

WYONG EDUCATION & BUSINESS PRECINCT CONCEPT MASTER PLAN

August 2014



Cover images present an indicative visualisation of the following Concept Master Plan, based on a Desktop Analysis. The final designs will be subject to a further detailed Master Plan study.

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1.1 Introduction

Project Purpose:

- The project comprises the development of an integrated Education & Business precinct located in the north of Wyong Shire. The project strategy focuses on the creation of a regionally significant integrated development which brings together major education providers, industry and business groups in one location. The initial driver for investment will focus on securing a university to anchor the development in order to attract complementary service providers and business.
- The Precinct is part of a network of key infrastructure and development initiatives within the LGA. This includes airport, cultural and recreation, housing, employment and town centre purposes. See Figure 1.
- The site is owned by Wyong Shire Council, and consists of approximately 65 ha of developable land for of a total site area of 433 ha.
- This Master Plan is a high level indicative concept plan only, and should be read in conjunction with the earlier completed Desktop Review.
- The Desktop Review was completed in March 2014 and assisted in determining a developable footprint for the Master Plan. The Desktop Review considered challenges, opportunities and constraints arising from:
 - Locational attributes of the site and proximity in a macro and micro context
 - Key infrastructure projects in the region and locality
 - Strategic Planning objectives of both the State and local governments
 - Existing (and likely future) statutory planning regime
 - Physical attributes and constraints of the site, including:
 - Topography
 - Bushfire
 - Flooding and Stormwater
 - Geotechnical and Contamination characteristics
 - Transport and Access
 - European and Aboriginal Heritage and

- Archaeology
 - Ecology, Biodiversity and green space and open space linkages
 - Infrastructure needs and provision
 - Integration with surrounding land uses
- A concept Master Plan has been prepared for the site, accommodating the key components of the proposed Education & Business precinct. These key components are:
 - A university campus for 7,000 students
 - Residential college for 1,500 students
 - Community, Sports Institute and Recreational facilities, including a SMARTS Hub
 - Integrated Business/Industrial Park
 - Associated infrastructure requirements associated with education/business park providers.

Benefits:

- It is anticipated that a range of benefits will flow to the local community such as:
 - The opportunity for major investment in Wyong.
 - The achievement of various goals in Wyong’s Community Strategic Plan, in particular delivering a balanced sustainable development while providing access to higher education opportunities.
 - Further complimenting strategic planning initiatives by Council and NSW Government in the region including Warnervale Town Centre, Precinct 7A as a major population land release area and the Chinese Theme Park.
 - Establishing a significant employment generator with a diverse range of job opportunities for the construction and operation of a University and related activities.
 - The establishment of a university campus (either domestic or international) a core focus is also towards the location of a major vocational education and training (VET) educational facility to service the ongoing demands of existing and future population needs especially in the northern parts of the Shire.

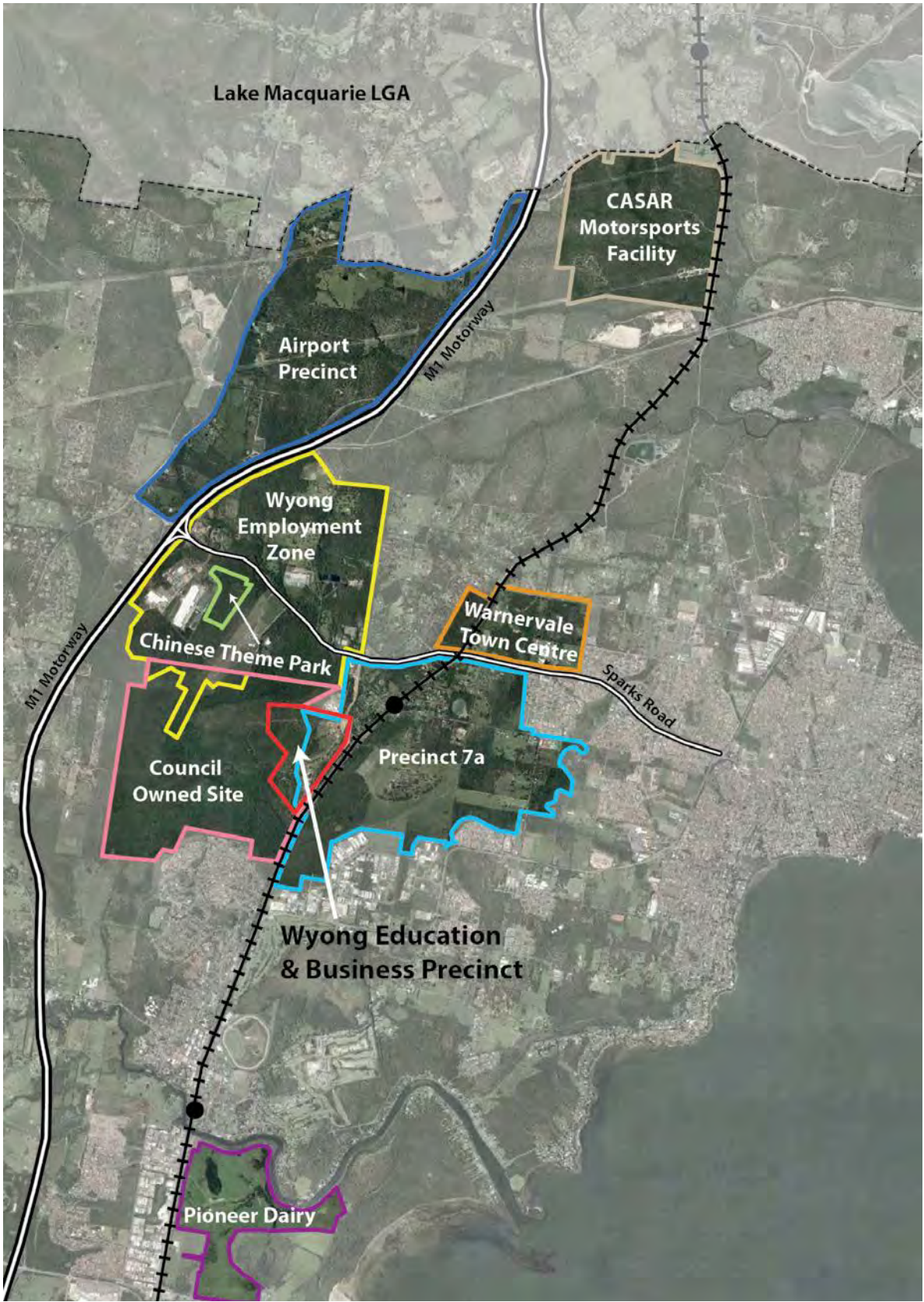


Figure 1 – Key local projects and areas of interest.

2.1 Historical Sydney Strategic Planning Context

- Wyong in the greater Sydney context was first identified in the 1968 Sydney Region Outline Plan (SROP), when Newcastle - Central Coast - Sydney - Wollongong were identified as the greater Sydney area - see Figure 2. Since that time, few subsequent metropolitan strategies observed the great Sydney Region in their plans. The current Draft Metropolitan Strategy has in fact excluded the Central Coast from the Sydney Region.
- There are many reasons why the Central Coast, Newcastle and Wollongong regions should be a part of Sydney. Sydney is arguably Australia's only global city and as such is attracting a greater number of residents from both overseas and other states. This has put considerable pressure on land and housing prices and consequently rents and the cost of living. Expanding the region by making outer cities like Newcastle, Wyong, Gosford and Wollongong as well as the Central West cities such as Bathurst, Orange, Lithgow, Mudgee, Bowral accessible by public transport allowing a one hour each way commute to the central employment nodes of Sydney is to everyone's benefit.
- South East England offers the best example where 800,000 people commute into Greater London daily whilst 300,000 commute out to work in the decentralised towns, where businesses have shifted to take advantage of a young, skilled workforce which could not afford London's housing.
- Wyong is in this Category, if Sydney's young workforce could commute to work in Sydney within one hour each way, industry could be attracted to Wyong to employ a young, skilled, local growing workforce. An added benefit, as found in South East England, is that companies benefit from lower cost employment lands compared to Sydney. If Newcastle could attract major government offices, like the Department of Trade & Investment; Resources and Energy, Wyong would be an ideal place to live and commute to Newcastle centre. It is this Macro scale of the NSW Eastern seaboard that requires planning and economic attention for the blueprint of the whole state.

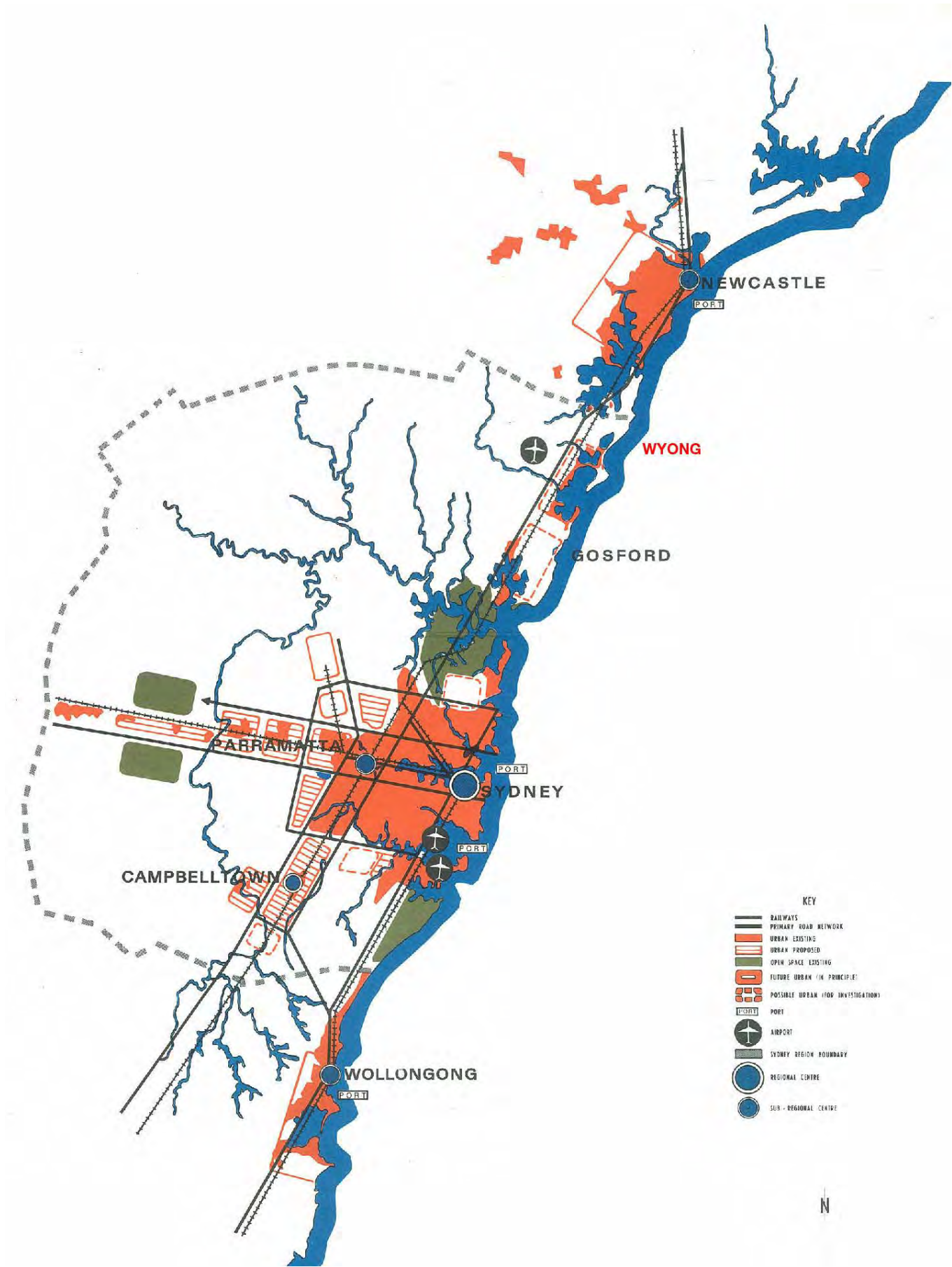


Figure 2 – Sydney Region Principles Diagram - Sydney Region Outline Plan 1970 - 2000.

2.2 Macro Regional Context

- The Precinct is highly accessible to both Sydney and Newcastle by road and rail, being some 100km and 50km from each, respectively. See Figure 3.
- A regional airport would further promote the Precinct, allowing fast access from all parts of the state, Australia and potentially international locations.
- Current state government initiatives which would even further enhance access to and from Wyong and the precinct are the North Connex linking the M1 and M2 motorways, the West Connex linking the M4 and M5 motorways and a future link between Newcastle and Wollongong via an Outer Sydney Orbital between Newcastle – Central Coast – Sydney’s West and Wollongong. These initiatives would link the fast growing population, workforce and jobs of Western Sydney.
- This will be particularly relevant with Sydney’s second airport at Badgery’s Creek, and the adjacent 10,000 ha Western Sydney Employment Area (WSEA).
- The North Connex, now under construction, will be a significant catalyst to further promoting the region and facilitate traffic movement between Wyong and Sydney, thereby further reducing travel times by road to markets and catchments.
- There are also investigations underway to

consider ways of eliminating ‘pinch points’ along the State’s rail networks to speed up rail travel between key destinations such as Newcastle, Sydney, and the Southern Highlands.

- Express trains able to allow commutes between major origins and destinations within an hour would considerably allow many in the workforce to shift out of Sydney to more affordable areas beyond the metropolitan area. The shift by a skilled workforce could attract businesses to establish in employment areas outside of metropolitan Sydney, as has been the trend seen in South East England.



Figure 3 - Greater NSW regional context

2.3 Local Context

Proximity to Key Locations

- The site is approximately 4km north of Wyong town centre, about 3.5km from the M1 Motorway via Sparks Road, about 2.5km from the future new Warnervale town centre, and about 6.0km from the proposed centre of the Central Coast Regional Airport Strategic Area. The Precinct also abuts the existing Sydney Newcastle railway line, with the existing Warnervale Station within 1km from the northern edge of the Precinct.
- It is strategically located near the M1 Motorway, the Wyong Employment Zone, the existing Warnervale train station, the proposed Warnervale town centre and master planned residential estate on the eastern side of the train station.

Adjacent Schools

- The Precinct is nearby to existing schools including the Lakes Grammar School (offering years K-12) and Warnervale Public School (offering years K-6).

Key Regional Infrastructure

- The Precinct is located within 3km of several critical projects to Wyong Council including:
 - Wyong Employment Zone (WEZ)
 - Warnervale Town Centre (including major train station)
 - Sparks Road upgrade (linking to M1 Motorway)
- Key regional infrastructure projects planned for the area (and which will influence the Education & Business precinct) include the completion of the north-south link road between Sparks Road at the Lakes Grammar School in the north to the Pacific Highway at North Wyong / Watanobbi in the south. Stage 1 of the road has been completed as far south only as the senior school of the Lakes Grammar School. Stage 2 would complete the entire link.
- Council is also currently garnering support via community engagement for a proposed Central Coast Regional Airport and identifying a suitable location for the facility. The intent of the airport is to cater to local

and regional demand for an airport in keeping with the current and projected population and employment growth over the next 20 years. It is also aimed to act as a catalyst for additional employment growth, opportunities, and investment.

Link Road

- The Precinct connects to the southern end of the existing Link Road and the Council has plans to extend the Link Road from the Precinct further south to connect to the Pacific Highway at North Wyong.
- The completion of the Link Road will provide significant economic and employment prospects for the region through significantly improved connectivity.
- It will ensure that the regional road network has the capacity to safely handle the increased traffic generated by the future development.
- The Link Road would be the only flood free access route linking Wyong to Warnervale, and provide a direct route north to the M1 Motorway, via Sparks Road.

Synergies with existing land uses:

- The Precinct will complement existing educational services provided by Lakes Grammar to the north of the Precinct. Note that while the Lakes Grammar School would be part of the Education Sub-Precinct, it falls outside of the Master Plan study area.
- Business uses will compliment, rather than compete with, industry and employment uses nearby and potentially form key partnerships with educational uses.
- Community facilities will service a large incoming resident population.

Railway Station

- Distances between existing and potential railway stations are shown in Figure 4.

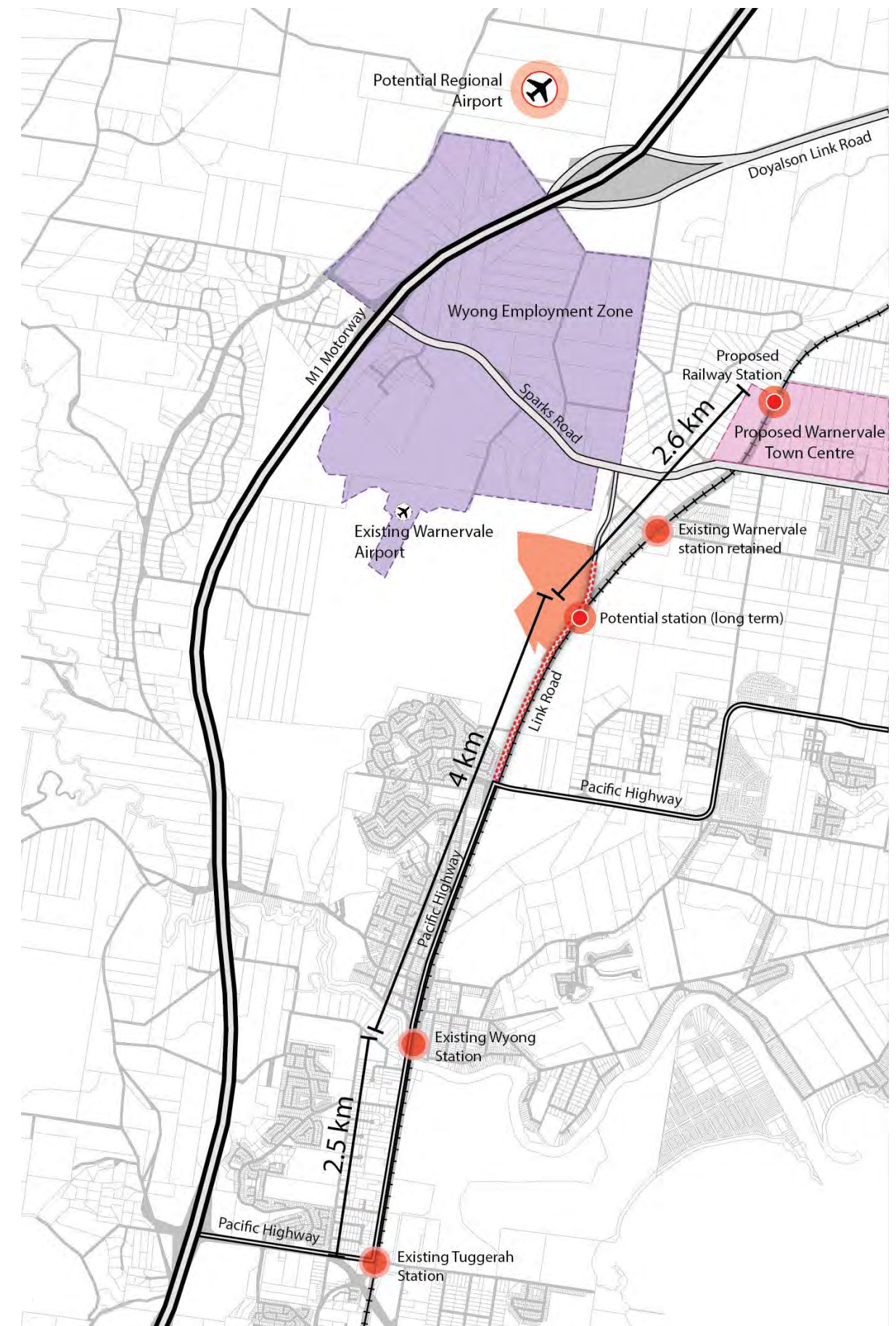


Figure 4 – Local Context

2.4 Precinct 7A Study

- The Precinct 7A rezoning will create a large area for residential properties, a business park, neighbourhood shops, open space and significant areas of conservation land. The combined value of investment created by this rezoning will exceed \$1 billion, providing a significant boost for the local economy and more than 1,000 permanent jobs. See Figure 5 for the Precinct 7A Structure Plan.
- The Precinct 7A area consists of approximately 540 hectares located immediately south of Sparks Road and the new Warnervale Town Centre. The southern portion of the site contains significant flood affected land containing wetlands and endangered ecological communities.
- Precinct 7A is also known as Development Precincts 4, 5 and 7 under the North Wyong Shire Structure Plan.

Land Use

- The Precinct 7A Structure Plan shows the main project elements and includes the following land uses:
 - Low density residential e.g. Single houses
 - Medium density/aged housing e.g. Housing estates and townhouses
 - Neighbourhood shopping facility
 - 37 Ha of business park on Council owned land that is well connected to the proposed Link Road and close to the new Warnervale Town Centre
 - Proposed high school on land owned by Department of Education and Training
 - Extensive areas of public green space, wetlands and parks
- The rezoning is estimated to produce approximately 2,300 residential lots, including an allowance for the redevelopment of Warnervale Village, which has been previously zoned for residential purposes.

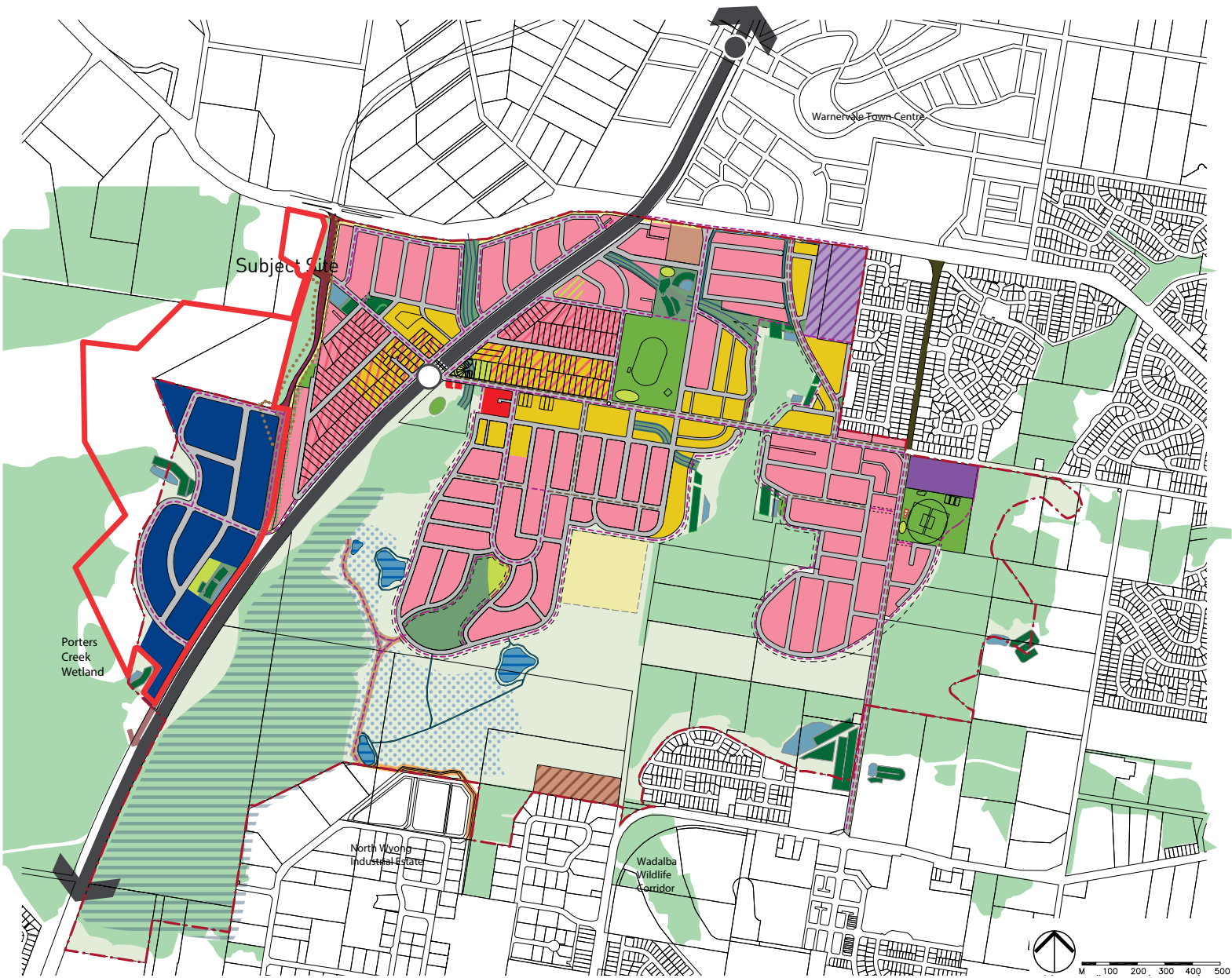


Figure 5 – The 7A Precinct Structure Plan

- The mix of residential lots will be:
 - 65% detached dwellings (expected average size 500m²)
 - 35% medium density, which includes 55+ dwellings, mixed use, dual occupancy and residential flat buildings in Warnervale Village (approximately 300m² lot size)
- This will result in approximately 5,300 extra residents in the area.

Current Project Status

- Extensive consultation with community groups, State Government departments and other key external stakeholders allowed for the identification, resolution and creation future management plans for issues and grievances surrounding the Precinct 7A proposal.
- The final Precinct 7A plans were adopted at the Ordinary Council meeting on 24 April 2013 with the zoning plans incorporated in the Wyong Shire LEP 2013, which became effective on the 23rd December 2013.



02 Context

2.5 Existing Planning Controls

Zoning and Land Uses

- The Precinct is subject to Wyong Local Environmental Plan (LEP) 2013. Under the LEP, the Precinct is zoned part SP2 – Education Establishment, part E2 – Environmental Conservation, and part B7 – Business Park. See Figure 6.
- The developable land largely coincides with the B7 – Business Park Zone. Adjacent SP2 – Educational Establishment and E2 – Environmental Conservation zones also apply.
- Under the B7 zone, a range of supporting land uses are permitted with consent. Educational Establishments are also permitted via other legislation (see State Environmental Planning Policy (Infrastructure) 2007 – ISEPP – clause 28(1)).
- The B7 Land Use table is replicated below.

Zone B7 Business Park

- 1 Objectives of zone
 - To provide a range of office and light industrial uses.
 - To encourage employment opportunities.
 - To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.
 - To permit limited residential accommodation that contributes to the provision of employment opportunities.
- 2 Permitted without consent
 - Nil
- 3 Permitted with consent
 - Child care centres; Food and drink premises; Hotel or motel accommodation; Kiosks; Light industries; Neighbourhood shops; Office premises; Passenger transport facilities; Respite day care centres; Roads; Serviced apartments; Sewage reticulation systems; Shop top housing; Warehouse or distribution centres; Water reticulation systems; Water storage facilities; Any other development not specified in item 2 or 4
- 4 Prohibited
 - Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Boat building and repair facilities; Camping grounds; Caravan

parks; Cemeteries; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Entertainment facilities; Exhibition homes; Exhibition villages; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industries; Marinas; Mortuaries; Open cut mining; Registered clubs; Residential accommodation; Resource recovery facilities; Restricted premises; Rural industries; Sewerage systems; Storage premises; Tourist and visitor accommodation; Truck depots; Vehicle body repair workshops; Waste disposal facilities; Water supply systems; Wharf or boating facilities

- Not all proposed land uses under this Master Plan are permitted with consent. Adjustments would be required to the LEP in order to realise the Master Plan. This is discussed in further detail at Section 6.2.

Height and Density Controls

- Height and density controls apply in the B7 zone, but may require review following adoption of the Master Plan. No height or density controls are applicable of the SP2 or the E2 zones.

- Under the LEP, a 12m height limit applies across the B7 zone whilst the same area is subject to a density (FSR) control of 0.8:1 – we note that the LEP FSR map and legend do not accord. We assume the FSR is 0.8:1 based on the previous version of the map now no longer in force.

- Clause 4.6 of the LEP allows for exceptions to development standards, including height and FSR controls. Whilst this provides flexibility, it may not provide sufficient scope to allow Council to approve more significant departures from these standards.

- As with the land use zone(s), adjustments would be required to the LEP in order to realise the Master Plan. This is discussed in further detail at Section 6.2.

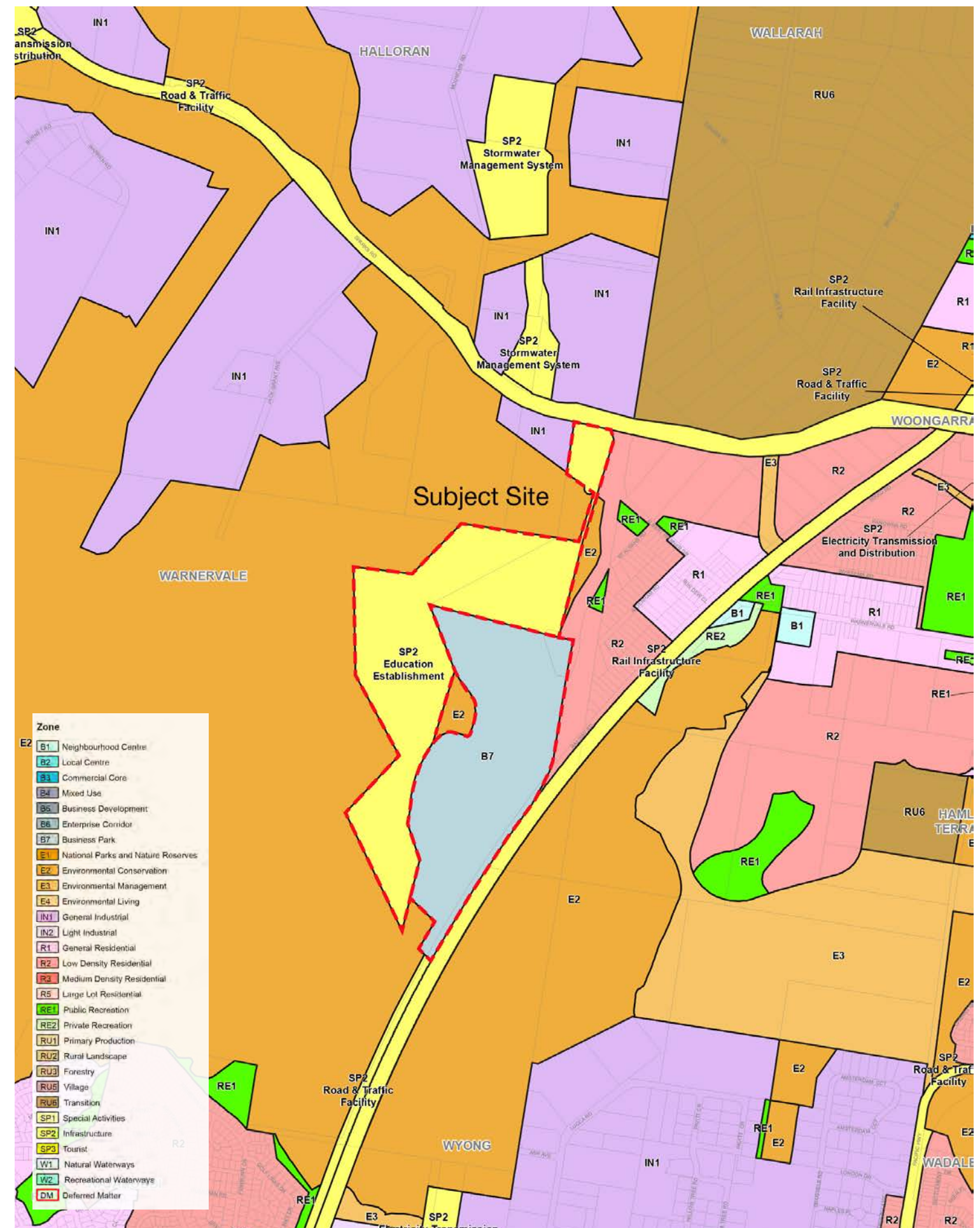


Figure 6 – Wyong Shire Council LEP 2013: Existing zoning controls map.

3.1 Site Boundary

- The site is in the ownership of the Wyong Shire Council and forms part of the overall study area known as Precinct 7A, north of the Wyong and Tuggerah major employment areas. The Precinct is approximately 4km north of Wyong town centre, about 3.5km from the M1 Motorway via Sparks Road, about 2.5km from the future new Warnervale town centre, and about 6.0km from the proposed centre of the Central Coast Regional Airport Strategic Area. The Precinct also abuts the existing Sydney-Newcastle railway line, with the existing Warnervale Station within 1km from the northern edge of the Precinct.
- It is strategically located near the M1 Motorway, the Wyong Employment Zone, the existing Warnervale train station, the proposed Warnervale town centre and master planned residential estate on the eastern side of the train station. The Precinct is nearby to existing schools including the Lakes Grammar School (offering years K-12) and Warnervale Public School (offering years K-6). These education sites fall within the Education Precinct, but outside of the study area for this Master Plan. The Precinct connects to the southern end of the existing Link Road and the Council has plans to extend the Link Road from the Precinct further south to connect to the Pacific Highway at North Wyong.

- The wider site is approximately 433 ha in area, with some 65 ha identified via the Desktop Review as being developable land. The site is generally characterised by:
 - A cleared landscape, along a long north-south ridge-line and a series of ridge tops
 - Open woodland
 - Bush fire risk
 - Topography and catchment drainage to the west and south-west
 - Wetlands and ecological constraints in the Western portion of the Precinct.

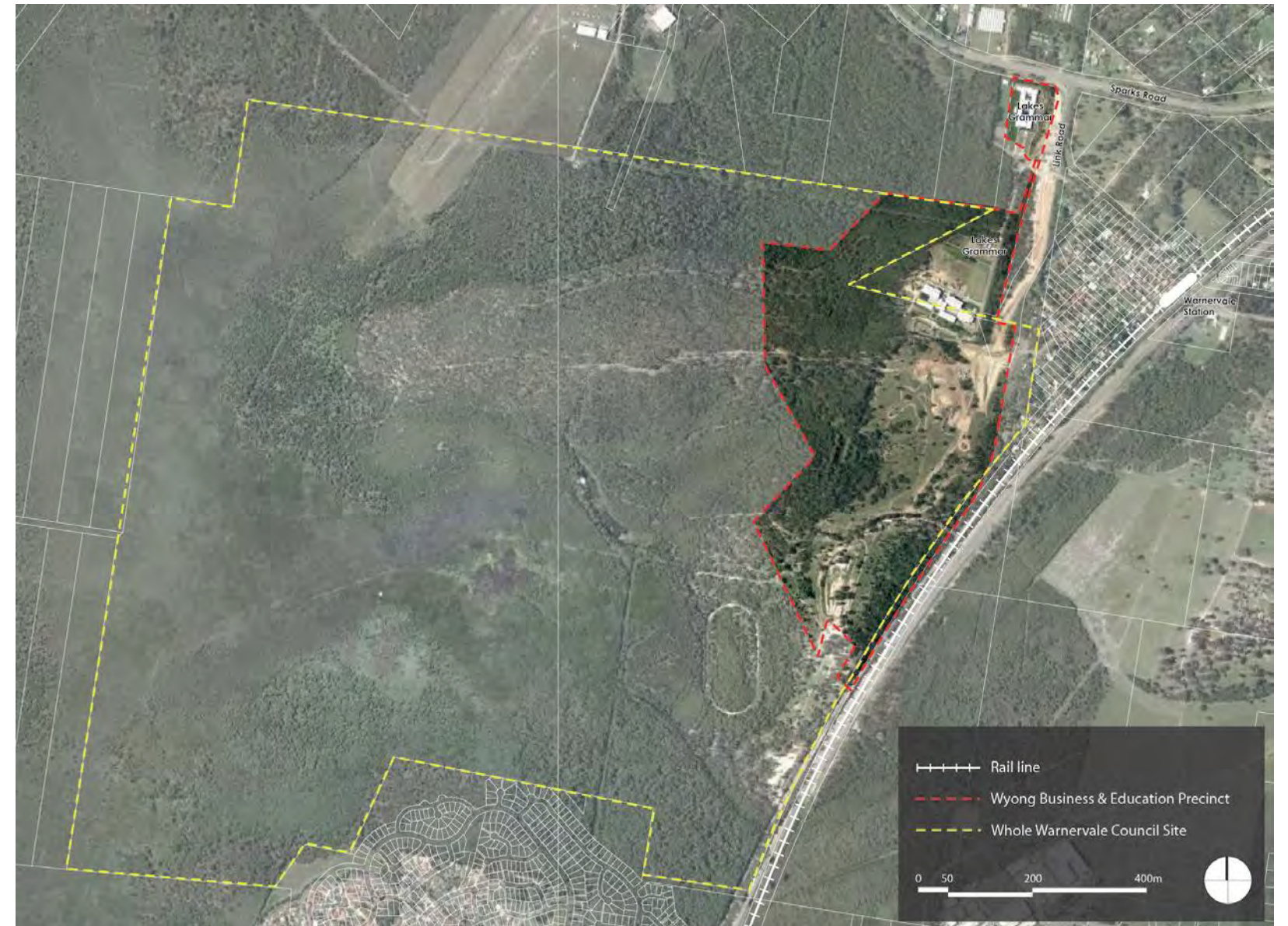


Figure 7 – Aerial Photo with council owned land, and proposed site boundaries.

3.2 Topography

- Generally, the site is characterised by a dominant high ridge line running in a north-south direction and which is generally the existing cleared land with the best parcels for future development. This broadly runs parallel and within proximity to the rail line.
- This ridgeline provides for a “necklace” of cleared high points linked by vegetated spaces.
- The second of the two arms of ridge lines runs westwards from the northern extremity of the site, but would seem a little less well suited for development due to a range of constraints addressed below. This arm of ridgeline has a max RL of 30m and is heavily modified land with fill, moved earth, and imported material from within the precinct presently serving as a moto-cross track. This part of the site offers the best opportunity for views to the west and south-west.
- Of the natural topography on the site, the highest RL is 22m on this western ridgeline’s arm.
- The main and longer southern ridgeline arm has two plateaux at RL 20m with a large and consistent benching of at least RL 18m for many hundreds of metres in length.
- Views on all directions would be possible for any significant and taller buildings and would also allow for landmark locations for taller buildings, particularly at the north of the site near existing urban development which would also provide for a “front door” to the Precinct.
- The slope of the land is generally to the west falling from RL 18m to below RL 4m into the Porter’s Creek wetland to the site’s south-west. The site also slopes to the eastern boundary of the site towards the rail line and its cutting.
- Landmark building(s) on higher parts of site operating / serving as a focal point may result in Obstacle Limitation Surface (OLS) and Procedures for air navigation services (PANS-OPS) issues for future Central Coast Regional Airport. This in itself is not prohibitive, but would be instructive of maximum heights of buildings (most critically in relation to PANS-OPS).
- The likely future OLS and PANS-OPS limitations are not known, but given the distance of the site from the likely airport location this should not pose a significant issue in formulating likely building envelopes.
- Clause 7.7 of Wyong LEP 2013 presently limits approval of DAs for development near to Warnervale Airport that may penetrate either or both the OLS and PANS-OPS until the Commonwealth has signed-off or approved the development (as the case may be). Similar provisions would come into play in relation to the future airport.
- The Warnervale Airport OLS limitation across the site is RL 52.6m. This is the equivalent of about a 10-storey building plus plant assuming development on the RL 18m benched areas on the main ridgeline. No PANS-OPS information for the airport is available.
- Figure 8 shows the site’s topography via a contour map.

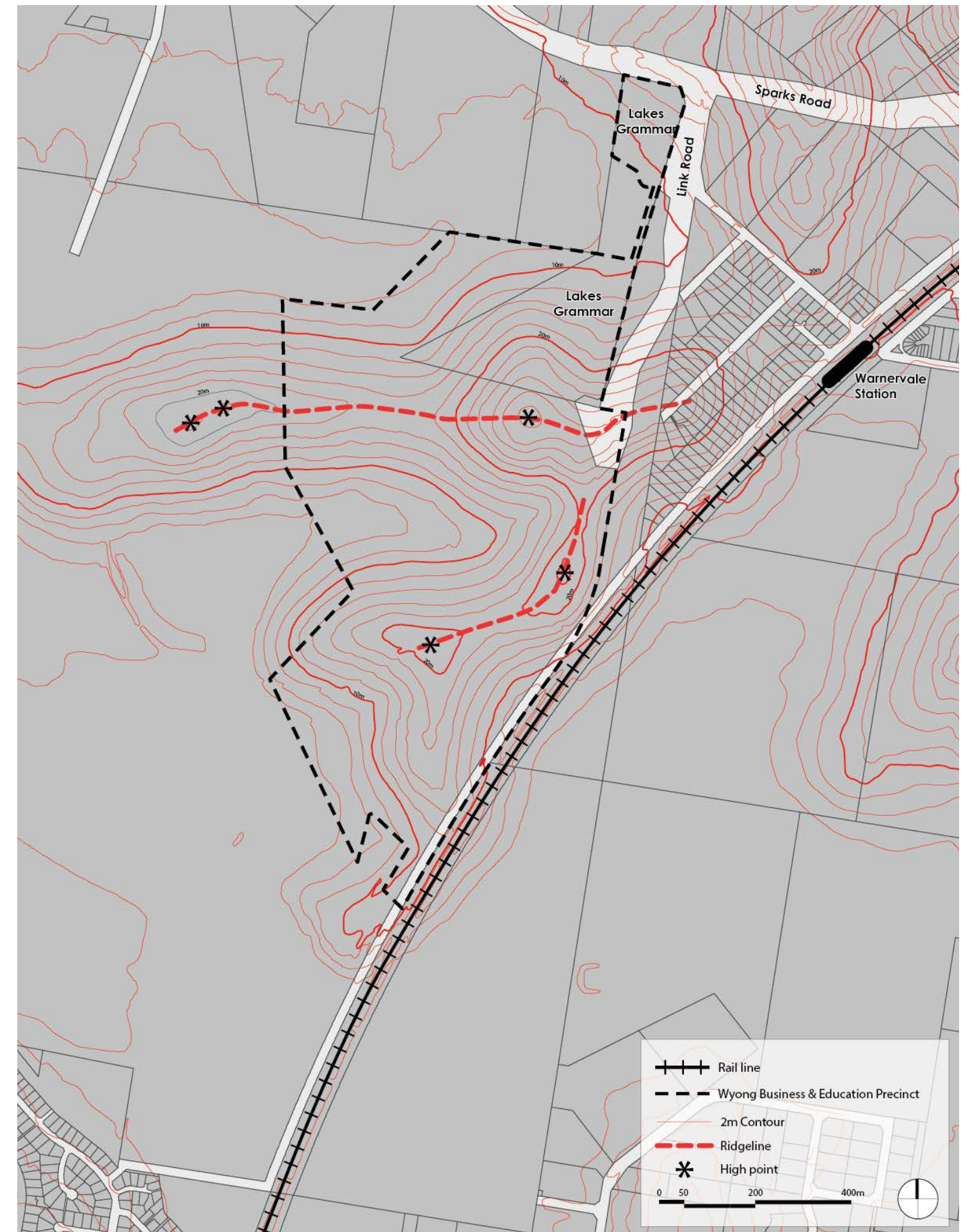


Figure 8 – Topographical features of the proposed site.

3.3 Ecology and Biodiversity

- A significant portion of the site (below about RL 6m) is understood to be subject to SEPP14 Wetlands and Ecological Endangered Communities (EEC).
- The SEPP 14 Wetlands are the Porter's Creek Wetland. Accordingly, whilst they cover a wide area they appear to not substantially affect or apply to the developable parts of the site atop the ridge lines.
- Investigations carried out for Council in 2013 in relation to the Precinct 7A area found five threatened flora species, nineteen threatened fauna species, one endangered flora population and four endangered ecological communities (EECs) within the Precinct 7A study area.
- Within the Business & Education Precinct only two small pockets of Alluvial Melaleuca Sedge Forest (EEC) were identified. These are located along the rail line at the easternmost boundary of the site and are affected by the Link Road Stage 2 extension, more so than by potential development (particularly the southernmost pocket of the EEC). These 2013 studies concluded that the Precinct 7A project would have no significant impact on any of the 4 EECs.
- No threatened flora species were found in the Business & Education Precinct subject to the 2013 investigation.
- Two locations on the downwards slopes between the two ridge lines were identified as containing the Large-footed Myotis. The large-footed Myotis was not recorded during 2013 surveys, however has been recorded in the study area in two earlier surveys. There is suitable foraging habitat for this species in parts of Porters Creek wetland.
- The Business & Education Precinct has the potential to be Koala habitat. The study area is subject to assessment under SEPP 44 (Koala Habitat Protection), as it lies in a Local Government Area listed in Schedule 1 of the policy. SEPP 44 aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for the koala. The aim of this is to ensure permanent free-living populations over their present range and to reverse the current trend of population decline. Any development application in an identified LGA that will potentially affect an area of one hectare or greater, must be assessed under this policy.

- The SEPP 44 assessment completed as part of the survey for this project in 2013 consisted of determining the proportion of Schedule 2 feed tree species. In total 13 eucalypt species were identified throughout the study area, of these three were koala feed tree species.
- Of the 21 sites surveyed, seven of the sites contained koala feed tree species, and of these seven sites five contained sufficient proportions of feed trees to identify the site as potential koala habitat.
- Whilst there is no clear evidence of koalas, it must be assumed that the study area contains (at least in part) core koala habitat. However, given the highly urbanised landscape around the study area and its locality, it is unlikely that the area would contain a viable population of this species.
- A high degree of vegetation connectivity is assumed to occur within the site, principally along the main north-south ridgeline and in the lower areas north of the Porter's Creek wetland. This connectivity has the potential to form key corridors to be used by a variety of fauna groups (and species), depending on the dominant vegetation type in the corridor.
- The Commonwealth EPBC Act may also apply to land where the proposed hazard reduction works or any other clearing works are to be undertaken. The EPBC Act requires that actions which will have or are likely to have a significant impact on matters of national environmental significance (controlled actions) are approved under the EPBC Act.
- A search of the Department of Sustainability, Environment, Water, Populations and Communities (DSEWPC) Protected Matters Database identified threatened and migratory species (EPBC Act listed) known to occur or considered likely to occur, on the basis of habitat modelling, within 10 kilometres of the study area. No EPBC Act listed endangered populations or threatened ecological communities (TECs) are known or have potential to occur within the study area. From the Assessment of Significance, it is concluded that the project is not likely to pose a significant impact on matters of national environmental significance as listed under the Schedules of the EPBC Act. The proposal is not believed likely to comprise a controlled action, and will not require referral to the Minister for determination.
- Figure 9 provides for a composite of the various ecological constraints on or near the site.

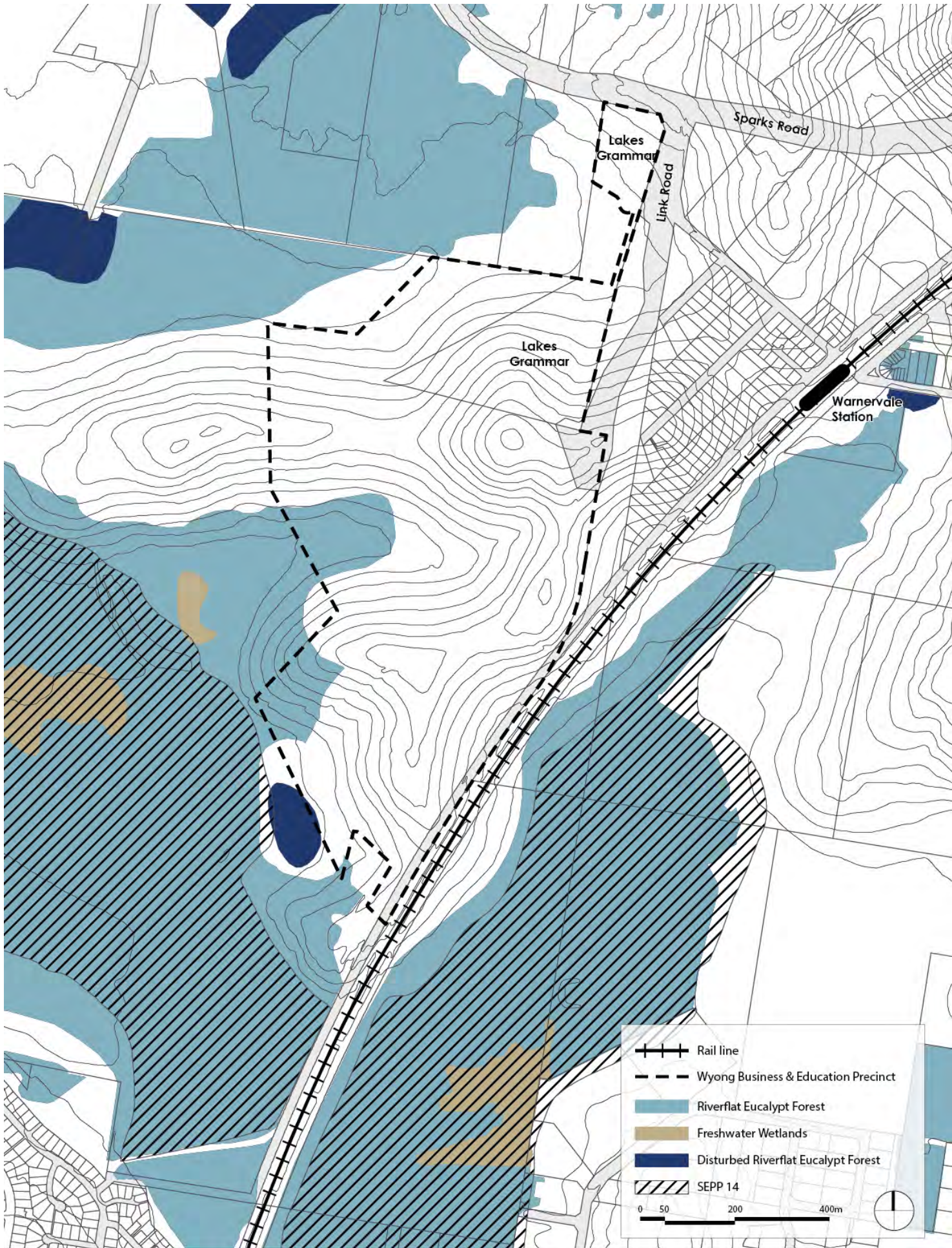


Figure 9 – Ecology & biodiversity features of the proposed site.

3.4 Bushfire

- The site is affected by bushfire risk and is mapped as Bushfire Prone Land on Council's maps – see Figure 10.
- Relevant State planning provisions in relation to bushfire protection and Asset Protection Zones (APZs) of varying widths relative to the level of bushfire risk and land use would apply, noting special provisions apply to clearing of SEPP 14 wetlands (including the Porter's Creek wetland).
- APZs would form part of engineered solutions where required.
- The clearings and open and benched land on the ridges on the site are broadly partly unaffected by bushfire risk (in isolated cases only), but predominantly nominated as Vegetation Buffer under Council's maps. Either side of the ridgelines in higher density vegetation, the Bushfire Risk is nominated as Vegetation Category 1. A small amount of lower order Vegetation Category 2 land is also identified.
- Vegetation Category 1 is typically forest, woodland, National Parks or State Forest land.
- The Vegetation Buffer applied in this instance is a 100m wide buffer for the Category 1 vegetation which predominantly skirts the site's ridgelines. The area within the Buffer is about 20ha in area.
- The RFS's Planning for Bushfire Protection 2006 will apply to the development of the site. Principles within this guideline should be applied in early spatial planning for development.
- Formal assessment of bushfire risk will only be needed at development application stage (whether subdivision or for buildings).
- Note, development for the purposes of an educational establishment, health services facility, correctional centre or group home, or for residential purposes, in an area that is bush fire prone land (as defined by the Act) are required to consult with the NSW Rural Fire Service as Special Fire Protection Purposes.
- Special Fire Protection Purpose are defined by s100B of the Rural Fires Act 1997. They are generally developments designed for occupants that are more vulnerable to bush fire attack due to reduced mobility capacity, less educated regarding bush fire impacts, organisational difficulties for relocation, have communication barriers and logistical arrangements.
- A university, college, independent student accommodation use would generally fall within this category. Approval from the RFS under s100B would be required at DA stage.
- Broadly development opportunity on the site is located on the limited non bushfire prone land and within the 100m buffer zone with the application of suitable APZs, and other design solutions including evacuation routes and fire fighting infrastructure to address bushfire risk.

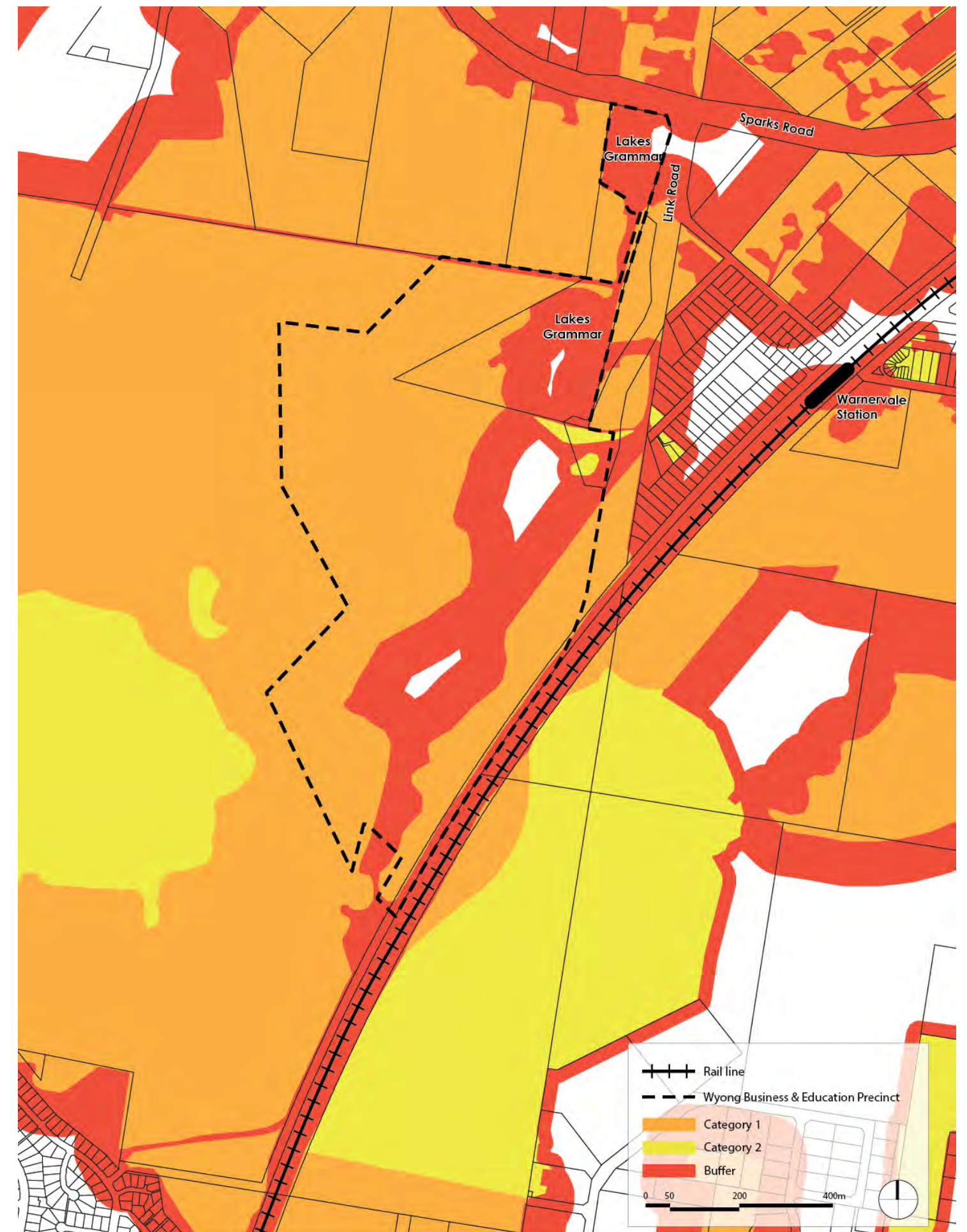


Figure 10 - Bushfire risk at the proposed site.

3.5 Drainage and Flooding

- A key principle applied to the North Wyong Shire Structure Plan has been to not intensify land use in areas that could be at risk from increased flooding. Detailed flooding investigations will need to be undertaken as part of local planning.
- Flooding impacts for a 1% AEP event are largely nonexistent above RL 6m. An event that has an AEP of 1% is an event occurring that is 1 chance in 100 in any given year, thus the probability is 0.01 (1%). Accordingly, the ridge lines of the site are well above a significant annual rain / flooding event.
- Development of the site / precinct can take advantage of existing drainage infrastructure to the north and Porter's Creek wetland to the south-west and seek to link the two through the site with contemporary drainage designs. Northern drainage collection points have the potential to feed into the wetland via a "harvesting pipe".
- Adoption of an Integrated Water Cycle Management system (see Cardno model for Precinct 7A) may include proposed constructed wetlands at the site's periphery near the Porter's Creek wetland and piped infrastructure in support.
- Drainage infrastructure at a localised or micro level may include WSUD models including at-grade car parks, open space

and green space, and thoroughfares within the campus(es).

- The general drainage and flooding features of the site are shown in Figure 11.

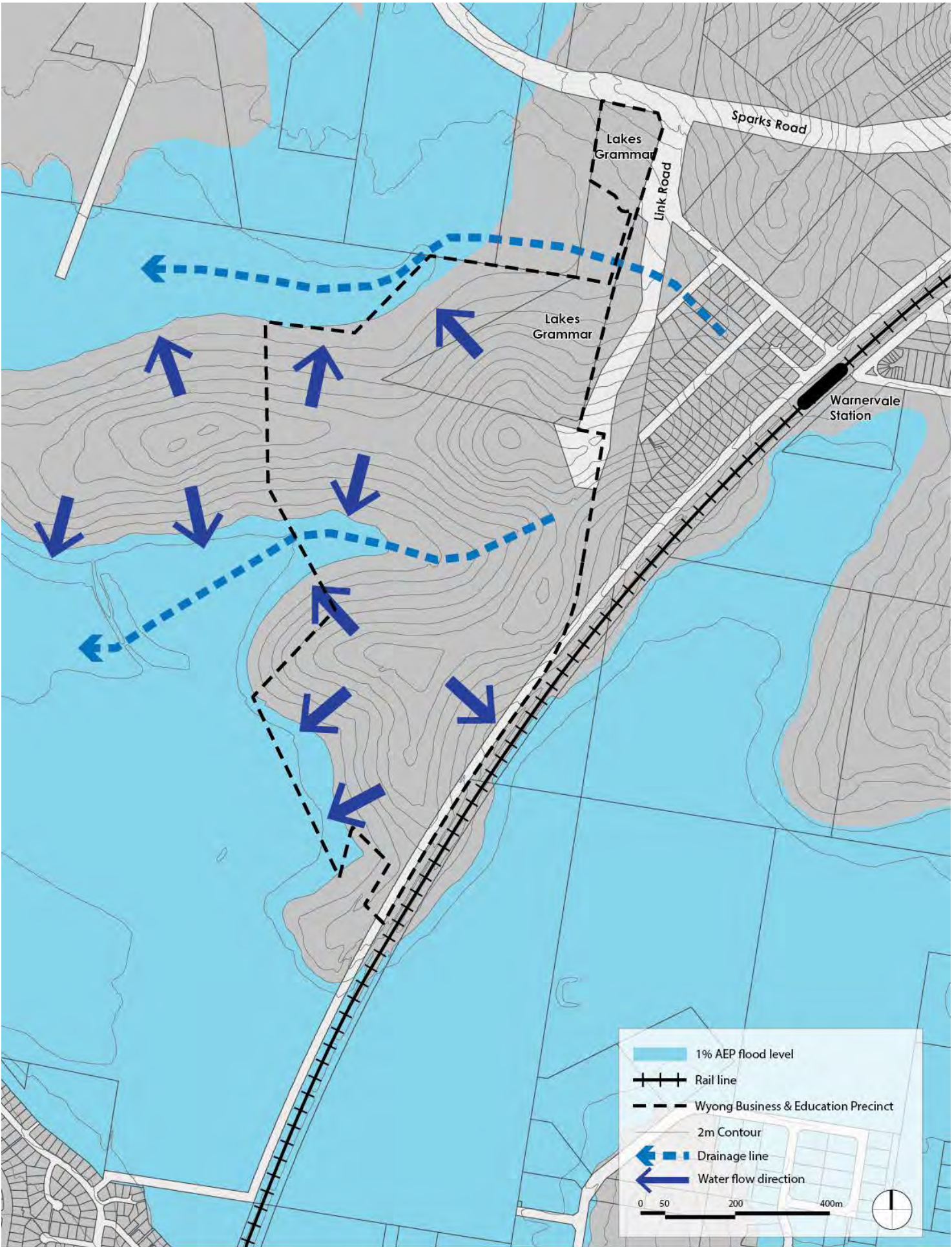


Figure 11 – Drainage and water features of the proposed site.

3.6 Geotechnical & Contamination

- The site is mapped by Council as containing Acid Sulfate Soils of Class 5 on the ridge lines and of Class 3 on lower land generally within the area within and bordering the Porter's Creek wetland. Acid Sulfate Soils pose no threat unless exposed by works or development. See Figure 12.
- Class 5 soils are the lowest category of Acid Sulfate Soils. Only works which are within 500 metres of adjacent Class 1, 2, 3, or 4 land which are likely to lower the watertable below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land are likely to require an Acid Sulfate Soils Management Plan and development consent. This would appear unlikely given the distance of the Class 3 soils from the likely developable land.
- The site is not a Mine Subsidence District under Council's maps. This allows for substantially sized developments on their merits having regard to other relevant impacts and constraints.
- None of the site is mapped as contaminated land.
- Fill and moved earth on the site would appear to originate from within the site and also therefore not be considered as contaminated.

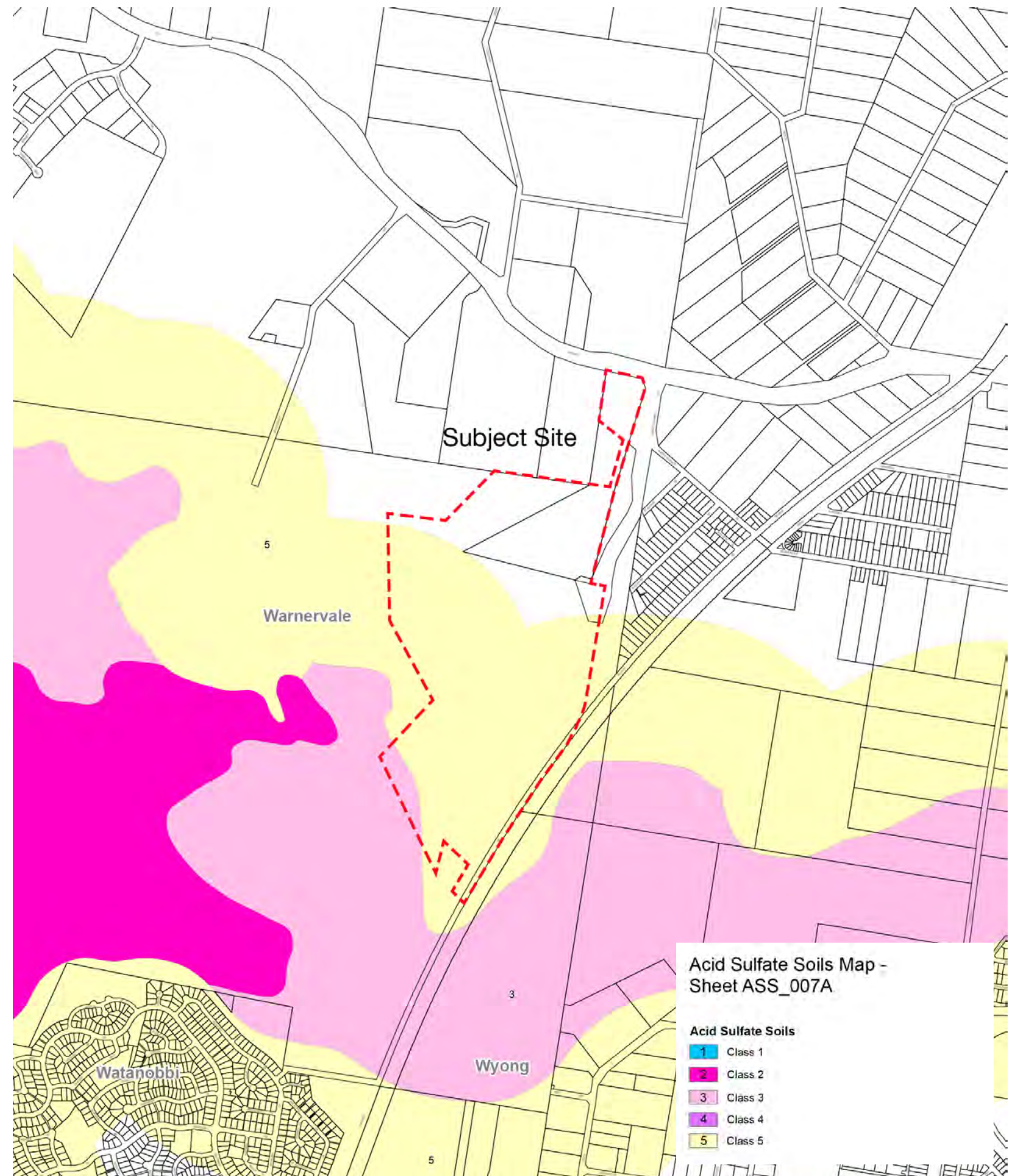


Figure 12 – Wyong Shire Council LEP 2013: Acid Sulfate Soil Map

3.7 Transport and Access

- As stated earlier, the site is well located being approximately 4km north of Wyong town centre, about 3.5km from the M1 Motorway via Sparks Road, about 2.5km from the future new Warnervale town centre and railway station, and about 6.0km from the proposed centre of the Central Coast Regional Airport Strategic Area. The site also abuts the existing Sydney-Newcastle railway line, with the existing Warnervale Station within 1km from the northern edge of the site.
- Improved and faster connections to and into the site and Precinct will result from the planned Link Road Stage 2 extension.
- Improved Motorway access via Sparks Road will result once the second stage of the Link Road is completed. This will also provide significant exposure to the site and enhance its marketability.
- Widening of the M1 is planned south and north of site access off Sparks Road to further improve peak traffic flows and accessibility.
- Rail access from Warnervale Station (upgraded station location at new town centre) and likely changed express services to and from Warnervale (currently not offered or available) will enhance accessibility to the Precinct.
- Shuttle bus access from Warnervale Station to site is possible as well as adjustments to existing bus routes in the

locality.

- Accommodation options on Campus will also reduce travel demand and infrastructure needs to a portion of the students. With a accommodation for 1,500 planned for a 7,000 student campus this equates to over 20% of students potentially residing on-site.
- Figure 13 identifies the site in the context of existing and planned roads and rail infrastructure.

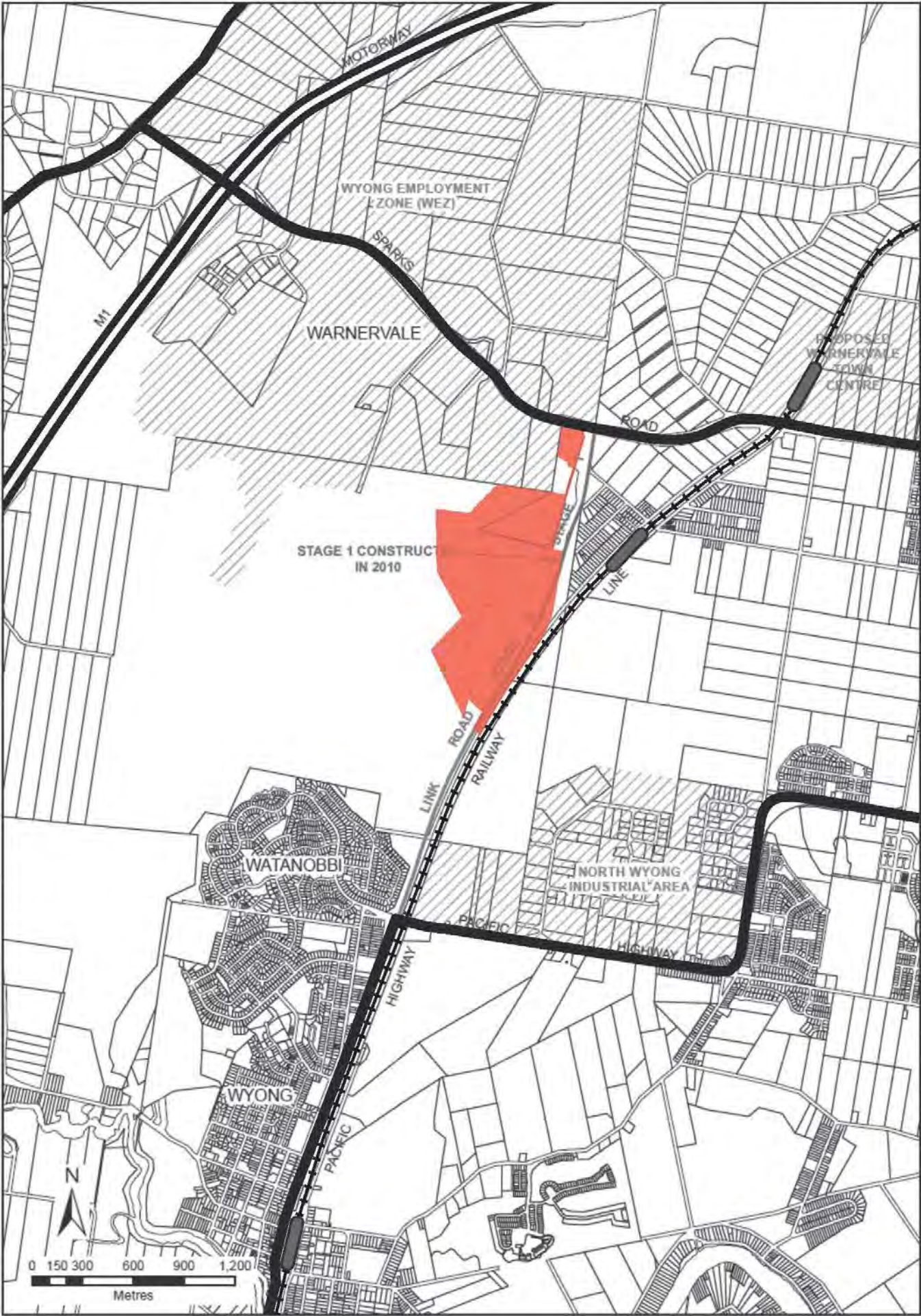


Figure 13 – Transport & access features of the proposed site.

3.8 Infrastructure

- The site is substantially unserviced with only drainage up to the site boundary at the completed portion of the Link Road.
- Sewer connection appears possible near the railway line at the northern boundary with adjacent residential development – however existing capacity is not known but assumed upgrades will be required.
- As the site is wholly in Council's ownership a single shared set of infrastructure can be planned for from the outset.
- Accordingly, an infrastructure funding regime can be more easily established with Council as the lead landowner and authority.
- Infrastructure could follow the Link Road reservation, particularly if a north-south oriented development pattern and staging is implemented.
- The range of likely infrastructure upgrades required (within the wider Precinct 7A) includes:
 - Transport (roads, rail and public transport, pedestrian and cycle ways)
 - Water
 - Sewerage
 - Drainage
 - Community buildings
 - Open Space
 - Health facilities
 - Education buildings
 - Energy infrastructure
- Some of these will be provided for directly by the site (e.g education and community buildings), but others will be part of the wider network and dependent upon staging and capacity considerations.
- Infrastructure can be provided in a number of ways as the planning and delivery of infrastructure may be shared between many parties such as State Government agencies, Local Government, Commonwealth Government, as well as developers through development contributions and private sector investors. As the area develops, infrastructure will likely be delivered by private developers and/or programmed into the State and local council capital works programs in stages with a view to keeping pace with the new urban development that is occurring.
- Figure 14 sets out the existing servicing of the site and its environs.

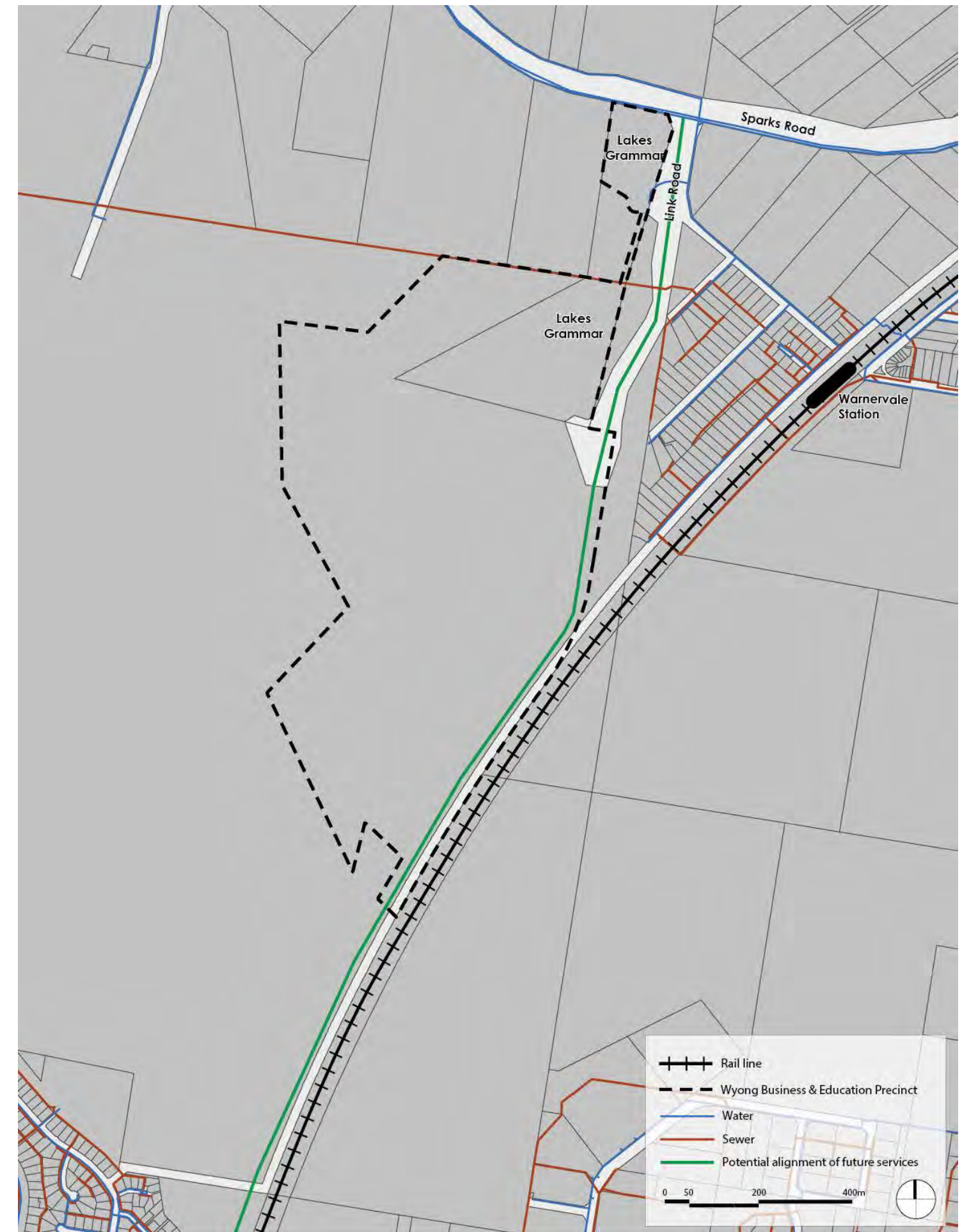


Figure 14 – Infrastructure features of the proposed site.

3.9 Public Transport

Bus:

- Warnervale’s land uses are changing, particularly with employment and education activities. This will require a new bus network from most parts of Wyong, linking the current and future residential areas with the activity nodes.
- Existing and new bus routes can access the site via the proposed Link Road.

Railway

- The Precinct is bounded by the Northern Railway between Newcastle and Sydney, which offers major opportunities for the Central Coast workforce to access these two major employment nodes. There are currently studies being undertaken as to how to speed up the services so as to make commuting more attractive, by cutting the journey-to-work times.
- The corollary to this is that reverse trips from the large workforce in Sydney and Newcastle could encourage businesses to establish in Wyong to take advantage of a skilled local workforce and availability of more affordable land. With the aim of speeding up rail travel between Newcastle and Sydney there would need to be express train stopping at key destination and origin stations.
- Wyong’s obvious destination stations would be Wyong, Tuggerah, and a potential Warnervale Town Centre Station.

- In the longer term, when the proposed SMARTS Hub, Business Park and University are functioning, a train station to serve this major destination would be a key element in reducing the car dependency of the Precinct, thereby allowing less land required for car parking.
- It is recommended that provision be made for a future interchange adjacent to the Link Road.
- Figure 15 sets out the likely bus and train linkages to the Precinct within the existing network context.

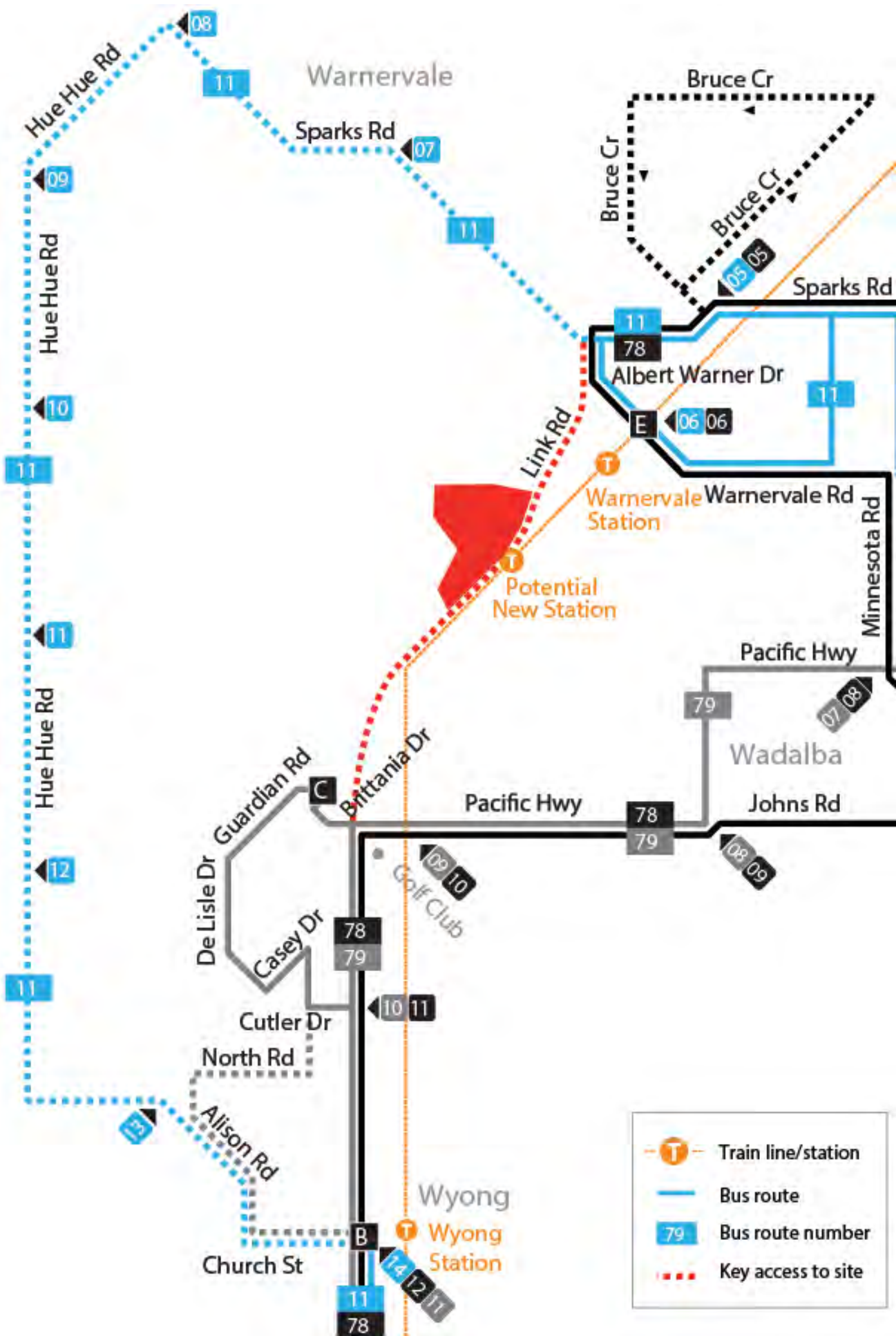


Figure 15 – Existing local bus and heavy rail routes.

3.10 Combined Constraints

- The Precinct / site is (potentially) affected by:
 - Future aviation constraints from the proposed Central Coast Regional Airport in relation to OLS and PANS-OPS limitations to development height. This will need to be confirmed at a later date.
 - Warnervale Airport OLS limitation of RL 52.6m. This equates to building of about 10 storeys in height on the highest parts of the site.
 - Bushfire Prone Land, with the need for APZs of various widths to be determined. Given Educational Establishments are a Special Fire Protection Purpose under the Rural Fires Act, separate approval will most likely be required, unless the DA for this development is State Significant Development (SSD).
 - Limited scope for threatened species including Koalas and the Large-footed Myotis.
 - Two small pockets of Alluvial Melaleuca Sedge Forest (a listed EEC) near the railway line.
 - The need to provide a high degree of vegetation connectivity and green corridors across and along the ridgeline of the site.
 - Location of the Stage 2 extension of the Link Road and its funding, timing and delivery.
 - Aboriginal heritage may occur on the site and require separate approval as part of the DA process (unless SSD).
 - Significant Infrastructure (social, but also principally physical) is required - the location, funding for, and staging of which has not yet been determined.
 - Noise and vibration impacts from road, rail, and aviation, particularly on sensitive education and residential uses.
 - Introduction of an overseas university into the local market and timing to establish this university under relevant local legislation and therefore its ability to act as a catalyst for the precinct in the shorter term.
 - The development opportunity within the SP2 Educational Establishment zone is less clear than that of the B7 Business Park zone (where greater opportunity appears available). This

would need to be further reviewed in light of potential flooding, wetlands, and ecological issues.

- Figure 16 provides a single map of the likely combined constraints.
- There would appear to be no significant or material impact posed by:
 - Topographical constraints. In general, an area in the order 20ha would appear developable along a necklace of clearings along the north-south ridge line within the B7 Business Park zone.
 - Flooding on the ridgeline above a RL of at least 6m in relation to a 1% AEP event. Broadly any land above RL 16m would be well outside off substantial flooding risk.
 - Building height (other than future potential effects upon aviation). A landmark building of about 10 storeys would be possible without affecting Warnervale Airport's OLS limitation.
 - SEPP 14 wetlands (such as the Porter's Creek wetland) and their EECs appear to be well located away from developable parcels and would not affect future development.
 - SEPP 26 Littoral Rainforests as none occur on the site.
 - SEPP 71 Coastal Protection as the site is sufficiently well located way from the relevant zones under State legislation.
 - Commonwealth legislation in relation to matters of National Significance, including Threatened Ecological Communities.
 - Geotechnical issues (including subsidence), contamination, acid sulphate soils or mining licences.
 - Traffic, access, or parking issues or constraints.
 - European heritage or archaeology.
 - Integration with existing and future adjacent land uses (other than edge impacts to low-rise residential development and the airport(s) in proximity to the site).
 - Strategic and statutory planning objectives and controls as the proposal satisfies broader planning and land use objectives.

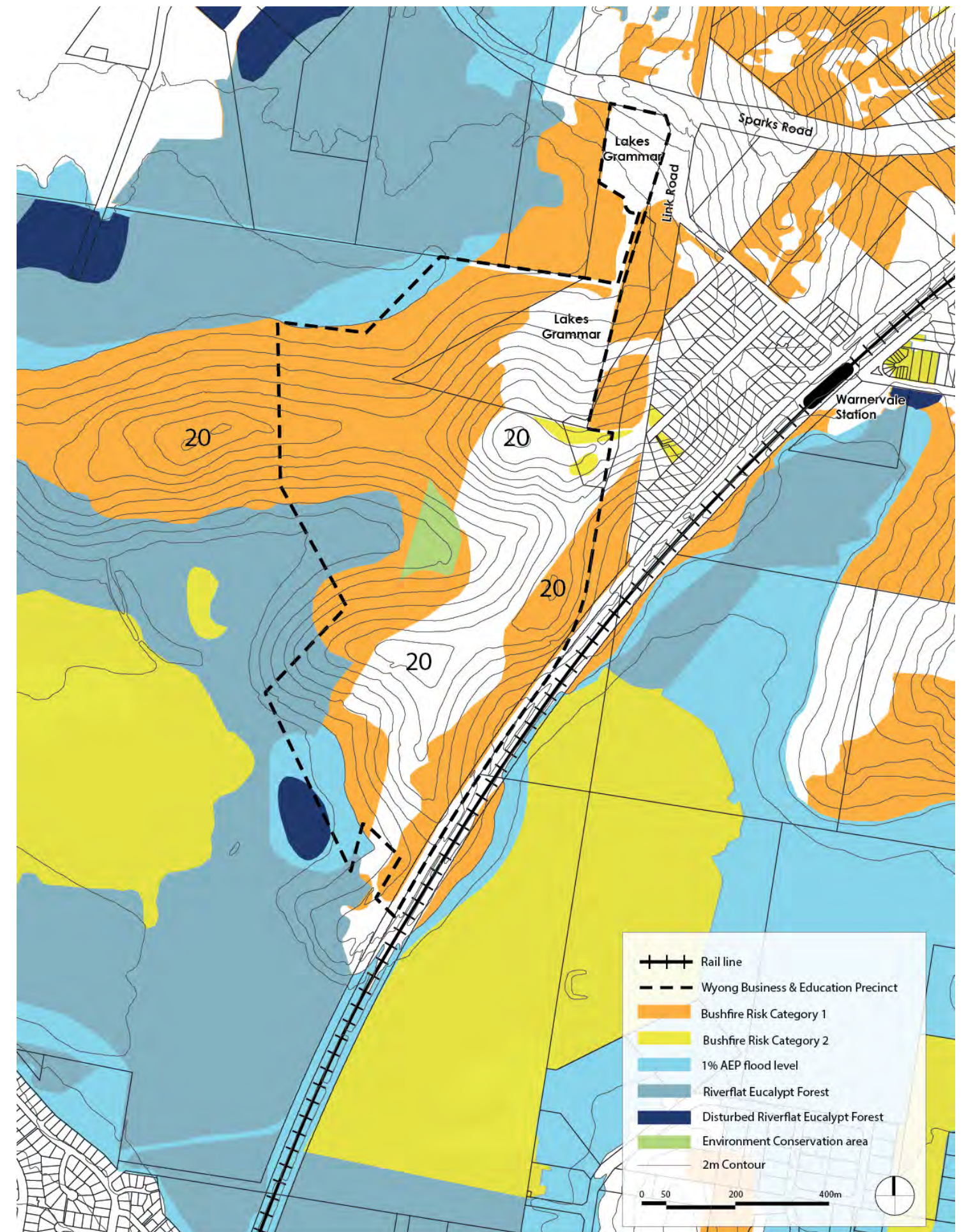


Figure 16 – Combined constraints of the proposed site.

3.11 Development Opportunities

- The developable footprint of 65 ha is largely confined to a dominant north-south ridge-line and a secondary east-west ridge-line at the northern extent of the Precinct.

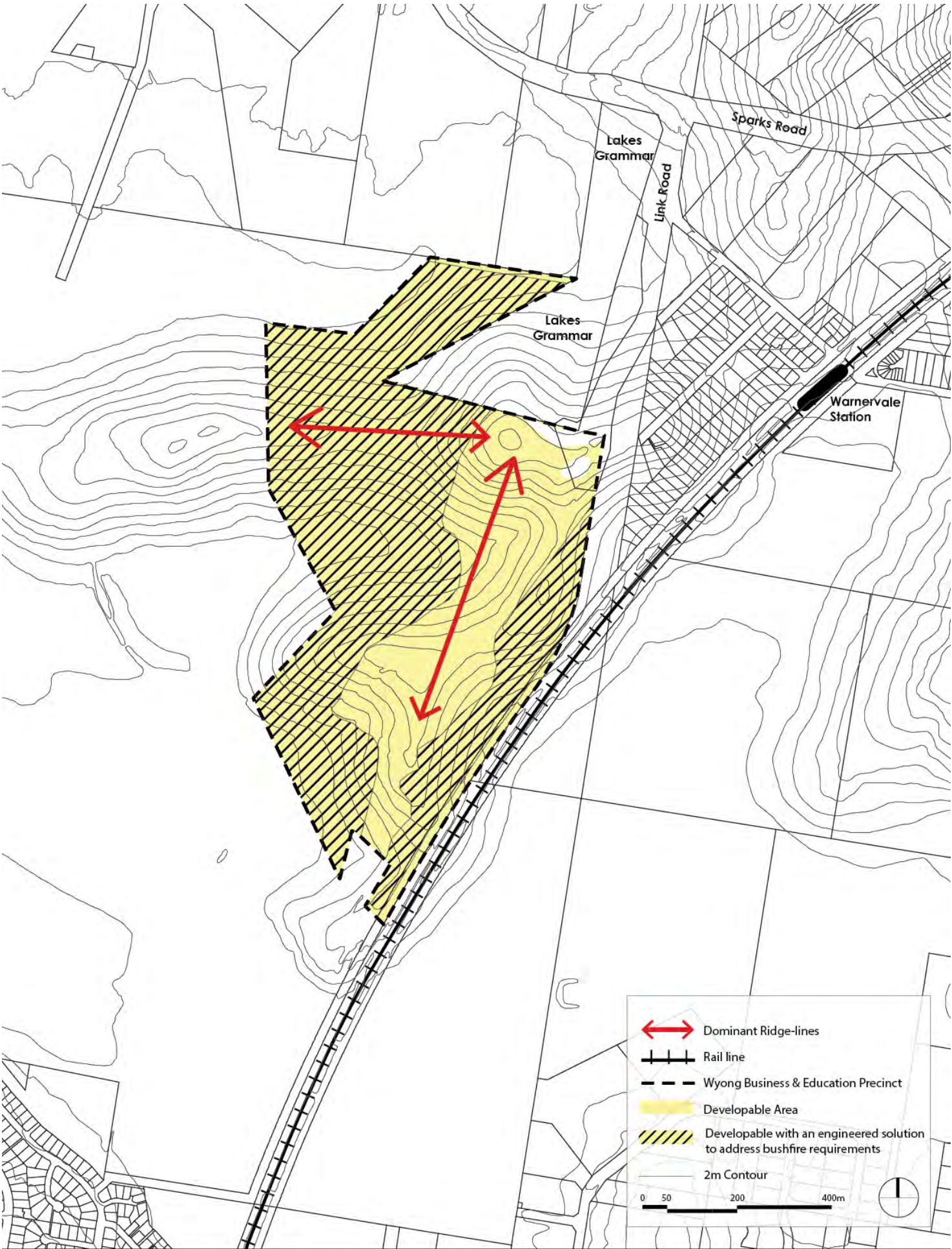


Figure 17 – Developable areas of the proposed site.

4.1 Vision

- The overall vision is for an integrated and interactive tertiary education, business & technology park, community & recreational space, and a SMARTS Hub, on a key council owned site. It will be a key activity hub in Wyong, attracting a variety of demographic groups.
- The physical vision is based on integrating these components by two development corridors or arms, focused on a central fulcrum; the western arm along the ridge line is the majority of the university, and is tied to a central hub by an east-west pedestrian spine which forms the location for each faculty building. A north-south pedestrian spine, from the central hub, contains the university campus up to the Northern boundary of the Business Park. Whilst the boundary between the University and the Business Park could be fixed, the interface of activity can be 'fluid', allowing business and research to interact in a positive way.
- It is also proposed that the University will complement and work closely with the existing schools in the area such as Lakes Grammar, McKillop Catholic College and Warnervale Public School.
- The Central Core includes;
 - SMARTS Hub:
 - Low-scale retail to cater for the incoming population:
 - Library: possibly shared between the University and Council.
 - The main pedestrian square at the intersection of these, will form the main meeting place for the space, including for students, workers and visitors of the precinct.
- The vision includes making the Precinct the focus of Public transport from all parts of Wyong and beyond.

Goals & Objectives

- A concept Master Plan has been prepared for the site, accommodating the key components of the proposed Education & Business precinct. These key components are:
 - A university campus for 7,000 students
 - Residential college for 1,500 students
 - Language centre to support International Students
 - Community, Sports Institute and Recreational facilities
 - Integrated Business/Industrial Park
 - Associated infrastructure requirements associated with

education/business park providers.

- The Master Plan will include the future development of the following Key Precincts including:
 - Precinct A (Tertiary Education with a focus towards science, technology and engineering)
 - Precinct B (Secondary Education & Child Care Services) – note that part of this precinct already exists.
 - Precinct C (Business/ Industrial Park)
 - Precinct D (Student Accommodation)
 - Precinct E (Sporting & Recreational)
- The University also would be located close to the new Warnervale Rail Station and the Warnervale Town Centre.



Figure 18 - Pedestrian Walkways - form the spines of the university.



Figure 19 - Pedestrian Squares - creating an activity hub and facilitating person to person contact.



Figure 20 - Business Park Boulevard to Open Space - forming the key pedestrian and cycle way spine.

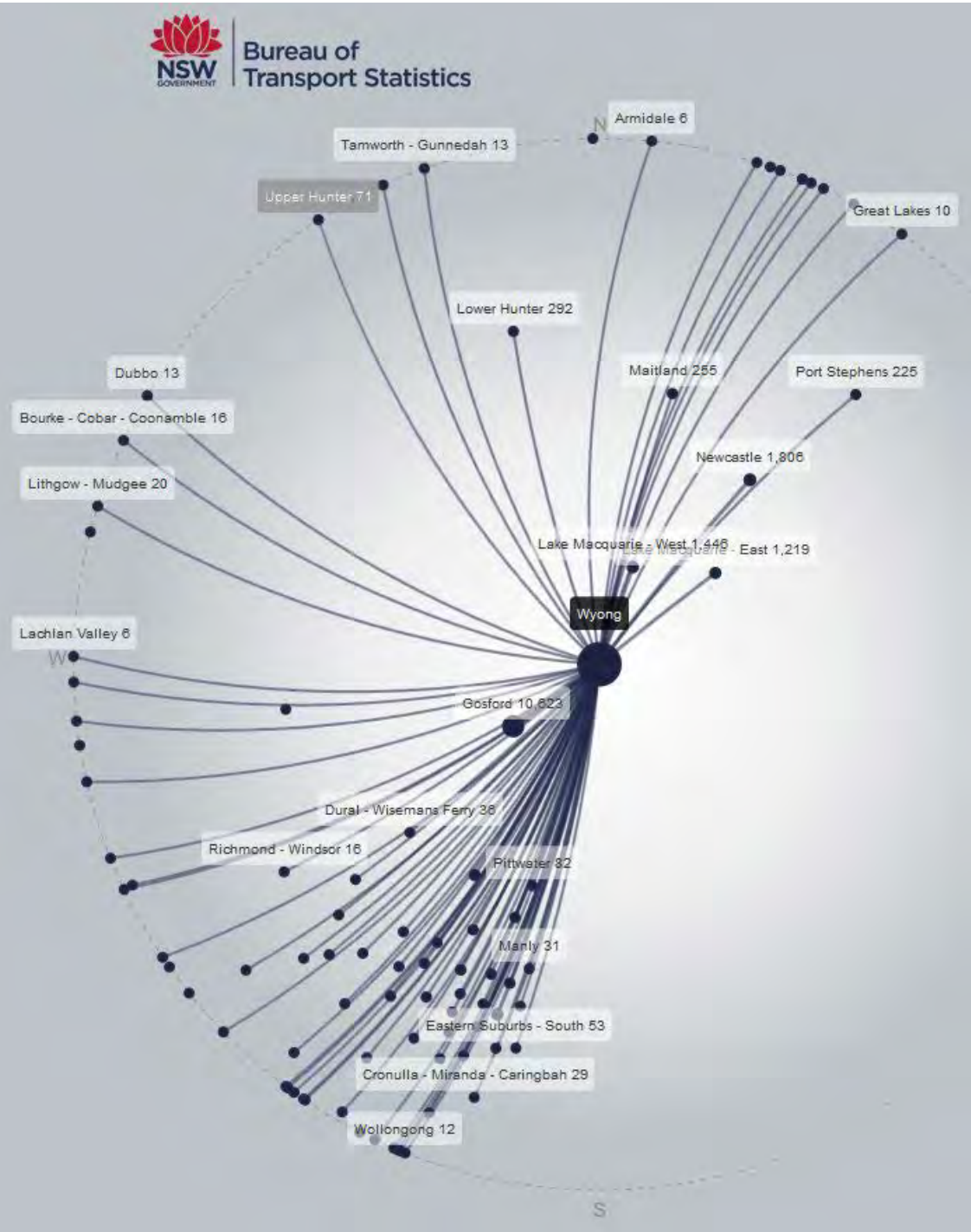
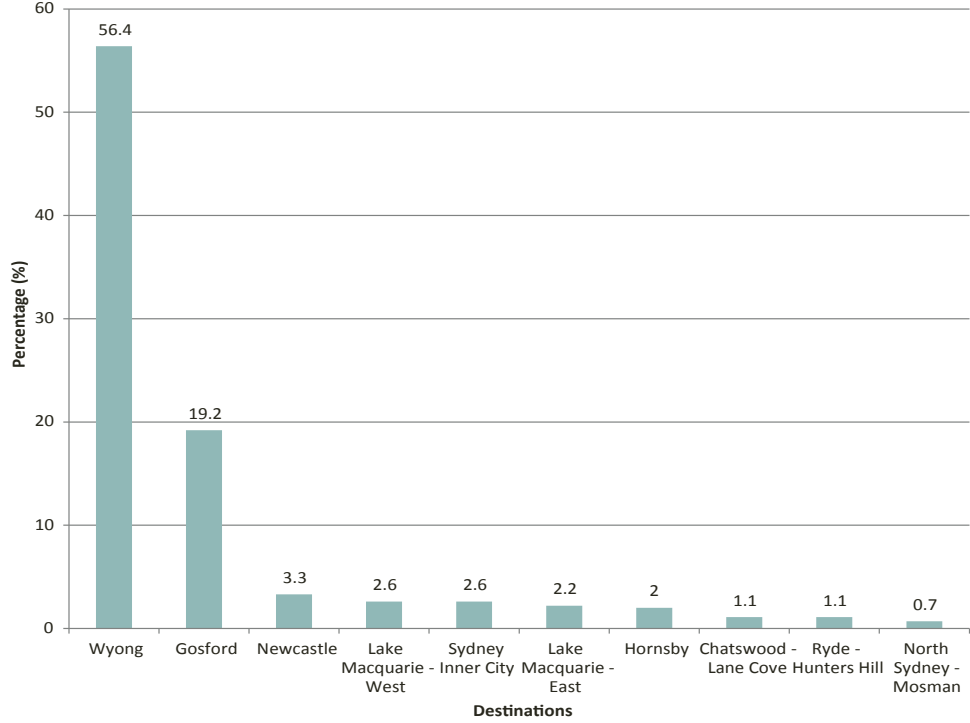


Figure 21 – Bureau of Transport Statistics: Journey to work visualiser.

Top Employment Destinations for Workforce of Wyong in 2011	Number	
Wyong	31,219	56.4
Gosford	10,623	19.2
Newcastle	1,806	3.3
Lake Macquarie - West	1,446	2.6
Sydney Inner City	1,419	2.6
Lake Macquarie - East	1,219	2.2
Hornsby	1,129	2
Chatswood - Lane Cove	604	1.1
Ryde - Hunters Hill	584	1.1
North Sydney - Mosman	436	0.7
Total	55,397	91.2

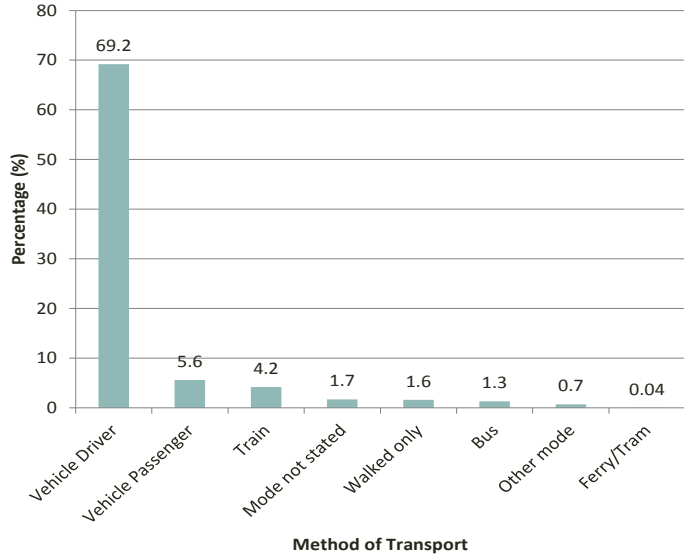
Table 1 – Census 2011: Top employment destinations for Wyong workforce.



Graph 1 – Census 2011: Top employment destinations for Wyong workforce.

Modal Share for Residents of Wyong in 2011	Number	
Vehicle Driver	38,329	69.2
Vehicle Passenger	3,082	5.6
Train	2,313	4.2
Mode not stated	960	1.7
Walked only	883	1.6
Bus	717	1.3
Other mode	363	0.7
Ferry/Tram	23	0.04

Table 2 – Census 2011: Methods of transport to work for Wyong workforce.



Graph 2 – Census 2011: Methods of transport to work for Wyong workforce.

5.1 Community Profile - Destinations and Method of Transport

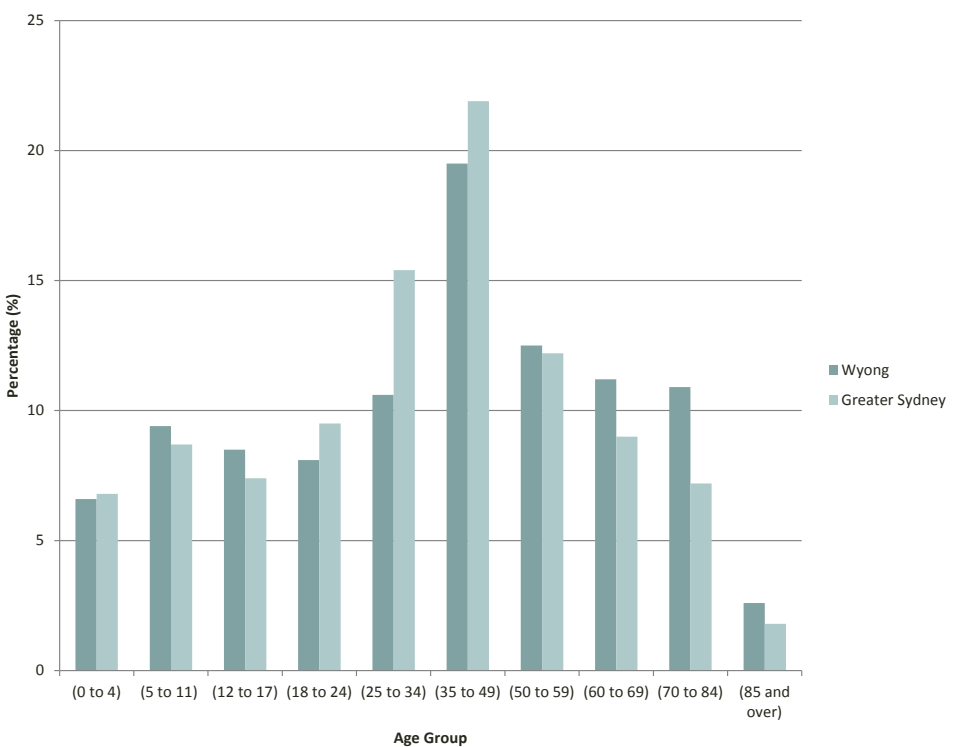
- The proportion of the Wyong workforce employed locally is reasonably high, and if Gosford is included, the census shows a high level of self-contained employment in the Central Coast.
- It is surprising that no more than 3.3% access jobs in Newcastle, approximately 50km from Wyong, comparably, a relatively short distance for Sydney commuters to the Sydney CBD in a Sydney context.
- These figures show the demand for jobs to be provided within Wyong.
- Journey to work figures reflect the close proximity to local jobs and the relative lack of congestion and the ease of parking when compared with the Sydney and North-Sydney CBDs.
- Local jobs accessible by rail and bus are required in the future.

5.2 Community Profile - Age Structure & Education Demographics

- Wyong’s age structure, when compared with Greater Sydney shows similar proportions in all categories, apart from two broad categories:
 - Wyong has a much lower proportion of “young workforce” than Greater Sydney; and
 - A higher proportion of “retirees”, “seniors” and “elderly”.
- The latter reflects most likely, those retirees who have moved to the Central Coast for an improved and affordable lifestyle.
- The “young workforce” 25–34 age group possibly reflects the lack of higher order jobs in Wyong or lack of opportunities within the LGA. This could change with the proposed SMARTS Hub, University and Business Park.

Age Structure - Service Age Groups in 2011	Number	Wyong %	Greater Sydney %
Babies and pre-schoolers (0 to 4)	9,956	6.6	6.8
Primary schoolers (5 to 11)	12,100	9.4	8.7
Secondary schoolers (12 to 17)	12,756	8.5	7.4
Tertiary education and independence (18 to 24)	12,158	8.1	9.5
Young workforce (25 to 34)	15,909	10.6	15.4
Parents and home builders (35 to 49)	29,153	19.5	21.9
Older workers and pre-retirees (50 to 59)	18,733	12.5	12.2
Empty nesters and retirees (60 to 69)	16,742	11.2	9.0
Seniors (70 to 84)	16,394	10.9	7.2
Elderly aged (85 and over)	3,844	2.6	1.8
Total population	149,745	100	100

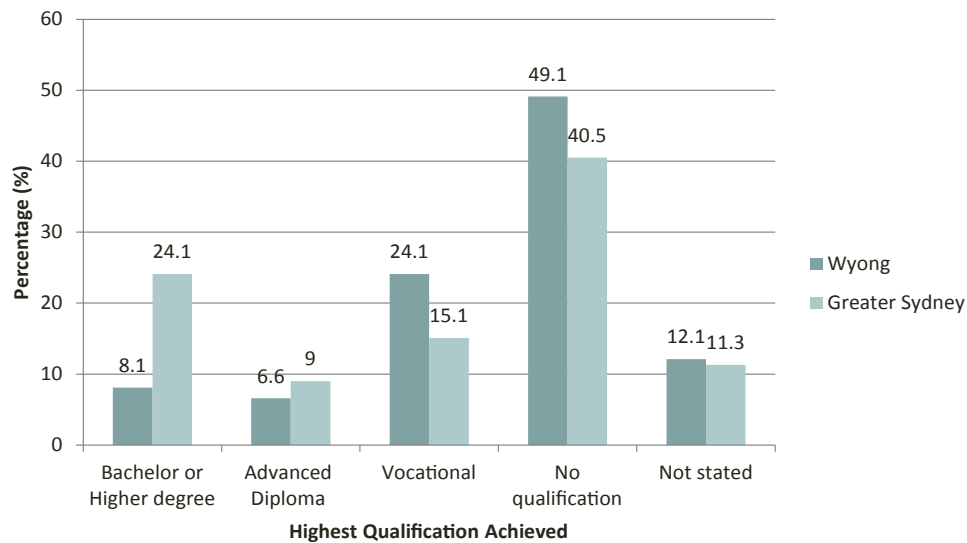
Table 3 – Census 2011: Wyong service age groups comparison.



Graph 3 – Census 2011: Wyong service age groups comparison.

Education - Highest qualification achieved in 2011	Number	Wyong %	Greater Sydney %
Bachelor or Higher degree	9,628	8.1	24.1
Advanced Diploma	7,921	6.6	9.0
Vocational	28,819	24.1	15.1
No qualification	58,585	49.1	40.5
Not stated	14,467	12.1	11.3
Total persons aged 15+	119,420	100	100

Table 4 – Census 2011: Highest qualification of education achieved by residents of Wyong, compared to the Greater Sydney area.



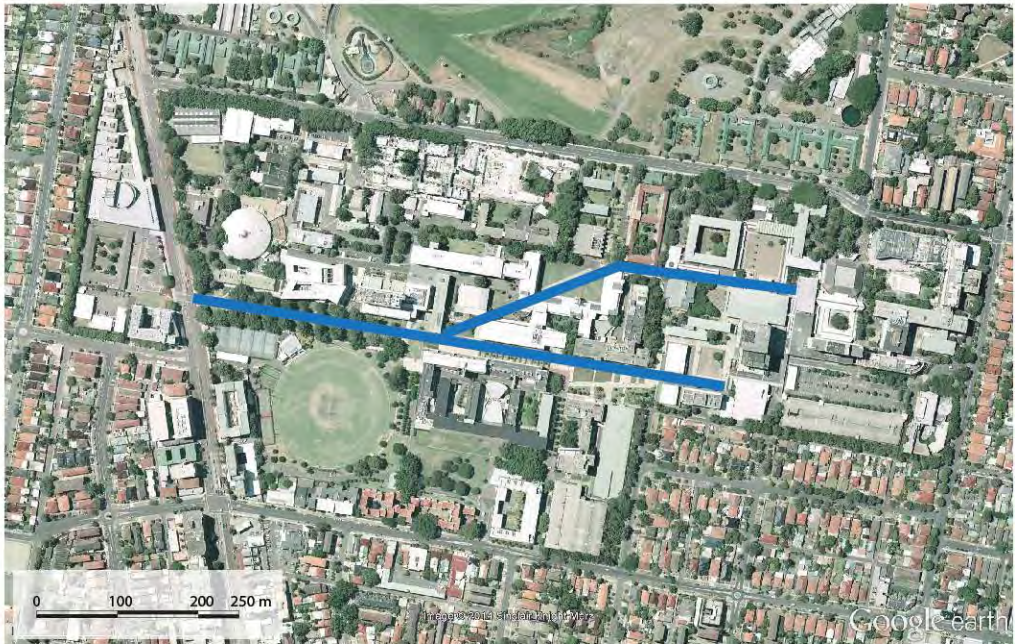
Graph 4 – Census 2011: Highest qualification of education achieved by residents of Wyong, compared to the Greater Sydney area.

5.3 Pedestrian Spines

- Pedestrian spines facilitate interaction between students of various faculties and becomes the focus of public spaces and facilities.
- The two greenfield universities, Macquarie and the University of Western Sydney Campbelltown Campus, were both planned around a pedestrian spine which served as the main access points to all buildings.
- A pedestrian spine at the University of New South Wales links Anzac Parade with the bulk of the campus. At the University of Sydney, the walk from City Road to the Library has only recently been completed.



MACQUARIE UNIVERSITY



UNIVERSITY OF NEW SOUTH WALES - Kensington Campus



UNIVERSITY OF SYDNEY - Camperdown & Darlinghurst Campus



UNIVERSITY OF WESTERN SYDNEY - Campbelltown Campus

Figure 22 – University Pedestrian Spines Comparison.

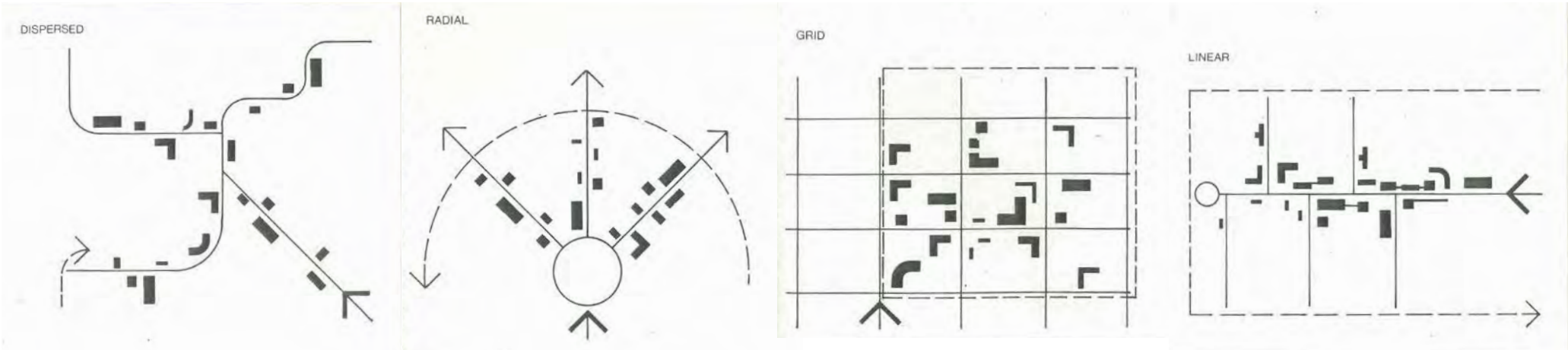


Figure 23 –Structure planning options.

5.4 Macquarie University as a Greenfield Development

- Macquarie University has been highly successful in generally conforming to its original Master Plan, that of a 100m grid. Each 100m x 100m site was for a faculty building, with the first stage being able to expand within this grid. If that grid was full, the faculty could expand with an adjacent grid, thereby clustering sciences to the west, humanities to the east, and social sciences in the middle areas.
- Macquarie University opted for a tightly knit campus in spite of its large campus area to reflect its teaching program where students were encouraged to enrol in a mix of courses varying from humanities to sciences.
- One of the key principles of Macquarie University's original Master Plan included a compact academic core, to propose limitations on pedestrian time – distance factors, each 100m grid taking approximately 1 minute to walk and improve accessibility to allow access across the teaching areas of the campus.
- Another key principle, based on the Stanford University/Silicon Valley, California model, that has been quite successful for Macquarie University, is its proximity to the Macquarie Business Park and nexus between academia, research and commerce.



Figure 24 – Macquarie University campus plan.

5.5 University of Western Sydney Campbelltown, Macarthur Campus

- The UWS Campus at Campbelltown is an outcome of the Macarthur Development Board's development of a regional centre, containing a shopping mall, a hospital, a TAFE college, with an ambitious program for office development clustered around a new railway station. This centre dates from the late 1970s to the early 1980s.
- The university started as an Institute of Higher Education which subsequently became a campus of UWS.
- The site was restricted to a small area, and as one of several Western Sydney Campuses, it's size was limited to 7000 students. Its size and scale of generally 2 storey buildings provides a good benchmark for the proposed university.
- Several options were considered for the campus layout, the spine chosen due to the topography and the link to the remainder of the town centre, including a new Macarthur Railway Station.



Figure 25 – Sydway Greater Sydney 2012, Edition 16 - University of Western Sydney Campus, Campbelltown, Macarthur.



Figure 26 - University of Western Sydney - Campbelltown, Macarthur Campus - another greenfield university campus of a similar size and scale.

5.6 Central Core - Library

- Library's have changed quite dramatically in the past two decades. The University's library is seen as the future heart of learning and research.
- If shared with a council library, could become an important community interchange with the local community and the school children from the adjacent schools.
- The newest university library is at Macquarie University, designed as an innovative learning centre, changing its focus from a traditional custodian of collections, to being a learner focussed environment.
- The new library includes an automated storage retrieval system, thereby saving a considerable volume of space. Not withstanding this, 20 percent will be available on open shelving for browsing.
- The Library will be adjacent to the SMARTS Hub and the bus station allowing good access to the people of Wyong and beyond.



Figure 27 – Community Library Space, with books, table and chairs available for browsing.



Figure 28 – Furniture providing space for university students to complete their work.

5.6 Central Core - SMARTS Hub

- Wyong Shire Council has proposed that the site include a Smart Work Centre, as the landmark and a key community facility of the Precinct, and the greater Wyong area.
- Smart work centres are third spaces, targeted to serve tele-workers, in locations closer to the residences of professionals. They aim to dramatically minimise commuting time, while providing a flexible, innovative and creative yet formal work space, functioning with a community atmosphere.
- Workers who travel for longer than 60 minutes to their primary workplaces, are considered the best candidates for these smart work centres.
- The key components of these centres includes:
 - A mix of individual offices
 - Shared flexible office spaces
 - Meeting rooms
 - Shared reception
 - Other facilities
- The features that are considered important for the success of these centres include:
 - Essential:
 - Public transport
 - Coffee and food services
 - Secure bicycle parking – as these centres are located in close proximity to the professional's

residence, the use of active transport also allows personal financial benefits in travel cost reductions.

- Ideal:
 - General retail, grocery, medical and dental services, personal services (e.g. dry-cleaning, repairs, hairdressing).
- In an analysis of demand by the Institute for Sustainable Futures and UTS, “stakeholders noted that if these services are not available locally, then consideration should be given to integrating them within the centre, as these services are necessary for the successful participation of employees in the centres”¹ (pg 47).
- One key influence in the success of these hubs, is their discover ability. The community must be aware of it's availability and be able to access it easily. The ambience of the centre would also be a key attracting factor.

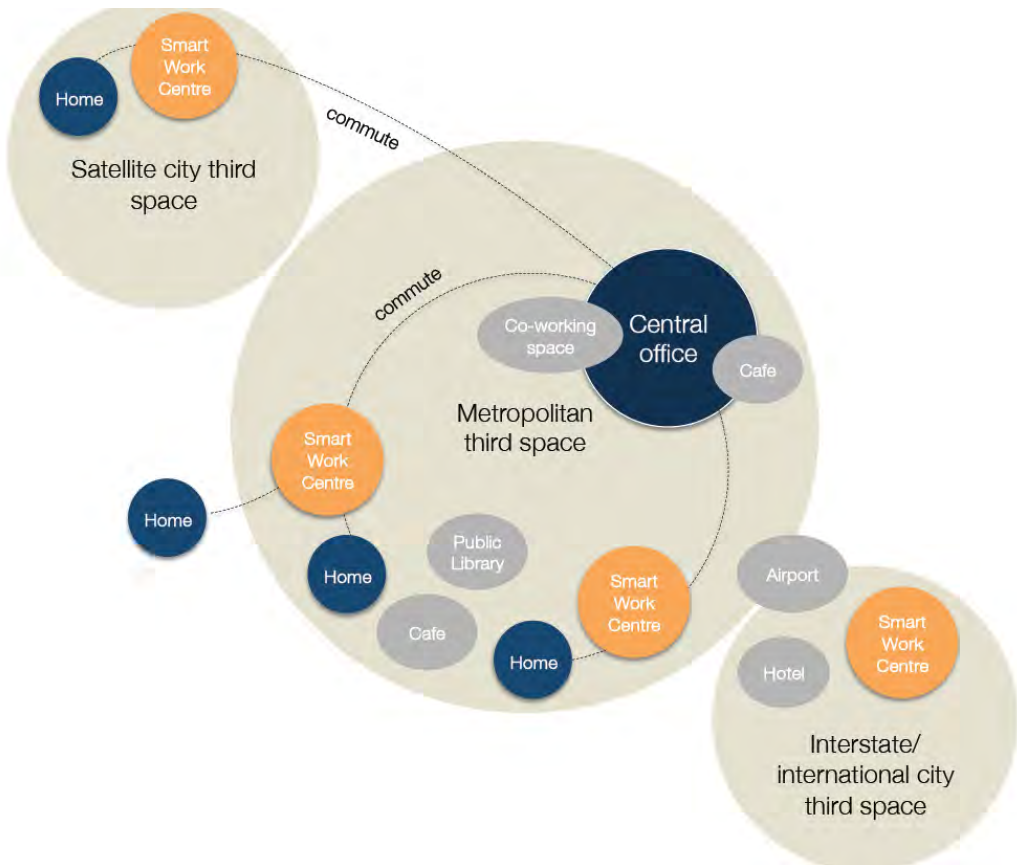


Figure 29– Smart Work Centres: An Analysis of Demand in Western Sydney - “Smart Work Centres occupy a niche in the geography of third space telework”¹ (pg 21).



Figure 30 – Coffee and food services are an essential component of Smart Work Centres, creating a different environment to the ‘working at home’ atmosphere.

¹ Institute for Sustainable Futures, University of Technology Sydney 2014, ‘Smart Work Centres: An Analysis of Demand in Western Sydney’, paper for Regional Development Australia Sydney, the Western Sydney Regional Organisation of Councils and Penrith Business Alliance.

5.7 Central Core - Pedestrian Squares and Open Spaces



Figure 31 – Business Park pedestrian open spaces, facilitating incidental interactions.



Figure 32 – Commercial zone pedestrian open spaces, facilitating movement and incidental interactions.

5.8 Central Core - Retail and Car Parking Facility



Figure 33 – Google Streetview Maps - Stocklands, Baulkham Hills, Sydney. Part of the development consists of retail on ground floor, with levels of parking above and below it.

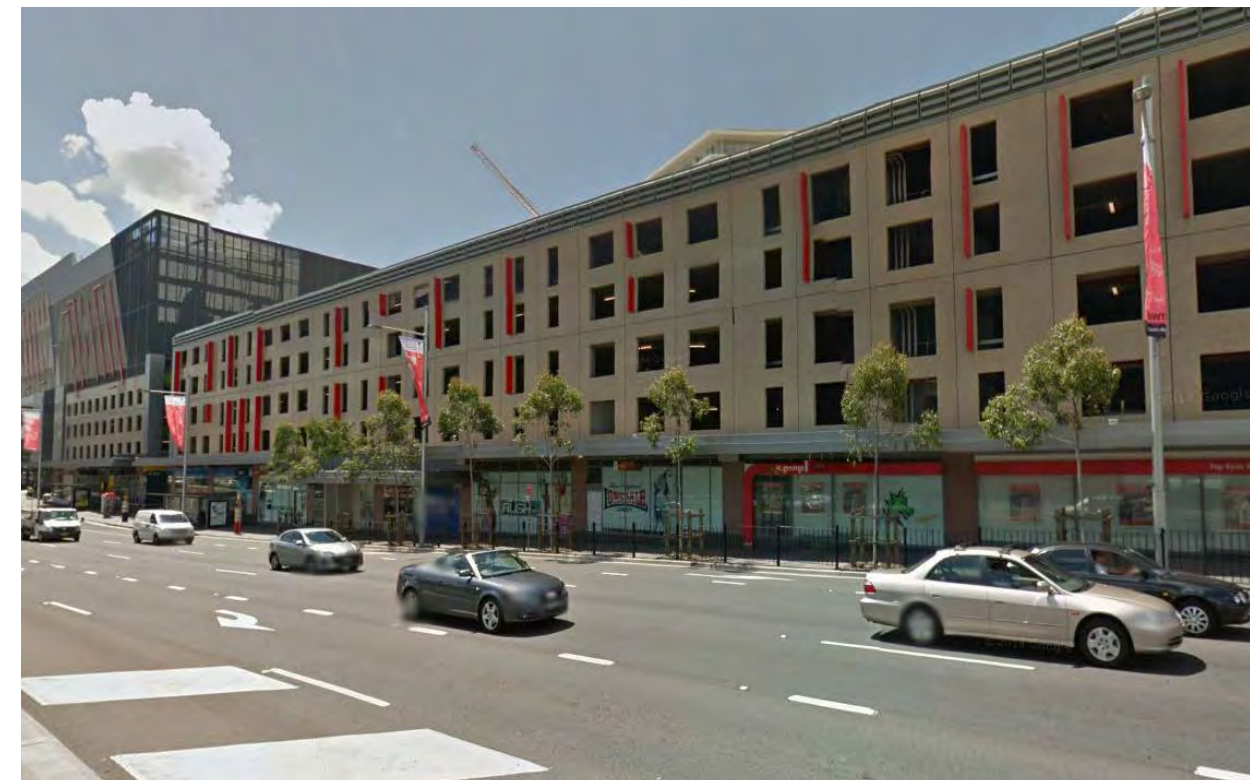


Figure 34 – Google Streetview Maps - Top Ryde City Shopping Centre, Top Ryde, Sydney. Part of the development consists of retail on ground floor, with levels of parking above it.