CPTED REPORT

APPENDIX I

Sydney Metro City & Southwest: Waterloo Over Station Development

Crime Prevention Through Environmental Design (CPTED) assessment report

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1.0 Executive Summary

This Crime Prevention Through Environmental Design (CPTED) Assessment has been undertaken to assess the potential opportunities for crime and the perceived fear of crime that may be associated with the proposed concept mixed use building envelope above and adjacent to the approved Waterloo Station as envisaged in the Environmental Impact Statement (EIS) to which this report is appended.

CPTED is a situational crime prevention strategy that focuses on the design, planning and structure of an environment. This assessment aims to identify the potential opportunities of crime created by the proposed development by assessing the development in accordance with design and place management principles of CPTED.

Ethos Urban has prepared this assessment in accordance with the methods and resources of the NSW Police Force *Safer by Design Course*. This assessment has been prepared and reviewed by experienced CPTED professionals, following their completion of the NSW Police Force *Safer by Design Course*. The assessment uses qualitative and quantitative measures to analyse the physical and social environment in which the proposed development is located and recommends actions to mitigate opportunities for crime in accordance with the Australian and New Zealand Risk Management Standard AS/NZS 31000:2009.

In accordance with the NSW Department of Planning & Environment's (DPE) guidelines (2001) the aim of CPTED strategy is to influence the design of buildings and places by:

- increasing the perception of risk to criminals by increasing the possibility of detection, challenge and capture;
- increasing the effort required to commit a crime by increasing the time, energy or resources which need to be expended;
- reducing the potential rewards of crime by minimising, removing or concealing 'crime benefits'; and
- removing conditions that create confusion about required norms of behaviour.

An Urban Design and Public Domain Study prepared by Turner and Turf has been reviewed as part of this assessment.

The following tasks were undertaken in the preparation of this assessment:

- 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); and
- a crime risk assessment, in accordance with the current NSW policy, 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.

A site inspection was undertaken on 20 August 2018 between the hours 9.00am and 11.00pm to assess the current site conditions, situational crime prevention measures and perceived safety of the existing environment.

This CPTED report is submitted as part of the development application submission for the concept State Significant Development Application (SSD Application). The SSD Application relates to the proposed over station development (OSD) mixed use building in Waterloo. We note that this assessment considers the concept proposal against the principles of CPTED, however, is general in nature. Further CPTED assessments are therefore necessary during subsequent detailed SSD applications, informed by detailed design.

1.1 Disclaimer

CPTED strategies must work in conjunction with other crime prevention measures, social intervention strategies and police operations. By following the recommendations contained in this assessment, it must be acknowledge that:

- there is no definitive measure of 'safety'. Therefore, this assessment cannot be used to prove a definitive measure of safety
- this assessment does not ensure complete safety for the community or public and private property
- assessment and recommendations are informed by information provided, with observations made at the time the assessment was prepared
- this assessment does not guarantee that all risks have been identified, or that the area assessed will be free from criminal activity if recommendations are implemented
- this assessment has been undertaken on behalf of the applicant and does not represent the opinions and expertise of the NSW Police Force.

The principles of CPTED aim to minimise the opportunity for crime. However, it is recognised that environmental design cannot definitively eliminate opportunities for crime or prevent a determined perpetrator from engaging in criminal activity.

This assessment has not been informed by a specialist security consultant. Ethos Urban are not specialist security consultants and therefore cannot comment on specific security measures or system requirements. A security plan for the site is recommended to be prepared in consultation with a security consultant. Security consultants should hold a Class 2A licence in accordance with the *Security Industry Act* 1997. A security consultant can advise on the specific placement, installation, monitoring and maintenance of CCTV networks and other security systems such as bollard/barriers.

2.0 Introduction

2.1 Purpose of this report

This report accompanies a concept State Significant Development Application (concept SSD Application) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The concept SSD Application is made under Section 4.22 of the EP&A Act.

This report should be read in conjunction with the Nominated State Significant Precinct (SSP) Study – Waterloo, submitted to the Minister for Planning (The Minister) in July 2018. That study proposes new planning controls to facilitate the development proposed.

Sydney Metro is seeking to secure concept approval for over station development (OSD) above and adjacent to Waterloo Station comprising a podium and three taller buildings which include commercial, residential, and community land uses. The concept SSD Application seeks consent for a building envelope and use for residential, retail, commercial, entertainment, community and recreational purposes, maximum building height, maximum gross floor area (GFA), pedestrian and vehicular access, circulation arrangements and associated car parking and the strategies and design parameters for the future detailed design of development.

Sydney Metro proposes to procure the construction of the OSD as part of an integrated station development package, which would result in the combined delivery of the station, OSD and public domain improvements. The station and its public domain elements form part of a separate planning approval for Critical State Significant Infrastructure (CSSI) approved by DPE on 9 January 2017.

As the development is within a rail corridor, is associated with railway infrastructure and is for "commercial premises or residential accommodation" with a Capital Investment Value of more than $30 million, the project is identified as State Significant Development (SSD) pursuant to Schedule 1, 19(2)(a) of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP).

This report has been prepared to outline the crime prevention through environmental design impacts and specifically respond to the Secretary's Environmental Assessment Requirements (SEARs) issued for the concept SSD Application on 29th June 2018 which states that the Environmental Impact Statement (EIS) is to address the following requirements:

Reference	SEARs Requirement	Where Addressed in Report
Plans and Documents	In addition, the EIS must include the following: • CPTED assessment	Sections 4.0, 5.0 and 6.0 of this report.

2.2 Overview of the Sydney Metro in its context

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 36km 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 30km 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 per cent capacity across the network to meet demand.

Figure 1: Sydney Metro alignment map

Sydney Metro City & Southwest includes the construction and operation of a new metro rail line from Chatswood, under Sydney Harbour through Sydney's CBD to Sydenham and on to Bankstown through the conversion of the existing line to metro standards.

The project also involves the delivery of six (6) new metro stations, including at Waterloo, together with new underground platforms at Central. Once completed, Sydney Metro will have the ultimate capacity for a train every two minutes through the CBD in each direction - a level of service never seen before in Sydney.

On 9 January 2017, the Minister approved the Sydney Metro City & Southwest - Chatswood to Sydenham application lodged by TfNSW as a CSSI project (reference SSI 15_7400.

The CSSI Approval includes all physical work required to construct the CSSI, including the demolition of existing buildings and structures on each site. Importantly, the CSSI Approval also includes provision for the construction of below and above ground structures and other components of future OSD (including building infrastructure and space for future lift cores, plant rooms, access, parking and building services, as relevant to each site). The rationale for this delivery approach, as identified within the CSSI application is to enable the OSDs to be more efficiently built and appropriately integrated into the metro station structures.

The EIS for the Chatswood to Sydenham alignment of the City & Southwest project identified that the OSD would be subject to a separate assessment process.

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

- Modification 1 - Victoria Cross and Artarmon Substation which involves relocation of the Victoria Cross northern services building from 194-196A Miller Street to 50 McLaren Street together with inclusion of a new station entrance at this location referred to as Victoria Cross North. 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 Trains Facility South which incorporated 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.

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

The remainder of the City & Southwest alignment (Sydenham to Bankstown) proposes the conversion of the existing heavy rail line from west of Sydenham Station to Bankstown to metro standards. This part of the project, referred to as the Sydenham to Bankstown upgrade, is the subject of a separate CSSI Application (Application No. 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.

2.3 Nominated State Significant Precinct - Waterloo

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 will be new planning controls that will 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)

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.

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 Environmental Impact Statement (EIS) for the SSD Application will be exhibited concurrently.

2.4 Planning relationship between Waterloo Station and the OSD

While Waterloo Station and the OSD will form an integrated station development, the planning pathways defined under the EP&A Act require separate approval for each component of the development. In this regard, the approved station works (CSSI Approval) 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.

For clarity, the approved station works under the CSSI Approval included the construction of below and above ground structures necessary for delivering the station and also enabling construction of the integrated OSD. This includes but is not limited to:

- demolition of existing development
- excavation
- integrated station and OSD structure (including concourse and platforms)
- lobbies
- retail spaces within the station building
- public domain improvements associated with the station
- access arrangements including vertical transport such as escalators and lifts space provisioning and service elements necessary to enable the future development of the OSD, such as lift cores, plant rooms, access, parking, retail, utilities connections and building services.

The vertical extent of the approved station works above ground level is defined by the 'transfer level' level (which for Waterloo is defined by approximately RL 33.1 over the northern station box and RL 35.1 over the southern station box), above which would sit the OSD. An example of this delineation is illustrated in **Figure 2**.

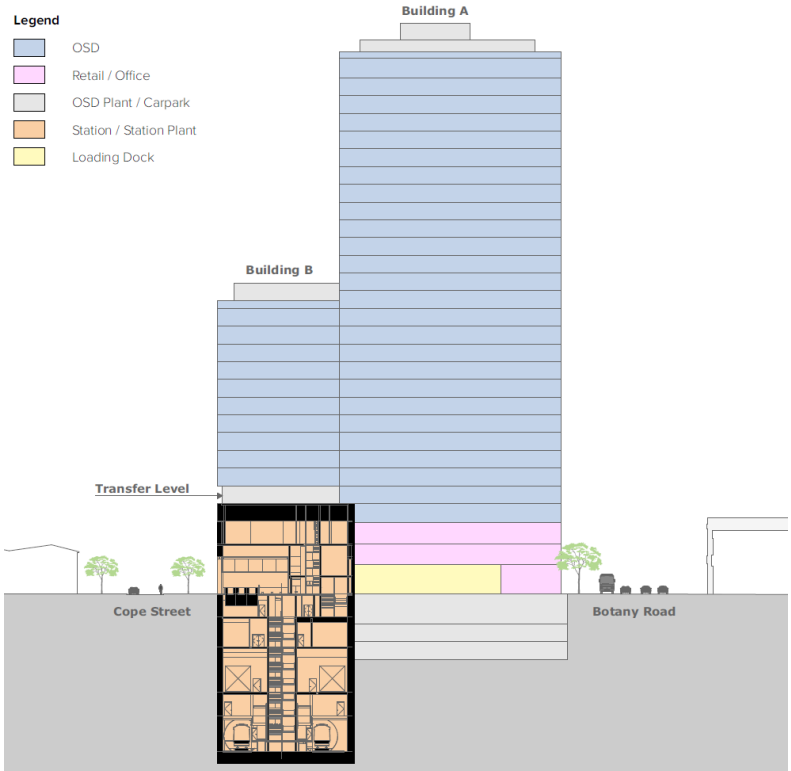

Figure 2: Delineation between the Metro station and OSD

It is noted that the structural and service requirements and space provisioning to support OSD 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 CSSI Approval also establishes the general concept for the ground plane of Waterloo Station including access strategies for commuters, pedestrians and workers. In this regard, the main pedestrian access to the station would be via an entry located at 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. Retail uses (approved under the CSSI Approval) would be located on the ground floor of the station development along the Cope Street frontage of the site.

Since the issue of the CSSI Approval, Sydney Metro has undertaken design work to determine the technical requirements for the structural integration of the OSD with the station. This level of design work, together with the planning and design undertaken for the

remainder of the Metro Quarter has informed the concept proposal for the OSD. It is noted that ongoing design development of the works to be delivered under the CSSI Approval would 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 of the CSSI Approval. The detailed design for the Metro Quarter would continue to evolve having regard to the IAP and SDPP.

Public domain improvement works immediately adjacent to Waterloo Station would be delivered as part of the CSSI Approval to support pedestrian movements 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), while other public domain works within the Metro Quarter are proposed as part of the OSD. Final details of public domain works for the OSD will be provided with the detailed SSD Application(s) following finalisation of the SDPP and IAP for the CSSI Approval.

2.5 The site

2.5.1 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 3**).

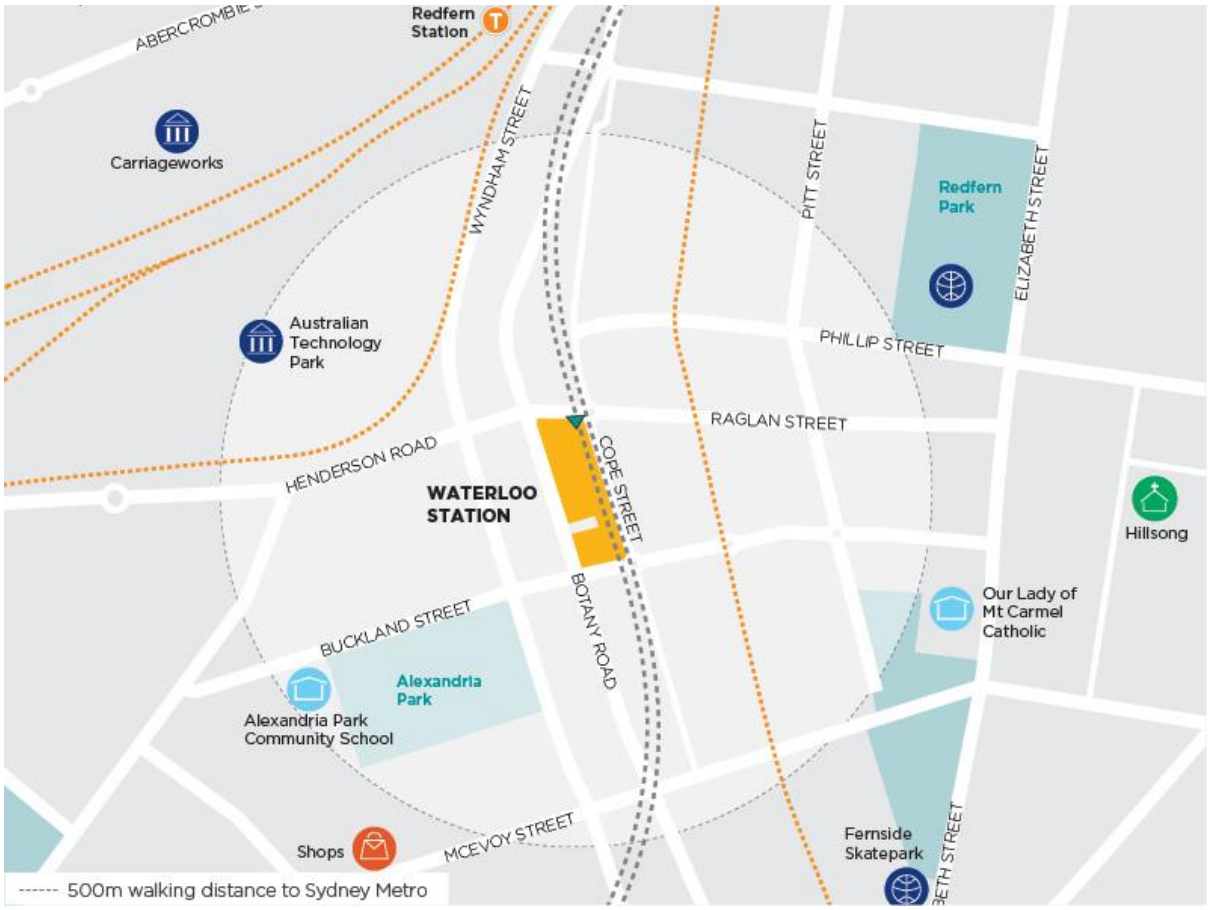

Figure 3: Waterloo Station location plan

2.5.2 Site context

The Metro Quarter is located in Redfern Street Village (see **Figure 4**) in the City of Sydney LGA approximately 3.3 kilometres south of Sydney CBD, 1 kilometre north of Green Square and less than 1 kilometre south of Redfern Station.

Directly east is the Waterloo Estate, which is owned by the NSW Government and is under the management of NSW LAHC. The Waterloo Estate comprises 2,012 social housing dwellings and a small number of private dwellings in medium and high density forms, ranging from single storey attached dwellings to apartment buildings of up to thirty storeys.

The Metro Quarter is less than 1 kilometre south-east of the Australian Technology Park (ATP), a technology micro-cluster that currently contains around 3,000 – 3,500 workers with a range of businesses in technology and creative industries; and a start-up/business incubator hub. It is set to grow into a business park that will soon accommodate new premises currently under construction (i.e. Commonwealth Bank Australia (CBA) has committed to two major office towers).

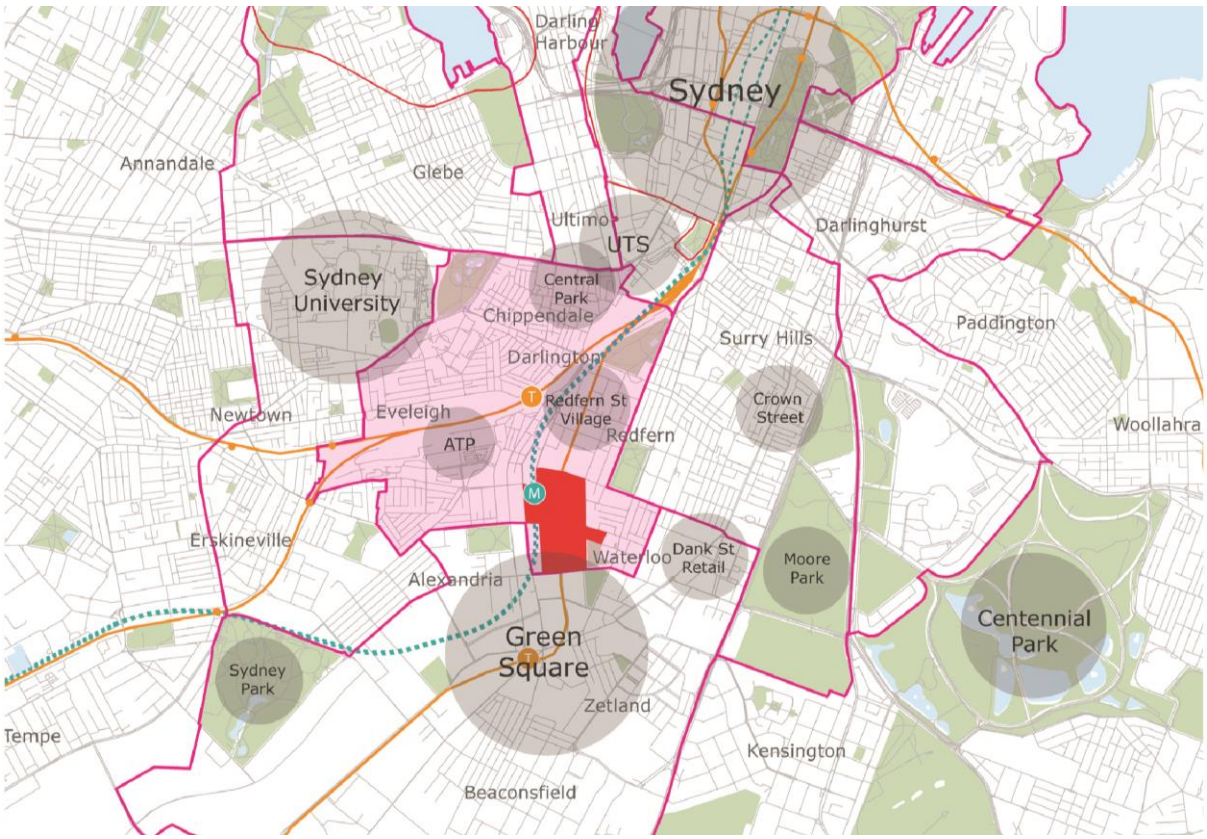

Figure 4: Location and site plan of the Waterloo State Significant Precinct (in red) and Redfern Street Village (in pink)

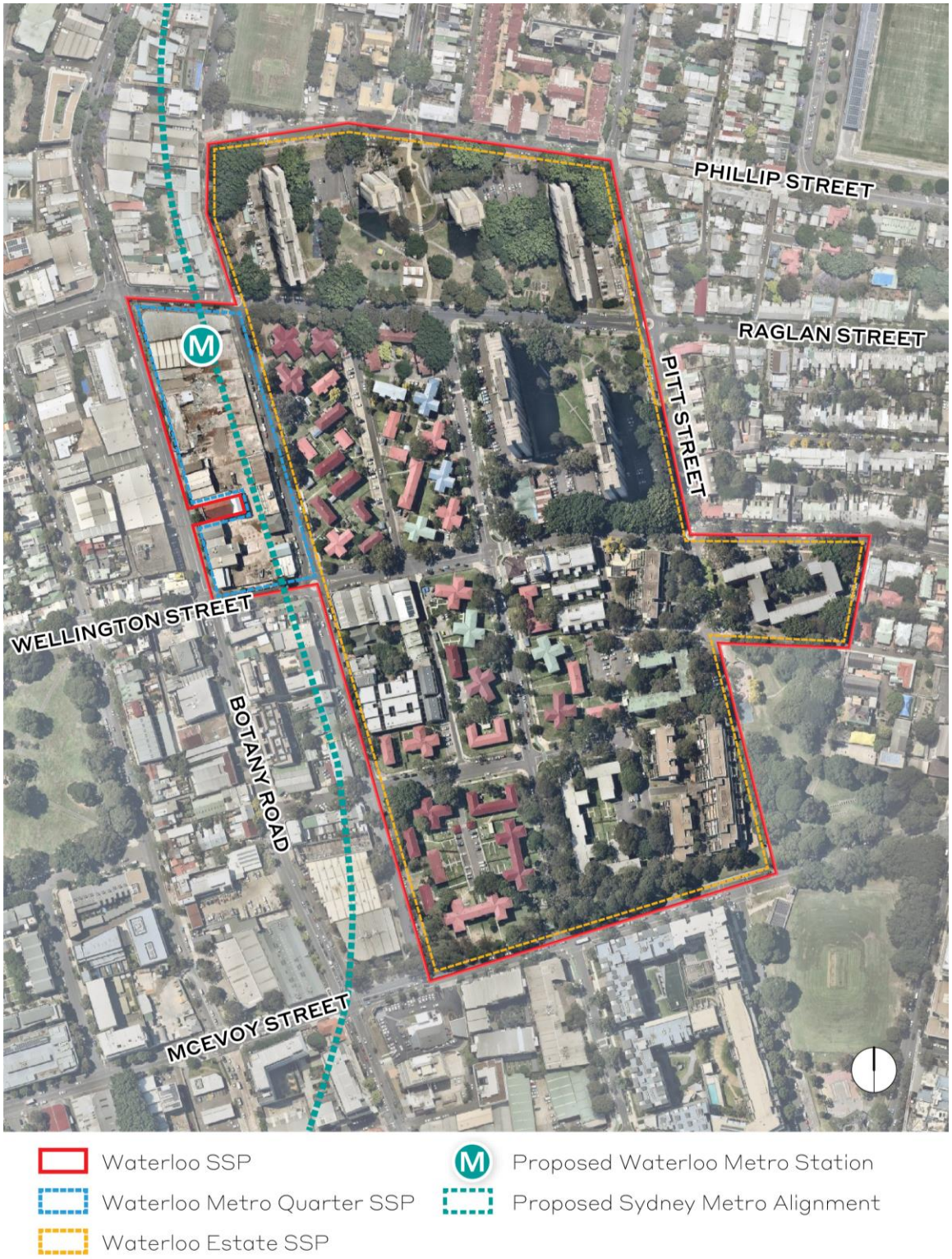

Figure 5: Nominate State Significant Precinct - Waterloo

The site comprises the following properties:

- 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

The buildings and structures on the site are now demolished in accordance with the CSSI Approval with the exception of one building which is being used to support construction.

2.6 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.

2.6.1 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. 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.

To the north-west of the site adjacent the railway line is ATP. The ATP site has an overall area of 13.2 hectares and is bound by railway lines to the north, railway workshops and yards to the north-west, government-owned community housing to the west, Henderson

Road to the south and Garden & Cornwallis Streets to the east. The site 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.

2.6.2 To the east

To the immediate east of the site, within the suburb of Waterloo is the Waterloo Estate. The Estate 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 towers up to 30-storeys. The Estate has been identified for renewal. Graffiti and dumping were noted in this area, as illustrated in **Figure 6** and **Figure 7**.

Figure 6: Graffiti present in the immediate surrounds

Figure 7: Dumping present in the immediate surrounds

2.6.3 To the south

The area to the 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 the *Sydney Local Environmental Plan 2012* (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, medium and high rise buildings containing retail, commercial, civic and residential uses. The site is connected to Green Square via the Botany Road Growth Corridor.

2.6.4 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 Heritage Conservation Area. The suburb is undergoing progressive renewal with the introduction of medium to high density residential dwellings.

Alexandria Park, located approximately 200 metres from 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. Graffiti and dumping were noted to the west of the site, as illustrated in **Figure 8** and **Figure 9.**

Figure 8: Graffiti present in the immediate surrounds

Figure 9: Graffiti present in the immediate surrounds

2.6.5 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 the Botany Road corridor 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 five-six storey mixed use development at 74-88 Botany Road was approved by the City of Sydney on 21 November 2016. The building contained two commercial tenancies and 63 affordable housing dwellings. Construction has not commenced on the site. UrbanGrowth NSW has been in consultation with the landowner, who is currently investigating alternative built form options for the site, including a taller building form with reconfigured dwellings to achieve better amenity.

2.7 Existing Development

All existing buildings and structures on the site have been demolished under the terms of the CSSI Approval, with the exception of one building which is being used to support construction. These structures comprised a mix of low rise commercial and residential buildings, ranging from 2-3 storeys and previously occupied a range of uses including shops, light industry and residential dwellings.

Construction of the station has commenced with the site occupied by a construction compound. While most of the station will 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), will protrude above the finished ground level. One station box is located in the north-eastern part of the site (adjacent to the Cope Street/Raglan Street intersection), the other is located in the south-eastern part (adjacent to the Cope Street/Wellington Street intersection).

2.7.1 Access

Access to the site is currently restricted, due to the construction of the Sydney Metro. The site features two points of vehicle and pedestrian access, of which access is controlled by traffic management personnel. Access to the site is restricted outside of construction hours.

2.7.2 Security

Given the scale of construction currently ongoing, the site is managed by security procedures. It is likely that formal security patrols would be in operation outside of construction hours.

2.8 Overview of the proposed development

This concept SSD Application follows the submission of a SSP Study which supports a proposal to amend existing controls to facilitate the proposed development. The concept SSD Application will in turn comprises the first stage of seeking SSD development consent for the Waterloo OSD project. It will be followed by a future detailed SSD Application(s) for the design and construction of the OSD built form.

This concept SSD Application seeks approval for the planning and development framework and strategies to inform the future detailed design of the OSD. It specifically seeks approval for:

- maximum building envelopes, including maximum building heights, street-wall heights and ground and upper level setbacks
- a maximum gross floor area (GFA) of 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 GFA of retail premises and entertainment facilities

  - approximately 8,645 square metres GFA for business and commercial premises and community, health service and recreational facilities (indoor), including at least 2,000 square metres of floor space 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 AHD respectively)
- use of OSD space provisioning within the footprint of the CSSI Approval
- public domain works, including open spaces, 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).

It is noted that the Sydney Metro comprises GFA of approximately 8,415 square metres on the site, approved under CSSI Approval. The total GFA for the integrated station development, including the station GFA is approximately 77,165 square metres, which is equivalent to an FSR of approximately 6:1.

Key parameters of the concept proposal based on the current level of design development are indicated at **Figure 10** and **Figure 11**.

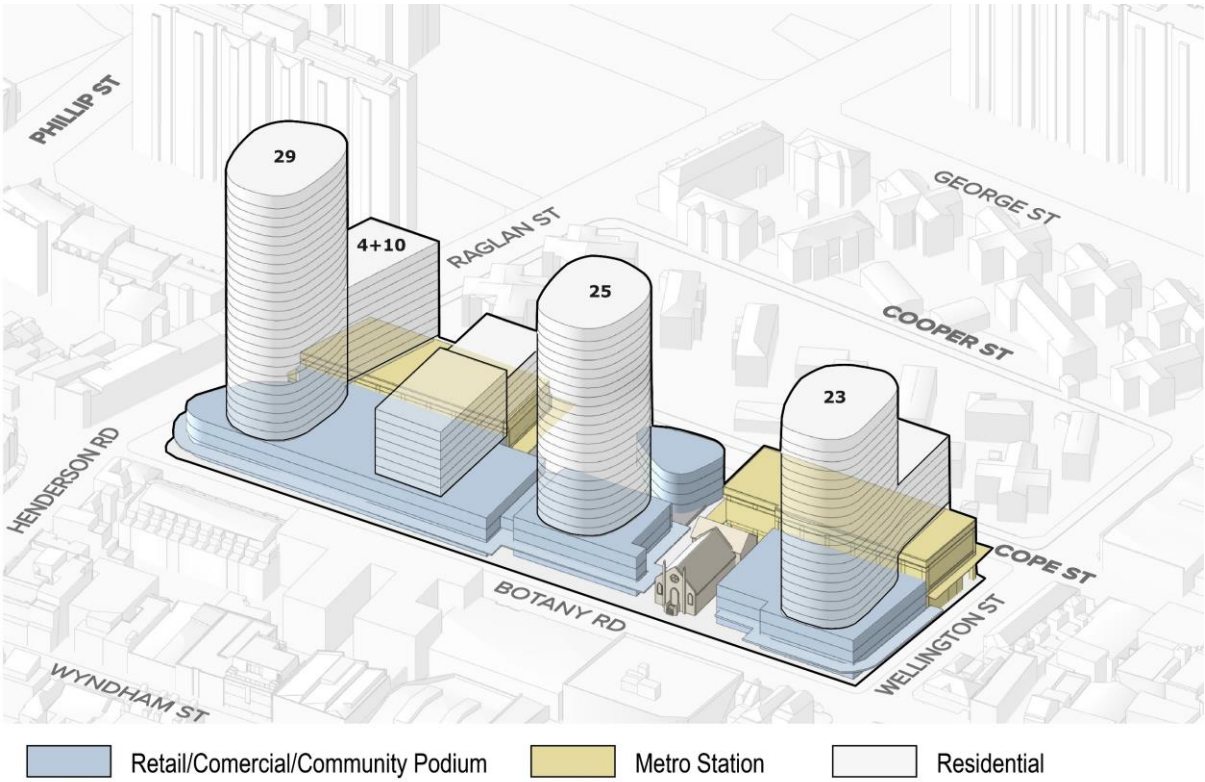

Figure 10: Proposed massing, viewed from the west

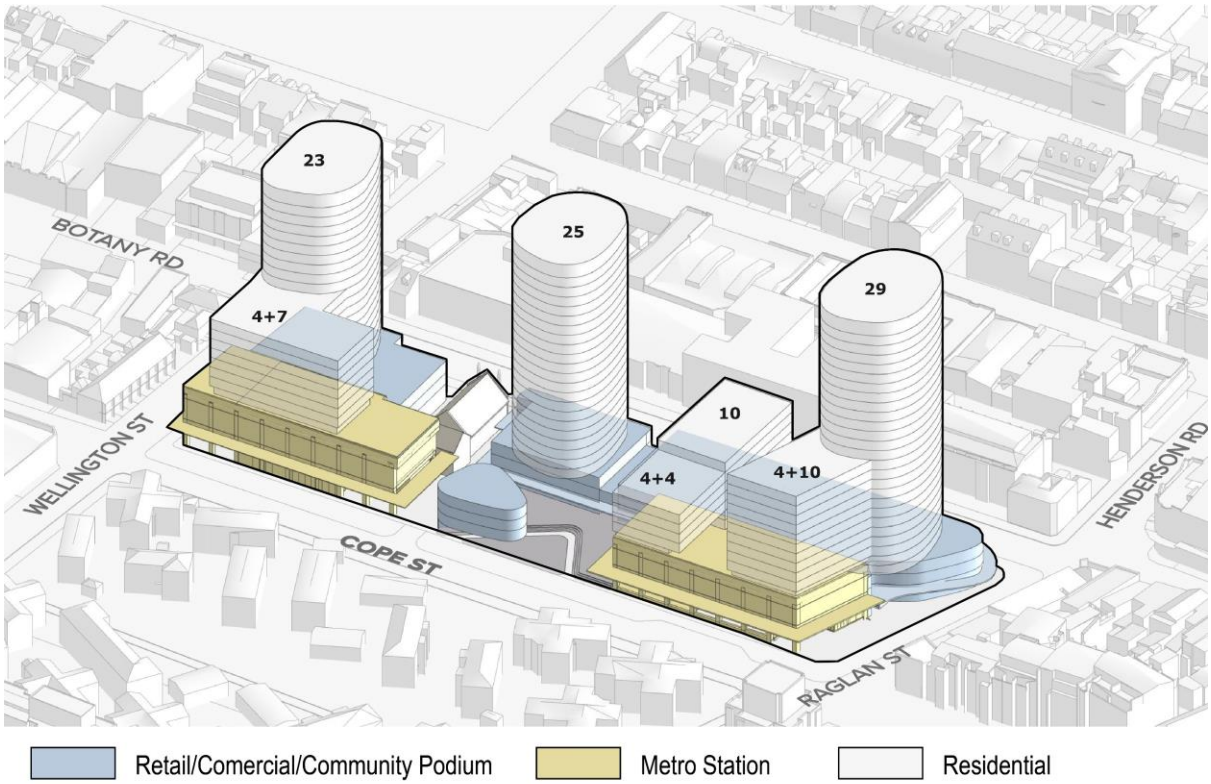

Figure 11: Proposed massing, viewed from the east

The proposal is a significant opportunity to contribute to the urban renewal process for the Waterloo SSP. The objective to deliver the Metro Quarter project as soon as reasonably possible after completion of the Sydney Metro works (earmarked to open 2024) would ensure buildings within the Metro Quarter are occupied to support maximum patronage of the proposed metro station.

The Metro Quarter would contain a mix of uses including residential, commercial, retail, community facilities and services and cultural opportunities sufficient for daily life to be provided for within the wider neighbourhood and to support the activation of the precinct. This would help make Waterloo one of the most connected and attractive inner-city places to live, work and visit.

2.9 Staging and framework for managing environmental impacts

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

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

Separate delivery packages are also proposed by Sydney Metro to deliver the excavation of the station boxes/shafts ahead of the integrated station development delivery package, and linewide 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 considering construction related impacts, three possible staging scenarios have been identified for delivery of the integrated station development:

1. 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 in 2024.
2. Scenario 2 – the station is constructed first and ready for operation in 2024. OSD construction may still be incomplete or soon ready to commence after station construction is completed. This means that some or all OSD construction is likely to still be underway upon opening of the station in 2024.
3. Scenario 3 – the station is constructed first and ready for operation in 2024. The OSD is built at a later stage, with timing yet to be determined. This creates two distinct construction periods for the station and OSD.

The final staging for the delivery of the OSD would be resolved as part of the detailed SSD Application(s).

For the purposes of providing a high level assessment of the potential environmental impacts associated with construction, the following have been considered:

- Impacts directly associated with the OSD, the subject of this SSD Application
- Cumulative impacts of the construction of the OSD at the same time as the station works (subject of the CSSI Approval).

Given the integration of the delivery of the Sydney Metro City & Southwest metro station with an OSD development, Sydney Metro proposes the framework detailed in **Figure 12** to manage the design and environmental impacts, in relation to crime prevention through environmental design, consistent with the framework adopted for the CSSI Approval.

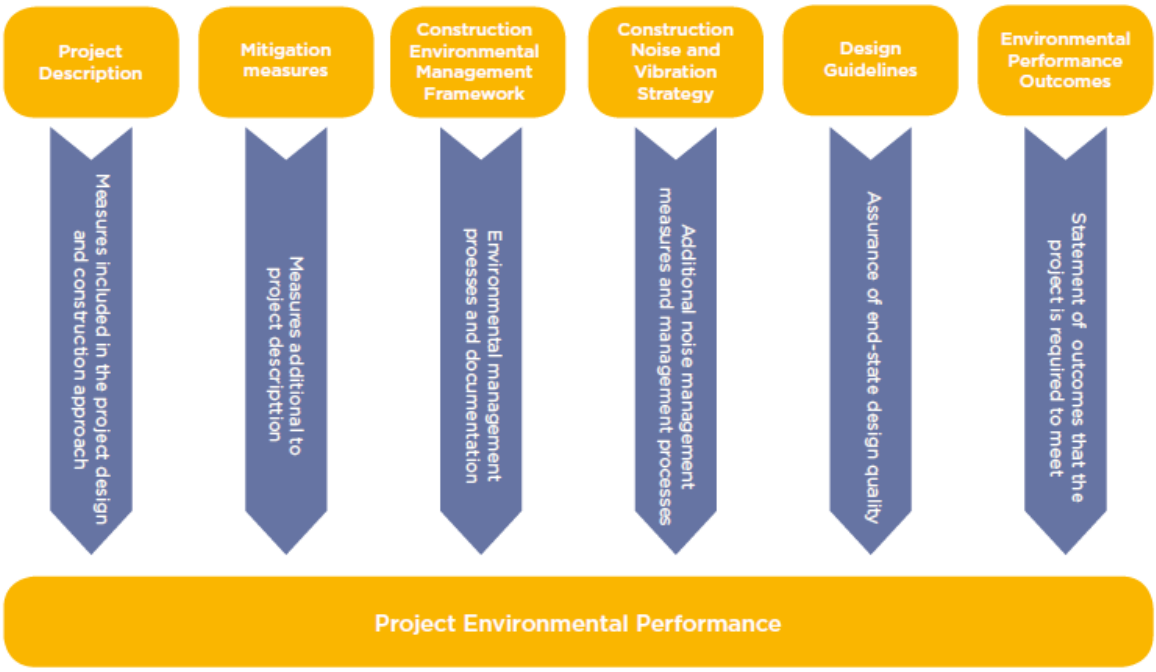

Figure 12: Project approach to environmental mitigation and management

This approach would be implemented until such time as completion of the station works (i.e. works under the CSSI Approval) is achieved. Beyond that point, standard construction environmental management practices would be implemented by the OSD developer in accordance with relevant guidelines and any conditions of approval.

2.10 Crime Risk Rating

A risk assessment of the site in its existing context and form has been undertaken. Overall, the Crime Risk Rating is considered 'moderate'. The reasons for this are:

- the site's location within an existing inner urban area
- the site's location within an established area of various land uses and their associated operation/functions
- the site's location adjacent a high-density housing area (of various tenure) known as Waterloo Estate
- the site's location adjacent a major arterial road
- the site's location adjacent night-activity (ie hotels and pubs within the immediate surrounds)
- the presence of graffiti in the surrounds
- the presence of illegal dumping in the surrounds
- restricted public access to the site
- on site security and its operation
- the storage of valuable and/or high-risk goods (associated with construction) on the site
- minimal visibility into/out of the site, due to security fencing
- significant construction activity on the site during daytime hours
- natural surveillance provided by surrounding uses, including commercial tenancies along Botany Road and residential dwellings along Cope Street.

3.0 Overview of the proposed development

This concept SSD Application seeks approval for the planning and development framework and strategies to inform the future detailed design of the OSD. It specifically seeks approval for:

- maximum building envelopes, including maximum building heights, street-wall heights and ground and upper level setbacks
- a maximum gross floor area (GFA) of 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 GFA of retail premises and entertainment facilities
  - approximately 8,645 square metres GFA for business and commercial premises and community, health service and recreational facilities (indoor), including at least 2,000 square metres of floor space 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 AHD respectively)
- public domain works, including open spaces, 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).

It is noted that the Sydney Metro comprises GFA of approximately 8,415 square metres on the site, approved under CSSI Approval. The total GFA for the integrated station

development, including the station GFA is approximately 77,165 square metres, which is equivalent to an FSR of approximately 6:1.

3.1 Building envelope

The proposed built form and building typology aims to respond to the findings of the context analysis as described within Turner and Turf's Urban Design Report. The proposal includes a composition of typologies, including podium, mid-rise and tall buildings, that reflect the surrounding context.

3.1.1 Podium

A three-storey podium has been proposed to respond to the scale of the existing streetscape along Botany Road. 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, illustrated in **Figures 13** and **14**.

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

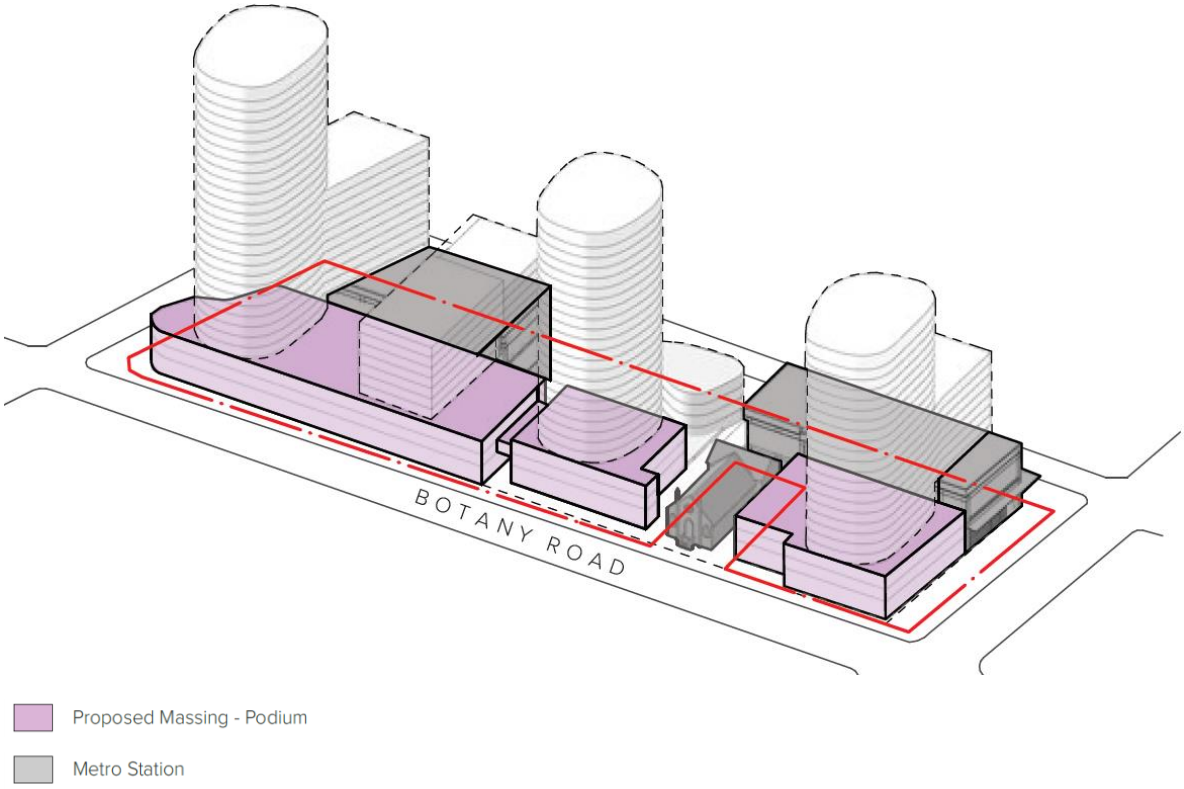

Figure 13: – Podium typology

Figure 14: – Proposed podiums setting and shared zone adjacent to Waterloo Congregational Church

3.1.2 Mid-rise

The mid-rise buildings (illustrated in **Figure 15**) range between 4-10 storeys and are located above the station boxes and 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 Cope Street Plaza.

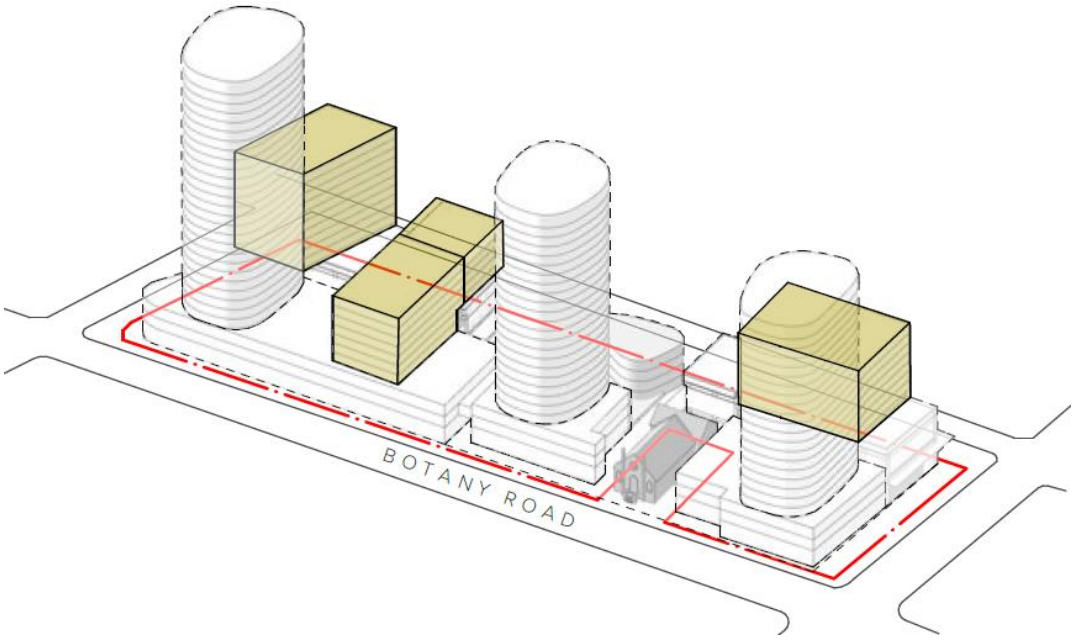

Figure 15: Mid-rise typology

3.1.3 Tall buildings

Three tower forms of 23, 25 and 29 storeys will act as a destination marker for Waterloo Station and the new activity centre (illustrated in **Figure 16**). The curvature of the tower forms aims to 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.

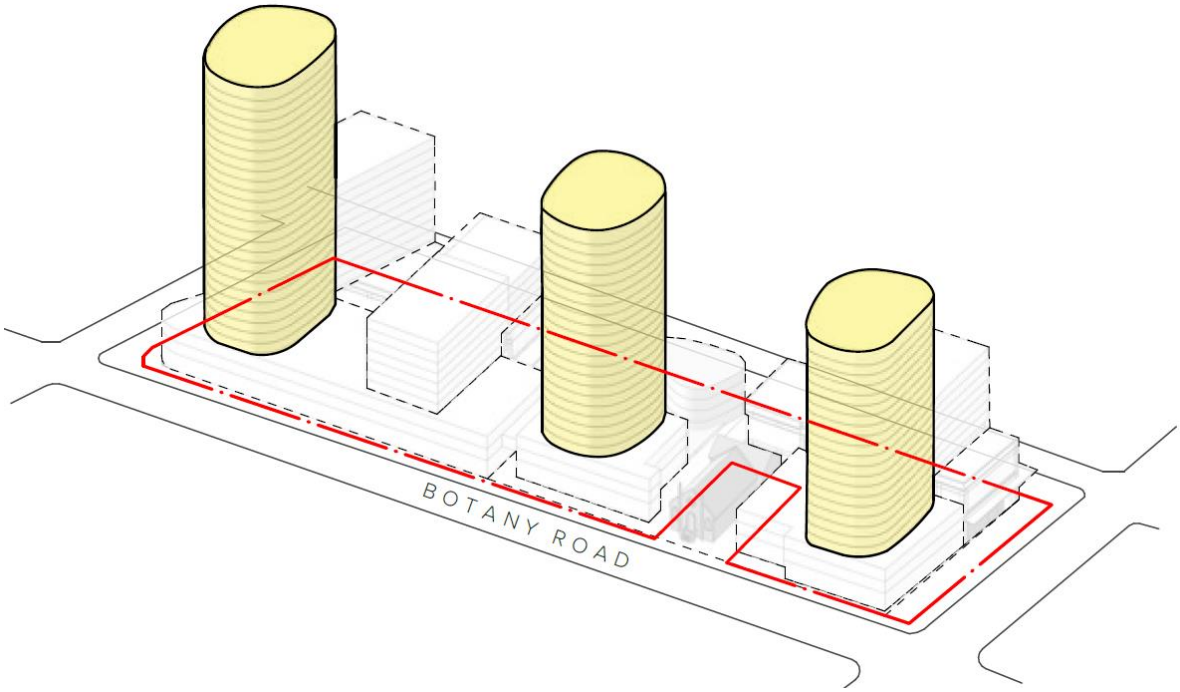

Figure 16: Tall buildings typology

3.2 Access

Access to the site and the proposed built form (concept) will be provided by the surrounding road network of Botany Road, Raglan Street, Cope Street and Wellington Street, as shown in **Figure 17**. Given the various uses proposed within this concept, the proposed built form will feature multiple access points that will be the subject of detailed design of subsequent SDD applications.

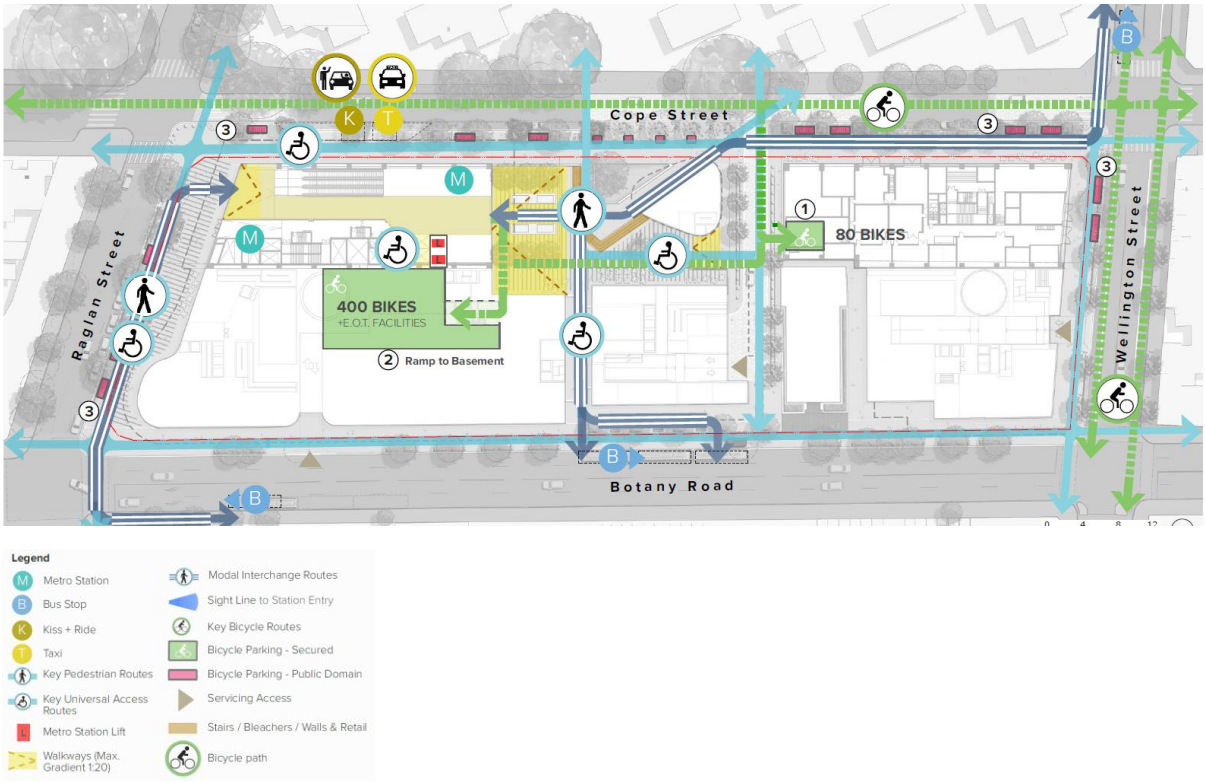

Figure 17: Points of access throughout proposed built form concept

It is noted that the main commuter access to the metro station will be located at the corner of Raglan Street and Cope Street, with a second access point provided from the public plaza. Three vehicle access points are provided; one from Botany Road for Sydney Metro and retail service vehicles; one from Cope Street to the basement for residents and retail uses; and one from Wellington Street for service, resident and retail vehicles.

The proposed concept design provides a through site pedestrian link and a new street that encourages visitors, residents and workers to move through the site on an east-west axis, allowing access to residential and non-residential lobbies and also to street level retail premises. Furthermore, access to non-residential lobbies are provided from Raglan Street and Wellington Street.

3.3 Car parking

The concept seeks approval for up to 427 cars, 700 residential bicycles and 440 public bicycles. The layout and access to the car park will be determined during the detailed design stage.

3.4 Security

Provisions of security will be determined during the detailed design stage. As the proposed concept plan includes a variety of uses that operate during various hours of the day, formal security patrols will likely be incorporated into the operation of the future development.

4.0 Nature of Recorded Crime

Crime statistics obtained from the NSW Bureau of Crime Statistics and Research (BOCSAR) represents criminal incidents recorded by NSW Police. A review of the local statistics for 2017 found that the most commonly occurring crimes relevant to CPTED within the City of Sydney LGA (rates per 100,000 persons) were:

- Fraud
- Non-domestic assault
- Steal from retail store
- Malicious damage to property
- Steal from person
- Steal from dwelling
- Domestic violence related assault.

As shown in **Figures 18-25**, the BOSCAR database indicates that the site is located within a hotspot for the following crimes:

- Assault – domestic violence related
- Assault – non-domestic violence related
- Break and enter – dwelling
- Break and enter – non-dwelling
- Malicious damage to property
- Motor vehicle theft
- Steal from dwelling
- Steal from motor vehicle.

Hotspots indicate areas of higher crime density (number of incidents per 50m by 50m) relative to crime concentrations across NSW. They are not adjusted for the number of residents and visitors in the area and therefore may not accurately reflect the risk of victimisation in inner city locations, such as Waterloo with very high residential population.

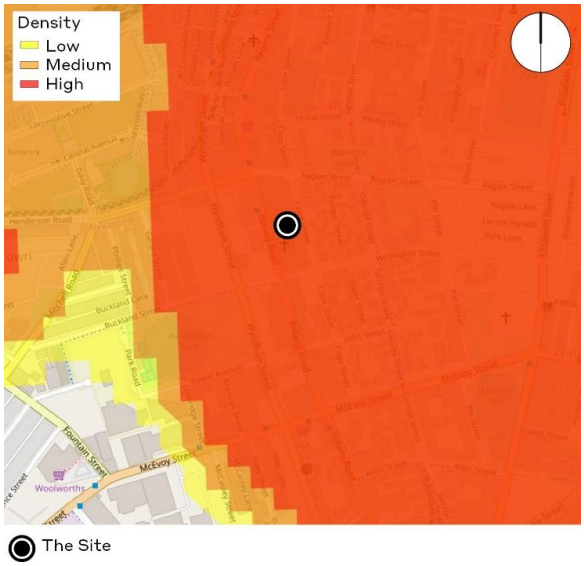

Figure 18: Density of assault (domestic violence related) near the site

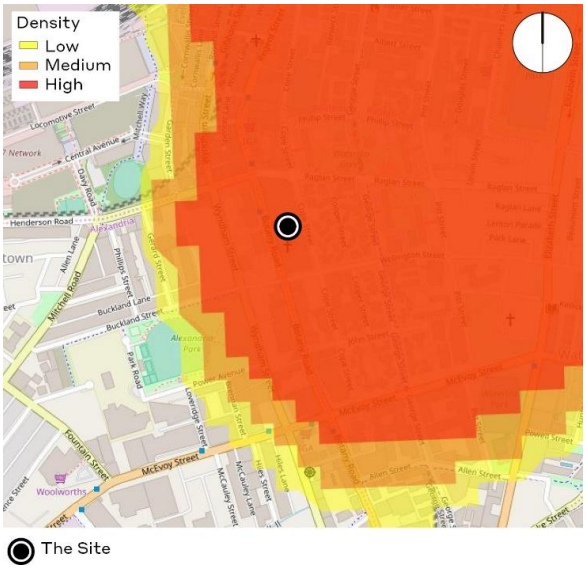

Figure 19: Density of assault (non-domestic violence related) near the site

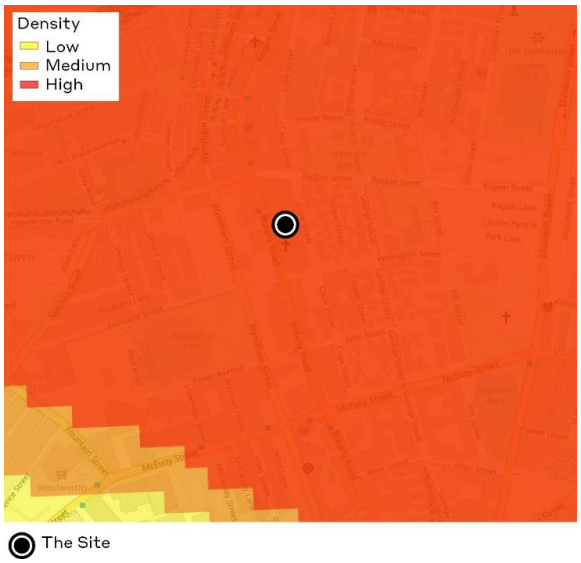

Figure 20: Density of break and enter (dwelling) near the site

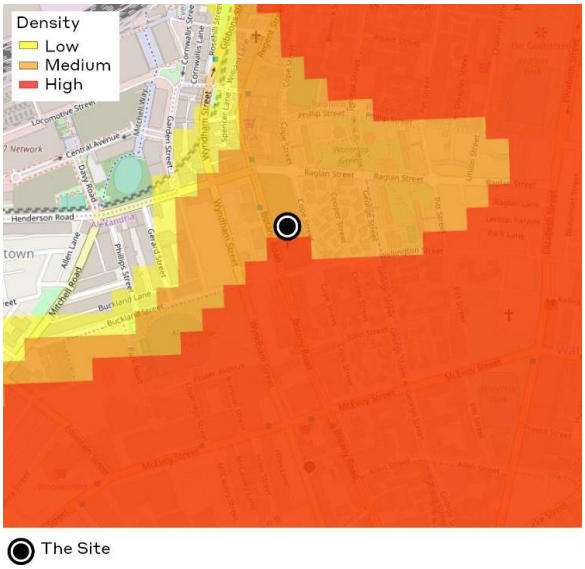

Figure 21: Density of break and enter (non-dwelling) near the site

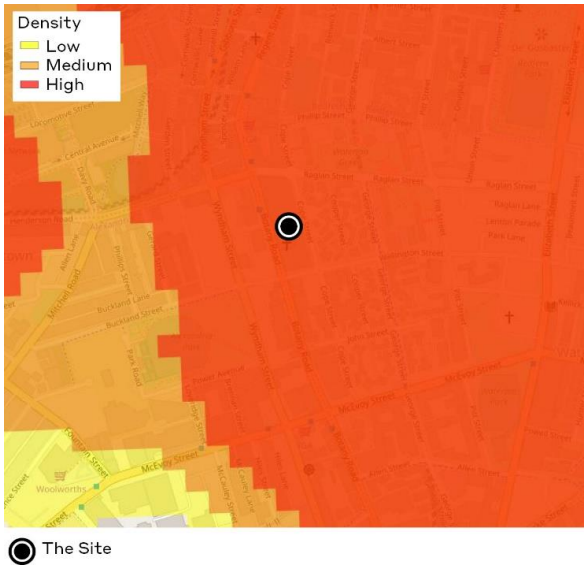

Figure 22: Density of malicious damage to property near the site

Figure 23: Density of motor vehicle theft near the site

Figure 24: Density of steal from dwelling near the site

Figure 25: Density of steal from motor vehicle near the site

The frequency of the crimes identified above in Waterloo (suburb), between 2014 and 2018 are detailed below in **Table 2**.

Table 2 Statistics of recorded crime in Waterloo (suburb) between 2014 and 2018

Crime	Incidents March 2014 – March 2015	Incidents March 2015 – March 2016	Incidents March 2016 – March 2017	Incidents March 2017 – March 2018	2014 – 2018 Trend	Rate per 100,000 Population
Assault –domestic violence related	125	103	105	130	Stable	Moderate
Assault – non-domestic violence related	130	157	124	137	Stable	Low
Break and enter – Dwelling	103	65	60	95	Stable	High
Break and enter – Non-dwelling	20	21	16	32	Stable	Very Low
Malicious Damage to Property	198	178	199	184	Stable	Very Low
Motor Vehicle Theft	23	19	25	26	Stable	Very Low
Steal from Dwelling	104	100	89	110	Stable	Very High
Steal from Motor Vehicle	180	95	79	65	Decline	Very Low
Steal from Person	31	23	16	13	Decline	Very Low

5.0 Matters for Consideration

A potential perpetrator can take advantage of the environment, with access and the opportunity for concealment significantly affecting the safety and perceived safety of an environment. Given the site's location within the hotspots identified in the previous section, the following is an assessment of the proposed development's potential to facilitate opportunities for such crimes.

The proposed development is a concept SSD that features a mix of uses within an urban fringe location. While the concept SSD incorporates primarily commercial and residential uses, the inclusion of specific uses such as late-night trading and community uses, and the development's proximity to a major transport system significantly influences the safety and perceived safety of the environment. For this reason, understanding the relationship of these uses is integral in forming recommendations for crime reduction. This context underpins an assessment of the proposed development in accordance with the CPTED principles.

5.1 Surveillance

Effective natural and incidental surveillance can reduce the opportunities for crime and improve the safety or perceived safety of an area. The principle indicates that offenders are often deterred from committing a crime in areas with high levels of natural surveillance, due to the increased likelihood of that criminal act being witnessed or an offender being identified. The following design features can improve natural surveillance:

- Clear sight lines between public and private places
- Appropriate lighting and effective guardianship of communal and/or public areas
- Minimal opportunity for concealment or entrapment
- The siting and orientation of buildings towards populated areas or paths of travel
- Clarity of building entry points, and their orientation towards populated areas or paths of travel.

5.1.1 Ground Level

Opportunities for natural surveillance within the ground floor of the proposed development will undoubtedly improve due to the increase of activity catalysed by various uses within this level. Further, opportunities for natural surveillance are benefited by the proximity to the metro station portal and the pedestrian activity associated with these portals.

The concept SSD incorporates significant public domain improvements which encourage greater occupancy of these spaces. Greater occupancy of the public domain will result in greater opportunities for natural surveillance.

The proposed Cope Street Plaza, freestanding buildings, pedestrian through site link and the existing Waterloo Congregational Church all promote activity, engagement and a sense of community ownership over the publicly accessible spaces of the proposed development and provide opportunities for natural surveillance. The linear design of the public domain further benefits clear lines of sight and opportunities for natural surveillance.

The site benefits from four street frontages that will likely experience higher levels of vehicle and pedestrian traffic when the metro station becomes operational. This unprecedented activity will improve opportunities for natural surveillance to the proposed development. Natural surveillance is further benefited by the siting and orientation of the proposed built form, which generally has frontage toward public spaces.

However, it is noted that the proposed development will experience periods of reduced occupancy and activity, namely during late night and early morning periods. Therefore, opportunities for natural surveillance will be limited during these times.

Given the proposed pedestrian through-site-link between the Botany Road bus interchange and Cope Street Plaza is relatively narrow and semi-enclosed, careful design consideration is required to ensure clear sightlines, activity and the associated perception of safety is maintained. Recommendations in respect of surveillance are provided in Section 6.1.1.

5.2 Lighting and Technical Supervision

Effective lighting can reduce fear, improve visibility and increase the likelihood that offenders will be detected. Lighting within the proposed development should meet the applicable Australian and New Zealand Standard, specifically addressing crime and fear reduction. Maintenance of lighting and CCTV should be implemented to ensure consistent function.

The brightness of lighting should allow for facial recognition and visibility into a vehicle. Bright and well-distributed lighting should be installed at all building entrances, egress points and throughout the public domain. Lighting types should be of a high quality and vandal resistant. All lighting should be designed and managed in the context of the location to maximise effectiveness. Where recesses and interrupted sightlines cannot be avoided, the use of additional lighting and/or mirrors should be considered.

As multiple areas within the proposed development will be continuously publicly accessible, the use of CCTV is considered appropriate throughout these areas. Further, back of house and service areas, circulation corridors and the public domain should be appropriately supervised by CCTV systems.

To ensure the CCTV network is effective, lighting within the proposed development should be designed to correspond with the placement of the CCTV cameras to permit adequate facial recognition (of CCTV images) at all times. A suitably qualified consultant should be engaged to advise on the lighting and CCTV specifications. Recommendations in respect of lighting and technical supervision are provided in Section 6.1.2

5.3 Territorial Reinforcement

Territorial reinforcement involves the perceived ownership of public spaces. Users will be more inclined to visit areas that are maintained and to which they feel they have a vested interest in. A well-used and dynamic public space is made safer by natural surveillance. Designing with a clear transition between public and private spaces, and clear design cues indicating the intended use of space is critical. A well maintained public domain is critical in encouraging occupancy of space, both in the interior and exterior of the development.

The NSW Police Safer by Design Guidelines notes that people generally recognise areas that display strong ownership cues, and that these areas are less likely to be improperly used.

The OSD benefits from the holistic and contiguous design of the Metro Quarter. As such, issues of territorial reinforcement associates with ad-hoc urban development area avoided. However, territorial reinforcement may be challenged by the perceived public nature of the ground floor and associated publicly accessible open spaces. The design of the OSD facilitates public access from the surrounds, including Waterloo Station, with public access integral to the successful occupancy of retail tenancies. Accordingly, it is difficult to distinguish the extent of privately owned land. This is further challenged by the integration of landscaping throughout the public domain and surrounding footpaths. Conflict relating to management and maintenance of the public domain may arise from this ambiguity.

Furthermore, areas that may provide entrapment and/or concealment opportunities should be appropriately mitigated. An example of a potential entrapment location is the podium setback area from the southern side of the Waterloo Congregational Church. Mitigation measures could include restricting public access to this area after hours.

Suitable wayfinding, building/business identification signage associated with the station and commercial uses is recommended to assist territorial reinforcement. The reinforcement of territorial ownership can reduce the ambiguity of use within a space and may assist in the identification of suspicious behaviour.

Overall, the proposed development presents many opportunities to implement formal and informal guardians within the site. These guardians will benefit territorial reinforcement and the associated improvement of safety and perceived safety. Recommendations in respect of territorial reinforcement are provided in Section 6.1.3.

5.4 Environmental Maintenance

There is a strong association between environmental maintenance and the fear or perceived fear of crime. General image can greatly affect an individual's desire to enter and engage with space. Environmental maintenance and territorial reinforcement are co-dependent in achieving a safer space and are integral in achieving optimal natural surveillance. The maintenance of the built form, landscaping and lighting will assist in communicating care and the presence of effective guardianship. Routine maintenance is a strong indicator of area management and safety.

As with territorial reinforcement, environmental maintenance may be challenged by the perceived public nature of the ground floor and associates open spaces. The integration of landscaping within the public realm (namely the footpaths that surround the site) may result in environmental degrade as the clarity of ownership and responsibility to maintain these area is unclear. As such, a thorough environmental maintenance plan should detail the extent of the site manager's duty in respect of environmental maintenance. This is particularly relevant given the site's proximity to the Waterloo Station. Environmental maintenance may be further challenged by the multiple retail tenancies that are proposed on ground level. As these tenancies will likely be food and small goods retailers, the management of waste within public areas is required, specifically addressing rubbish created by retail tenancies.

As shown in the Urban Design and Public Domain Strategy prepared by Turner architects and Turf landscape architects, the proposed development involves major regeneration of the site. The works provide the opportunity to act as a catalyst for environmental improvements to the surrounding public areas, reducing existing of graffiti, litter and urban decay. This environmental grade negatively impacts perceptions of safety.

Environmental maintenance practises should incorporate the rapid removal of graffiti and litter from the site, and the repair of items/areas that have been vandalised. Further, high-quality furniture, building materials and signage should be used to lessen the likelihood of damage and to reduce maintenance costs.

Therefore, the on-going maintenance and cleaning of publicly accessible areas within proposed development, such as Cope Street Plaza, pedestrian through site link and new shared street will require further consideration in future detailed SSD applications. Recommendations in respect of environmental maintenance are provided in Section 6.1.4.

5.5 Activity and Space Management

Similar to environmental maintenance, there is a strong association between activity and space management, and the fear or perceived fear of crime. Unlike environmental maintenance, this principle endeavours to manage the more dynamic activity and use of space.

The management of activity and space will be challenged by the various uses which are proposed on the site, including the commercial, retail, residential and community uses. Therefore, the central management of tenancies and their communal resources (i.e. outdoor spaces) will benefit the effective management of activity and space within the proposed development. In light of this, it is considered that the spatial design of buildings within the concept plan SSD endeavour to clearly define spaces, capable of being well managed.

Consideration of the commercial tenants' cash handling protocol should respond to their operational needs, ensuring the movement of cash and valuable items into and out of the site occurs at times of maximum visibility. Ideally, these times should be varied, avoiding the risk of a potential offender monitoring the movement of these items.

Tenants should consider the public use of equipment within the proposed development as items such as furniture, rubbish bins and signage often attract vandalism. Adequate storage and security of these items will limit the opportunity of an offender misusing them as a projectile, weapon or opportunity for concealment.

Given the proposed commercial uses within the OSD, it is possible that future tenants may become licensed premises. If a tenant obtains a liquor license, the license holder would be subject to the conditions of the license which generally aim to minimise the conflict of patrons in the surrounding environment. Recommendations in respect of activity and space management are provided in Section 6.1.5.

5.6 Access Control

Access control strategies restrict, channel and encourage the movement of people and vehicles into and through designated areas. Unauthorised entry is reduced by physical and

technical barriers which also increase the effort required to commit a crime. The proposed development includes multiple types of access, these include:

- Primary – access to publicly accessible areas, including the public plaza and associated pedestrian paths, retail tenancies and building lobbies (during operational hours)
- Secondary – access to semi-public, paid entry or private areas, including the specific tenancies (i.e. gyms), residential lobbies, back of hours and service areas
- Vehicle – access for vehicles for parking and loading within the proposed development, encompassing all the above uses.

Access control within the proposed development is challenged by the quantity of access points. Each of the proposed retail tenancies will feature its own access. Given the proximity of the proposed development to the Waterloo Station and the public nature of the proposed development, unrestricted public access to the ground floor public plaza is expected. It is also understood that access to the public domain areas will be unrestricted, 24 hours. After-hours access control to certain higher risk areas of the public domain (such as to the southern setback area from Waterloo Congregational Church) should be considered to minimise entrapment and concealment opportunities.

Access to residential dwellings requires significant consideration. Residential lobbies should be independent of other uses, with access to these lobbies clearly differentiated from public uses. Access from designated residential car and bicycle parking space to residential lobbies should be exclusive where possible. Further, access to bicycle parking areas is ideally restricted to those who have pre-arranged access to these spaces.

Generally, access control strategies are assisted by co-location of uses that require a similar level of access controls. This is particularly relevant given the proximity to the metro station. Recommendations in respect of access control are provided in Section 6.1.6.

5.7 Design, Definition and Designation

The design of the proposed development reflects its purpose, and while perpetrators will often exploit areas with unclear spatial definition, the design of the proposed development generally addresses multiple principles of CPTED. To further delineate varying uses provided by the development, signage indicating how each space is used should be incorporated within future applications. Clear wayfinding signage should be incorporated throughout all publicly accessible areas.

Where possible, concierge desks and staff offices should be positioned along or within proximity of street frontages in order to maximise opportunities for natural surveillance through the provision of clear sightlines.

As stations are typically subject to higher levels of crime and attractive places for loitering, there is the potential for conflict to occur between customers using the Metro station and users of the immediate surrounds. For this reason, appropriate technical surveillance will be required throughout the interior and exterior of the development, and should form part of a wider CCTV network. Recommendations in respect of design, definition and designation are provided in Section 6.1.7.

6.0 Crime Risk Rating and Recommendation

The Crime Risk Rating considers the development as proposed in the Urban Design and Public Domain Study prepared by Turner and Turf. Acknowledging the existing and future site context along with the issues discussed in Section 2, 4, and 5, the Crime Risk Assessment Rating of the proposed development is rated within the 'moderate' category.

An assessment of the proposal using the CPTED principles has found that, with the implementation of the recommendations, the rating would remain within the 'moderate' category. It is noted that this rating is the product of dense urban environment rather than the proposed concept development itself. The recommendations included in Section 6.1 should inform the detail design of various development components, subject to future applications.

6.1 Recommendations

6.1.1 Surveillance

- Maintain sightlines to and from the proposed development and the surrounds by ensuring signage and equipment do not create a significant visual obstruction.
- In the detail design of built form, ensure potential opportunities for concealment are removed.
- At street level, building facades should be free of signage and clutter, permitting sightlines between tenancies and the public domain.
- Future design of internal car park structures should be strategically placed to prevent opportunities for concealment and entrapment.
- 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).
- The height of ceilings in the car parking areas should ensure that lighting is distributed across the entire car park and to a brightness which permits facial recognition into a vehicle.
- Wayfinding signage should be provided to ensure that users understand how and where to enter, exit and find assistance.
- Active uses are encouraged along the publicly accessible areas of the proposed development, particularly along the Cope Street Plaza, 'new street' and pedestrian through site link to increase natural surveillance and effective guardianship.
- In areas of the public domain that do not align with a late-night activity, consider the accessibility of these areas during night hours.

6.1.2 Lighting and Technical Supervision

- The installation of a CCTV network within the proposed development is strongly recommended, specifically within the public domain.
- The CCTV network is to be designed in consultation with a suitably qualified security consultant who holds a Class 2A licence under the *Security Industry Act* 1997. A security

consultant will advise on the placement, installation, monitoring and maintenance of the CCTV network.

- The CCTV network should ensure blackspots of natural surveillance are adequately covered by technical supervision.
- The CCTV network should be partnered with the internal and external lighting strategy to ensure facial recognition is achieved in all lighting conditions.
- A minimum colour rendering index of 60 should be achieved throughout the proposed development.
- Discrete CCTV systems (ie small dome camera) are recommended.
- CCTV and effective lighting are particularly important throughout pedestrian through-site-link to ensure a perception of safety is maintained.
- Within through-site-links, design initiatives to enhance the attractiveness and perceptions of safety of this area should be explored.
- A lighting strategy should be developed by a suitably qualified technician.

6.1.3 Territorial Reinforcement

- Ensure there is a clear delineation between public and private areas within the site and the proposed development.
- Ensure there is a clear delineation between the various activities within the proposed development.
- Ensure the management/ownership structure of various areas within the proposed development is appropriately communicated to owners.
- Ensure building entrances remain highly visible and free of clutter.
- Within the metro concourse and portals, ensure adequate signage is installed to guide pedestrian movement.
- Provide wayfinding, building/business identification signage where appropriate to reinforce perceptions of safety and legibility.

6.1.4 Environmental Maintenance

- Once operational, prioritise the on-going and frequent maintenance of internal and external environments, especially areas that are publicly accessible.
- Prioritise the rapid removal of graffiti and rubbish within the site, and the repair of items damaged through vandalism and environmental degrade.
- Within publicly accessible or communal areas, ensure unfixed items (i.e. furniture, equipment, signage) are appropriately stored when not in use.
- Ensure the management of environmental maintenance is clearly communicated to future tenants of the proposed development.

6.1.5 Activity and Space Management

- Ensure business, building and wayfinding signage is appropriately installed throughout the proposed development.
- Ensure the rights and obligations of tenants and the building manager are clearly communicated through a leasing agreement.
- For developments of this size, centralised building management is recommended. Central building management can ensure conflicts of activity and space management between the development's various uses is avoided or appropriately managed.

6.1.6 Access Control

- Install electronic access systems within the entrances of all private areas (ie residential lobbies and back-of-house areas).
- Install electronic access systems within bicycle storage areas.
- Building management should ensure all individual tenancies can be appropriately secured, subject to their use.
- Consider the delineation and separation of car parking areas. Where possible, shared access to these car parking areas (ie commercial and residential) should be avoided.
- Subject to the requirements of access and egress, residential car parking areas should be exclusively accessed by residents and their visitors. Residential car parking areas should not be publicly accessible.
- Consider restricting access to publicly accessible areas that do not align with night activity or have low levels of activity and natural surveillance after hours, such as the setback area south of the Waterloo Congregational Church.

6.1.7 Design, Definition and Designation

- As the detailed design of built form and the public domain is further refined, consider further CPTED assessments to specifically address features of the detailed design.

7.0 Conclusion

This Crime Prevention Through Environmental Design (CPTED) Assessment has been undertaken by Ethos Urban to assess the potential opportunities for crime and the perceived fear of crime that may be associated with the proposed OSD above and adjacent to the approved Waterloo Station.

Overall, the Crime Risk Rating applicable to the existing site is considered 'moderate'. A review of the BOSCAR database indicates that the site is located within hotspots of various incidents of criminal activity, as common with urban locations. An assessment of the proposed OSD using the CPTED principles has found that, with the implementation of the recommendations, the Crime Risk Rating would remain within the 'moderate' category. It is noted that this rating is the product of dense urban environment rather than the proposed OSD itself. Design of the proposed OSD is generally in accordance with CPTED principles.

Recommendations to enhance the proposed development's consistency with CPTED principles are provided.