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6 May 2024	27 May 2024	

1 INTRODUCTION

1.1 Overview

This DCP chapter has been prepared to assist Wollongong City Council (WCC) to consider the adoption of development control plan (DCP) controls which will inform the future development of the Tallawarra Lands Urban Release Area (URA).

The State significant development process provided an alternate approvals process for sites/projects that were considered to be of State significance. This enabled the assessment of significant projects at a State level, rather than Local Government level. The Tallawarra Lands site was one of the sites that was subject to a Major Project (MP) approved by the NSW State Government.

The Tallawarra Lands Concept Plan (Concept Plan) was approved on 23 May 2013 for a mixed use development including residential, commercial, industrial, retail and public open space, along with conservation areas, and modified in 2020 under MP approval 09_0131 (MOD1). The key elements of the modification included an increase in the number of potential residential lots in the northern and central precincts by reducing the minimum lot size and increasing the urban footprint and modifying specific conditions of consent to enable the northern and central precincts to be developed independently of the southern precinct. The southern precinct is proposed to be retained until contamination issues associated with the previous Tallawarra Coal Fired Power Station are addressed and completed.

Condition A5 of the MP 09_0131 Mod 1 approval, is detailed as follows:

> ***A5 Development Guideline***
>
> *The proponent shall develop a site-specific set of development guidelines which incorporate the information contained in the Environmental Assessment except as amended by the Preferred Project Report except as amended by Modification 1 including the documents and plans listed at Condition A2(b)*
>
> *The guidelines shall be formatted so as to be capable of being inserted as a site specific chapter in Section D of Wollongong City Council's Residential Development Control Plan 2009 and shall be capable of being read in conjunction with other relevant components of that plan.*
>
> *The guidelines must be designed to provide guidance for future residential development in the Northern and Central Precinct and to ensure that future residential development in the Northern and Central Precinct would achieve the objectives of WDCP 2009 with respect to residential development and ecologically sustainable development.*
>
> *The guidelines must include guidance for future residential development on sites adjoining Carlyle Close, including building envelope, siting and height controls to ensure that future development on these sites would minimise impacts to views of the ridgeline and would minimise view loss impacts from Carlyle Close.*

This DCP submission is supported by DCP controls which have been formatted in a manner suitable for potential inclusion in Section D to Wollongong DCP 2009.

Tallawarra Lands is a former Part 3A (Major Infrastructure and Other Projects) project (now repealed) of the EP&A Act, however the transitional provisions continue to apply.

This DCP will be supported by VPAs (Voluntary Planning Agreements) corresponding to each future DA.

Figure 2 shows the location of the Tallawarra lands site and Figure 1 shows the approved concept plan.

1.2 The Vision for Tallawarra

The following 'Vision' underpins the future planning of Tallawarra Lands with the principle idea of creating a new circular society in the Illawarra / Shoalhaven region that builds community, creates jobs and celebrates the landscape setting:

> *The opportunity for Tallawarra Lands is to experiment with an urban strategy that is localised to the population of the Illawarra, Shoalhaven and Wollongong communities. Our vision is to deliver a mixed-use land package that is fine grain and of its place to establish a sustainable community and bolster a strong local economy.*

For residents, a mix of housing typologies will ensure a diverse community of young and old can flourish. Build to rent, aged care and housing affordability initiatives will be employed to drive a sustainable community.

People need places to go and a village centre at the heart of Tallawarra Lands will service the community and surrounding areas generating and day and night economy and be closely connected to civic infrastructures such as sports facilities, a library and creative studio spaces.

For employment outcomes, a circular economy where light industrial start-ups can play a role in the construction of the wider community, supporting innovative and sustainable construction methods.

The design and planning will follow a 'long life, loose fit' approach, attracting smaller creative businesses who can scale up in low-risk low-cost warehouse spaces.

Finally, the landscape from Mount Brown to Lake Illawarra has the potential to not only provide for new locals but position the area as a destination for the wider region. An activated foreshore with water sports, hiking, cycling and other recreational opportunities will draw people out in the beautiful landscape and enrich the community.

A good masterplan must balance the project realities of budget, economy, time, ambition and political environment with a future vision, to deliver a plan with a high level of clarity while ensuring a healthy level of 'flex' – enabling it to adapt and accommodate future challenges. Our role in the development of the masterplan is to dream big. Often, it's not always possible to realise every good idea, but at least with knowledge, experience and foresight we are able to ensure that we don't design out opportunities.

Development at Tallawarra intends to be innovative and future-focussed. Therefore, the planning principles need a degree of flexibility to enable future development that is adaptive and responsive to future challenges, improved knowledge, foresight and best practice so that opportunities for improvement are not prevented by controls adopted at a fixed date.

Tallawarra Lands is being delivered in a staged approach which ensures involvement of all stakeholders including Wollongong City Council. Tallawarra Lands URA will deliver in the order of 1260 residential lots (comprising a mix of traditional detached, attached small lot, and medium density housing, build-to-rent and seniors living), 20ha of employment land, 4.4ha of commercial land, 30km of shared pathways, over 430ha of protected vegetation, riparian corridors and restored foreshore areas. Tallawarra Lands also provides potential for eco-tourism and entertainment opportunities on the lake foreshore. EnergyAustralia (EA) will retain ownership of the southern precinct, and is not identified for imminent development at the current time.

1.3 Relationship to Wollongong Development Control Plan 2009

Wollongong DCP 2009 contains planning guidelines and controls which support the raft of statutory planning controls governing land use, including Wollongong LEP 2009. This document includes planning principles, objectives and controls specific to the ongoing development of Tallawarra Lands, and will form a chapter within Part D of Wollongong DCP 2009. In the event of any inconsistency with Wollongong DCP 2009, it is intended that the controls of the Tallawarra Lands Development Control Plan take precedence, as the controls have been designed specifically having regard to the constraints and opportunities applicable to the Tallawarra Lands site.

Other parts of Wollongong DCP 2009 will continue to apply to Tallawarra Lands in conjunction with this chapter:

Part A contains the introduction,

Part B contains land-use based planning controls,

Part C provides specific land use activity controls, and

Part E provides general (LGA Wide) controls.

The following table (refer Table 1-1) details the relationship between the planning controls in this chapter and the planning controls adopted by Wollongong DCP 2009.

Table 1-1 Application of Wollongong Development Control Plan 2009

Wollongong Development Control Plan 2009	Application
Chapter A1: Introduction	Applies.
Chapter A2: Ecologically Sustainable Development	Applies, except where superseded by Tallawarra DCP.
Chapter B1: Residential Development	Applies, except where superseded by Tallawarra DCP.
Chapter B2: Residential Subdivisions	Applies, except where superseded by Tallawarra DCP.
Chapter B3: Mixed Use Development	Applies, except where superseded by Tallawarra DCP.
Chapter B4: Development in Business Zones	Applies, except where superseded by Tallawarra DCP.
Chapter B5: Industrial Development	Applies, except where superseded by Tallawarra DCP.
Chapter B6: Development in the Illawarra Escarpment	Does not apply.
Chapter B7: Development in Rural Zones	Does not apply.
Chapter C1: Advertising Signage and Structures	Applies.
Chapter C2: Bed and Breakfast Accommodation	Applies.
Chapter C3: Boarding Houses	Applies.
Chapter C4: Caravan Parks, Camping Grounds and Manufactured Home Estates	Applies, where permissible under Wollongong LEP 2009.
Chapter C5: Child Care Centres	Applies.
Chapter C6: Events Management	Applies.
Chapter C7: Exhibition Villages and Exhibition Homes	Applies.
Chapter C8: Extractive Industries	Applies.
Chapter C9:Health Consulting Rooms	Applies.
Chapter C10: Home Business and Industry	Applies.
Chapter C12: Outdoor Restaurant and Footpath Trading (Street Vending) Activities	Applies.
Chapter C13: Places of Public Worship	Applies.
Chapter C14: Firearms and Weaponry Stores	Applies.
Chapter C15: Retail Markets	Applies.
Chapter C16: Sex Services Premises and Restricted Premises (Sex Shops)	Applies.
Chapter C17 – Telecommunications and Radiocommunications Facilities	Applies.
Chapter D1: Character Statements	Applies. To be updated to include Tallawarra Lands.
Chapter D2-D18: Site Specific	Does not apply.
Chapter E1: Access for People with a Disability	Applies.

Wollongong Development Control Plan 2009	Application
Chapter E2: Crime Prevention through Environmental Design	Applies.
Chapter E3: Car Parking, Access, Servicing/ Loading Facilities and Traffic Management	Applies.
Chapter E6: Landscaping	Applies, except where superseded by Tallawarra Lands DCP.
Chapter E7: Waste Management	Applies, except where superseded by Tallawarra Lands DCP.
Chapter E8: On-site Sewage Management Systems	Does not apply.
Chapter E9: Hoardings and Cranes	Applies.
Chapter E10: Aboriginal Heritage	Applies, except where superseded by Tallawarra Lands DCP.
Chapter E11: Heritage Conservation	Does not apply
Chapter E12: Geotechnical Assessment of Slope Instability	Applies, except where superseded by Tallawarra Lands DCP (hillside erosion or coastal inundation).
Chapter E13: Floodplain Management	Applies, except where superseded by Tallawarra Lands DCP.
Chapter E14: Stormwater Management Chapter	Applies.
Chapter E15: Water Sensitive Urban Design	Applies, except where superseded by Tallawarra Lands DCP.
Chapter E16 Bush Fire Management	Applies.
Chapter E17 Preservation and Management of Trees and Vegetation	Applies.
Chapter E18 Threatened Species	Applies.
Chapter E19 Earthworks (Land Reshaping Works)	Applies.
Chapter E20 Contaminated Land Management	Applies.
Chapter E21 Demolition and Asbestos Management	Applies.
Chapter E22 Soil Erosion and Sediment Control	Applies.
Chapter E23 Riparian Corridor Management	Applies.

Given the broad range of site constraints and multitude of stakeholder interest, there are a number of departures from the controls adopted in Wollongong DCP 2009. These are necessary to achieve the development outcomes detailed in the approved concept plan and reflect a number of competing constraints inherent in the advancement of developing Tallawarra Lands.

1. Road widths

The proposed undergrounding of the (current) above ground HV power lines through the northern precinct and the resulting need to achieve buffer distances to the underground electrical feeders has necessitated a need to vary the road width requirements specified in Chapter B2 of Councils DCP. The proposed controls are specified in 6.7 of this chapter and provide for a slightly wider road pavement and a reduced verge width. A footpath width of 1.5m is maintained together with space for tree planting of 1.5m, which aligns with the MP concept plan approval and provides improved outcomes for future development. This variation is proposed to two (2) of the road types contained in the Northern Precinct.

2. Residential Building Controls

Consistent with the MP 09_0131 approval (as modified), this DCP proposes specific objectives and controls for residential development in the Central and Northern Precincts. These include two- and three-dimensional buildings envelopes for development on future lots adjoining Carlyle Close in the Central Precinct. These objectives and controls relate to siting, setbacks, stepping of finished floor levels and height, and areas specific to views of the ridgeline and minimising view loss from Carlyle Close. In addition, specific urban design, materials and density controls are specified to future dwelling development in the Northern Precinct, particularly in relation to dwellings oriented to the public domain, Lake Illawarra foreshore, and lots affected by noise contours associated with the EA power station operations.

2 THE SITE

The Tallawarra Lands urban release area (URA) is a 535.9ha landholding located on the western foreshore of Lake Illawarra within the Wollongong LGA. The eastern edge of the site is defined by the western foreshore to the Lake and Tallawarra Power Station. The western edge of the site is the Princes Highway and Cormack Avenue. The northern border of the site is formed by Carlyle Close, Mount Brown Reserve, Wyndarra Way and the Council-owned recreation reserve known as Hector Harvey Park. The southern edge of the site adjoins Haywards Bay residential area, and the boundary is adjacent to Tallawarra Crescent and Haywards Bay Drive.

Historically the site was predominately rural and has been used for power generation operations since the late 1950's. Large portions of the site have undergone past disturbance particularly in the south and east where a number of former ash settling ponds used by the original coal-fired Tallawarra Power Station now remain. The construction of the current power station and its operational infrastructure has further contributed to the disturbance of the site. Extensive vegetation clearance has occurred across the remainder of the site for grazing purposes, resulting in large areas of exotic grassland. The majority of intact vegetation occurs in the south eastern corner of the site with smaller areas in the north, adjoining a large stand of vegetation in Mount Brown Reserve, as well as along the south western boundary. The subject site has a varying topography, ranging from near level ground to steep slopes. The northern boundary of the site is characterised by a steep hill side (Mount Brown) sloping downwards towards the east, south and southeast. The ground surface near Yallah Bay Road is generally near level ((<1° grade) and forms part of an alluvial flood plain and wetlands with exception of the areas near the western boundary. The area near the western site boundary (south of Yallah Bay Road) is locally elevated rising towards the Princes Highway to the west and sloping down towards the east.

Tallawarra Power Station

The Tallawarra Power Station is approximately 32.5ha in size. Before the current gas-fired power station commenced operations in January 2009, the site was a 320MW coal-fired power station which operated between 1954 and 1989. The former plant and many ancillary buildings have been demolished and the operational areas of the site remediated. The power station will continue to be owned and operated by EA, and is excluded from the concept plan and proposed DCP, apart from identifying site boundaries and occupancy, access and acoustic impact.

Northern Precinct

The Northern Precinct is located to the south of the established suburbs of Kanahooka and Koonawarra, and north of the Tallawarra Power Station. The precinct is 110ha in size and positioned on the eastern slopes of Mount Brown fronting Lake Illawarra. The majority of the Northern Precinct consists of rural fenced paddocks, which were previously used for agricultural purposes. A rural homestead and compound are located in the northern most part of the site and includes dams, fences, small fenced paddocks and animal shelters. A HV power line, with associated towers, runs through the central portion of the precinct in a north-south orientation. Residential lots within this precinct will be positioned in the middle section of the site, with foreshore land set aside for public open space and the conservation of existing vegetation. This precinct will be connected to Kanahooka through the extension of the existing Gilba Road, which connects through to Fowlers Road and to the Princes Highway.

Central Precinct

The Central Precinct is located adjacent to existing residential area, is 210ha in size and is positioned on the southern slopes of Mount Brown, providing an outlook to the south with views towards Albion Park and Shellharbour. The precinct extends from the Princes Highway in the west through to the power station in the east. The topography of the Central Precinct is variable with the northern portion dominated by a moderate

to steep slope with a southern aspect that grades into a generally flat ground surface in the vicinity of Yallah Bay Road. Yallah Bay Road provides connection from the Princes Highway through to the Tallawarra Power Station and the proposed foreshore tourism site. Yallah Bay Road connects to the Princes Highway which provides connection to Dapto in the north and Albion Park Rail in the south. The precinct will accommodate standard residential lots, with larger lots located on the hillslope adjacent to Carlyle Close. Employment lands will be included on the northern side of Yallah Bay Road, between the proposed residential area and the power station. The precinct will also accommodate a neighbourhood centre within the residential zoned land, and a 2.5ha tourism site to be located on the foreshore headland near the eastern portion of the precinct.

Southern Precinct

The Southern Precinct is bounded by the Princes Highway, residential development in Haywards Bay, Duck Creek and existing wetlands adjacent to Lake Illawarra. The majority of this precinct is located within an existing bunded area that was formerly used as an ash dam for the previous coal fired power station. The site also comprises cleared grazing land, dense vegetated areas of both natural and introduced species, a road base stockpile and an asbestos landfill. The precinct is proposed to accommodate residential land, including opportunities for seniors living and a primary school. The precinct will also contain a significant area of employment zoned land. The site is proposed to be accessed from the north from Yallah Bay Road and south via the existing suburb of Haywards Bay. The Southern Precinct will remain in the ownership of EA for the foreseeable future and there are no plans for immediate development of this land.

Mount Brown

Mount Brown Reserve is located in the eastern portion of the Central Precinct and offers substantive views over the site and Lake Illawarra. Mount Brown will form a key element of the environmental lands between the Northern and Central Precincts and a buffer to the north of the EA land.

The DCP controls apply to all land within the Tallawarra Lands concept plan boundary as shown in **Figure 1**.

Figure 1: **Concept Plan**

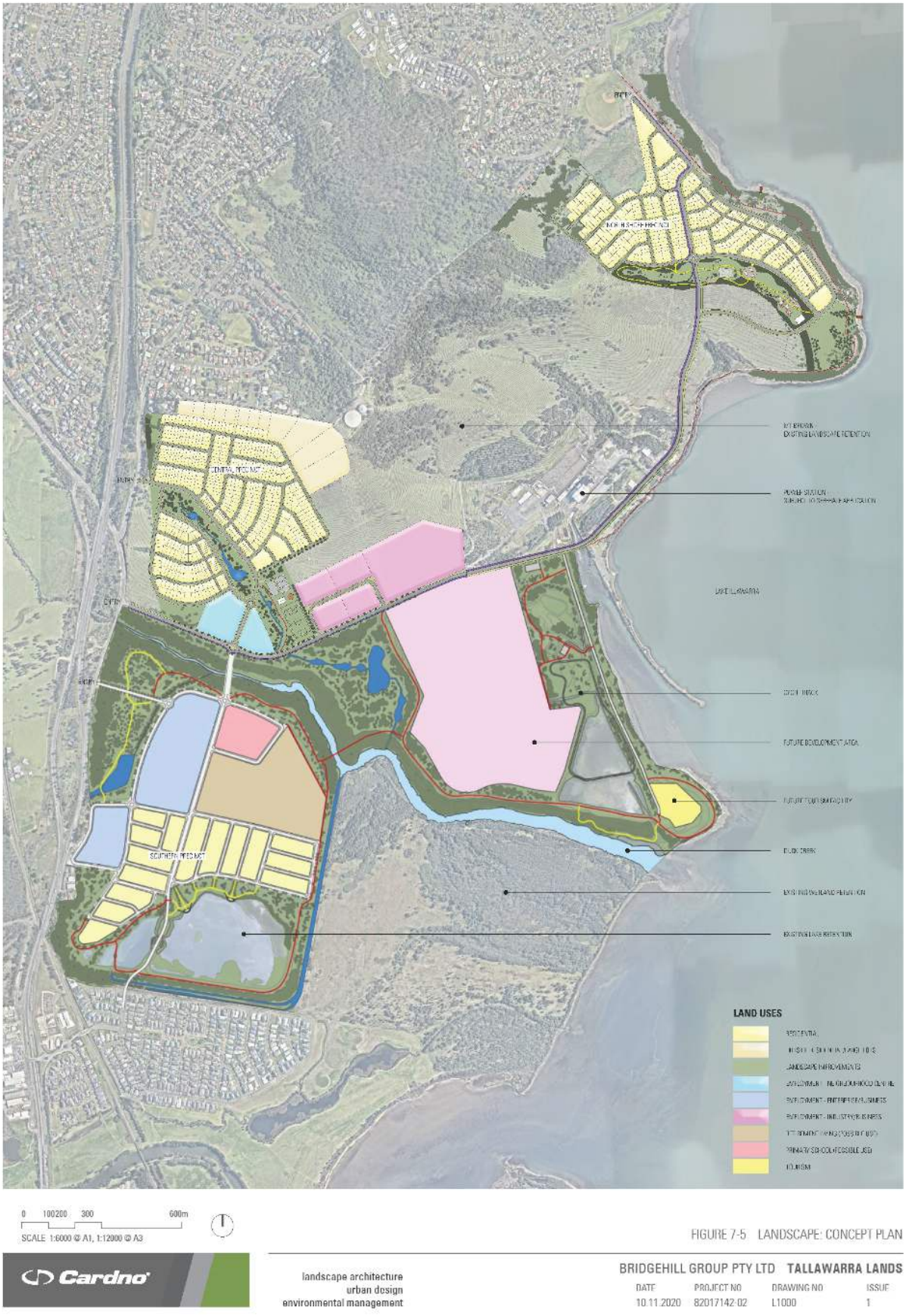


Figure 2 Locality Plan

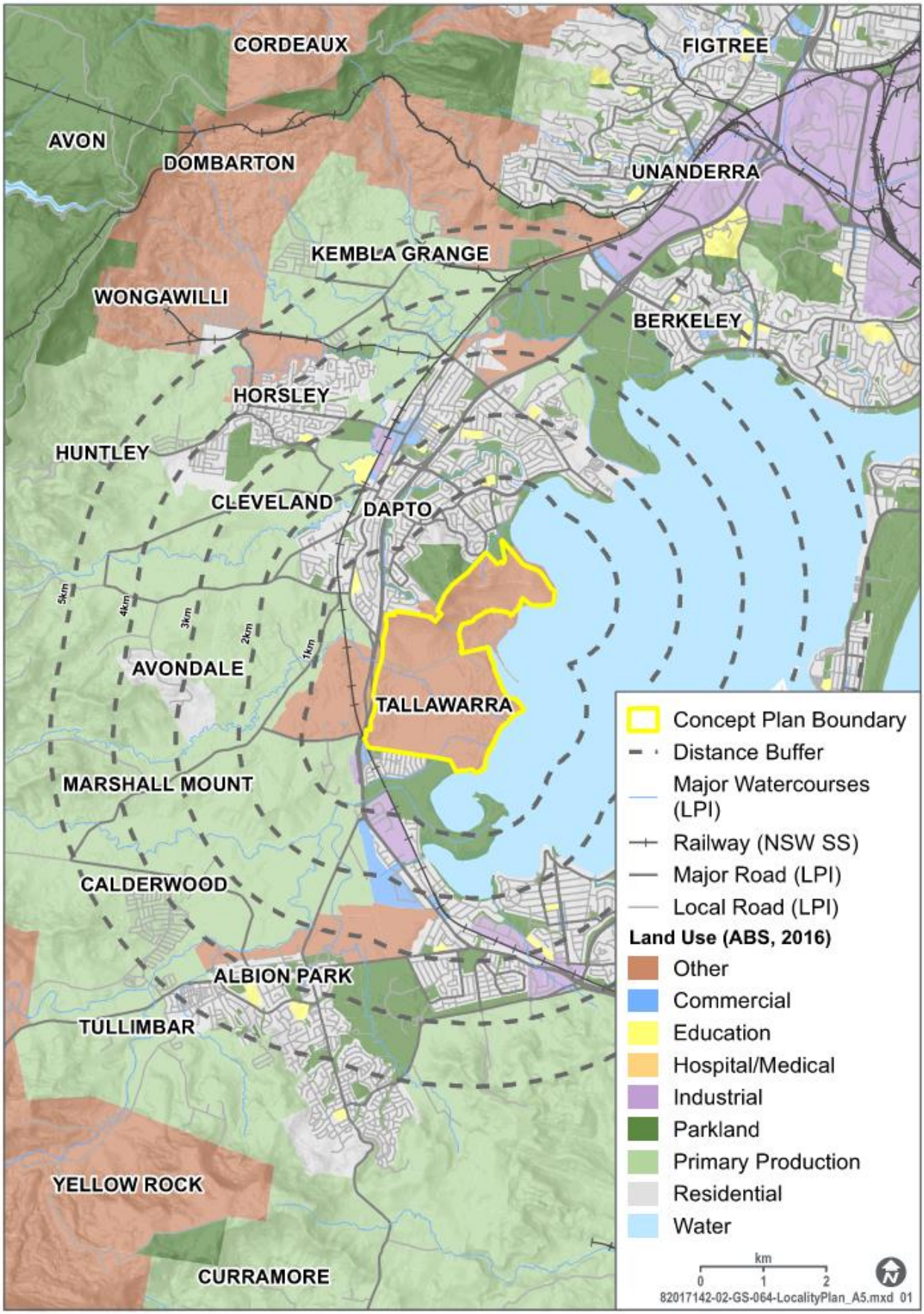
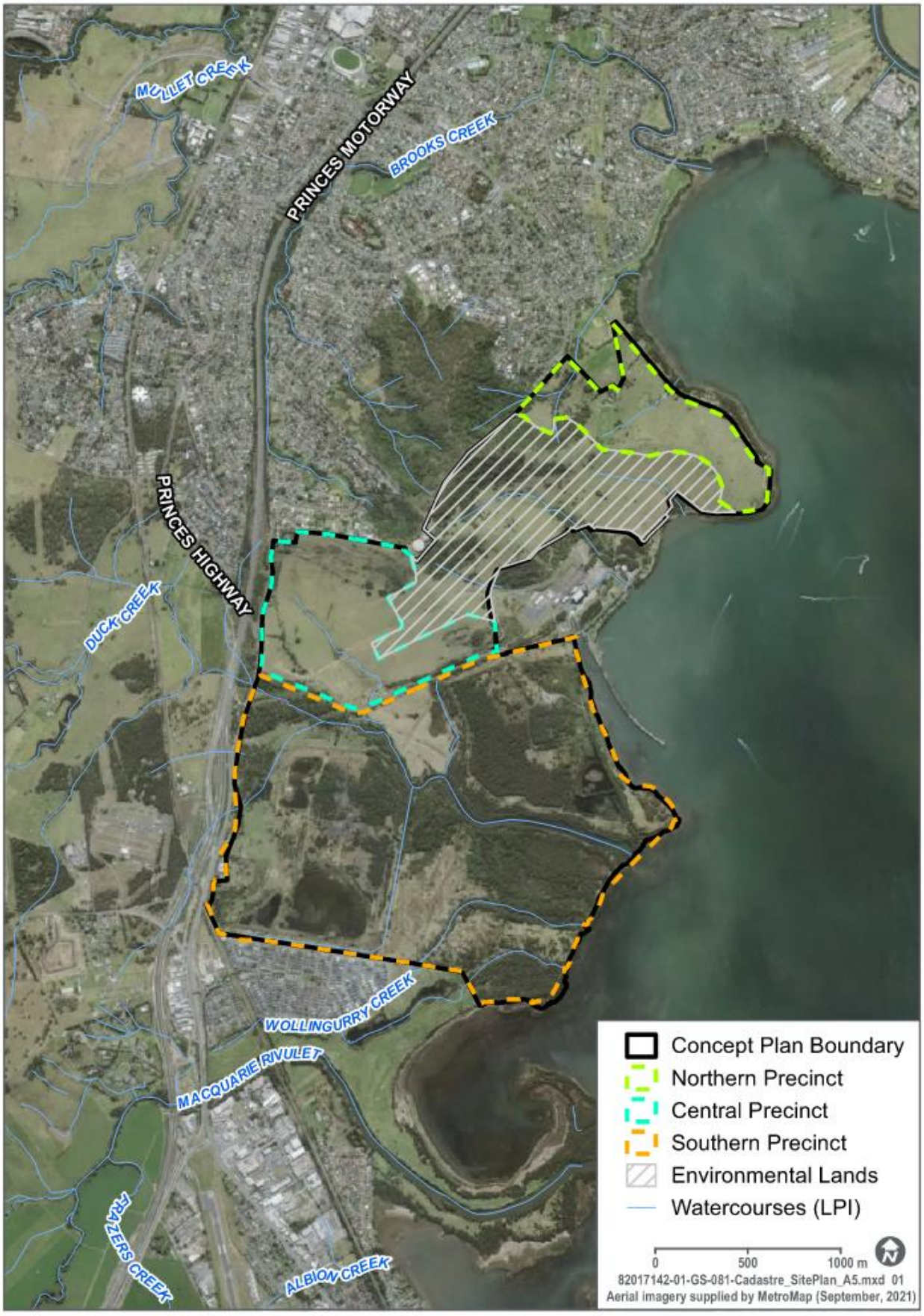


Figure 3 Site Plan



3 AIMS AND OBJECTIVES

The objectives of this DCP Chapter are to:

(a) provide guidance for the development of Tallawarra lands for residential, commercial, employment, industrial, community, open space, environmental conservation and management areas consistent with Wollongong Local Environmental Plan 2009, the Concept Plan in **Figure 1** and the conditions and documents approved with MP 09_0131 as modified.

(b) allow for innovation and future focussed best practice.

(c) ensure the development of Tallawarra Lands exemplifies the principles of Ecologically Sustainable Development with:

  i. energy and water efficiency and carbon emissions reductions in housing, commercial and industrial uses,

  ii. sustainable urban design to ensure cooler suburbs and improve climate,

  iii. restoration and revegetation of riparian areas and the Lake Illawarra foreshore,

  iv. an environmental corridor linking the lake foreshore to high points of Mount Brown,

  v. environmental lands to adjoin the Mount Brown Reserve,

  vi. water quality improvements enhancing the catchment of Lake Illawarra; and

  vii. waste minimisation.

(d) support the delivery of a safe and efficient movement network with a hierarchy of roads, an efficient bus route and a continuous network of pathways and movement options throughout the locality and connecting to the broader network.

(e) implement Water Sensitive Urban Design (WSUD) for effective management of water including targets and monitoring for stormwater quality within the site sub-catchments and the larger catchment of Lake Illawarra.

(f) ensure development is compatible with flood characteristics including the ecological function of watercourses and specific design of infrastructure and development to safely function in flood events.

(g) understand and identify existing and potential natural and landscape attributes and establish objectives and controls for their long-term enhancement and viability.

(h) protect, conserve and enhance riparian and environmentally sensitive areas and identify conservation values for future development with net positive outcomes.

(i) identify features of high scenic value such as the Mount Brown Reserve and outlooks to the Illawarra Escarpment, Lake Illawarra and its foreshore, and distant views. Manage and guide development to optimise outlooks and share the views and outlooks with the broader community.

(j) conserve and enhance items, places and cultural connections of Aboriginal heritage significance with Cultural Heritage Management and Interpretation Plans.

(k) establish and maintain a variety of connected and universally accessible open spaces for ecological functions, social and recreational needs and healthy lifestyle choices for use and enjoyment.

(l) ensure the commercial and community hub in the Central Precinct caters for a diverse mix of uses including retail, commercial and residential uses, and incorporates buildings that are adaptable for these uses.

(m) include focal points for recreation and social interaction linked to, and part of, public recreational spaces and movement networks connected with public transport.

(n) set standards for design and ESD performance for commercial and employment uses, infrastructure and open space.

(o) protect and maintain buffer areas to ensure the continued operation of the Tallawarra Power Station.

(p) incorporate sustainable urban design to ensure cooler suburbs and improve climate resilience.

(q) Incorporate air quality assessment for subdivision areas along the M1 Motorway in the Central and Southern precincts.

(r) Incorporate measures to improve resilience and general health of residents.

(s) Limit the retention of heat within the urban environment and provide sufficient shading for pedestrians and users of open space.

4 STRUCTURE PLAN AND STAGING

The Tallawarra Concept Plan detailed in Figure 1 (Concept Plan approved with MP 09_0131 Mod 1) shows the layout of future land uses and activities that will guide development applications and works.

The Concept Plan includes:

- The Northern Precinct with residential land, open space areas and an environmental corridor linking the lake foreshore with elevated areas of Mount Brown.
- The Central Precinct with residential land ranging from medium density areas to large lots, a mixed use commercial centre and community centre, an active open space area and employment lands.
- The Southern Precinct accommodates provision for employment and commercial lands, a tourist facility site on the lake foreshore, regional scale recreational space and residential land for medium and low density living.
- Environmental Lands establishing a buffer to the Tallawarra Power Station to be managed for environmental enhancement ancillary to the operation of the power station.
- Part of the land adjacent the Princes Motorway will be dedicated to TfNSW for future road infrastructure, construction and maintenance.

Concept stages will generally be in accordance with **Figure 4**. The following key objectives which govern a legible and achievable development outcome include:

- Connecting with existing public road network and utilities infrastructure starting with connections to Gilba Road.
- Matching the adopted Sydney Water Servicing Strategy.
- Coordinating with the works for undergrounding the HV transmission line through the Northern Precinct.
- Works patterns matching sub-catchments to best manage installation and effective operation of WSUD infrastructure and achieving water quality targets.
- Providing flood free access routes for new residential precincts as they are developed.
- Balancing the urban development footprint with embellishment and potential dedication of land for public open space and revegetation.
- Land use intensity, traffic generation demand and connectivity with the surrounding road network will be matched to the timing for delivery of the east-west and north-south collector roads.
- Ensuring future development potential of adjoining lands is not prejudiced or constrained.

Development will commence in the Northern Precinct in accordance with the Concept Staging Plan **(Figure 4**). This will be undertaken in two (2) phases in accordance with the following position:

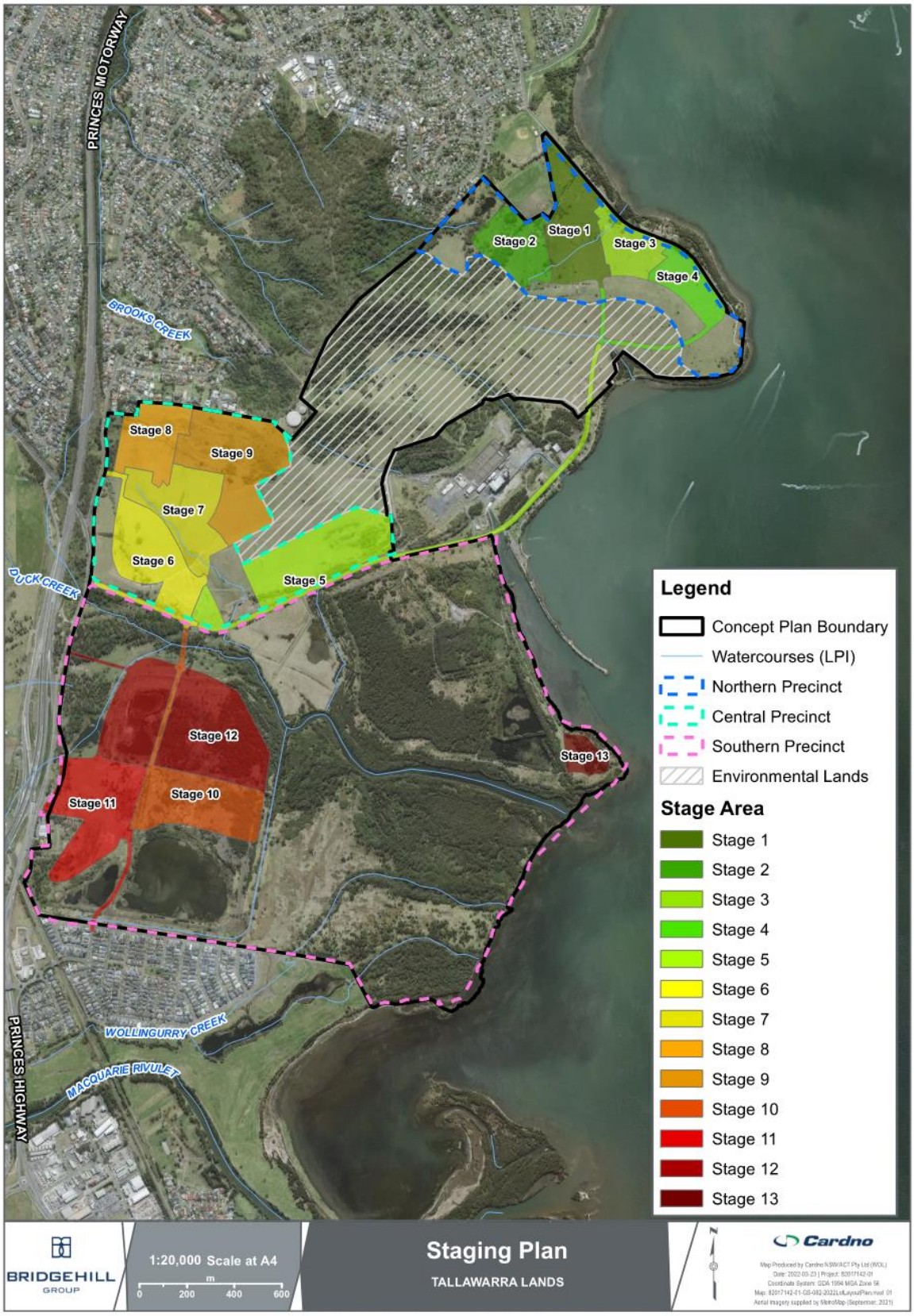
- match the adopted Sydney Water Servicing Strategy
- extend connections to the existing public road and utilities from Gilba Road,
- coordinate with the site works for undergrounding the HV transmission line (the subject of a separate approval) in the Northern Precinct; and
- establish a balance of land development with embellishment and potential dedication of land for public open space.

Development will then progress the Central Precinct, focussing initially on advancement of the employment lands, which will help to activate the surrounding residential precincts of the Central Precinct. Subsequent

stages of the residential precincts will yield mixed residential development, neighbourhood centre and seniors living opportunities, utilising road and infrastructure connections.

Staging will be an evolving process as development progresses and infrastructure and urban footprints are refined with future development applications. Future development applications will demonstrate the ways in which each proposal stage is compatible with adjoining land and generally consistent with the Major Project Concept Approval. The Tallawarra Lands chapter of Wollongong DCP 2009 is intended to incorporate flexibility to align with the progress of future development stages.

Figure 4 Concept Staging Plan - Tallawarra Lands



5 DEVELOPMENT PRINCIPLES

The following principles will guide land use planning decisions and the integration of multiple DAs with the overall Concept Plan and MP 09_0131 as modified. Innovation and flexibility are key principles which will underpin future development, allowing for development that can demonstrate improved outcomes that may not be foreseeable at the time of adoption of this DCP chapter.

The principles are the desired outcomes for development overall. Each DA is expected to contribute to a standard of design and performance consistent with this DCP Chapter and the quality outcomes sought for the URA.

The principles aim to:

- optimise natural and cultural assets;
- achieve efficient use of infrastructure and utilities; and
- promote, and continually improve on, measures of performance and outcomes in terms of social, cultural, environmental, economic and governance factors.

The Development Principles address:

Movement - The concept road network is indicated in the Concept Plan (**Figure 1**) and the Notice of Determination of MP 09_0131 as modified. Future development applications for subdivision will demonstrate the provision of flood free vehicle access to the broader public road network, connections to a cycling and pedestrian network, and provision for public transport integration. Road Design Standards are included in Section 6.7 of this DCP.

Water Management - Flooding, stormwater quality management and coastal/tidal influences are relevant to planning for Tallawarra URA. The site is comprised of several sub catchments. The initial planning for flood and stormwater management for the sub catchment north of Yallah Bay Road has been addressed in a number of previous flood studies and stormwater management plans prepared by Cardno. Tallawarra URA is exposed to the runoff from these upstream areas and is the final overland flow area before runoff enters Lake Illawarra.

Environmental Management – Environmental management is to be achieved by way of remediation of contaminants, Aboriginal heritage assessments, vegetation management plans (VMPs), restoration of watercourses and landscape plans.

Open Spaces – For passive and active use by the local Tallawarra and broader Wollongong community. These open spaces will be complimentary to the various natural assets surrounding Tallawarra such as the Lake Illawarra Foreshore and Mt Brown.

Community Hub – A community hub is to be provided in the Central Precinct, accommodating a variety of indoor and outdoor functions, and integrated with the commercial centre and employment landswith clear lines of sight, movement routes and links that encourage walking, cycling and public transport.

Residential Development - These principles are to be considered in conjunction with other planning principles and strategies adopted by Council for delivery of housing including the Wollongong Housing Strategy, and the residential densities and dwelling typologies reflected in the Concept Plan as modified.

It is intended that controls are flexible to enable responsiveness to evolving market demands, thereby facilitating housing supply and choice. Housing choice builds into the community the opportunity for various levels of affordability, dwelling forms and family structures to be accommodated. Allowing for a range of housing and building types also facilitates the creation of a well-integrated and cohesive community.

Employment Lands - The development of employment lands in the Central Precinct is aligned with the key goals of Council's adopted Economic Development Strategy 2019-2029 to generate jobs in higher-paying industries and align new jobs to the local talent pool, and provide opportunities to promote small business and entrepreneurial opportunities.

Innovation, flexibility and continuous improvement - Development at Tallawarra intends to be innovative, future-focussed and oriented to producing sustainable outcomes.

Table 5-1 Development Principles

Movement	
Roads, Verges and Pathways within the future public road network	
Principle 1 - Movement networks that support land use patterns	1.1 Public roads connecting to Gilba Road are to provide multiple points of public access to the lake foreshore and establish view corridors to Lake Illawarra.
Principle 2 – Safe, connected and legible movement network for all modes and users	2.1 Road, pathway and intersection design to meet the requirements of DCP Chapter B2: Residential Subdivision, AusRoads and Australian Standards for residential streets.
	2.2 Restrict vehicle crossings and driveways on main collector roads to prioritise efficient movement and continuity of pathways that will be used for longer trips and through trips
Principle 3 – Quality infrastructure	3.1 Use of robust and durable materials, quality finishes and ancillary infrastructure with minimal maintenance requirements.
	3.2 Incorporate sustainable and recycled materials and construction methods.
Active Transport	
Principle 1 – Coordination with land use patterns	1.1 Pathways to include multiple connection points to the publicly accessible foreshore of Lake Illawarra.
Principle 2 – Connected, functional and safe network	2.1 Link the pathway network within Tallawarra Lands to the adjoining regional and local networks.
Bridges and Culverts	
Principle 1 – Good Design is context sensitive and contributes positive values to the community and environment	1.1 Design and function to account for ecological factors such as riparian habitat, fauna movement and vegetation management.
	1.2 Where necessary, design is to be compatible with the Fish Passage Guidelines of NSW Fisheries.
	1.3 Bridges and culverts to include paths safe for co-use by cyclist and pedestrians.
Public Transport	
Principle 1 – Convenient public transport	1.1 Ensure employment and visitor/customer-generating land uses are located within 400m walking distance of a bus stop.
Principle 2 – Effective planning for bus routes and stops, service provision & integration	2.1 Future subdivision layouts and road reserve widths to include bus routes and bus stop locations connected within Tallawarra URA and the broader locality and region and consistent with Chapter B2 Residential Subdivision.
	2.2 Incorporate bus priority measures as necessary to ensure highly efficient, prioritised bus transport.
Principle 3 – Quality infrastructure	3.1 Provide comfortable, attractive, safe and secure bus

	related infrastructure with clear timetable/service information and catering for all abilities.
	3.2 Ensure pedestrian and cycle links to bus stops are of a high standard and form a continuous network (refer also Active Transport Principles)
	3.3 Plan for innovative and efficient public transport technology such as ride share and carpool services in employment, community and commercial areas
Water Management	
Principle 1 - Integrate floodplain and stormwater management into the urban development process	1.1 The principles of water sensitive urban design are integral to water cycle management of Tallawarra URA.
Principle 2 - Improve the management of water quantity outcomes for stormwater, wastewater, water supply and recycled water	2.1 Manage stormwater runoff using a combination of at-source and regional systems rather than a single scale system where possible.
	2.2 Manage stormwater discharge to minimise impacts on downstream receiving waters and Lake Illawarra with targets for water quality and a water quality monitoring program.
	2.3 Accommodate storage and re-use of stormwater in subdivision and open space design.
Principle 3 – Flooding and flood affected land to be managed in a coordinated way and considered in development of upstream land	3.1 Individual DAs for subdivision and development within Tallawarra URA shall be addressed in a whole of catchment manner.
	3.2 Developable land within the shallow floodplain (< 0.5m depth in a 1% AEP event and of low hydraulic hazard) to be considered by way of a local cut/fill strategy where compliance with relevant floodplain management controls can be demonstrated and not limited to depth and velocity calculation.
Principle 4 - Preserve the natural function of the floodplain, riparian areas and foreshore and marine waters	4.1 Achieve rehabilitation of the riparian corridors of Category 1 and 2 watercourses consistent with the DCP Chapter E23 Riparian Land Management.
	4.2 Maintain riparian connectivity of key Category 1 watercourses by using piered deck structures where road crossings are proposed.
	4.3 Minimise the number of road crossings across Category 2 watercourses to preserve riparian connectivity.
Principle 5 – Strategically protect people and property from flooding	5.1 Minimise the risk to human life and property damage caused by flooding through appropriately locating urban structures outside of the 1% AEP flood extents and elevate and floodproof buildings using a freeboard of 500mm plus a predetermined climate change factor, based on the post development (ultimate) flooding scenario.
	5.2 Design specific roads to achieve a 1% AEP flood event immunity including a pre-determined climate change factor or greater flood event.
Principle 6 - Protect water quality of surface and groundwater and avoid	6.1 Improve the long-term environmental protection of receiving waters and Lake Illawarra.

adverse effects on water quality to watercourses and Lake Illawarra	6.2 Manage stormwater quality using a combination of at-source and regional systems, rather than single scale systems where possible.
	6.3 Utilise stormwater quality targets consistent with the stormwater risk management framework being developed for the Lake Illawarra catchment.
	6.4 Apply a treatment train approach including a variety of WSUD systems such as bio-retention, swales, wetlands and raingardens to meet water quality targets.
	6.5 Implement a water quality monitoring system.
Principle 7 – Efficient and sustainable stormwater infrastructure	7.1 Ensure that lifetime maintenance costs are factored into decision making processes and strategies are in place to ensure adequate maintenance over the life of the system, and where possible capital costs are reduced by implementing soft engineering methods.
	7.2 Interim stormwater management solutions will only be considered where there is a clear strategy for replacement with an identified ultimate strategic solution.
	7.3 Ensure stormwater infrastructure is designed to remain viable for the long term and under the widest range of probable climate futures.
	7.4 Incorporate best practice stormwater management principles and strategies in developments, including monitoring regimes that can demonstrate the effectiveness of the system.
Environment Management	
Principle 1: Prioritise areas with high environmental value for conservation	1.1 Habitat for threatened ecological communities, threatened species or vegetated areas of high conservation value is considered land of high environmental value in terms of habitat size and area and will be managed consistent with: i. an overarching Biodiversity Development Assessment Report for the Northern and Central Precincts; and ii. a future Biodiversity Development Assessment Report for the Southern Precinct.
	1.2 Manage areas on and adjacent to the Lake Illawarra foreshore consistent with the Lake Illawarra Coastal Management Program 2020 and a future Plan of Management including improvements to Coastal Wetlands and Proximity Areas to Coastal Wetlands and restoration of foreshore vegetation.
Principle 2: Maintain and enhance connectivity of habitat areas and movement and dispersal corridors	2.1 Connectivity to be achieved by corridors of native vegetation cover in one or more stratums and habitat links or 'stepping stones' between wildlife corridors.
Principle 3: Conservation and management of Heritage Items, sites of Aboriginal Heritage Significance and places of Aboriginal Cultural Heritage	3.1 ACHAR, AHIP and Cultural Heritage Interpretation Plan to be prepared and approved by Heritage NSW prior to the determination of any development application for the Southern Precinct.
Principle 4: Respect the Cultural Landscape	4.1 Mount Brown, Duck Creek and Lake Illawarra are landscape features to be retained, enhanced and protected, to remain visible from multiple prominent vantage points in the public realm throughout the URA

	and accessible by public space connections. Street and pathway layouts and open space settings shall take advantage of view lines and vistas.
Principle 5 – Riparian Corridors	5.1 Riparian areas can be retained in private ownership and subject to requirements for maintenance in perpetuity or dedicated to Council at no cost to Council. Land dedicated to Council is to be planted and stabilised in accordance with an approved Vegetation Management Plan (VMP) prior to dedication. There are no development contributions off-set for the dedication / transfer of this land to Council.
Principle 6 – Environmental Lands Buffer to Tallawarra Power Station	6.1 A single allotment of environmental lands will accommodate part of the continuous environmental corridor connecting the Lake Illawarra foreshore with elevated areas of Mount Brown and will remain and be retained as a buffer to the operations of the power station.
Open Space	
Principle 1 – Multi functional open spaces	1.1 Open spaces of a variety of sizes and functions will be provided throughout Tallawarra URA, including: i. Neighbourhood playgrounds and playing fields within a connected linkage of riparian lands along the western edge of the Northern Precinct. ii. A primary area of open space in the Central Precinct is to contain playing fields, a playground and community centre. iii. A large area of open space in the Southern Precinct is intended for active sports facilities and playing fields of regional scale.
Principle 2: Accessibility and Connectivity	2.1 The network and location of public open spaces will ensure public open spaces are distributed within 400m walking distance of 80% of residential dwellings.
	2.2 Open space to be connected with shared paths and trails to other facilities or places of interest including commercial zoned land, riparian areas, natural areas, employment lands, transport nodes community facilities, education facilities and childcare centres and the lake foreshore.
	2.3 Connection to the lake foreshore is to be achieved where supported by Department of Planning, Industry and Environment - Crown Lands.
Community Hub	
Principle 1: Accessibility and Connectivity	1.1 The community hub will be accessible for people of all abilities and designed to achieve the principles of CPTED.
	1.2 The community hub will be integrated with the commercial centre with clear lines of sight, and connections that encourage walking and cycling.
Residential Development	
Principle 1: Residential Density	1.1 Housing densities are to be optimised in locations that are: i. Within and adjacent to community hubs and commercial and employment land uses.

	ii. Adjacent to local, district and regional scale public open spaces. iii. Within walking distance of public transport routes and collector roads. iv. Not constrained by flooding, bushfire hazard, or steep slopes.
	1.2 Medium density housing forms contribute to the efficient use of land and infrastructure, household diversity, sustainable movement choices and energy and resource efficient built form.
	1.3 Low density housing contributes to diversity in housing choice and is located in locations which prevent higher density forms of housing.
Principle 2: Housing diversity and Affordability	2.1 A range of dwelling types, sizes and adaptable floorplans which allow low impact work-from-home opportunities in suitable locations will all be considered in subdivision design stages.
	2.2 A variety of lot sizes and dimensions must be provided to achieve diversity in housing types, orientation, building proportions and scales to suit a range of household structures as well as meet the density targets for the residential zones.
	2.3 Diversity in housing form and lot size includes opportunity for more affordable housing options.
Principle 3: Sustainable, energy efficient, low maintenance and low embodied energy materials and minimal construction effort	3.1 Facilitate smart design solutions for housing with passive heating/cooling and external materials and finishes that are low maintenance, have high performing insulating properties and low embodied energy, and encourage new dwellings to be fully electric and be 'EV (electric vehicle) capable'.
	3.2 Front and rear setbacks will allow deep soil planting areas and street tree growth to contribute to the long-term urban tree canopy.
	3.3 Encourage housing forms with minimal construction and installation time and cost to reduce construction and site impacts and reduce overall housing costs.
	3.4 Promote innovative housing types that allow adaptable spaces and is responsive to demands for WFH and appropriate creative industry opportunities.
Principle 4: Creating local amenity and a sense of place	4.1 Safe, healthy and active neighbourhoods with active interfaces between dwellings, streets and open spaces by including large windows, verandas and balconies providing views to and from the street and public open space areas to achieve a clear visual connection between housing and the public realm.
	4.2 Building and lot orientation to maintain and protect views to significant landscape features including Lake Illawarra, Mount Brown, the foreshore, public open spaces and riparian areas.
	4.3 Air quality assessment is to be undertaken for lots in the central and southern precincts in accordance with NEPM guidelines.

Employment Lands	
Principle 1: Flexibility in scale and use	1.1 Uses of employment lands will include low-cost, small-scale units and spaces to provide low risk entrepreneurial start up opportunities.
	1.2 Lot sizes and tenure will be flexible to allow for shared facilities (such as loading, unloading and storage) and changes to scale as business grow and adjust.
Principle 2: Connectivity	2.1 Employment lands will be connected to the commercial and mixed-use lands and public open space by shared pathways to encourage walking and movement.
Principle 3: Sustainable, energy efficient, low maintenance and low embodied energy materials	3.1 Facilitate smart design solutions for passive heating/cooling and external materials and finishes that are low maintenance, have high performing insulating properties and low embodied energy.
	3.2 Front and rear setbacks to allow deep soil planting areas and street tree growth to contribute to the long-term urban tree canopy and create a visual buffer between the northern edge of the employment lands and the residential lands in the Central Precinct.
	3.3 Encourage building forms that are multi-purpose with minimal construction and installation time and cost to reduce construction and site impacts and reduce overall development costs.
Innovation, flexibility, and Continuous Improvement	
Principle 1: Development at Tallawarra intends to be innovative and future-focussed	1.1 Future planning principles need a degree of flexibility to enable development that is adaptive and responsive to future challenges, improved knowledge, foresight and best practice so that opportunities for improvement are not prevented by controls adopted at a fixed date.

6 DEVELOPMENT CONTROLS

6.1 Residential Development

6.1.1 Dwellings on visually prominent land – Central Precinct – lots fronting Carlyle Close

Objectives

The objectives for housing on visually prominent land in the Central Precinct with frontage to Carlyle Close are to:

(a) Protect and improve the appreciation of the existing scenic and environmental quality of Mount Brown by creating building envelopes that share and maintain views and vistas.

(b) Facilitate low density and quality of design of residential development to complement the surrounding setting and topography.

(c) Create a form and external appearance of residential development which will be responsive to the natural slope.

(d) Maintain a building form and profile which will enhance the visual prominence of the ridgeline to Mount Brown.

(e) Integrate structures into the site that are responsive to the natural landform and topography.

(f) To ensure landscape design responds to the existing site conditions including changes in levels and views and proximity to adjoining environmental lands.

(g) To enhance the appearance of housing through integrated landscape design.

Controls

(a) Building envelopes and minimum setback requirements are to be in accordance with **Figure 5**.

(b) Partial excavation, finished floor levels, roof articulation and building height are to be set out to fit within the building setback controls in **Figure 6**.

(c) A minimum of half of the minimum rear setback must be provided as densely planted deep soil zone using endemic species on lots directly adjoining environmental lands. The deep soil zone is to be located along the length of the rear boundary to provide a corridor of vegetation and must be in addition to private open space requirements.

(d) Where private or communal open space is located on the rooftop provide 1.5 metre wide landscaped beds or screening devices, setback 1.5 metre from the edge of the building façade, to avoid overlooking into neighbouring properties.

Figure 5 Plan view of building envelope controls - Central Precinct

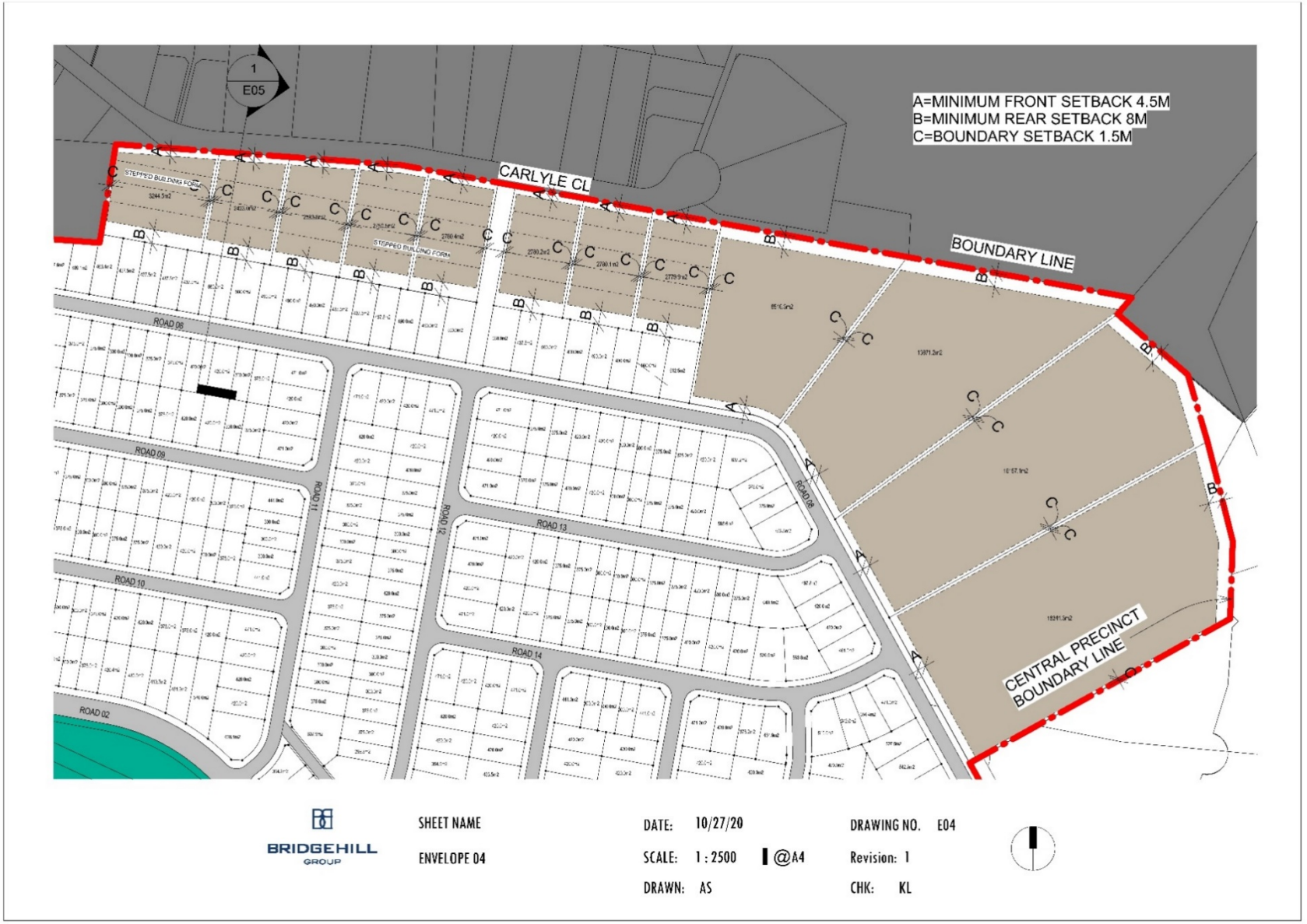
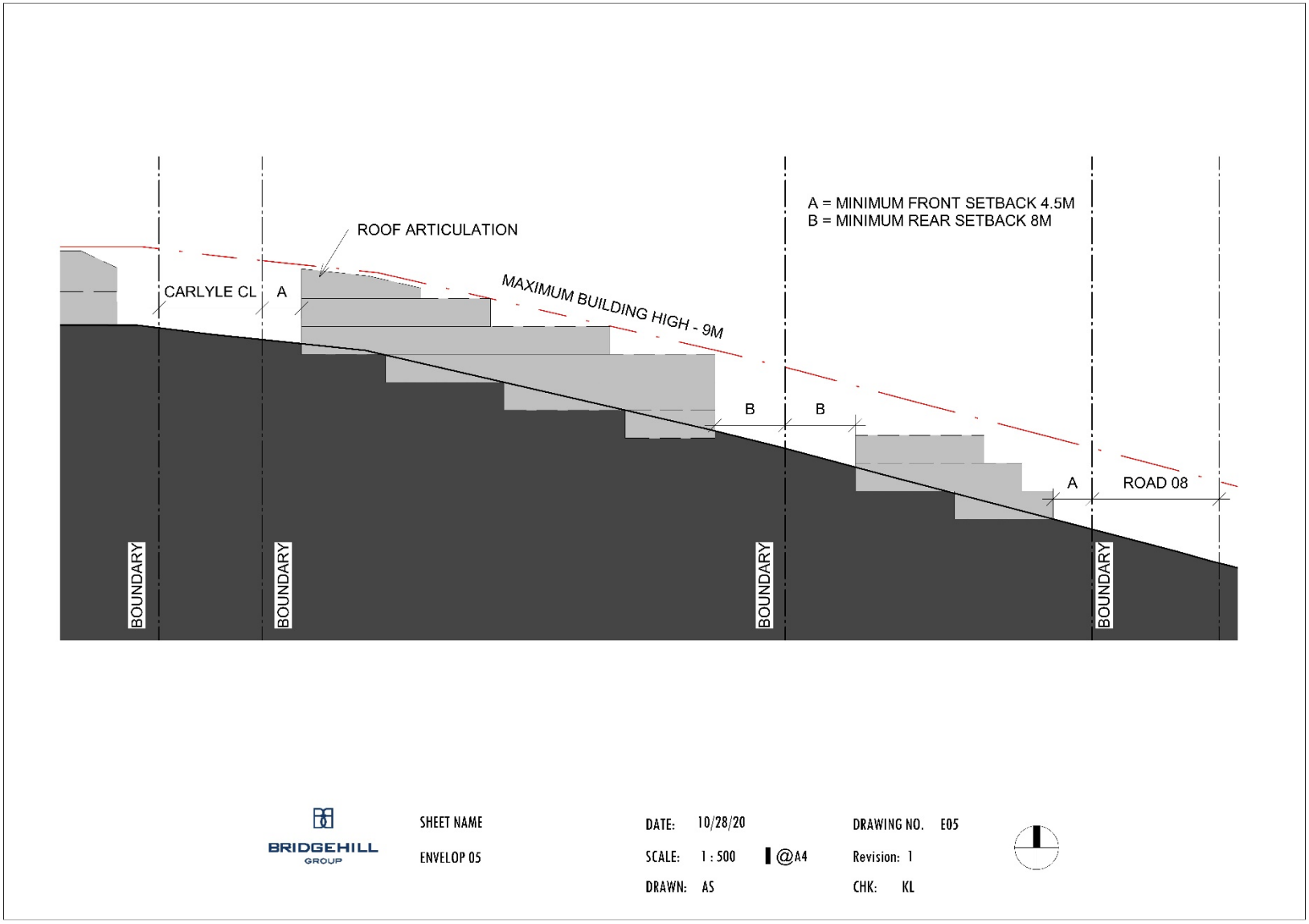


Figure 6 Section view of Building Height, excavation and floor level stepping and roof articulation controls



6.1.2 Building Design controls for dwellings adjacent to the Noise Contour control – Northern Precinct and areas along the M1 Motorway – Central and Southern Precincts

Objectives

The objectives for residential development adjacent to the 50 LAmax noise contour are to:

(a) To ensure a high level of amenity for residential occupants in close proximity to the noise contour associated with the Tallawarra Power Station.

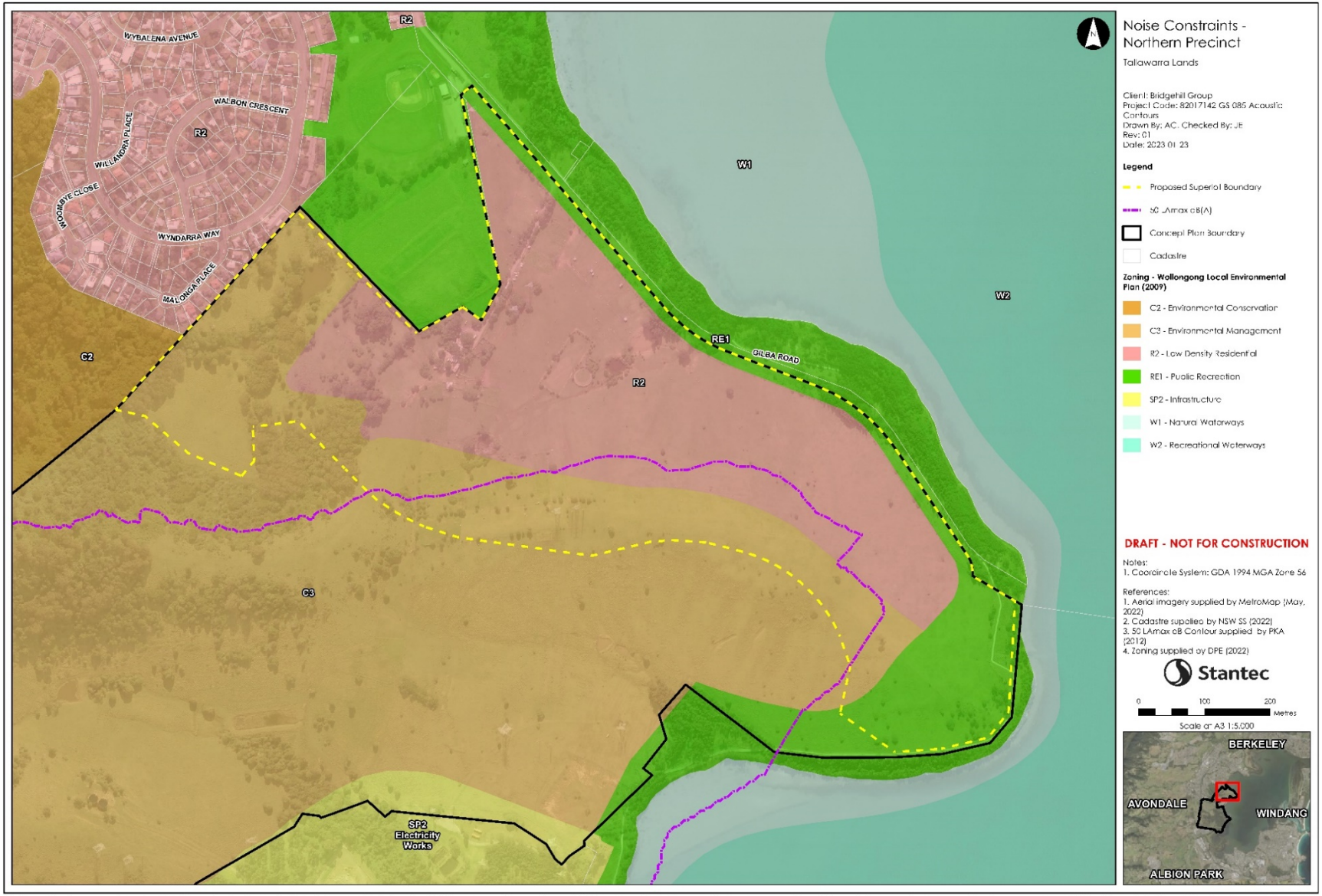
(b) Ensure that built improvements and acoustic treatments do not detract from the urban landscape.

(c) Ensure that air quality is considered to inform subdivisions within the Central and Southern Precincts.

Controls

1. These controls apply to each proposed lot affected by the 50 LAmax noise contour associated with the Tallawarra Power Station as shown in **Figure 7**.
2. Built form placement and orientation shall maximise residential acoustic privacy and amenity and shall demonstrate that the following LAeq levels are not exceeded: in any bedroom in the building 35dB(A) and 40 dB(A) anywhere else in the building (other than a garage, kitchen, bathroom or hallway) at any time between 10 pm and 7 am.
3. Any future subdivision application shall be supported by a noise impact assessment study which outlines appropriate and alternative acoustic treatment measures for each dwelling to be erected on each lot affected by the noise contour. The acoustic impact assessment study must be carried out by a suitably qualified and experienced acoustic consultant and meet a maximum indoor noise level of 45dB(A), 52dB(A) LAmax or the current best practice standards, whichever is the higher/better.
4. Any future residential subdivision application within the Central and Southern Precincts shall be supported by an air quality assessment. The air quality assessment report will need to determine air quality for carbon monoxide, oxides of nitrogen, sulphur dioxide, particulate lead, particulate matter - PM10 and PM2.5 as per the National Environment Protection Measures (NEPMs) Guidelines and will need to demonstrate that each residential subdivision will meet NEPM guidelines.

Figure 7 Noise contour impacts on the future Northern Precinct associated with Tallawarra Power Station



6.1.3 Small lot Building Envelopes (lots up to 300m2)

Objectives

(a) Optimise opportunities for canopy tree planting in the streetscape.

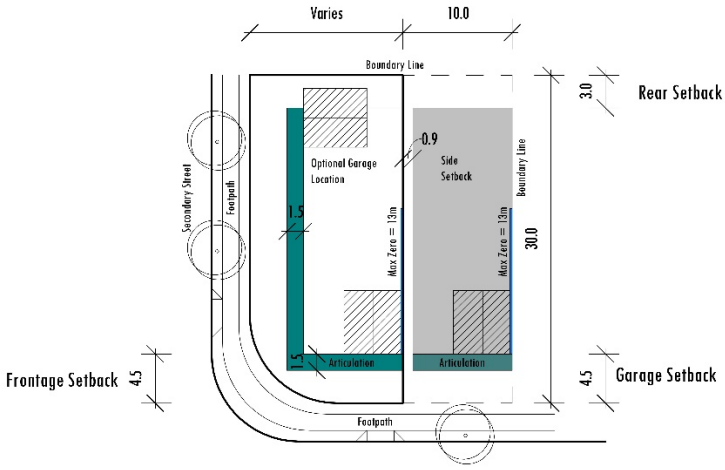
(b) Development that achieves articulation and interest in front facades proportional to the lot dimensions.

(c) Zero lot lines are encouraged for integrated development (where dwellings on adjoining lots are subject to the same DA).

Controls

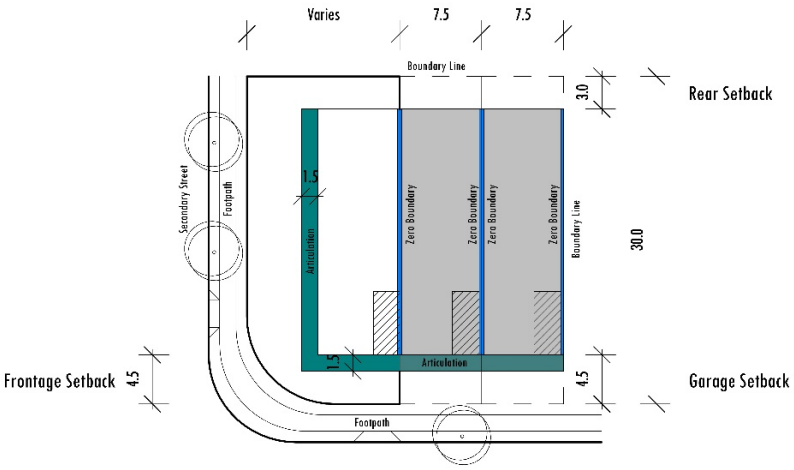
1. Front setbacks to be a minimum 4.5m with an articulation zone of 1m depth as shown in **Figure 8** and **Figure 9**. A maximum of 50% of the width of the front façade should be articulated within the articulation zone with a variety of design elements such as balconies and verandahs, windows, blade walls and adequate landscape treatment provided. This does not apply to onsite carparking arrangements (garage or carport), which requires a minimum setback of 5.5m.
2. The width of any garage shall not exceed 50% of the width of the dwelling at the front building alignment and shall be recessed at least 1m behind the street alignment of the dwelling. The garage setback shall be a minimum of 5.5m from the lot boundary.
3. Zero lot lines shall be adopted for integrated dwelling designs on lots 10m wide or less as shown in Figure 9. Zero boundaries shall be utilised to maximise private open space utility and amenity and solar orientation and avoid inefficient narrow side setbacks. Where a zero lot line is created for attached housing adjacent to another lot, a maintenance easement will be required on the affected property to be controlled through section 88B covenants.
4. There should be consistency in architectural language through built form, materials, colours and textures, landscaping and fencing between the dwellings however identical repetition of elevations on any two adjoining dwellings is to be minimised.

Figure 8 Building Envelope with articulation zone and side setbacks – Detached Dwellings



Typical Building Envelope Plan
Detached 10 X 30m (300m^2)

Figure 9 Building Envelope with articulation zone and side setbacks – Attached Dwellings



6.1.4 Residential development near the Lake Illawarra Foreshore

Objectives

(a) Ensure that development visible from the Lake Illawarra foreshore makes a positive contribution to the foreshore and natural setting of the area.

(b) Ensure development is compatible with the scale, character and landscape setting of the foreshore with natural setting and scenic quality considered in the design and siting of new development.

(c) Retain, enhance and add to the mature trees and indigenous vegetation adjacent to the foreshore area.

(d) Integrate structures into the site with minimal change to the natural landform and topography.

(e) Visually integrate developments near the foreshore by using design and materials which complement the natural landscape and enhance views and appreciation of the foreshore area.

(f) Manage environmental impacts from development and where possible improve environmental qualities along the foreshore.

Controls

1. External materials, colours and finishes of all buildings and structures including fencing must complement the existing features of the natural environment of the Lake Illawarra foreshore, and comprise subtle light coloured and natural tones. External building materials to be salt tolerant.
2. Dwellings to include design elements such as living room windows, balconies, roof top terraces and verandahs which enable lines of sight and views to the Lake Illawarra foreshore from elevated active interior and exterior dwelling spaces. This enables ongoing appreciation of the foreshore environment and facilitates passive surveillance of the foreshore open space with sight lines above the level of vegetation canopies.
3. Landscaping of residential development is to include a minimum of 60% of endemic plant species.
4. Buildings shall be located, designed and configured such that there is no significant loss of amenity to foreshore areas and adjoining development. This shall be achieved through –
    - Building siting and height with minimal cut and fill.
    - Building bulk distributed to reduce visual, amenity and solar access impacts on foreshore areas, adjoining properties and the public realm.
    - Building forms that enable a sharing of views with neighbours.
    - No blank walls to be oriented to the foreshore and adjoining public realm spaces.

6.1.5 Medium Density Housing setbacks and edge treatments to street frontages – Central Precinct

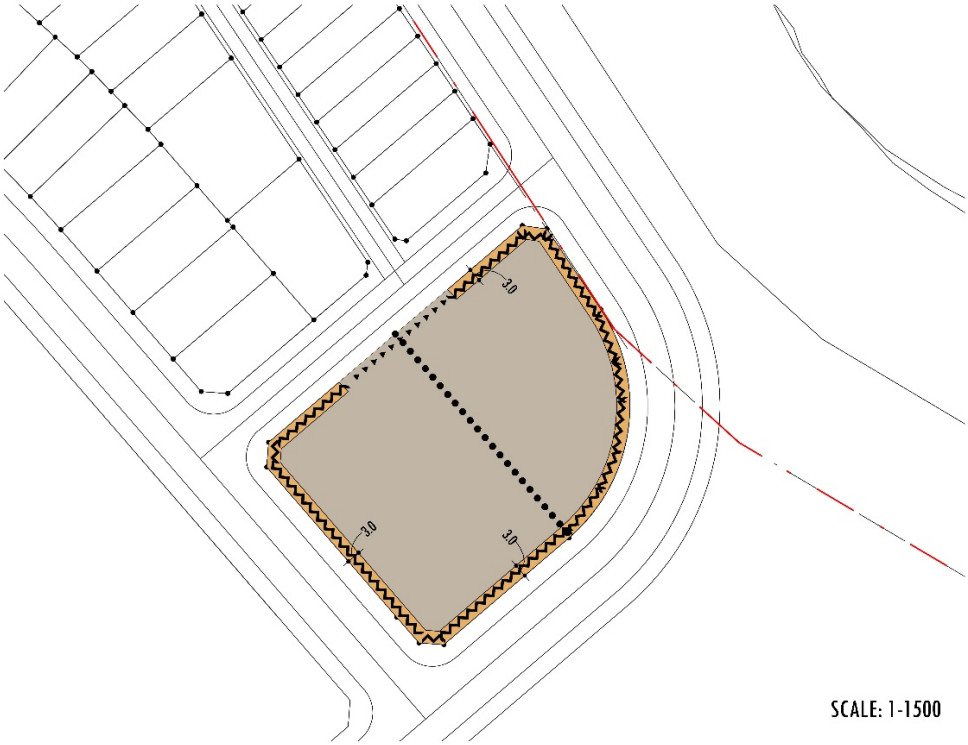
Objectives

(a) Medium density residential development in the Central Precinct is to achieve a high quality of urban design and function so as to have positive impacts to the aesthetics and function of the adjoining public realm.

Controls

1. Street facades, building envelopes, through-site building breaks, setback articulation and vehicle access is to be matched to the schematic diagrams shown in Error! Reference source not found.**, Figure 11,** and **Figure 12**.
2. Carparking and vehicle manoeuvring areas are to be located internally to the lots, and access provided by a central/combined driveway.

Figure 10 Schematic set out of building features interfacing with the public realm for medium density development



SITE THROUGH LINKS DESIRABLE WHERE POSSIBLE

1M ARTICULATION ZONE

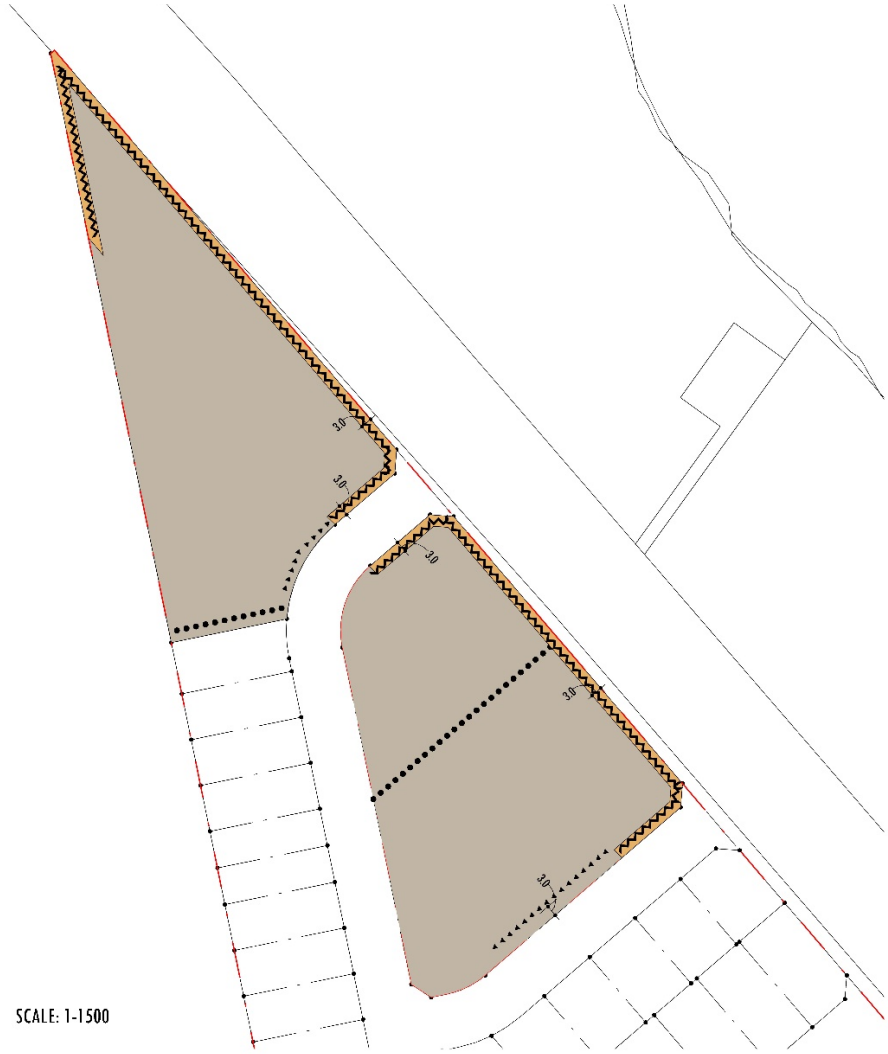
PROMINENT CORNER BUILT FORM TO STREET EDGE

VEHICULAR ACCESS ZONE

BUILDING ENVELOPE UP TO 9M

* ADG APPLIES

Figure 11 Schematic set out of building features interfacing with the public realm for medium density development



SITE THROUGH LINKS DESIRABLE WHERE POSSIBLE

1M ARTICULATION ZONE

PROMINENT CORNER BUILT FORM TO STREET EDGE

VEHICULAR ACCESS ZONE

BUILDING ENVELOPE UP TO 9M

* ADG APPLIES

Figure 12 Schematic set out of building features interfacing with the public realm for medium density development

6.1.6 Residential Development – Other

Objectives

(a) Residential development that contributes positively to the character and function of the streetscape and public realm.

(b) Residential development that exceeds sustainability ratings for energy efficiency, water efficiency, thermal comfort, natural lighting and ventilation and low embodied energy in materials and construction.

Controls

1. Front setbacks shall be a minimum of 4.5m, except to a garage or car parking structure (carport or the like), which shall be a minimum of 5.5m.
2. Minimum front setback of 2m from a secondary road on a corner lot.
3. For lots with more than one road frontage, the primary frontage is that which is adjacent to the road with the widest reserve width (internal roads/laneways are considered to be the secondary road frontage and the rear of the lots).

4. Vehicle crossing widths and hard surface paving within the front and secondary setbacks to be the minimum needed to access on-site parking required by the Chapter B1 of the Wollongong DCP and provide all weather access to the dwelling entry.
5. All dwellings must address and activate the primary road frontage.
6. For lots with more than one frontage, car ports, garages and on-site parking must not be located within the setback to the primary frontage and not be accessed from the primary frontage.
7. Front fences and walls should not be higher than 1.5 metres. Fencing and retaining walls fronting controlled access roads are to present a consistent streetscape and should be constructed prior to the issue of a Subdivision Certificate to ensure consistency of materials, construction and delivery.
8. Fencing and boundary landscaping treatment along a secondary frontage or public open space is to be a maximum of 1.8m including retaining of which a maximum 1.5m from the ground is solid form and elements above 1.5m are open form. Corner lot fencing must finish a minimum of 4m behind the front wall of the dwelling. These fencing requirements are to be included as a Restriction-as-to-User on the title of affected lots.
9. Fencing to 'Access Denied Road' primary frontages shall be constructed prior to the issue of a Subdivision Certificate. Where retaining walls are required, they are to be constructed in stepped design of masonry blocks or Council-approved equivalent and fencing with details approved at subdivision stage. These fencing requirements are to be included as a Restriction-as-to-User on the title of affected lots.
10. Where rear or side boundary fences adjoin land to be dedicated as open space, fences are to be of a design and materials which allow for passive surveillance between the private lot and the open space. These fencing requirements are to be included as a Restriction-as-to-user on the title of affected lots.
11. Large lots in Zone R5 (greater than 1,000m^2) shall have rural style open form fencing such as post and rail, or open wire fencing. Metal deck fencing, impervious solid timber or masonry fencing types are not permitted.
12. Dwellings shall incorporate design features that connect with, and activate, the adjoining public realm. Such features include wide verandahs and balconies suitable for passive recreational uses (outdoor seating), large windows to living rooms, entry doors and entry porches directly visible from the street.

6.2 Indigenous and European Heritage

Objectives

(a) To provide for the retention and protection of heritage items within the Tallawarra site.

(b) To ensure that the design of the proposed development does not have a negative impact on Indigenous and European heritage artefacts/items.

(c) Site management and development to be consistent with the Aboriginal Cultural Heritage Management as set out in the Aboriginal Cultural Heritage Assessment Report ACHAR by Biosis dated October 2020 and similar future reports to be submitted with future DAs.

(d) To promote and acknowledge Tallawarra's cultural heritage as a valuable resource that must be conserved for future generations.

Controls

1. All applications for subdivision are to include an Aboriginal and European archaeological and cultural heritage assessment and interpretation plan for land identified to be of moderate or high potential for significance to Aboriginal cultural heritage, or to contain items and places of Aboriginal heritage significance.

6.3 Water Management

Objectives

(a) Increase public convenience and public safety as well as protection of property.

(b) Promote sustainable water resource management.

(c) Adopt a total catchment management approach to water quality and protection of water systems.

(d) Protect ecological habitats from water pollution.

(e) Integrate water management into the landscape.

(f) Improve the water quality of Lake Illawarra and tributaries through the adoption of water sensitive urban design principles and the application of stormwater quality improvement devices along and on discharge points.

(g) Sustainably integrate natural systems with urban development.

(h) Minimise the volume of stormwater runoff.

(i) Improve the potential for urban run-off reuse.

(j) Minimise impervious areas where practicable.

(k) Protect watercourses from increased erosion and sedimentation.

(l) Preserve, restore and enhance riparian corridors as natural systems.

(m) Minimise the drainage infrastructure cost of development.

Controls

1. Stormwater quality performance targets for the development as determined using the software MUSIC in the detailed design phase will be as follows:

Parameter	Zone B - 2009 DCP targets	Zone A - 'Maintain' targets
TSS	85%	82%
TP	60%	78%
TN	45%	67%
Gross Pollutants	90%	90%

(*note: this control is consistent with Wollongong DCP Chapter E15: Water Sensitive Urban Design which states that Developments in the Lake Illawarra catchment may have targets adjusted by Council*.)

2. Stormwater quality improvement devices will not be constructed on lands owned or managed by Crown Lands.
3. There is to be no net increase in fill within the floodplain.
4. Compensatory excavation may be used to offset fill; however, the compensatory excavation must be taken from an adjacent area of similar flood function that is lower in the floodplain (i.e. at a lower AEP inundation extent) than the proposed fill areas. Cut and fill drawings and volume calculations must be supplied to Council with a DA.
5. Enhanced riparian corridors cannot be used to offset any floodplain storage in the flood modelling.
6. Maintain consistency with other water quality objectives and controls contained in Chapter E15: Water Sensitive Urban Design of Wollongong Development Control Plan 2009, which have not been specifically covered by this Chapter.
7. Water quality treatment system should be designed in accordance with Council's requirements.
8. Water management and monitoring undertaken before, during and after construction must demonstrate compliance with Australian and New Zealand Environment and Conservation Council guidelines for protection of aquatic ecosystems and be undertaken in accordance with Landcom guidelines – Managing Urban Stormwater: Soils and Construction.

6.4 Flood Management

Objectives

(a) Reduce the risk to human life and minimise damage to property caused by flooding. Ensure that flood risks are not increased beyond the level acceptable to the community.

(b) Ensure that proposed development does not increase the flood inundation of other properties.

(c) In the event of a flood, ensure that adequate access to affected properties is available for emergency service personnel and that safe egress is available for residents and employees.

(d) Ensure that sensitive land uses are designed and sited to minimise risk from flooding and have safe and reliable access.

(e) Maintain consistency with relevant flood risk management objectives and controls contained in Chapters E13 – Floodplain Management and E14 – Stormwater Management of Wollongong Development Control Plan 2009.

(f) Minimise potential impact of development on the ecology and the aesthetic and recreational value of waterways.

(g) Prevent intensification of development on land that is subject to a high risk of flood.

(h) Ensure that potential environmental contamination resulting from inundation of sensitive developments is minimised by appropriate design and siting.

(i) Maintain the existing flood regime and flow conveyance capacity.

(j) Maintain the function of floodway and flood storage areas.

(k) Reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone land including reducing private and public losses from flooding, improve public safety with respect to flooding and minimise the costs of responding to and repairs from flood damage.

(l) Increase public awareness of the hazard and extent of land affected by the full range of potential floods.

(m) Ensure new development must, as far as practical, reduce the existing flood risk, and in no circumstances should the flood risk be worsened.

(n) Ensure new development (with the exception of waterway crossings) does not encroach within areas susceptible to channel erosion, migration, bank failure and slumping.

(o) Deal equitably and consistently with all matters requiring Council approval on flood affected land in accordance with the principles within the latest version of the NSW Floodplain Development Manual (as revised and updated).

(p) Ensure that development takes into account the projected changes as a result of climate change.

Controls

1. For Development Applications on flood affected land north of Yallah Bay Road a two-dimensional computer model will be required to demonstrate pre-development and post-development flood scenarios and potential impacts. A Flood Impact & Risk Assessment is to be undertaken in accordance with the Flood Risk Management Guidelines LU01.
2. Road and bridge designs are to provide for the following flood immunity standards:
   i. Lake Illawarra catchment – probable maximum flood; and
   ii. Duck Creek catchment and all other Category 1, 2, and 3 watercourses – 100yr ARI flood including for climate change.

6.5 Riparian Corridors

Objectives

(a) Ensure riparian corridors provide ecological connectivity between Mount Brown and Lake Illawarra and along Duck Creek and Barrons Gully.

(b) Conserve and enhance riparian corridors to ensure their ecological and hydrological functions are maintained or improved.

Controls

1. Future treatment of riparian corridors shall demonstrate compliance with the NSW Department of Primary Industry (Office of Water) *Guidelines for Riparian Corridors on Waterfront Land* and NSW Department of Primary Industry (Natural Resources Access Regulator) *Guidelines for Controlled Activities on Waterfront Land,* except where these standards are overridden by controls specified by Chapter E23 (Riparian Management) of Wollongong DCP 2009.

6.6 Open Space and Recreation

Objectives

(a) To ensure that open spaces including land for public open space, drainage and environmental conservation are appropriately provided within the site.

(b) To provide retention of the bushland areas of Mount Brown.

(c) To provide for the mixed use of land for open space, conservation and critical drainage function.

(d) Ensure the provision of additional structured (active) and casual (passive) open space within the Tallawarra locality to meet future demand. Build upon the existing network of open spaces in the nearby locality of Koonawarra and enhance opportunities for future improvements to the management of natural and public assets of the Lake Illawarra foreshore.

(e) Ensure a diverse range of open space to support a variety of active and passive recreational activity improving community health and well-being and reflecting community need and innovative, sustainable design.

(f) Open spaces to provide visual relief from the urban environment and designed to provide identity and a sense of place for the community by incorporating important landscape features, scenic vistas, cultural or historic characteristics and canopy trees.

(g) The open space network and road network will be connected to provide a network of pedestrian, shared paths and cycleways to achieve good access and improve connectivity and site permeability.

(h) Ensure commitment to the design of high quality multi-functional open spaces that are welcoming, attractive, accessible and safe, incorporating the principles of universal design, social inclusion and sustainability.

(i) Provide opportunity for the developer to deliver alternate open space types, uses and facilities in lieu of standard open space requirements to best suit the conditions of the site and surrounds such as space along the lake foreshore and improvements to Hector Harvey Reserve and Mount Brown Reserve.

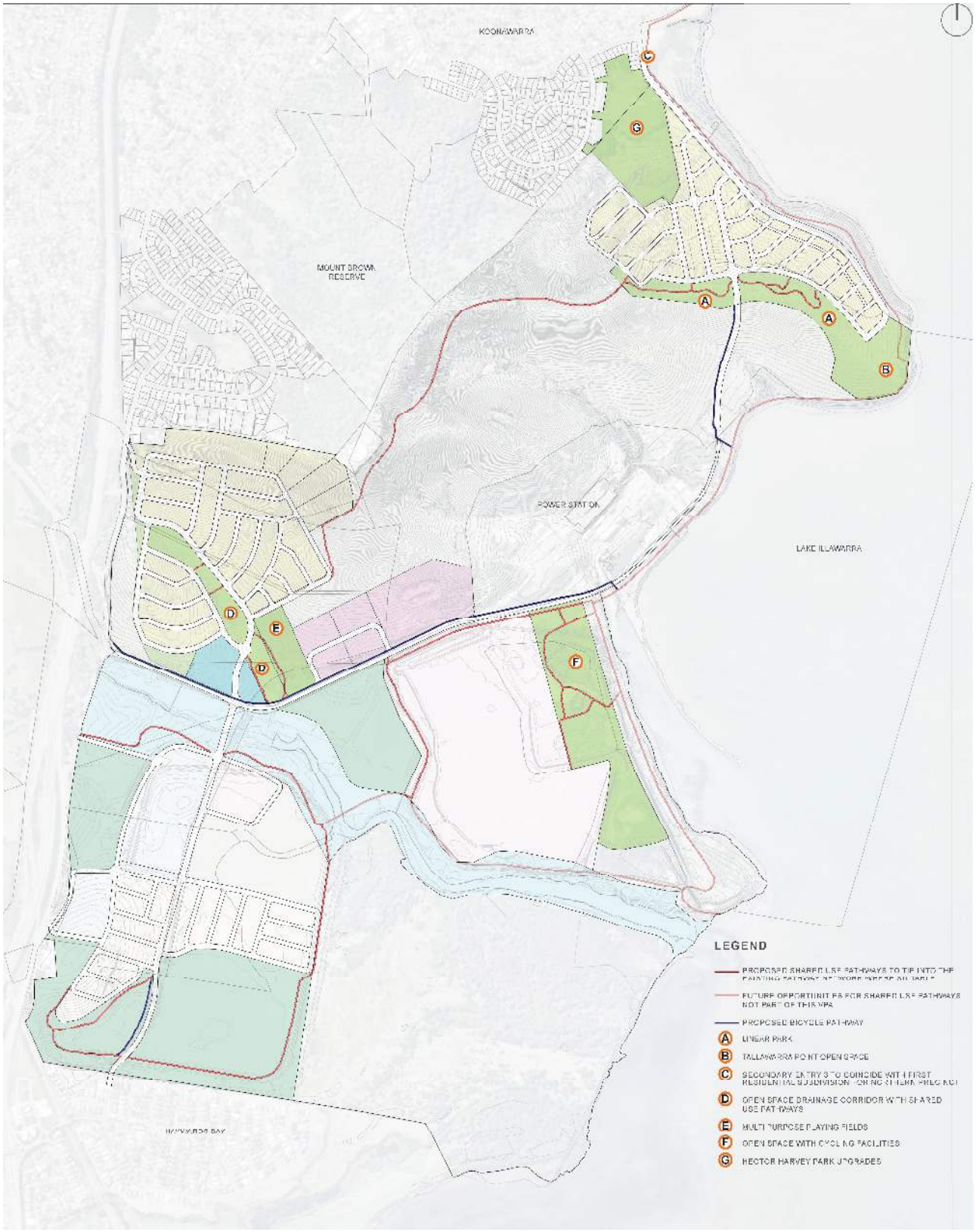
(j) Ensure green linkages through urban precincts to connect open spaces into the greater (external) network, improve amenity, encourage walking and cycling and improve biodiversity links.

(k) Integrate the principles of water sensitive urban design (WSUD) into street and open space design.

Controls

1. Public open space areas shall be provided with multiple connections to and from the public realm.
2. Public open space areas are to be designed and sited to have optimum frontages to public roads and clear lines of sight from public roads to the majority of the open space area for surveillance and quality streetscape.

Figure 13 Open Space and Green Linkages



6.7 The Road and Pathway System

Objectives

(a) To provide a defined hierarchy of roads and streets, in order to provide an acceptable level of access, safety and convenience for all road users suited to the site conditions and network approved with the Concept Plan (**Figure 1**).

(b) To ensure that the design features of each residential road within a subdivision reflects the role, function and character of the road within the overall road network.

(c) To provide an acceptable level of access, safety and convenience for all road users whilst ensuring acceptable levels of amenity and minimising traffic management issues in the Tallawarra URA.

(d) To provide appropriate road access for larger and special purpose vehicles including garbage and recycling trucks, fire trucks, delivery trucks and vehicles for construction and ancillary to the employment and commercial uses within the URA.

(e) Ensure sufficient road carriageway and verge widths to enable all roads to perform their designated function within the road network within and connecting to Tallawarra URA.

(f) Ensure that the road reserves cater for all required functions including safe and efficient vehicular and pedestrian movement throughout the road network, provision of on-street parking and the provision of street tree planting and other landscaping and, in the case of some roads, achieving noise attenuation from Tallawarra Power Station and land to be dedicated to TfNSW.

(g) Ensure road verges are of sufficient width to physically accommodate all necessary infrastructure assets and utilities including, where necessary, noise attenuation measures and undergrounded high voltage electricity infrastructure.

(h) Provide road geometry that is consistent with the designated function of the specific road as well as the physical characteristics of the locality including bus routes and street tree planting.

(i) Ensure the road network is simple and safe for all road users, including motor vehicles, pedestrians and cyclists.

(j) Ensure that appropriate vehicle speed limits are communicated and clear through the road design and road environment to enhance the safety of pedestrians and cyclists, the young and people with a disability.

(k) Swept paths of the design and checking vehicles are to demonstrate acceptable manoeuvring on all roads as per Austroads requirements.

(l) Ensure road verges are of sufficient width to physically accommodate large canopy plantings and water sensitive urban design (WSUD).

Controls

1. The design of any road as part of a subdivision in the Tallawarra URA shall be in accordance with the Wollongong DCP 2009 (Chapter B2 – Residential Subdivision) and the road design schedule detailed in **Figure 14**, **Figure 15** and **Figure 16** as follows relating to the Northern and Central Precincts.
2. Provision for bus services will be accommodated in the following road types as shown in **Figure 14, Figure 15** and **Figure 16** as follows, and the following specific road types:

   Northern Precinct:

   WCC Road Type 3 – Major collector with bus service and parking; and

   WCC Road Type 6 – Access street.

   Central Precinct:

   Central Precinct Specific Road (Based off WCC Road Type 3); and

   WCC Road Type 4 – Minor collector road with limited bus service and parking.

   3. Any future subdivision application will need to demonstrate how compliance with TfNSW Guidelines for Public Transport Capable Infrastructure in Greenfield sites.

Figure 14 Road design schedule for Tallawarra URA – Northern Precinct

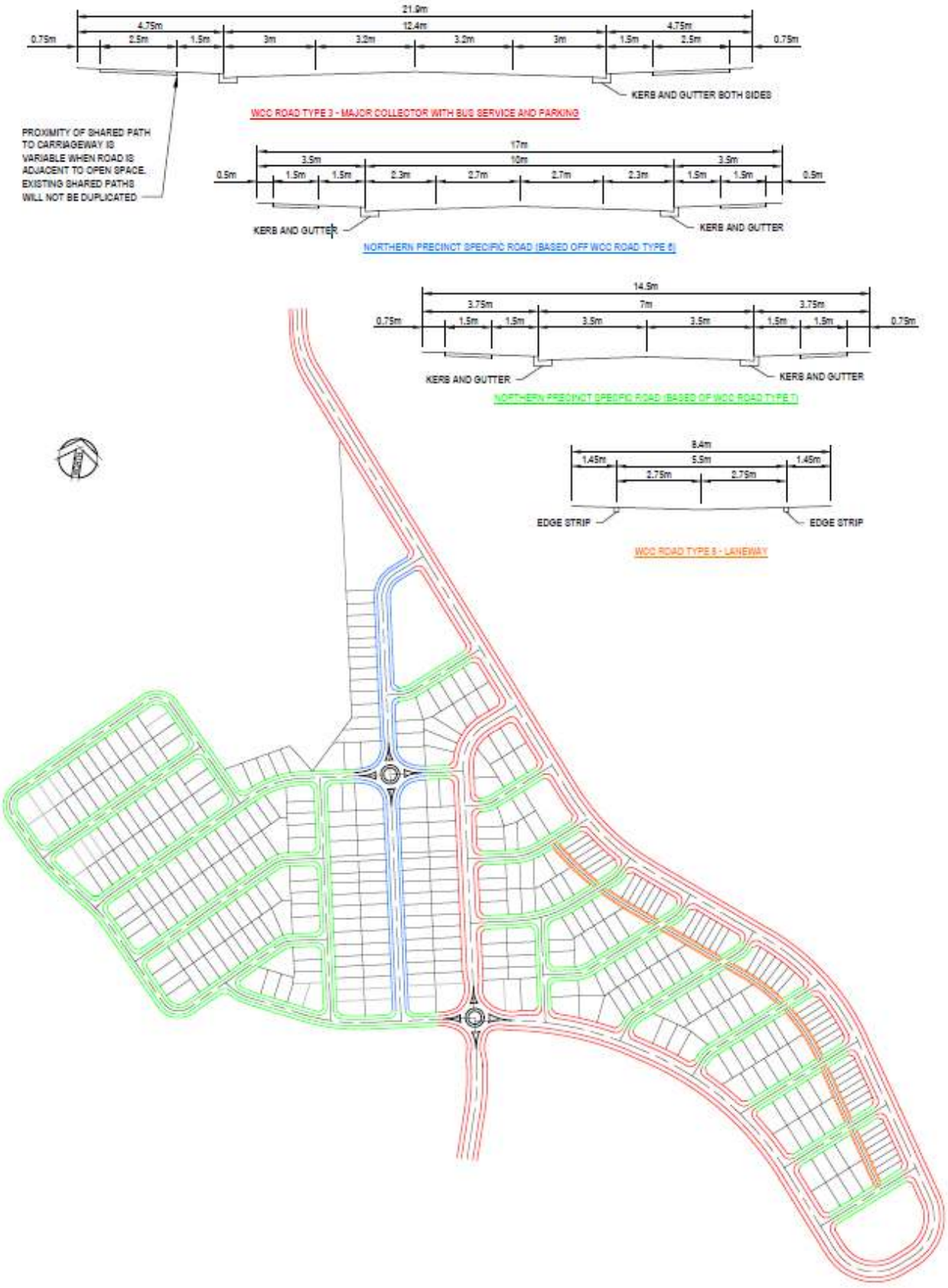


Figure 15 Road design schedule for Tallawarra URA – Central Precinct.

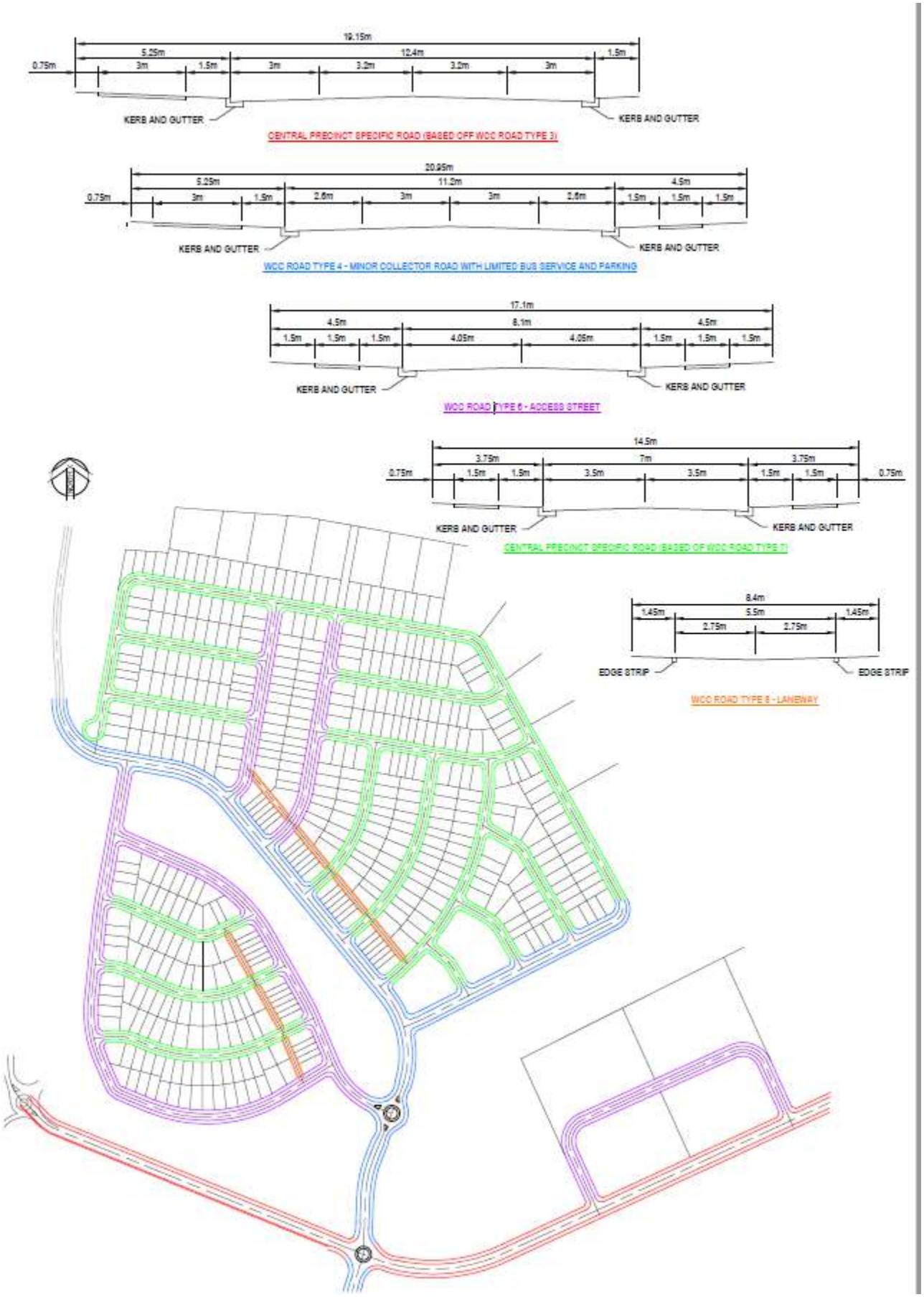


Figure 16 Road Design Schedule for Tallawarra URA – Southern Precinct.

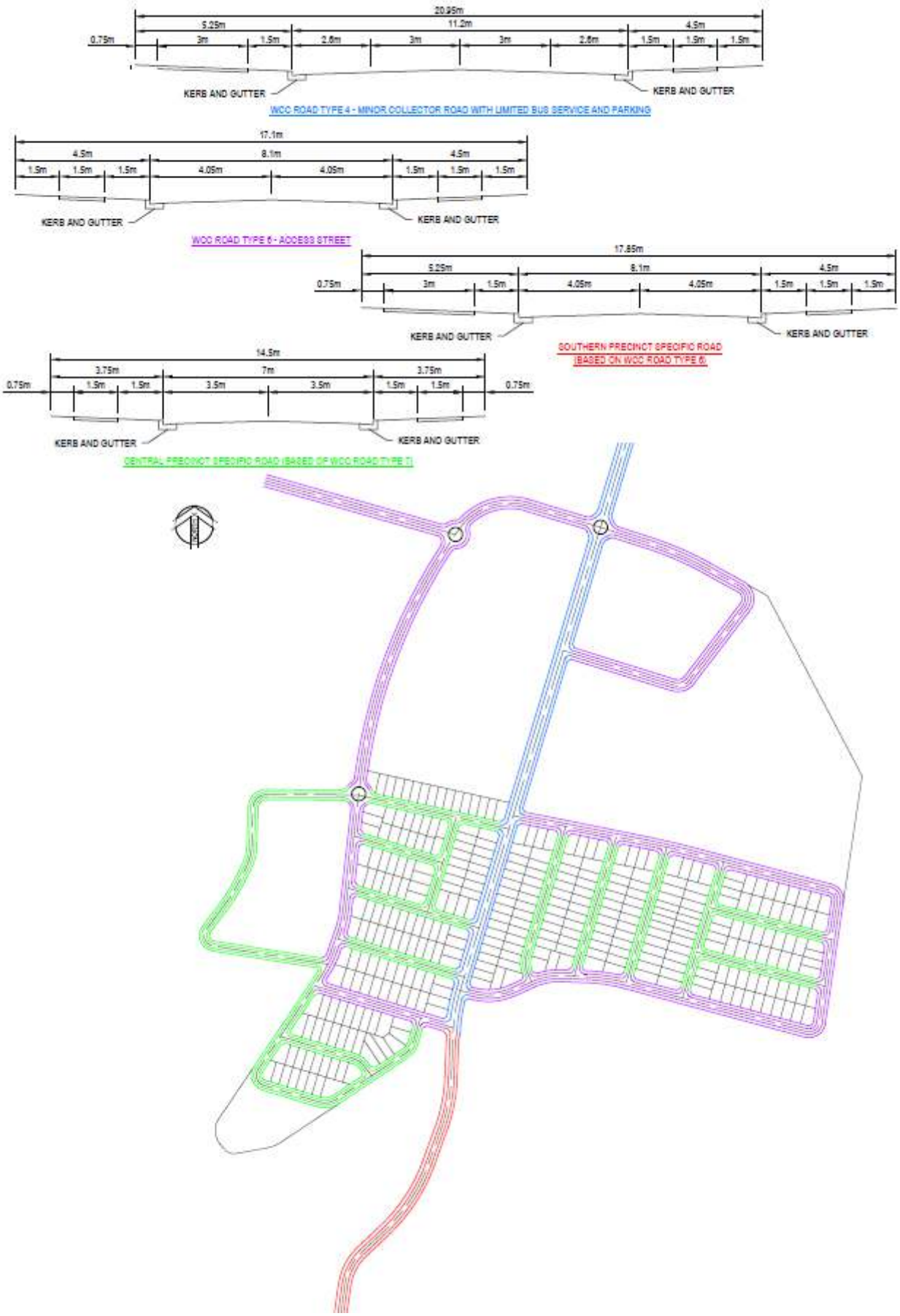
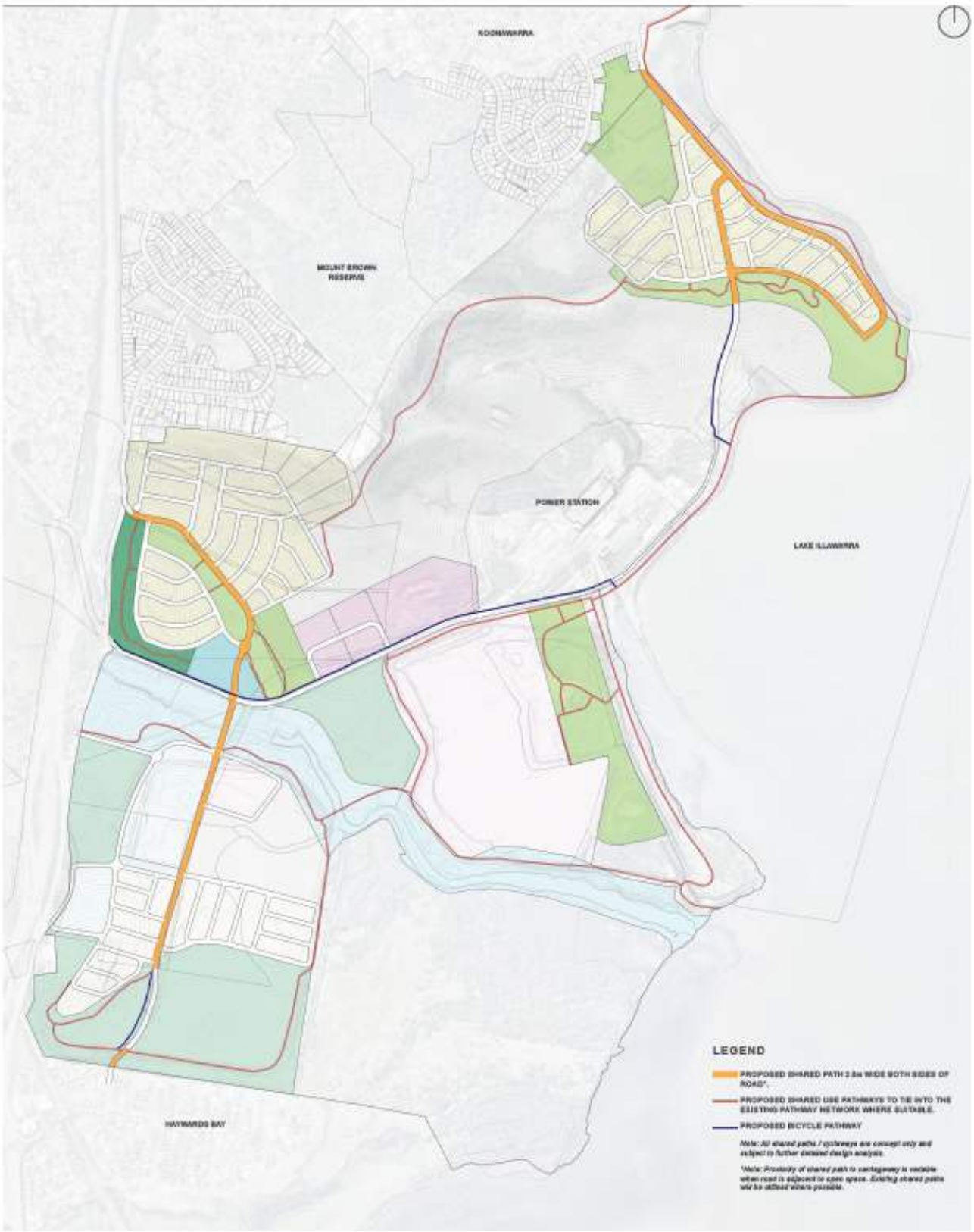


Figure 17 Tallawarra Cycleways



6.8 Commercial Development

Objectives

(a) A wide diversity of uses serving the daily needs of the community.

(b) Active street frontages and an engaging interface at street level and first floor levels with the adjoining public realm.

(c) Back of house facilities functional and accessible for servicing, loading and unloading with access that does not interrupt the continuity and activity of the pedestrian environment at the main frontage.

(d) A high quality, safe, interesting, appealing, and comfortable public realm connecting a mix of public spaces, commercial and residential premises.

Controls – all commercial and mixed use development

1. Buildings to have a zero front setback where there are active frontage(s) at ground level.
2. Buildings to have zero side setbacks at ground and first floor levels to create a consistent street wall and optimise the potential use of ground and first floor areas for commercial uses.
3. Buildings adjoining residential land or public open space are to have a greater setback at first floor level and above. The setback is to be determined by the case-specific conditions including direct solar access, visual privacy, acoustic attenuation, and desired bulk and scale outcomes.
4. Parking, loading, unloading, servicing and other back-of-house functions and facilities to be provided at the rear of commercial buildings. Rear laneways and shared parking and servicing areas accessed from the rear laneways are encouraged.
5. All commercial premises should have a publicly accessible address to the street for accessible entry from the major street where possible or by a major area of the public realm such as a village green, plaza or public open space.
6. The ground floor front façade and any secondary frontage is to be well integrated with the adjoining public realm to provide interest and activity such as clear lines of sight between the interior and exterior, readily visible entry points, continuous awnings and verandas for pleasant pedestrian experience and lighting to enhance safety and security after daylight hours.
7. Awnings shall be setback a minimum of 600mm from the kerb line of the road carriageway.
8. Primary and secondary frontages at first floor and levels above are to include windows, verandas and other features that optimise visual and activity connection with the public realm.
9. Where mixed use developments provide residential uses at upper floor levels, the pedestrian entry to the residential component of the building is to be securely separated from commercial and public spaces and designed to be integrated with the street frontage to maintain consistency with commercial frontages as required by Controls 5, 6 and 7 above.
10. Ground floor levels are to have a minimum floor to ceiling height of 3.3m to optimise the range of potential future fit-outs and uses.
11. Commercial premises of less than 200sqm in gross floor area should generally have a depth to width ratio ranging between 1:1 and a maximum 3:1.
12. Large retail or commercial office floor space not requiring continuous and direct connection to the street (e.g. supermarkets) should be 'wrapped' by smaller retail shops or commercial offices to avoid blank walls and provide active street frontages and continuity of activity and interest along street facades.
13. The siting, form, height and external appearance of any retail or business premise development or mixed-use development should be compatible with adjoining buildings in the surrounding retail and business precinct in addition to any abutting or nearby residential dwellings and open space.
14. The parapet height of any building must be consistent with the parapet height and building façade height in the streetscape.
15. External walls exposed to view from the public realm or visually prominent shall be constructed of high quality and durable materials and low maintenance finishes and shall not be visually unsightly.

16. Pedestrian through-site routes must be direct without any concealment opportunities and designed to provide clear sightlines from one end to the other and shall link purposeful, publicly accessible destinations.
17. Pedestrian through-site links should be a minimum of 5m in width and activated by direct lines of sight and accessible entries to retail, civic and /or commercial office uses.
18. Pedestrian links should be well lit at all times and publicly accessible between 7am to 7pm daily with preference for 24-hour public access. Any such pedestrian link is to be universally accessible.
19. Each building shall ensure the continuity and consistency of footpath pavement, street furniture and landscaping to maintain high quality public realm and streetscape character.
20. All developments in the commercial centre are to be designed to minimise overshadowing impacts and maximise solar access opportunities to any adjoining residential properties and the public domain (public reserves and / or footpaths).
21. Solar access shall be maintained for any north facing window of a habitable room of any residential dwelling and at least 50% of the private courtyard area for a minimum 3-hour continuous period between 9am and 3pm for the 21st of June winter solstice period.
22. Shadow diagrams must be submitted with DAs for any new retail, business or mixed-use building or any major alterations and additions to a retail or business building where in the opinion of Council, the development may pose potential overshadowing impacts upon any residential land use or public domain area. The shadow diagrams will be required for the 9am, 12 noon and 3pm 21 June winter solstice periods, as a minimum.
23. Additional hourly shadow diagrams between 9am to 3pm 21 June may be required where Council requires certainty as to the potential adverse overshadowing impacts upon surrounding properties and / or the public domain.

Controls for Large Business Premises / Commercial Office Buildings

1. Any new commercial office / business premises building with a total gross floor area of 5,000sqm or greater is to be provided with suitable shower and change facilities and secure bike storage, to encourage staff and visitors to use active transport alternatives.
2. Any new commercial building / business premises with a total gross floor area of 5,000sqm or greater must be provided with suitable parenting facilities. The parenting room should be designed so that it is accessible to carers young children. The entrance to the parenting room is to have an unobstructed width of 820mm. Operations of doors are to permit ease of use for people with a pram/stroller. The location of parenting room(s) is to be clearly signposted throughout the building.

6.9 Employment Lands

Objectives

1. The employment precinct will be developed with an emphasis on ‘Passivhaus’ design principles, in terms of building forms, construction materials and future business operators.
2. Priority will be given to suitable forms of development to accommodate low-cost start-ups to encourage innovation, and creative industries, especially those in the sustainable building and construction industry, data centres and battery storage and small-scale personal storage facilities.
3. Suitable uses will be ‘low trip generating’ in keeping with the locational factors of the Tallawarra employment lands.
4. Building design and land tenure outcomes shall be oriented to an adaptable, ‘long-life loose fit’ approach to allow for expansion of small businesses, and adaptive re-use of building infrastructure.
5. Building forms and architectural design will have regard to the site constraints, including height restrictions and setbacks to EA infrastructure.
6. Opportunities for shared use of facilities, including loading docks, storage, parking and communal staff and office facilities shall be accommodated where possible.

Controls

(Controls aligned with the above objectives will be developed prior to the planning advancement of the ‘employment lands’ precinct in Phase 2.)

6.10 Sustainable Urban Design

Objectives

1. Thermal performance outcomes for all new dwellings shall aim to exceed the minimum statutory requirement for thermal performance compliance (NCC and BASIX).
2. All residential development should aim to achieve the 6 STAR Green Building (or similar) level of certification.
3. Reduce indoor/outdoor air pollutants associated with the combustion of natural gas.
4. Provide sufficient shading and a cooler environment for pedestrians and users of the public domain.
5. Limit the retention of heat within the urban environment.
6. Reduce ongoing costs to occupants by improving passive resilience and energy efficiency of dwellings.
7. Promote sustainable construction practices and reduce environmental impact from development.

Controls

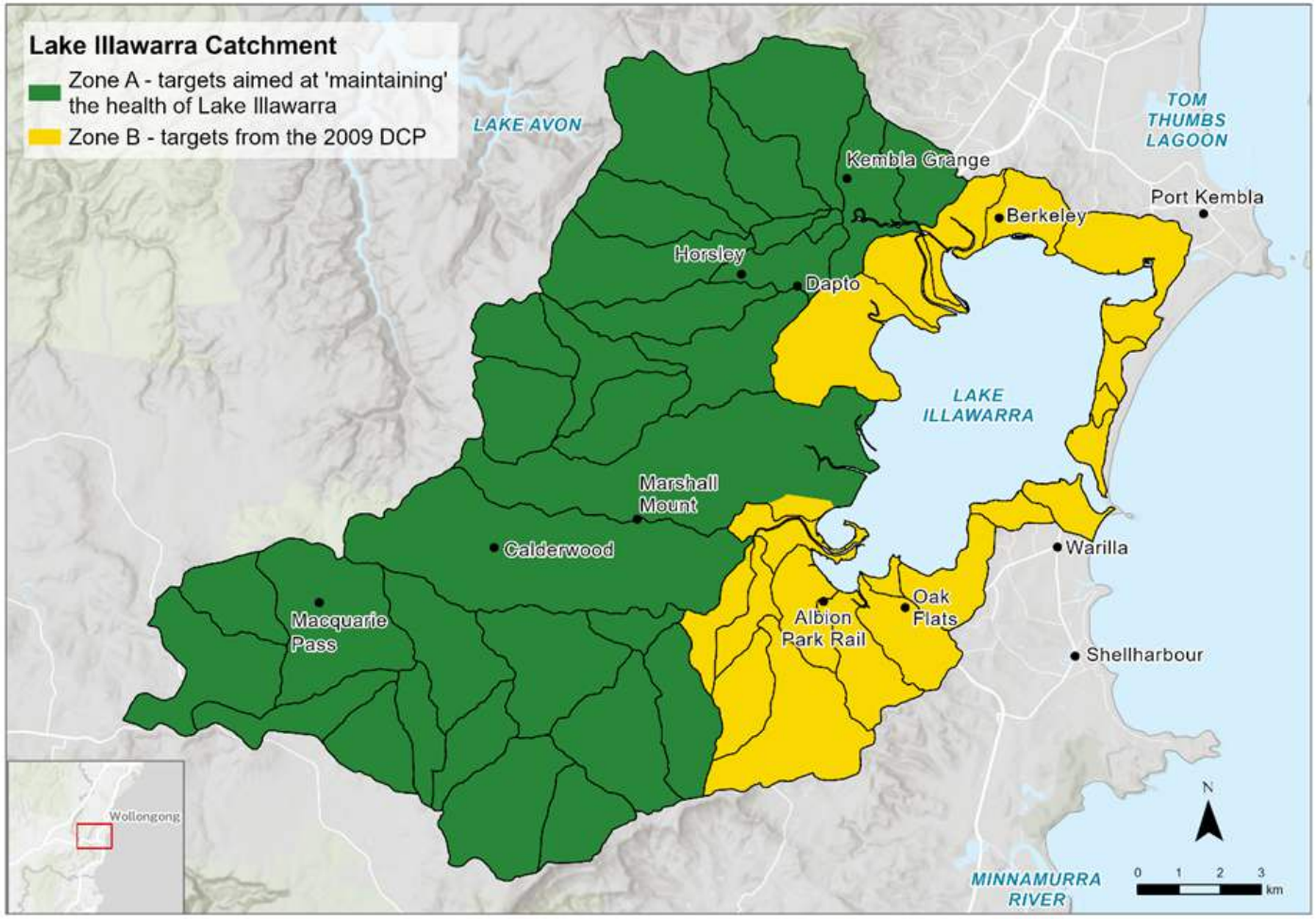
1. Each standard residential lot is to be provided with a deep root planting zone of minimum 4m depth. This can be either in the front or rear setback area.
2. No building will be permitted to be erected which has a roof colour classified as being 'dark' or having a solar absorptance level of 0.60 or greater.
3. All dwellings shall be provided with an outdoor clothes drying area with unimpeded solar access for at least 3 hours on 21 June.
4. All rooms in all dwellings shall be provided with a window or vented skylight to ensure provision of natural light and ventilation.
5. In order to maximise the thermal performance and sustainable outcomes for all residential, commercial, employment, and community development, the following items shall be addressed in any application for future development:
   - Orientation,
   - Building materials (floor, wall & roof type)
   - Windows (size/location/frames, type of glazing etc.),
   - Insulation (ceiling/roof/wall/floor),
   - Roof and wall colours,
   - Ventilation, ceiling fans and lighting,
   - Efficient heating, cooling, water heating and cooking appliances,
   - Rainwater tanks,
   - Use of endemic plant species in landscaping and minimising the use of turf,
   - Dwellings to include PV solar system where it incorporates a swimming pool or spa; and
   - Electric vehicle (EV) capable.
6. All new development is to use electricity only for all energy requirements associated with normal operation. Gas bottles are permissible for use for outdoor barbeques.
7. All footpaths are to be shaded by a tree canopy when measured 5 to 10 years after planting.
8. Alternate methods for slab construction that do not involve the use of polystyrene waffle pods must be used for all development.
9. Development applications will contain:
   - A statement of compliance to confirm all electric and no gas.
   - Basix review to confirm no gas.

- If gas is being proposed applicant needs to demonstrate it is the only option and an electric alternative is not possible.
- A Site plan to show tree spacing and species to demonstrate the scheduled provision.

Note: The Statement of Commitment for the Concept Approval # 13 requires future residential development to achieve potable water and greenhouse gas reductions equivalent to BASIX + 10% (2010 = 50% reduction).

7 APPENDIX

7.1 Appendix 1 - Lake Illawarra Catchment



Note: Management zones and targets for estuary health have been derived from of the Office of Environment and Heritage (now Department of Climate Change, Energy, the Environment and Water) Project: Applying the OEH / EPA Risk-Based Framework in the Lake Illawarra Catchment (Dela-Cruz et al, 2017).