slight exceedances of the ambient air quality criteria for PM<sub>10</sub> and PM<sub>2.5</sub> at locations within the Waterloo Metro OSD, particularly close to Botany Road on days of high regional levels of particulates. However, no exceedance of the ambient air quality criteria is predicted for sensitive receptor locations within the Waterloo Metro OSD (i.e. residences), with the exception of annual PM<sub>2.5</sub>. The potential PM<sub>2.5</sub> exceedance is due to high background concentrations in the local airshed. Notwithstanding, exceedances of the 24-hour average PM<sub>2.5</sub> criterion were recorded by the Earlwood Air Quality Monitoring Station in two of the past five years and ambient PM<sub>2.5</sub> concentrations often exceed the 24-hour and annual average criteria set out in the Approved Methods across the Sydney Greater Metropolitan Area. Qualitative assessment of other identified sources

Industrial sites located in and surrounding the site with the potential to be significant emitters of air pollutants have been identified as part of the AQIA. Considering the separation distances and activity types associated with the identified emission sources, significant air quality impacts at the site due to air emissions from these facilities are considered unlikely.

Other emission sources in the local area that could potentially impact on air quality within the Waterloo Metro OSD were identified as service stations, automotive workshops and food outlets. The potential for off-site air quality impacts due to these activities was assessed using a qualitative risk-based approach. Based on this qualitative risk-based assessment, taking into account the nature and scale of these activities and distance from the site, it was concluded that they do not have any significant potential to adversely impact on air quality within the Waterloo Metro OSD.

In addition, emission sources within the Waterloo Metro OSD (e.g. food outlets) could potentially lead to amenity/nuisance impacts at surrounding sensitive receptors or at residential locations within the OSD itself. The risk of any impacts would depend on the type and scale of the activities, the location of the activity relative to sensitive receptors, and any emissions controls incorporated into the design (e.g. filtration/control of emissions etc.) and are subject to future detailed design, and separate development approvals.

### 8.14.3. Recommendations

Mitigation measures have been incorporated into the current concept design of the Waterloo Metro OSD. These include:

- locating no sensitive receptors within a 20 metre radius of Botany Road and at elevations below 12 metres
- minimising the formation of urban canyons by having buildings of different heights interspersed with open areas and setting back the upper stories of multi-level buildings
- orienting living areas and bedrooms as far as practicable from Botany Road
- using vegetative screens, to assist in maintaining local ambient air amenity

Notwithstanding, the AQIA recommends a number of mitigation measures to manage potential air quality impacts during construction and detailed design of Metro Quarter OSD. These include:

- adoption of the site-specific construction management measures recommended by the IAQM, within the detailed Construction Environmental Management Plan (where relevant) to mitigate potential dust impacts from future construction works
- implementation of vegetation barriers, including street tree planting
- locating sensitive receptors within Metro Quarter OSD away from the metro station's fresh air ventilation outlet
- implementation of suitable air extraction systems for polluting activities during detailed design

In addition, it is recommended that further assessment of any future potentially air polluting activities proposed within Metro Quarter OSD be carried out during the detailed design stage so that appropriate mitigation measures are adopted to reduce the risk of any exceedances of the relevant air quality criteria.

## 8.15. Utilities, infrastructure and services

A Utilities and Infrastructure Servicing Report is provided at Appendix P. The report identifies the existing capacity of the site to service the Metro Quarter OSD and any augmentation requirements for utilities, including arrangements for electrical network requirements, drinking water, wastewater and recycled water.

### 8.15.1. Potable water

Potable Water is supplied by Sydney Water through the Potts Hill Trunk Delivery System incorporating the Potts Hill Reservoirs and Crown Street Reservoir. An assessment of the estimated increase in potable water demand generated from the Metro Quarter development has been conducted to determine the required infrastructure upgrades associated with the development.

The cumulative Maximum Daily Demand (MDD) of the Metro Quarter when assuming BASIX compliance is estimated to be approximately 392kL per day. While, factoring in a  $\pm 15$  percent range in development yields of the Metro Quarter OSD, the Maximum Day Demand (MDD) could vary between 350-600 kL per day.

New potable water services tapping would be required to service the Metro Quarter OSD (as shown in Figure 104). This would require further onsite utility investigations and service searches as part of any future detailed SSD application along with future Sydney Water consultation. The final layout and design of the building would determine the final water tapping location and connection sizes.





**Figure 104 – Potable Water Plan**

### 8.15.2. Wastewater

Sydney Water wastewater facilities service the quarter and effluent is processed through the Malabar Sewage Treatment Plant Network (Botany). Factoring in  $\pm 15$  percent variation in development yields for contingency planning, the Average Dry Weather Flow (ADWF) per Equivalent Population (EP) could range between 2.0-2.8L/s. Sydney Water has indicated that the trunk system has the capacity to service the potential development scenarios. Several carrier mains running to the trunk system from the Metro Quarter study area may require amplification. Hydraulic modelling would be required during detailed design as part of the separate, subsequent development application stage to confirm the scope of any lead-in infrastructure upgrades.

The report shows the location of wastewater connections to the quarter from existing surrounding trunk lines to cater for forecast demand (as shown in Figure 105).



**Figure 105 – Wastewater plan**

### 8.15.3. Electricity

Electricity servicing the Metro Quarter is provided by Ausgrid and is located within the Eastern Suburbs load area. The overall peak electrical demand for all buildings and carparks following development has

been estimated to be 6.6MVA. Considering a +15 percent range in development yields, the peak electrical load increases to approximately 7.6MVA.

Due to supply limitations, connection to Zetland Zone Substations is infeasible. However, there is capacity to provide a permanent connection from Green Square via an 11kV feeder to the Metro Quarter.

While the Metro Quarter does not propose to incorporate any on-site electricity generation, storage and / or transmittal to the broader electricity grid, this does not preclude this from being proposed as part of the subsequent detailed design stage.

#### **8.15.4. Gas**

Gas servicing to the Metro Quarter is provided by Jemena, while there is currently an extensive network of gas mains within the Metro Quarter, in particular:

- An external secondary trunk main (1050kPa) that lies approximately 150m from the Metro Quarter's southern border at the corner of George Street and Allen Street; and
- A number of medium pressure 210kPa network mains servicing previous buildings prior to demolition.

Factoring in a  $\pm 15$  percent range for development yields, the gas demand could vary from 968-1,310m<sup>3</sup>/day which includes the BASIX reduction. Jemena has indicated the Metro Quarter is able to be supplied with natural gas. In accordance with standard procedures, confirmation of capacity and potential required upgrades would be received when formal connection applications are received.

#### **8.15.5. Data and telecommunications**

A number of communication providers have assets running adjacent to and intersecting the Metro Quarter, including:

- NBN Co, NSW/ACT
- Nextgen, NCC – NSW
- Optus and/or Uecomm, NSW
- PIPE Networks, NSW
- Telstra NSW, Central
- Verizon Business (NSW)
- Vocus Fibre Pty Ltd (NSW)

Due to the scale of development proposed on the site it is expected that new telecommunications servicing would be provided by the National Broadband Network (NBN). In accordance with standard procedures, confirmation of eligibility and capacity would be received when formal connection applications are received.

### 8.15.6. Waste

The SSD Application seeks concept approval for a range of uses including residential, commercial and retail. An operational waste management strategy has been prepared (included in the Utilities and Infrastructure Servicing Report at Appendix P), which details future waste management measures to achieve the best environmental outcomes. These measures include:

- the identification and separation of solid waste would be carried out at the point of generation to aid the maximum re-use and recycling of materials. All waste materials generated during the operation would be identified and classified in line with the *Waste Classification Guidelines* (EPA, 2014) prior to separation.
- appropriate containers and bins would be provided on all levels across the site during operation for garbage and reusable/recyclable materials.
- sufficient area for residual mobile garbage bins (MGBs)
- sufficient area for MGBs for mixed recycling and compacted cardboard and paper
- an area of approximately 2.5 metres by 1.5 metres for a baler for paper and cardboard (retail)
- appropriate access for 1,100 litre MGBs – it would be important to ensure the doors to the storage room are designed to accommodate these MGBs
- an area for the storage of bulky waste, e-waste and fluorescent and LED lighting
- ensure waste storage rooms are designed to meet the relevant Australian Standards
- allow for the safe transfer of bins from the storage rooms to the loading dock (e.g. ramps with suitable gradients, signage, unobstructed passageway etc.)
- where residential developments and commercial (retail) developments occupy the same site, the waste handling, storage and collection system for residential and commercial waste are to be completely separate and self-contained, with separate centralised waste and recycling areas

The waste management strategy estimates the total waste and recycling generation for the operational uses (i.e. residential and commercial), including the minimum waste storage capacity requirements to ensure compliance with the relevant State and local government policy requirements.

A detailed waste management plan for the operational phase of the development would be prepared and submitted as part of the detailed SSD Applications, and would address the following:

- relevant legislative and Council requirements
- types of waste to be generated
- expected waste volume per week
- proposed detailed on-site storage and treatment facilities
- destination of waste
- information about the ongoing management of waste on-site.

### 8.15.7. Water recycling

Although Sydney Water does not provide recycled water to the Metro Quarter, the privately operated recycled water scheme at Green Square Town Centre provides opportunities to extend this system to

the Metro Quarter OSD. In addition, the Australian Technology Park (ATP) currently has recycled water infrastructure including reticulation within roads and dual pipes within buildings that could supply non-potable uses. This presents the opportunity to share these existing systems as a potential source of recycled water for the OSD.

Future detailed SSD applications for the Metro Quarter may consider the opportunity to integrate the system used with either of the above schemes.

### **8.15.8. Recommendations**

The Utilities and Infrastructure Servicing Report further details requirements relating to water, waste, electrical, telecommunications, gas and fire services within the future OSD and confirms these can be provided in accordance with industry standards including the relevant Australian Standards.

Development application(s) for the detailed design of the building would provide details of consultation carried out with the relevant utility service providers, including Sydney Water and Jemena. Consultation would confirm whether modifications to existing services and utilities infrastructure are required and whether utilities protection measures need to be implemented.

In developing the future detailed building design for the OSD, more detailed enquiries and service agreements would be required from relevant services and utility providers, and arrangements for final connections and approvals would need to be obtained.

## **8.16. Stormwater and flooding**

A Water Quality, Flooding and Stormwater Report is provided at Appendix T. This assessment considers stormwater drainage and on-site detention requirements for the site, as well as the potential flood risk, with a detailed assessment undertaken to support this.

### **8.16.1. Flooding**

The Metro Quarter OSD has been modelled to consider the 100 year ARI and PMF, as well as the associated probable maximum flood hazard levels, in order to determine the overall risk of flooding for the Metro Quarter site under existing conditions as well as post-development conditions including a sensitivity analysis for climate change case.

There is an area of high flood hazard around the Cope and Wellington Street intersection. During significant rainfall events, flood water depths in this area can exceed one metre (refer to Figure 106). The primary cause of this is constrained capacity of the Sheas Creek open channel, which results in water backing up. The depth of ponding in the southern portion of the Metro Quarter is up to 1 metre for the 100 year ARI and 1.6 metres for the PMF events. As a consequence of this ponding, the FPL at the southern end of the Metro Quarter based on existing conditions in this area is approximately 1.5 metres above street level, while at the northern end it is up to 0.9 metres above the street level.

Entrances to underground areas such as carparks are also required to be flood free in the PMF event. Due to these requirements, carpark entrances at Cope Street may need to be ramped up approximately 1.6 metres above street level before ramping down into basement areas.



Figure 106 – Existing flood depths for 100yr average rainfall intensity (ARI) (left) and probable maximum flood (PMF) (right)

### Flood Planning Levels (FPLs)

Recommendations for the Metro Quarter have been provided where the adopted criterion for setting of FPL was maximum of PMF and 100 year ARI +0.5 metres. The raising of proposed ground levels is to ensure there are no floodwater breaches from significant storm events particularly at building entrances.

The recommended FPLs for Metro Quarter (shown in Figure 107).

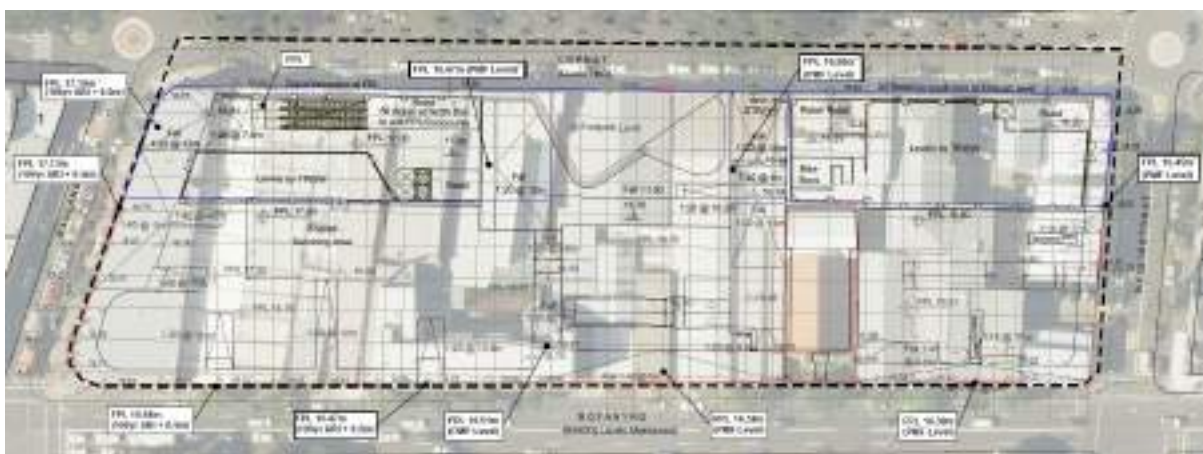
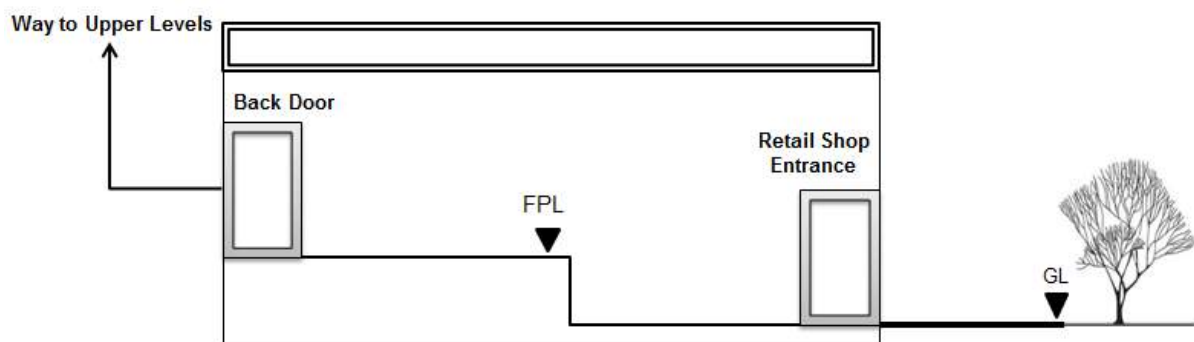


Figure 107 – Recommended flood planning levels (RL)

Building levels have been coordinated with Turner Studio and Turf to ensure that acceptable levels of personal and property safety are achieved, while supporting achieving high quality urban design outcomes, including the engagement between public and private domain at the ground level.

For public-private domain engagement on the ground level, this has required setting of an appropriate FPL for retail establishments. While retail entrances can be at existing street level, a stepped up zone inside ground level retail properties above the FPL may need to be considered for shelter in place of evacuation. An example of how this could be achieved is illustrated in Figure 108 below. However, treatment options for retail properties affected by flooding should be further developed during the detailed design phase.



**Figure 108 – Indicative internal treatment for retail properties**

### 8.16.2. Flood evacuation plan

Potential emergency response measures have been considered to assist in reducing the consequences of flood risks. For the Metro Quarter, this would primarily rely on adopting an appropriate FPL, and ensuring that developments are sufficiently raised to enable a shelter in place strategy to be effective. Residential development would all be located above the podium levels (i.e. generally from level 4 up)...

Access to and from the buildings during a flood event, including for the purposes of evacuation should also be considered. The majority of the Waterloo Precinct east of Cooper Street is expected to be subject to shallow depth overland flows which are managed with appropriate drainage. Evacuation from the buildings in this precinct, or emergency vehicle access, is still likely to be possible. However, as the buildings would be above the PMF level, a shelter in place strategy is likely preferable to avoid unnecessary vehicle or pedestrian movements during an extreme storm event.

However, as the apartments would be above the PMF level, a shelter in place strategy is likely preferable to avoid unnecessary vehicle or pedestrian movements during an extreme storm event.

During infrequent and rare flood events, potentially hazardous flood conditions may temporarily impede emergency vehicles from accessing the Metro Quarter, as flood depths exceed 1 metre on the southern side. It may be possible for emergency vehicles to access the Metro Quarter from Raglan Street; however, this would be dependent on the flood conditions in the surrounding streets, as well as the judgment of the vehicle operator.

The expected duration of flooding is expected to be relatively short, with the flooding along Cope Street and Botany Road responding quickly to local rainfall. As a consequence, flood levels would recede relatively quickly (approximately 1 hour following storm commencement). Isolated ponding areas may remain throughout the catchment that take longer to recede, and these may contribute to more widespread traffic issues. Given the short duration of flooding, a shelter in place strategy is likely the most appropriate strategy.

Overall, the flood hazard is most appropriately managed for residents with a shelter in place strategy, as the duration of inundation is relatively short and the rate of rise is relatively rapid. The indicative concept proposal can be supported with appropriate design features, such as the recommended FPLs, and further consideration of the following emergency response measures as part of the detailed design of the Metro Quarter:

- develop an operational flood emergency response plan. The plan would, at a minimum, confirm the most appropriate response strategy, nominate shelter locations or muster points, plot the recommended evacuation routes, consider the timeline to execute the plan, identify trigger conditions for initiating the plan, and assign specific responsibilities
- provide appropriate facilities and shelter spaces to support the response strategy
- consult the local State Emergency Service (SES) and other emergency services
- communicate the plan to residents and other building occupants
- develop an appropriate operational response for the station (under separate approval) to manage the number of people who may be exiting the station during a flood event. Station box retail spaces are also considered under a separate approval which would undergo their own detailed design (including flooding emergency).

### 8.16.3. Impact of Climate Change

A sensitivity analysis for climate change has been performed for both the existing and proposed development cases. This was undertaken by increased the rainfall intensity by 10 percent for the 100 year ARI, in line with the Australian Rainfall and Runoff and Office of Environment and Heritage guidelines.

Climate change scenario modelling shows that flood depths and flood impacts over current and proposed scenarios are slightly increased around Metro Quarter by up to 60 millimetres. As such, the FPL (at locations where it is less than the PMF level) would increase by up to 60 millimetres in the northern portion of the site.

### 8.16.4. Stormwater

Proposed stormwater management measures have been identified, including WSUD options and requirements.

#### **Stormwater quantity**

The proposed stormwater drainage and runoff system for the Metro Quarter development would comply with the design requirements of the SDCP 2012 and the City of Sydney Interim Floodplain Management Policy. The main design considerations are shown within Figure 109 and include:

- post development stormwater runoff connections into existing drainage infrastructure would match pre-development case
- compliance with Sydney Water total Permissible Site Discharge (PSD) requirements of 503litres per second (assuming 13,500 square metres area) and On Site Detention of 203 cubic metres for the entire site
- On-Site Detention is to be situated above the 100 year ARI flood levels to facilitate discharge into potentially fully charged stormwater pipes
- sizing of On-Site Detention areas, including bypass areas, to be managed based on relevant stage of construction process.

### **Stormwater quality**

The stormwater quality management approach would involve integrating WSUD techniques in the proposed stormwater drainage system and intends to achieve the City of Sydney's stormwater quality reduction targets.

The suggested strategy is to provide at-source stormwater pollution control devices provide flexibility to achieve stormwater pollution reduction targets prior to discharge from the precinct. These are proposed to be placed in tanks beneath podium courtyards and within the upper levels of underground car parks.

The proposed drainage scheme for the proposal proposes to utilise stormwater runoff connections into existing drainage infrastructure (as shown in Figure 109). This considers the impacts of stormwater flows on the site from the remainder of the Sheas Creek sub catchment for the Alexandra Canal.





Figure 109 – Concept stormwater and flood management plan

### 8.16.5. Recommendations

The future detailed SSD Application would need to consider the relevant stormwater management measures outlined above to respond to stormwater and flooding. This includes further assessment for the future detailed SSD Application to ensure that full coordination of stormwater can be achieved between the station and the OSD. The main mitigation measures include:

- post-development stormwater runoff connections into existing drainage infrastructure would match pre-development case
- compliance with Sydney Water total PSD requirements of 503 litres per second (assuming 13,500 square metres area) and On Site Detention of 203 cubic metres for the entire site
- On-Site Detention is to be situated above the 100 year ARI flood levels to facilitate discharge into potentially fully charged stormwater pipes
- On-Site Detention to be sized with consideration for bypass areas. The Metro Station is responsible for all interim On-Site Detention for the site
- management of water quantity to ensure no increase in stormwater discharge rate from the site for the 20 and 100 year ARI storms
- provide at-source stormwater pollution control devices provide flexibility to achieve stormwater pollution reduction targets prior to discharge from the precinct. These are proposed to be placed in tanks beneath podium courtyards and within the upper levels of underground car parks.

## 8.17. Noise and vibration

An Acoustic and Vibration Impact Assessment Report (Appendix V) has been prepared to assess the potential construction and operation noise and vibration impacts associated with the OSD, as well as consider the amenity of future occupants of the building. Where relevant, the assessment has been based on the concept proposal.

### 8.17.1. Existing noise and vibration environment

#### Noise

The existing ambient noise levels been obtained through a baseline noise monitoring survey undertaken from 8-15 June 2016 at several locations surrounding the site. The measured noise levels have been used to establish existing ambient noise levels throughout the project area and to develop a detailed understanding of the existing noise environment. The existing ambient noise levels have been summarised at Table 40 shown below.

**Table 40 – Summary of Unattended Noise Logging Results**

Noise Monitoring Location	Measured Noise Level (dB)							
	NPfI Time Periods <sup>1</sup>						RNP Time Periods <sup>2</sup>	
	Daytime RBL	Evening RBL	Night time RBL	Daytime LAeq	Evening LAeq	Night time LAeq	Daytime LAeq(15hour)	Night time LAeq(9hour)
L1	50	46	40	57	53	50	56	51
L2	48	42	38	57	52	50	56	50
L3	47	43	37	61	58	59	60	59
L4 <sup>3</sup>	50	46	41	65	57	54	64	54
L5	60	57	46	72	70	69	72	69
L6 <sup>4</sup>	Failed	-	-	-	-	-	-	-

Note 1: *Noise Policy for Industry (NPfI)* assessment periods – Daytime: 7:00 am to 6:00 pm Monday to Saturday, 8:00 am to 6:00 pm Sundays and Public Holidays; Evening: 6:00 pm to 10:00 pm; Night: 10:00 pm to 7:00 am Monday to Saturday, 10:00 pm to 8:00 am Sundays and Public Holidays.

Note 2: Road Noise Policy (RNP) Assessment Time Periods – Day: 7.00 am to 10.00 pm; Night: 10.00 pm to 7.00 am (weekly data).

Note 3: Attended noise measurements at this location identified a bird feeder located on the wall of the residential building. This was not identified at the time the noise logger was deployed as it was raining. At the time of the attended measurements the bird feeder attracted a large number of Rosellas which were generating noise levels over 100 dBA. This significant noise source is the reason that the RNP noise levels for L4 are higher than other comparable noise environment areas of the Waterloo project area.

Note 4: The noise logger at location L6 was damaged during the logging survey and no data was recorded.

## Vibration

There are currently no major existing vibration sources in the project area. Road traffic typically generates very low vibration levels which are well below applicable criteria. Where large discontinuities such as potholes, road plates or joins in the pavement occur, vibration levels can be perceived in close proximity to the road when heavy vehicles travel over them.

### 8.17.2. Noise and vibration impacts during construction of Metro Quarter OSD

During the construction period, the acoustic assessment has identified that several noise and vibration sensitive areas are located in the vicinity of the site, which are likely to be impacted by construction activities. Based on the scenarios that were input into the noise model, the construction noise predictions indicate that:

- the highest construction noise levels were predicted at the closest receivers surrounding the project site in all Noise Catchment Areas (NCAs) (refer to **Figure 110**) during the 'Earthworks / Basement Construction' scenario (Stage 1B and Stage 3). Refer to Chapter 4.12 for further discussion on project staging. Noise sources in this scenario may include an excavator, pile driver, dump truck and concrete truck
- the predicted noise levels at these receivers during the 'worst case scenario' construction periods were significantly higher than the "highly noise affected" level in accordance with the Environment Protection Authority's Interim Construction Noise Guideline criteria. The 'worst case scenario' construction periods include construction noise for both the 'Earthworks / Basement Construction' scenario (Stages 1B and 3) and 'Building Construction' scenario (Stages 1B, 2 and 3) without the implementation noise mitigation measures (e.g. localised screening or site hoarding). Refer to Chapter 4.12 for further discussion on project staging
- construction noise levels exceeding the recommended construction noise management levels (NMLs) were predicted during the 'Building Construction' scenarios across all three stages, with predicted exceedances above the highly affected noise level ranging from 2 dB to 6 dB. Noise sources in this scenario include cranes, delivering truck, forklift, caged material hoist and concrete placing boom
- the highest number of impacts were predicted in NCA1 during the 'Earthworks / Basement Construction' scenario (Stage 1B and Stage 3) with a total of 51 and 54 NML exceedance at receivers surrounding the project site respectively. Refer to Chapter 4.12 for further discussion on project staging
- for most construction activities, it is expected that the construction noise levels would frequently be lower than predicted at the most exposed receivers, as the noise levels presented in this report are based on a realistic worst-case assessment.

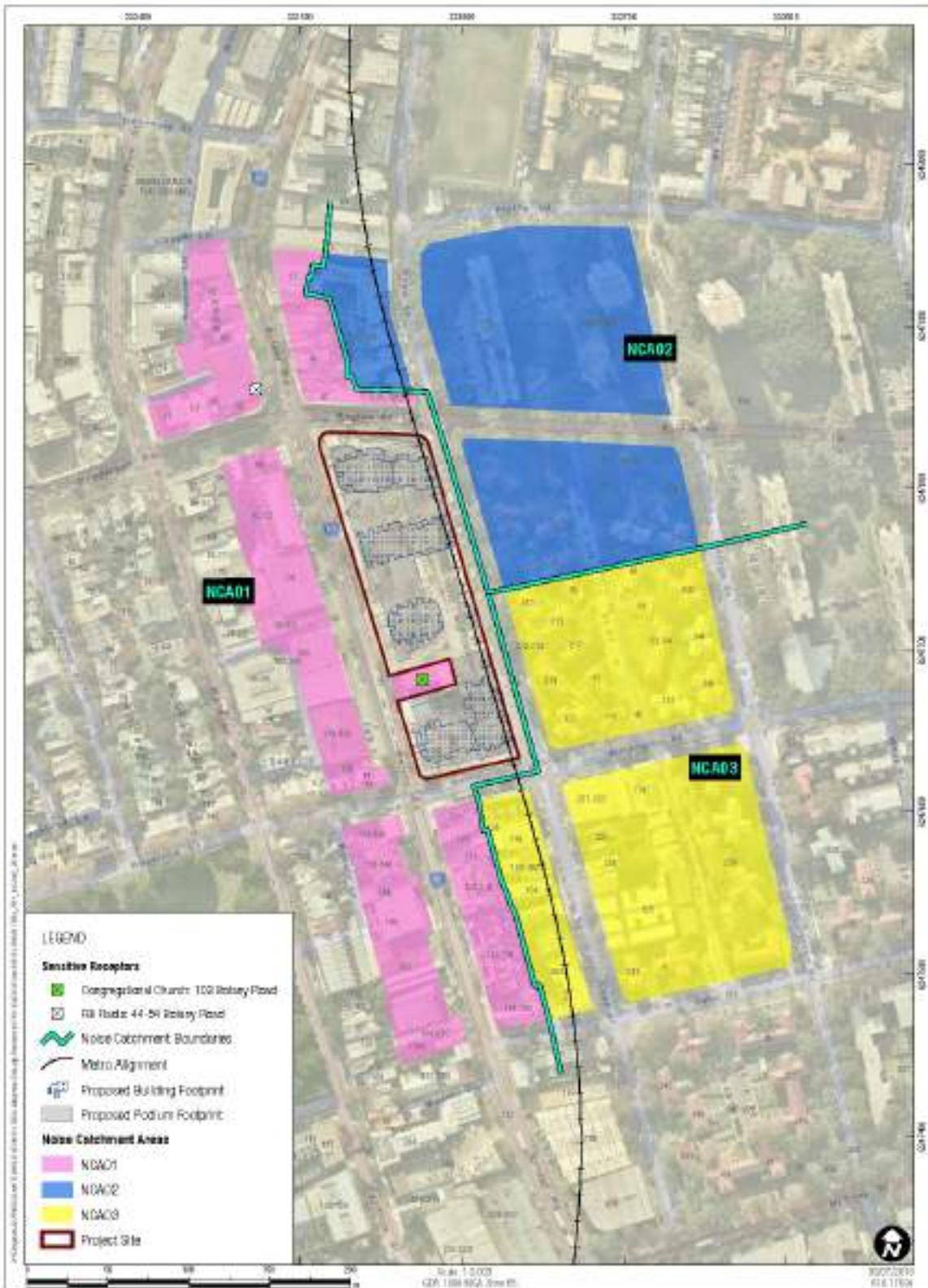


Figure 110 – Project site and nearby noise sensitive receivers

Noise mitigation measures have been recommended to minimise potential noise impacts during the construction phase of the OSD. These include:

- judicious selection of mechanical plant and equipment (e.g. quieter machinery and power tools)
- localised shielding of noisy equipment
- maximising the offset distance between noisy plant items and nearby noise sensitive receivers
- avoiding the coincidence of noisy plant working simultaneously close together and adjacent to sensitive receivers
- orienting equipment away from noise-sensitive areas
- carrying out loading and unloading away from noise-sensitive areas
- minimising consecutive works in the same locality
- considering periods of respite

The above mitigation measures would be incorporated as part of a comprehensive Construction Noise and Vibration Management Plan once more specific information regarding the proposed construction methodology, equipment and staging is known. This would be undertaken as part of the detailed design and future SSD Application.

Furthermore, as details relating to the proposed construction methodology, equipment and phasing are unknown, a detailed construction vibration assessment is not possible at this stage. This would form part of a comprehensive Construction Noise and Vibration Management Plan to be undertaken as part of the detailed design and future SSD Application, having regard to the *Chatswood to Sydenham, Construction Noise and Vibration Strategy* (Sydney Metro 2017) (prepared as part of the CSSI Approval), and should address potential cumulative impacts of the proposed development.

### **8.17.3. Operational noise impact**

During the operation period of the OSD, sources of industrial noise are likely to be associated with mechanical equipment of the commercial premises component of the OSD, including:

- heating, ventilation and air conditioning (HVAC)
- carpark ventilation fans
- corridor ventilation systems and carpark entry gates
- substation
- fire pump and fire control equipment

At this stage, the technical specifications and layout of the proposed mechanical plant and other equipment have not been defined. As such, the detailed assessment and verification of mechanical noise emissions would be carried out during the detailed design stage of the project ensuring that the nominated criteria identified within the Noise and Vibration Assessment Report for mechanical plant emissions are met.

In-principle acoustic treatment recommendations have been identified for these noise sources through common engineering methods. These include:

- selection of low-noise mechanical plant and other noise generating equipment
- sensible location of mechanical plant and equipment with respect to nearby noise-sensitive receivers
- barriers/enclosures (e.g. plant rooms)
- silencers and acoustically lined ductwork

Subject to detailed design and the incorporation of the above recommendations of the acoustic assessment during detailed design, it is considered that the proposal would be capable of being acceptable from an operational acoustic impact perspective by operating within the established operational noise criteria. This would be subject to further assessment during the detailed design and future detailed SSD Application.

#### 8.17.4. Noise and vibration impacts from surrounding sources

##### Sydney Metro City and Southwest alignment

As the Metro Quarter OSD is situated over and adjacent to the Sydney Metro City & Southwest alignment, including Waterloo Station, there is potential for vibration and re-radiated ground-borne noise impacts at future receivers in the Metro Quarter from metro trains operating in the underground tunnels.

The Acoustic and Vibration Assessment Report (Appendix V) provides a high level assessment of the potential impacts related to the operation of the Sydney Metro and is summarised within Table 41 below.

**Table 41 – Sydney Metro – Potential Noise and Vibration Impacts**

Receiver	Trackform	Vibration (RMS)		Ground borne Noise (L <sub>Amax,slow</sub> )	
		Criteria	Predicted	Criteria	Predicted
First level of residential	Standard	0.4 mm/s <sup>1</sup>	<0.1 mm/s	35 dBA (night-time)	44 to 49 dBA
	High attenuation (Delkor Eggs)		<0.1 mm/s		40 to 45 dBA

Note 1: Criteria based on continuous vibration levels detailed in *Assessing Vibration: a Technical Guideline*.

The above conservative assessment indicates:

- Tactile vibration from Sydney Metro trains is unlikely to exceed the proposed threshold levels.
- Ground-borne noise levels from trains may exceed the night-time criteria for residential receivers.

Further investigation of the impacts from trains on the Metro Quarter would be undertaken during the detailed design stage to ensure the impacts are adequately assessed and mitigated. It is anticipated that the criteria can be met through the use of resilient trackforms, building isolation in the form of bearings at the base of the buildings, or a combination of both.

## Botany Road

The internal noise targets for residential uses are the “window open” criteria of:

- 45 dBA LAeq(9hour) for bedrooms (10pm-7am)
- 55 dBA LAeq(24hour) for main living areas (24 hours)

Compliance with internal noise targets for residential receivers can be achieved during the daytime period (07:00 am – 22:00 pm). Compliance with the internal noise goals for residential receivers during the night-time period (10:00 pm – 07:00 am) was also achieved in the majority of locations. However exceedances of the internal noise goals of up to 3 dB were predicted at 16 out of the sample 222 receivers. To achieve compliance at these receivers, the internal floorplate layout should be developed such that living spaces (not bedrooms) are located at the opening locations which are found to not comply with the night-time criteria.

### 8.17.5. Recommendations

#### Construction stage

The Sydney Metro *Construction Noise and Vibration Strategy* (CNVS) has been developed to manage construction noise and vibration issues. The CNVS defines the strategies by which construction noise and vibration impacts are to be minimised on Sydney Metro projects and aims to provide a consistent approach to management and mitigation across the Sydney Metro projects.

The CNVS would be implemented to manage construction noise and vibration impacts for the delivery of the OSD where that delivery occurs concurrently with and up until completion of the station (i.e. construction Scenarios 1 and 2). For Scenario 3 (i.e. an OSD developed at some stage in the future beyond the completion of the station), the construction-related noise and vibration impacts would be managed in accordance with the applicable guidelines/standards that apply at the time and any relevant conditions of consent.

The recommended noise mitigation measures for the construction phase of the OSD would be incorporated as part of a comprehensive Construction Noise and Vibration Management Plan once more specific information regarding the proposed construction methodology, equipment and staging is known for the OSD. This would be undertaken as part of the detailed design stage.

#### Operational stage

Based on the findings of the Acoustic and Vibration Impact Assessment Report, the proposed development is capable of achieving compliance with the relevant acoustic criteria. This however is contingent on the conceptual recommendations within the report being implemented and developed during detailed design phases, which could include:

- further refinement of the internal floorplate layout should be developed as part of the detailed design such that living spaces (not bedrooms) are located at the opening locations which are found to not comply with the night-time criteria
- non-residential (commercial) uses within the OSD are sealed and mechanically ventilated, and glazing and solid areas of the external building fabric should be designed to achieve compliance



with the Australian Standard AS2107:2016 *Acoustics - Recommended design sound levels and reverberation times for building interiors* criteria

- all glazing and solid areas of the external building fabric should also be designed such as to achieve compliance with the “windows closed” criteria as part of the future detailed design of the OSD.
- further investigation of the impacts from trains on Metro Quarter be undertaken during the detailed design stage, with the selected Metro Quarter developers working closely with Sydney Metro to ensure the impacts are adequately assessed and mitigated.

## 8.18. Public benefits, contributions and voluntary planning agreement

The development would be subject to the CoS Council’s contributions requirements under section 7.11 of the EP&A Act.

The *City of Sydney Development Contributions Plan 2015* levies a contribution against new development within areas outside of Central Sydney to assist in funding public facilities, amenities and services to meet the needs of an increased population as a consequence of future development. Under this, it is noted that:

- no contributions are generated for social or affordable housing
- offsets may be sought for works in kind related to gross floor area set aside for community facilities
- contributions would be secured under a suitable legal mechanism

The levy is not required to be paid at concept stage, but rather prior to obtaining a construction certificate for the future detailed SSD Application(s) for physical works, when details of dwelling mix, floor space mix and delivery of affordable and social housing are confirmed.

## 8.19. Construction management

A Preliminary Construction Management Statement (Appendix CC) has been prepared by Sydney Metro to address how future stages of the project would manage impacts to pedestrians, metro users, bus services and taxis. The statement considers the three construction scenarios outlined in Chapter 4.12 which are:

- Scenario 1: OSD constructed while metro construction is underway
- Scenario 2: OSD construction may still be occurring after commencement of metro station operation
- Scenario 3: OSD construction starts after commencement of metro station operation.

As indicated in Chapter 4.12, in Scenarios 2 and 3 the contractor may undertake excavation of the basement areas of the OSD between 2021 and 2024 alongside construction of the station, however above ground OSD works could occur post 2024 after station opening.

The identified risks and proposed mitigation strategies for each stage are outlined in Table 42 below.

**Table 42 – Construction management risks and mitigation strategies**

Impact type	Risks	Mitigation
<b>Scenario 1</b>		
<b>Pedestrians</b>	Risk higher than in other scenarios due to concurrent construction activities.	Number of construction driveways should be minimised where possible. Specific pedestrian management measures would need to be put in place to manage pedestrians on all four frontages to the site.
<b>Sydney Metro customers</b>	No notable risk as construction would be completed for both projects.	Not applicable.
<b>Bus users</b>	Low to moderate risk that construction vehicle activities would impact bus operations along Botany Road and Wellington Street.	The number of construction site driveways along street frontages should be reduced to avoid pedestrian conflicts and encroachment into bus zones.
<b>Taxis</b>	There are currently no existing taxi facilities on the streets fronting the site.	If a taxi space or spaces are introduced on roads fronting the site between now and the commencement of OSD construction, replacement spaces may need to be provided if spaces are impacted for extended periods of time.
<b>Scenario 2</b>		
<b>Pedestrians</b>	The risk to pedestrians is high because OSD construction is occurring after the metro station has opened.	Specific pedestrian management measures would need to be put in place to manage pedestrians on all four frontages to the site. Restrictions on heavy vehicle access may be required during the AM and PM peak periods. Footpath upgrades would be provided as part of the CSSI Approval. Depending on the timing of the OSD works there may be a need to provide temporary functional footpaths to accommodate peak demand periods and/or to and from relocated bus stops near the site under the CSSI Approval, with end state footpaths delivered as part of the OSD. Preparation of a site specific Pedestrian Management Plan in accordance with the Principal's General Specifications G10 – Traffic & Transport Management may also be required.

Impact type	Risks	Mitigation
<b>Sydney Metro customers</b>	Risks for Metro customers and pedestrians generally, if construction activities are not clearly segregated. Sydney Metro loading dock relies on access from Botany Road.	Clear segregation of construction activity would be required. Temporary pedestrian paths, way finding and other signage may be required. If shared loading dock is not finalised by station opening, interim measures are to be included in a Traffic Management Plan.
<b>Bus users</b>	OSD construction vehicle activity and higher metro generated bus activity generated by operation of the Sydney Metro would coincide	Preparation of a site specific Pedestrian Management Plan may also be required to ensure safe and functional access between metro station and bus services. Interim measures may be required to ensure there is sufficient queuing space and signage provided. Numbers of construction driveways should be reduced as per Scenario 1.
<b>Taxis</b>	There would be a new taxi rank provided near the station entry on Raglan Street for a minimum of two spaces.	Temporary signage to be provided to identify taxi rank. If the taxi rank area is impacted by OSD construction works, replacement taxi space(s) may need to be provided in the immediate vicinity of the site. Preparation of a site specific Pedestrian Management Plan may also be required to ensure safe and functional access between metro station and taxi rank.

### Scenario 3

<b>Pedestrians</b>	As per Scenario 2	As per Scenario 2
<b>Sydney Metro customers</b>	As per Scenario 2	As per Scenario 2
<b>Bus users</b>	As per Scenario 2	As per Scenario 2
<b>Taxis</b>	As per Scenario 2	As per Scenario 2

Notwithstanding the above construction scenarios, the OSD developer would determine the timeframe for construction of the OSD and document the relevant construction management and mitigation measures in a Construction Environmental Management Plan (CEMP) to be provided with the future detailed SSD Application. This would include the refinement and implementation of the mitigation measures detailed in the Preliminary Construction Management Statement (as relevant). Further consultation with the Sydney Coordination Office and Roads and Maritime Services would occur during the preparation of the CEMP.

Refer to further detail in Chapter 11.0 of this EIS which sets out how Sydney Metro proposes to manage the environmental impacts associated with delivery of the OSD under the three scenarios identified above.

## 8.20. Reflectivity

A Reflectivity Impact Assessment Report (Appendix U) has been prepared to address potential reflectivity impacts of the Metro Quarter OSD.

Analysis of potential glare from the concept proposal indicates that with an uninterrupted glazed façade there would be some glare for motorists and pedestrians traveling along neighbouring streets. Initial calculations indicate that there may be reflectivity levels which exceed acceptable Threshold Increment Values (TI Value) for motorists travelling along Buckland, Cope, Raglan and Wellington Streets, as well as Henderson Road. There may also be instances of pedestrian discomfort along Botany Road, Buckland Street, Cope Street, Henderson Road, Raglan Street, Wellington Street and Wyndham Street.

However, upon further refinement of the current scheme, it is assumed that the building exterior would not be 100 percent glazing and would contain a number of features that should reduce the solar reflectivity off the façades. These include:

- materials other than glazing used. There would be areas of the façade that are not glazed
- there would be articulations and setbacks in the building façade which would provide further shading to glazed areas
- planned and existing vegetation around the site and neighbouring streets

The model used assumed that there were no surrounding buildings. Where in reality there is significant building density around the site to the north, east, south and west. It is likely that these buildings would provide shielding at certain times of the year, particularly to lower levels.

As this application seeks concept approval only, the detailed façade design and materials would be subject to future detailed SSD Application(s). The design and materiality of the façade which determine reflectivity would be resolved at the detailed design phase of the development and would be consistent with the recommendations provided within the Reflectivity Impact Assessment Report. This would ensure potential adverse glare conditions are managed to an acceptable level.

### 8.20.1. Recommendations

The following recommendations have been made to be investigated in relation to reflectivity:

- incorporation of glazing with 10 percent reflectivity coefficient to southern and northern aspect glazing.
- landscaping and trees to be emphasised around external pedestrian pathways.
- awnings over lower level building entries and surrounding pedestrian pathways.
- balustrade material to be solid or dark low reflectivity alternative.
- building façade to incorporate protruding wing walls or setbacks around areas of significant façade glazing
- fins or screens to be used near areas of significant façade glazing.

## 8.21. Geotechnical and Contamination

### 8.21.1. Geotechnical

An assessment of the local soil conditions specifically addressing erosion, salinity and acid sulfate issues has been included in a Geotechnical and Contamination Report (Appendix Z).

Soils within Metro Quarter are classified as Acid Sulfate Soil (ASS) – Soil Class 5 (indicating no known risk of acid sulfate soils).

Commercial and residential development with basements should be practicable for Metro Quarter with conventional structural elements and normal construction techniques. However, some geotechnical matters for consideration exist that include:

- high groundwater table and the potential for rapid increase in groundwater levels to the ground surface during heavy/intense rain events or flooding
- potentially saturated cohesionless soils (Unit 2 – Botany Sands)
- interaction with existing structures such as the metro station box, running tunnels and the heritage-listed Waterloo Congregational Church. Restrictions associated with existing structures may result in increased site retention and foundation costs and impact on construction programs
- the risk associated with underground services along the site boundaries. Retention system design would need to consider the risk of excavation induced ground movements on existing services. Relatively stiff retention systems may be required to limit ground displacements beyond the site boundaries.

The predominantly sandy soils at the site are unlikely to be highly erodible. However, sediment or dust could still be an issue during construction under adverse conditions, such as during very wet or dry weather. Erosion and sediment control would be managed using standard construction methods managed in accordance with a Construction Management Plan (CMP) and Material Management Plan (MMP).

It was found that salinity and acid sulfate soil, if encountered, would be managed in accordance with site specific management plans developed as part of the detailed design of the Metro Quarter.

### 8.21.2. Contamination

As part of the CSSI Approval, a Phase 1 Contamination Investigation was undertaken for the full Sydney Metro City & Southwest alignment between Chatswood and Sydenham. This investigation was undertaken for the purpose of ensuring that the site was suitable for the construction and operation of the proposed Sydney Metro project, which included the construction of Waterloo Station. In this assessment, potential areas of environmental interest were identified which would assist in any assessment of possible contamination at the site.

In addition, an assessment of the proposed land uses of the Metro Quarter OSD satisfying the SEPP 55 has been prepared as part of the Geotechnical and Contamination Report (Appendix Z), specifically addressing Clause 6(1)(b)(c). Potential sources of contamination identified during the Stage 1 Preliminary Site Investigation (PSI) which may impact the condition of soil and groundwater within Metro Quarter and its surrounds include the following:

- commercial and light industrial properties including car repair centres (J&S Smash Repairs), car servicing and mechanical repairs (All Mechanic Repairs and Waterloo Automotive), panel beaters and/or spray painters, cleaning product manufacturers, printer machinery and supplies, sheet metal workers, woodworking machinery and battery manufacturers
- dry cleaning facilities including Waterloo Laundry
- service station including former Total Service Station
- use of fill material of unknown origin that could potentially contain or be impacted with contaminants
- historical use of asbestos containing materials (ACM) within buildings and structures erected since the 1920s
- historical use of lead based paints on the interior and exterior of historical and current buildings

Based on the above findings, it is recommended that a Stage 2 contamination assessment is undertaken as part of future detailed SSD applications to characterise the nature and extent of potential soil and groundwater contamination identified within Metro Quarter, noting that the assessment would not need to cover areas associated with the station box as this is being managed as part of the CSSI Approval. This would confirm that Metro Quarter is either suitable in its current condition or can be made suitable following remediation for the proposed land use and zoning in accordance with clause 6(1)(b) of SEPP 55.

### 8.21.3. Recommendations

Noting that the scope of this report is to assess the feasibility of the potential future buildings to achieve the criteria set out within the Geotechnical and Contamination Report (Appendix Z), designs would be further developed as part of the detailed SSD application.

The following recommendations have been made in relation to geotechnical findings:

- Further geotechnical investigations should form part of detailed SSD Application(s) and should address the following requirements:
  - Allowance for up to 15 cored boreholes to 20 metre depths and five standpipe piezometers in five of these boreholes to allow for groundwater monitoring. If site-specific information prepared as part of the Metro rail investigations can be relied upon and is sufficient to demonstrate that the site is suitable for the proposed development then geotechnical investigations may not need to be as extensive
  - Prepare geotechnical models for design and to assess interactions between the Metro Quarter OSD and station boxes and running tunnels. This would identify restrictions associated with existing structures that may result in increased site retention and foundation costs and impact on construction programs

The following recommendations have been made in relation to contamination:

- a Stage 2 contamination assessment to characterise the nature and extent of potential soil and groundwater contamination identified within Metro Quarter to confirm that Metro Quarter is either suitable in its current condition or can be made suitable following remediation for the proposed land use and zoning in accordance with clause 6(1)(b) of SEPP 55

- in accordance with clause 6(1)(c) of SEPP 55, remediation and/or management of impacted areas may be required to mitigate risks associated with the identified impacts during the proposed construction works
- development of a Construction Environmental Management Plan (CEMP) to manage risks to construction and maintenance workers from impacted soils and groundwater during the redevelopment of Metro Quarter
- development of a Materials Management Plan (MMP) to include a strategy for the management of materials so that impacted material can be reused in less sensitive areas or managed within Metro Quarter to manage erosion, salinity (if encountered) and mitigate off-site disposal of excavated material
- in the event that potential or actual acid sulfate soil is identified, prepare an Acid Sulfate Soils Management Plan (ASSMP) to manage material that may require disturbance and/or movement

## 8.22. Crime prevention through environmental design

A Crime Prevention Through Environmental Design (CPTED) review of the proposed concept design has been undertaken and is provided at Appendix I. The CPTED review identifies the potential security concerns in and around the site and provides recommendations to guide crime prevention, safety and security arrangements as part of future detailed design of the development.

This strategy includes a detailed assessment which includes:

- a review of the Safer by Design Manual by the NSW Police Force
- collection and analysis of local and NSW State crime statistics from the Bureau of Crime Statistics and Research (BOCSAR)
- a crime risk assessment, in accordance with the current NSW policy and practice, of the following regulation and assessment principles:
  1. surveillance
  2. lighting / technical supervision
  3. territorial reinforcement
  4. environmental maintenance
  5. activity and space management
  6. access control
  7. design, definition and designation

Out of this assessment, a number of key recommendations were provided which are outlined below.

### 8.22.1. Recommendations

Key findings of the CPTED Report are detailed in Table 43 below and should be incorporated in the future detailed SSD Application.

**Table 43 – Key findings of the CPTED assessment undertaken for the project**

Area	Recommendation
<p><b>Surveillance</b></p>	<ul style="list-style-type: none"> <li>• Maintain sightlines to and from the proposed development and the surrounds by ensuring signage and equipment do not create a significant visual obstruction.</li> <li>• Ensure circulation spaces are unobstructed by structures, to remove opportunities for concealment and ensure that pedestrians can move freely with clear sightlines of their surrounds.</li> <li>• The gazed facades of the building at street level should be free of clutter and signage to allow sightlines between the development and the public domain.</li> <li>• Future design of internal car park structures should be strategically placed to prevent opportunities for cover and entrapment.</li> <li>• Subject to detailed design, the configuration of car parking spaces should maximise natural surveillance opportunities (i.e. using grid rows instead of a herringbone design).</li> <li>• The height of ceilings in the car parking areas should ensure that lighting is distributed across the entire car park evenly and to a standard which permits facial recognition into a vehicle.</li> <li>• Way-finding signage should be provided to ensure that users know how and where to enter, exit and find assistance.</li> <li>• Clear sightlines along publicly accessible areas, such as the pedestrian through site link and new street, are important for the real and perceived sense of safety for users. Visual obstructions should be minimised.</li> <li>• Active uses are encouraged along the publicly accessible areas of the proposed development, in particularly along the Cope Street Plaza, new street and pedestrian through site link to increase natural surveillance and effective guardianship.</li> <li>• Publicly accessible areas that do not have an after hours function and have low levels of activity and natural surveillance should be considered to be access restricted.</li> </ul>
<p><b>Lighting and Technical Supervision</b></p>	<ul style="list-style-type: none"> <li>• A CCTV network is essential for the overall development, in particular the public domain areas. The CCTV network is to be designed in consultation with a suitably qualified security consultant with a Class 2A licence under the <i>Security Industry Act 1997</i> who can provide specific advice on the placement, installation, monitoring and maintenance of the CCTV network.</li> <li>• The CCTV network should endeavour to ensure blackspots of coverage are not created.</li> <li>• The CCTV network strategy should be partnered with the internal and external lighting strategy to ensure facial recognition is achieved in all lighting conditions and a minimum colour rendering index of 60 is achieved.</li> <li>• Discrete CCTV systems such as small dome cameras are recommended.</li> <li>• CCTV and effective lighting are particularly important for the pedestrian through site link to ensure perceptions of safety are maintained in this area. Innovative design ideas are recommended to be explored to enhance the attractiveness and perceptions of safety of this area.</li> <li>• A lighting strategy should be developed by or in consultation with a suitably qualified and experienced lighting expert.</li> </ul>



Area	Recommendation
<b>Territorial Reinforcement</b>	<ul style="list-style-type: none"> <li>• Ensure public furniture is durable and of high quality design.</li> <li>• Ensure there is clear delineation between public and private areas to avoid ambiguity of spaces in terms of ownership and use.</li> <li>• Maintain that building entrances remain free of clutter to ensure entry points are highly visible from the street frontages.</li> <li>• Provide signage within the concourse to direct pedestrian movements and deter loitering.</li> <li>• Ensure that pathways within lobbies and corridors are unobstructed at all times to avoid blind spots.</li> <li>• Provide wayfinding signage and building / business identification signage where appropriate to reinforce perceptions of safety and legibility.</li> </ul>
<b>Environmental Maintenance</b>	<ul style="list-style-type: none"> <li>• Ensure mechanisms are in place to facilitate the on-going maintenance of the building, including the implementation of a rapid removal policy for vandalism repair and the removal of graffiti.</li> </ul>
<b>Activity and Space Management</b>	<ul style="list-style-type: none"> <li>• Ensure business, building and wayfinding signage is appropriate to deter access to private spaces and direct pedestrian movements to desired locations.</li> <li>• Maximise the inclusion of glazed facades with anti-graffiti coatings wherever possible to maximise lines of sight and mitigate the risk of damage.</li> </ul>
<b>Access Control</b>	<ul style="list-style-type: none"> <li>• Provide secure electronic access (card / key controlled entries / lifts etc.) to all private entrances of the building and lifts to facilitate in demarcating the residential and non-residential uses of the building and providing a delineation between public and private spaces.</li> <li>• Install a security door at an appropriate location to prevent unauthorised individuals from entering any back of house areas.</li> <li>• Consider restricting access after hours to publicly accessible areas that do not have a primary function and have low levels of activity and natural surveillance after hours, such as the setback area south of the Waterloo Congregational Church.</li> </ul>
<b>Design, Definition and Designation</b>	<ul style="list-style-type: none"> <li>• Security and general station personal are advised to patrol or occupy the metro concourse to minimise opportunities for anti-social behaviour.</li> </ul>

## 8.23. Accessibility

An Accessibility and DDA Impact Statement is provided at Appendix BB. The review addresses the access provisions and considerations for the proposed mixed use development in accordance with the following policies and guidelines:

- the *Disability Discrimination Act 1992 (DDA)*
- the *Building Code of Australia 2016* and referenced Australian Standards
- the *Disability Access to Premises (Buildings) Standard 2010*

The Accessibility and DDA Impact Statement provides a range of specific areas which would need to be further reviewed as the project develops. The future access provisions within the proposal would be further refined as part of the detailed design and incorporated as part of a detailed SSD Application for the site.

Overall, this review confirms that the proposal is capable of complying with the relevant accessibility policies and guidelines outlined above.

### 8.23.1. Recommendation

A detailed accessibility assessment is to be submitted with the future detailed SSD Application. No mitigations measures have been identified at this concept stage, although some areas in the Accessibility and DDA Impact Statement at Appendix BB have been highlighted as requiring further review during the detailed design of the development.

## 9.0 Social and economic impacts

### 9.1. Social impacts

The Metro Quarter OSD provides the opportunity to capitalise on the influence of new transport infrastructure, to enable renewal and allow diverse and innovative communities to grow in locations that are well served by high quality public transport. Recognising the importance of character, community cohesion and a human scale as determinants of liveability, amenity and sustainability, the OSD would have a positive social impact through the delivery of an integrated station development that includes a variety of uses, accessible open space and improved public domain to create a focal point for social activity within the Waterloo area.

Specifically, the Metro Quarter OSD would deliver significant social benefits, including:

- A wide range of uses and services catering to the needs of a diverse population, including at least 2,000m<sup>2</sup> of floor space for community uses (refer to Chapter 4.5).
- Delivery of additional housing in an accessible location.
- Improved housing diversity and housing affordability.
- Provision of 70 social housing dwellings.
- Provision of between 5-10 percent of dwellings being affordable housing.
- Improved accessibility to the Sydney CBD and other jobs and services hubs through the new Metro Station.
- Design excellence built form.
- Opportunities for involvement of local community in public art.
- New publicly accessible spaces and improved public domain

The mix of land uses proposed have been selected based upon their ability to be accommodated on the site and to maximise the benefits arising from the future use of the site as part of the integrated station development. The provision of a mixed-use scheme accommodating residential apartments, retail, office and community floor space responds to a wide range of community needs.

New retail, business and community uses would support the opportunity to establish a new activity centre within the Waterloo area, where the everyday service and social needs of the local community are located. By supporting a wide range of land uses, the OSD would support a range of activities and occupancy throughout the day and evening. This would contribute towards a vibrant transport precinct that is safe, well-utilised and which acts as a focal point for the city in regard to both transport and land use.

Additional housing in an accessible location would provide the opportunity for people to live close to where they work, whether within Metro Quarter or along the new Sydney Metro. A Housing Affordability and Diversity Study has been undertaken (refer to Appendix O) which identified that the area surrounding Metro Quarter OSD and the wider Sydney LGA have critical housing needs including:

- A continuing supply of social housing to meet those with critical housing needs
- Additional affordable housing suited to key workers

- More affordable rental housing in the private market

These needs are being driven by changes in demography and the housing market. Within this context the proposed OSD addresses the changing demographic needs, housing diversity and housing affordability through the following:

- **Mix of housing tenures** – the OSD concept proposal comprises a mixture of private dwelling (80 percent), affordable dwellings (up to 10 percent) and social dwellings (10 percent)
- **Mix of dwelling sizes** – the OSD concept proposal provides for a mixture of dwelling sizes including studios, one-bedroom, two-bedroom and three-bedroom dwellings, whilst addressing the need for smaller dwellings
- **Range of price points** – the proposed housing sizes cater for a range of price points including investors, renters and owner-occupiers
- **Inclusive and socially connected development** – principles of social and inclusive development would be supported by the OSD concept proposal through the provision of a mixture of dwelling types and tenures, community spaces, supporting community health services, retail and commercial spaces
- **Liveability** – the OSD would enhance the liveability of the wider Precinct through the promotion of health and wellbeing outcomes, provision of community spaces, delivery of housing in a well serviced location and the development of a sustainable community that is culturally diverse
- **Energy efficiency** – the OSD concept proposal demonstrates that an energy efficient development can be achieved
- **Sustainable community** – future residents and tenants within the OSD would comprise a diverse and include range of income groups and cultural backgrounds

The Design Excellence Framework and Design Guidelines would ensure that future detailed design of the OSD buildings would provide a memorable landmark that is commensurate with the important role of the site within the Redfern Street Village and broader Eastern City. The proposal provides for the integration of public art during the detailed design, in addition to that required under the CSSI Approval, and would contribute to the cultural qualities of the site and the locality, improving the social experience of future visitors to and occupants of the site.

Potential environmental impacts of the OSD have been identified throughout the EIS and demonstrated to be acceptable, with specific mitigation measures identified where necessary to ensure that future development is consistent with the expected benefits of the project and does not result in any significant adverse impacts on the community.

Having regard to the above, it is considered that the OSD would not result in any significant social impacts and would result in a number of benefits. A framework of mitigation measures and strategies have been provided which would assist in mitigating these impacts (refer to Chapter 12.0).

## 9.2. Economic impacts

The delivery of the OSD above and adjacent to the Waterloo Station is expected to make a significant positive contribution to the Waterloo area and wider CoS LGA by providing for additional direct and indirect employment, support additional economic activity in the retail services and non-retail activity (i.e. office/business sectors and community services), and contributing to additional housing supply,

including 70 social housing dwellings and between 5-10 percent of dwellings as affordable housing. Specifically, the OSD is expected to result in around 400 operation jobs and 550 jobs during the construction phase (subject to detailed design and planning approval).

The CSSI Approval included an assessment of the property and business impacts of the construction of the Waterloo Station, including from the demolition of buildings previously located on the site and employment generated by the construction of the Sydney Metro project. These impacts are separate from the OSD project and do not form part of this assessment.

The Metro Quarter OSD would help to meet a clearly identified market gap for retail facilities such as supermarkets across the main trade area and would augment the existing centres hierarchy, without any expected reduction in the level of service provision across the catchment. The provision of non-retail activities, such as business and community uses, would further support local need for everyday services.

The economic villages of CoS LGA collectively make up 45 percent of total output and are major employment generators within the LGA. Forming part of the Redfern Street Village, the Metro Quarter presents an opportunity to support further employment growth and economic activity within this area.

The *Greater Sydney Region Plan* and *Eastern City District Plan* also emphasise the important role local centres have in providing employment opportunities and supporting the everyday needs of the local population. The Metro Quarter would be an opportunity to provide additional capacity to support employment growth around Waterloo Station. Future retail space located within the OSD is envisaged to support fine-grain retail with a small scale supermarket that would be suitable for servicing existing and future local community needs without compromising the function of existing retail centres within the main trade area.

By facilitating the delivery of approximately 700 apartments (including social and affordable housing) in an accessible location, the OSD supports the delivery of diverse housing to meet the needs of the population and contribute to housing choice and affordability. Through immediate proximity to employment within the Harbour CBD, as well as through convenient and timely access to other major employment centres along the Eastern Economic Corridor via the Sydney Metro, this project supports the '30-minute city' concept to support increased productivity and reduced congestion within Sydney. Future occupants of dwellings delivered on the site would contribute additional expenditure into local businesses within the vicinity of the site, contributing to additional employment particularly within the evening and night-time economies.

Having regard to the above, it is considered that the OSD would not result in any significant economic impacts and would result in a number of benefits.

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## 10.0 Site suitability and public interest

### 10.1. Site suitability

The proposal comprises a key mixed use development located on a large, consolidated allotment in the Waterloo area. On the basis of the Urban Design and Public Domain Report at Appendix G and the Options Analysis undertaken at Chapter 1.6, the Metro Quarter OSD has been subject to a substantial and thorough assessment of development suitability, which has confirmed the proposed uses as being the most suitable outcome at the site. In this regard, the site is considered to be suitable for the concept proposal as:

- the proposal comprises a prime opportunity to take advantage of the approved Sydney Metro project, with the airspace created as part of the Metro Quarter site envisaged to be developed for the purposes of OSD under the CSSI Approval.
- the large size of the site allows for a significant sized development to be created whilst accommodating the future Sydney Metro station.
- the site comprising the entire block provides for four street frontages and gives significant street width to accommodate the various uses proposed.
- the separation of the site from other buildings provides sufficient space to allow residential development to be proposed on the site whilst maintaining high levels of amenity in terms of solar access and privacy.
- the site's location within the emerging Waterloo SSP is well suited to retail, commercial office and business services uses, in addition to cultural, entertainment and community facilities
- the ability to support multiple uses has been demonstrated through a well-developed indicative ground floor plane and the proposed envelope. It has been demonstrated through this assessment that a balance of uses would result in the creation of a vibrant and interesting development to create a new centre of activity within the Waterloo area.
- the proposed scale and density of the development is highly appropriate in the context of other transit-oriented centres throughout the Eastern City District and Greater Sydney
- the proposed envelope has been selected with the specific intention of ensuring that overshadowing of the future envelope is compliant with the requirements of the SDCP 2012 and proposed WMQ DCP
- the shape and size of the site has allowed the proposal to be designed to ensure that the operations of Sydney Metro, or the future expansion of the Sydney Metro network of stations are not inhibited, as well as to ensure the effective movement of pedestrians through and around the site to support the interchange.
- the proposal would contribute to the provision of additional dwellings in a location which reinforces the '30 minute city' concept proposed by the Greater Sydney Commission, locating dwellings and employment in a location which is proximal to services, open space, transport and jobs.
- the development is appropriate with regards to matters such as flooding, geotechnical and contamination, air quality, noise and vibration, aeronautical safety and wind.

## 10.2. Public interest

The proposal is in the public interest as it would contribute to the evolution of a key part of the Waterloo SSP and Central to Eveleigh Corridor, working alongside the future Waterloo Station and surrounding developments in the creation of a renewed precinct within the heart of Waterloo. Given the significance of this precinct within Sydney, a robust assessment of the public benefits of the proposal must therefore be undertaken. Specifically, the Metro Quarter OSD is considered to be in the public interest as:

- the OSD development at the site would provide additional residential capacity (including social and affordable housing) in an inner city context, ensuring that jobs and dwellings are co-located in a manner which reduces commute lengths and improves the level of access to facilities, services, transport options and public open space
- the OSD development also provides a substantial retail component, providing additional capacity to support future residents, workers and visitors of the area, without compromising on the function of existing surrounding centres. This would have flow on positive economic impacts within the context of the Waterloo area, as well as the Greater Sydney and NSW economies more broadly
- as part of the integrated station development, the proposal would contribute to the delivery of major improvements to the public domain, providing for a higher quality pedestrian environment around the site which would link the various civic, open space and employment precincts in proximity of the site
- a community use component would be provided, enabling the provision of social infrastructure and services to further enhance the wellbeing and liveability of the local population
- the proposal would directly contribute to the provision of 550 additional jobs during the construction period
- the proposal would accommodate approximately 400 jobs on an ongoing basis, generated by the retail, business, office uses and community facility components of the development
- additional economic benefits are also provided by residents using surrounding services following the completion of the development
- the proposal under this concept SSD Application would work alongside the Waterloo Station development under the CSSI Approval in order to create an overall station precinct which is integrated, high quality, enjoyable and safe for future public transport users
- the development would provide a variety of different uses above and adjacent to the station, which would work to activate the station precinct, both within traditional business hours as well as during the evening, late night and weekend periods
- the proposed building envelope would enable the delivery of a future OSD form which is memorable, reinforcing the legacy of the Sydney Metro project and its mark on the Sydney skyline
- the proposed envelope has been demonstrated as enabling very high amenity and high quality future dwellings
- the development has been designed in such a manner which ensures that sustainability requirements are achieved or exceeded throughout the development
- the proposal provides a framework which would ensure that future development at the site exhibits design excellence, working alongside the future railway station to deliver a very high design quality building form outcome
- the proposal includes provision for future public art, which would contribute to the vibrancy and interest generated by the surrounding built environment.

## 11.0 Framework for management of design and environmental impacts

Given the integration of the delivery of the metro station with an OSD development, Sydney Metro has given consideration to the management of impacts associated with the project. The approach to environmental mitigation and management identified for the CSSI Approval is illustrated at Figure 111 and includes:

- project design – measures which are inherent in the design of the project to avoid and minimise impacts
- mitigation measures – additional to the project design which are identified through the environment impact assessment
- construction environmental management framework – details the management processes and documentation for the project
- construction noise and vibration strategy – identifies measures to manage construction noise and vibration.
- design guidelines – provides an assurance of end-state design quality
- environmental performance outcomes – establishes intended outcomes to be achieved by the project.

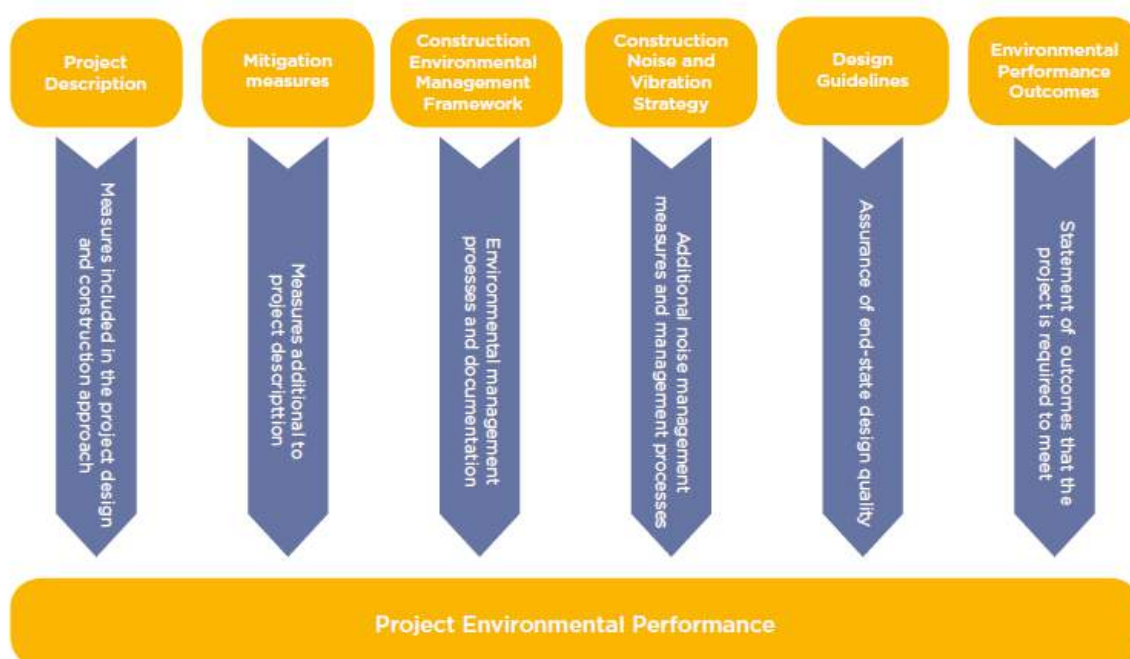


Figure 111 – Project approach to environmental mitigation and management



The EIS documentation for the Sydney Metro City & Southwest project identified that the construction environmental management framework, construction noise and vibration strategy and design guidelines for the station would be reviewed and updated periodically throughout delivery of the project.

Sydney Metro proposes that the integrated delivery of the CSSI station works and the OSD be subject to a similar environmental management framework up until the point of completion of the station to ensure a consistent approach. The applicability of this framework to the various components of the integrated station development is detailed in the Table 44.

**Table 44 – Environmental management framework for the integrated station development**

	CSSI Approval	Concept SSD Application	Detailed SSD Application(s)
<b>Project Description</b>	As detailed in EIS, PIR and subsequent modification reports and Conditions of Approval (CoA). Covers both construction and end state /operation.	Building envelope, maximum floor space, use and measures/ requirements to guide detailed design as described in the EIS.  Concept design and high level consideration of construction.	Detailed design and supporting information in EIS, including its design and construction.
<b>Mitigation Measures</b>	As detailed in EIS, SPIR and subsequent modification reports and CoA.	Mitigation measures proposed in EIS to be taken into account in detailed design/ SSD Application(s).	Project specific mitigation measures would be detailed in EIS to manage design requirements and construction related impacts.
<b>Construction Environmental Management Framework</b>	Appended to EIS and referred to in CoA, therefore requirement in delivery of project.	Commitment to implementation of <i>Construction Environment Management Framework</i> (CEMF) requirements in the delivery of integrated station development up until the point of completion of the station. These commitments are detailed as part of this EIS.  CEMF requires preparation of Traffic and Transport Management Plan.	Commitment to implementation of CEMF requirements in the delivery of integrated station development up until the point of completion of the station. These commitments would be detailed as part of EIS.  Construction staging to be confirmed in the EIS. Where OSD construction is not concurrent with station construction, the OSD contractor would prepare a separate Construction Environmental Management Plan (CEMP) outlining any temporary/interim measures. Details would be submitted with the EIS.
<b>Construction Noise and</b>	Appended to EIS and referred to in CoA,	Commitment to implementation of <i>Construction Noise and</i>	Commitment to implementation of CNVS in the delivery of integrated

	CSSI Approval	Concept SSD Application	Detailed SSD Application(s)
<b>Vibration Strategy</b>	therefore requirement in delivery of project.	<i>Vibration Strategy</i> (CNVS) in the delivery of integrated station development up until the point of completion of the station. These commitments are detailed as part of this EIS.	station development up until the point of completion of the station. These commitments would be detailed as part of EIS.  Where OSD construction is not concurrent with station construction, the OSD contractor would prepare a separate Construction Noise and Vibration Management Plan. Details would be submitted with the EIS.
<b>Design Guidelines</b>	Appended to EIS and referred to in CoA, therefore requirement in delivery of project.  Note also CoA E100 requires Design Review Panel (DRP) to review and refine design and CoA E101 requires Secretary approval of Station Design Precinct Plans (SDPPs).	Design Guidelines for OSD and Design Excellence Strategy included as part of this EIS.  Concept proposal has been reviewed by DRP.  Commitment to ongoing review by DRP to manage interface between station/public domain and OSD until completion of station.	Detailed design required to respond to Design Guidelines.  Detailed design subject to review by DRP.
<b>Environmental Performance Outcomes</b>	As detailed in EIS, SPIR and subsequent modification reports and CoA. Covers both construction and end state /operation.	This EIS includes the following to be met in development of design and construction methodology: <ul style="list-style-type: none"> <li>• noise and vibration criteria for both construction and operation stages</li> <li>• noise and vibration mitigation measures</li> <li>• Construction Environmental Management Statement</li> <li>• heritage outcomes to be achieved through design (interface with CoA E101)</li> <li>• issues and process to resolve traffic and transport impacts for design (interface with CoA E92 – IAP) and construction (CoA E77 - Traffic and Transport</li> </ul>	The EIS would address how environmental criteria have been met through design and provide detailed impact assessment together with mitigation measures.  These measures would reflect commitments in this concept SSD EIS (refer to Chapter 12.0) and where applicable to construction, would be applied up until the point of completion of the station. The detailed SSD Application would detail appropriate mitigation measures to be implemented to manage construction related impacts beyond completion of the station (in accordance with latest published Guidelines) and any relevant CoA.

CSSI Approval	Concept SSD Application	Detailed SSD Application(s)
		Liaison Group and CoA E82 – Construction Traffic Management Plans)

## 11.1. Construction environmental management framework

The *Sydney Metro Construction Environmental Management Framework* (CEMF) has been reviewed to provide a framework for management of environmental impacts for the delivery of the OSD, where that delivery occurs concurrently with and up until completion of the station (i.e. staging Scenarios 1 and 2). For staging Scenario 3 (i.e. an OSD developed at some stage in the future beyond the completion of the station), the construction related impacts would be managed in accordance with the applicable guidelines at the time (e.g. *Construction Environmental Management Plan*) and any relevant CoA.

The practical application of the CEMF is as a linking document between planning approval documentation and construction environmental management documentation, which would be developed by the construction contractors.

The CEMF details the environmental, stakeholder and community management systems and processes for the construction of the project. Specifically, it details the requirements in relation to the CEMP, sub-plans and other supporting documentation for each specific environmental aspect.

## 11.2. Construction noise and vibration strategy

The *Sydney Metro Construction Noise and Vibration Strategy* (CNVS) has been developed to manage construction noise and vibration issues. The CNVS defines the strategies by which construction noise and vibration impacts are to be minimised on Sydney Metro projects and aims to provide a consistent approach to management and mitigation across the Sydney Metro projects.

The CNVS would be implemented to manage construction noise and vibration impacts for the delivery of the OSD, where that delivery occurs concurrently with and up until the completion of the station (i.e. staging Scenarios 1 and 2). For staging Scenario 3 (i.e. an OSD developed at some stage in the future beyond the completion of the station), the construction related impacts would be managed in accordance with the applicable Guidelines at the time (e.g. *Interim Construction Noise Guidelines*, DECC, 2009) and any relevant CoA.

## 12.0 Mitigation measures

A full list of measures required to mitigate the potential impacts associated with the concept proposal are detailed at Table 45.

**Table 45 – Environmental risk assessment**

Proposed OSD specific measure		Interface issue with CSSI Approval
<b>Operation (detailed design) measures</b>		
<b>Built form and urban design</b>	<p>The detailed design of the OSD is to be undertaken in accordance with the Waterloo Design Guidelines at Appendix K. The detailed SSD Application(s) must address the manner in which the design/proposal responds to the detail within this concept SSD Application and the Design Guidelines.</p> <p>The future detailed SSD Application must implement the process outlined in the Design Excellence Strategy provided at Appendix J.</p>	<p>The detailed design of the OSD and its integration with the design of Waterloo Station is to be reviewed by the Design Review Panel established under Condition of Approval E100 of the CSSI Approval.</p> <p>The design of the OSD is to be prepared having regard to the Station Design Precinct Plan required by Condition of Approval E101 of the CSSI Approval.</p>
<b>Public domain overshadowing</b>	<p>Future development is to be consistent with the proposed maximum building envelope (and detailed in Appendices C and D) so as to ensure that the overshadowing impacts are not worse than those assessed in this concept proposal.</p>	N/A
<b>Solar access</b>	<p>Future development is to be consistent with the proposed maximum building envelope (and detailed in Appendices C and D) so as to ensure that the solar access impacts are not worse than those assessed in this concept proposal.</p>	N/A
<b>Visual and view impacts</b>	<p>Future development is to be consistent with the proposed maximum building envelope (as detailed in Appendix M) so as to ensure that the visual and view impacts are not worse than those assessed in this concept proposal. Future landscaping would assist in mitigating potential visual and view impacts from within the public domain.</p>	N/A
<b>Residential amenity</b>	<p>Detailed SSD Application(s) is to address the relevant provisions of the Apartment Design Guide to demonstrate that appropriate levels of residential amenity are achieved for existing and future residential dwellings.</p>	N/A

	Proposed OSD specific measure	Interface issue with CSSI Approval
<b>Heritage</b>	Detailed SSD Application(s) must address how the recommendations made in the Heritage Impact Assessment (Appendix Q) have been addressed to ensure the development achieves a positive heritage outcome for the site.	N/A
<b>Transport, traffic, parking and access</b>	<p>Detailed SSD Application(s) must consider the recommendations of the Transport Impact Assessment provided of Appendix N, including:</p> <ul style="list-style-type: none"> <li>• Servicing planning principles and commitment to develop servicing plans to manage loading dock operations are to be adopted as part of the detailed SSD Application process.</li> <li>• On site car parking is not to exceed the Category A parking rates outlined within SLEP 2012 as required by the WMQ DCP.</li> <li>• Accessible parking spaces are to be included in accordance with SLEP 2012 as required by the WMQ DCP, and Australian Standard (AS) 2890 and would be situated within easy access of lifts.</li> <li>• All pedestrian access points and corridors are to be designed to comply with AS1428.1 and 1428.2 and are to form part of the detailed design of the project.</li> <li>• All parking areas are to be designed to comply with the relevant Australian Standards including AS 2890.1, 2890.2, 1428.1 and 1428.2 to help manage vehicle access and circulation in parking areas.</li> <li>• Bike parking spaces are to be delivered in accordance with WMQ DCP requirements, which are easily accessed and are supported by end of trip facilities.</li> <li>• The detailed design of the site and vehicle access locations considers the needs of emergency service vehicles to ensure safe and easy access to all areas of the site.</li> </ul>	<p>The detailed design of the OSD should be in conjunction with the Interchange Access Plan required to be prepared in accordance with Condition of Approval E92 of CSSI Approval No. 15_7400 for the Sydney Metro City &amp; Southwest Chatswood to Sydenham project.</p> <p>The detailed design of the OSD and assessment of its impact is to be undertaken in consultation with the Traffic and Transport Liaison Group(s) established under Condition of Approval E77 of CSSI Approval No. 15_7400 for the Sydney Metro City &amp; Southwest Chatswood to Sydenham project. Beyond completion of Waterloo Station, the detailed design of the OSD and its traffic, parking, pedestrian and cycle accessibility impacts would require consultation with and the approval of the relevant roads authority in accordance with the terms of the relevant approval.</p>
<b>ESD</b>	In order to achieve a high level of ecological sustainability, detailed SSD Applications should comply with the sustainability framework and strategies, including the minimum targets identified in the ESD Report (Appendix S). Where practicable, a future detailed SSD Application should also consider and implement world best practice / innovation strategies.	N/A
<b>Prescribed airspace</b>	The detailed SSD Application(s) would need to comply with any requirements set by Sydney Airports Corporation Limited.	N/A

	Proposed OSD specific measure	Interface issue with CSSI Approval
<b>Utilities, infrastructure and services</b>	In accordance with the specific requirements of the individual utility service providers, the developer of the OSD must undertake detailed enquiries and arrange for final connections and associated approvals based on the final design.	The provisions of all utility services to the OSD are to be coordinated with the station works under Condition of Approval E2 of the CSSI Approval.
<b>Stormwater and flooding</b>	<p>The future SSD Application(s) must adopt the recommendations of the Water Quality, Flooding and Stormwater Report provided of Appendix T, including:</p> <ul style="list-style-type: none"> <li>• post development stormwater runoff connections into existing drainage infrastructure would match pre-development case</li> <li>• compliance with Sydney Water total Permissible Site Discharge (PSD) requirements of 503L/s (assuming 13,500 square metres area) and On Site Detention of 203m<sup>3</sup> for the entire site</li> <li>• On-Site Detention is to be situated above the 100 year ARI flood levels to facilitate discharge into potentially fully charged stormwater pipes</li> <li>• management of water quantity to ensure no increase in stormwater discharge rate from the site for the 20 and 100 year ARI storms.</li> <li>• provide at-source stormwater pollution control devices provide flexibility to achieve stormwater pollution reduction targets prior to discharge from the precinct. These are proposed to be placed in tanks beneath podium courtyards and within the upper levels of underground car parks.</li> </ul>	The detailed design of the OSD should be developed having regard to the flooding requirements in Conditions of Approval E8 and E9 of the CSSI Approval.
<b>Noise and vibration</b>	The future detailed SSD Application(s) must address the manner in which the design/proposal has responded to the recommendations contained within this concept SSD Application including the noise and vibration criteria established within the Acoustic and Vibration Impact Assessment Report at Appendix V.	The detailed design of the OSD is to consider cumulative impacts having regard to the noise and vibration requirements under Condition of Approval E41 and E42 of the CSSI Approval.
<b>Wind impacts</b>	<p>It is recommended that further investigation of the wind conditions for the ground level and elevated areas within and around the development be undertaken during the design development for detailed development applications, with consideration of the SDPP, to verify the suitability of the relevant areas. This would include detailed wind tunnel testing of the future residential balconies and communal areas.</p> <p>The recommendations of the Pedestrian Wind Environment Impact Assessment Report (Appendix X) should be considered when developing the detailed OSD design.</p>	<p>The detailed design of the OSD is to be developed with consideration to the SDPP to manage potential impacts to station areas.</p> <p>If amelioration measures, such as awnings, are required to be implemented on the metro station components, coordination with the station design team for the CSSI Approval is to be undertaken to ensure the metro</p>

Proposed OSD specific measure		Interface issue with CSSI Approval
		station and OSD achieve acceptable conditions.
<b>CPTED</b>	<p>The detailed SSD Application(s) must incorporate CPTED principles relating to natural surveillance, access control, territorial reinforcement and space management.</p> <p>The detailed SSD Application(s) must adopt the recommendations contained within the CPTED Assessment Report (Appendix I).</p>	N/A
<b>Waste management</b>	<p>A Waste Management Plan (WMP) must be prepared and submitted as part of the detailed SSD Application addressing the following:</p> <ul style="list-style-type: none"> <li>• Relevant legislative and Council requirements</li> <li>• Type of waste to be generated</li> <li>• Expected volume per week</li> <li>• Proposed on-site storage and treatment facilities</li> <li>• Destination of waste</li> <li>• Information about the ongoing management of waste on-site</li> </ul> <p>The WMP must address the objectives, principles and strategies outlined in the Utilities and Infrastructure Servicing Report (Appendix P) to deliver effective waste management.</p>	N/A
<b>Accessibility</b>	<p>The detailed SSD Application(s) must take into consideration the Australian Standards, Building Code of Australia, Federal Disability Discrimination Act (DDA) and Disability (Access to Premises – Buildings) Standards 2010), as relevant, and comply with the recommendations of the Accessibility and DDA Impact Statement (Appendix BB).</p>	N/A
<b>Reflectivity</b>	<p>The detailed SSD Application(s) must confirm façade treatment and the impact of this in terms of solar reflectivity glare to motorists and pedestrians.</p>	N/A
<b>Construction Measures</b>		
<b>General</b>	<p>Construction Environment Management Plans must be prepared in accordance with the Sydney Metro Construction Environmental Management Framework up until completion of Waterloo Station. Beyond that time, Construction Environmental Management Plans must be prepared in accordance with best practice guidelines and conditions of approval.</p>	N/A

	Proposed OSD specific measure	Interface issue with CSSI Approval
Transport, traffic, parking and access	<p>Construction traffic and transport related impacts of the OSD must be managed in accordance with the Construction Traffic Management Framework (CTMF) established under Condition of Approval E81 of the CSSI Approval, until such time as completion of Waterloo Station has been reached.</p> <p>In accordance with the process established for Waterloo Station, Construction Traffic Management Plans (CTMPs) must be prepared to address the potential traffic and transport related impacts associated with construction and how these impacts would be managed.</p> <p>In the event that construction activities for the OSD occur beyond the completion of Waterloo Station, a detailed Construction Pedestrian and Traffic Management Plan must be developed by the proponent in consultation with the relevant roads authority and council during the detailed design stage and details are to be submitted with the detailed SSD Application.</p> <p>Preparation of Construction Traffic Management Plans or Construction Pedestrian and Traffic Management Plans must take into consideration the preliminary mitigation measures identified in the Preliminary Construction Management Statement (Appendix CC).</p>	<p>The detailed design of the OSD and assessment of its impact is to be undertaken in consultation with the Traffic and Transport Liaison Group(s) established under Condition of Approval E77 of the CSSI Approval, until such time as completion of Waterloo Station has been reached.</p> <p>Beyond completion of Waterloo Station, detailed design of the OSD and its traffic, parking, pedestrian and cycle accessibility impacts would require consultation with and the approval of the relevant roads authority in accordance with the terms of the relevant approval.</p>
Noise and vibration	<p>The Construction Noise and Vibration Strategy (CNVS) must be implemented up until the time of completion of the Waterloo Station with the aim of achieving the noise management levels/ criteria established within this concept SSD Application including the Acoustic and Vibration Assessment Report at Appendix V.</p> <p>In accordance with the CNVS, Construction Noise Impact Statements must be prepared to address the potential noise impacts associated with construction and how these impacts would be managed.</p> <p>In the event that construction activities for the OSD occur beyond the completion of Waterloo Station, a Construction Noise and Vibration Management Plan (CNVMP) must be developed by the proponent in consultation with the stakeholders and an acoustic engineer during the detailed design stage and details are to be submitted with the detailed SSD Application. In this instance, the CNVMP must be developed in accordance with ICNG or applicable guidelines in force at the time.</p>	<p>Construction Noise and Vibration Impact Statements prepared for the OSD must consider cumulative impacts having regard to the Construction Noise and Vibration Impact Statements prepared under Condition of Approval E33 of the CSSI Approval.</p>
Waste	<p>A Waste Management Plan must be prepared as part of the Construction Environment Management Plan,</p>	<p>N/A</p>



Proposed OSD specific measure	Interface issue with CSSI Approval
<p>having regard to the provisions included in the Sydney Metro Construction Environmental Management Framework up until completion of the Waterloo Station. Beyond that time, a Construction Waste Management Plan must be prepared in accordance with best practice guidelines and conditions of approval.</p> <p>Details regarding impacts to be managed during construction are to be submitted as part of the detailed SSD Application and should include:</p> <ul style="list-style-type: none"> <li>• The waste management and recycling mitigation measures as detailed in the Utilities and Infrastructure Servicing Report (Appendix P)</li> <li>• The responsibility of key project personnel with regard to implementation of the plan</li> <li>• Waste management and recycling monitoring requirements</li> <li>• Procedures for the assessment, classification, management and disposal of waste in accordance with the NSW EPA Waste Classification Guidelines (EPA, 2014)</li> <li>• Compliance record generation and management</li> </ul>	

## 13.0 Environmental risk assessment

This chapter provides an environmental risk assessment (ERA) of the development proposed under this concept SSD Application. The ERA, which has been adapted from Australian Standard AS4369:1999 *Risk Management and Environmental Risk Tools*, identifies all potential impacts, the significance and manageability of each impact, and any potential residual impacts following mitigation.

The significance of impact is assigned a value between 1 and 5 based on:

- the receiving environment
- the level of understanding of the type and extent of impacts
- the likely community response to the environmental consequence of the project

The manageability of environmental impacts is assigned a value of between 1 and 5 based on:

- the complexity of mitigation measures
- the known level of performance of the safeguards proposed
- the opportunity for adaptive management

The sum of the significance and manageability values provides an indicative ranking (between 1 and 10) of the potential residual impacts after the mitigation measures are implemented, in accordance with the Risk Assessment Matrix in Table 46 below. A full list of the mitigation measures is presented in Chapter 12.0 above.

Table 46 – Risk assessment matrix

Significance of impact	Manageability of impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 – Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 – Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 – Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 – High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 – Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

**Table 47 – Environmental risk assessment**

Item	Phase	Potential Environmental Impact	Significance of impact	Manageability of impact	Residual impact
Visual and views	Operation	<ul style="list-style-type: none"> <li>Visual / view impacts from surrounding streetscape and key public vantage points</li> <li>View impacts on neighbouring residential building</li> </ul>	4	3	7 (High / Medium)
Public domain overshadowing	Operation	<ul style="list-style-type: none"> <li>Increase in shadowing to surrounding public domain, including Alexandria Park</li> </ul>	1	1	2 Low
Traffic, transport and pedestrian movement	Construction	<ul style="list-style-type: none"> <li>Increased traffic on surrounding roads</li> <li>Conflict with pedestrians</li> </ul>	2	2	4 Low / Medium
	Operation	<ul style="list-style-type: none"> <li>Increased traffic on local roads</li> <li>Potential queueing of traffic and pedestrians at Botany Road and Henderson Street intersection</li> <li>Conflict with pedestrians</li> </ul>	3	3	6 Medium
Non-Indigenous heritage	Construction	<ul style="list-style-type: none"> <li>Structural impact on adjacent heritage items</li> </ul>	1	1	2 Low
	Operation	<ul style="list-style-type: none"> <li>Impact on heritage items in the vicinity</li> </ul>	1	1	2 Low
Noise and vibration	Construction	<ul style="list-style-type: none"> <li>Increase in noise and vibration associated with construction including from vehicles and machinery</li> </ul>	4	2	6 Medium
	Operation	<ul style="list-style-type: none"> <li>Increase in noise and vibration associated with emissions from building plant and services</li> <li>Increase in noise associated with vehicle movements</li> </ul>	3	2	5 Low / Medium
Infrastructure and utilities	Operation	<ul style="list-style-type: none"> <li>Adequate connection to infrastructure and utilities</li> <li>Adequate capacity to service building</li> </ul>	2	2	4 Low / Medium

Item	Phase	Potential Environmental Impact	Significance of impact	Manageability of impact	Residual impact
Flooding	Operation	<ul style="list-style-type: none"> <li>Potential flooding of development</li> <li>Adequate stormwater management for development</li> </ul>	4	2	6 Medium
Reflectivity	Operation	<ul style="list-style-type: none"> <li>Adverse solar reflectivity glare to motorists and pedestrians</li> </ul>	3	2	5 Low / Medium
Contamination	Construction	<ul style="list-style-type: none"> <li>Exposure of contamination of hazardous materials during construction</li> </ul>	4	2	6 Medium
Wind impact	Operation	<ul style="list-style-type: none"> <li>Adverse wind environment along surrounding streets, publicly accessible open space and station entries</li> <li>Adverse wind environment to outdoor areas in the OSD, including to private balconies and communal areas</li> </ul>	4	2	6 Medium
Crime and public safety	Operation	<ul style="list-style-type: none"> <li>Antisocial and criminal behaviour</li> </ul>	3	2	5 Low / Medium
Environmental and construction management	Construction	<ul style="list-style-type: none"> <li>Noise, dust, air quality, waste management and traffic impacts</li> </ul>	3	2	5 Low / Medium
Biodiversity	Construction	<ul style="list-style-type: none"> <li>Impacts on street trees</li> </ul>	1	1	2 Low
Waste	Construction	<ul style="list-style-type: none"> <li>Waste production associated with construction activities</li> </ul>	2	2	4 Low / Medium
	Operation	<ul style="list-style-type: none"> <li>Waste production associated with operation of OSD</li> </ul>	3	2	5 Low / Medium

Item	Phase	Potential Environmental Impact	Significance of impact	Manageability of impact	Residual impact
ESD	Operation	<ul style="list-style-type: none"> <li>Carbon emissions</li> <li>Energy consumption</li> <li>Thermal comfort of building occupants</li> </ul>	2	2	4 Low / Medium
Accessibility	Operation	<ul style="list-style-type: none"> <li>Adequate access for people with a disability</li> </ul>	2	1	3 Low
Social Impact	Construction	<ul style="list-style-type: none"> <li>General disruption to community associated with large scale construction</li> </ul>	4	2	6 Medium
	Operation	<ul style="list-style-type: none"> <li>Potential anti-social behaviour associated with operation of the development</li> </ul>	2	2	4 Low / Medium
Property and land use	Operation	<ul style="list-style-type: none"> <li>Compatibility between OSD uses and station/surrounding uses</li> </ul>	1	2	3 Low
Business impacts	Construction	<ul style="list-style-type: none"> <li>Impacts on surrounding business during construction (due to loss of amenity)</li> </ul>	2	2	4 Low / medium
	Operation	<ul style="list-style-type: none"> <li>Altered access and visibility to surrounding businesses</li> <li>Impacts on surrounding business during operation (due to changes in amenity)</li> </ul>	1	2	3 Low
Water quality	Construction	<ul style="list-style-type: none"> <li>Potential erosion and sediment impacts on drainage system</li> </ul>	2	1	3 Low
	Operation	<ul style="list-style-type: none"> <li>Impacts on quality of stormwater discharge into drainage system</li> </ul>	2	1	3 Low

Item	Phase	Potential Environmental Impact	Significance of impact	Manageability of impact	Residual impact
Air Quality	Construction	<ul style="list-style-type: none"> <li>Dust associated with construction activities</li> <li>Emissions associated with construction vehicles</li> </ul>	2	2	4 Low / medium
	Operation	<ul style="list-style-type: none"> <li>Emissions associated with vehicle traffic (including along Botany Road)</li> <li>Plant and equipment emissions</li> </ul>	4	2	6 Medium
Cumulative Impacts	Construction	<ul style="list-style-type: none"> <li>Cumulative impacts (traffic, noise, dust, etc.) associated with concurrent construction of station and OSD, and other development in the area</li> </ul>	3	2	5 Medium
	Operation	<ul style="list-style-type: none"> <li>Cumulative impacts (traffic, noise emissions, etc.) during concurrent operation of station and OSD, and other development in the area</li> </ul>	2	2	4 Low / Medium

## 14.0 Conclusion

This EIS provides a comprehensive assessment of the environmental, social and economic impacts of the concept SSD Application for the proposed OSD above and adjacent to Waterloo Station. This EIS has addressed the requirements of the SEARs (Appendix A), as well as the relevant requirements contained at Schedule 2 of the EP&A Regulation 2000.

The proposal provides for new development in a location that would benefit from a high level of direct public transport access. The land uses proposed to be included in the Metro Quarter OSD are considered to be appropriate in this location to capitalise on this significant public transport investment, ensuring that residents, visitors and employees are able to enjoy the substantial benefits offered by the Sydney Metro project.

The proposal has also been designed to align closely with the work undertaken regarding the Waterloo Station design as part of the CSSI Approval, delivering an integrated station development that delivers housing and employment uses that contribute to an active and vibrant transport precinct. This would ensure that the OSD complements the station operations at the ground plane, and that future OSD development would not result in any adverse impacts on station operations.

This concept proposal would also enable future OSD development to contribute to the overall legacy of the Sydney Metro project, adding to the creation of the future Waterloo Station precinct. Specifically, the OSD component would work to create an overall station precinct which is integrated, high quality, enjoyable and safe for future public transport users.

Having regard to the above, the concept proposal is considered to warrant approval for the following key reasons:

- a full assessment has been undertaken of the environmental impacts of the proposal which demonstrates that potential impacts have been avoided, adequately justified or appropriately mitigated. On this basis, the proposed envelope, which represents a maximum potential building form, has been demonstrated to be appropriate within its context and the specific circumstances of the site
- the large, consolidated land area upon which the OSD is proposed to be developed enables a degree of flexibility in the future detailed building design to enable further refinements to facilitate a high quality development
- the proposal directly responds to the demand for provision of additional housing in locations close to jobs, consistent with the '30-minute city' concept, which would provide greater residential amenity and contribute to reduced congestion associated with longer commutes
- the proposal also facilitates the provision with new commercial and community uses to service the needs of future residents, workers and visitors within the Metro Quarter and surrounding area. This would assist in contributing to the proposed renewal of the Estate, as well as providing additional direct employment on the site
- potential impacts of any future building on surrounding public domain areas have been a central consideration of the development of the concept SSD Application, including the minimisation of overshadowing to Alexandria Park and surrounding uses, ensuring that potential impacts are appropriately mitigated

- an extensive program of consultation has contributed to the formation of this application, which has led to the provision of a development form which reflects the comments of relevant stakeholders
- the proposal includes a robust framework for the attainment of design excellence
- the concept proposal would not result in any adverse social or economic impacts, and would result in a number of significant benefits including the provision of approximately 550 full time-equivalent construction jobs and approximately 400 full time-equivalent ongoing jobs at the site
- the site is suitable for the proposed development

Overall, it can be considered that there are substantial benefits from the proposed concept proposal on the surrounding area, which would help to contribute to the strong legacy of the Sydney Metro project. Where potential impacts have been identified, these have been considered and evaluated as being appropriate in the context of the site. On this basis, it is considered that the concept proposal is able to be approved.