ETHOS URBAN

34-72 Tallawong Road

Planning Proposal
Urban Design Report
May 2019

Issue B — 2190192

Issue to Council

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This document has been reviewed by:

Stefan Meissner 10/05/2019

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VERSION NO.	DATE OF ISSUE	REVISION BY	APPROVED BY
A (Issue to Council)	04.05.18	CHT	SMe
B (Issue to Council)	10.05.19	PN	SMe

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Project

Project No.	2190192
Project	34-72 Tallawong Road
Client	CDMA Australia Pty Ltd
Urban Design	Ethos Urban
Location	Rouse Hill
Site Area	74,226 Sqm

Contents

1.0

Executive Summary

1.0
Executive Summary

This report has been prepared by Ethos Urban on behalf of CDMA Australia Pty Ltd to support a Planning Proposal for 34-72 Tallawong Road, Rouse Hill for a residential development with associated retail, communal uses and a more generous public open space.

Key drivers and considerations to change current controls are:

- **The approach to height has been guided by the 26m height limit applicable in the town centre.**
- **The Subject Site is within 250 metres of a Metro station and should have been included in the Area 20 precinct in the first place.**
- **In the context of other metro station precincts Area 20 controls permits much lower density.**
- **Public benefits and the provision of urban infrastructure, currently based on a population density of 25 persons per hectare, do not reflect the residential densities put forward by recent development applications.**

Outlined in this report is the analysis of the immediate surrounding and broader strategic context, the exploration of built form options and a refined structure plan which covers the Subject Site and adjacent land. The urban design analysis has considered a precinct extending well beyond the immediate boundaries of the Subject Site. A master plan has been included which sets out potential built form outcomes as a basis for the proposed amendments to planning controls. It also identifies additional public benefits that can be delivered on Subject Site to cater for the increased demands of a larger resident population.

The construction of the Sydney Metro North West (the Metro) will fundamentally change how the West Central District of Metropolitan Sydney operates and dramatically transform the natural and built environment along the Metro corridor. In this context the precincts which immediately surround each new station have a particularly important role to play in creating new communities, delivering housing and commercial and retail opportunities. The planning controls around Tallawong Metro Station will result in significantly less development when compared to other stations along the Sydney Metro Northwest, like Bella Vista and Kellyville. While the Tallawong Metro Station is further west than these stations, the housing market in this part of Sydney is rapidly changing, and there is strong demand for higher density housing that is not reflected in the current controls.

The Subject Site is only 250 metres from Tallawong Metro Station. The Subject Site is an opportunity to encourage public transport use and reduce car reliance because new residents will be able to live within walking distance of a new metro station and a planned new town centre.

At the time when precinct planning occurred, controls were applied at a broad scale and zoning and height controls have generally been applied across entire large footprint rural properties. The current maximum building height of 16 metres, while consistent with other land in the Riverstone East Precinct, does not acknowledge that the Subject Site is functionally and physically related to the Tallawong Metro Station precinct to the east. The current planning controls will significantly constrain the achievement of an integrated, mixed use urban village that can take advantage of access to the rest of the city through the Sydney Metro Northwest. The current planning controls do not realise the full potential and strategic merit of this land.

While there are interface issues with the western edge of the Subject Site and the Sydney Metro Trains Facility, the more detailed, site specific urban design analysis undertaken for this report demonstrates these issues can be addressed through good design. Closest to the town centre a podium and tower built form typology is proposed to create opportunities for better public domain outcomes at ground level of the new square. Proposed uses include small scale retail, cafes and restaurants, as well as, the communal recreational facility for the residents which will help activate the space. Pedestrian links and wider street verges will improve access through the Subject Site to the adjacent town centre and Metro station, and will create more space for trees and landscaping to improve amenity and reduce urban heat effects.

This report demonstrates that the proposed density controls for the Subject Site are appropriate and that the land should be considered as part of the walking catchment around Tallawong Metro Station. Otherwise an opportunity for substantial transport based development may be lost.

01 Aerial Image of Sydney Metro Stabling Yard and Subject Site

02 Aerial Image of Sydney Metro Stabling Yard and Subject Site

03 Artist's Impression of Proposed Public Square

2.0

Urban Context

2.1
Subject Site

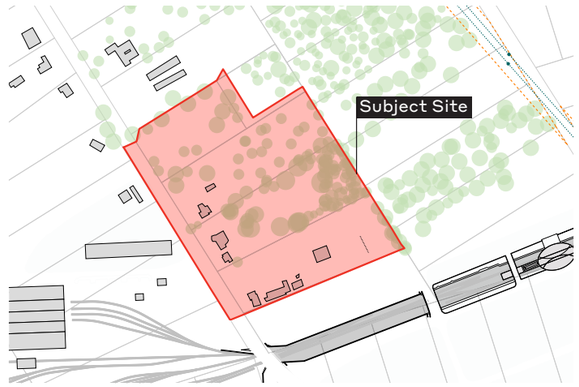
The Subject Site is located within the suburb of Rouse Hill within the Blacktown City Council Local Government Area (LGA). It is located 35km north west of the Sydney CBD, 17km north west of the Parramatta CBD, 8.6km north of the Blacktown Centre, and just north of the newly developed urban release area known as The Ponds. It is on the northern side of Schofields Road, approximately 2km west of the intersection with Windsor Road, which forms a key north/south arterial road in north western Sydney.

The Planning Proposal takes into consideration three properties north of the CDMA land which are under separate ownership. Consideration of these properties as part of the Subject Site enables a more comprehensive approach to planning the new Centre, and ensures that an integrated and consistent approach is adopted for any proposed amendment to the controls.

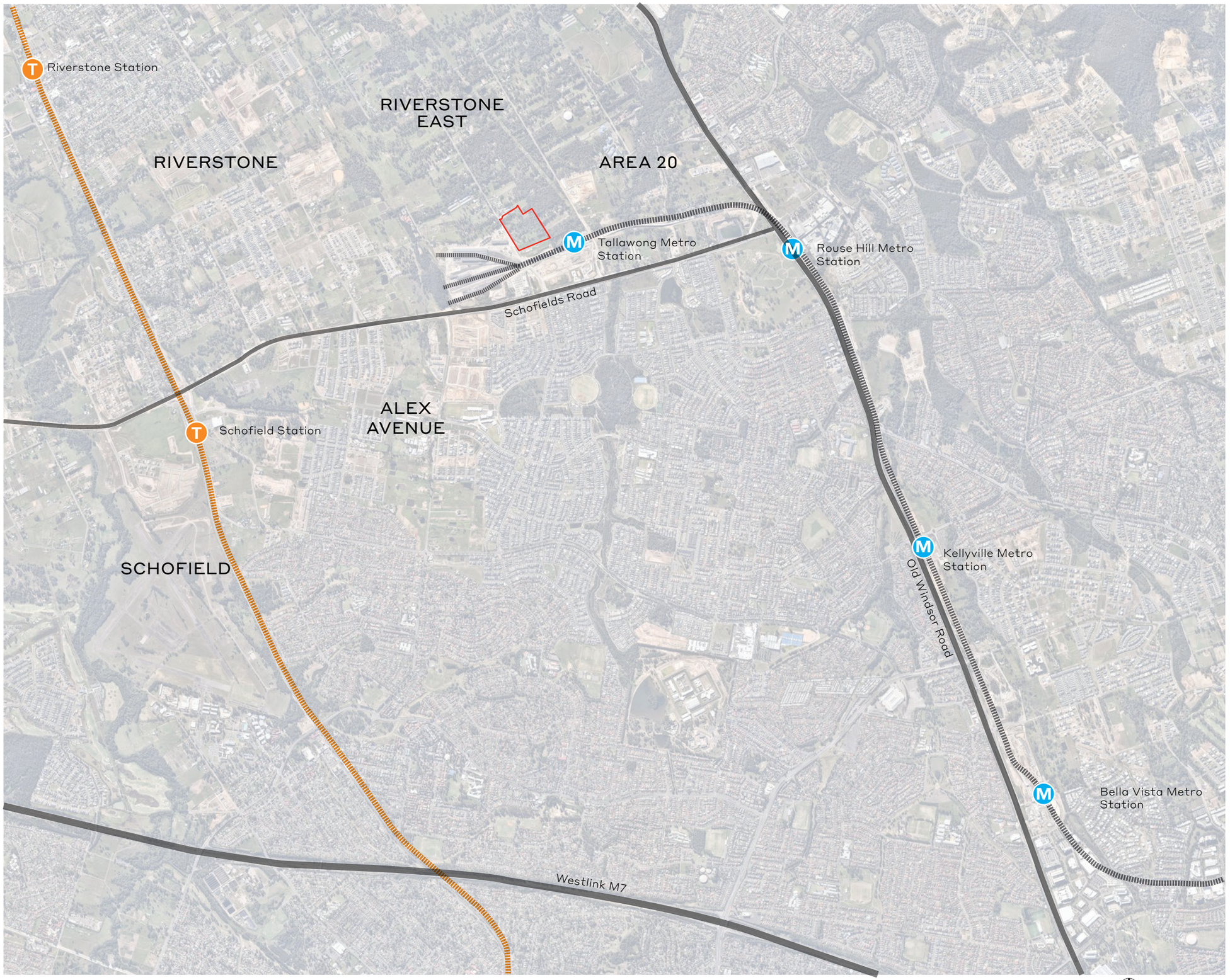
The Subject Site remains characterised by a semi-rural context. It is primarily occupied by mature trees or cleared areas for grazing and some intensive agriculture. The underlying subdivision pattern is typically rural small holdings with a typical lot size of around 2 hectares. A number of single storey detached dwellings and ancillary sheds are also dispersed across the area and accessed from Tallawong Road (Figures 6+7).

In this area the new Metro line will run in a trench and pass underneath Tallawong Road to reach the stabling yard (Figure 2). The stabling yard, an approximate 24 ha industrial facility, is located on the western side of Tallawong Road. As part of the transformation of the area the first new ILP roads have been constructed and Tallawong Road has been widened with new kerbs and gutters provided.

The land falls towards the north along Tallawong Road. Reduced levels change from RL65 to RL50. A local low point in the topography is in the north-western corner of the Subject Site which is characterised by lush vegetation and saturated, muddy soil (Figure 9) This area has been identified in the planning documents to provide an east-west green corridor to connect Tallawong Road to Cudgegong Road and Windsor Road beyond.

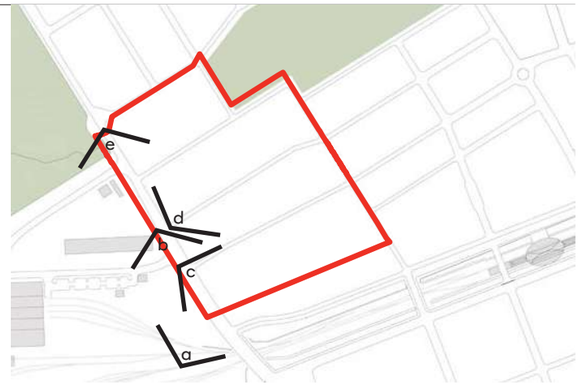


04 Subject Site



05 Location Plan

2.2
Surrounding Views



Key Plan

06 View b - Subject Site

06 View b - Subject Site

06 View b - Subject Site

07 View c - Subject Site

07 View c - Subject Site

07 View c - Subject Site

08 View d - Subject Site

08 View d - Subject Site

08 View d - Subject Site

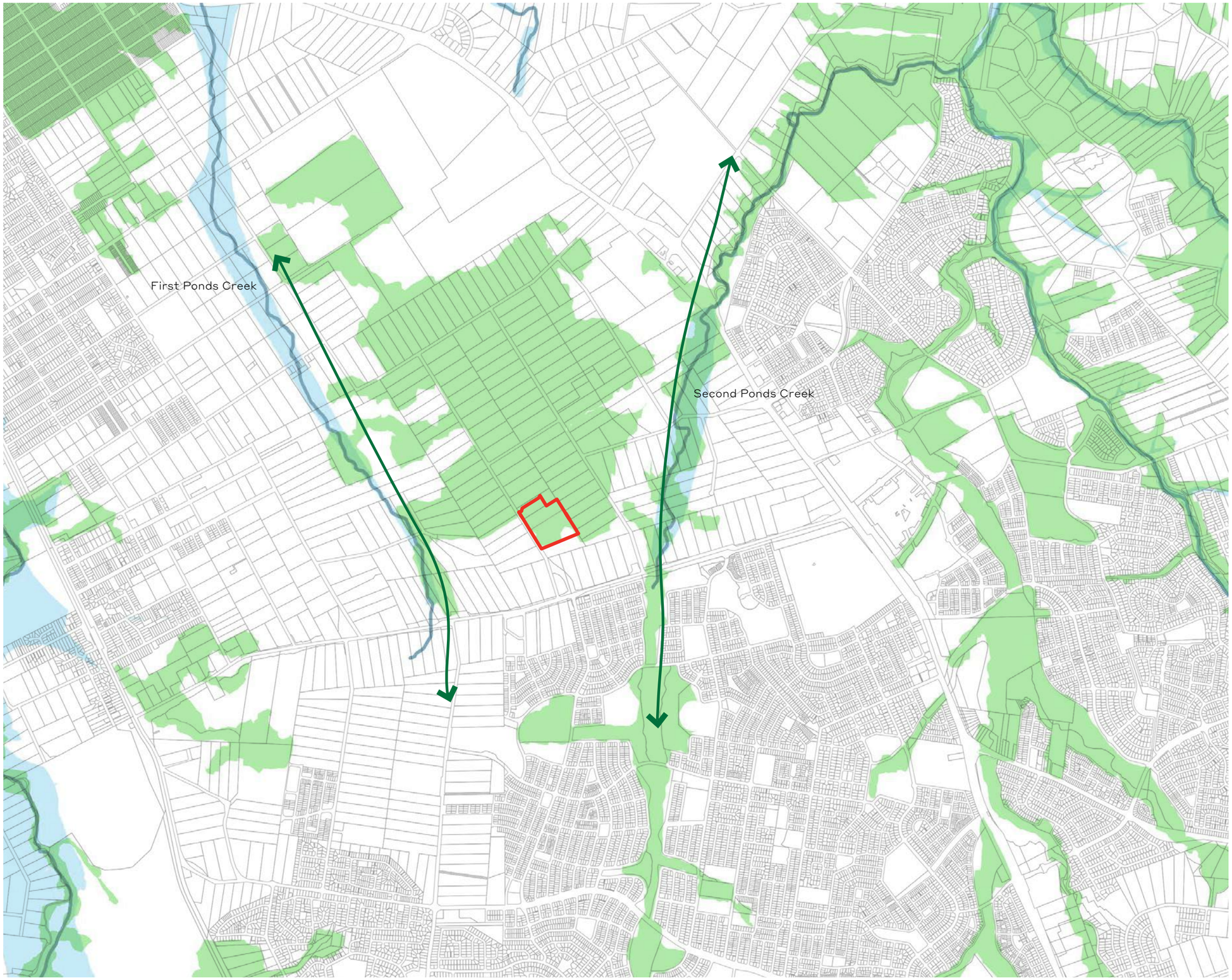
09 View e - Subject Site

09 View e - Subject Site

09 View e - Subject Site

2.3 Natural Systems

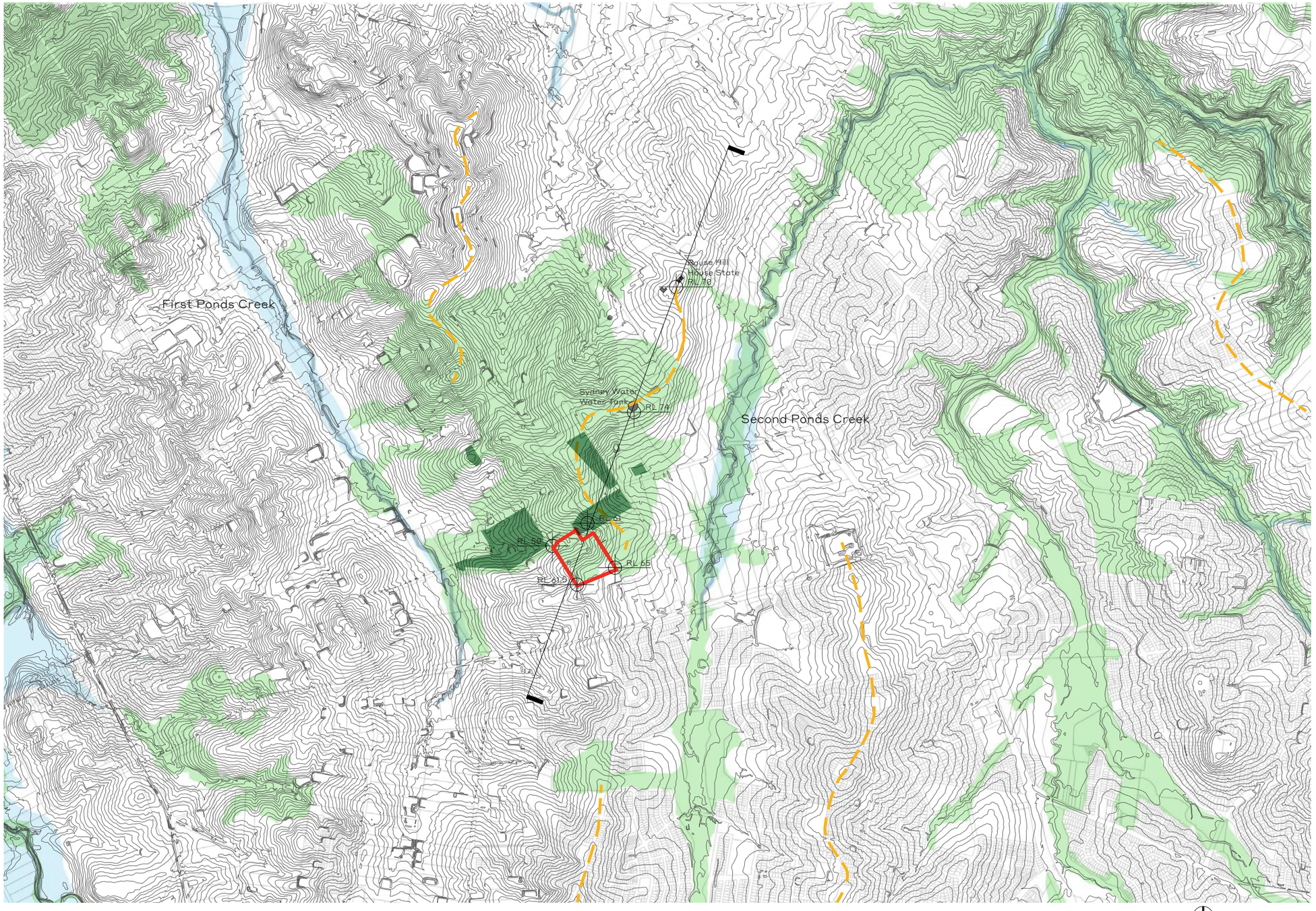
Two riparian corridors, First and Second Ponds Creek, have been identified in the Planning Controls as future open space corridors of regional importance. They create two strong north-south spines which run through the various Growth Centre Precincts and which will provide the opportunity to create an open space network which will permit active recreation, cycling and walking. The Subject Site is located half way between the corridors and is still heavily vegetated. Maintaining some of the existing vegetation and gaining logical and easy access to this network of open space and recreation will be critical to the quality and amenity of future communities in this part of the Growth Centre. It will also provide for a distinctly different type of medium density living.



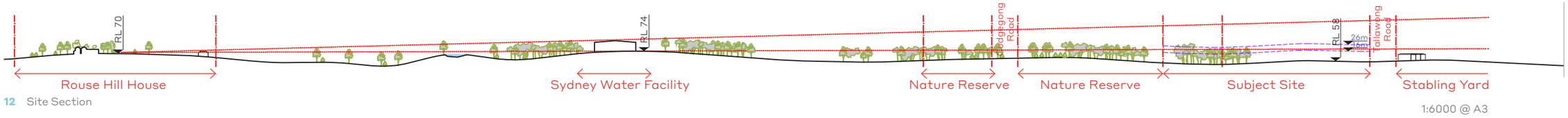
10 Existing Vegetation and Creeks

2.4 Topography and Rouse Hill House

The Subject Site sits on the lower western side of a ridgeline which runs from Rouse Hill House to Tallawong Metro Station. The approximate natural ground reduced level at Rouse Hill House is 70m. The Subject Site varies from RL50 to RL65. There is a high point along the ridge around the Sydney Water facility of RL74. Our analysis indicates that in a foreshortened view with the higher land being closer to Rouse Hill House and in combination with the retention of substantial existing vegetation as part of the Precinct planning, 26m tall structures will not be visible from Rouse Hill House. A separate Visual Impact Assessment has been prepared as part of this application.



11 Topography and Ridgeline



12 Site Section

3.0

Strategic Context

3.1
Indicative Layout Plan

3.1 — Riverstone East and Area 20 Indicative Layout Plan

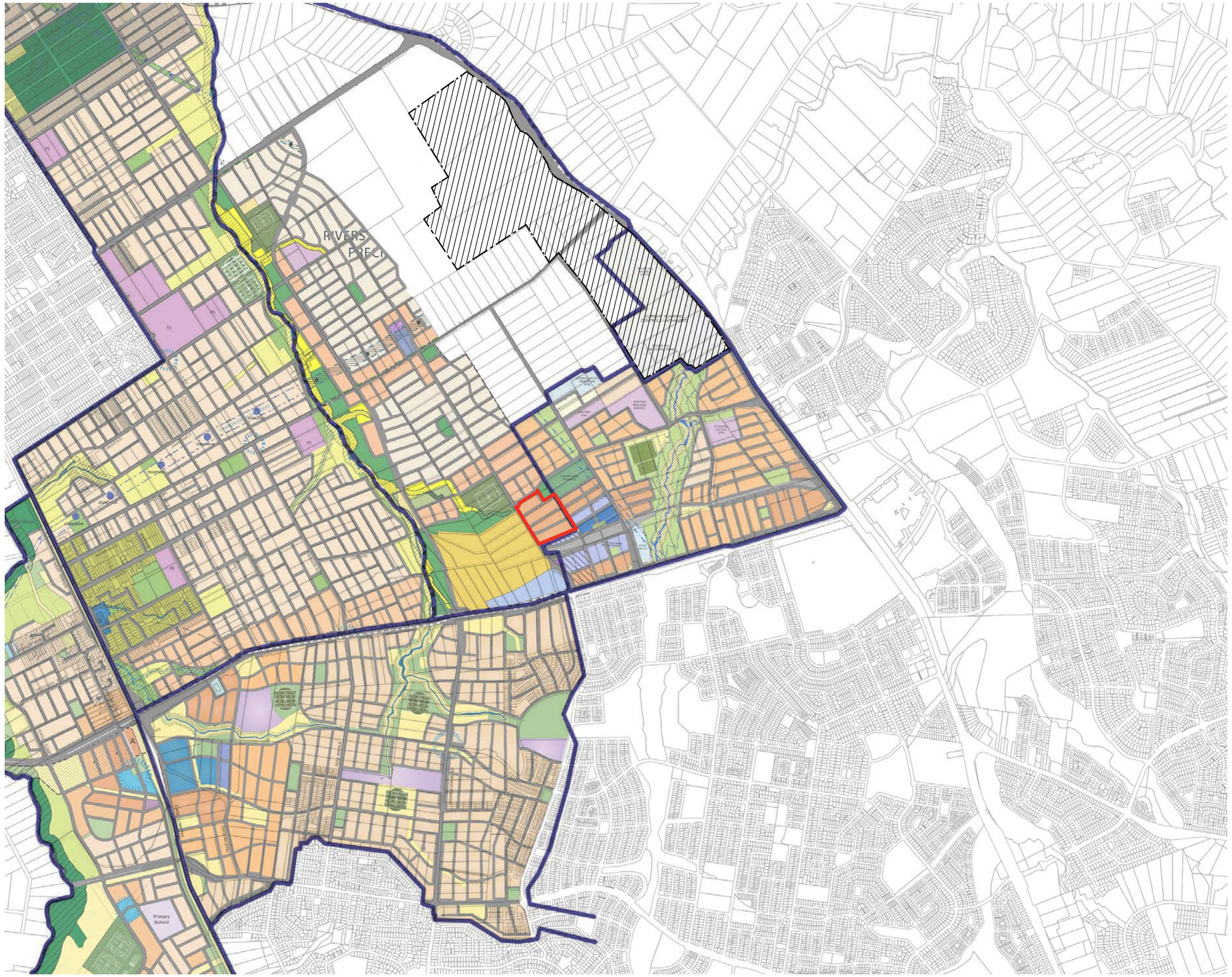
The Subject Site is located within the broader North West Priority Growth Area (formerly known as the North West Growth Centre), which has been earmarked for substantial redevelopment since 2003 to streamline the supply of greenfield land for urban development in Sydney. Over the past decade the character of this area has been steadily reshaped and subject to substantial development, providing new homes, jobs, infrastructure, and centres of activity.

The Subject Site sits on the boundary between the Riverstone East and Area 20 Precincts, which are in the process of being developed to provide a new neighbourhood centre around the Tallawong Metro Station directly to the east and south. The key features of this centre comprise transitioning high to low density residential uses, flowing from the station; providing new sporting facilities and regional open space to the north; providing new community facilities within the centre; and a school to the north east.

With the construction of the Metro a new type of mass transportation with a greater flexibility and capacity than heavy rail will be introduced to Sydney. Trains will run driverless every 15 minutes throughout the day and every four minutes during rush hour. The Subject Site is located within a five minute walking distance from Tallawong Metro Station. Travel times to job centres such as Norwest Business Park and Macquarie Park will be nine minutes and 28 minutes respectively.

There is a notable disconnect between the strategic merit of the Subject Site and the proposed development standards when considering the extent and scale of growth proposed in surrounding centres and land immediately adjoining site within the Area 20 Precinct. Figure 15 on page 23 compares the development standards within commensurate centres, and within an 800m catchment of future railways stations.

It illustrates that land surrounding the future Tallawong Metro Station has notably lower development potential when compared to surrounding comparable centres, which allow development up to 68m in height and with 5:1 FSRs. Even under the controls that currently apply to the Subject Site, the development potential is not consistent with the approach taken in other centres along the Sydney Metro Northwest. The existing planning controls do not reflect the strategic merit of development within the walking catchment of the Metro Station, which currently mean that a site within less than 250 metres of the station is limited to low rise apartments, townhouses, and small lot



13 Existing Cudgegong Town Centre Building Height in Relation to Other Town Centres Along Metro Line

3.2 Heavy Rail and Metro

			min
Schofield	to	Parramatta	25
(Heavy Rail)		Sydney Town Hall	65
Every 30 min.			
Every 15 min. peak			

Cudgegong	to	Norwest Business Park	9
(Metro)		Macquarie University	26
Every 15 min.		Macquarie Park	28
Every 4 min. peak		North Sydney	51
		Wynyard	57

Legend

- Subject Site
- Precinct Boundary
- Sydney Trains Heavy Rail
- Sydney Metro North - West

NOT TO SCALE

14 Heavy Rail and Metro

3.3 Town Centres Building Height Comparison

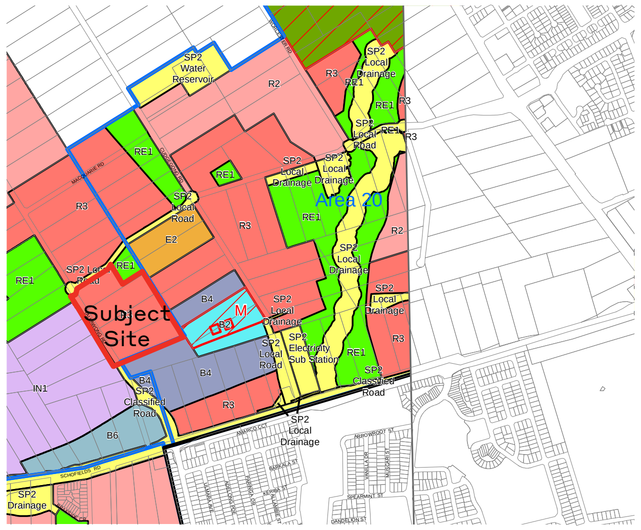
15 Density of Metro Station Precinct

4.0

Planning Context

SEPP (Sydney Region Growth Centres) 2006

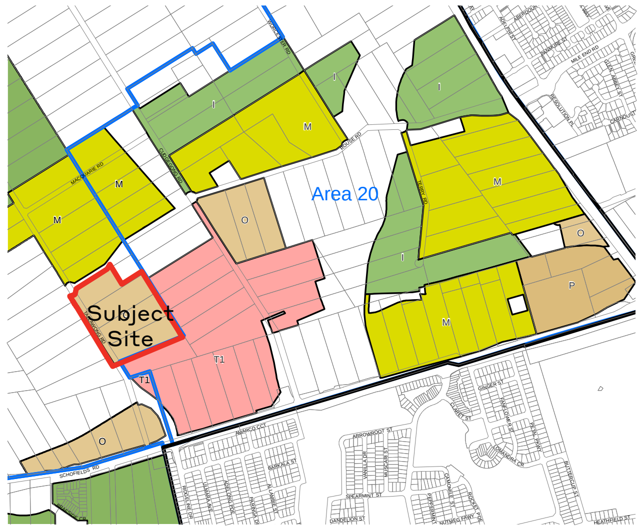
4.1
Current Controls
SEPP (Sydney Region Growth Centres) 2006



16 Land Zoning Map

Legend — NOT TO SCALE

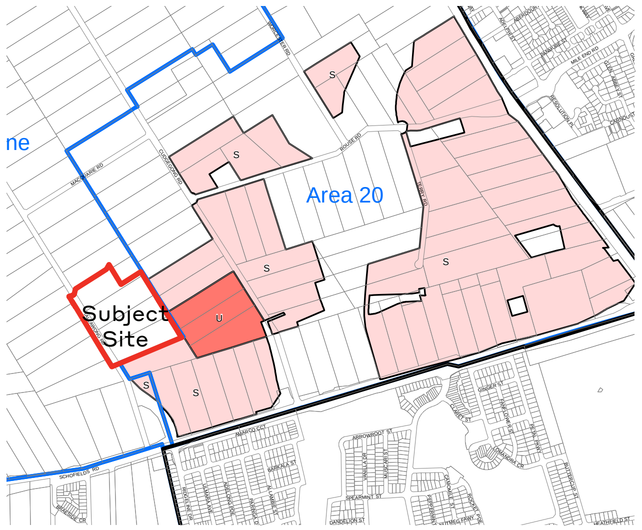
- Subject Site
- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary
- RE1 Public Recreation
- B2 Local Centre
- B4 Mixed Use
- E2 Environmental Conservation
- B6 Business Park
- R2 Low Density Residential
- R3 Medium Density Residential
- SP2 Infrastructure
- IN1 General Industrial
- Cadastre © 20/02/2015 NSW LPI



17 Height of Buildings Map

Legend — NOT TO SCALE

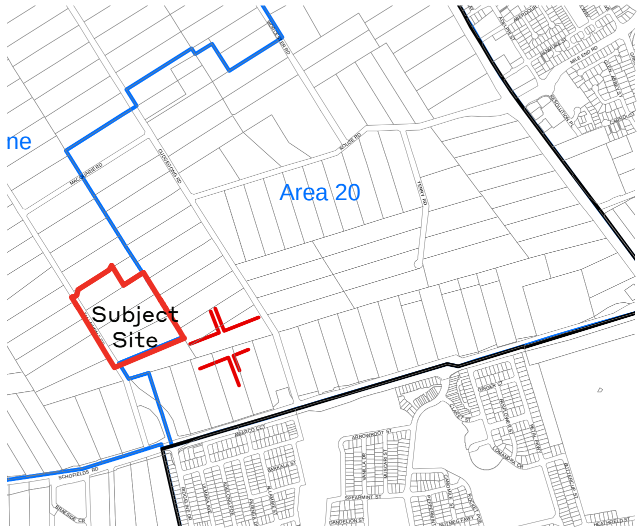
- Subject Site
- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary
- J 9
- M 12
- O 16
- P 18
- T1 26
- Cadastre © 20/02/2015 NSW LPI



18 Floor Space Ratio Map

Legend — NOT TO SCALE

- Subject Site
- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary
- S 1.75
- U 2.75
- Cadastre © 20/02/2015 NSW LPI



19 Active Street Frontage Map

Legend — NOT TO SCALE

- Subject Site
- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary
- Active Street Frontage
- Cadastre © 20/02/2015 NSW LPI

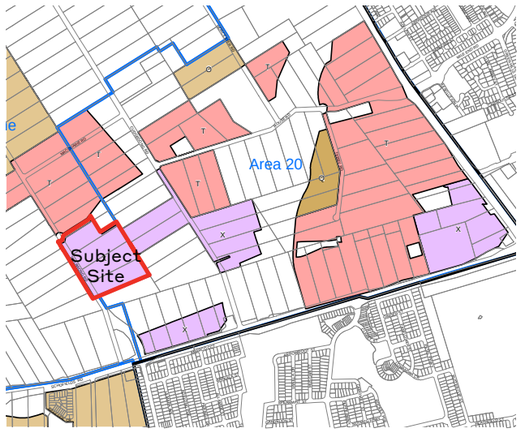
4.2
Proposed Draft Amendments

20 Vegetation Protection Map

Legend

NOT TO SCALE

- Subject Site
- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary
- Existing Native Vegetation Area
- Native Vegetation Retantion Area
- Cadastre © 20/02/2015 NSW LPI

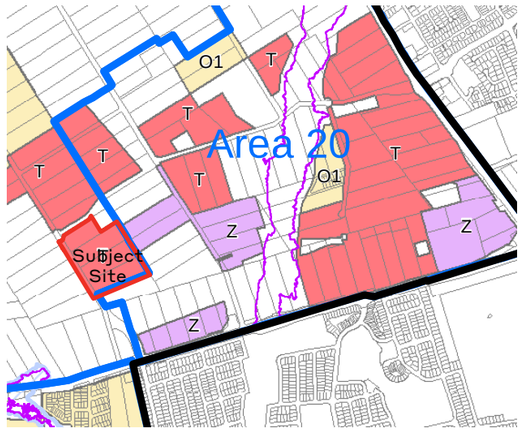


21 Existing Residential Density Map (per hectare)

Legend

NOT TO SCALE

- Subject Site
- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary
- O 15
- Q 20
- T 25
- X 45
- Cadastre © 20/02/2015 NSW LPI



22 Draft Residential Density Map (per hectare)

Legend

NOT TO SCALE

- Subject Site
- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary
- O1 15-25
- T 25-35
- V 35-55
- Z 55-100
- Cadastre © 20/02/2015 NSW LPI

The Subject Site is located within the Riverstone East Precinct. It is governed by the Growth Centre SEPP 2006 and the Blacktown City Council Growth Centre DCP 2016.

The current zoning is R3 with a maximum permitted height of 16m. No FSR is applicable. The minimum dwelling density is 45 dwellings per hectare. The Department of Planning and Environment's (DPE) exhibited a Draft Land Use and Infrastructure Plan in 2017 for comment, which proposes a dwelling density range of 25 to a maximum of 35. This change has not come into effect, and it is unclear whether changes will be made to the scheme post-exhibition.

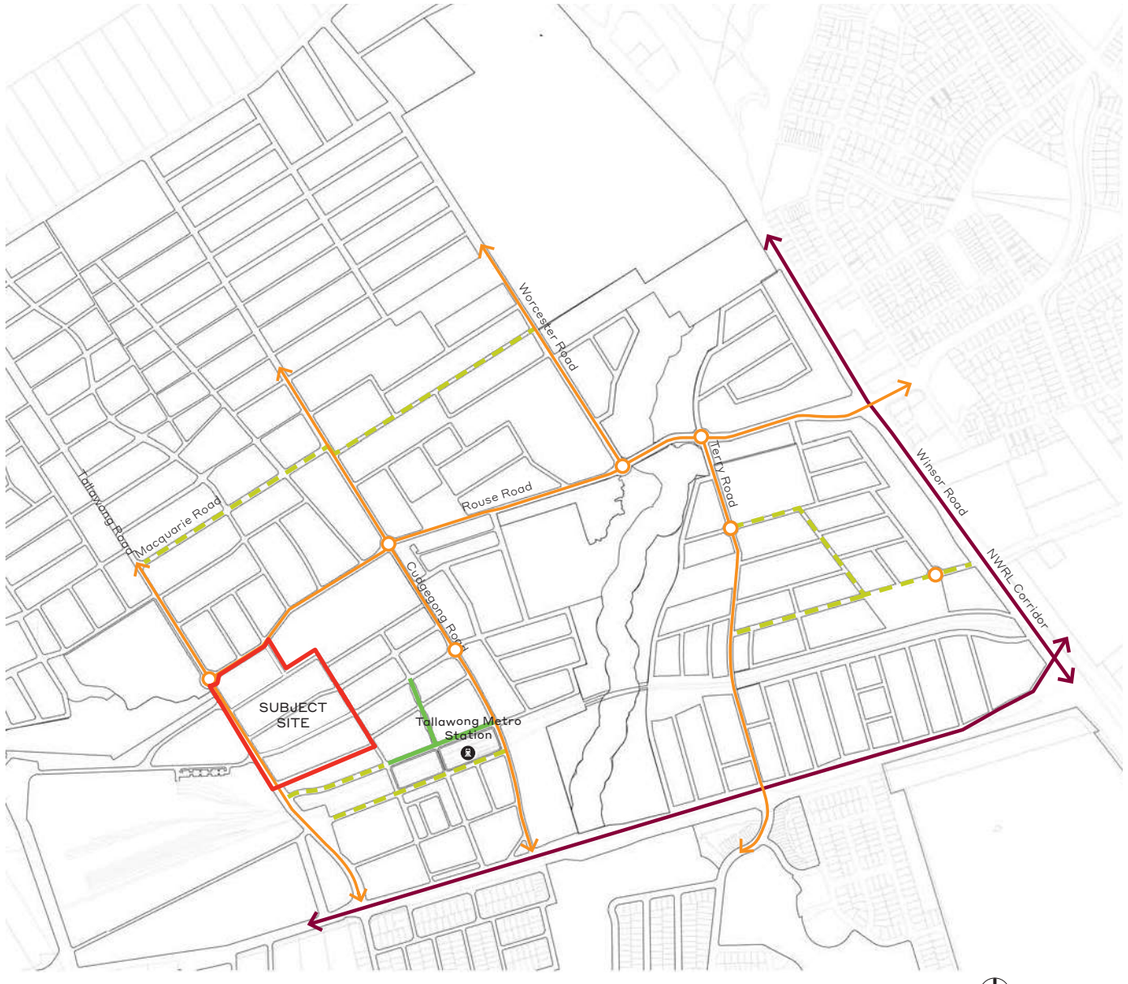
The Subject Site has two common boundaries with the town centre of Area 20 Precinct to the east and south. Adjacent zoning varies from B2 to B4 and R3. The height limit is 26m with FSRs of 2.75 and 1.75:1.

5.0

Planning Context

Blacktown City Council Growth Centre Precincts DCP 2016

5.1 Road Network and Circulation



1:15000 @ A3

23 Road Network and Circulation

Legend

- Subject Site
- Metro Station
- Arterial Roads
- Collector Road
- Roundabout
- Town Centre Road
- Major Local Street

5.2 Public Transport Network

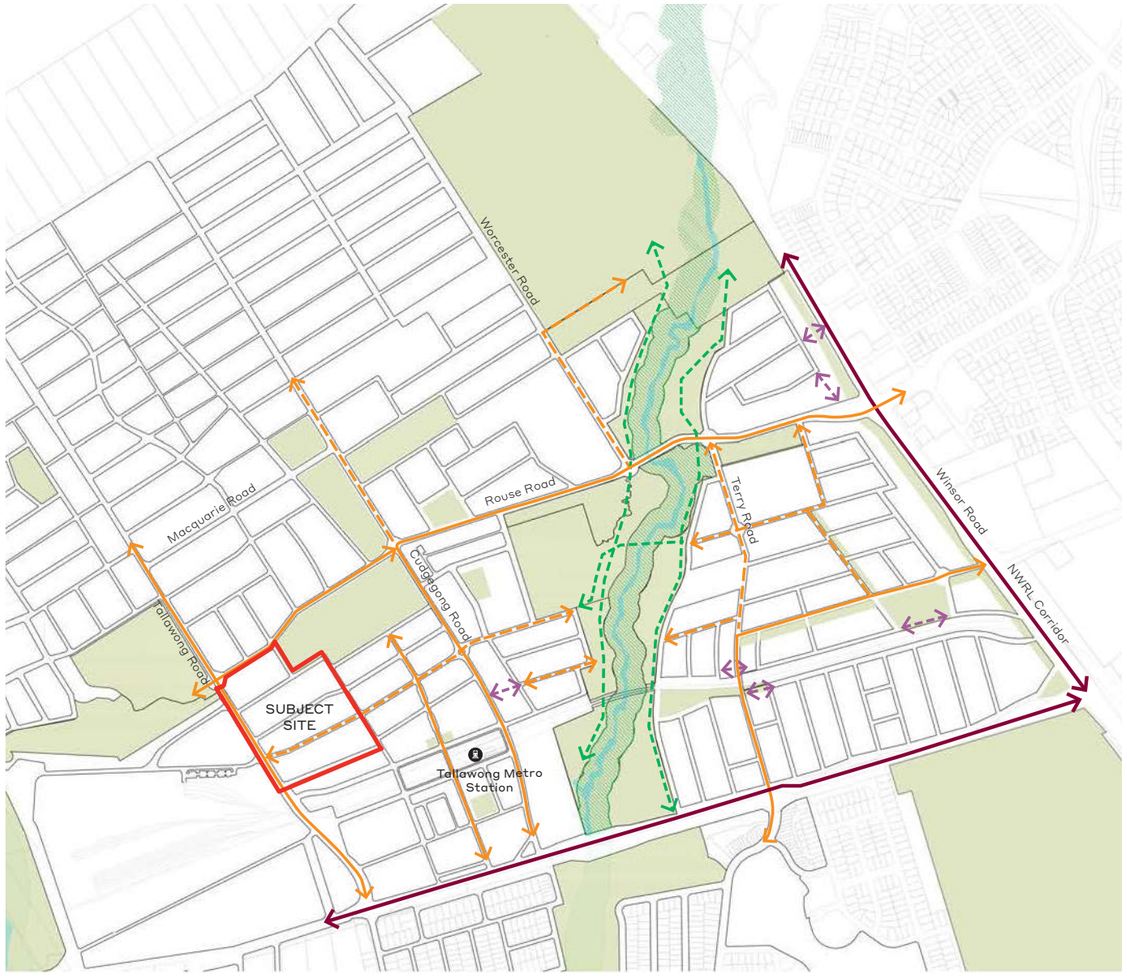
1:15000 @ A3

24 Public Transport Network

Legend

- Subject Site
- Metro Station
- Proposed Strategic Bus Corridors
- Bus Route
- Initiative Bus Stop Location
- 400m Pedestrian Catchment for Bus Stops
- 800m Pedestrian Catchment for Train Station

5.3 Pedestrian and Cycling Circulation



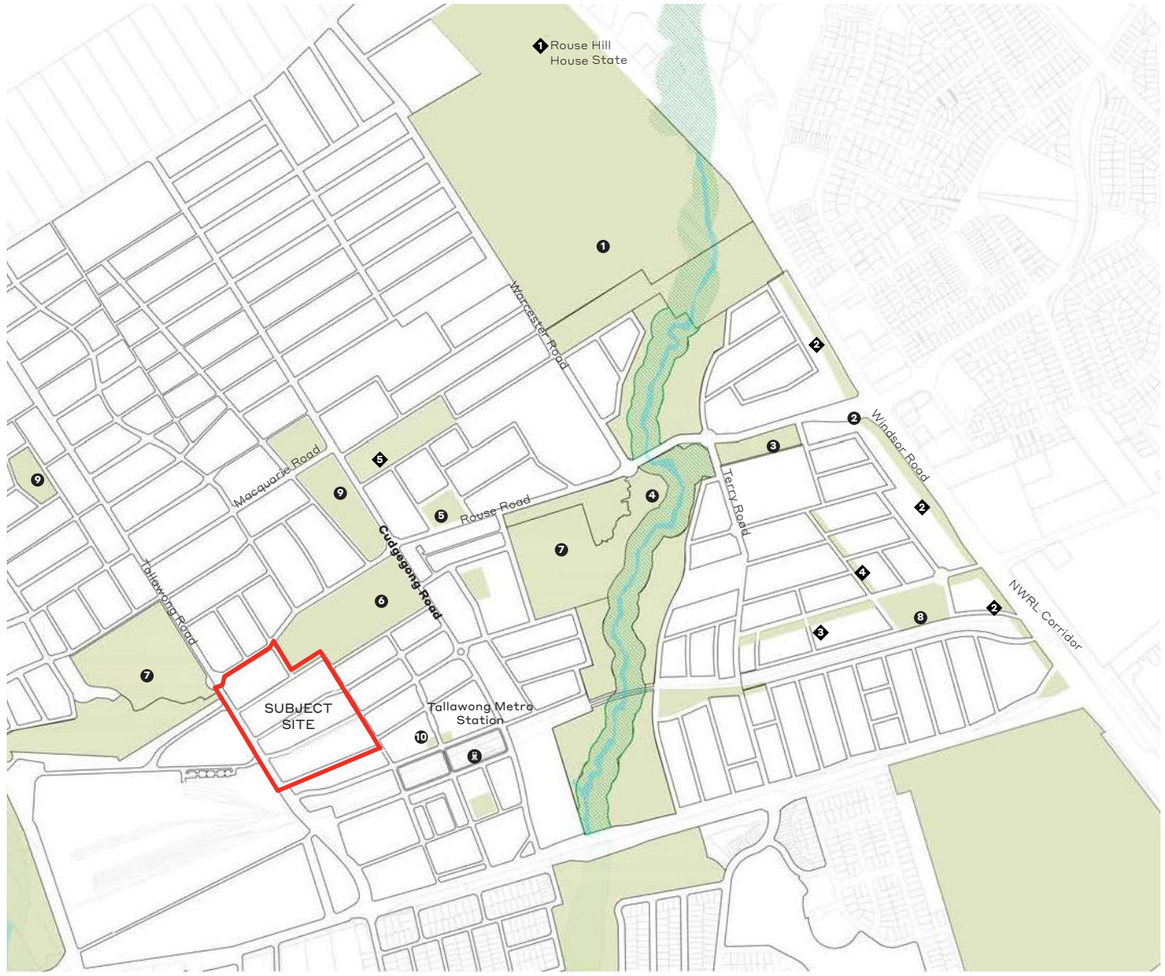
25 Pedestrian and Cycling Circulation

1:15000 @ A3

Legend

- Subject Site
- Metro Station
- Existing Shared Pedestrian and Bikeway on Main Roads
- Main Off Road, Shared Pedestrian and Bikeway (BCC)
- Secondary Shared Routes Shared Pedestrian and Bikeway
- Off Road Recreational Shared Routes Pedestrian / Bikes
- Potential Location for On-Road Physically Separated Bicycle Path
- Signalised Intersections

5.4 Public and Semi - Public Domain



26 Public and Semi-Public Open Space

1:15000 @ A3

Legend

- Subject Site
- Metro Station
- Open Space
- Riparian Corridor
- Creek Line - Top of Bank Line

Public Open Space

1. Rouse Hill Regional Park
2. Rouse Road Gateway
3. Rouse Road School Park
4. Second Ponds Creek Corridor
5. Rouse Road Pocket Park
6. Cudgegong Reserve
7. Sports Field
8. Knoll Park
9. Future Public park
10. Village Square

Semi - Public Open Space

1. Rouse Hill House and Estate
2. Allotments adjoining Windsor Ro ad
3. Allotments fronting east-west collector road
4. Allotments fronting north-south local road
5. Anglican School Sporting Field

6.0

Local Context

6.1
Site Conditions

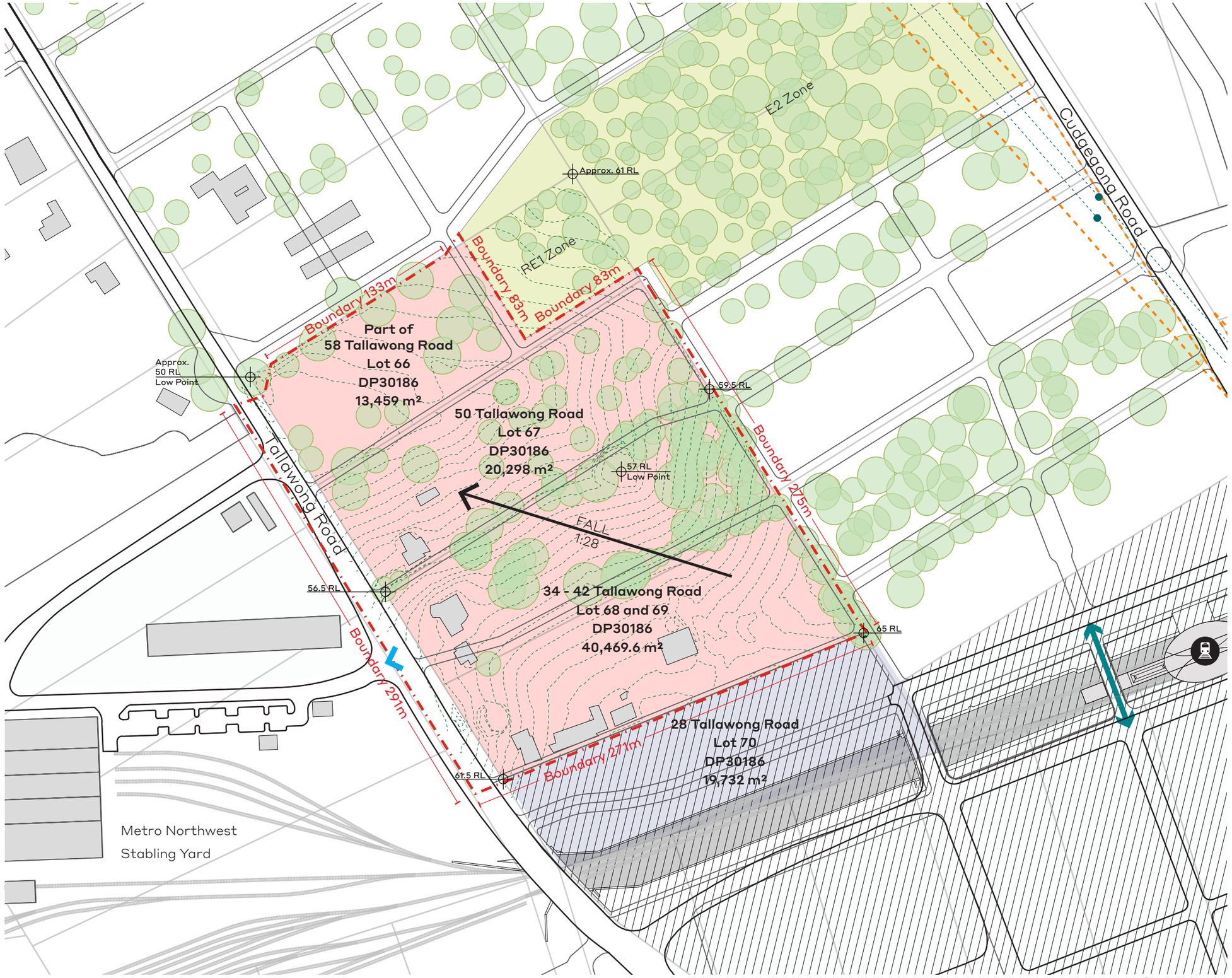
The Subject Site has a size of approximitely 7.4ha. It is made up of three equal sized lots (34-42, 50 Tallawong Road) which are 250m deep with an 80m wide frontage to Tallawong Road each, part of a lot (58 Tallawong Road) which is 163m deep with the same 80m wide frontage to Tallawong Road and a small portion of another lot (72 Tallawong Road) that adjoins 58 Tallawong Road along its northern boundary.

The land is currently occupied by single dwelling houses and a few sheds. There are numerous medium sized and large trees in the centre and towards the back of the properties along a future north-south road. Part of 58 Tallawong Road is zoned RE1 to retain exist bush vegetation.

The topography generally falls diagonally across the Subject Site from the south-east corner to the north-west corner. The change in level is approximately 15m, a fall of 1:28. The low point is a local low point with water ponding at times.

Vegetation is lush and grounds are well saturated. The Indicative Layout Plan for Riverstone East envisages a green east-west corridor through this part of the Subject Site.

As the precinct is undergoing a huge transformation the conditions surrounding the Subject Site are in constant flux. The Metro stabling yard is almost finished, Tallawong Road has been upgraded, some ILP roads are being constructed and a commuter car park is being laid out immediately south of the Metro. Along Cudgegong Road the sites are being developed for residential flat buildings.



27 Site Conditions

6.2
Site Constraints and Opportunities

The main constraint for the creation of a new suburb with various land owners is to find an integrated approach which will allow to think and develop across the immediate boundaries. An approach which will create the best possible and most considered outcome for a precinct and its future residents.

With regards to the Subject Site the location of ILP roads, the integration of new public infrastructure and a precinct wide stormwater concept which will allow to deal with local low points in the topography are important.

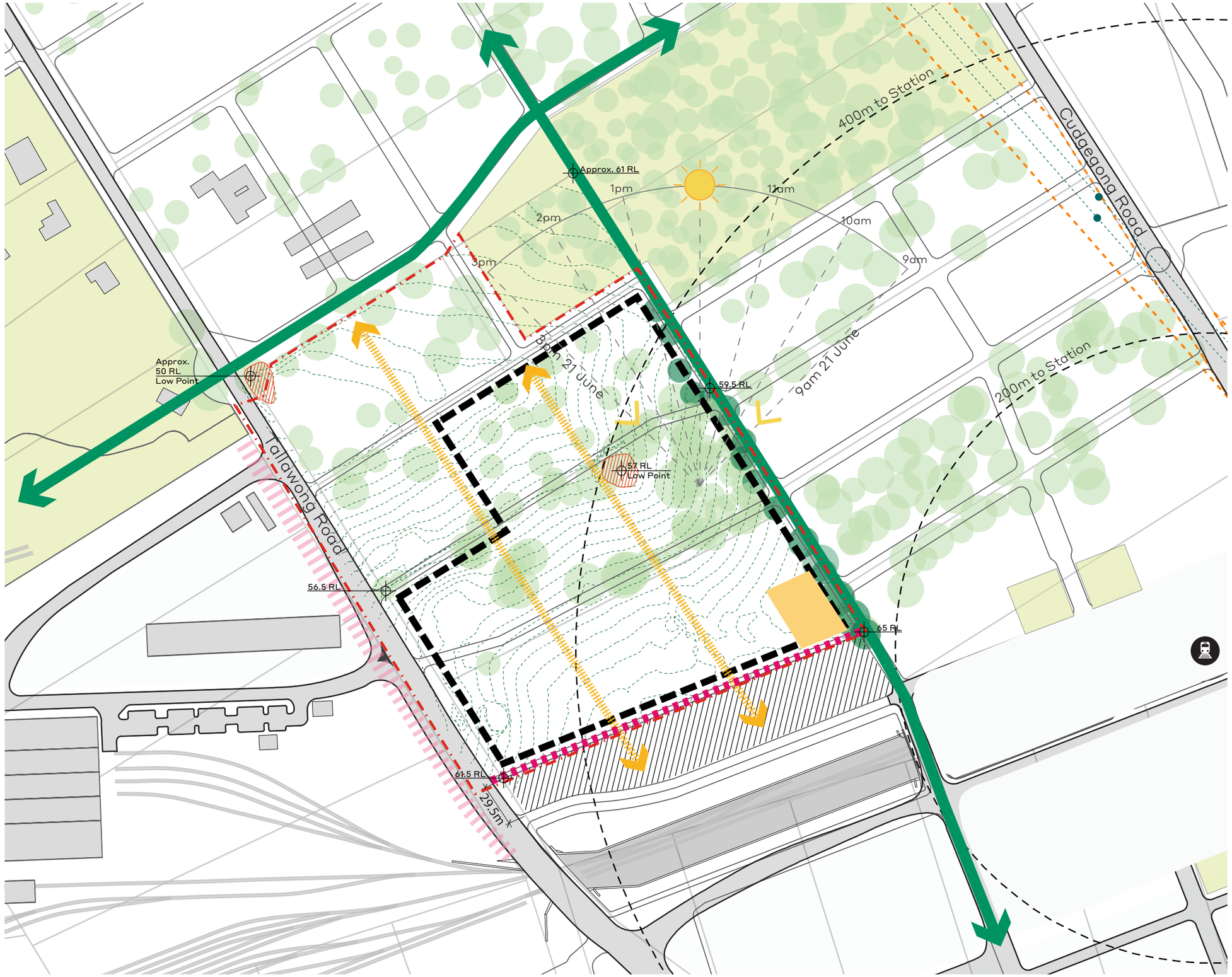
The indicative layout plans for the two Growth Centre Precinct include a half road along the boundary of no 28 and 32 Tallawong Road. This road is in very close proximity, approximately 30m centre to centre, to the road future road long the railway tracks which is likely to carry busses and drop off and pick up traffic related to the Metro, as well a people driving to the local shopping centre adjacent to the station. The other problem associated with having two roads this close together is that parts the developable land of 28 Tallawong Road become so narrow that it will not be possible to fit a suitable building footprint. Hence it is proposed to replace this half road with a pedestrian connection and plan buildings across the boundary.

Due to the orientation of the Subject Site and its relation to true north building design will need to be carefully considered to achieve Apartment Design Guide solar access compliance. If buildings are to address streets which is, for obvious reasons, a desired outcome, only two faces of the buildings will be able to receive 2hrs of sun light. Hence units in the western and southern components of buildings will need to be laid out to face across courts to the north.

This approach will also assist to ameliorate the potential noise and light from the Metro stabling yard which will be a 24 hour facility.

Approaching the Subject Site by looking across its boundaries has identified creating better north south connections to facilitate better access to the station as a key opportunity. These connections can be in form of public pedestrian through site links across private land and also as an upgrade to an already proposed road which may provide an enhanced pedestrian and cyclist environment. This move may also permit to retain some existing mature trees.

Finally, as the Subject Site is within a five minute walking distance to the station there is an opportunity to increase the height from 16 meters and provide greater density closest to the station, balanced with additional urban, public open space.



Opportunities

- Increase density in close proximity to rail infrastructure
- Green link network for pedestrian and cyclist
- Retain some of the existing vegetation as part of desig
- Create a fine grain urban fabric by introducing north - south links creating a better connection to station
- Create an additional public square

Legend

- Subject Site
- Existing Buildings
- Existing Railway Corridor
- Tallawong Metro Station
- Existing Easement
- Proposed Open Space
- 0.5m Contour Lines
- Topographical Low Points
- Existing Trees
- Existing Roads
- Future ILP Roads
- 1/2 ILP Road
- Noise and Light Pollution from Stabling Yard
- Interface with Transport for New South Wales Land
- Solar Access of Subject Site
- Proposed Village Square

1:2500 @ A3

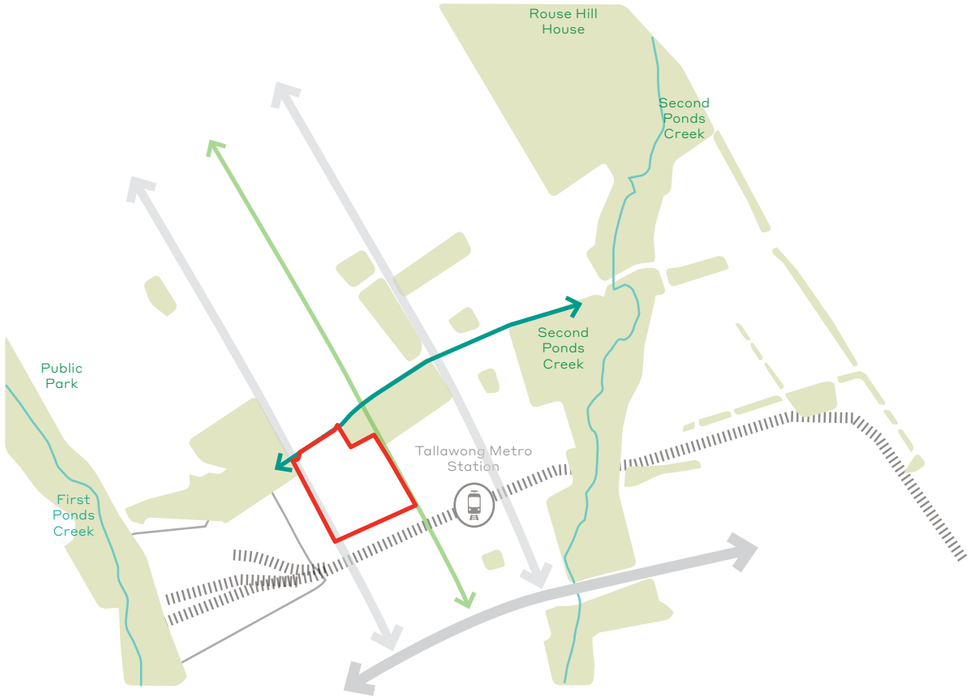
28 Site Constraints

7.0

Key Moves

7.1 Connect Regional Green Corridors

As part of the precinct plans for Area 20 and Riverstone East substantial parts of existing vegetation will be retained. The DCP proposes to create a green corridor in east west direction in form of a collector road with adjacent pedestrian and cycle corridor to connect the future open spaces. Move 1 creates an additional green link perpendicular in north-south direction. This spine will run parallel to Tallawong Road and Cudgegong Road and provide a quieter, more pedestrian and bicycle focused environment to access the station.



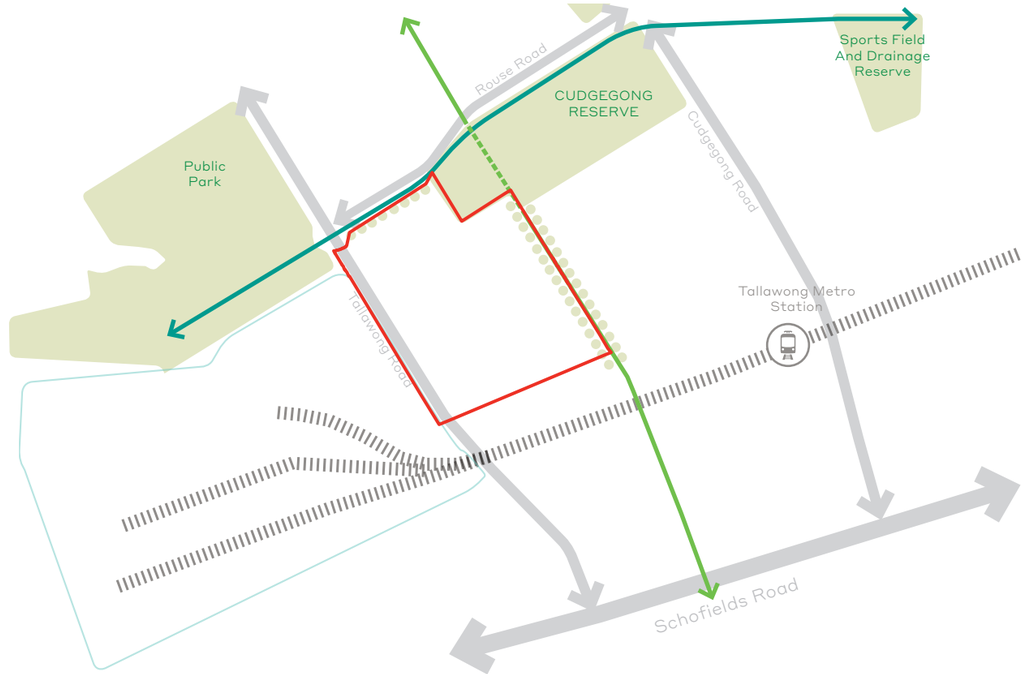
29 Green Corridors (Regional Context)

Legend

- Subject Site
- Tallawong Metro Station
- Trainline
- Road Network
- Public and semipublic open spaces
- Creek
- East - West Green Corridor
  Blacktown City Council Growth Centre
  Precincts DCP 2016
- Proposed North - South Green Corridor

7.2 Create Additional Green Corridors

This green spine will run along the eastern boundary of the Subject Site as an interface between the B2/B4 zones and the R3 zones. The extension of the pedestrian and cycle way through the future Cudgegong Reserve should be explored.



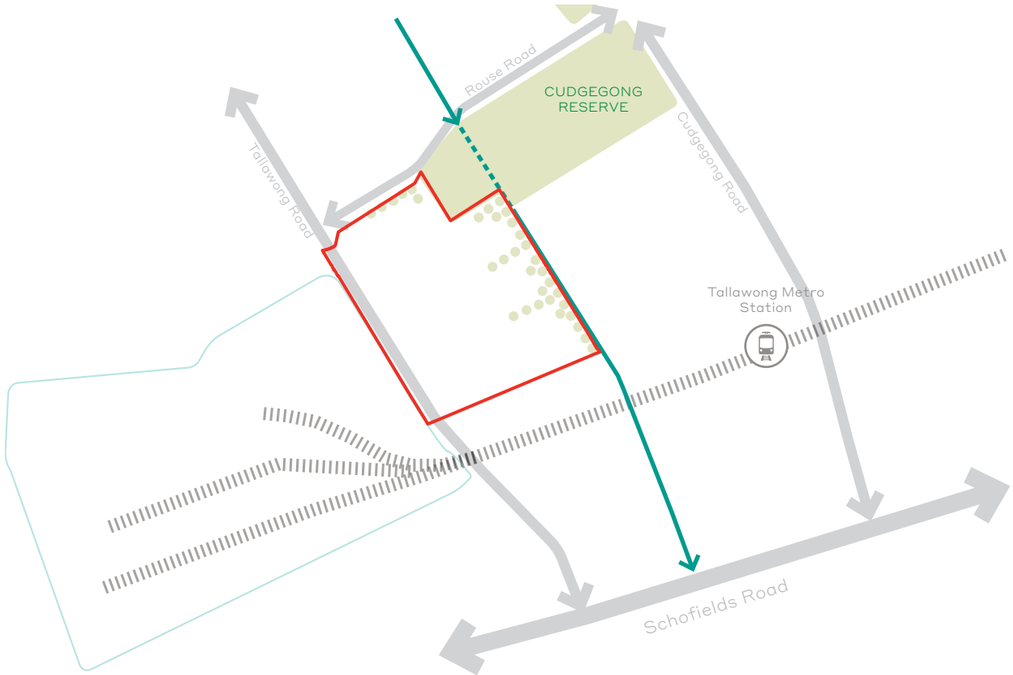
30 Green Corridors (Local Context)

Legend

- Subject Site
- Tallawong Metro Station
- Trainline
- Public and semipublic open spaces
- East - West Green Corridor
  Blacktown City Council Growth Centre
  Precincts DCP 2016
- Proposed North - South Green Corridor

7.3 Retain Existing Trees

The existing trees in the Subject Site are predominantly located in the eastern part of the Subject Site. As part the new north-south green spine and the creation of a new public square some of these trees may be retained.



31 Tree retention strategy

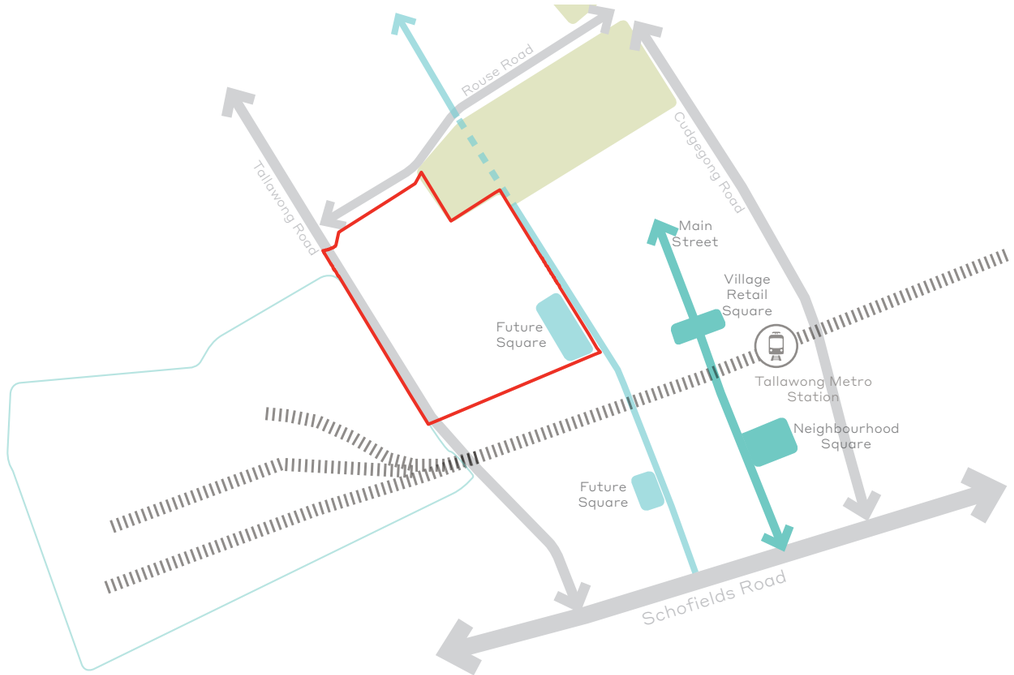
Legend

- Subject Site
- Tallawong Metro Station
- Arterial and Collector Roads
- Public and Semi-Public Open Spaces
- Green Corridor
- Existing Trees

7.4 Extend Open Space Network

The precinct DCP for Area 20 includes the creation a public north-south link which connects the main village square north of the Metro and a neighbourhood square to the south. No further urban public spaces are proposed. The creation of a second public link will permit the creating of additional public spaces in a legible urban environment.

Not only can a future square be located along this route within the Subject Site but there is also an opportunity for another similar space south of the Metro line.



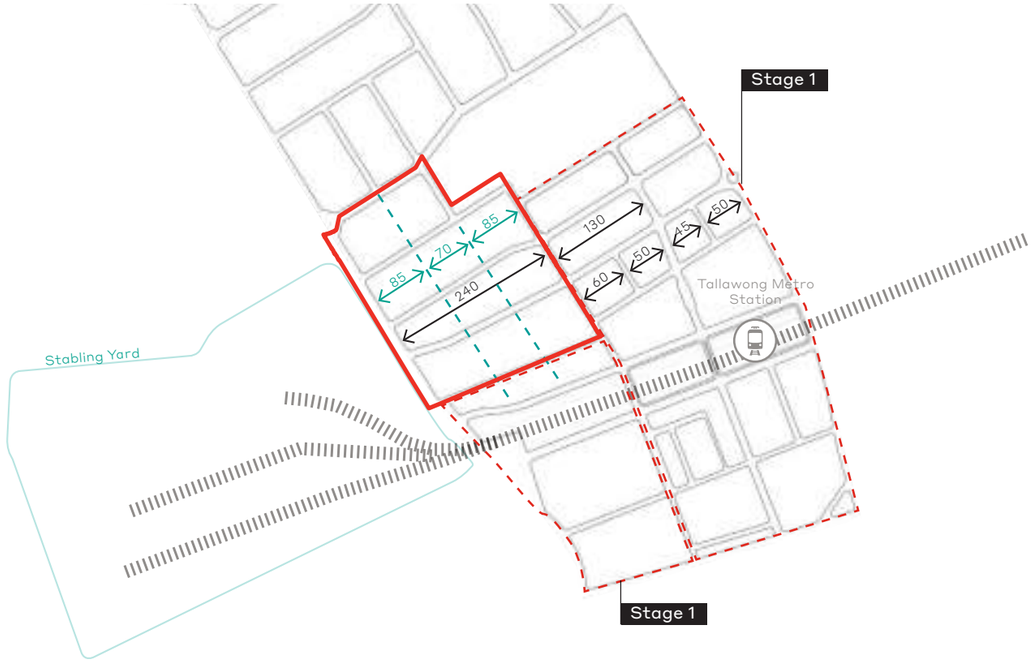
32 Open spaces

Legend

- Subject Site
- Tallawong Metro Station
- Arterial and Collector Roads
- Existing Public Open Space Spine
- Additional Public Open Space Spine

7.5 Reduce Block Length

The blocks indicated for the Subject Site in the Indicative Layout Plan have a length of 240m in east-west direction. They are considerably longer than the blocks proposed in the Area 20 precinct. We propose to introduce two additional breaks to create a similar scale urban morphology.



33 Blocks length in Tallawong Metro Station area

Legend

- Subject Site
- Tallawong Metro Station
- Trainline
- Blocks
- Stabling Yard

7.6 Increase Permeability

The additional breaks in the east-west blocks will considerably increase the north-south permeability and increase the access to the station. Additional links will make it easier for locals to walk and cycle to the station and community and retail facilities.

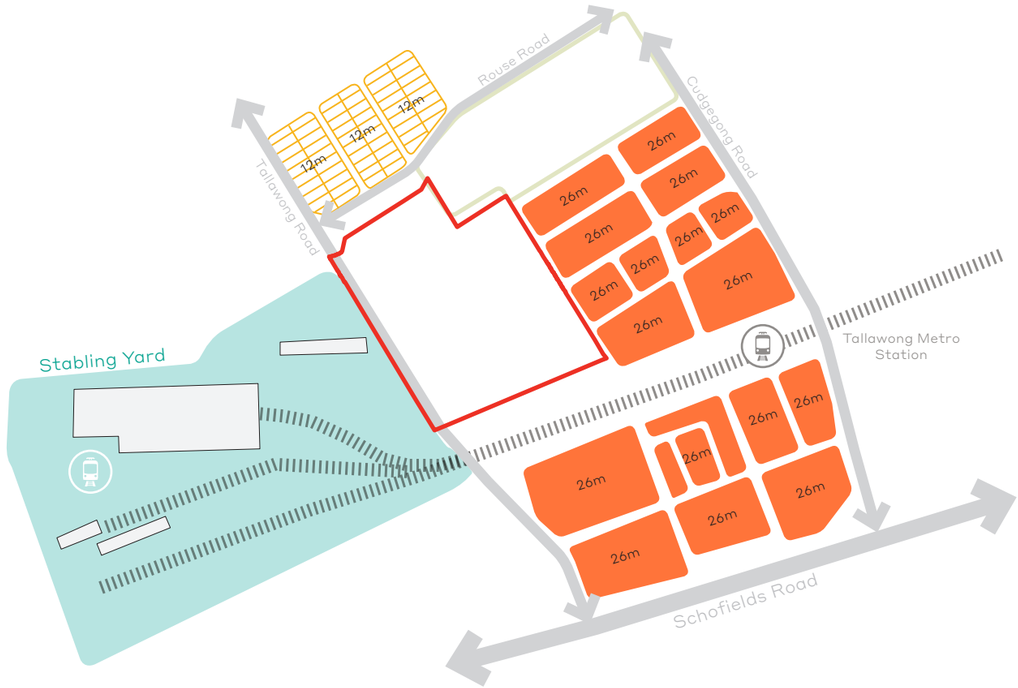
34 Permeability and roads in Tallawong Metro Station area

Legend

- Subject Site
- Tallawong Metro Station
- Trainline
- Arterial and Collector Roads
- Collector Roads
- Special Collector Road
- Stabling Yard
- North - South Pedestrian and Bicycle Permeability

7.7 Transition Height and Density

The Subject Site will have no transition in height and density from the B2 and B4 zoned land in the town centre however northern most heights should be considerate of the lower R3 zoned land north of the future Rouse Road which has a height limit of 12m and a town house typology noted in the ILP.



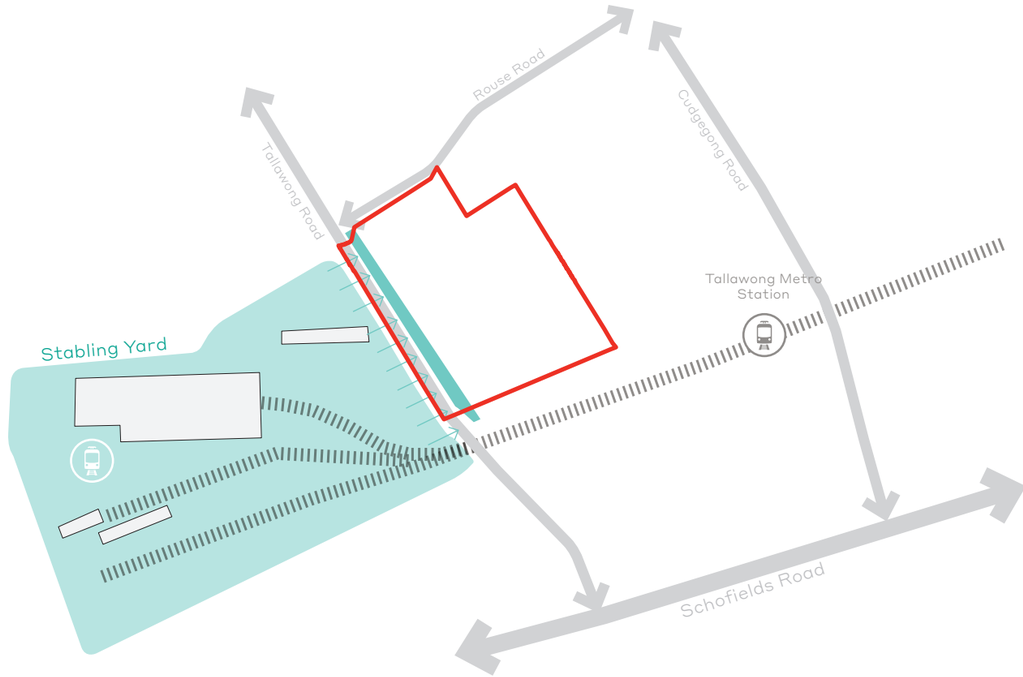
35 Transition in Height and Density

Legend

- Subject Site
- Tallawong Metro Station
- Trainline
- Arterial and Collector Roads
- High Density Area
- Medium Density Area
- Stabling Yard

7.8 Create Acoustic and Visual Buffer

The new Metro stabling yard is substantial industrial facility which will operate 24 hours per day. The residential interface with the facility needs to be carefully considered. The increase in density should generally be focused away from the yard. If for other urban design reasons an increase is proposed the number of single orientation units to the west should be limited or avoided completely.



36 Acoustic and Visual Buffer to Stabling Yard

Legend

- Subject Site
- Tallawong Metro Station
- Trainline
- Arterial and Collector Roads
- Acoustic Impact Area
- Acoustic impact into Subject Site
- Stabling Yard

8.0

Structure Plan

8.1
Structure Plan

The proposed structure plan synthesises the key moves and relates them back to Subject Site and the ILP road layout. The Subject Site is characterised by:

- The new green north-south spines which sits between the two Growth Centre Precincts.
- Pedestrian through-site links which are aligned with proposed roads approaching the Subject Site from the north.
- Greater height integrating with the retail core of the Area 20 town centre.
- A new square interfacing with the town centre. It aligns with the enhanced green street and is on axis with a secondary town centre road which runs east-west.
- New roads which get created in accordance with the requirements of the Blacktown City Council DCP.
- The half road on the boundary of 28 and 32 Tallawong Road which gets replaced by a pedestrian link.

37 Structure Plan

1:5000 @ A3

8.2
Road Network

38 Road Network

NTS

Legend

- Subject Site
- Metro Line
- Tallawong Metro Station
- Metro Trains Facility
- Public and Semi - Public Open Space
- Neighbourhood Open Space
- Arterial Road
- Collector Road
- Pedestrian Connection
- Green Corridor Connections
- Special Collector Rouse Road
- Green Road - 21m Road Reserve
- Town Centre Road - 25 m Road Reserve
- Major Local Road - 18 m Road Reserve

8.3
Building Height

39 Building Height

NTS

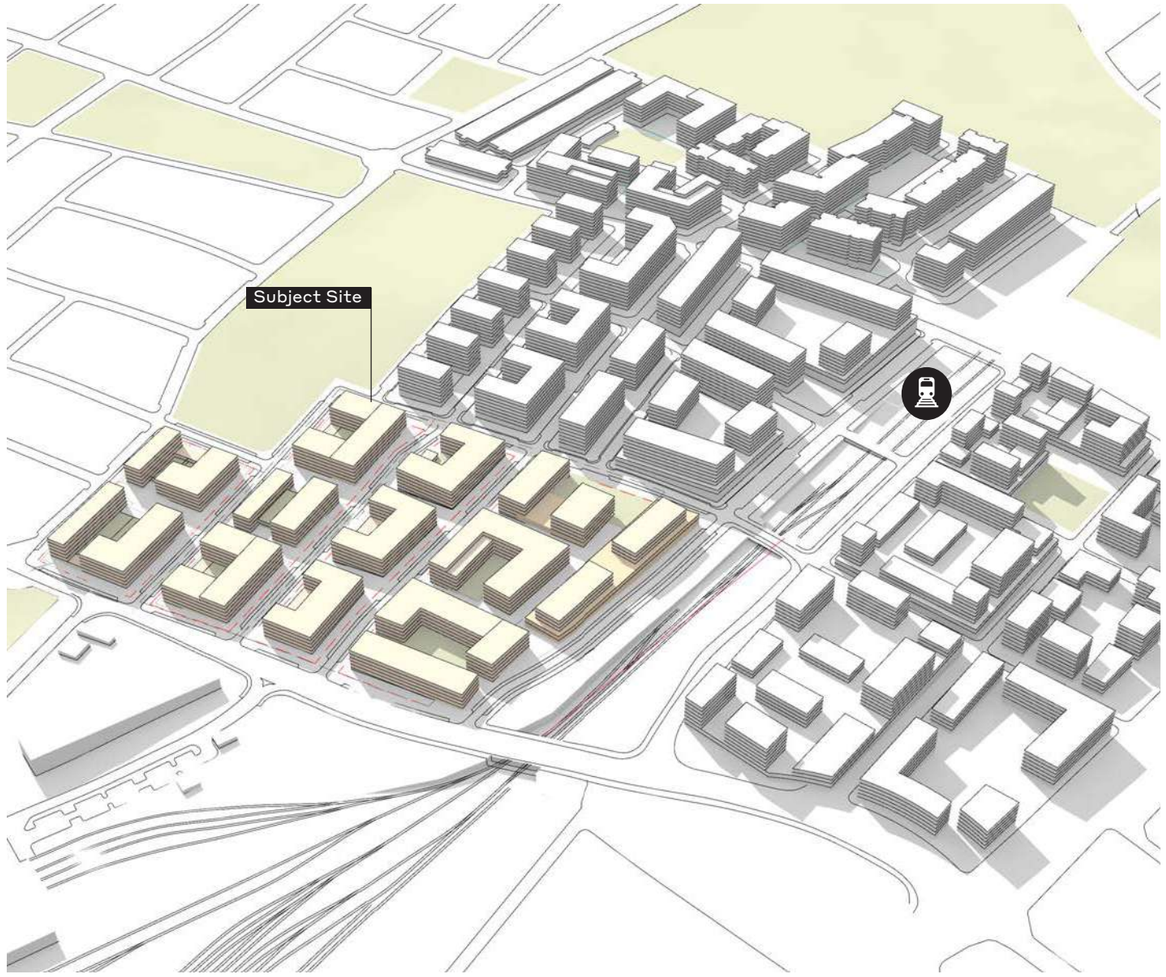
Legend

- Subject Site
- Metro Line
- Tallawong Metro Station
- Metro Trains Facility
- Public and Semi - Public Open Space
- Neighbourhood Open Space
- Arterial Road
- Collector Road
- Special Collector Road
- HOB - max. 16m
- HOB - max. 26m

9.0

Built Form Exploration

9.1 Built Form - 16m Height Limit



40 Built Form Exploration - 16m Height

Figure 40 illustrates a built form outcome based on current development standards which generally enforce a uniform 16m design outcome, and whilst this creates consistency with other land in the Riverstone East Precinct, it does not acknowledge that the Subject Site is functionally and physically related to the adjoining Area 20 Precinct Centre to the east. In view of this, the Concept Scheme seeks to refine these broad scale controls.

9.2 Built Form - 25-35 Dw/ha

41 Built Form Exploration - 25 dwellings per ha

Figure 41 shows the built form outcome if the maximum residential density of 35 dwellings per hectare as proposed in the North West Priority Growth Area Land Use and Infrastructure Implementation Plan was applied to the Subject Site. This Plan was exhibited for comment in 2017 and it is unclear whether or when any changes will occur to the development standards applying to the Subject Site. It would result in a poor built form outcome as it creates a substantial disparity between the town centre land immediately to the south-east of the Subject Site, where maximum building heights are 26 metres and there are no residential density controls.

9.3 Built Form - Urban Design Led Option

42 Built Form Exploration - Urban Design Led Option

Figure 42 illustrates an urban design led proposal. It seeks to refine the controls to encourage a better and more diverse built form outcome across the Subject Site. Greater height and density is placed towards the station, at the interface with the town centre and along the metro line and rail yard. The scheme introduces high quality open spaces in form a new public square, additional pedestrian friendly through-site links and by a widened road reserve to the main north-south street to create a better pedestrian and cycling environment.

10.0

The Proposal

10.1
Master Plan

44 Artist's Impression of Public Open Plaza

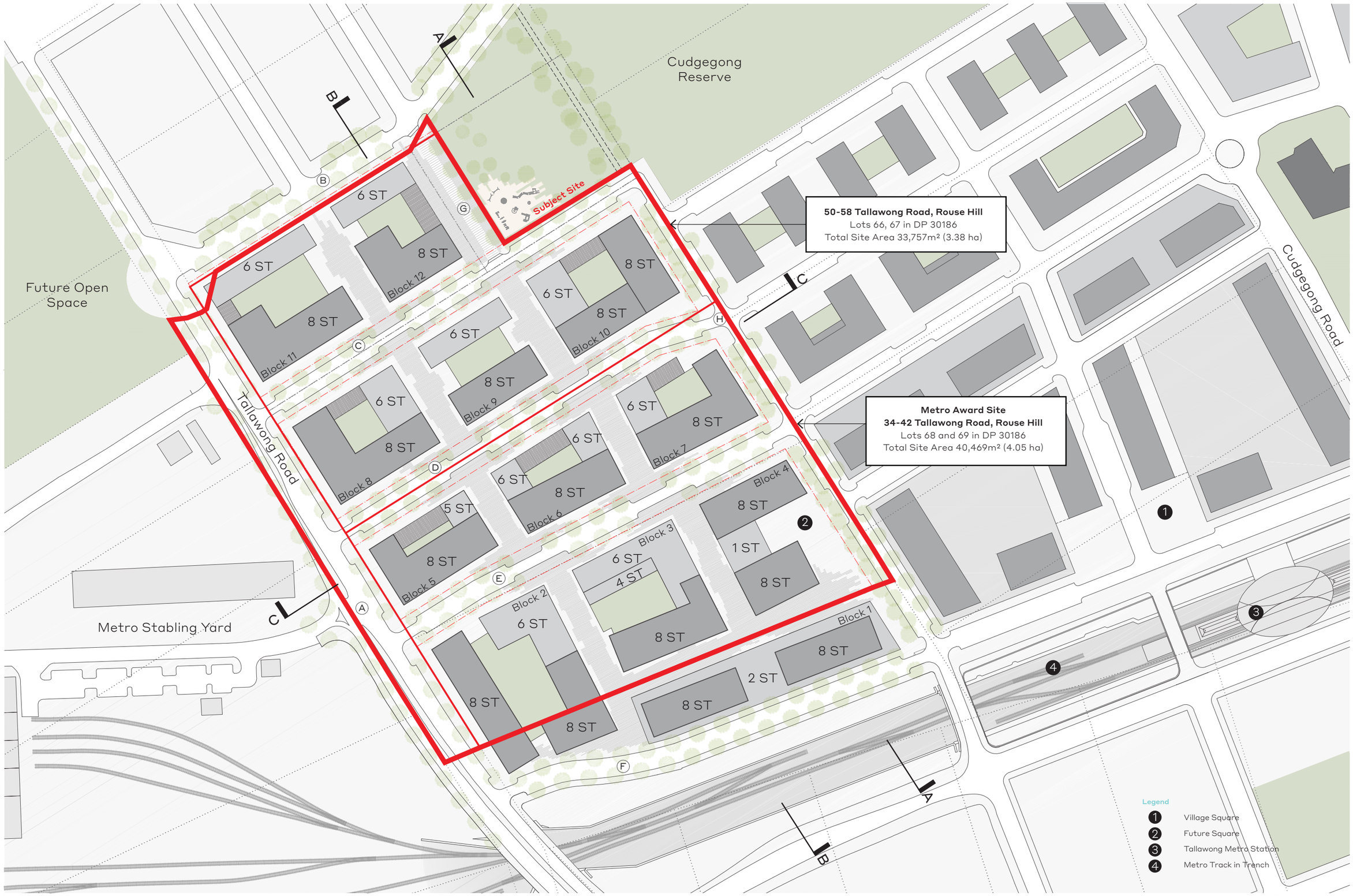
The Proposal breaks up the Subject Site into six blocks with the typical length of approximately 30m to create pedestrian connections in north-south direction. Block depths vary from 20 metres to 45 meters. The proposed typology is a perimeter block with a central courtyard with the exception of the building which is adjacent to the proposed square. This block has a retail podium and is similar to the building types envisaged in the B4 and B2 zones.

While no changes are proposed to the controls on the Department of Transport land south of the Subject Site, there is potential for the built form of Block 2 to traverse the boundary with the Department of Transport land as the best possible outcome to develop the most western portion of that land. The developable land on 28 Tallawong Road narrows to approximately 21 metres and once building separation and rear setbacks are applied building footprints will be too narrow for a meaningful commercial or residential floor plate.

The heights of blocks vary between 6 and 8 storeys. Taller buildings are placed strategically to allow for the best solar outcomes and for both adjacent land and built form. They transition down to 6 storeys towards the north-west. In addition, height also changes within the blocks with taller components being place towards the south to permit sunlight into communal courtyards and to achieve Apartment Design Guide amenity compliance. Units in the western and southern parts of the block will need to face across the courtyard to achieve 70 percent solar access. As previously discussed there is a considerable change in topography across the Subject Site area. Generally the Subject Site falls by one storey across a block in north-south direction. Hence basements are likely to accessed on the southern site of each street. Buildings will also need to step one level to comply with the maximum permissible heights.

Proposed streets are generally compliant with the typical section in the DCP. There are two variations across the this master plan. First, the green link street along the eastern boundary has a widened road reserve of 21 instead of 18 metres and a reduced setback of three metres instead of six metres. It should be explored if this green link can be continued through Cudgegong Reserve to connect into the ILP road to the north. Second the half ILP road along the southern boundary of 32 Tallawong Road has been omitted to allow for an integrated design approach across the Department of Transport land.

The master plan includes a new public open space not included in the planning documents in form of a 2,200sqm public square with associated retail and recreational facility for the residents. The square in located close to the station, on the new green spine and on axis with a new secondary road which crosses the two centre in east-west direction. As it is across the road from the retail and shopping centre in the B2 zoned land the square will provide an important second open space in the town centre. It has been placed and designed to achieve excellent solar access through-out the year.



43 Master Plan

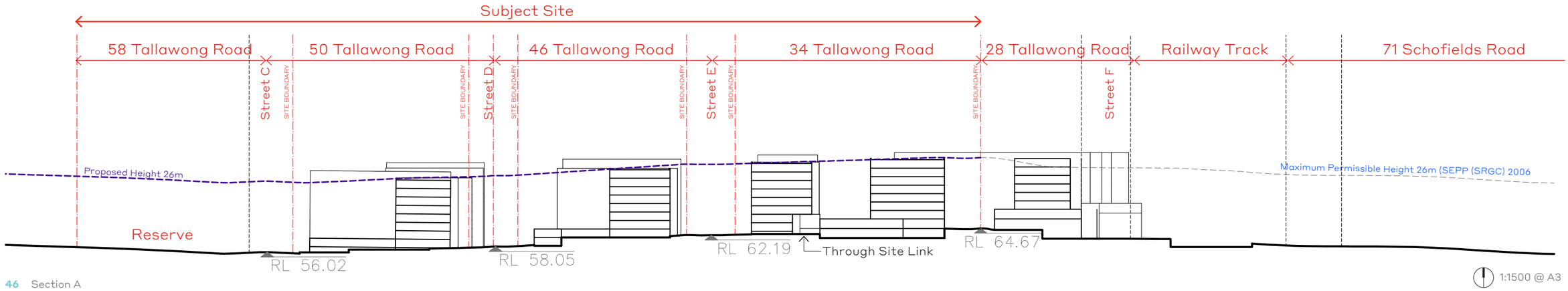
1:2000 @ A3

10.2
Site Section

44 View 1 - Building Envelope with Surrounding Context

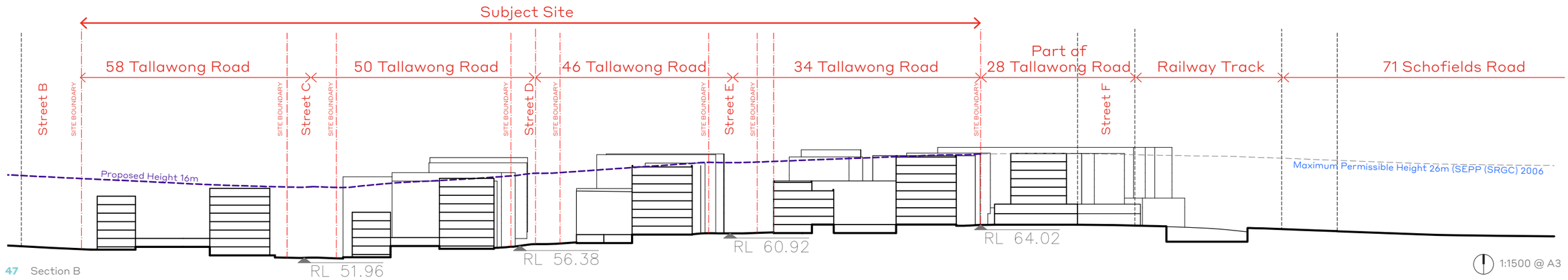
45 View 2 - Building Envelope with Surrounding Context

Key Plan



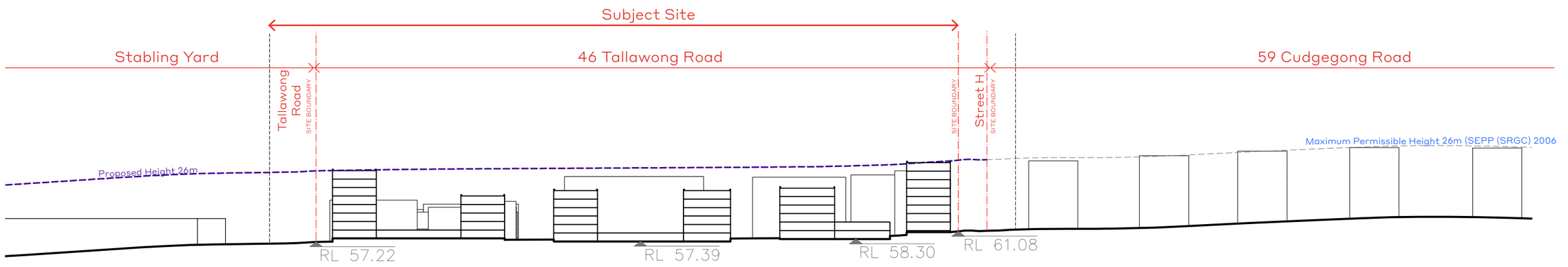
46 Section A

1:1500 @ A3



47 Section B

1:1500 @ A3



48 Section C

1:1500 @ A3

10.3
Focus Area

49 View 3 - Civic Square in relation with Town Centre Village Retail Square

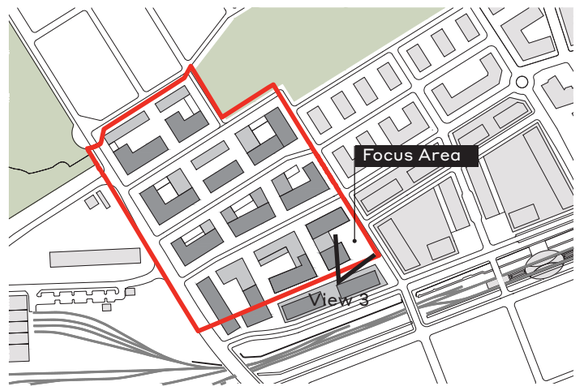
10.3.1 — Urban Plaza

The new urban square in the south-east corner of the Subject Site will create a new destination on the western edge of the Centre. It will build on activity within the Centre and be a link between the Metro Station and pedestrianised through-site connections. As it is across the road from the retail and shopping centre in the Centre, the square will provide an important open space area within the town centre.

The edges of the square will be activated by smaller cafés and retail outlets. They will service the future residents on Subject Site and in the greater surrounding area. A recreational facility including a gym and indoor pool are also proposed in this location. The facility will be for the use of the residents only and will contribute to making the square an active space. The square has also been located to have good solar access throughout the year.

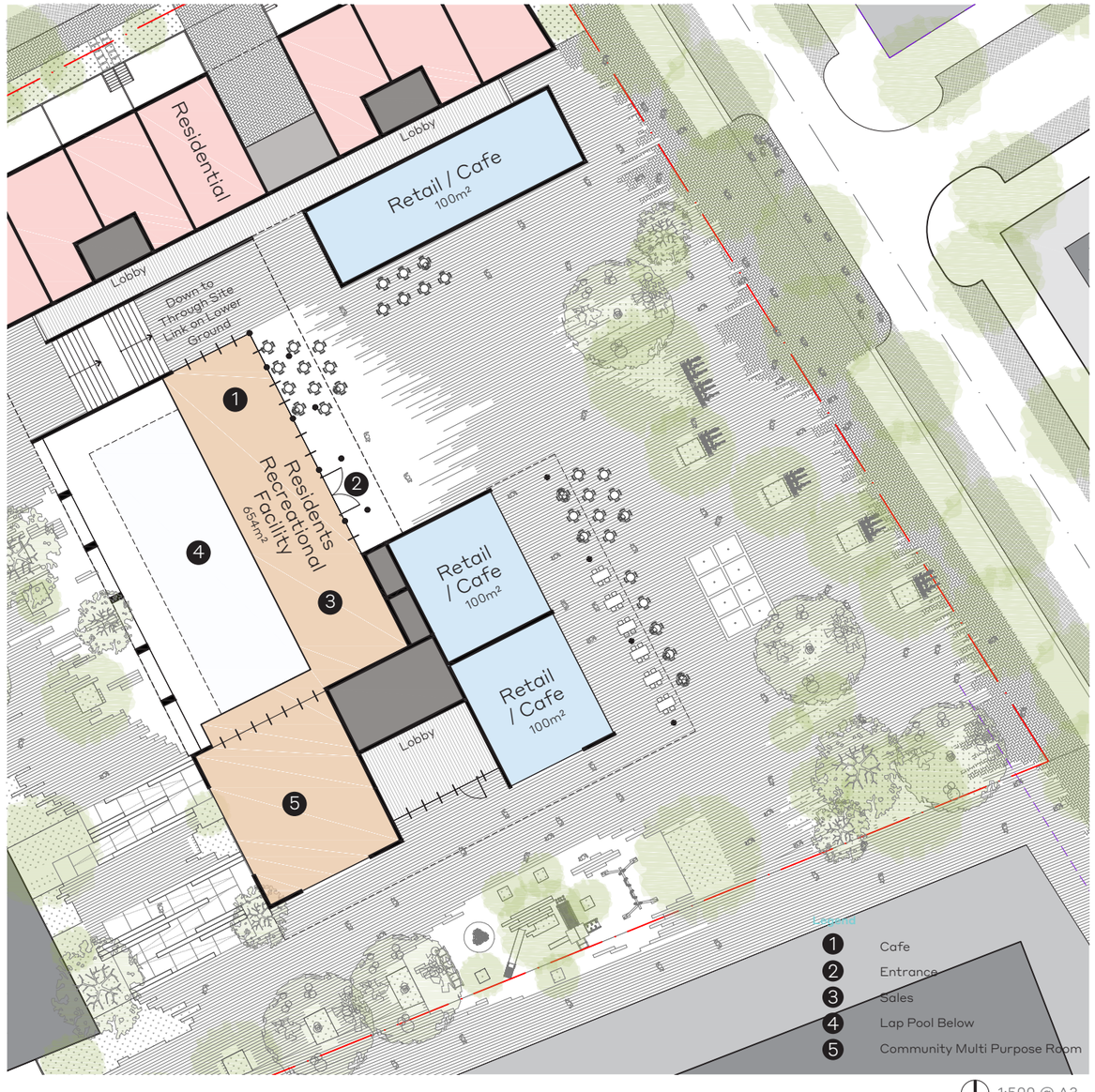
The square is substantial in size being 2,200sqm, 1,450sqm of which will be an open to the sky public space.

To appropriately respond to this type of mixed use environment a tower and podium typology is proposed in this location. A generous public stair will connect the square to the pedestrian link which is on a lower level. The combination of square, recreation facility, pedestrian link, retail, change in topography with generous public stair will provide for a high quality urban environment with a distinct character.



Key Plan

50 Public Open Plaza Precedents



1:500 @ A3

51 Public Open Plaza

52 View 3 - Proposed Public Open Plaza

10.3
Focus Area

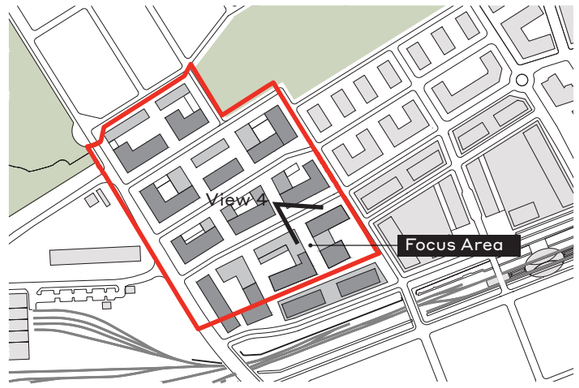
53 View 4 - Pedestrian Through Site Link

10.3.2 — Pedestrian Through-Site Links

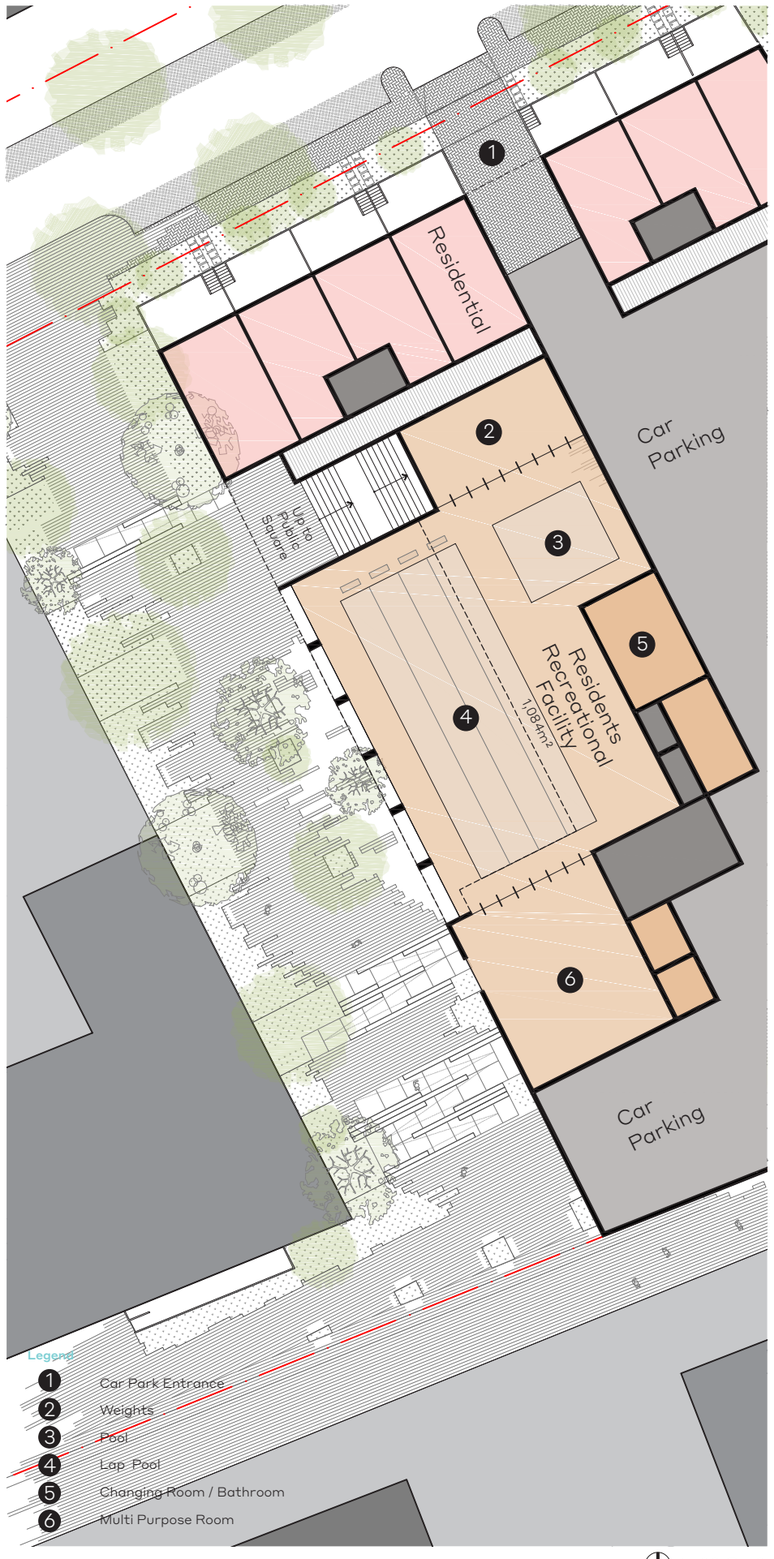
In addition to the new public square, the master plan will provide new publicly accessible through-site connections, and enhanced public domain linkages.

This is in the form of two north-south pedestrian links proposed that run through the Subject Site, providing a safe and direct path of travel between the Metro Station and Centre and surrounding residential areas. Additional links will make it easier for locals to walk to the station and community and retail facilities. Whilst these links will be retained as private land, they will be designed and treated to read as publicly accessible spaces. The links are typically 18m in width and will be lush and generously vegetated.

Landscape will provide appropriate segregation between pedestrians and private residences. Making use of the slope in topography the resident recreation facility may be organised over two levels. Thus activating the southern most pedestrian link and providing an additional open space for the community which will be different in character from the square. It will be a much more compressed space, away from the cars, quieter and shaded under the canopy of the building and trees. A public stair will connect this space with the main square. Refer to Figures 54 to 56 below.



Key Plan



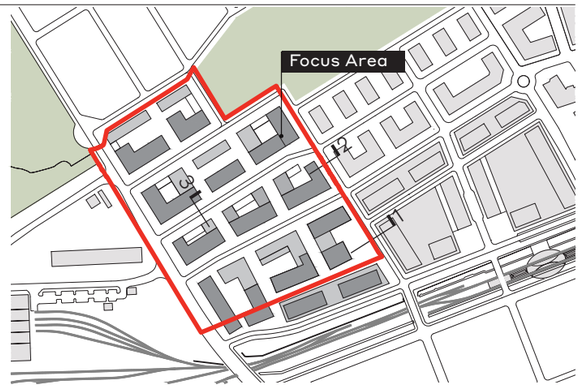
1:500 @ A3

54 Pedestrian Through Site Link

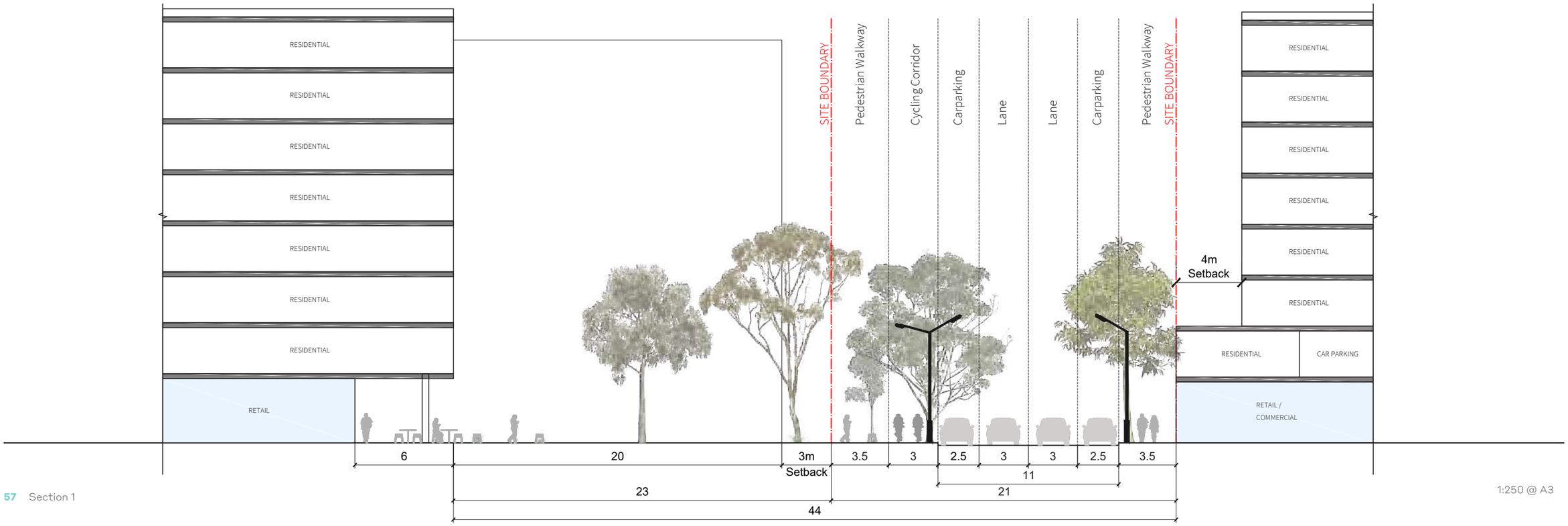
55 Through Site Link Precedent

56 View 4 - Pedestrian Through Site Link

10.4
Street Sections

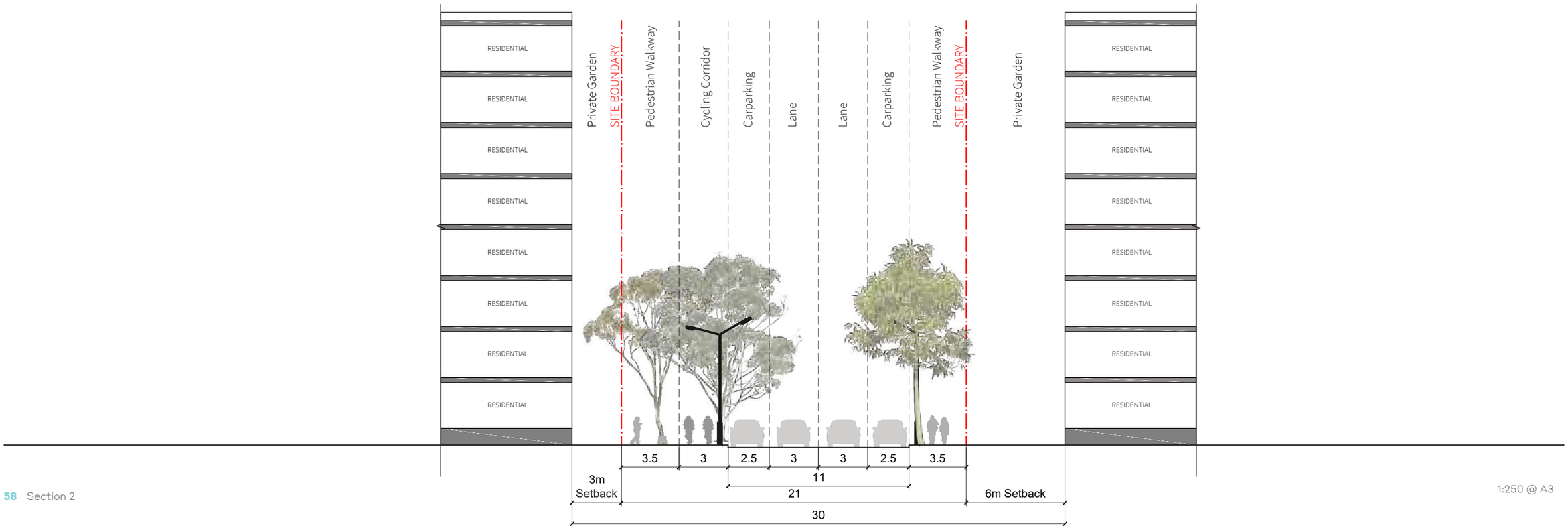


Key Plan



57 Section 1

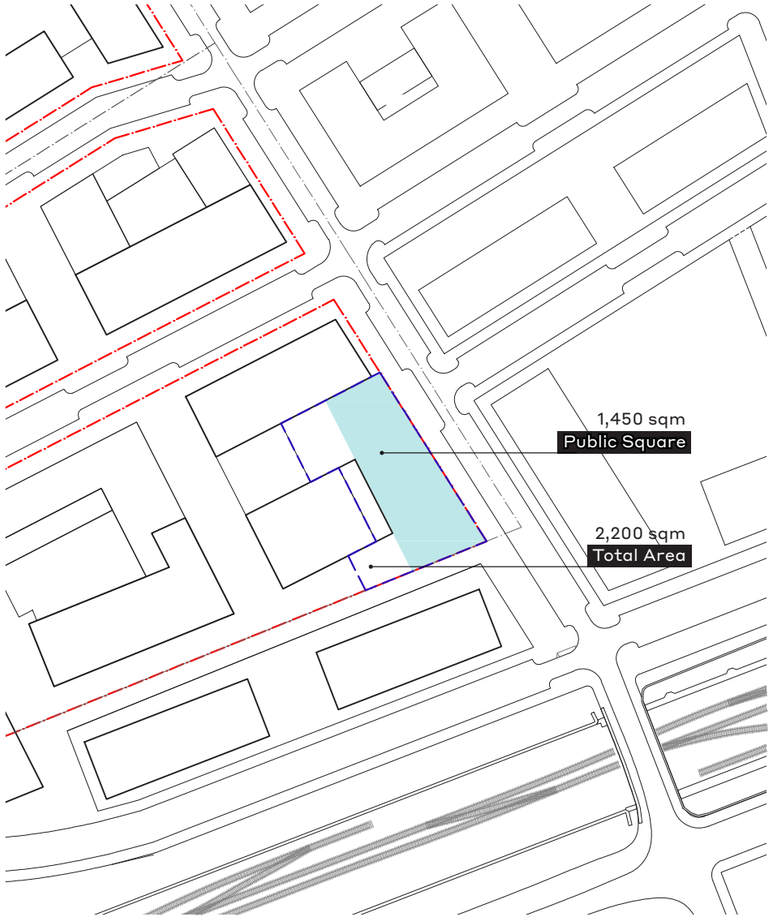
1:250 @ A3



1:250 @ A3

1:250 @ A3

10.5
Public Domain Improvements



60 Public Square

Legend

- Subject Site
- Public Domain Improvements

61 Green Spine

Legend

- Subject Site
- Public Domain Improvements

10.6
Public Domain and Cycle Connection

62 Public Domain and Cycle Connection

NTS

Legend

- Subject Site
- Existing Buildings
- Existing Railway Corridor
- Tallawong Metro Station
- Existing Easement
- Proposed Open Space
- Proposed Green Corridor and New Square
- Proposed Seperate Cycle Paths
- Proposed Pedestrian Connections

10.7
Height Transition

63 Building Height Transition Zone

Legend

- Subject Site
- Existing Buildings
- Existing Railway Corridor
- Tallawong Metro Station
- Existing Easement
- Proposed Open Space
- Building Height Transition Zone
- 8ST Proposed Maximum Building Height

10.8
Public Transport and Vehicular Movement

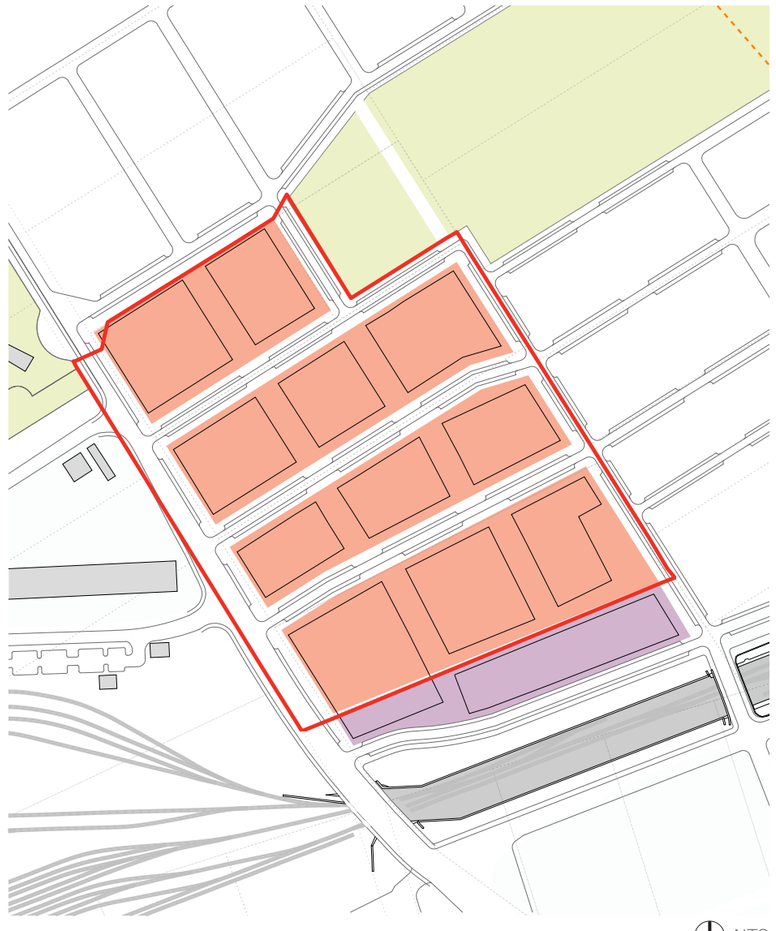
64 Public Transport and Vehicular Movement

NTS

Legend

- Subject Site
- Existing Buildings
- Existing Railway Corridor
- Tallawong Metro Station
- Existing Easement
- Proposed Open Space
- Collector Roads
- Local Roads
- Green Link Road (Bicycle and Pedestrian)
- Carpark Entry
- Commuter Parking within Building
- Bus Route
- Bus and Metro Interchange

10.9
Land Use



65 Land use

NTS

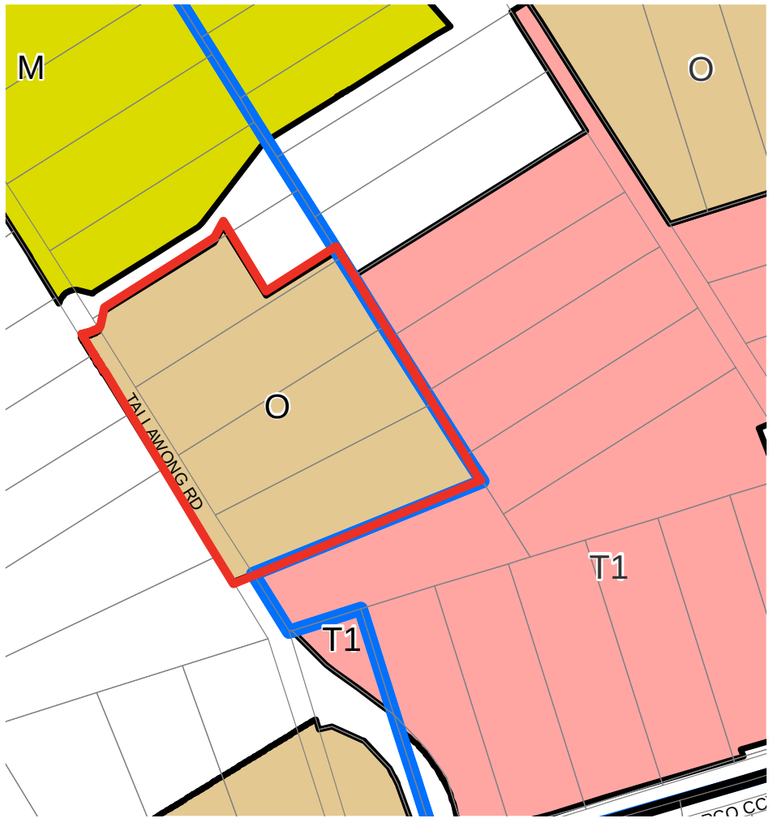
Legend

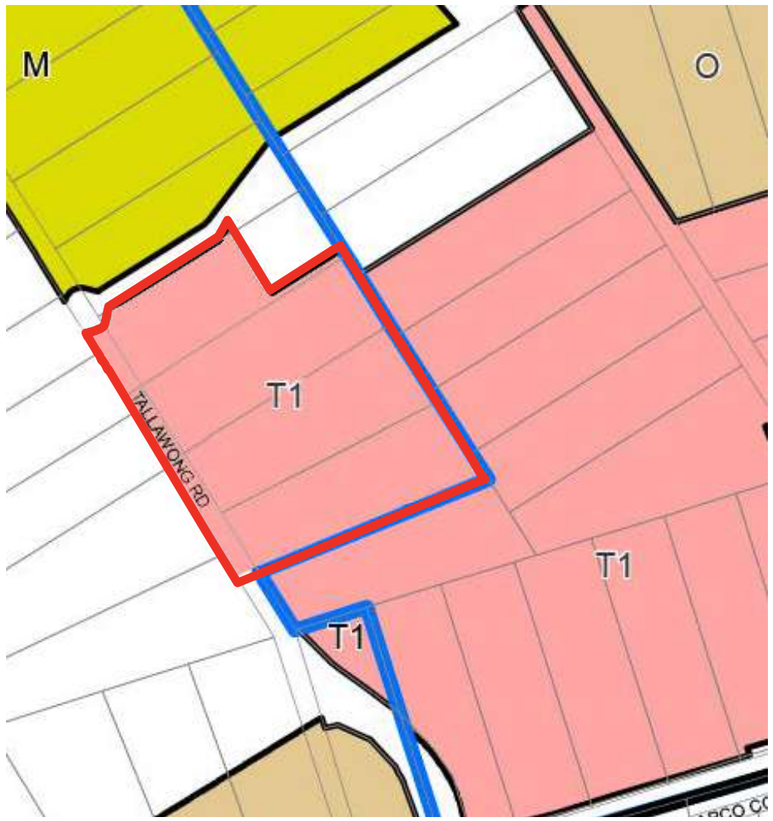
- Subject Site
- Existing Buildings
- Existing Railway Corridor
- Tallawong Metro Station
- Existing Easement
- Proposed Open Space
- R3 Medium Density Residential
- B4 Mixed Use

11.0

Proposed Planning Controls

11.1
Height of Buildings





66 Existing Building Height and Proposed Building Height

Legend

NOT TO SCALE

- Subject Site
- North West Growth Centre Precinct Boundary
- M 12
- O 16
- T1 26
- Cadastre © 20/02/2015 NSW LPI

Legend

NOT TO SCALE

- Subject Site
- North West Growth Centre Precinct Boundary
- M 12
- O 16
- T1 26
- T2 27
- U 33
- W 40
- Cadastre © 20/02/2015 NSW LPI

12.0

Supporting Studies

12.1 Yield Table - Apartment layout

SUMMARY - METRO AWARD

	Unit Type					GFA (m2)	Site Area (m2)	FSR
	1-Bed	1-Bed+	2-Bed	3-Bed	Total			
Block 2	20	20	116	20	176	16,194		
Block 3	32	12	114	15	173	15,684		
Block 4	15	14	96	13	138	14,047		
Block 5	9	11	79	11	110	9,925		
Block 6	17	13	83	13	126	11,463		
Block 7	15	16	92	13	136	12,611		
	108	**86**	**580**	**85**	**859**	**79,924**	**40,469.6**	**2.0**
	13%	10%	67%	10%				

Block 1 - DEPARTMENT OF TRANSPORT

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA/NLA	NSA/NLA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Podium	Ground	4,532	Commercial / Retail	60%	2,719	70%	1,903	0	0	0	0	0	4	4
Podium	1	4,532	Commercial / Retail	75%	3,399	85%	2,889	0	0	0	0	0	4	8
Building	2	2,280	Residential	75%	1,710	85%	1,454	2	2	14	2	20	3.1	11.1
Building	3	2,280	Residential	75%	1,710	85%	1,454	2	2	14	2	20	3.1	14.2
Building	4	2,280	Residential	75%	1,710	85%	1,454	2	2	14	2	20	3.1	17.3
Building	5	2,280	Residential	75%	1,710	85%	1,454	2	2	14	2	20	3.1	20.4
Building	6	2,280	Residential	75%	1,710	85%	1,454	2	2	14	2	20	3.1	23.5
Building	7	2,280	Residential	75%	1,710	85%	1,454	2	2	14	2	20	3.1	26.6
Subtotal		**22,744**			**16,378**	**NSA**	**8,721**	**12**	**12**	**84**	**12**	**120**	**26.6**	
						NLA	**4,793**	10%	10%	70%	10%			

Block 2 - DEPARTMENT OF TRANSPORT

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	Ground	1,112	Residential	75%	834	70%	584	1	1	5	1	8	3.1	0
Building	1	1,112	Residential	75%	834	85%	709	1	1	7	1	10	3.1	3.1
Building	2	1,112	Residential	75%	834	85%	709	1	1	7	1	10	3.1	6.2
Building	3	1,112	Residential	75%	834	85%	709	1	1	7	1	10	3.1	9.3
Building	4	1,112	Residential	75%	834	85%	709	1	1	7	1	10	3.1	12.4
Building	5	1,112	Residential	75%	834	85%	709	1	1	7	1	10	3.1	15.5
Building	6	1,112	Residential	75%	834	85%	709	1	1	7	1	10	3.1	18.6
Building	7	1,112	Residential	75%	834	85%	709	1	1	7	1	10	3.1	21.7
Subtotal		**8,896**			**6,672**		**5,546**	**8**	**8**	**54**	**8**	**78**	**24.8**	
								10%	10%	69%	10%			

Block 2 - METRO AWARD

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	-1	428	Residential	60%	257	70%	180	0	0	2	0	2	3.1	-3.1
Building	Ground	3,128	Residential	75%	2,346	75%	1,760	2	2	17	2	23	3.1	0
Building	1	3,128	Residential	75%	2,346	85%	1,994	3	3	16	3	25	3.1	3.1
Building	2	3,128	Residential	75%	2,346	85%	1,994	3	3	16	3	25	3.1	6.2
Building	3	3,128	Residential	75%	2,346	85%	1,994	3	3	16	3	25	3.1	9.3
Building	4	3,128	Residential	75%	2,346	85%	1,994	3	3	16	3	25	3.1	12.4
Building	5	1,870	Residential	75%	1,403	85%	1,192	2	2	11	2	17	3.1	15.5
Building	6	1,870	Residential	75%	1,403	85%	1,192	2	2	11	2	17	3.1	18.6
Building	7	1,870	Residential	75%	1,403	85%	1,192	2	2	11	2	17	3.1	21.7
Subtotal		**21,678**			**16,194**		**13,492**	**20**	**20**	**116**	**20**	**176**	**27.9**	
								11%	11%	66%	11%			

Block 3 - METRO AWARD

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	-1	490	Residential	60%	294	70%	206	2	2	1	0	5	3.1	0
Building	Ground	3,259	Residential	75%	2,444	75%	1,833	6	2	17	2	27	3.1	3.1
Building	1	3,259	Residential	75%	2,444	85%	2,078	6	2	17	2	27	3.1	6.2
Building	2	3,259	Residential	75%	2,444	85%	2,078	6	2	17	2	27	3.1	9.3
Building	3	3,259	Residential	75%	2,444	85%	2,078	6	2	17	2	27	3.1	12.4
Building	4	2,915	Residential	75%	2,186	85%	1,858	6	2	15	1	24	3.1	15.5
Building	5	1,523	Residential	75%	1,142	85%	971	0	0	10	2	12	3.1	18.6
Building	6	1,523	Residential	75%	1,142	85%	971	0	0	10	2	12	3.1	21.7
Building	7	1,523	Residential	75%	1,142	85%	971	0	0	10	2	12	3.1	24.8
Subtotal		**21,010**			**15,684**		**13,043**	**32**	**12**	**114**	**15**	**173**	**27.9**	
								18%	7%	66%	9%			

Block 4 - METRO AWARD

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA/NLA	NSA/NLA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	-1	585	Residential	60%	351	70%	246	1	0	3	0	4	4	
Building	-1	1,275	Residents / Retail	85%	1,084	90%	975						4.5	4.5
Building	Ground	585	Residential	75%	439	85%	373	1	1	4	0	6	3.1	
Building	Ground	1,060	Residents / Retail	90%	954	90%	859						4.5	4.5
Building	1	2,313	Residential	75%	1,735	85%	1,475	2	2	14	2	20	3.1	7.6
Building	2	2,313	Residential	75%	1,735	85%	1,475	2	2	14	2	20	3.1	10.7
Building	3	2,313	Residential	75%	1,735	85%	1,475	2	2	14	2	20	3.1	13.8
Building	4	2,313	Residential	75%	1,735	85%	1,475	2	2	14	2	20	3.1	16.9
Building	5	2,313	Residential	75%	1,735	85%	1,475	2	2	14	2	20	3.1	20
Building	6	2,313	Residential	75%	1,735	85%	1,475	2	2	14	2	20	3.1	23.1
Building	7	1,081	Residential	75%	811	85%	689	1	1	5	1	8	3.1	26.2
Subtotal		**18,464**			**14,047**	**NSA**	**10,155**	**15**	**14**	**96**	**13**	**138**	**33.3**	
						NLA	**859**	11%	10%	70%	10%			

Block 5 - METRO AWARD

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	-1	1,138	Residential	60%	683	70%	478	1	1	3	1	6	3.1	-3.1
Building	Ground	1,862	Residential	75%	1,397	75%	1,047	2	1	10	1	14	3.1	3.1
Building	1	1,862	Residential	75%	1,397	85%	1,187	1	2	11	2	16	3.1	6.2
Building	2	1,862	Residential	75%	1,397	85%	1,187	1	2	11	2	16	3.1	9.3
Building	3	1,862	Residential	75%	1,397	85%	1,187	1	2	11	2	16	3.1	12.4
Building	4	1,625	Residential	75%	1,219	85%	1,036	1	1	11	1	14	3.1	15.5
Building	5	1,625	Residential	75%	1,219	85%	1,036	1	1	11	1	14	3.1	18.6
Building	6	1,625	Residential	75%	1,219	85%	1,036	1	1	11	1	14	3.1	21.7
Subtotal		**13,461**			**9,925**		**8,194**	**9**	**11**	**79**	**11**	**110**	**24.8**	
								9%	10%	72%	10%			

Block 6 - METRO AWARD

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	-1	1,002	Residential	60%	601	70%	421	1	1	4	0	6	3.1	-3.1
Building	Ground	2,068	Residential	75%	1,551	75%	1,163	2	1	11	2	16	3.1	3.1
Building	1	2,068	Residential	75%	1,551	85%	1,318	2	2	11	2	17	3.1	6.2
Building	2	2,068	Residential	75%	1,551	85%	1,318	2	2	11	2	17	3.1	9.3
Building	3	2,068	Residential	75%	1,551	85%	1,318	2	2	11	2	17	3.1	12.4
Building	4	2,068	Residential	75%	1,551	85%	1,318	2	2	11	2	17	3.1	15.5
Building	5	1,381	Residential	75%	1,036	85%	880	2	1	8	1	12	3.1	18.6
Building	6	1,381	Residential	75%	1,036	85%	880	2	1	8	1	12	3.1	21.7
Building	7	1,381	Residential	75%	1,036	85%	880	2	1	8	1	12	3.1	24.8
Subtotal		**15,485**			**11,463**		**9,499**	**17**	**13**	**83**	**13**	**126**	**27.9**	
								13%	10%	66%	10%			

Block 7 - METRO AWARD

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	-1	720	Residential	60%	432	70%	302	0	1	3	0	4	3.1	-3.1
Building	Ground	1,776	Residential	75%	1,332	75%	999	1	1	10	2	14	3.1	3.1
Building	1	2,288	Residential	75%	1,716	85%	1,459	2	2	13	2	19	3.1	6.2
Building	2	2,288	Residential	75%	1,716	85%	1,459	2	2	13	2	19	3.1	9.3
Building	3	2,288	Residential	75%	1,716	85%	1,459	2	2	13	2	19	3.1	12.4
Building	4	2,288	Residential	75%	1,716	85%	1,459	2	2	13	2	19	3.1	15.5
Building	5	1,770	Residential	75%	1,328	85%	1,128	2	2	9	1	14	3.1	18.6
Building	6	1,770	Residential	75%	1,328	85%	1,128	2	2	9	1	14	3.1	21.7
Building	7	1,770	Residential	75%	1,328	85%	1,128	2	2	9	1	14	3.1	24.8
Subtotal		**16,958**			**12,611**		**10,521**	**15**	**16**	**92**	**13**	**136**	**27.9**	
								11%	12%	68%	10%			

SUMMARY - 50-58 Tallawong Road

	Unit Type					GFA (m2)	Site Area (m2)	FSR	Density (dwellings per hectare)
	1-Bed	1-Bed+	2-Bed	3-Bed	Total				
Block 8	11	14	98	24	147	15,206			
Block 9	14	20	58	8	100	8,694			
Block 10	24	23	91	20	158	16,070			
Block 11	14	15	106	19	154	14,978			
Block 12	12	10	74	14	110	11,409			
	75	**82**	**427**	**85**	**669**	**66,356**	**33,757.0**	**2.0**	**198**
	11%	12%	64%	13%					

Block 8 - 50-58 Tallawong Road

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	Ground	2,708	Residential	75%	2,031	70%	1,422	1	2	11	3	17	3.1	0
Building	1	2,708	Residential	75%	2,031	85%	1,726	2	2	13	3	20	3.1	3.1
Building	2	2,708	Residential	75%	2,031	85%	1,726	2	2	13	3	20	3.1	6.2
Building	3	2,708	Residential	75%	2,031	85%	1,726	2	2	13	3	20	3.1	9.3
Building	4	2,708	Residential	75%	2,031	85%	1,726	2	2	13	3	20	3.1	12.4
Building	5	2,708	Residential	75%	2,031	85%	1,726	2	2	13	3	20	3.1	15.5
Building	6	2,013	Residential	75%	1,510	85%	1,283	0	1	11	3	15	3.1	18.6
Building	7	2,013	Residential	75%	1,510	85%	1,283	0	1	11	3	15	3.1	21.7
Subtotal		**20,274**			**15,206**		**12,620**	**11**	**14**	**98**	**24**	**147**	**24.8**	
								7%	10%	67%	16%	100%		

Block 9 - 50-58 Tallawong Road

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	Ground	1,825	Residential	75%	1,369	70%	958	0	4	6	2	12	3.1	0
Building	1	1,825	Residential	75%	1,369	85%	1,163	2	4	8	2	16	3.1	3.1
Building	2	1,825	Residential	75%	1,369	85%	1,163	2	2	10	2	16	3.1	6.2
Building	3	1,825	Residential	75%	1,369	85%	1,163	2	2	10	2	16	3.1	9.3
Building	4	1,073	Residential	75%	805	85%	684	2	2	6	0	10	3.1	12.4
Building	5	1,073	Residential	75%	805	85%	684	2	2	6	0	10	3.1	15.5
Building	6	1,073	Residential	75%	805	85%	684	2	2	6	0	10	3.1	18.6
Building	7	1,073	Residential	75%	805	85%	684	2	2	6	0	10	3.1	21.7
Subtotal		**11,592**			**8,694**		**7,185**	**14**	**20**	**58**	**8**	**100**	**24.8**	
								14%	20%	58%	8%			

Block 10 - 50-58 Tallawong Road

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	Ground	2,874	Residential	75%	2,156	70%	1,509	3	4	8	1	16	3.1	0
Building	1	2,874	Residential	75%	2,156	85%	1,832	3	3	13	3	22	3.1	3.1
Building	2	2,874	Residential	75%	2,156	85%	1,832	3	3	13	3	22	3.1	6.2
Building	3	2,874	Residential	75%	2,156	85%	1,832	3	3	13	3	22	3.1	9.3
Building	4	2,874	Residential	75%	2,156	85%	1,832	3	3	13	3	22	3.1	12.4
Building	5	2,874	Residential	75%	2,156	85%	1,832	3	3	13	3	22	3.1	15.5
Building	6	2,091	Residential	75%	1,568	85%	1,333	3	2	9	2	16	3.1	18.6
Building	7	2,091	Residential	75%	1,568	85%	1,333	3	2	9	2	16	3.1	21.7
Subtotal		**21,426**			**16,070**		**13,336**	**24**	**23**	**91**	**20**	**158**	**24.8**	
								15%	15%	58%	13%			

Block 11 - 50-58 Tallawong Road

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	Ground	2,729	Residential	75%	2,047	70%	1,433	0	1	13	2	16	3.1	0
Building	1	2,729	Residential	75%	2,047	85%	1,740	2	2	15	3	22	3.1	3.1
Building	2	2,729	Residential	75%	2,047	85%	1,740	2	2	15	3	22	3.1	6.2
Building	3	2,729	Residential	75%	2,047	85%	1,740	2	2	15	3	22	3.1	9.3
Building	4	2,729	Residential	75%	2,047	85%	1,740	2	2	15	3	22	3.1	12.4
Building	5	2,729	Residential	75%	2,047	85%	1,740	2	2	15	3	22	3.1	15.5
Building	6	1,798	Residential	75%	1,349	85%	1,146	2	2	9	1	14	3.1	18.6
Building	7	1,798	Residential	75%	1,349	85%	1,146	2	2	9	1	14	3.1	21.7
Subtotal		**19,970**			**14,978**		**12,424**	**14**	**15**	**106**	**19**	**154**	**24.8**	
								9%	10%	69%	12%	100%		

Block 12 - 50-58 Tallawong Road

Building Element	Level	GBA(m2)	Use	% of Building Envelope as GFA	GFA	% of Building Envelope as NSA	NSA	Unit Type					Height (m)	Accumulative Height (m)
								1-Bed	1-Bed+	2-Bed	3-Bed	Total		
Building	Ground	2,070	Residential	75%	1,553	70%	1,087	2	3	7	1	13	3.1	0
Building	1	2,070	Residential	75%	1,553	85%	1,320	2	1	9	1	13	3.1	3.1
Building	2	2,070	Residential	75%	1,553	85%	1,320	2	1	11	2	16	3.1	6.2
Building	3	2,070	Residential	75%	1,553	85%	1,320	2	1	11	2	16	3.1	9.3
Building	4	2,070	Residential	75%	1,553	85%	1,320	2	1	11	2	16	3.1	12.4
Building	5	2,070	Residential	75%	1,553	85%	1,320	2	1	11	2	16	3.1	15.5
Building	6	1,396	Residential	75%	1,047	85%	890	0	1	7	2	10	3.1	18.6
Building	7	1,396	Residential	75%	1,047	85%	890	0	1	7	2	10	3.1	21.7
Subtotal		**15,212**			**11,409**		**9,465**	**12**	**10**	**74**	**14**	**110**	**24.8**	
								11%	9%	67%	13%	100%		

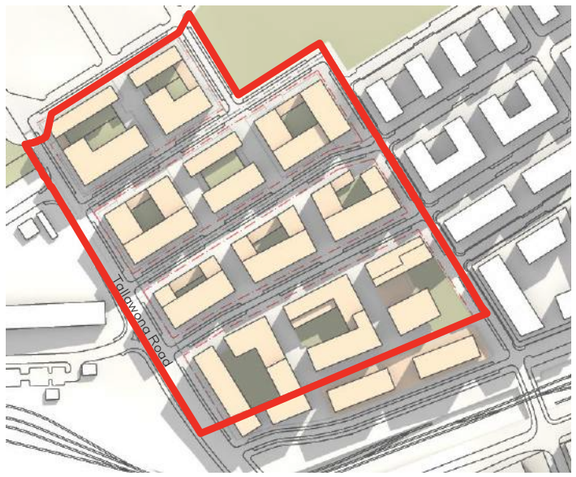
12.2
Shadow Diagrams

69 9am 21 June

Legend

Subject Site

NOT TO SCALE



70 10am 21 June

Legend

Subject Site

NOT TO SCALE

71 11am 21 June

Legend

Subject Site

NOT TO SCALE

72 12pm 21 June

Legend

Subject Site

NOT TO SCALE

73 1pm 21 June

Legend

Subject Site

NOT TO SCALE

74 2pm 21 June

Legend

Subject Site

NOT TO SCALE

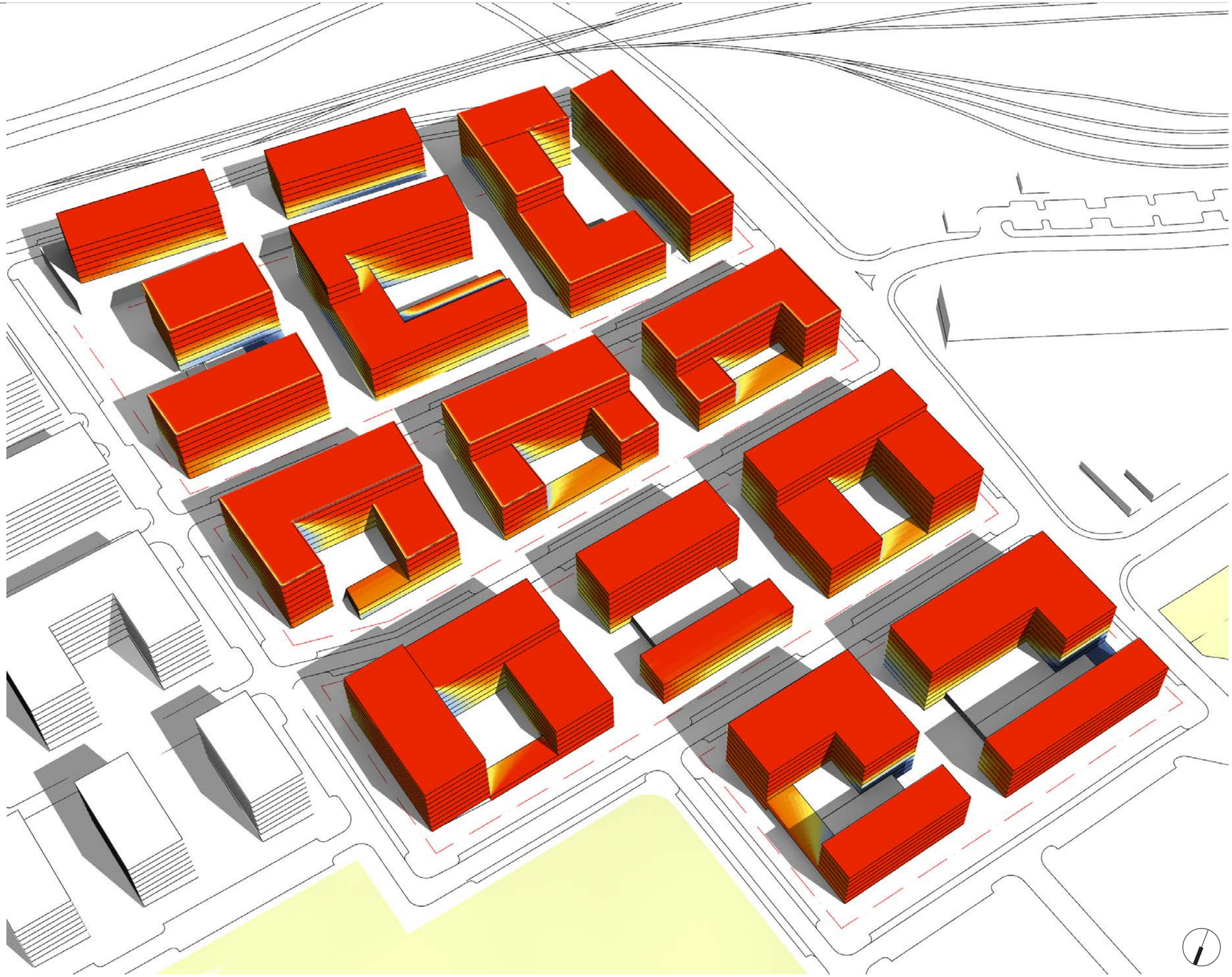
75 3pm 21 June

Legend

Subject Site

NOT TO SCALE

12.3
Solar Access Building Envelope



HOURS OF DIRECT SUNLIGHT

- >6 hrs
- 5.75 hrs
- 5.5 hrs
- 5.25 hrs
- 5 hrs
- 4.75 hrs
- 4.5 hrs
- 4.25 hrs
- 4 hrs
- 3.75 hrs
- 3.5 hrs
- 3.25 hrs
- 3 hrs
- 2.75 hrs
- 2.5 hrs
- 2.25 hrs
- 2 hrs

2 hours or more direct sunlight between 9am and 3pm

- 1.75 hrs
- 1.5 hrs
- 1.25 hrs
- 1 hrs
- 0.75 hrs
- < = 0.25 hrs
- Context

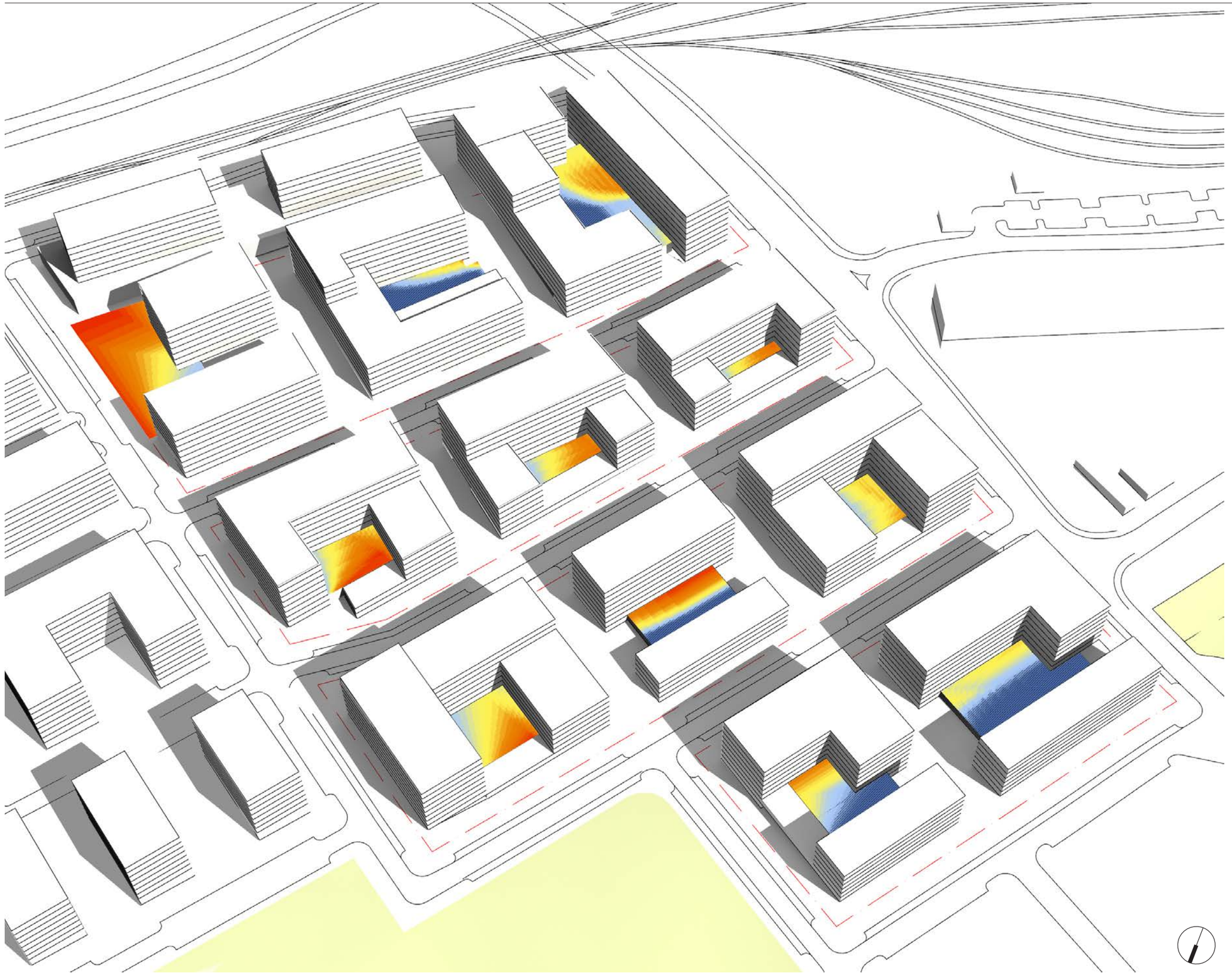
2 hours or less direct sunlight between 9am and 3pm

Legend

////////// ADG Non-Compliance Surface

76 Hours of Direct Sunlight onto Apartment Units

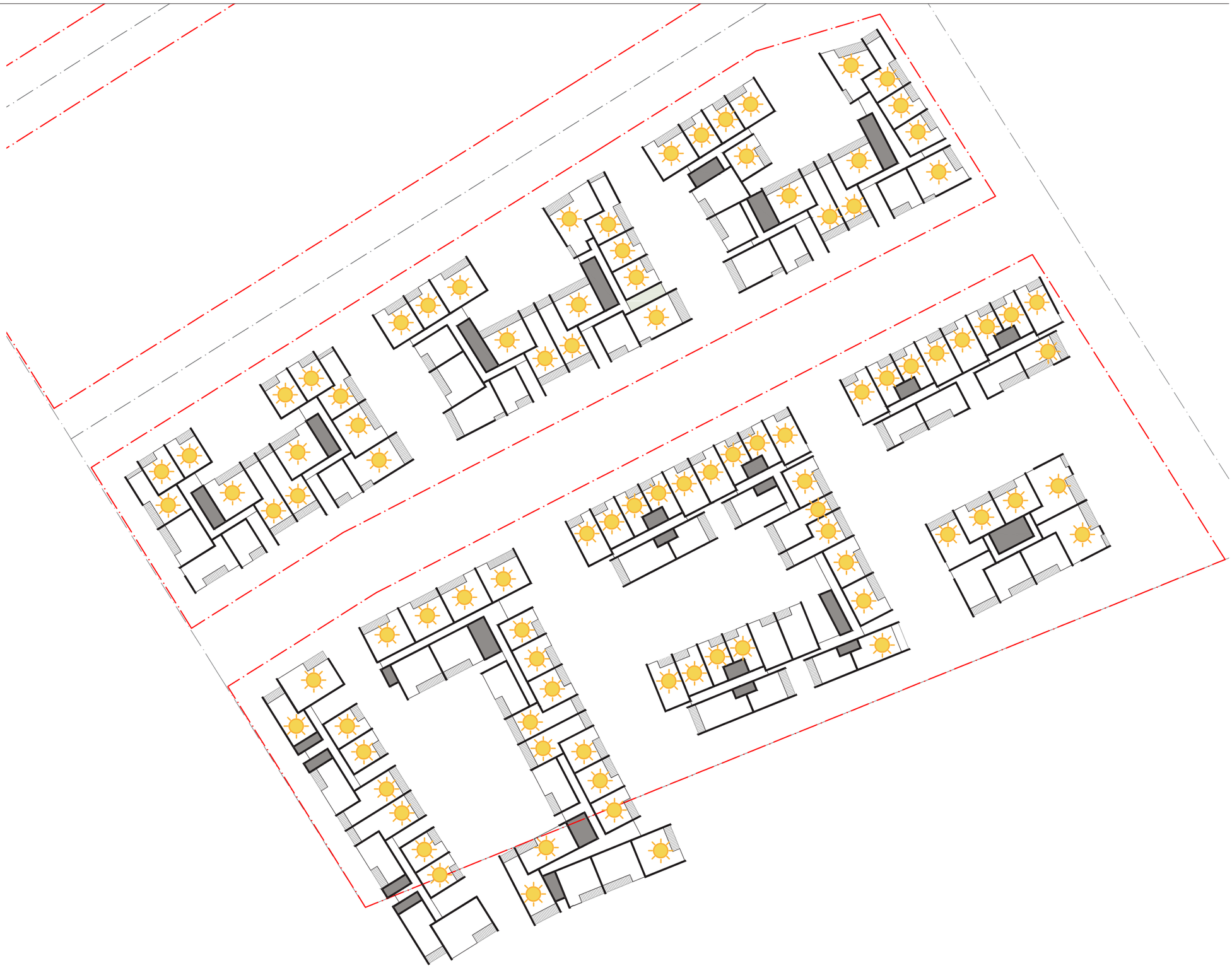
12.4 Solar Access Square and Communal Space



77 Hours of Direct Sunlight onto Open Space

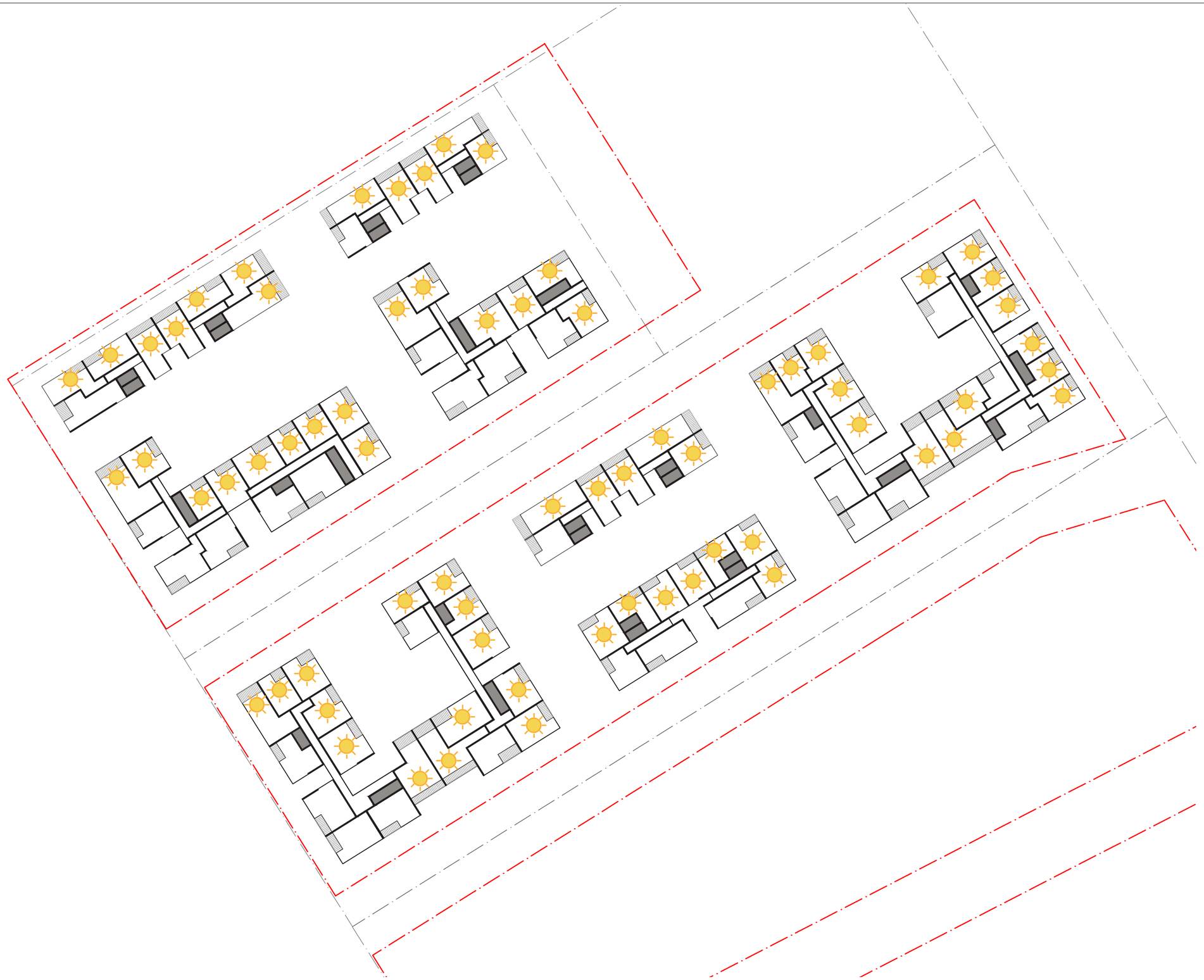
12.5 Indicative Typical Floor Plan and Solar Access

The indicative typical floor plans illustrate how solar access compliance with the Apartment Design Guide (ADG) may be achieved on 34-42 Tallawong Road (noting that 50-58 Tallawong Road is on the page following). As previously discussed due to the Subject Site's orientation only two faces of buildings will achieve two hours of sun light in mid-winter. Hence the majority of units will need to be located on these two sides. This approach will also mean that apartments will face away from the stabling yard and potential noise and light impacts will be ameliorated. The layout shown includes 132 units of which 96 or 73% comply with ADG requirements. As this is a mid-level typical floor plan this percentage number may be higher as the upper levels which will have fewer units tend to perform better.



78 Typical Apartment Level Floor Plan - 34-42 Tallawong Road

1:1000 @ A3



78 Typical Apartment Level Floor Plan - 50-58 Tallawong Road

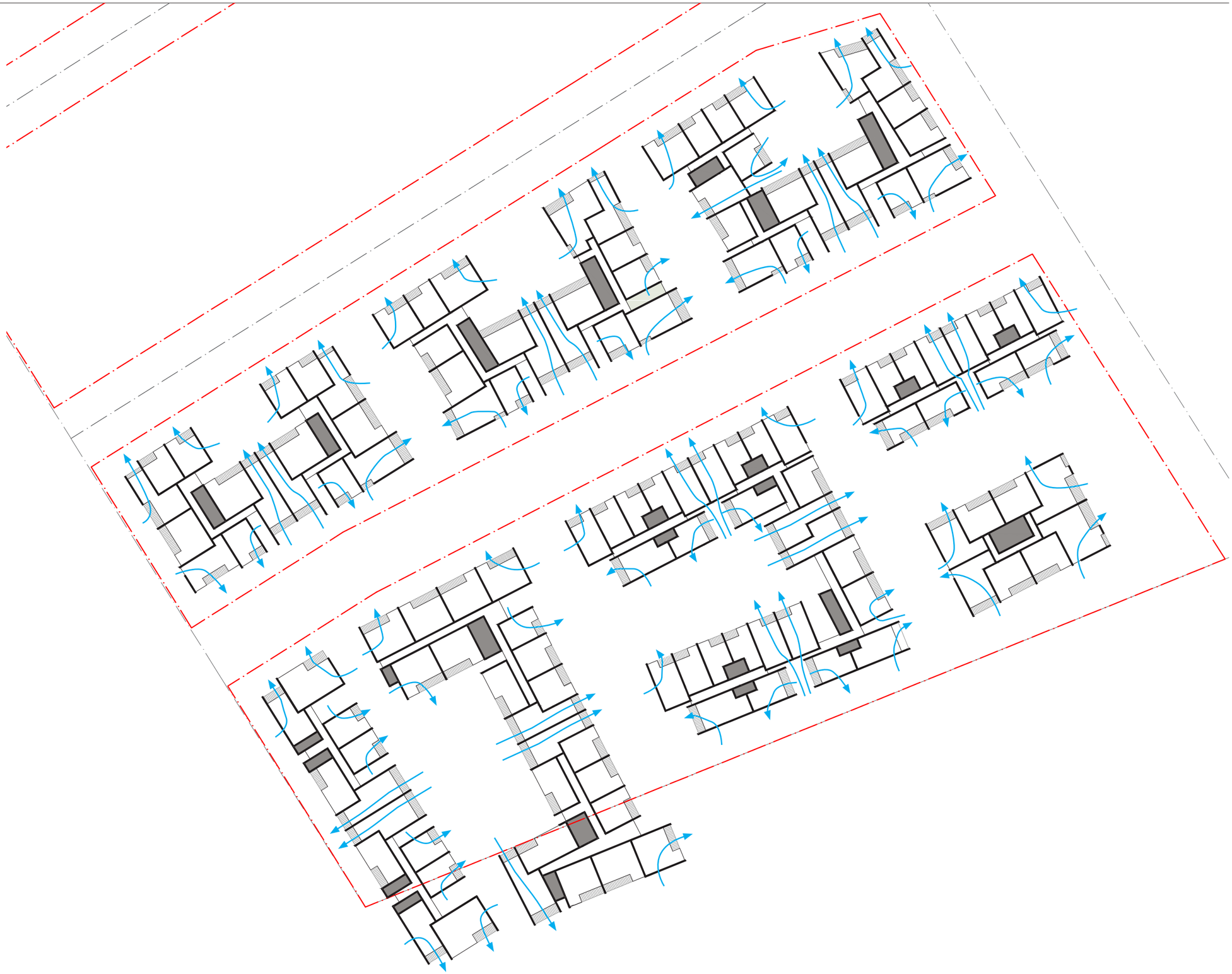
1:1000 @ A3

12.5 Indicative Typical Floor Plan and Solar Access

The indicative typical floor plans illustrate how solar access compliance with the Apartment Design Guide (ADG) may be achieved on 50-58 Tallawong Road. As previously discussed due to the Subject Site's orientation only two faces of buildings will achieve two hours of sun light in mid-winter. Hence the majority of units will need to be located on these two sides. This approach will also mean that apartments will face away from the stabling yard and potential noise and light impacts will be ameliorated. The layout shown includes 96 units of which 68 or 71% comply with ADG requirements. As this is a mid-level typical floor plan this percentage number may be higher as the upper levels which will have fewer units tend to perform better.

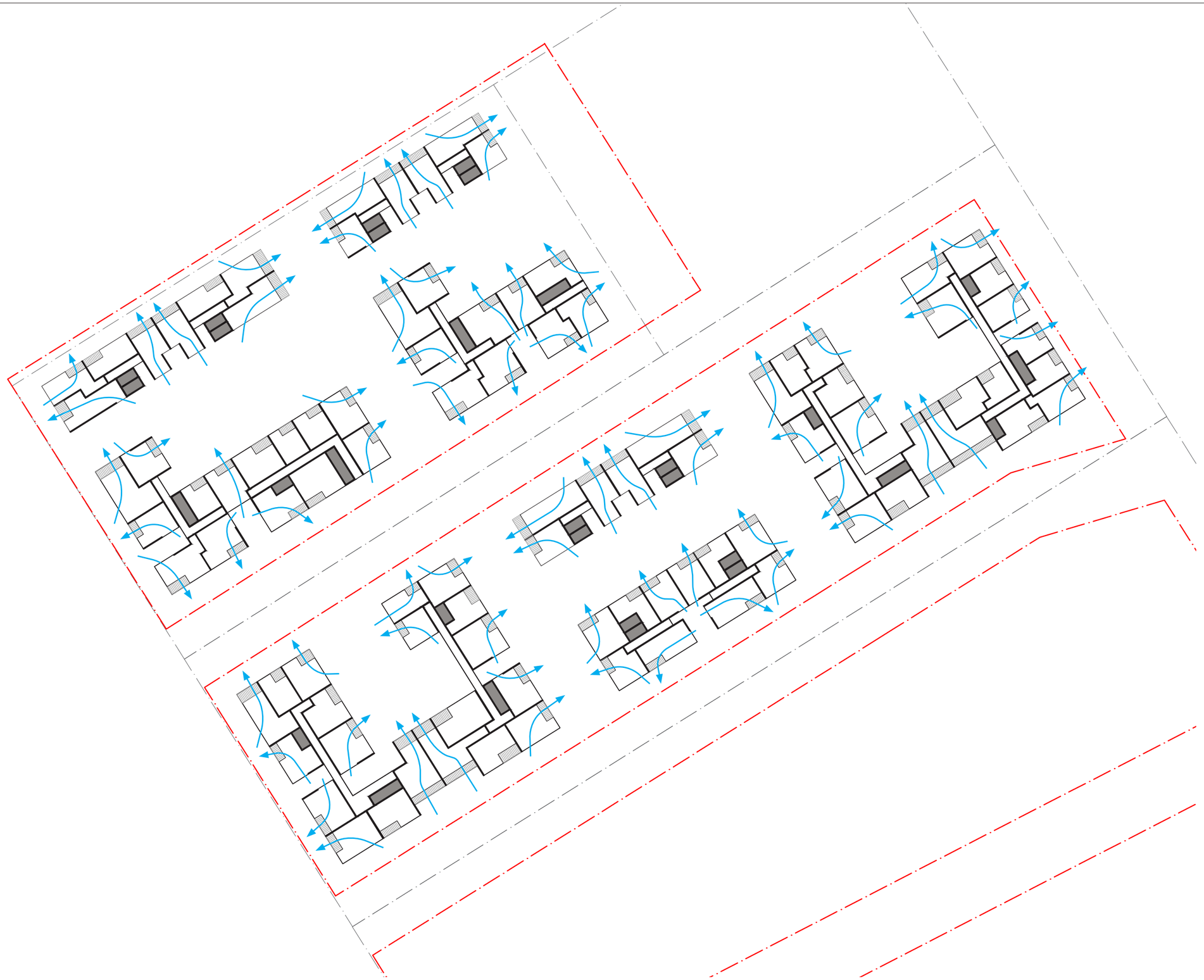
12.6 Indicative Typical Floor Plan and Cross/Corner Ventilation

The indicative typical floor plans illustrate how cross ventilation compliance with the Apartment Design Guide (ADG) may be achieved on 34-42 Tallawong Road (noting that 50-58 Tallawong Road is on the page following). The layout shown includes 132 units of which 79 or 60% comply with ADG requirements. As this is a mid-level typical floor plan this percentage number may be higher as upper level floor plans with fewer units tend to perform better proportionally. Top floors also have the opportunity to ventilate through the roof.



79 Typical Apartment Level Floor Plan - 34-42 Tallawong Road

1:1000 @ A3



12.6 Indicative Typical Floor Plan and Cross/Corner Ventilation

The indicative typical floor plans illustrate how cross ventilation compliance with the Apartment Design Guide (ADG) may be achieved on 50-58 Tallawong Road. The layout shown includes 96 units of which 73 or 76% comply with ADG requirements. As this is a mid-level typical floor plan this percentage number may be higher as upper level floor plans with fewer units tend to perform better proportionally. Top floors also have the opportunity to ventilate through the roof.

79 Typical Apartment Level Floor Plan - 50-58 Tallawong Road

1:1000 @ A3

ETHOS

URBAN