

North West Rail Link Cudgegong Road Station Structure Plan

A Vision for Cudgegong Road Station Surrounds



Cudgegong Road Structure Plan

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Cudgegong Road Structure Plan

1. Introduction

1.1 CONTEXT

The North West Rail Link (NWRL) is a priority transport infrastructure project for the NSW Government. The NWRL will include eight new stations and services as part of a 23 kilometre link, running from Epping to Cudgegong in north west Sydney, connecting with the Epping to Chatswood Rail Link (ECRL) and Sydney's wider rail network.

The north west of Sydney is expected to experience high growth with the need for new dwellings and additional jobs to meet demand. To sustainably manage this growth, metropolitan planning aims to provide for a more compact, accessible city, capable of supporting more jobs, homes and lifestyle opportunities within close proximity of public transport.

The delivery of a new rail line in the North West is a significant investment in public infrastructure and represents an opportunity to carefully consider the wider implications of rail and to comprehensively plan for the future. The North West has great potential to become a major transport-oriented corridor, delivering a significant amount of housing and employment, high levels of self-containment and an unrivalled level of amenity and lifestyle within a desirable residential community.

The NWRL will meet the challenge of future growth, by:

- **Providing rail access** between North West Sydney and Epping, Macquarie University, Macquarie Park, Chatswood, St Leonards, North Sydney and the Sydney Central Business District (CBD), including new rail services to existing centres in the Hills District, such as Castle Hill, Rouse Hill and Norwest Business Park.
- **Reducing vehicle trips**, when rail is introduced to the North West all modes of public transport will become a more attractive and accessible alternative to the private motor vehicle.
- **Improving travel times** from, to and within the North West and delivering a reliable, dependable service which surpasses that of the bus or car.

1.2 REPORT STRUCTURE

This study has determined the challenges and opportunities a new station will present to the Cudgegong Road locality, culminating in a collective vision and Structure Plan for the station precinct, to guide the future character of the Study Area and to reinforce the delivery of the NWRL and a new station at Cudgegong Road. In preparing the Structure Plan, consideration has been given to the following:

- 1. Role of the Study Area in the NWRL corridor.** Consideration is given to the role the Study Area will perform within the rail corridor and the North West.
- 2. Analysis of the physical characteristics.** A comprehensive site analysis has been undertaken to ascertain the natural and physical opportunities and constraints of the Study Area. Please refer to *Section 2: Opportunities & Constraints Analysis*.
- 3. Analysis of the existing planning controls in the Study Area.** The key planning controls that apply to the Study Area have been examined to determine their ability to respond to a new rail link and station. Please refer to *Section 3: Current Planning Controls*.
- 4. Identification of Opportunities for Growth.** Sites that may contribute to the growth of the Study Area in response to a new rail link and station have been identified. Please refer to *Section 4: Opportunities for Growth*.
- 5. Vision for the Study Area.** The overall vision for the Study Area is informed by the above analysis. This vision will be realised through the Structure Plan, which provides an overall guide to the future character of the Study Area. Please refer to *Section 5: Vision and Structure Plan*
- 6. Actions and Implementation.** To achieve the overall vision for the Study Area, a series of actions to be undertaken, have been identified. Please refer to *Section 6: Actions and Implementation*

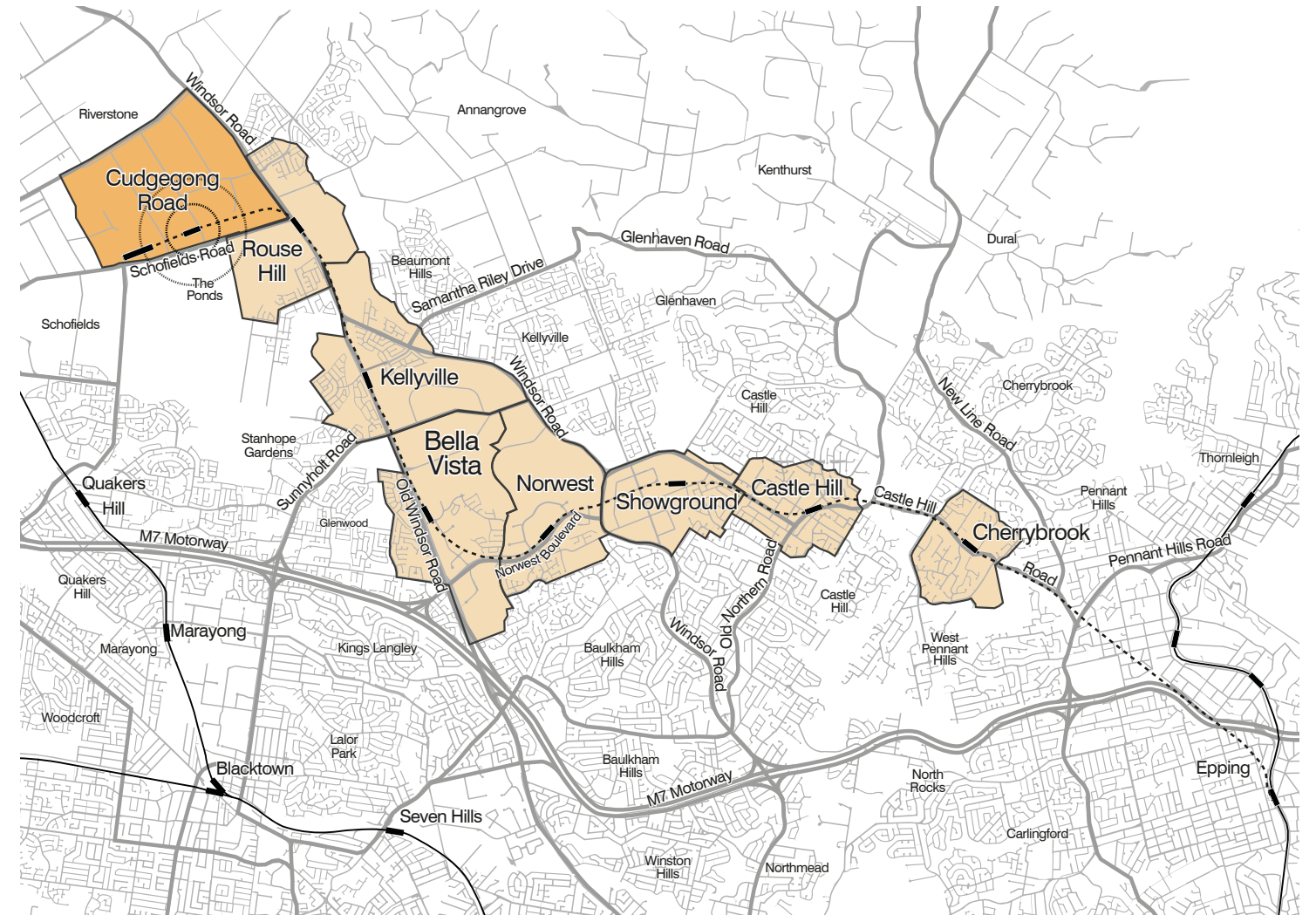


Figure 1: Cudgegong Road Study Area, in the context of the North West Rail Link.



1.3 STUDY AREA LOCALITY & CHARACTER

The NWRL includes a new station at Cudgegong Road. The new train station will be located slightly north of the intersection of Cudgegong Road and Schofields Road.

The Cudgegong Road Area is within the North West Growth Centre and has been identified within two growth centre release area precincts, Riverstone East and Area 20. Planning for the Riverstone East Precinct is yet to be undertaken by the Department of Planning and Infrastructure. The Area 20 Precinct was rezoned for urban development in October 2011 by the Minister for Planning and Infrastructure.

Area 20 will deliver capacity for approximately 2,500 new dwellings to accommodate 6,400 residents. The Area 20 Plan makes provision for the proposed North West Rail Link corridor, railway station, commuter car parks and part of the train stabling yard. It also creates a village centre linked to the station, complementing the surrounding residential use and Rouse Hill Town Centre. The North West Growth Centre Structure Plan identifies the Riverstone East Precinct as a predominantly residential precinct with a capacity for 6,000 dwellings.

The boundary of the Study Area is based on the nearest road boundary within a radius of 800m from Cudgegong Road Station, which is a distance normally considered to reflect a 10 minute walking trip. The boundary has also been defined by taking into account the existing character, predominant land uses, built form and natural elements of the area.

Currently, the Cudgegong Road Area consists of predominantly rural residential, intensive animal and agricultural activities, with some utilities infrastructure and an Anglican College. Some areas of remnant native bushland and the Second Ponds Creek corridor remain. It is bounded by Schofields Road to the south, Windsor Road to the east, First Ponds Creek to the west and Guntawong Road to the North. The Precinct is strategically located opposite Rouse Hill Town Centre.

The NWRL will support Cudgegong Road's role as a Village Centre, by supporting growth in and around the station. This will also help achieve metropolitan planning goals to locate a significant proportion of new housing within walking distance of centres, like the Cudgegong Road village centre, that have good public transport. This will assist in reducing car dependence and to make walking, cycling and public transport more viable for residents.



Figure 2: Cudgegong Road Station Study Area, showing station location, Study Area boundary and key land uses
Source: Google Maps 2012

Cudgegong Road Structure Plan

2. Opportunities & Constraints Analysis

2.1 INTRODUCTION

This section assesses the opportunities and constraints within the Study Area. The physical characteristics of the Study Area have been mapped and analysed. The characteristics include; transport, traffic and accessibility; open space networks and ecology; topography and landslip; drainage and hydrology; bushfire risk; and infrastructure easements. Constraints related to recent development, heritage, strata-title and community-title have also been examined.

The combination of these elements will reveal the overall level of constraint within the Study Area and highlight those sites which have the opportunity to change in response to a new rail link and station at Cudgegong Road.

The analysis of the information contained within sections 2, 3 and 4 of this report have been drawn from a number of sources including;

- Blacktown Council;
- Department of Planning and Infrastructure;
- Land and Property Information Division of NSW; and
- Transport for NSW



Figure 3: Photos showing existing character of the Cudgegong Road Study Area
Source: TfNSW



Cudgegong Road Structure Plan

2. Opportunities & Constraints Analysis

2.2 TRANSPORT, TRAFFIC & ACCESSIBILITY

The Study Area is accessible from two principle routes – Windsor Road and Schofields Road. Windsor Road bounds the Study Area to the east and traverses north-south linking Windsor to the CBD (via the M²) and important employment centres, such as Norwest Business Park and Macquarie Park. Schofields Road provides the main east-west arterial road linking Riverstone to Rouse Hill.

Internally, the street layout is made up of local roads in a large grain street network. Permeability for all transport modes is poor, typical of large lot rural residential areas.

The local bus network connects Cudgegong Road to Rouse Hill, Kellyville, Norwest and the CBD/Macquarie Park via Windsor Road and the M² Motorway. However, service is often time consuming, indirect and infrequent.

Figure 4 below demonstrates the 5, 10 and 20 minute walking catchments from the proposed station location. Within the Study Area, pedestrian and cycling accessibility is restricted by barriers such as crossing the major arterial route of Schofields Road and the lack of permeability associated with the large grain street network within the Study Area. Old Windsor Road is also a potential barrier for pedestrian and cycle movements west, towards the established residential areas and Rouse Hill Regional Centre.



Figure 4: Walking Catchment within the Study Area

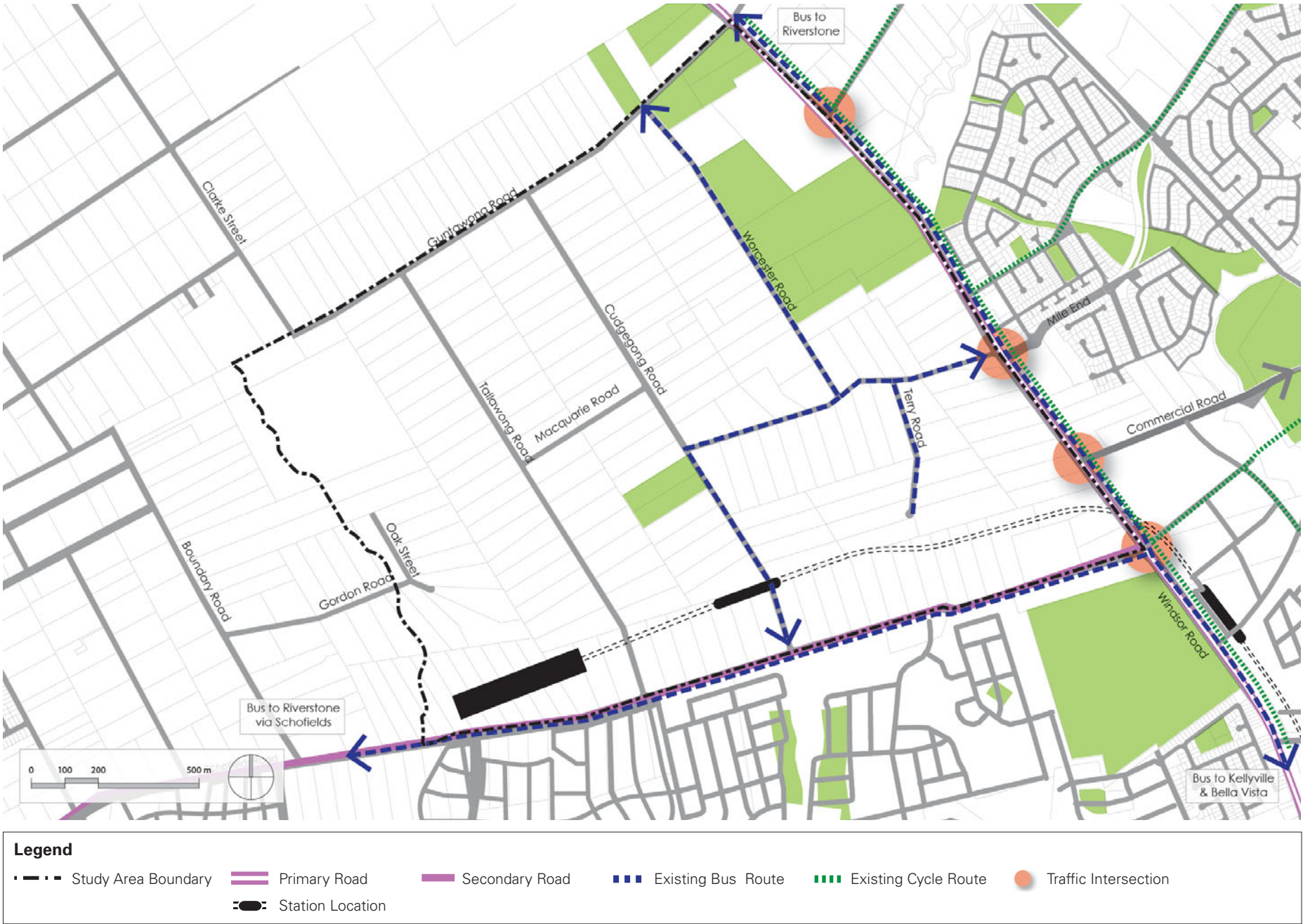


Figure 5: Access & Movement within the Study Area



2.3 OPEN SPACE & CONSERVATION

Within the Study Area is one major park, Rouse Hill Regional Park, located in the north east of the site, and a pocket park, located along Cudgegong Road. Rouse Hill Regional Park represents a significant recreational facility for the area. These spaces are worthy of retention and enhancement, and are candidates for proposals under any future open space/public domain strategies.

The Study Area contains large tracts of Shale Plains Woodland, classified as a Critically Endangered Ecological Community under the *Environment Protection and Biodiversity Conservation Act (EPBC) 1999* and the *NSW Threatened Species Conservation Act 1995*. Where sensitive vegetation is located within government owned lands in the east, there are opportunities to protect the vegetation and provide public open space.

The Study Area also contains concentrations of Shale/Sandstone Transition Forest, listed as an Endangered Ecological Community under both the *Threatened Species Conservation Act 1995* and the *Environment Protection and Biodiversity Conservation Act (EPBC) 1999*, located in the north and in the Second Ponds creek riparian corridor in the east.

Tracts of Alluvial Woodland, listed as Endangered Ecological Community under the *Threatened Species Conservation Act 1995*, are located in the west and along the Second Ponds creek riparian corridor.

Detailed ecological studies will be required to identify impacts on native vegetation and threatened flora and fauna as part of any future rezoning investigations within the Study Area.

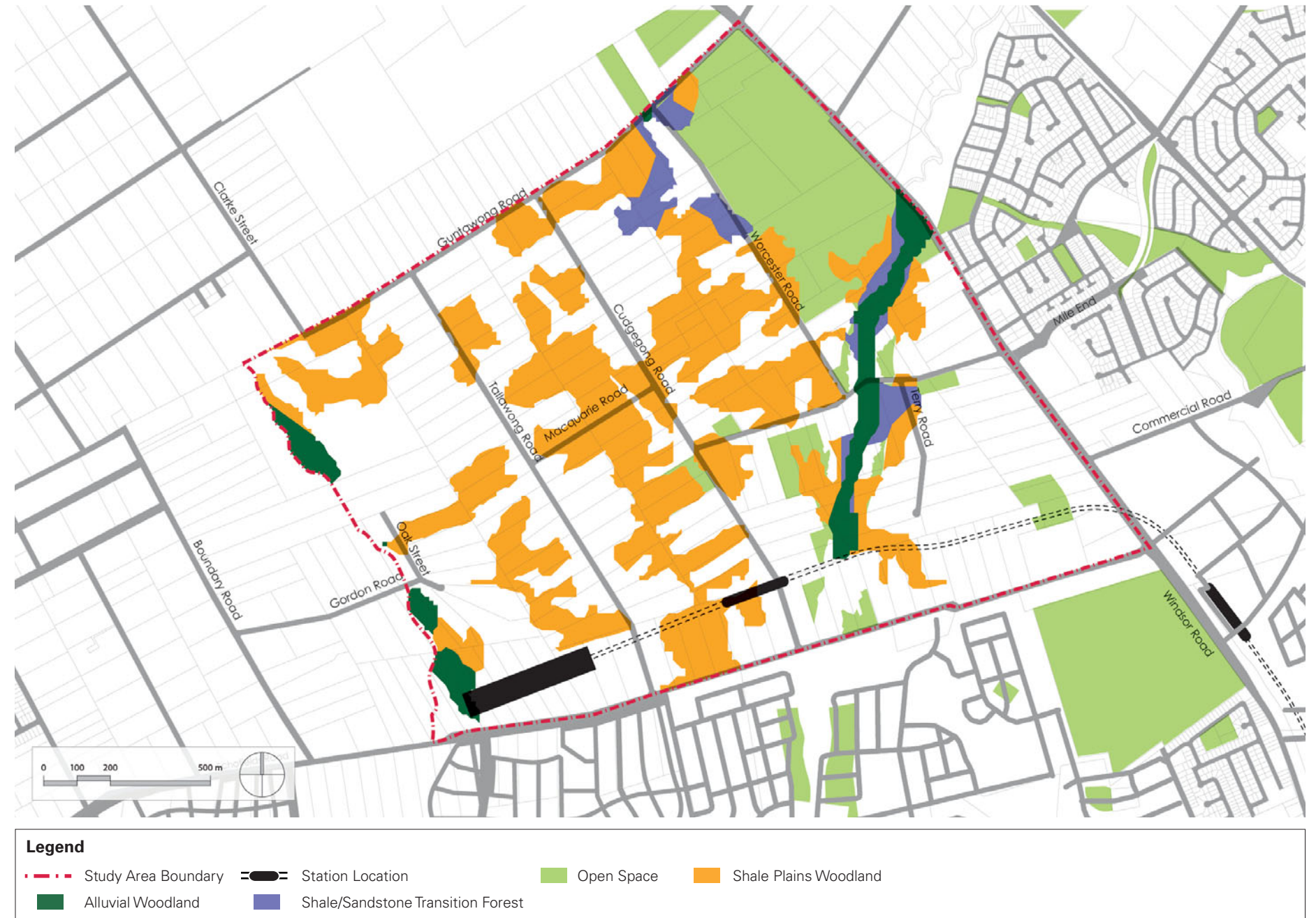


Figure 6: Open Space & Conservation within the Study Area

Cudgegong Road Structure Plan

2. Opportunities & Constraints Analysis

2.4 HERITAGE & SPECIAL USES

Figure 7 shows the site within the Study Area that accommodates a special use - the Rouse Hill Anglican College located along Worcester Road.

One general heritage item is located within the Study Area. This is the Rouse Hill House and Farm located on Windsor Road, which is of State significance and listed on the State Heritage Register. An archaeological heritage item and a number of general heritage items are located to the east and south-east of the Study Area. This includes a portion of the Windsor Road corridor. There are no heritage conservation areas located within the Study Area.

The Structure Plan seeks to protect the heritage items identified in *Figure 7: Heritage & Special Uses* within the Study Area.



Figure 7: Heritage & Special Uses within the Study Area



2.5 TOPOGRAPHY

The topography within the Study Area is characterised by two ridgelines that run south-north across Schofields Road and fall gently away to two drainage lines, Second Ponds Creek to the east and First Ponds Creek to the west.

Heights within the Study Area range between approximately 40-70 metres above sea level. The highest point within the Study Area is located north west of the Rouse Hill Anglican College.

Slope analysis of the Study Area shows that land levels are highest in the south east surrounding the shale quarry on Schofields Road and within the centre of the Study Area at the junction of Cudgegong and Macquarie Roads.



Figure 8: Topography within the Study Area

Cudgegong Road Structure Plan

2. Opportunities & Constraints Analysis

2.6 DRAINAGE

The station is located parallel to Schofields Road and within the Second Ponds Creek corridor catchment. This and the First Ponds Creek catchment drain into the Hawkesbury River catchment which lies to the north.

The predominantly rural land and areas of open space adjoining First Ponds Creek and Second Ponds Creek are subject to varying degrees of flooding risk. Further investigation may be required at any future re-zoning or development application stage to establish appropriate flood planning levels.

Similarly, given the location at the start of significant drainage catchments, controls governing stormwater capture, treatment and re-use will need to be devised to govern any future growth within the Study Area.

The flooding information captured in this report is preliminary and a detailed flooding study will need to be undertaken at master plan or rezoning level.

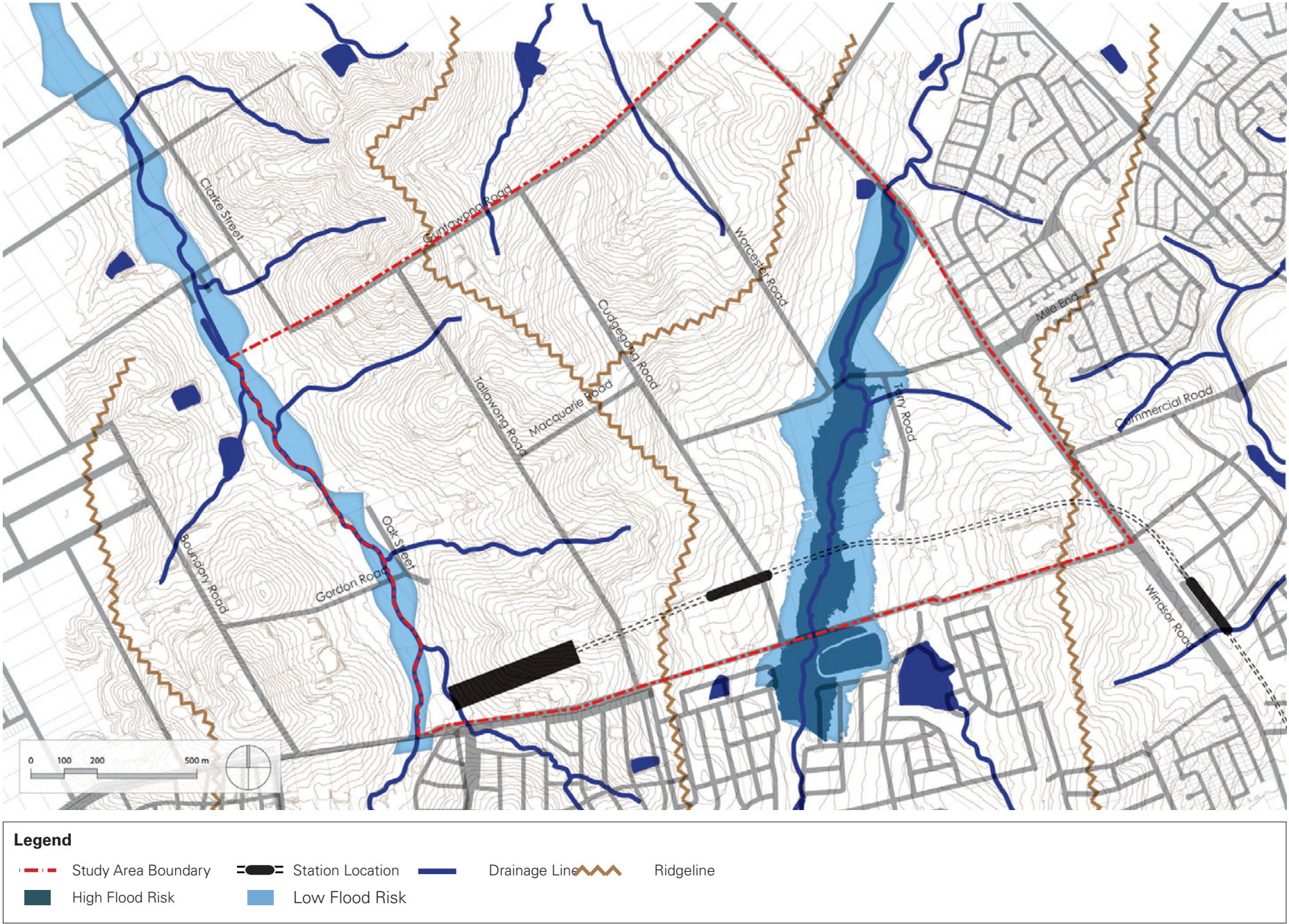


Figure 9: Drainage within the Study Area



2.7 OTHER CONSTRAINTS

There are areas within the Study Area which, as a result of their highly vegetated setting, are prone to bushfire. Bushfire prone land is concentrated in the mid-section of the Study Area along the ridgeline and also along parts of the two riparian corridors - First and Second Ponds Creek in the west and east respectively. The remainder of the Study Area is otherwise free of bushfire prone land.

Any redevelopment of land within these bushfire prone areas will need to provide the required asset protection zones in accordance with relevant Planning for Bushfire Protection guidelines.

Overhead electricity wires, with a corresponding easement, diagonally traverse the Study Area north to south. This significant utility service and easement represents a constraint to certain types of land uses within its vicinity.

The assessment of recent residential development includes any development that has occurred over the last 15 years. An analysis of recent residential development indicates that incremental low density residential development has occurred in the area surrounding the Study Area, mainly to the east and south. One site within the Study Area has recently been developed however this site is constrained by flooding associated with Second Ponds Creek.



Figure 10: Other Constraints within the Study Area

Cudgegong Road Structure Plan

2. Opportunities & Constraints Analysis

2.8 COMBINED CONSTRAINTS

The constraints mapping indicates there are large portions of the Study Area that are constrained.

The number of large vegetation tracks scattered across the Study Area are a considerable constraint to development. Bushfire constraints associated with this existing vegetation are also considered a major constraint for the Study Area.

Both First and Second Ponds Creek, and their associated flooding, are considered a constraint.

An electricity easement diagonally traverses the Study Area north to south. This significant utility service and easement represents a constraint to certain types of land uses within its vicinity.

Special use sites such as the Rouse Hill Anglican College, the heritage site of Rouse Hill House and the areas of open space and significant vegetation are seen as both constraints and opportunities. They may provide the opportunity to increase community facilities, active recreation and passive recreation spaces to contribute to increased levels of amenity for workers and residents of Cudgegong Road in to the future.

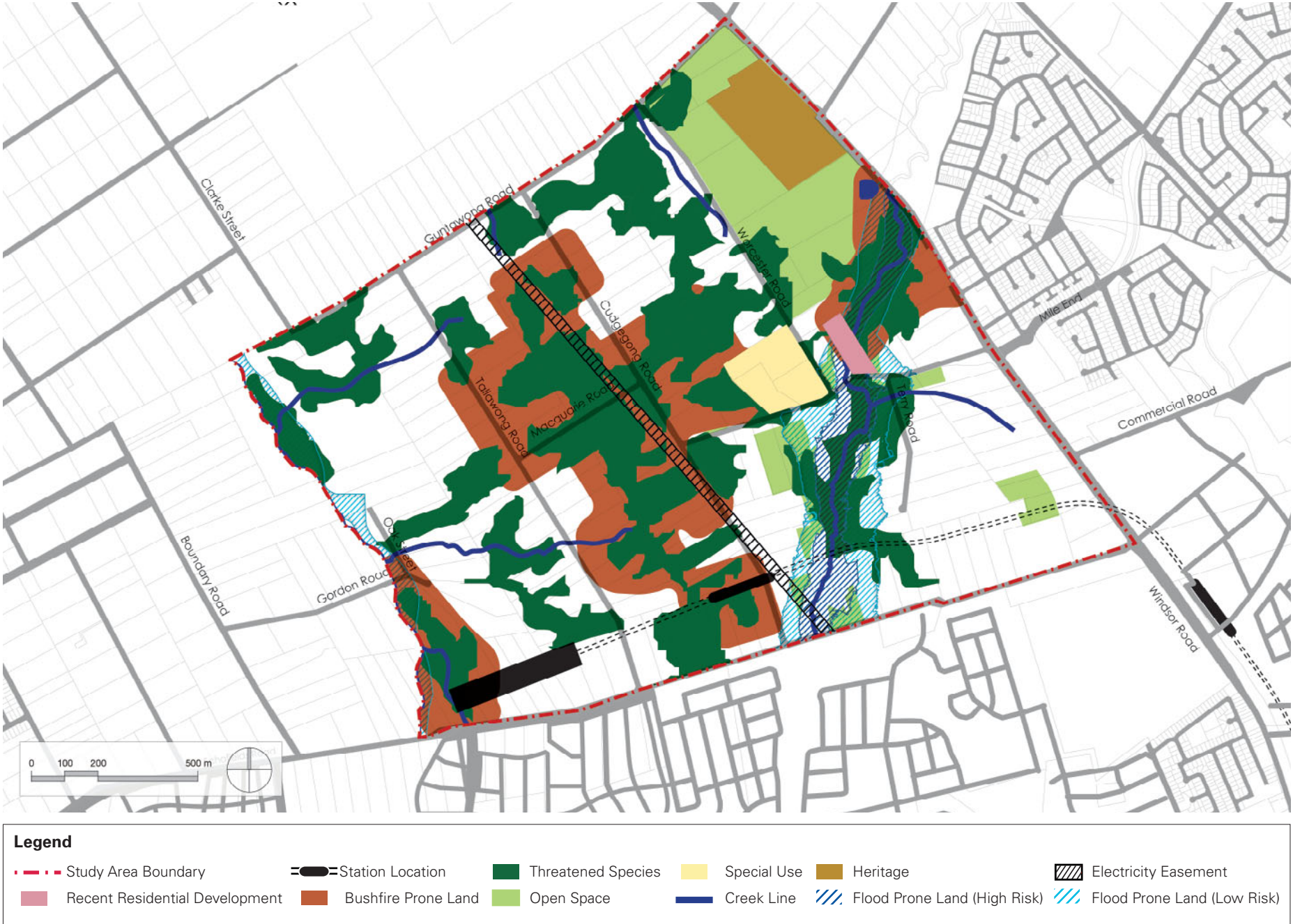


Figure 11: Combined Constraints within the Study Area



Figure 13: Images illustrating the character of the Study Area

Cudgegong Road Structure Plan

3. Planning Controls

3.1 INTRODUCTION

This section reviews the land use zoning, height, floor space and lot size controls that currently apply to land within the Study Area.

The key planning controls applying to the Cudgegong Road Study Area are included in *Draft Blacktown Local Environmental Plan 2013* and the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*.

3.2 LAND USE

The Cudgegong Road Study Area includes the 245 hectare 'Area 20' precinct and part of the 'Riverstone East' precinct, both of which are located within the North West Growth Centre. It is noted that planning for Riverstone East has not been carried out.

Area 20 was rezoned having regard to the future delivery and location of the NWRL corridor, Cudgegong Road station, commuter car parks and stabling yard. The remaining portion of the Cudgegong Road Study Area that falls within the Riverstone East precinct is subject to the land use controls contained in Draft Blacktown LEP 2013 and is zoned for rural small holdings.

In general terms, the existing zoning allows for greater residential densities close to the existing Rouse Hill Centre and the proposed Cudgegong Road station and retains the low density rural residential character of areas to the west and north. The Area 20 Precinct is zoned to allow for a local centre and a mix of residential densities. Medium density residential development is allowed on lands closest to the Rouse Hill centre and proposed location of the Cudgegong Road station. Permitted residential densities gradually decrease with distance from the centre.

A plan illustrating the existing zoning controls is provided in *Figure 12: Zoning Controls*.

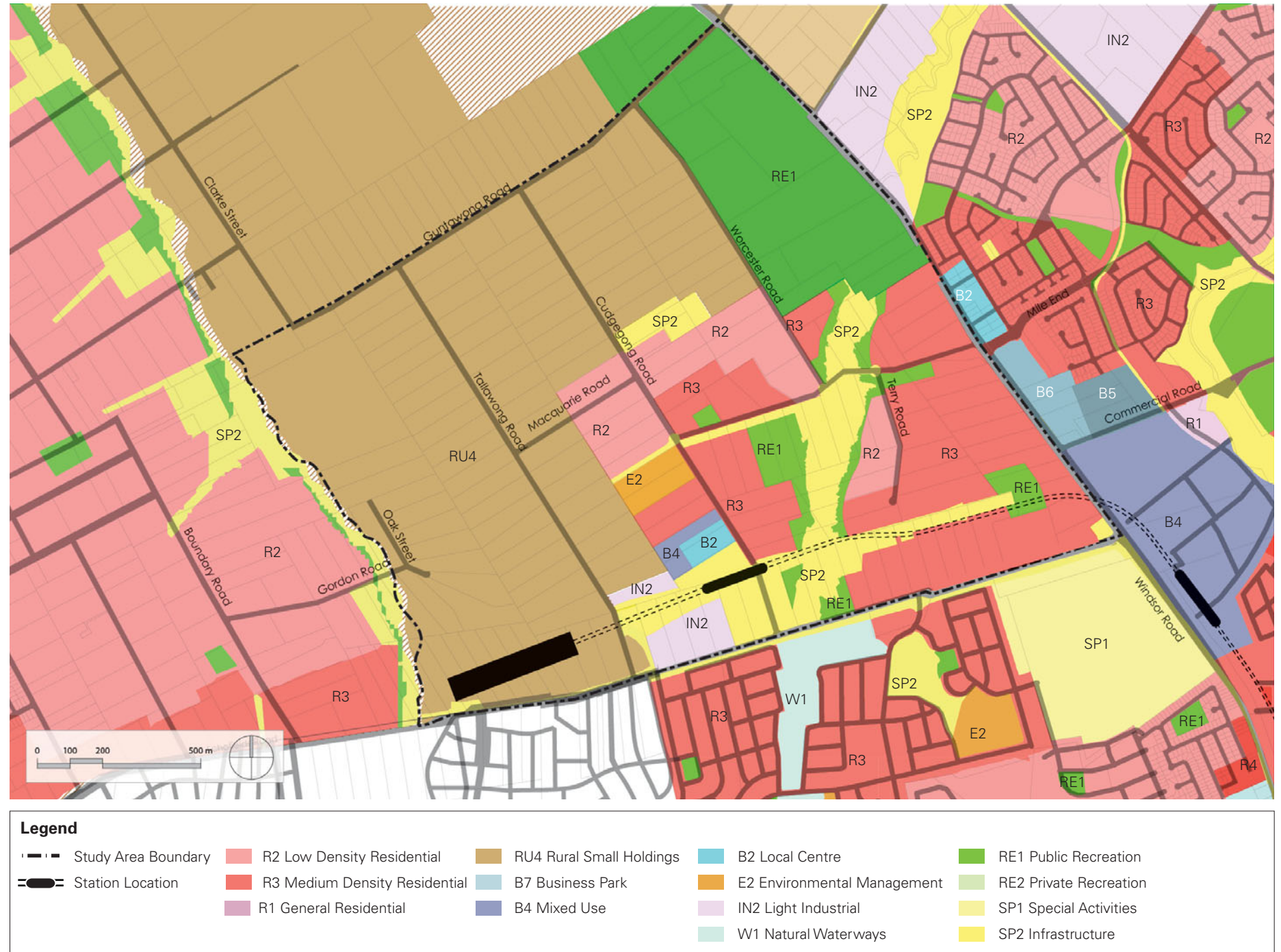


Figure 12: Zoning Controls within the Study Area



3.3 BUILDING HEIGHT

Height controls in the Study Area apply predominately within the Area 20 Precinct. They vary from 18m (near the mixed use Rouse Hill Town Centre), to 8.5m in low density residential areas.

Areas in the north and west part of the Study Area are not subject to a height limit.

Generally, maximum building height controls for residential developments to the west of Windsor Road, within Blacktown LGA, range from 9 metres for dwelling houses, and 1-2 storeys for dual occupancies, integrated housing and medium density housing.



Figure 13: Building Heights within the Study Area

Cudgegong Road Structure Plan

3. Planning Controls

3.4 LOT SIZE

A plan illustrating the minimum lot size controls is provided in *Figure 14: Minimum Lot Size Controls*.

The land zoned for rural small holdings has a minimum lot size control of 40ha under the Draft Blacktown LEP 2013. The only other parts of the Study Area that contain lot size controls includes areas close to the proposed station, where a minimum lot size of 1,000 m² applies and general residential land to the north with a minimum lot size of 2,000 m².

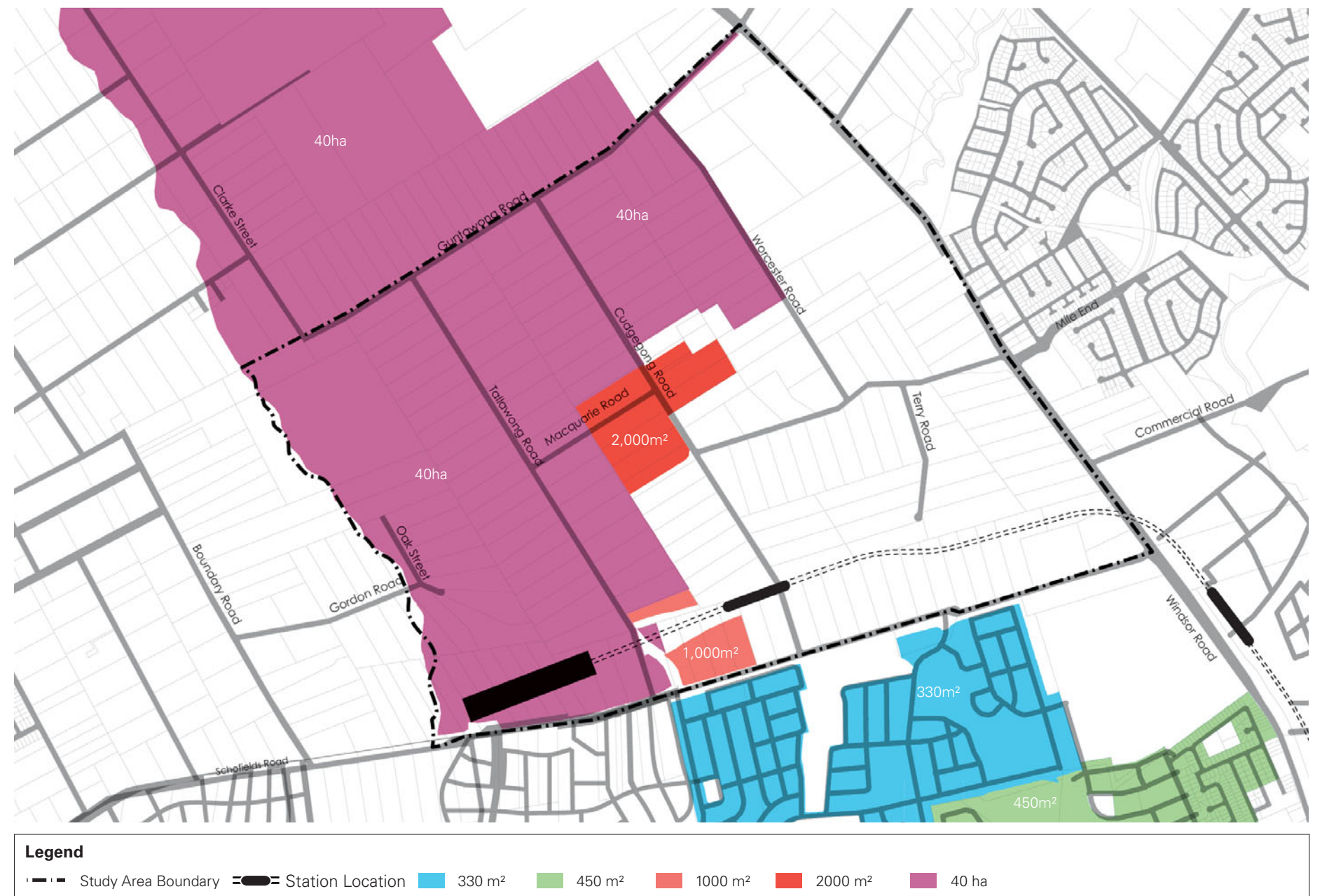


Figure 14: Minimum Lot Size Controls within the Study Area



3.5 FLOOR SPACE RATIO

Floor space ratio (FSR) controls refer to the relationship of the permitted built form to the area of a site.

Under the land use controls for Area 20 contained in *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*, residential areas have an FSR of 1.75:1. The local centre and mixed use zone have a 3:1 FSR control. The industrial area immediately surrounding the station location has a lower FSR control of 2.75:1. The remainder of the Study Area does not have any FSR controls.

A plan illustrating the existing zoning controls is provided in *Figure 15: Floor Space Ratio Controls*.

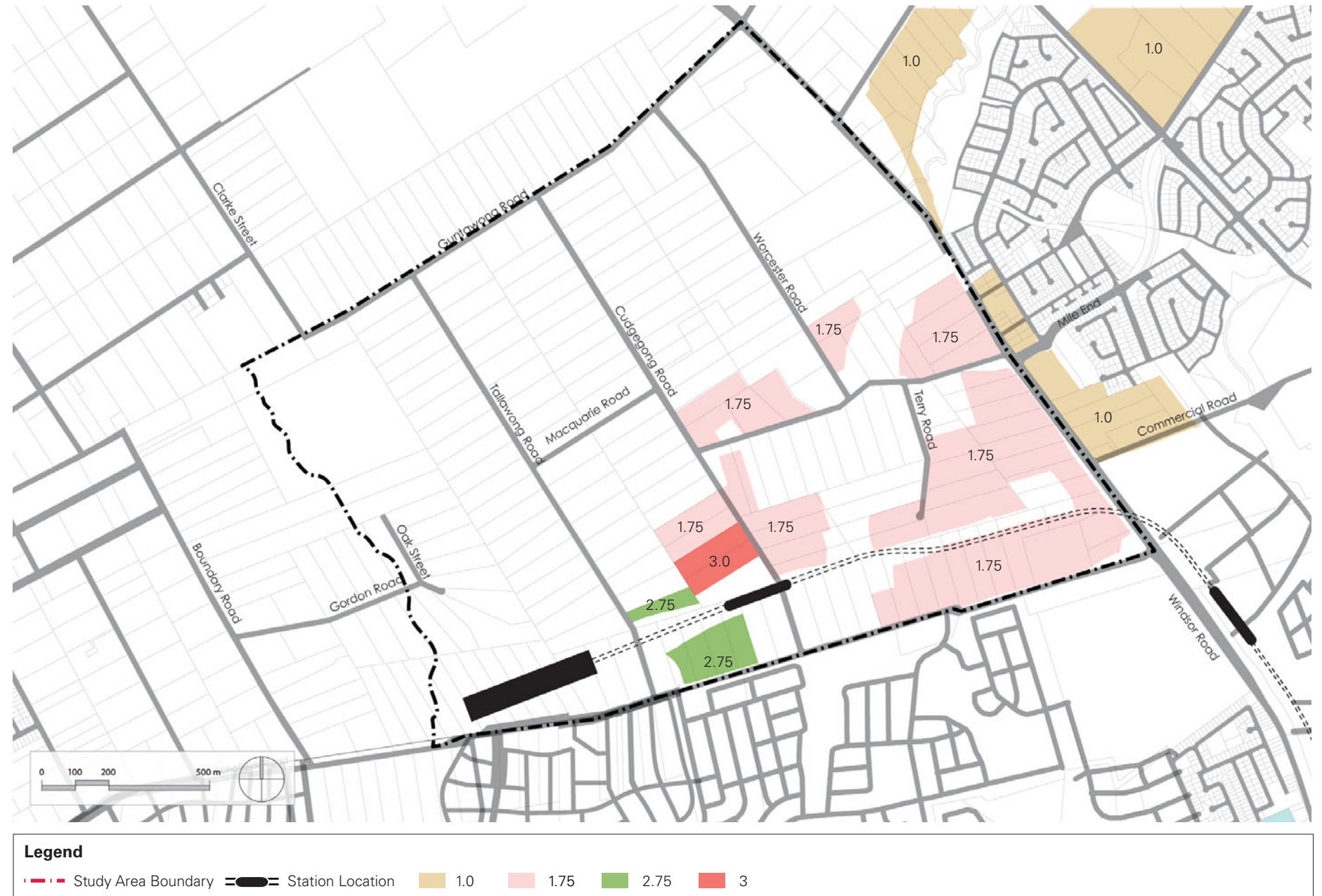


Figure 15: Floor Space Ratio Controls within the Study Area

Cudgegong Road Structure Plan

4. Opportunities for Growth

4.1 OPPORTUNITY SITES

The outcome of the review of the opportunities and constraints and the existing planning controls of the Study Area leads to the identification of sites with the most potential for renewal to complement a new rail link and station, subject to further investigations.

These opportunity sites vary in their capacity to contribute to the future growth of the Study Area. Some of the identified sites are currently unconstrained and present an immediate opportunity to stimulate growth within the corridor. However, some of the sites are currently being developed or have been developed in recent years and therefore present themselves as long-term opportunities for renewal.

The diagram adjacent highlights these opportunity sites, both short and long term. The sites located to the west of the proposed station present the fewest constraints with good connectivity and within walking distance of the proposed Cudgegong station. Contiguous opportunity sites may also allow for the amalgamation of lots in to larger single landholdings.

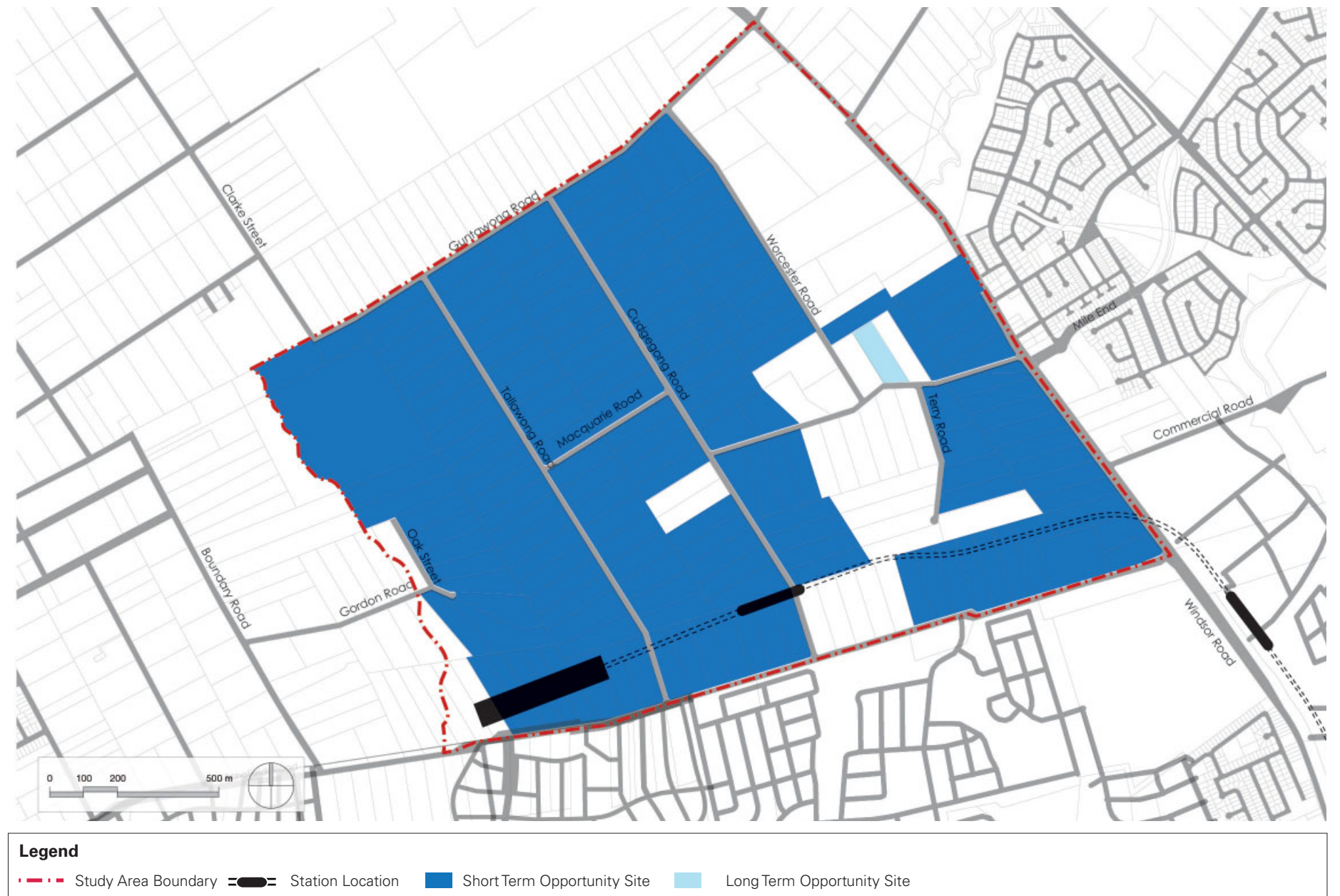


Figure 16: Opportunity Sites within the Study Area



4.2 PROJECTED GROWTH UNDER EXISTING CONTROLS

Under the existing planning controls contained within the *Blacktown Local Environmental Plan 2013* and the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*, the opportunity sites within Cudgong Road have a variety of land use controls applied to them.

Across the Study Area, the current zoning and planning controls allow for varying residential densities, including rural residential and in the Area 20 Precinct both low and medium density. As identified in Section 4.1 *Opportunity Sites*, the Study Area has large portions of unconstrained land. Given the current market demand for residential and employment land it is likely that the area currently zoned for rural residential could be reconsidered in terms of its use.

An assessment of these current controls on the opportunity sites reveals that the capacity for future growth within Cudgong Road is predominantly within the residential market. The current and proposed draft controls for the Study Area could result in an additional 2,000 jobs and 3,000 dwellings (including 2,500 within Area 20).

A review of the existing planning controls and zoning, under the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* and *Draft Blacktown LEP 2013*, indicates that the desired future character of the Study Area, as set out under the 'vision for the Study Area' will largely be realised by the existing controls. There are opportunities to increase the open space network and propose a future character for areas in the west, comprising lands located within the Riverstone East precinct. The vision and Structure Plan contained within this report will detail the desired future character of the area and proposed land uses to complement the new rail link and station.

	RESIDENTIAL		EMPLOYMENT	
	TOTAL DWELLINGS	GROWTH	TOTAL JOBS	GROWTH
2012	200	-	0	-
2036	3,200	3,000	2,000	2,000

Table 4.1: Projected growth in Housing and Jobs under existing controls



Cudgegong Road Structure Plan

5. Vision & Structure Plan

5.1 VISION FOR THE STUDY AREA

The Cudgegong Road Study Area will play an important role in the NWRL corridor, as a local village centre. The introduction of the NWRL has the potential to transform the Cudgegong Road Study Area by providing a new focal point for the community centred around the station. This is proposed to include a mix of local shops and services to provide for the daily needs of the local community.

The NWRL will also provide the opportunity to create a new transit oriented neighbourhood focused around a rail station and village centre. This will increase residential densities within walking distance of the station and involve a variety of housing types to ensure there is affordable and appropriate housing for all members of the community.

The Study Area will provide opportunities for increased employment and housing capacities within walking/cycling distance of the station, while ensuring the local heritage, open space network and natural environment are protected.

Development opportunities for higher densities have been identified at locations which will benefit from good access to the rail transport infrastructure and the mix of uses and facilities in the Cudgegong Local Centre and Rouse Hill Centre.



Figure 17: Images illustrating the future character of the Study Area



Cudgegong Road Structure Plan

5. Vision & Structure Plan

5.2 PROPOSED STRUCTURE PLAN

The Structure Plan is the framework which will guide future planning within the Cudgegong Road Study Area. It is the result of assessing the natural and built elements of the Study Area and existing planning controls. It is founded on principles of providing where possible greater connectivity and strengthening links between the station and surrounding uses.

USES

Drawing on the analysis and existing land uses, the Study Area is proposed to become a predominately residential area for the North West. Higher residential densities are proposed within the Study Area within 800 metres of the station and opposite the Rouse Hill Centre. This comprises a mixture of medium density development of 3-6 storey apartment buildings and 2-3 storey townhouses.

An employment zone is proposed in the area surrounding the NWRL stabling yard and along Schofields Road, with the ability to expand north of the stabling yards to accommodate potential future expansion. The Structure Plan proposes additional low rise housing to replace rural residential uses in other parts of the Study Area, particularly within Riverstone East. It is envisaged this low rise residential development would allow for the inclusion of small lots. However, there may be potential for other more dense built forms should demand arise at the time of future detailed precinct planning. In the event that the expansion of the NWRL stabling yard is not required, the land north of the stabling yard could revert to a different use, such as low rise residential developments.

ACCESS

A finer street network is proposed throughout the Study Area to increase connectivity and permeability. These links could be either pedestrian and/or vehicular connections and would be subject to further detailed analysis to determine their location and configuration.

Open space linkages are reinforced along First and Second Ponds Creek within the Study Area. Green links are proposed firstly along First Ponds Creek and secondly between Rouse Hill House, Rouse Hill Regional Park and along Second Ponds Creek. These links will become significant recreational links for residents and also provide significant habitat for wildlife within the Study Area.

Windsor Road is proposed to remain the primary north-south link connecting the Study Area with the Norwest and Bella Vista Business Parks, Hills Centre and the Castle Hill major centre. Schofields Road is proposed to remain a major east-west link between Schofields and Rouse Hill.

Gateway or entry demarcation points are proposed at entry points to the Study Area along Windsor and Schofields Road. These are likely to take the form of a change in streetscape, landscape character or defined built form.

PUBLIC DOMAIN

The redevelopment of sites within the Study Area, and the establishment of a new local centre surrounding Cudgegong Road station, will provide significant opportunities to improve the Study Area's public domain.

The primary public domain initiative nominated within the Cudgegong Road Structure Plan is the upgrading of the streetscapes in and around the proposed station precinct. The creation of new and widening of existing footpaths, providing barrier-free access and introducing attractive and appropriate street furniture will be required to reinforce the introduction of the NWRL and a new station at Cudgegong Road.

Upgrading the public domain of Cudgegong Road Study Area can be achieved through a number of initiatives:

- The creation of open space linkages, streets and connections between transport, new and existing housing and open space.
- The protection of existing green spaces within the Study Area which form part of the Cudgegong Road identity.
- The provision of additional urban plazas, parks and open spaces for the amenity of existing and future residents and workers, particularly within the station precinct.

A Public Domain Strategy will be required to detail the delivery of the above initiatives and to guide the broader character of the public domain within the Study Area. This Strategy will need to address a legible hierarchy of streetscapes, treatment of open spaces and plazas, preservation of ecological corridors, pedestrian and cycling linkages, built form response to public and private open space, signage and wayfinding, street furniture, lighting and public art.

INITIATIVES

To complement the introduction of the NWRL to the Study Area a number of transport, movement and accessibility initiatives will need to be delivered to ensure safe and attractive movement to, from and within the Study Area.

Within Cudgegong Road, the key connectivity issue is pedestrian access across Windsor and Schofields Road to the Rouse Hill Centre. The anticipated growth within the Structure Plan and increased activity will require a number of signalised crossings to provide safe and attractive pedestrian and cycle access across these major roads.

Complementing this will be the upgrade of existing connections and provision of new connections linking; Oak Street, Tallawong Road, Cudgegong Road, Terry Road, Schofields Road, Guntawong Road, Worcester Road, Rouse Road, Macquarie Road, Gordon Street and the broader road network within the Cudgegong Road Study Area.

Local road improvements may also be required within the station precinct and broader Study Area to accommodate increased movements associated with the evolution of the Centre and future growth opportunities.

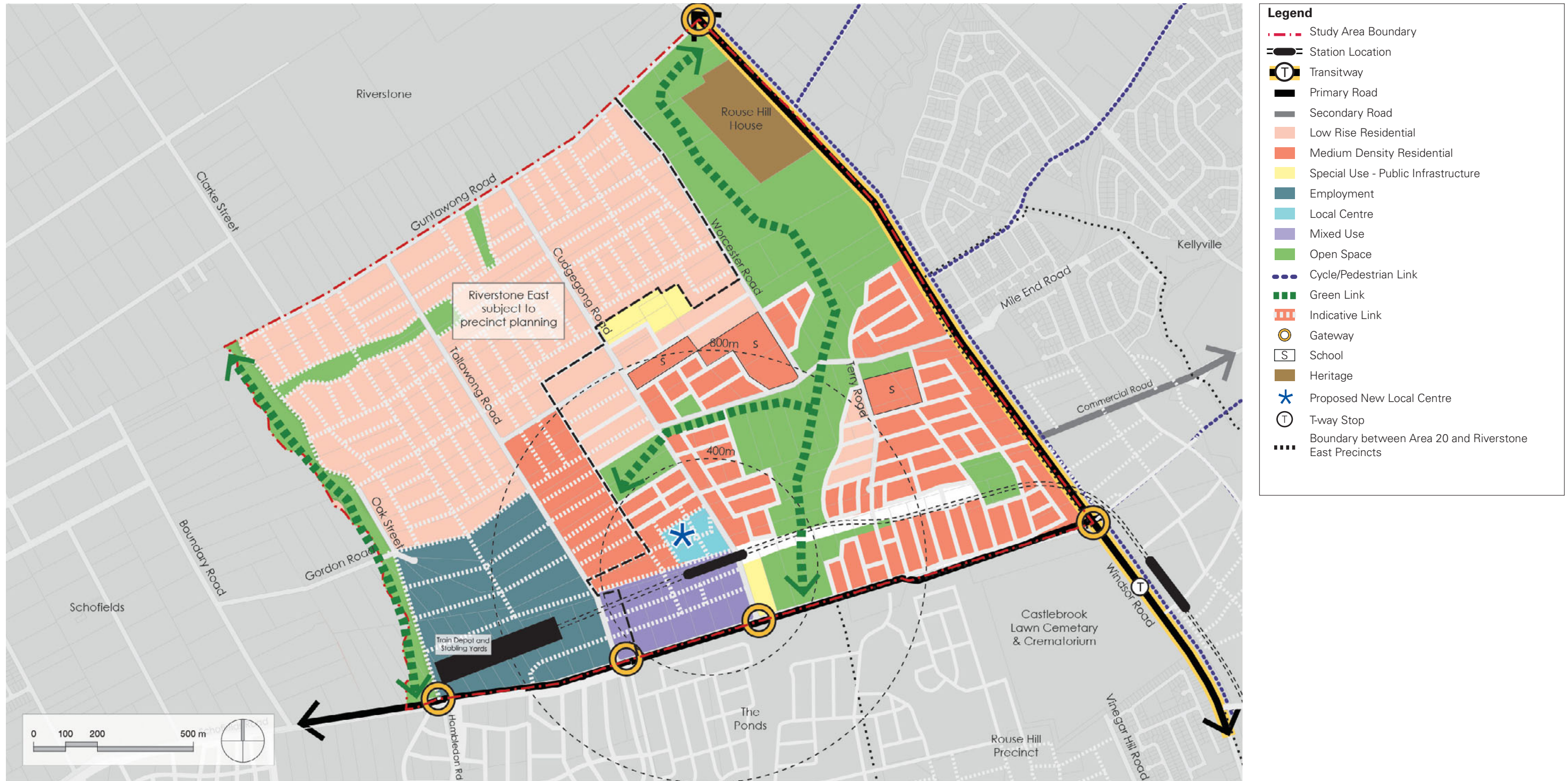


Figure 18: Structure Plan for the Cudgegong Road Study Area

Cudgegong Road Structure Plan

5. Vision and Structure Plan

5.3 FUTURE PRECINCT CHARACTER

The following diagrams and images demonstrate the desired future character for the sites which may contribute to the growth of Cudgegong Road in the future.

Centre

Objectives: To provide a precinct comprising a village centre that contains a flexible mix of retail and residential uses that suit the surrounding character and are located in close proximity to the proposed station.

Character: It is anticipated that under the vision and Structure Plan this precinct could accommodate retail and residential uses that would complement the character of the local area and create a mixed use village. This precinct would also provide residents with direct access to the new rail link and station which would be located above ground.



Figure 19: Proposed Location of Station Precinct



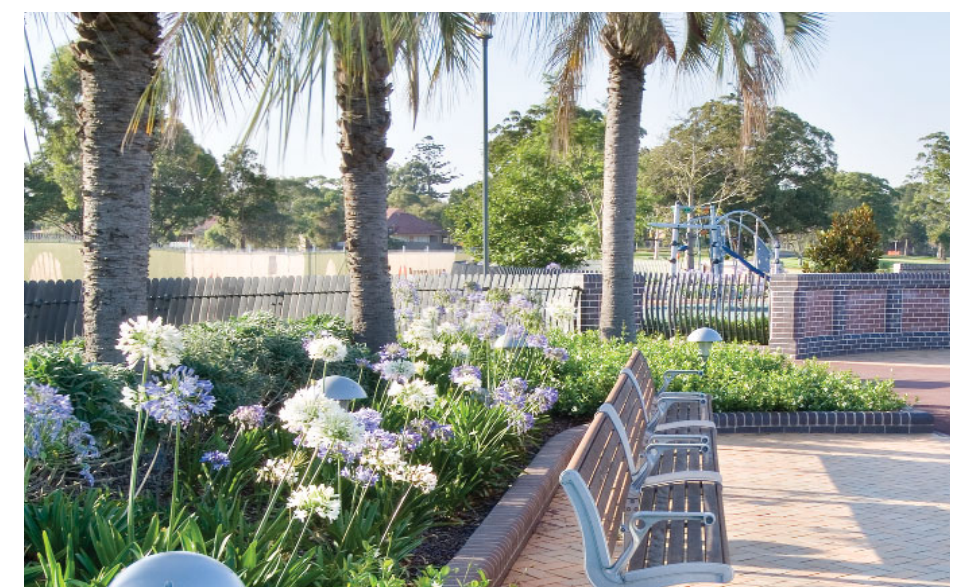
Public Domain and Open Space

Objectives: To provide attractive open spaces of high amenity for the public.

Character: The Structure Plan provides green open spaces for residents that are accessible and safe. They should be landscaped appropriately to integrate with the existing character of the area.



Figure 20: Proposed Location of Public Domain and Open Space





Employment Area

Objectives: To provide for the employment needs of a growing community and to encourage the emergence of a prominent employment area with direct access to the new rail link and station.

Character: It is anticipated that under the vision and Structure Plan that this precinct could accommodate light industrial uses that are carefully designed to integrate into the surrounding residential area. The public domain should integrate with employment areas near the station and particular attention should be paid to building design to mitigate noise impacts of the stabling yard.



Figure 21: Proposed Location of the Employment Area



Local Centre

Objectives: To provide for the retail needs of a growing community and to provide retail and community services within close proximity of the station.

Character: It is anticipated that under the vision and Structure Plan that this precinct will evolve to become a local centre within the North West Region. With a public domain and street network that provide access to and from the centre for the surrounding residential areas.



Figure 22: Proposed Location of the Local Centre



Cudgegong Road Structure Plan

5. Vision and Structure Plan

Low Rise Detached House Living

Objectives: To provide for the housing needs of a growing community and to provide a variety of housing types within close proximity of the station and associated uses.

Character: It is proposed that under the vision and Structure Plan that this precinct will evolve to become a mixture of single detached dwellings and medium density townhouses. This precinct will serve as a transition between the lower density residential areas beyond the Study Area and the station precinct.

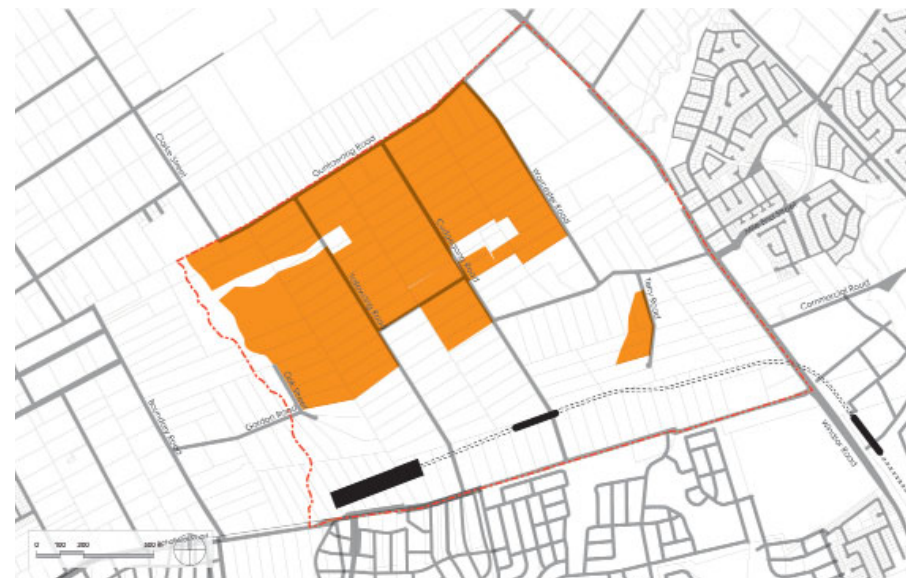


Figure 23: Proposed Location of Low Density Living



Low/Medium Density Townhouse Living

Objectives: To provide for the housing needs of a growing community and to provide a variety of housing types within close proximity of the station and associated uses.

Character: Under the vision and Structure Plan it is anticipated this precinct will evolve to become a mixture of single detached dwellings and townhouses. This precinct will serve as a transition between the lower density residential areas beyond the Study Area and the station precinct.



Figure 24: Proposed Location of Townhouses





Medium Density Apartment Living

Objectives: To provide for the housing needs of a growing community and to provide a variety of housing types within close proximity of the station and associated uses.

Character: It is anticipated that this precinct could accommodate multi-dwelling housing only where the site is an appropriate size to deliver a high level of amenity for the existing and future residents. This could comprise of 3-6 storey apartment buildings, carefully master planned around communal open spaces and incorporating landscaped setbacks to existing streetscapes.



Figure 25: Proposed Location of Medium Density Apartment Living



Areas Expected to Remain Unchanged

Within the Study Area there are areas and sites which are expected to remain largely unchanged through the delivery of the NWRL and the Structure Plan.

This is due to a number of factors including existing uses, varying degrees of constraints, connectivity, accessibility and market demand.



Figure 26: Areas Expected to Remain Unchanged

Cudgegong Road Structure Plan

5. Vision and Structure Plan

5.4 PROJECTED GROWTH

Calculating Projected Growth

The projected growth is a calculation of the amount of residential and employment development that is expected to take place in the Study Area. The projected growth calculations take into consideration the following factors:

- **Development on Opportunity Sites.** Development is projected to occur on the opportunity sites identified in Section 4.1 of this report.
- **The Proposed Future Character and Built Form.** The Structure Plan identifies the future desired character and built form for areas within the Study Area. These character/building types have been applied to the opportunity sites.
- **Assumptions.** A series of assumptions related to the different development types have been applied to calculate the land areas required for each built form. Details can be found in the North West Rail Link Corridor Strategy.
- **Demand.** The amount, and rate of development is influenced by market demand for different types of development within the Study Area. Market demand is determined by 'take-up' or 'realisation' rates, which reflect market conditions and has been informed by a high-level feasibility analysis. In the Cudgegong Road Study Area, due to the high level of amenity and quality of life afforded within the Study Area at present and the added accessibility delivered by the North West Rail Link, the take up/realisation rate is considered to be 81% for housing and 96% for employment. Take-up/realisation rates have been identified for each development type and these have been used in the projected growth calculations.

Projected Growth in the Study Area

The outcome of these projected growth calculations is provided in the tables below. Total opportunity site area within the Study Area equates to approximately 333 Hectares, 136 of which are located within the Area 20 Growth Centre Precinct.

Application of the proposed land uses and typologies within the Structure Plan will result in a total capacity for an additional 4,300 dwellings by 2036. However, it is anticipated that 81% of this capacity will be realised by 2036, delivering an additional **3,500** dwellings within the Study Area.

The proposed Structure Plan will result in an additional employment capacity of 4,400 jobs by 2036. It is anticipated that 96% of this capacity will be realised by 2036, delivering an additional **4,250** jobs within the Study Area.

RESIDENTIAL

TYPE OF HOUSING	DWELLINGS IN 2012		DWELLINGS IN 2036		GROWTH TOTAL
	TOTAL	%	TOTAL	%	
SINGLE DETACHED	200	100%	1,700	46%	1,500
TOWNHOUSE	0	0%	1,000	27%	1,000
3-6 STOREY APARTMENT	0	0%	1,000	27%	1,000
7-12 STOREY APARTMENT	0	0%	0	0%	0
TOTAL DWELLINGS	200	100%	3,700	100%	3,500

Table 5.1: Projected Residential Growth in Cudgegong Road under the Structure Plan

EMPLOYMENT

TYPE OF JOBS	JOBS IN 2012		JOBS IN 2036		GROWTH TOTAL
	TOTAL	%	TOTAL	%	
COMMERCIAL	0	0%	0	0%	0
RETAIL	0	0%	250	6%	250
BULKY GOODS	0	0%	0	0%	0
INDUSTRIAL	0	0%	4,000	94%	4,000
TOTAL JOBS	0	0%	4,250	100%	4,250

Table 5.2: Projected Employment Growth in Cudgegong Road under the Structure Plan

Demand Analysis

A high level demand analysis has been undertaken to ascertain the demand for potential development scenarios on opportunity sites within the Study Area. The analysis:

- Assessed the proposed future desired character and built form, including densities, as proposed under the Structure Plan, against market conditions and demand; and
- Identified take-up/realisation rates for each land use within the Study Area, which informed the calculation of projected growth.

Outcomes of the demand analysis:

1. **Demand for Additional Dwellings.** Future demand for additional residential development in the Study Area is estimated to be in the order of **160** dwellings per annum comprised of 29% 3-6 storey apartments, 29% townhouses and 43% single detached dwellings in addition to existing stock resulting in the total dwelling diversity shown in the adjacent table in 2036. Such demand is related to the high level of amenity and quality of life afforded within Cudgegong Road, the demand for housing diversity and improved access to social, recreational and employment opportunities as a result of the North West Rail Link.
2. **Demand for Employment Lands.** Future demand for additional employment (retail and industrial) floorspace within the Study Area is projected to increase within the Study Area at a rate of **300m²** p.a. of retail and **17,000m²** p.a. of industrial.
3. **Type and Location of Development.** The analysis supports the provision for 3-6 storey garden apartments and townhouses within close walking distance of the new train station. These areas of residential uplift and renewal may serve as the catalyst for regeneration within the broader precinct. In particular, future residents will be attracted to these areas for their high levels of amenity, employment opportunities, retail, cultural and community facilities and close proximity to the train station.

The analysis supports the provision for single detached dwelling development on the periphery of the Study Area where large undeveloped lots deliver a number of smaller freestanding dwellings.

In terms of future employment generating development, the feasibility analysis supports the provision for a small portion of retail land-use at the mixed use area around the new station to provide for the day to day needs of local residents and workers. The land surrounding the stabling yards will provide a large number of jobs in the light industrial sector.

Cudgegong Road Structure Plan

6. Actions and Implementation



6.1 INTRODUCTION

The Structure Plans for the NWRL Station Precincts are to be considered at the strategic planning level, similar to that of the Subregional Strategies for Sydney. The Structure Plans are to inform, and be implemented through, appropriate zonings, amendments to built form controls and to guide the assessment of major projects and development applications within the Study Area.

To deliver the Structure Plan's projected growth, zoning and planning controls will require review. Current controls, such as those relating to minimum lot size, height, and FSR constrain intensification of land use and thus should be revisited. Similarly, Development Control Plans, Section 94 Schemes and Public Domain Strategies will also need to be revised in light of the NWRL. Current parking policies and minimum apartment sizes are constricting the type and variety of dwellings being offered within the Study Area.

The above will be carried out in consultation with relevant agencies, stakeholders and key landholders. Other matters for consideration include public domain, transport, accessibility and infrastructure servicing.

6.2 IMPLEMENTATION

The Structure Plans for the NWRL Station Precincts are to be considered at the strategic planning level. The Structure Plans will inform appropriate zonings, amendments to built form controls and to guide the assessment of major projects and development applications within the Study Area.

The Structure Plan area is subject to the Growth Centres detailed Precinct Planning Process. Relevant parts of the Area 20 Precinct Plan will be reviewed and detailed planning will be undertaken in Riverstone East in the future. The review of Area 20 will consider a number of issues including open space and drainage.

Key investigations will include:

- Public domain and open space,
- Transport, movement and accessibility,
- Infrastructure and services.

The above will be carried out in consultation with relevant agencies, stakeholders and key landholders.



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