

APPIN (PART 2) PRECINCT

URBAN CONTEXT REPORT

PREPARED FOR
WALKER CORPORATION

09 OCTOBER 2024
FINAL



HATCH | RobertsDay



ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the Traditional Owners of the many lands on which we live and work. We pay respect to First Nations Elders past and present and thank them for their continuing care of Country, culture and community.

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EXECUTIVE SUMMARY

The Proponent has prepared the subject submission to rezone 100.10 hectares of land (the Site) within the Appin Precinct from RU2 Rural Landscape to the following zones:

Urban Development Zone

Zone 1 Urban Development (UDZ)

Conservation Zone

Zone C2 Environmental Conservation (C2)

The Site is known as the Appin (Part 2) Precinct. It comprises two non-contiguous sites which are contiguous to and directly adjoin the Appin (Part 1) Precinct which is currently submitted and under assessment by NSW Department of Planning and Environment (DPE). A description of both proposals is provided in the following and depicted in *Table 1* and *Table 2* respectively – refer to *Figure 1*.

APPIN PART PRECINCT PLANNING PROPOSALS OVERVIEW

THE APPIN AND NORTH APPIN PRECINCTS INDICATIVE PLAN

In November 2022, Walker Corporation Pty Ltd and Walker Group Holdings Pty Ltd (the Proponent) lodged a Planning Proposal (PP-2022-3979) to rezone part of the Appin Precinct.

PP-2022-3979 (referred to as the Appin (Part 1) Precinct) proposes to rezone the land from RU2 Rural Landscape to Urban Development Zone (UDZ), C2 Environmental Conservation and SP2 Infrastructure via an amendment to State Environmental Planning Policy (Precincts – Western Parkland City) 2021.

The UDZ will facilitate approximately 12,000 dwellings. The C2 zone will facilitate the conservation of 470ha of endangered ecological community and help implement the Office of the NSW Chief Scientist & Engineer (NSW Chief Scientist) recommendations.

The new zones are accompanied by a structure plan outlining the intended land uses. In addition, the Proponent produced an Appin and North Appin Precincts Indicative Plan to illustrate how the new zones might fit within the broader precinct as land is developed. The Indicative Plan has no statutory weight and will be refined as further planning proposals are prepared.


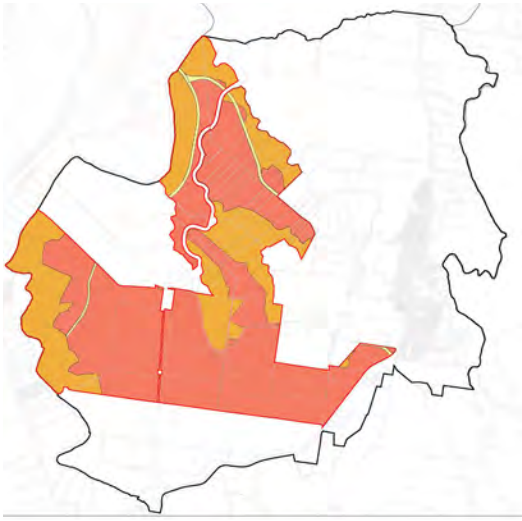

Population

Greater Sydney's population is projected to grow to approximately 6.1 million by 2041 – over a million more people than currently live in the Sydney region.

The NSW Government has identified Growth Areas to accommodate the population that will choose to live in greenfield areas (new suburbs). The Greater Macarthur Growth Area (GMGA) is one such growth area and is a logical extension of the urban form of south-west Sydney. The GMGA is divided into precincts. The Appin Precinct and North Appin Precinct are the southernmost land release precincts of the GMGA. The goal is to deliver 21,000 dwellings.

The rezoning and release of land for development will achieve this goal.

Table 1 PP-2022-3979 Title and Purpose of Plans

1. APPIN & NORTH APPIN PRECINCTS INDICATIVE PLAN	2. APPIN (PART 1) PRECINCT PLAN (THE PRECINCT PLAN)	3. APPIN (PART 1) PRECINCT STRUCTURE PLAN (THE STRUCTURE PLAN)
Broader context & for information purposes only. It has no statutory weight. It identifies: <ul style="list-style-type: none">Higher-order transport networkCentres hierarchySchool sitesConservation areasResidential areasCultural sites and connections	The Appin (Part 1) Precinct Plan (the precinct plan) shows the land proposed to be rezoned (the site). It will be incorporated into a new schedule in the State Environmental Planning Policy (Precincts – Western Parkland City) 2021 (Western Parkland City SEPP 2021). The precinct plan contains the development provisions (clauses and maps) applicable to the site and is used in assessing development applications.	A structure plan has been prepared for the site and is shown on the Appin (Part 1) Precinct Structure Plan (the structure plan). It identifies staging and the first stage to be developed – Release Area 1. It illustrates land use components including (but not limited to): <ul style="list-style-type: none">Low and medium-density residentialRetail and employment centresSchoolOpen spaceDrainage network/basinsTransport network
		
Figure 1 Appin & North Appin Precinct Indicative Plan	Figure 2 Appin (Part 1) Precinct Plan	Figure 3 Appin (Part 1) Precinct Plan
The Appin & North Appin Precincts Indicative Plan envisages the delivery of 21,000+ new homes.	'The precinct plan' envisages the delivery of 12,000+ new homes.	'The structure plan' envisages the delivery of 12,000+ new homes. Release Area 1 is anticipated to deliver 3,500+ dwellings.

APPIN (PART 2) PRECINCT PLANNING PROPOSAL


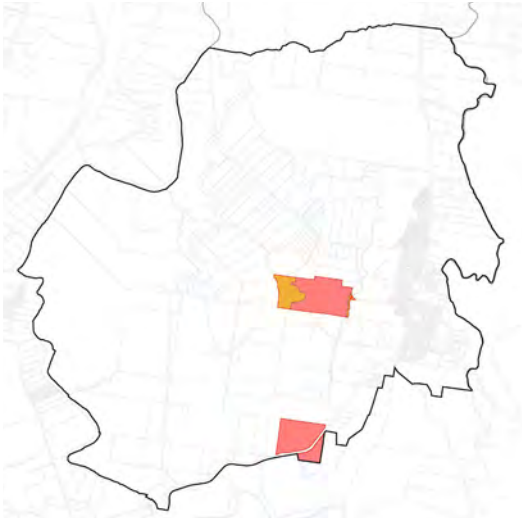
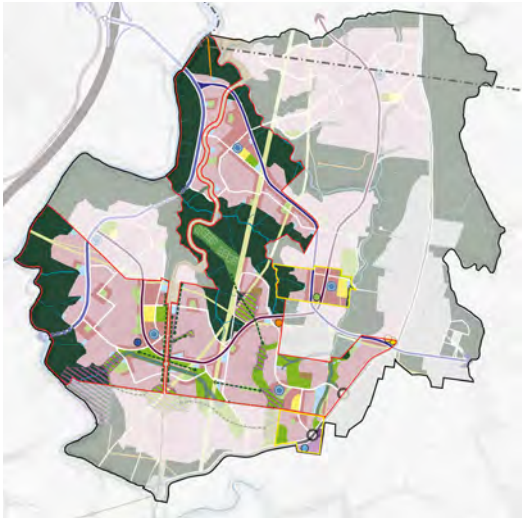
The Appin (Part 2) Precinct Plan (the precinct plan) shows the proposed new zones. 'The precinct plan' will be incorporated into the State Environmental Planning Policy (Precincts – Western Parkland City) 2021 and contain the provisions (clauses and maps) that will apply to 'the Site.' 'The precinct plan' envisages the delivery of the following:

- 1,312 dwellings (as a mix of low-density, medium density and apartments)
- 30,312 sqm of gross lettable retail/commercial floor area
- 17.64ha conservation land

The planning proposal submission is aligned with strategic land use planning, State and local government policies, infrastructure delivery and PP-2022-3979. The development potential is tempered by a landscape-based approach that protects the environment and landscape values, shaping the character of new communities. A series of residential neighbourhoods are to be delivered within the landscape corridors of the Nepean and Cataract Rivers, supported by local amenities, transit corridors and community infrastructure.

The submission includes a hierarchy of plans. The plans and their purpose are summarised in Table 2.

Table 2 PP-2022-3979 Title and Purpose of Plans

1. APPIN & NORTH APPIN PRECINCTS INDICATIVE PLAN	2. APPIN (PART 2) PRECINCT PLAN (THE PRECINCT PLAN)	3. APPIN (PART 2) PRECINCT STRUCTURE PLAN (THE STRUCTURE PLAN)
<p>Broader context & for information purposes only. It has no statutory weight. It identifies:</p> <ul style="list-style-type: none"> Higher-order transport network Centres hierarchy School sites Conservation areas Residential areas Cultural sites and connections 	<p>It shows the land proposed to be rezoned and incorporated into a new schedule in the Western Parkland City SEPP 2021.</p> <p>The precinct plan contains the development provisions (clauses and maps) applicable to the Site and is used in assessing development applications.</p>	<p>Structure plan for the Site, showing staging of release areas.</p> <p>Development is to be generally consistent with the structure plan. It illustrates land use components including (but not limited to):</p> <ul style="list-style-type: none"> Low and medium-density residential Retail and employment centres School Open space Drainage network/basins Transport network
		
<p>Figure 4 Appin & North Appin Precinct Indicative Plan</p>	<p>Figure 5 Appin (Part 2) Precinct Plan</p>	<p>Figure 6 Appin (Part 2) Precinct Structure Plan</p>
<p>The Appin & North Appin Precincts Indicative Plan envisages the delivery of 21,000+ new homes.</p>	<p>'The precinct plan' envisages the delivery of 1,312 new homes.</p>	<p>'The structure plan' envisages the delivery of 1,312 new homes in addition to Appin (Part 1) Precinct Structure Plan.</p>

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PART A

This Appin (Part 2) Precinct Proposal has been prepared in the context of Greater Sydney strategic planning which sets a 40 year vision (to 2056) and 20 year plan (to 2036) to manage growth and change. For the first time in a generation, this integrates land use, transport and infrastructure planning between the three tiers of government and across State agencies to align outcomes for Greater Sydney.

This section of the report provides an update of the contextual overview of the Appin and North Appin Precincts as provided within the Appin (Part 1) Precinct Planning Proposal Urban Context Report based on amendments to key strategic documents since it was submitted.

STRATEGIC ALIGNMENT



INTRODUCTION

The Appin and North Appin Precincts are identified land release precincts within the Greater Macarthur Growth Area. The Appin (Part 2) Precinct Plan and Structure Plan will enable the delivery of 1,312 lots to provide real solutions for housing supply in line with planned growth in western Sydney.

PROJECT CONTEXT

Delivery of the Greater Macarthur Growth Area is essential to realising the Greater Cities Commission's strategic vision for Greater Sydney as a "Metropolis of Three Cities" including a thriving Western Parkland City.

The Appin (Part 2) Precinct is the subject of this Proposal. Comprising approximately 100.10 hectares of land, entirely controlled by Walker Corporation, it sits alongside the Appin (Part 1) Precinct which is the single largest land holding within the GMGA 2040, and the greatest opportunity to address housing supply issues in Greater Sydney.



Dedicate 17.64 hectares of bushland for conservation.



Deliver approximately 9.07 ha new open space for active healthy lifestyles.



Deliver approximately 1,312 new homes.



Provide services and amenities for 3,709 people.



Secure strategic infrastructure corridors for Western Sydney.

PURPOSE OF REPORT

Urbis has been engaged by the Proponent to prepare a Urban Context Report to support the Appin (Part 2) Precinct Plan (the precinct plan) and Appin (Part 2) Precinct Structure Plan (the structure plan).

Refer to Figure 1 and Table 2 for key attributes of the precinct plan and structure plan area.

The Appin (Part 2) Precinct Plan zones land for conservation, urban development. It establishes the statutory planning framework permitting the delivery of a range of residential typologies, retail, education, business premises, recreation areas, and infrastructure services and provides development standards that development must fulfil. Within the proposed urban development zone, 1,312 dwellings and more than 30,000 sqm of gross lettable floor area for retail and commercial space can be delivered.

Table 3 Appin (Part 2) Precinct – summary of key attributes

Location	Key Attributes	
	Area	• 100.10 ha
	LGA	• Wollondilly LGA
	Proposed Dwellings	• 1,312
	Proposed retail & commercial floor space	• 30,000+ sqm
	Proposed Population	• 3,709

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- LGA Boundary

SITE LOCATION AND DESCRIPTION

The Appin (Part 2) Precinct comprises 100.10 hectares of land across two sites each of which is contiguous with the Appin (Part 1) Precinct.

The land legal description, ownership and areas are provided in Table 4.

Table 4 Appin (Part 2) Precinct Land Legal Site Descriptions and Areas

REF	LOT #	PLAN REF	ADDRESS	OWNERSHIP	AREA (HA)
NORTH SITE					
①	32	DP736923	110 Macquariedale Rd	Phillip Nelson Dunbier and Penny Grace Dunbier's	61.85
②	1	DP1000355	90 Macquariedale Rd		0.23
SUB-TOTAL					62.08
SOUTH SITE					
③	3	DP804375 (Part)	725 Wilton Rd	John Joseph McEvoy and Glynis Rita Patrick	36.61
④	1	DP804375	525 Wilton Rd		1.41
SUB-TOTAL					38.02
TOTAL					100.10

NOTE: Areas have been rounded up to nearest ha with one decimal point.

LEGEND:

Appin & North Appin Precincts Boundary

Appin (Part) Precinct Boundary

Appin (Part 2) Precinct Boundary

LGA Boundary

LAND OWNERSHIP

Phillip Nelson Dunbier and Penny Grace Dunbier

John Joseph McEvoy

Glynis Rita Patrick

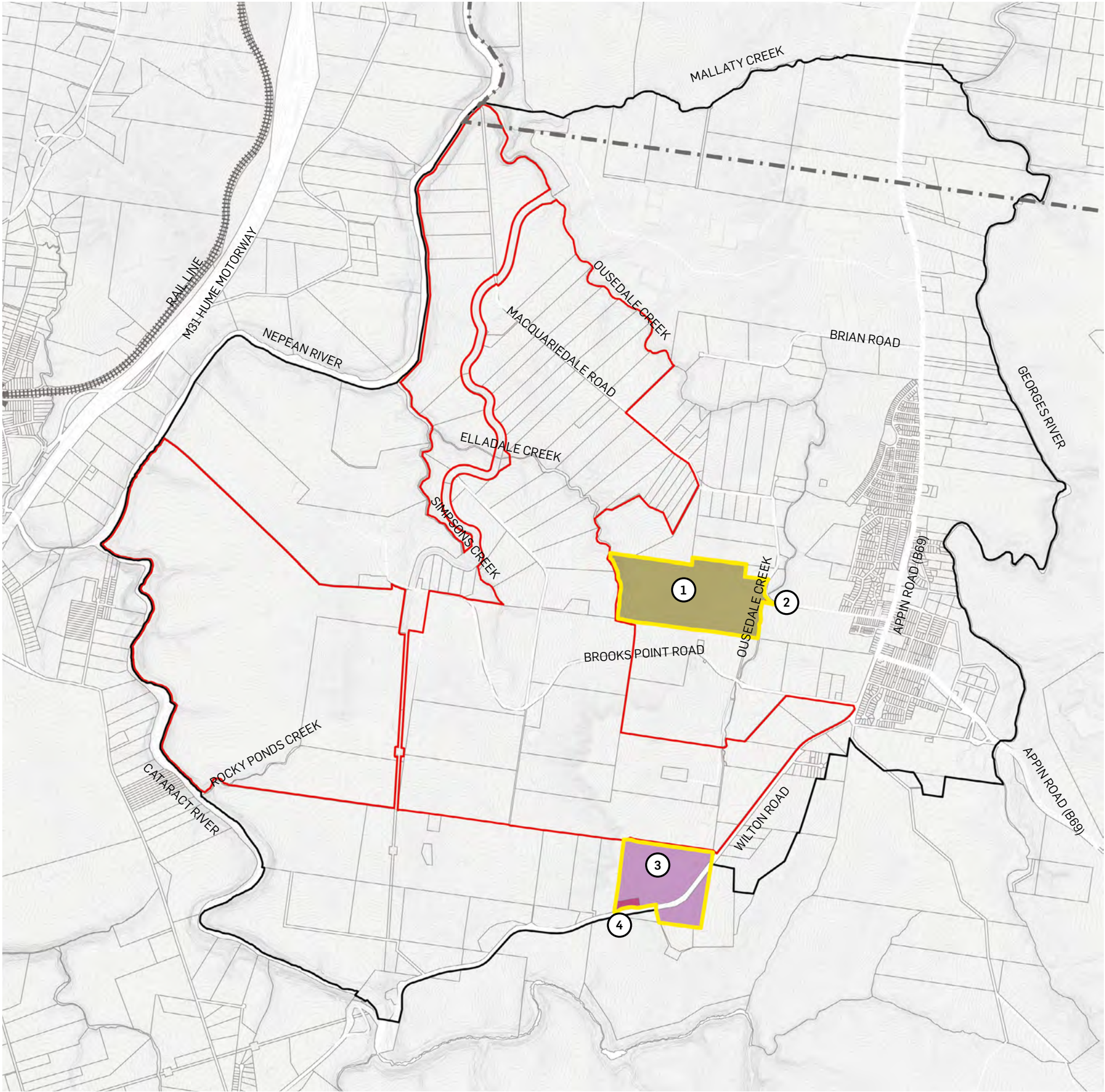


Figure 7 Appin (Part 2) Precinct Ownership Plan

APPIN (PART 2) PRECINCT DESCRIPTION

The Appin (Part 2) Precinct is located in the Appin Precinct and comprises the following existing features and conditions:

- **North Site:**
 - Bound by Ousedale Creek in the east, Elladale Creek in the west, and adjoining rural land holdings to the north and south. The western boundary adjoins the Appin (Part 1) Precinct.
 - Maquariedale Road is located to the east connecting Appin Road through to the north-western part of the Appin (Part 1) Precinct.
 - Comprises of a cluster of trees to the west of the site.
- **South Site:**
 - Bound by and adjoining rural land holdings on the north, west and south. To the east is the Macarthur Filtration Plant. The northern boundary adjoins the Appin (Part 1) Precinct.
 - It is located immediately to the south of the existing industrial land on Wilton Road south of Appin Village. The Southern site is divided by Wilton Road with land to the south-west of the road not located within the Greater Macarthur boundary.
 - Wilton Road runs through the Southern site, to the South and within close proximity to the Macarthur Filtration Plant.

These features are discussed in more detail in Part B of this report as part of the technical studies into site opportunities and constraints.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- LGA Boundary
- Existing Township
- Upper Canal
- Existing Infrastructure
- Existing Waterways
- 10m Contours
- Road Network
- Indicative site photo locations

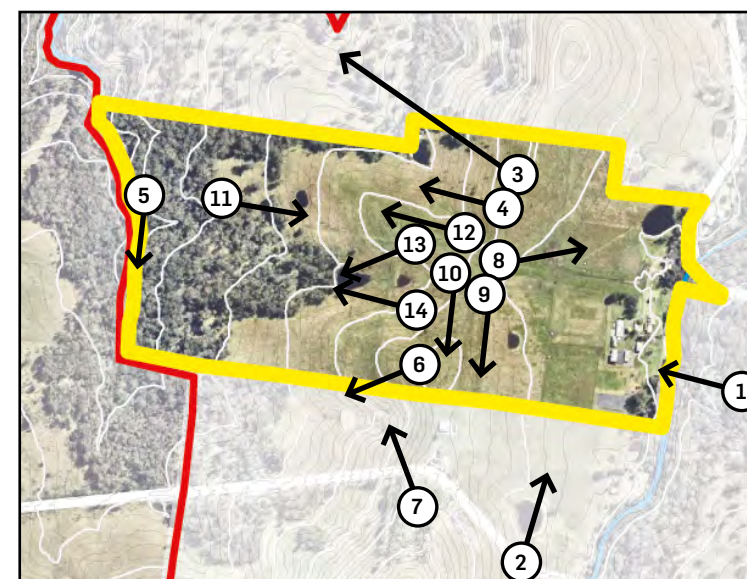


Figure 8 Dunbier Land - North Site

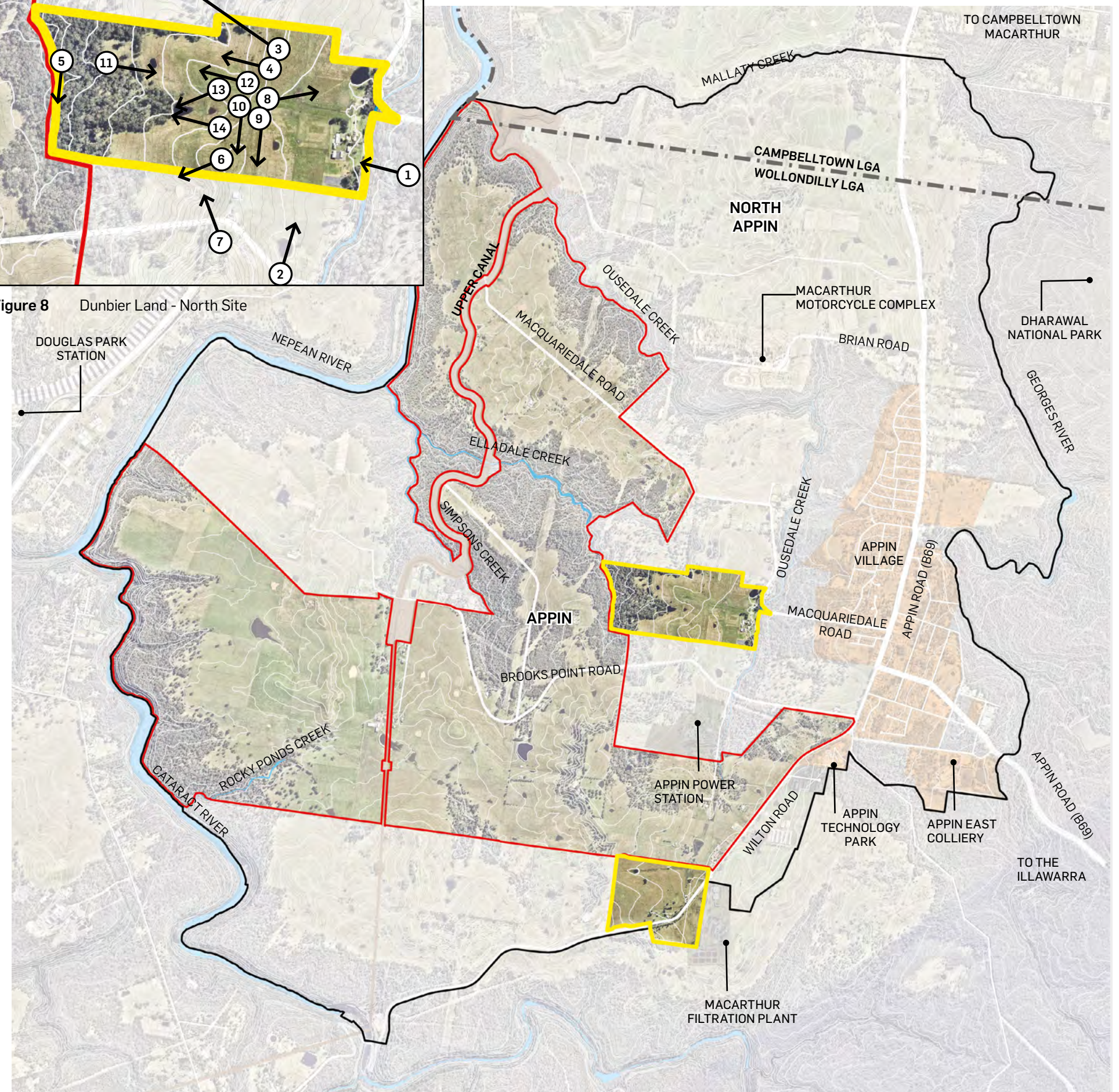


Figure 9 Appin (Part 2) Precinct Existing Conditions

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NORTH SITE - SITE PHOTOS

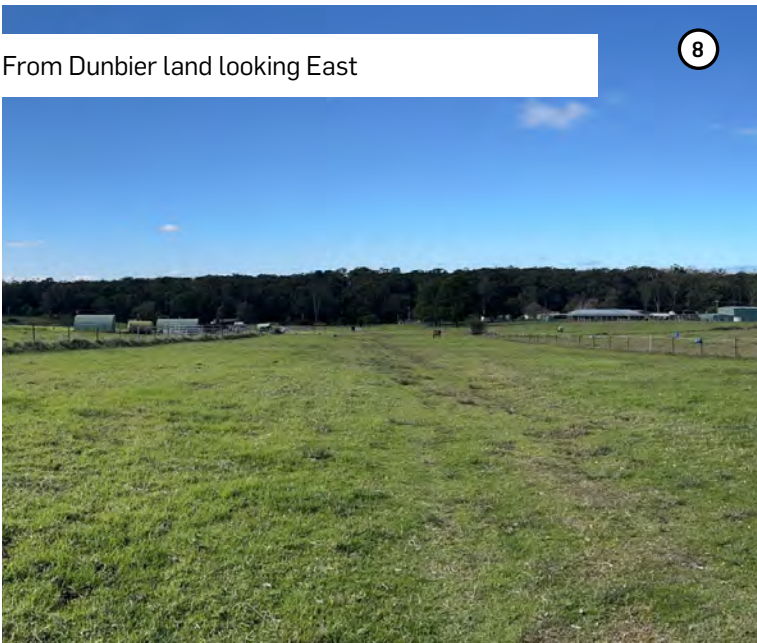
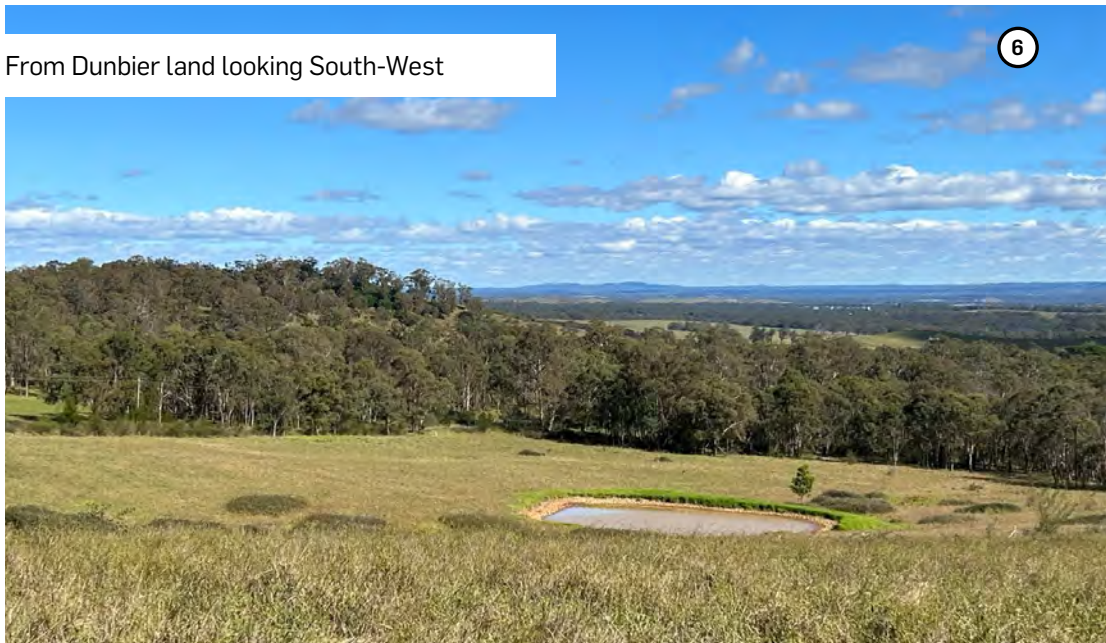
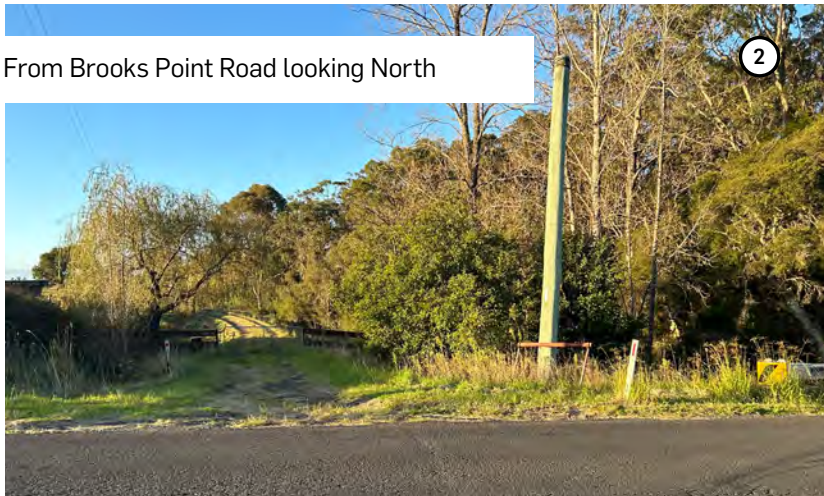
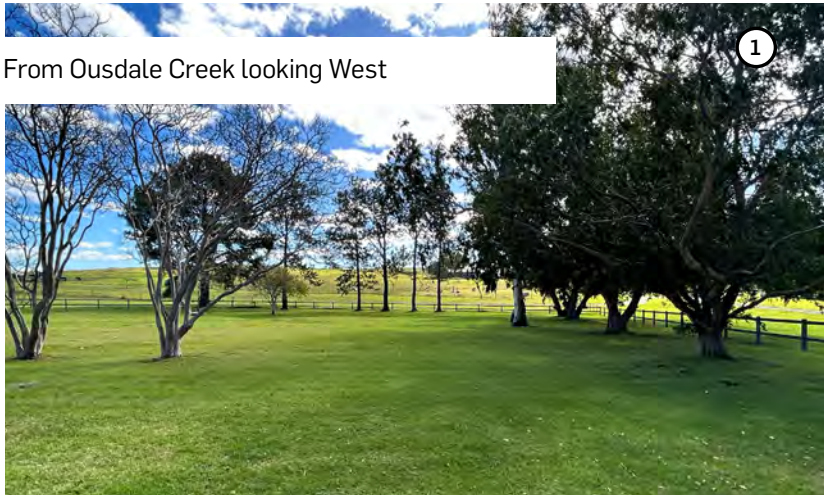


Figure 10 Site Photos

NORTH SITE - SITE PHOTOS

From Dunbier land looking South

9



From the Western conservation land looking East

10



From Dunbier land looking North-West

11



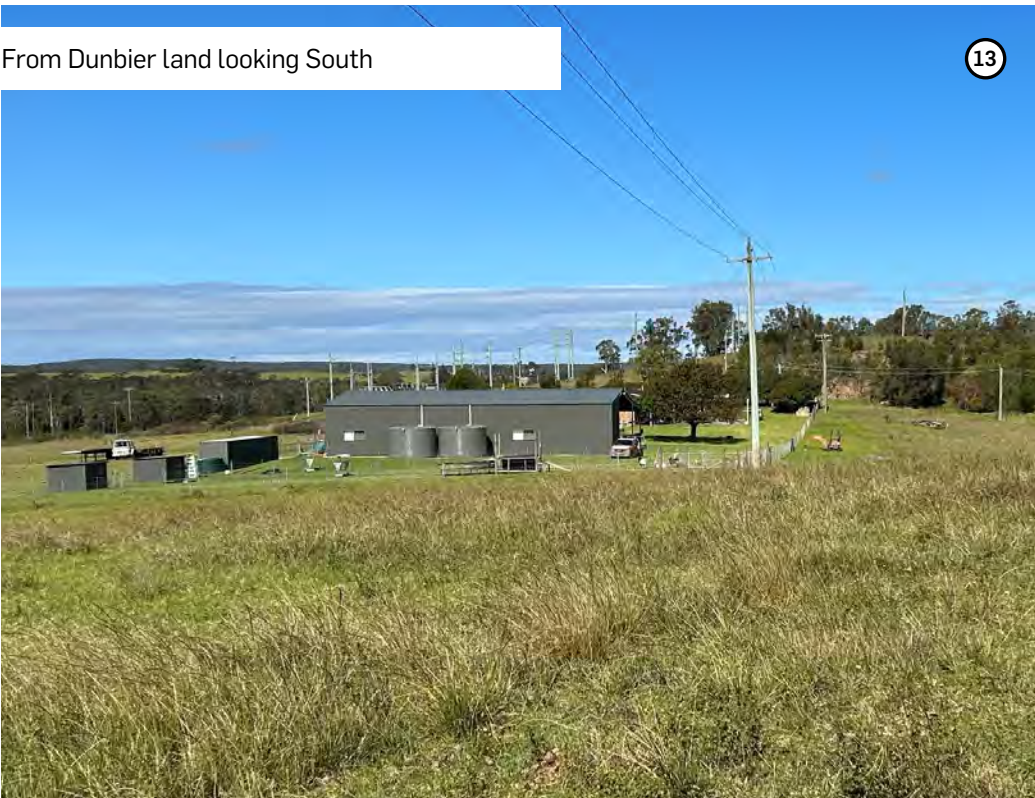
From Dunbier land looking South-West

12



From Dunbier land looking South

13



From Dunbier land looking West

14



STRATEGIC PLANNING DIRECTIONS

The Appin (Part 2) Precinct Structure Plan is strategically aligned to the NSW Planning framework for growth and development of greater Sydney. An overview of the strategic context for the project is set out in the Appin (Part 1) Precinct Planning Proposal Urban Context Report. This section provides an overview of the updates to the key documents since that lodgement.

KEY DOCUMENT UPDATES

The following documents have been updated since the Appin (Part 1) Planning Proposal was lodged. Please refer to the Appin (Part 1) Precinct Planning Proposal Urban Context Report for an overview of all key strategic planning documents and outcomes for the GMGA 2040 and the Appin & North Appin Precincts.

GREATER MACARTHUR GROWTH AREA 2040

This Rezoning Proposal has been prepared within the framework of the GMGA 2040 - an Interim Plan which sets out the strategic planning framework for the Growth Area.

- Since the submission of the Appin (Part 1) Precinct planning proposal, the following updates have occurred:
- Walker Corporation have completed the Aboriginal Cultural Values of Country Report.
 - Department and Government Agencies have completed the remaining additional technical studies (identified in **red** below) to finalise the GMGA 2040 plan as part of the pilot Technical Assurance Process (TAP).
 - A GMGA 2040 Update document was released in December 2022.

These updates are summarised on the following pages.

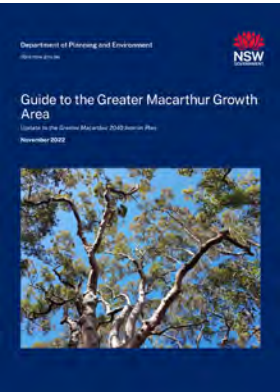
Table 5 GMGA 2040 Additional Technical Studies Status

#	PURPOSE	STATUS
1	Land Use Safety Study	Completed
2	Strategic Bushfire Study	Completed
3	Chief Scientist & Engineer's Koala Protection Advice	Completed
4	Employment Lands Study	Completed
5	Cumberland Plain Conservation Plan	Completed
6	Aboriginal Cultural Values of Country	Completed
7	Greater Macarthur Transport Network Plan	Completed

OUTER SYDNEY ORBITAL STAGE 2 (OSO2) CORRIDOR OPTIONS REPORT

In August 2021, following community and stakeholder engagement, TfNSW announced a preferred OSO2 corridor (Blue option). More recently, further work has been undertaken by Heritage NSW into the Appin Aboriginal massacre site. As a result of this work, an endorsed State Heritage Listing was identified and the crossing of Broughton Pass to connect to Picton Road was considered no longer

GMGA 2040 - 2022 STRUCTURE PLAN UPDATE & ACCOMPANYING GUIDE



The department has worked with councils, agencies and the Aboriginal community to update the structure plan for the Greater Macarthur Growth Area. Released in November 2022, the updated structure plan and accompanying guide outlines important work completed since the last update was published in December 2021.

2022 STRUCTURE PLAN

The 2022 structure plan (the structure plan) updates reflect the following new information:

- **Koala corridors:** The Cumberland Plain Conservation Plan (CPCP) was granted state approval in August 2022 reflecting expanded and revegetated Koala corridors to implement the advice and recommendations of the NSW Chief Scientist. At the time of writing, Commonwealth approval has not yet been granted.
- **State Heritage Listings:** Since the Interim plan was published, the sites below have been listed on the State Heritage Register (SHR). The structure plan shows all state heritage items, and a separate heritage map later in this Guide, shows both the state and local heritage items in the Growth Area.
 1. **Mount Gilead Estate:** Listed on the SHR in August 2020 for its exceptional significance as a cultural landscape.
 2. **Appin Massacre Cultural Landscape:** The department worked closely with Heritage NSW to engage with the Aboriginal community to investigate and understand sites within the Appin Massacre Cultural Landscape. The Appin Massacre Cultural Landscape SHR listing, comprising five key locations and their physical and visual interconnections was finalised in late 2022.
- **Centres:** The centres within the structure plan have been updated as follows:
 3. **Local centres:** Zoned and existing local centres in the Growth Area are differentiated from future indicative local centres, which are yet to be planned or rezoned.
 4. **Neighbourhood centres:** Smaller than local centres and generally aim to be with a 15-20 minute walking catchment of most new homes. Zoned or planned future neighbourhood centres are also shown in the Gilead and Menangle Park precincts.
- **Transport corridors:** Transport for New South Wales (TfNSW) has identified several road corridors in the Growth Area which will support growth and connectivity across the region. These are now shown in the structure plan and include:
 1. **The Link Road Corridor:** Preferred option identified in August 2022 for an east-west link road that will provide a key connection between Appin Road, Gilead and Menangle Road and Menangle Park, where it will connect with the Spring Farm Parkway Stage 1.

2. **Spring Farm Parkway Stage 1:** New road connecting Menangle Road to the Menangle Park Precinct and includes a partial interchange with the Hume Highway. In July 2022 major construction commenced and the work is expected to be completed by late 2024.
 3. **Spring Farm Parkway Stage 2:** TfNSW is planning Stage 2 to complete the key east-west link between Menangle Park and Spring Farm suburbs.
 4. **Outer Sydney Orbital Stage 2:** Following designation of the Appin Massacre Site SHR listing, TfNSW amended the previously announced alignment and adopted an alignment which is expected to support a future link to Picton Road.
 5. **Greater Macarthur Transit Corridor:** Proposed transport spine that would enable a fast and reliable turn-up-and-go services between neighbourhoods, centres, and transport hubs.
 6. **East-west connection:** Proposed by TfNSW as future connections providing additional access and egress in and out of the Gilead, Appin and North Appin precincts.
- **Employment Land:**
 - **Moreton Park Road Employment Area:** In June 2022, an update to the *Greater Macarthur Region Employment Lands Study* confirmed the suitability of this site to provide additional employment lands to address population driven employment and in consideration of its strategic location adjacent to the Hume Motorway, connecting to Port Botany and with future direct access to the Outer Sydney Orbital. The area identified excludes land identified as Strategic Conservation Area (SCA) identified under the CPCP.
 - **'Mixed use residential and employment subject to further investigation':** Also in June 2022, the 'West Appin Retail and Employment Study' found there would not be sufficient demand to support this employment land. This is now shown as Urban capable land.
 - **Potential additional employment area:** The structure plan identifies an additional area as potential employment land west of the Hume Highway, adjacent to the Moreton Park Road employment land. Further investigation is required to understand whether it has employment potential.

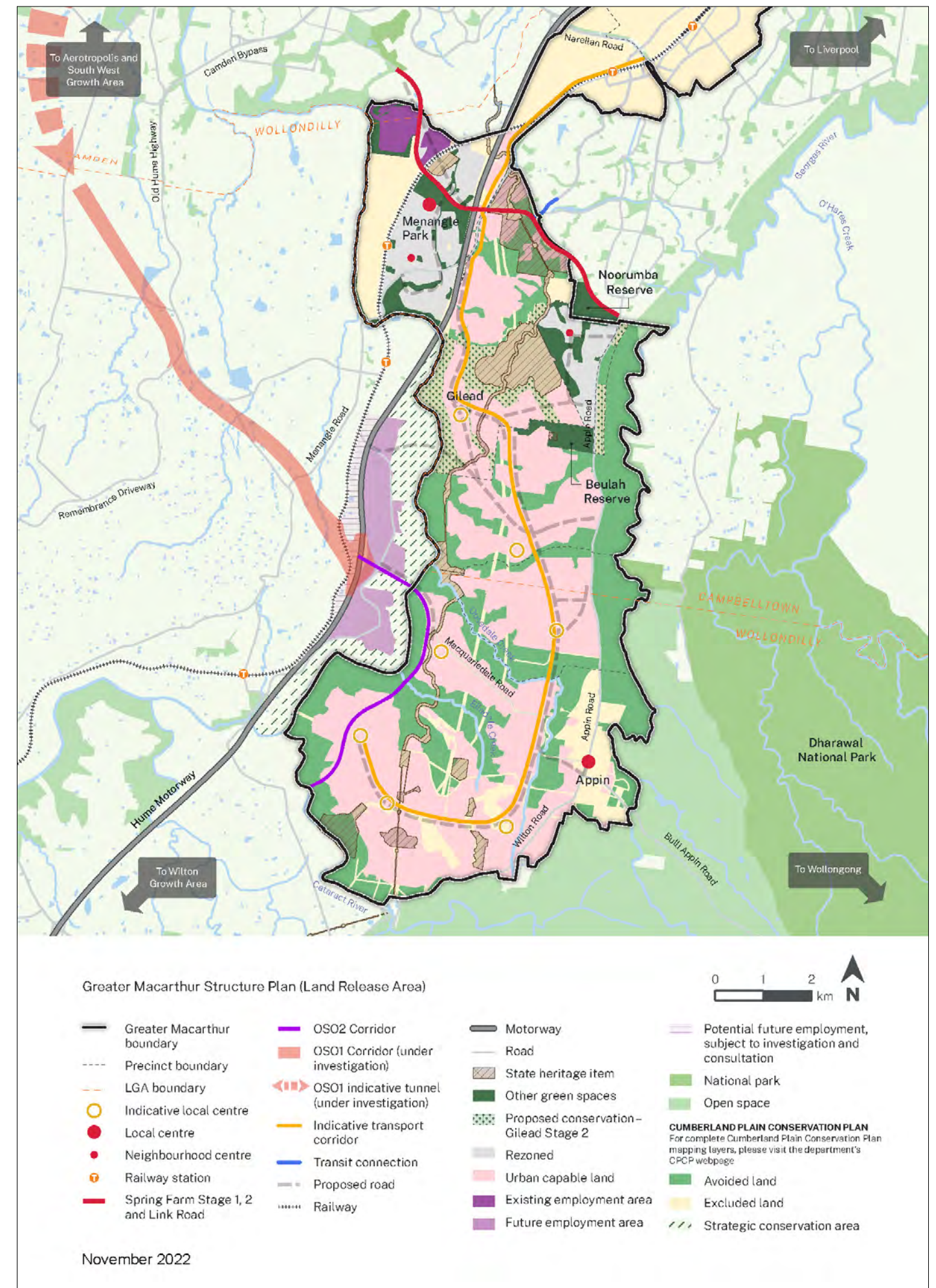


Figure 11 GMGA 2040 Structure Plan 2022

STARTING WITH COUNTRY

This update was informed by engagement with the Traditional Custodians, cultural knowledge advisors, and the broader Aboriginal community. Guided by the Government Architect NSW (GANSW) Connecting with Country draft framework around the intangible aspects of aboriginal cultural heritage, Country and cultural values. This informed the preparation of the Starting with Country Map and the identification of principles and outcomes for Planning Proposals:

THEME	PRINCIPLES AND OUTCOMES TO BE DEMONSTRATED IN PLANNING PROPOSALS
Understanding of cultural heritage	<div>Demonstrate consideration of cultural values and cultural landscape which goes beyond tangible archaeological assessments and site boundaries.</div> <div>Involve Traditional Custodians and knowledge holders in placing value on tangible heritage items, such as large quantities of artefacts indicating intensive use of an area.</div> <div>Engage with the Aboriginal community in a way that promotes cultural safety including choosing a neutral location on Country, taking an opt-in approach, and ensuring the engagement group comprises a balance of community members and project team.</div>
Master planning (to prepare a structure plan or indicative layout plan)	<div>Reference the Starting with Country Map in and address any areas of cultural sensitivity that apply to the proposed rezoning.</div> <div>Development within culturally sensitive areas requires further consultation with relevant Traditional Custodians and cultural knowledge holders to undertake more detailed investigation. Noting access these culturally sensitive areas should be facilitated and prioritised.</div> <div>Include open space connections between ridgelines, creeks and places mapped in the Starting with Country Map. Connected pathways and linking ridgetop parks with linear green corridors to waterways promote walking Country, animal connectivity and provide opportunities to facilitate cultural tours.</div> <div>Consider lines of sight and view corridors across Country as highlighted in Starting with Country Map to continue connection and foster a sense of orientation.</div> <div>Recognise the strong links to water throughout the Growth Area and embed a naturalised response to water on Country through water infrastructure planning.</div> <div>Develop respectful buffers from waterways in collaboration with Traditional Custodians and knowledge holders.</div> <div>Include detailed restoration and management plans of conservation areas to ensure the health of Country. The use of local native vegetation is recommended.</div> <div>Areas of cultural value should not be isolated in pocket parks, and rather connected through the open space network to allow for orientation and protection of cultural values within Country.</div> <div>Consider opportunities for truth telling and knowledge sharing about the Appin Massacre.</div>
Future Development outcomes	<div>Work with existing landforms and limit cut and fill. Avoid bringing fill into an area from off Country and taking fill from Country to other places.</div> <div>Include cultural design through urban design and landscaping to reflect local Country and culture through working with Traditional Custodians and knowledge holders in alignment with GANSW's Draft Connecting with Country framework.</div> <div>Address opportunities for sharing cultural knowledge through public art, signage, language and naming in the built environment.</div> <div>Include and protect native vegetation and provide opportunities for revegetation. Local native vegetation and bush medicines are recommended.</div> <div>Consider how to meet the minimum 5% affordable housing target as set out in the Western City District Plan.</div> <div>Ensure that Traditional Custodians and knowledge holders can care for Country and practice culture without access restrictions.</div>
Future community outcomes	<div>Consider the needs of elders and people with disabilities. Aboriginal communities have housing needs that require different models and thinking, including space for intergenerational living and options for different family compositions.</div> <div>Encourage affordable, culturally responsive housing.</div> <div>Consider producing plain English Aboriginal Cultural Heritage reports to share for education purposes, particularly with schools.</div> <div>Identify opportunities to improve access to Country for cultural practice so access can be easily facilitated and prioritised without requiring explanation or 'red tape', especially along waterways. Encourage cultural infrastructure including facilities for practicing culture on Country, spaces for cultural gathering and facilities for storing artefacts.</div> <div>Include opportunities for ongoing engagement of Aboriginal community.</div> <div>Local communities should have an opportunity to learn about the shared history of GMGA</div>

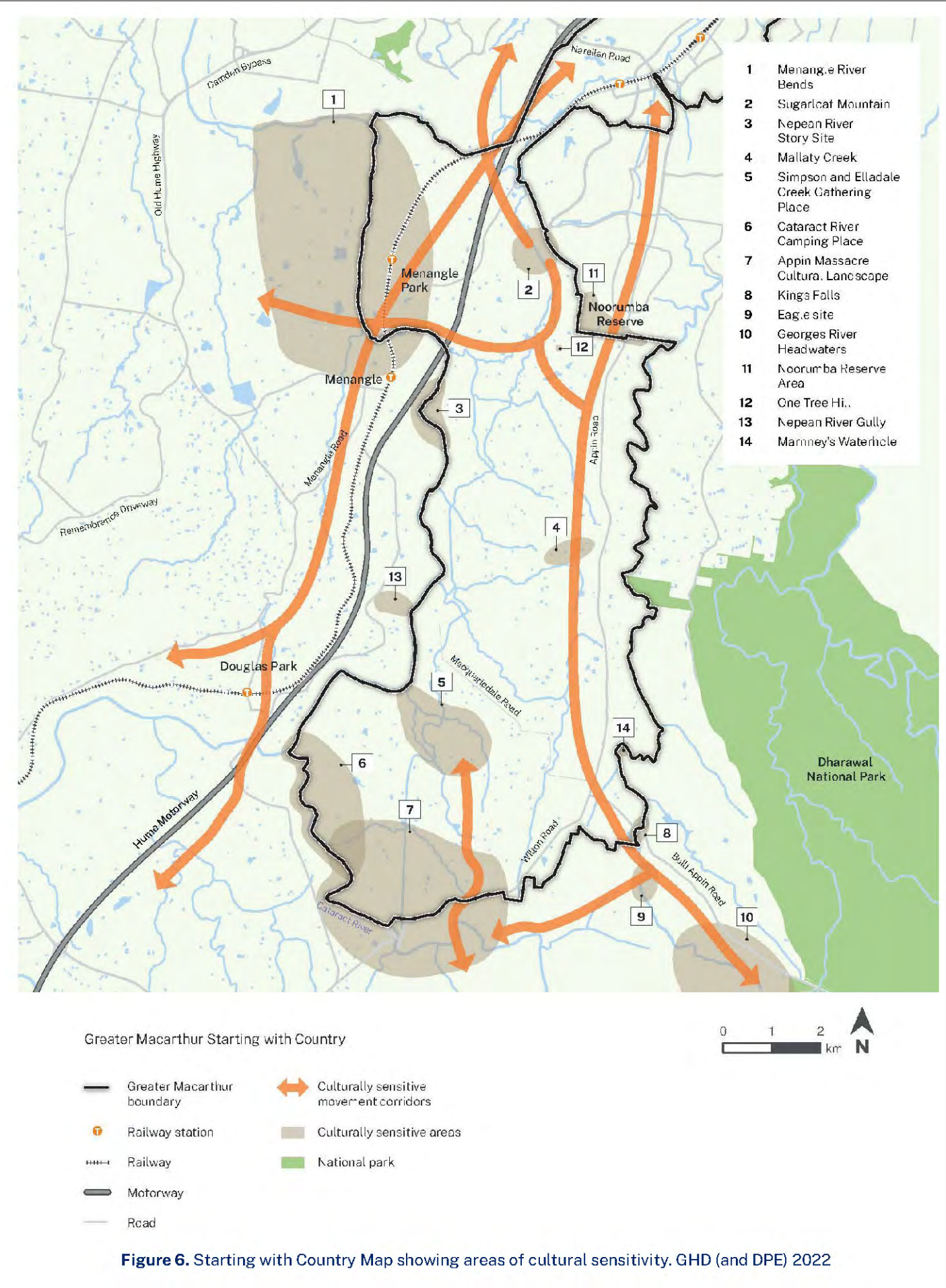
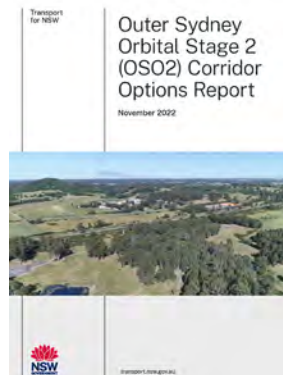


Figure 12 GMGA 2040 Structure Plan 2022: Starting with Country Map

OUTER SYDNEY ORBITAL STAGE 2 (OSO2) CORRIDOR OPTIONS REPORT



Following NSW Heritage exhibition and Minister endorsement of a State Heritage Listing for the Appin Aboriginal massacre site, TfNSW identified this conflicted with the previously identified Blue Option for the OSO2 Corridor stage 1. Released in November

2022, the updated Corridor Options Report provides the following updates.

- **Updated Preferred Alignment:** Transport for NSW previously proposed to link the Blue Option with a crossing of Broughton Pass to provide a connection to Picton Road. Due to the Minister endorsing a State Heritage Listing, such a connection across Broughton Pass is no longer appropriate. A direct connection to Picton Road is now proposed, and as such, is envisaged to provide the main link to the Illawarra in the future.
- Clarification about the form the OSO2 road is expected to take identified it is likely to be different forms in different locations. In some sections it may be a limited-access motorway style road (similar to, for example, the M31 Hume Motorway). Within the Greater Macarthur Growth Area, it is expected to be a high quality arterial road similar to The Northern Road or Camden Valley Way with limited at-grade intersections.

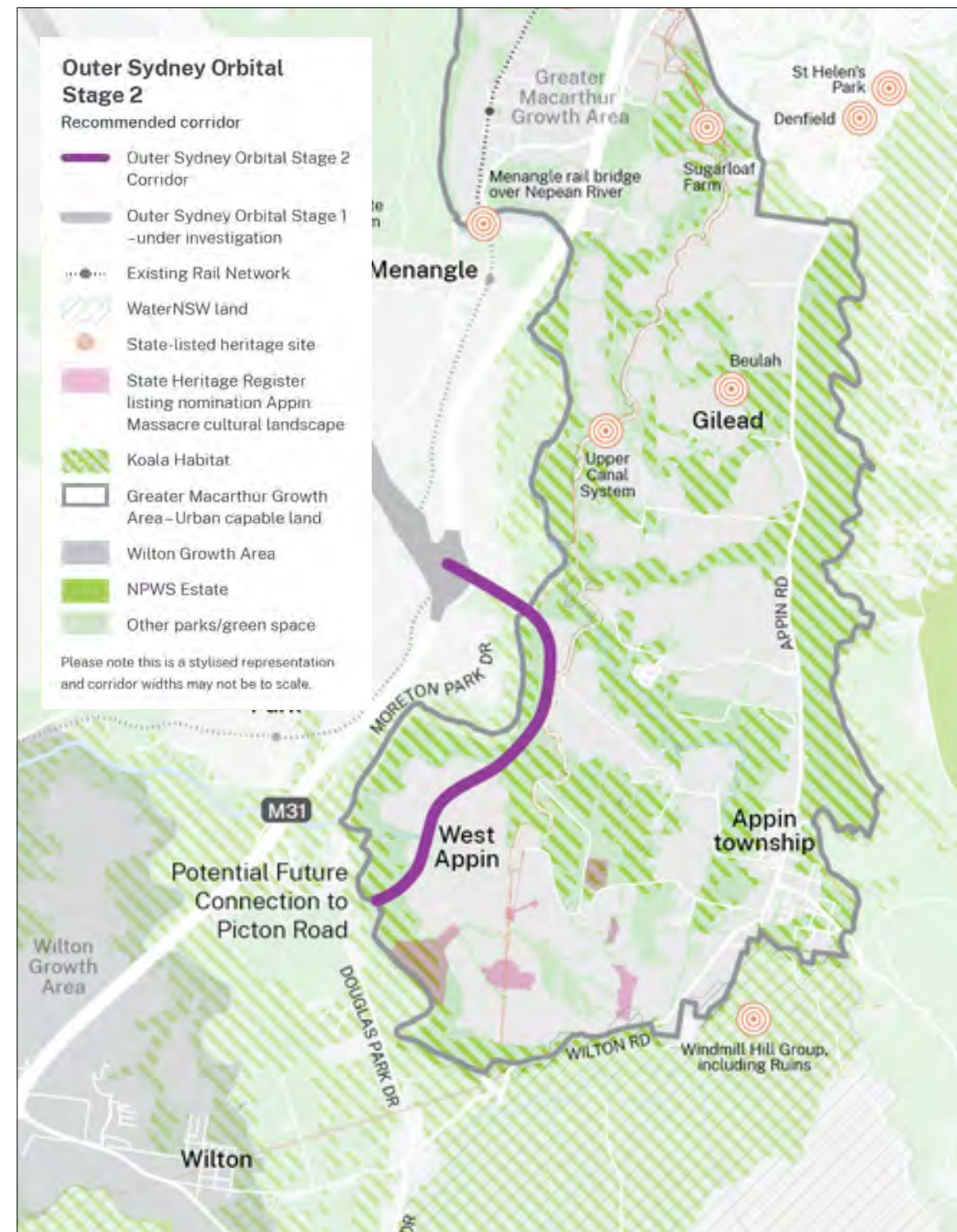


Figure 13 TfNSW OSO2 Corridor - Preferred Alignment

CONCLUSION

This series of strategic directions have been framed in the Greater Sydney context. Detailed investigations and ground-truthing are required to test, refine and evaluate a refined set of opportunities and constraints for the precinct. These are set out in Part B of this report.

PART B

As part of the preparation of the Appin (Part 2) Precinct Structure Plan, Walker engaged a team of technical experts to undertake site-specific investigations across the Precinct to ground-truth existing conditions, undertake more detailed technical analysis and refine strategic directions into site specific outcomes.

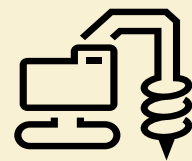
This section of the report provides a summary of the findings of these site-specific technical investigations to identify a consolidated set of opportunities and constraints for the site. This includes the determination of a net developable site area for the precinct, refinement of key structuring elements, as well as the identification of a series of place characteristics to inform the vision and design principles for the structure plan.

TECHNICAL INVESTIGATIONS

OPPORTUNITIES & CONSTRAINTS

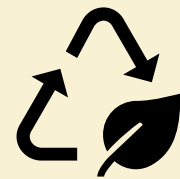
A series of detailed, site-specific investigations were undertaken by technical experts to review baseline information and strategic planning inputs for the site. The outcomes of these investigations identified refinements to the outcomes identified in region, district or precinct wide strategic planning studies through a combination of more detailed studies and ground-truthing. The result is a consolidated development area and summary of opportunities and constraints for the Appin (Part 2) Precinct.

KEY INVESTIGATIONS



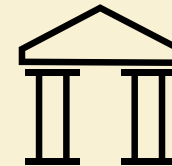
01 GEOTECH, SALINITY & SITE INVESTIGATIONS

Preliminary evaluation of the geotechnical features and salinity characteristics of the site and its suitability, from a geotechnical standpoint, for future urban redevelopment.



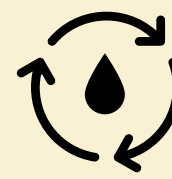
02 ECOLOGY & BIODIVERSITY INVESTIGATIONS

Biodiversity assessment to identify the vegetation and biodiversity values within the precinct and guidance to shape outcomes within the precinct in order to minimise potential biodiversity impacts.



03 CULTURAL VALUES & HERITAGE INVESTIGATIONS

First Nations and European Heritage Assessments to inform items or locations of significance. Preparation of a draft Connecting with Country Framework to guide the development of the Appin (Part 2) Precinct Structure Plan.



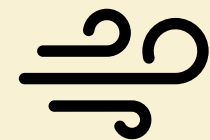
04 RIPARIAN & WATER CYCLE MANAGEMENT INVESTIGATIONS

Assessment of flooding, waterways and riparian corridors within the precinct through inspection, ground-truthing and assessment to understand the water cycle management requirements and existence of valuable riparian functions for protection within the Appin (Part 2) Precinct Structure Plan.



05 LANDSCAPE FEATURES & VISUAL CHARACTER INVESTIGATIONS

Identification of the existing landscape characteristics and visibility of the precinct to inform the Appin (Part 2) Precinct Structure Plan.



06 AIR QUALITY, ACOUSTICS & BUSHFIRE INVESTIGATIONS

Strategic Bushfire Study to understand Asset Protection Zone requirements for the Rezoning. Strategic Environmental Noise Assessment to identify potential noise issues for consideration within the Appin (Part 2) Precinct Structure Plan. Air Quality Review to identify existing and proposed sources of emissions with regard to the Appin (Part 2) Precinct Structure Plan.

OVERVIEW

The following site specific technical investigations have been undertaken to refine the outcomes identified in region, district or precinct wide strategic planning studies through a combination of ground-truthing, more detailed studies and the overlay of different technical investigation with one another.

The below table is a summary of the scope of each technical study and the responsible technical experts who prepared it. Additionally, the following assumptions around development have formed the basis of these investigations:

Table 6 Technical Investigations Assumptions

ASSUMPTION	APPIN & NORTH	
	APPIN PRECINCTS	APPIN (PART 2) PRECINCT
Housing (Dwellings)	Approx. 21,000+	Approx. 1,312
Population (People)	Approx. 65,000+	Approx. 3,709

Table 7 Summary of Site-Specific Technical Investigations

#	Report Name	Technical Scope	Technical Consultant	Study Area
Topography and Land Capability				
1	Land Capability Assessment	Preliminary geotechnical investigation to: <ul style="list-style-type: none">Provide a preliminary evaluation of the geotechnical features of the site and its suitability, from a geotechnical standpoint, for future urban redevelopment.Preliminary review of the salinity characteristics of the site.	Douglas Partners	Appin (Part 2) Precinct
2	Contamination	Preliminary site investigation to assess the site for any significant contamination constraints ('PSI') to inform proposed rezoning of land.	Douglas Partners	Appin (Part 2) Precinct
Cultural Values And Heritage				
3	Aboriginal Heritage Due Diligence Assessment	Aboriginal Heritage Due Diligence Assessment in accordance with the <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW 2010)</i> .	Niche Environment & Heritage	Appin (Part 2) Precinct
4	Historic Heritage Constraints Assessment	This work aims to establish the historical associations and significance of the subject area as a means of defining heritage constraints that may arise from a proposed rezoning of the land. On the basis of this evaluation, management strategies will be determined, including measures that may be required to mitigate any impact from future works associated with the rezoning of this land.	Niche Environment & Heritage	Appin (Part 2) Precinct

#	Report Name	Technical Scope	Technical Consultant	Study Area
Landscape, Waterways and Visual				
5	Water Cycle Management Strategy – Phase 1	The objective of this study is to prepare a Water Cycle Management Strategy that supports the future rezoning of the land for urban development. The study includes an assessment of stormwater quantity and quality management to ensure that there are manageable local impacts and no impacts external to the Precinct. This assessment has been conducted with consideration of Wollondilly Shire Council's Integrated Water Management Strategy and Policy (IWMS), adopted in December 2020.	JWP	Appin (Part 2) Precinct
Infrastructure Assessment				
7	Infrastructure Phasing Plan	This report summarises the investigations relating to the staged implementation of trunk utilities and State and regional infrastructure, as identified in the draft SIC for the entire Appin & North Appin Precincts. Specifically, this report will outline: <ul style="list-style-type: none">Existing utility services within the vicinity of the siteCurrent and planned utility projectsPlanned SIC infrastructure Implications of the above and potential servicing strategies for the proposed development within the Precinct.	IDC	Appin & North Appin Precincts
8	Infrastructure Delivery Schedule	The infrastructure Delivery plan includes infrastructure and land requirements, considers the approximate project timing and sequencing of infrastructure delivery.	GLN	Appin & North Appin Precincts
Environmental				
9	Ecological Assessment	This biodiversity assesses the potential impacts on biodiversity as a result of the proposed UD Urban Development Zone; and separately summarises the potential impacts associated with the East-West Arterial Road within the SP2 Infrastructure (roads) zone. This Biodiversity Assessment also outlines the approach to mitigation measures related to the development of the Subject Land with reference to the CPCP.	Niche Environment & Heritage	Appin (Part 2) Precinct
10	Air Quality	This report presents information and data that summarises and characterises the existing environmental conditions and identifies potential air quality pollutants associated with both the existing and proposed nature of the Proposal. It examines the potential risk of both of these scenarios and provides commentary on the suitability (or otherwise) for the land to be rezoned for urban development land uses.	North Star	Appin & North Appin Precincts
11	Acoustics	This report provides the results, findings and recommendations arising from an acoustic assessment of the potential for noise emanating from various existing and proposed noise sources and their impact on areas within the Appin & North Appin Precincts.	Spectrum Acoustics	Appin & North Appin Precincts
12	Urban Heat Island Effect	This report presents a high-level urban heat island assessment for the Appin & North Appin Precincts that will accompany the rezoning application for Appin Vale.	Civille	Appin & North Appin Precincts

#	Report Name	Technical Scope	Technical Consultant	Study Area
13	Sustainability	The purpose of this report is to identify the range of existing strategic and policy considerations for achieving sustainable and resilient outcomes and provide opportunities for sustainable and resilient outcomes for consideration as part of the development of the Appin & North Appin Precincts.	Urbis	Appin & North Appin Precincts
14	Strategic Bushfire Assessment – Preliminary Report (includes Evacuation)	The study provides an assessment of the landscape bushfire risk and the residual risk for the Appin & North Appin Precincts following the provision of bushfire protection measures. It includes a strategic assessment and evacuation considerations under the considerations in PBP 2019.	EcoLogical Australia	Appin (Part 2) Precinct and Appin & North Appin Precincts
Traffic & Transport				
15	Strategic Network Assessment	This strategic transport assessment supports the proposed rezoning of the Appin Development. It updates this work based on the latest structure plan for the Appin Development, including an update of the internal road network, revised position and density of dwellings.	WSP	Appin & North Appin Precincts
Housing, Retail & Employment				
16	Economic & Retail Assessment	<p>This report examines and outlines the following:</p> <ul style="list-style-type: none"> ▪ The trade area that future retail facilities in Appin will likely serve. ▪ An assessment of the demand and timing for retail uses within Appin, and the resultant supportable floorspace and mix requirements for centres within the precinct. ▪ An analysis of the resultant employment levels within centres in Appin, and considering self-containment rates. ▪ An assessment of potential impact on the scale and timing of Wilton Town Centre. 	Urbis	Appin & North Appin Precincts
17	Open Space And Social Infrastructure	The overall purpose of this the study is to provide recommendations for the provision of social infrastructure and open space facilities to support the needs of the incoming population and develop a high level strategy and action plan for the delivery of these recommended facilities, including compliance with IPART submission criteria.	Urbis	Appin & North Appin Precincts
18	Social Health Impact Assessment	The fundamental objective of a SHIA is to ensure that developments maximise positive impacts and minimise unplanned adversities for local people and communities. This is achieved through the identification of management and monitoring measures to help reduce negative impacts and enhance positive impacts in accordance with professional standards and statutory obligations.	Urbis	Appin & North Appin Precincts

GEOTECH, SALINITY & SITE INVESTIGATIONS

TOPOGRAPHY

The Appin (Part 2) Precinct is located in the Appin Precinct and comprises the following topography:

- **North Site:** Characterised by a north-south ridgeline running through the centre of the site and marks the transition from the Eastern Plateau in the east to the undulating hills in the west of Appin Precinct.
- **South Site:** Located on higher land of the Eastern Plateau to the southern extent of the north-south ridgeline that runs through the Appin Precinct.

Key Findings

- Both sites are located along the north-south ridgeline in the Appin Precinct providing elevated views across the precinct to the west.
- The South site has afforded views to the south and south-east.

LEGEND:

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Existing Waterways
- 2m contours
- Low - High
- * Localised High Points
- Steep Slope
- ▲▲▲ Primary Ridgeline
- ▲▲ Secondary Ridgeline
- Eastern Plateau

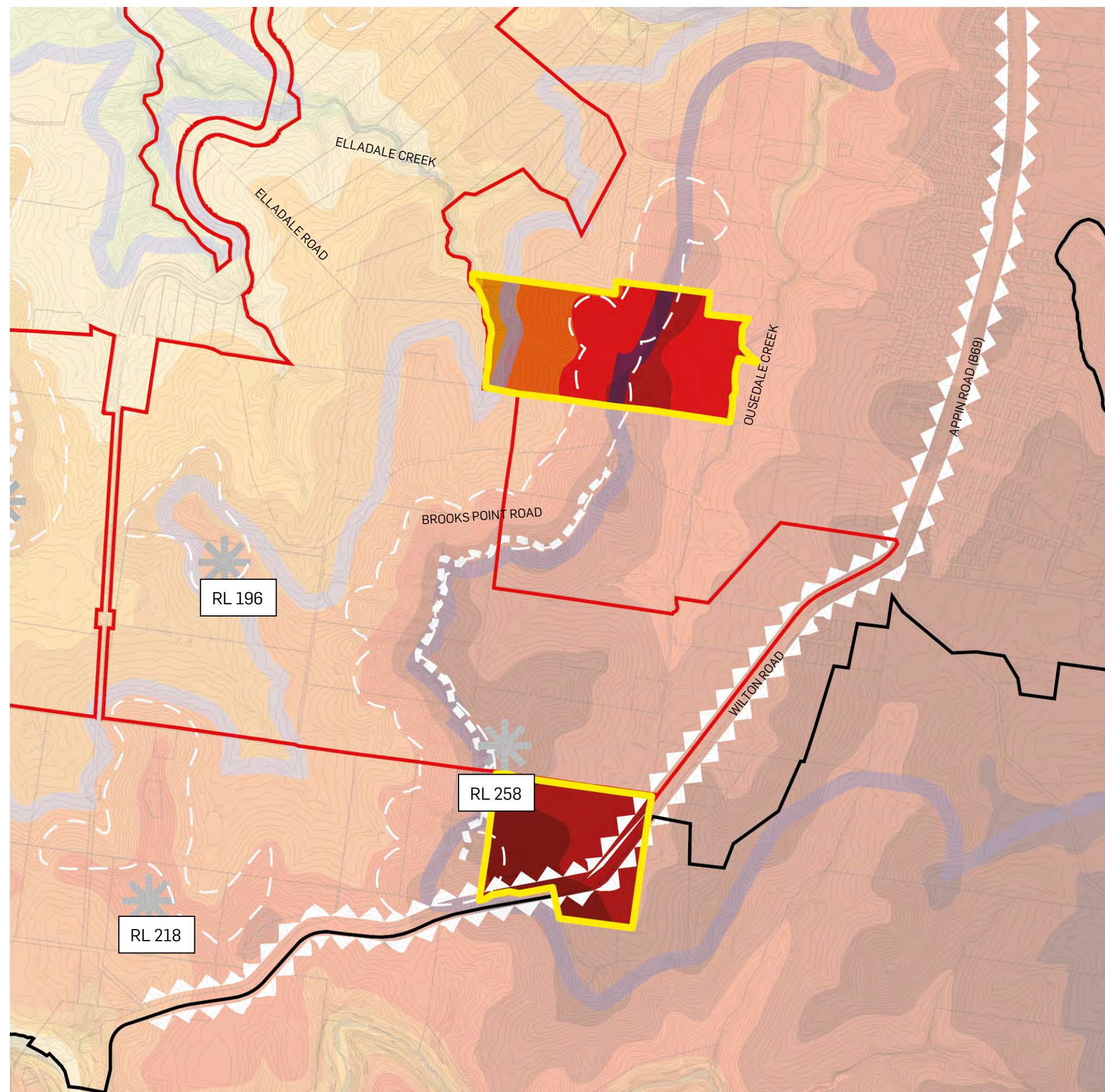


Figure 15 Topography and Landform Analysis

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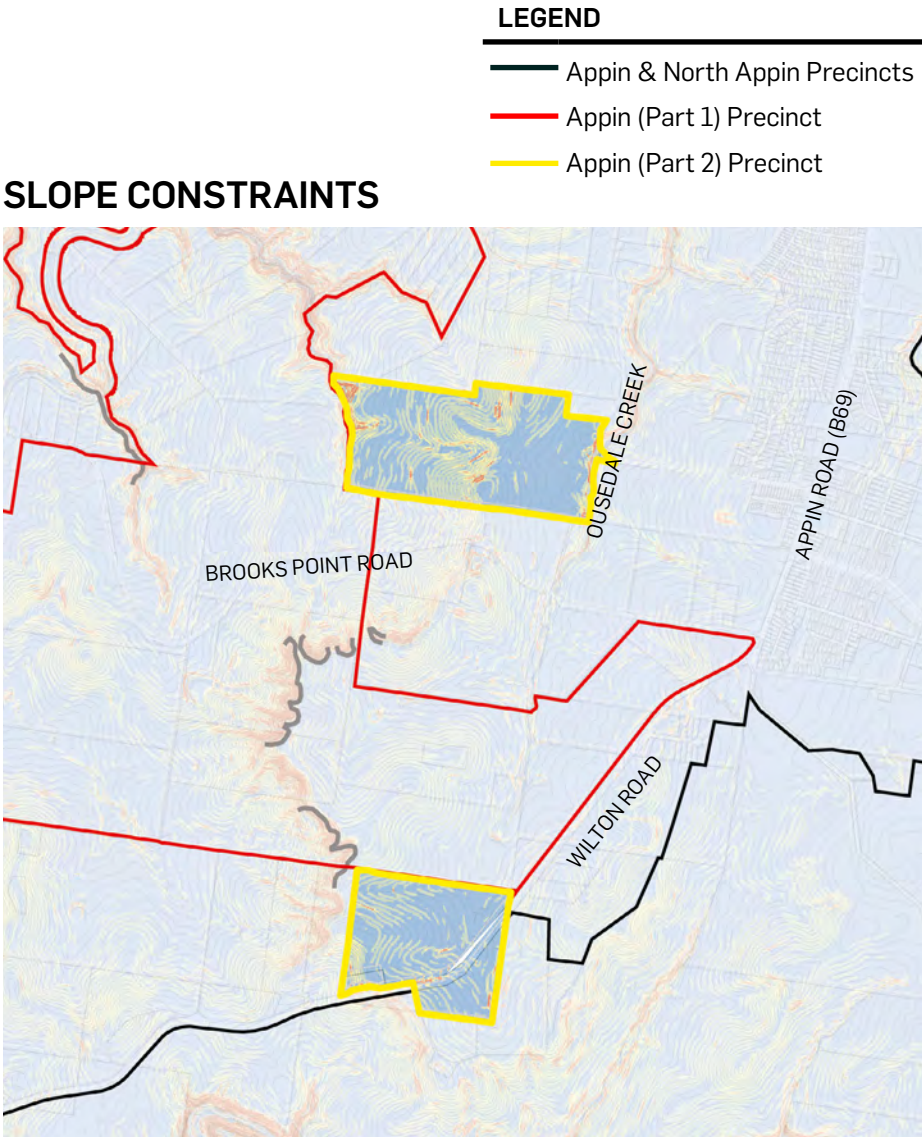


Figure 16 Slope Analysis

Slope analysis has been undertaken on the two sites as follows:	
	0-10% Gradient: The subject site is predominantly characterised by low-lying, flat land which is suitable for urban development.
	10-15% Gradient: Areas of undulating topography
	>15% Gradient: Areas of steep land comprising two features
Distinctive Features: The subject sites are characterised by the following slope and distinctive features:	
<ul style="list-style-type: none">North Site: The site ranges from 0-10% to the east and west with 10-15% along the central ridgeline. Minor areas of >15% occur along this ridgeline.South Site: The site is predominantly flat characterised by 0-10% gradient.	

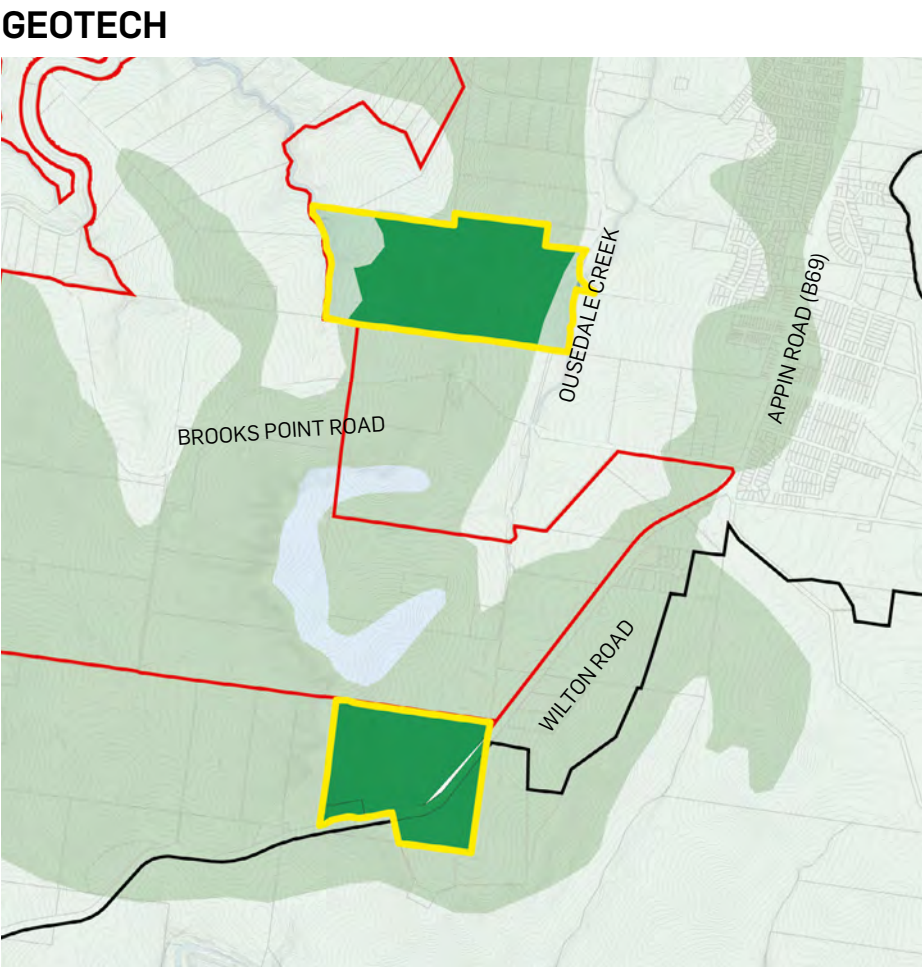


Figure 17 Geotech (Source: Geological Survey of NSW Wollongong – Port Hacking 1:100 000 scale Geological Series Sheet 9029 - 9129, 1st Edition 1985)

Geotech analysis has been undertaken on the two sites as follows:	
	Wianamatta Group (Ashfield Shale): Comprising claystone, siltstone, laminite and fine to medium grained lithic sandstone weathering to soils ranging in texture from loam to heavy clay.
	Hawkesbury Sandstone: Comprising medium to coarse-grained quartz sandstone with very minor shale and laminite lenses.
Distinctive Features: The subject sites are characterised by the following geotech and distinctive features:	
<ul style="list-style-type: none">North Site: Majority of the site is comprised of Ashfield Shale with Hawkesbury Sandstone on the eastern and western extents.South Site: The whole site is comprised of Hawkesbury Sandstone.	

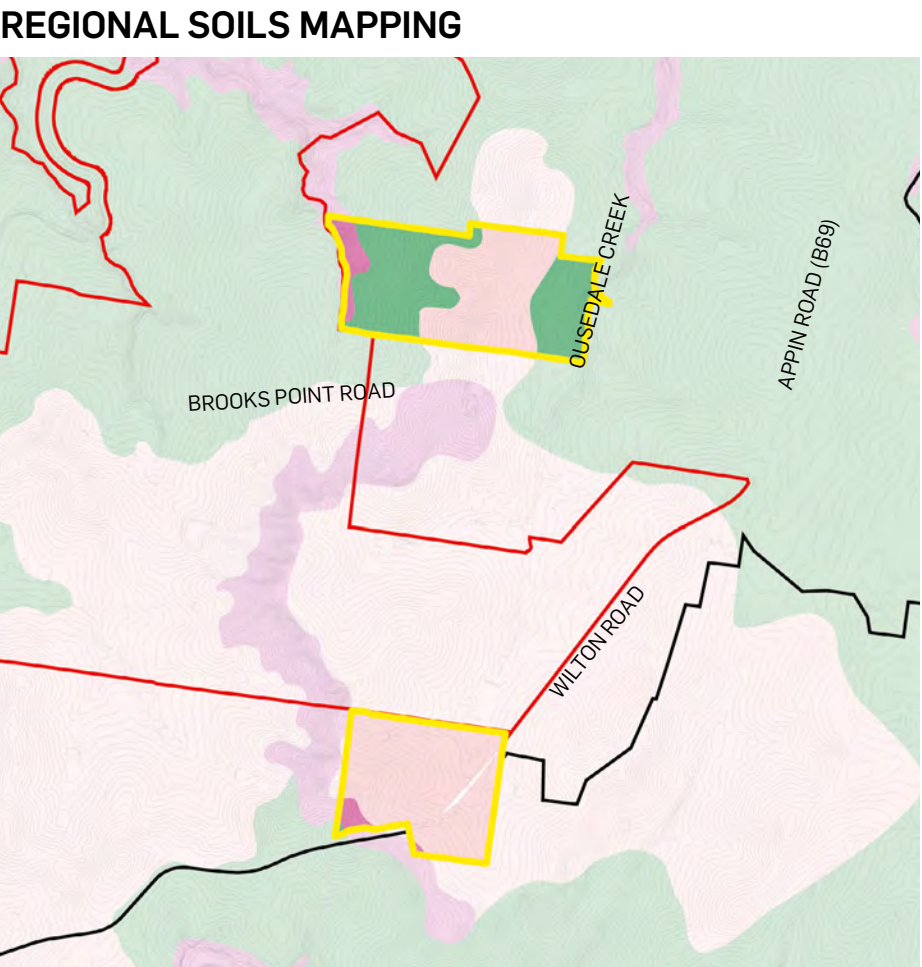


Figure 18 Soil (Source Soil Conservation Service of NSW, Soil Landscapes of the Penrith 1:100 000 Sheet)

Regional soils mapping has been undertaken on the two sites as follows:	
	Blacktown soils (dark green): Associated with the gently undulating rises on Wianamatta Group shales and Hawkesbury Sandstone. Blacktown soils comprise shallow to moderately deep red and brown podzolic soils on crests, upper slopes and well drained areas and deep yellow podzolic soils and soloths on lower slopes and in areas of poor drainage. Such soils are generally moderately reactive, highly plastic subsoil of low soil fertility with poor soil drainage.
	Luddenham soils (light pink): Comprising shallow dark podzolic or massive earthy clays on crests, erosional soils. Luddenham soils are associated with undulating to rolling low hills of the Wianamatta Group shales and lower slopes and drainage lines.
	Hawkesbury soils (dark pink): Colluvial lithosols/siliceous sands comprising podzolic soils, siliceous sands and secondary yellow earths.
Distinctive Features: The subject sites are characterised by the following regional soil features:	
<ul style="list-style-type: none">North Site: Luddenham soils defines the ridgeline with Blacktown soils either side. To the west along Elladale Creek is Hawkesbury soils.South Site: Luddenham soils is located on majority of the site with a Hawkesbury soils located to the south-western corner of the site.	

SALINITY

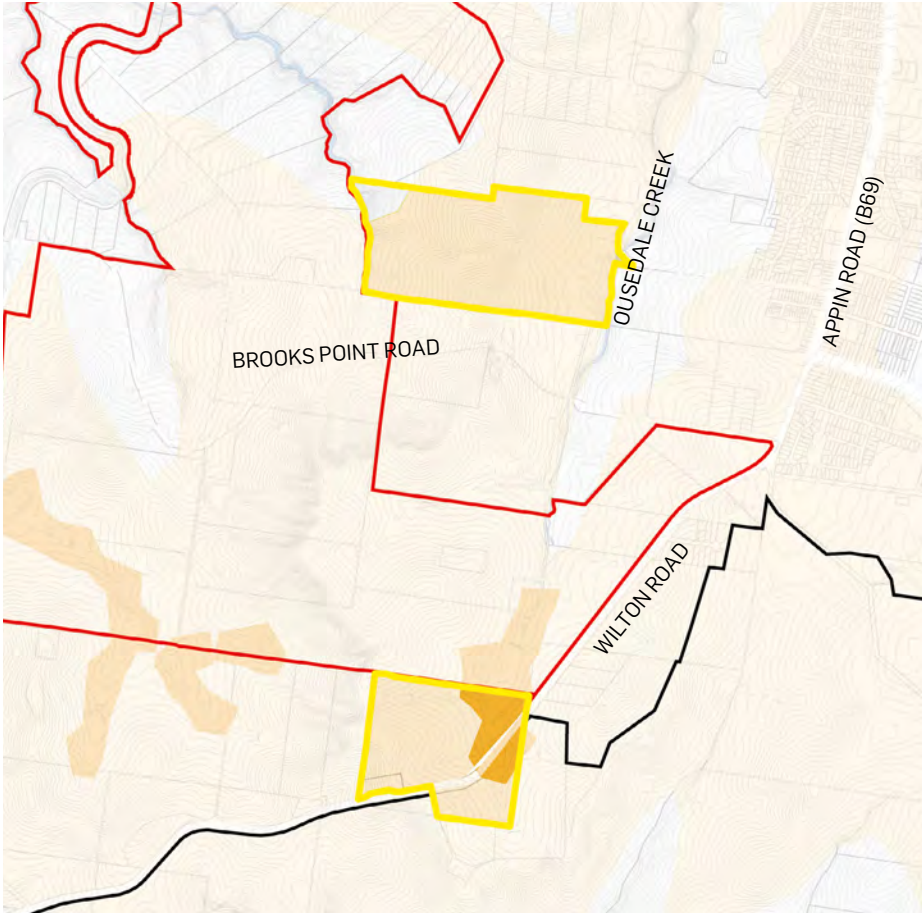


Figure 19 Salinity Soil Plan

Regional salinity mapping has been undertaken on the two sites as follows:

- High Salinity Potential
- Moderate Salinity Potential
- Low Salinity Potential

Preliminary salinity testing indicates that the salinity potential of this site would be within usually accepted limits, which could be managed by good engineering and land management practices. Based on the works undertaken to date, specific salinity management plans are not required for this site at this time.

Distinctive Features: The subject sites are characterised by the following salinity soil features:

- North Site:** There is a moderate salinity potential across the majority of the site (approximately 95%) with a cluster of low salinity potential to the western extent of the site.
- South Site:** There is a cluster of high salinity potential to the north-eastern corner of the site and moderate salinity potential for the rest of the site.

MINING

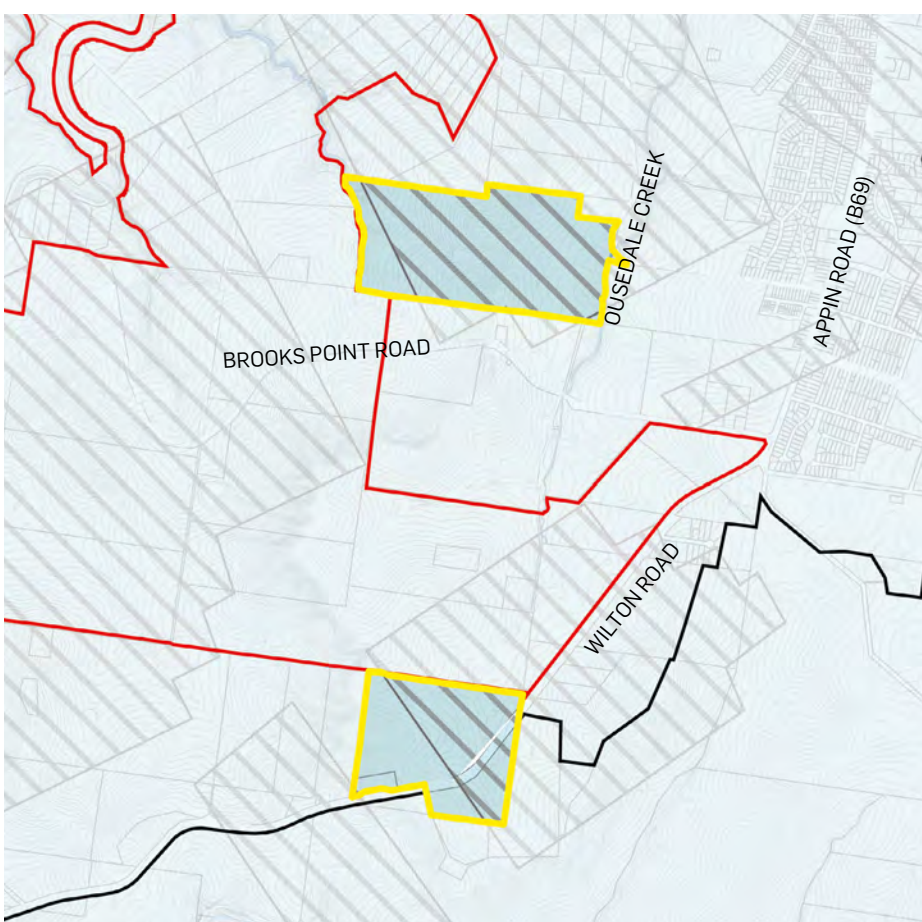


Figure 20 Mining Constraints

Mining analysis has been undertaken on the two sites as follows:

- Completed Longwall Mining:** Long wall mining has largely been completed for the Northern and Southern site
- Mine infrastructure, such as gas pipelines, vent shafts and coal washery remain in the subject sites as coal is transported underground to extractions points east of Appin Village.
- Appin Mine Subsidence Area:** All forms of development within the Appin & North Appin Precincts is subject to relevant building standards to mitigate impacts from subsidence.
 - Both sites** are identified as completed long wall mining with Appin Mine Subsidence Area covering the whole site.

Key Findings

- The land capability assessment did not identify any issue that would preclude the urban development of the subject sites.
- Future development can be designed and constructed in accordance with the relevant standards to mitigate and minimise effects from mine subsidence.
- The presence of erodible soils on the site will not present significant constraints to development provided they are well managed during site preparation and earthworks.

ECOLOGY & BIODIVERSITY INVESTIGATIONS

CUMBERLAND PLAIN CONSERVATION PLAN (CPCP)

The Appin (Part 2) Precinct comprises the following avoided and excluded land features:

- North Site:** The CPCP identifies **17.64 ha of CPCP Non-Certified Avoided land** within the site. The majority of this is Protected Koala Habitat. This is located predominantly in the west of the site around Elladale Creek. A small north-south strip is located along the eastern boundary adjacent to Ousedale Creek.
 - The balance of the site is identified as CPCP Certified Land.
- South Site:** There is a location of **CPCP Excluded Land** - This is land not included in the Appin and North Appin Indicative Plan. It comprises Sydney Water Catchment in the south-west of the site.
 - There is no CPCP Non-Certified Avoided Land on the south site.
 - The balance of the site is identified as CPCP Certified Land.

LEGEND:

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- CPCP - Protected Koala Habitat
- CPCP - Avoided Koala Habitat Restoration
- PCP Certified Urban Capable Land
Subject to strategic biodiversity certification for development under Part 8 of the BC Act. Development in these areas does not require further site by site biodiversity assessment.
- Final SEPP CPCP Mapping - Excluded Land
- Proposed Classified Road Alignment. Proposed SP2 Zone. Aligned to TfNSW Strategic Transport Network.
- Employment Lands
- 1a East-West Connection Road - east
- 1b Transport Corridor from North Appin to Appin.

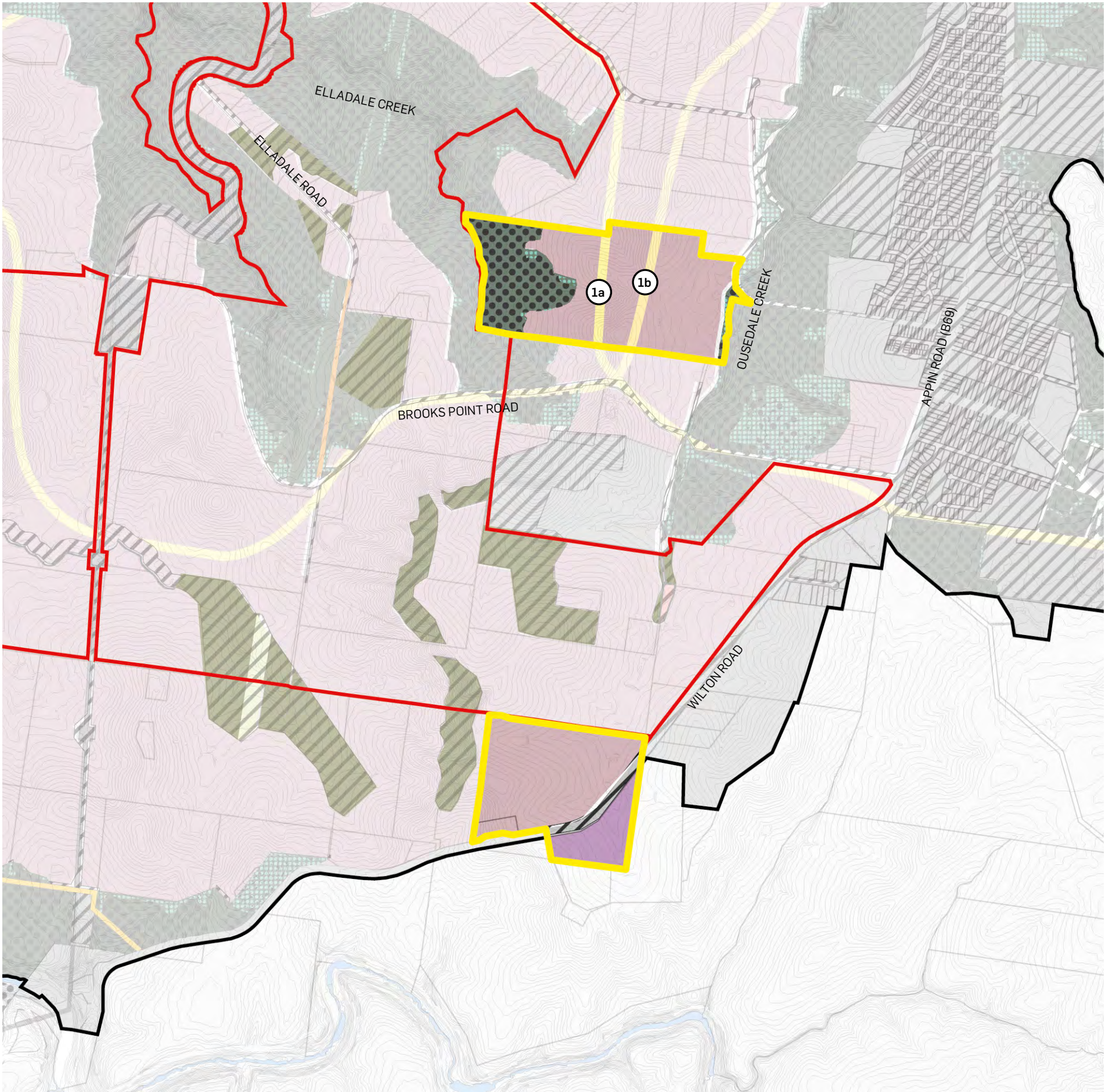


Figure 21 Findings of Cumberland Plain Conservation Plan Investigations - Avoided Land

RIPARIAN ASSESSMENT & WATER CYCLE MANAGEMENT

The creeks within the subject sites fall within the Nepean River catchment, with a number of its tributaries running across the two sites. These include:

- **North Site:** Is bound by two creeks on either side of the site wholly contained within the CPCP Avoided Land as follows:
 - Ousedale Creek running north-south along the eastern boundary.
 - Elladale Creek running north-south along the western boundary.
 - A stream order 1 connecting into Elladale Creek in the west.
- **South Site:** The southern most extent of Ousedale Creek has been identified as declassified and does not extend into the site.
- There is a small area of Sydney Water Catchment Land located within the South site. This is non-contiguous with the majority of the Sydney Water Catchment Land being on the southern side of Wilton Road. Retention of this land as Sydney Water Catchment Land would leave it unmanaged. There is an opportunity for this to be incorporated into open space provision to better manage the run-off.

Key Findings

- Flooding is not a constraint to the subject sites.
- JWP investigations assessed riparian corridors and concluded that riparian corridors located outside of the CPCP Non-Certified Avoided land in Appin (Part 2) Precinct can be relinquished.
- Low order streams within close proximity to retained riparian corridors can be engineered through the subdivision stormwater network to enable development.
- Riparian corridors are predominantly contained within the CPCP Non-Certified Avoided Land and will be protected through C2 Environmental Zoning.
- Riparian corridors must be managed by NRAR via a controlled activity permit to balance good environmental outcomes with the delivery of urban infrastructure.

LEGEND:

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- CPCP Non-Certified Avoided
- Sydney Water Catchment Land

Stream Order Riparian Corridors

- Stream Order 3 - 30 VRZ Buffer
- Stream Order 2- 20 VRZ Buffer
- Stream Order 1- 10 VRZ Buffer

Removed

- Declassified streams

Riparian Corridors

- Riparian corridors to be retained

LEGEND - (EXISTING):

Strahler Stream order Vegetated Riparian Zone

- Strahler Stream 4- 40m Buffer
- Strahler Stream 3 - 30m Buffer
- Strahler Stream 2 - 20m Buffer
- Strahler Stream 1 (no stream order 1 identified on site) - 10m Buffer

Flood Hazard

- 100 Year ARI

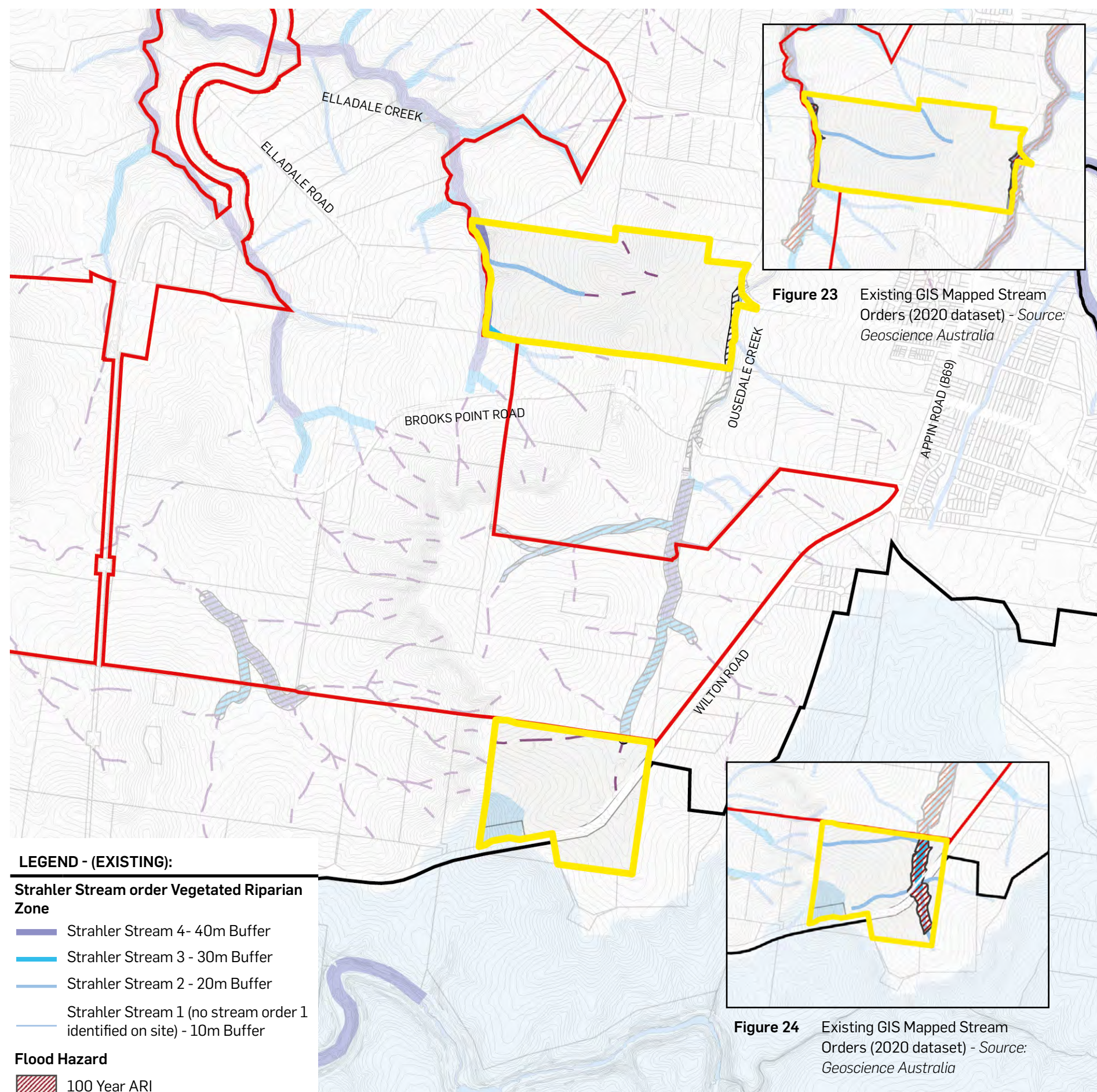


Figure 22 Ground-Truthed Waterways - Source JWP

Figure 23 Existing GIS Mapped Stream Orders (2020 dataset) - Source: Geoscience Australia

Figure 24 Existing GIS Mapped Stream Orders (2020 dataset) - Source: Geoscience Australia

LANDSCAPE CHARACTER & VISUAL ASSESSMENT

The landscape character of the Appin (Part 2) Precinct sites are:

North Site: Majority of the sites within Pastoral Landscapes (R1). This area includes grazing and live-stock, intermittent remnant vegetation, isolated residences and access to distant views.

- The site includes areas of significant vegetation to the east and west. This is characterised by CPCP Non-Certified Avoided land.

South Site: The area North of Wilton Road is within Pastoral Landscapes (R1) and includes grazing and live-stock, intermittent remnant vegetation, isolated residences and access to distant views.

LEGEND	
<div></div>	Appin & North Appin Precincts
<div></div>	Appin (Part 1) Precinct
<div></div>	Appin (Part 2) Precinct
Landscape Character Areas	
<div></div>	Pastoral Landscapes (R1): Open areas of pastoral landscapes, grazing and live-stock, intermittent remnant vegetation, isolated residences and access to distant views. The landscape has been highly modified as a result of agricultural uses with large levels of vegetative clearing.
<div></div>	Commercial Holdings: Commercial enterprises such as the Colliery that are at odds with the surrounding built-form scale (both commercial and residential).
<div></div>	Significant Vegetation Groupings: Predominantly characterised by vegetated riparian corridors along creeks and rivers which is distinctive due to form, density and colouration of the tree canopy. Mature vegetation often limits long distance views across the site and creates visually contained and physically separated areas throughout the site.
Photos of various Landscape Character Areas are on the following page.	

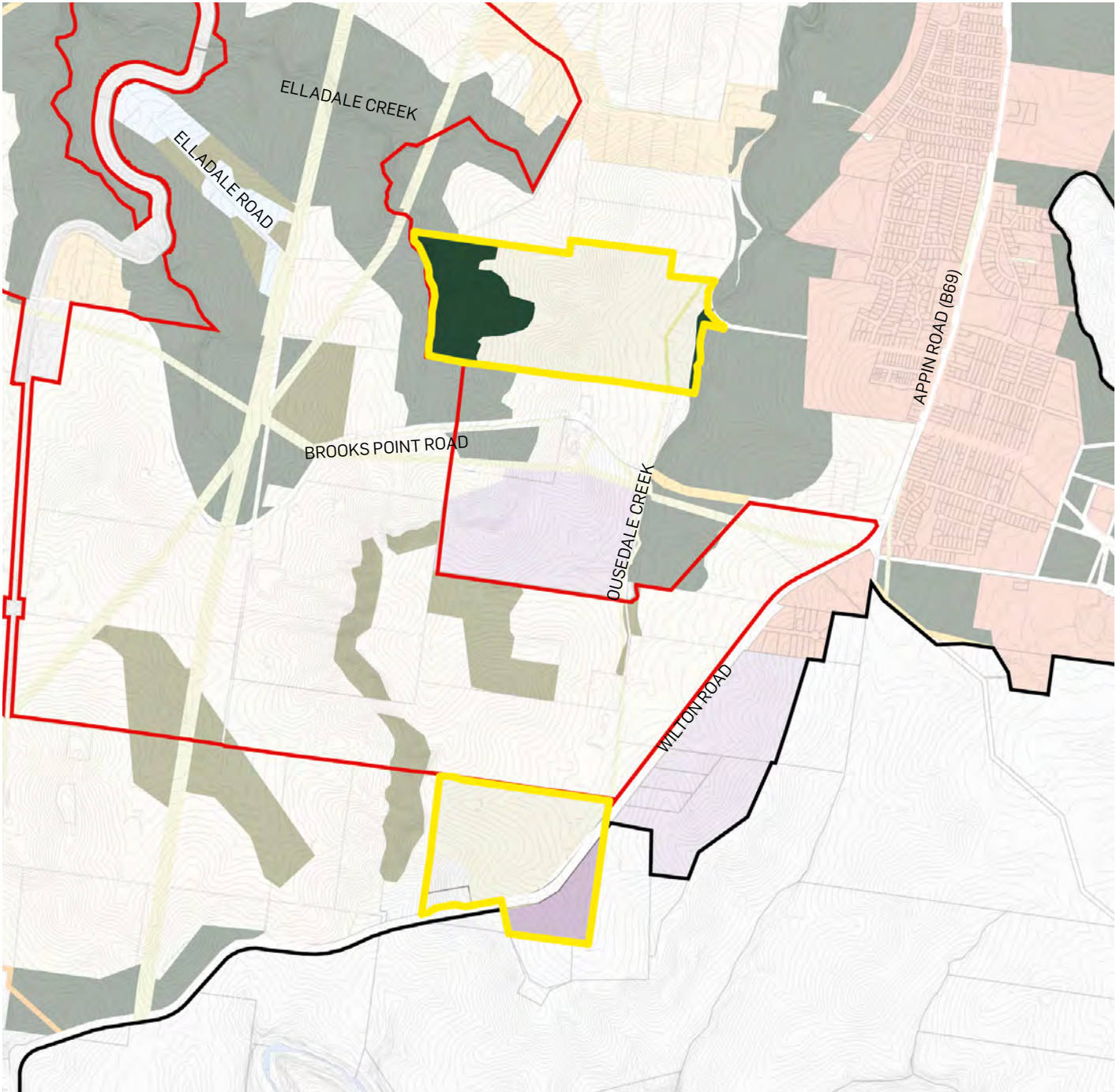


Figure 25 Landscape Character Areas

VISUAL RESOURCES AND EXTERNAL VISIBILITY

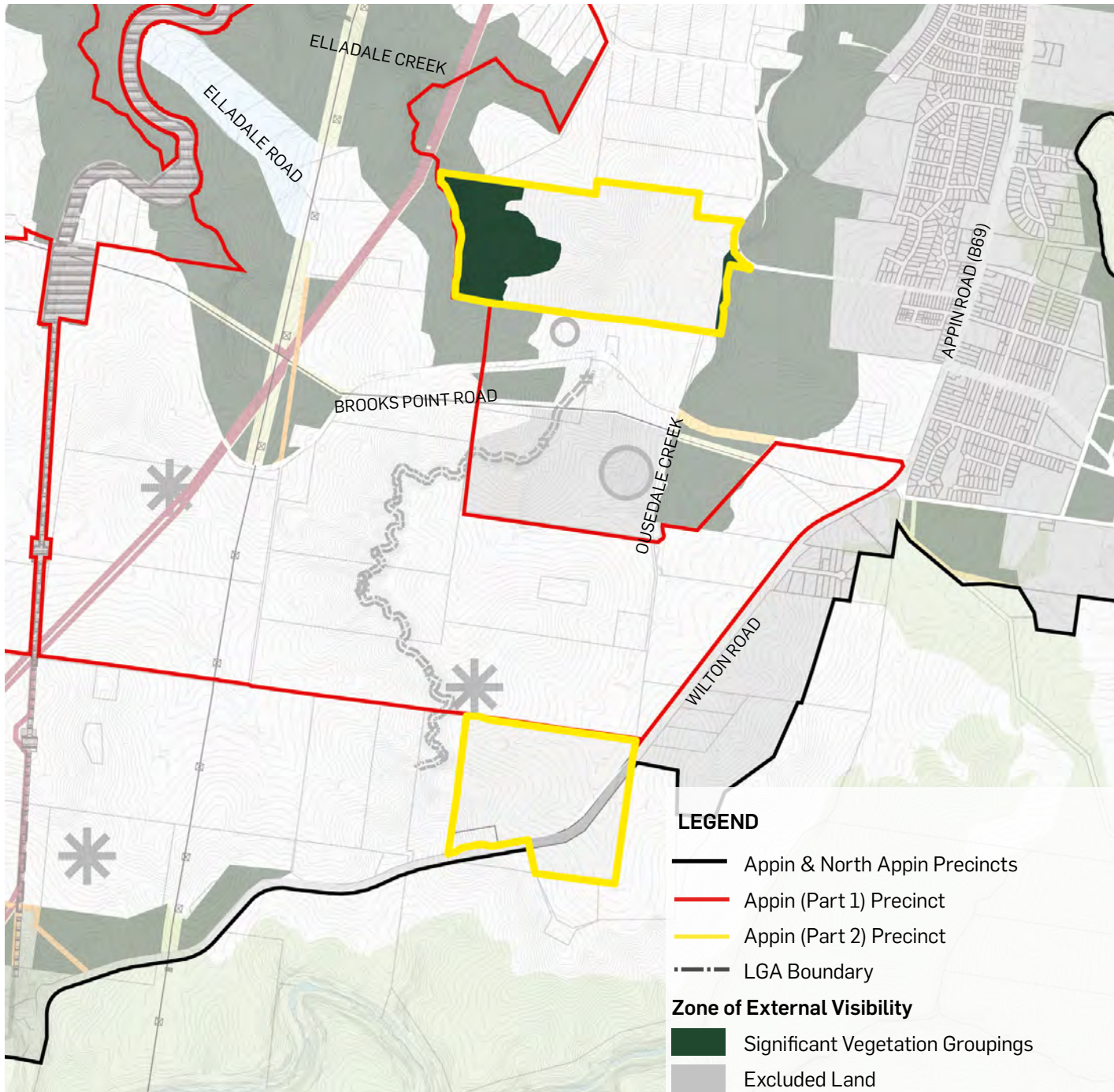


Figure 26 Visual resources and external visibility

There are no infrastructure and natural elements that are noticeable visual components of the landscape located on either site.

OPPORTUNITIES WITHIN THE SITE

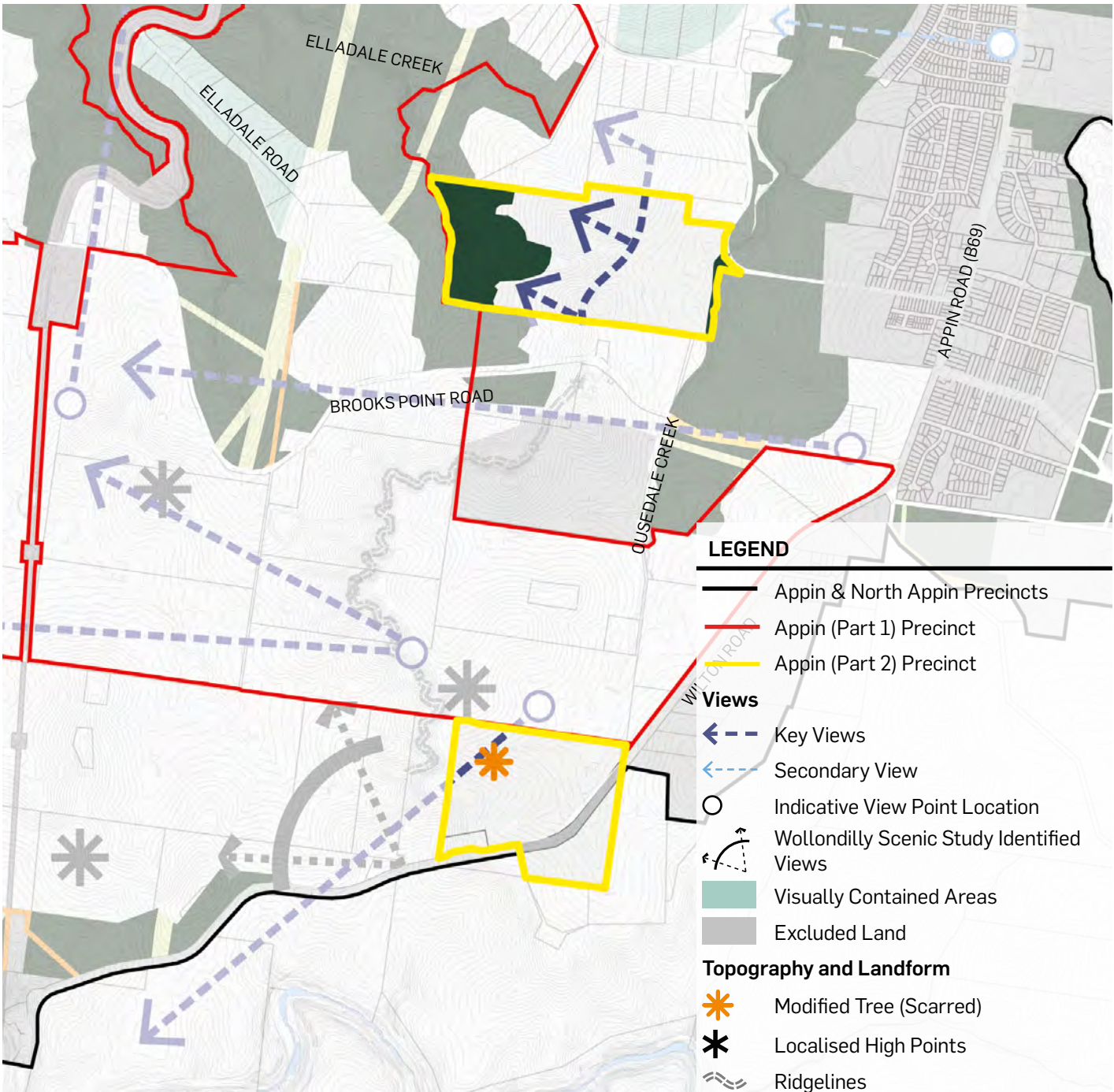


Figure 27 Opportunities within the site

The Appin (Part 2) Precinct comprises the following visual opportunities:

- **North Site:** Topography and vegetation create visually contained and separated pockets within the site with the opportunity to create distinct areas. Potential for more intense development that would not impact on long distance views.
- **South Site:** Key view line passing through from the north with views to the south-west along the ridgeline.

CULTURAL VALUES, HERITAGE ASSESSMENTS & CONNECTING WITH COUNTRY FRAMEWORK

The Appin area is traditional country of the Dharawal people. It is generally accepted that Aboriginal occupation of Australia dates back at least 40,000 years. The result of this extensive and continued occupation of the Sydney Basin has left a vast amount of accumulated depositional evidence.

ABORIGINAL OBJECTS DUE DILIGENCE ASSESSMENT

Niche prepared an *Aboriginal Objects Due Diligence Assessment* for the proposed Appin (Part 2) Precinct area. The aim of the assessment is to assess whether Aboriginal objects and/or Places are present and/or are likely to occur within or in close proximity to the activity area and, if present, whether they may be harmed by the proposed works and if further investigation is required.

South site: One newly recorded Aboriginal cultural heritage site was identified during the site inspection.

Key Findings

- The assessment indicates that Aboriginal objects and/or Places occur within Appin, with high potential for further Aboriginal objects and/or Places to be present both on the surface and subsurface.
- Following rezoning of the site, further investigation and impact assessment is required prior to undertaking future works in accordance with relevant legislation.
- A draft Connecting with Country Framework has been prepared through engagement with the Aboriginal community, to further inform an understanding of First Nation people's cultural values.
- Following rezoning of the site, the ACHA process will be undertaken prior to undertaking future works in accordance with relevant legislation.
- An unexpected finds protocol will be established for the site.
- Opportunity to undertake engagement with First Nations people on a salvage location for artefacts.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 2) Precinct
- Existing Waterways
- AHIMS**
 - Art
 - Artefact
 - Burial
 - Grinding Groove
 - Modified Tree (Carved / Scarred)
 - Potential Archaeological Deposit (Pad)
 - Stone Quarry
 - New Sites Identified During Site Inspection

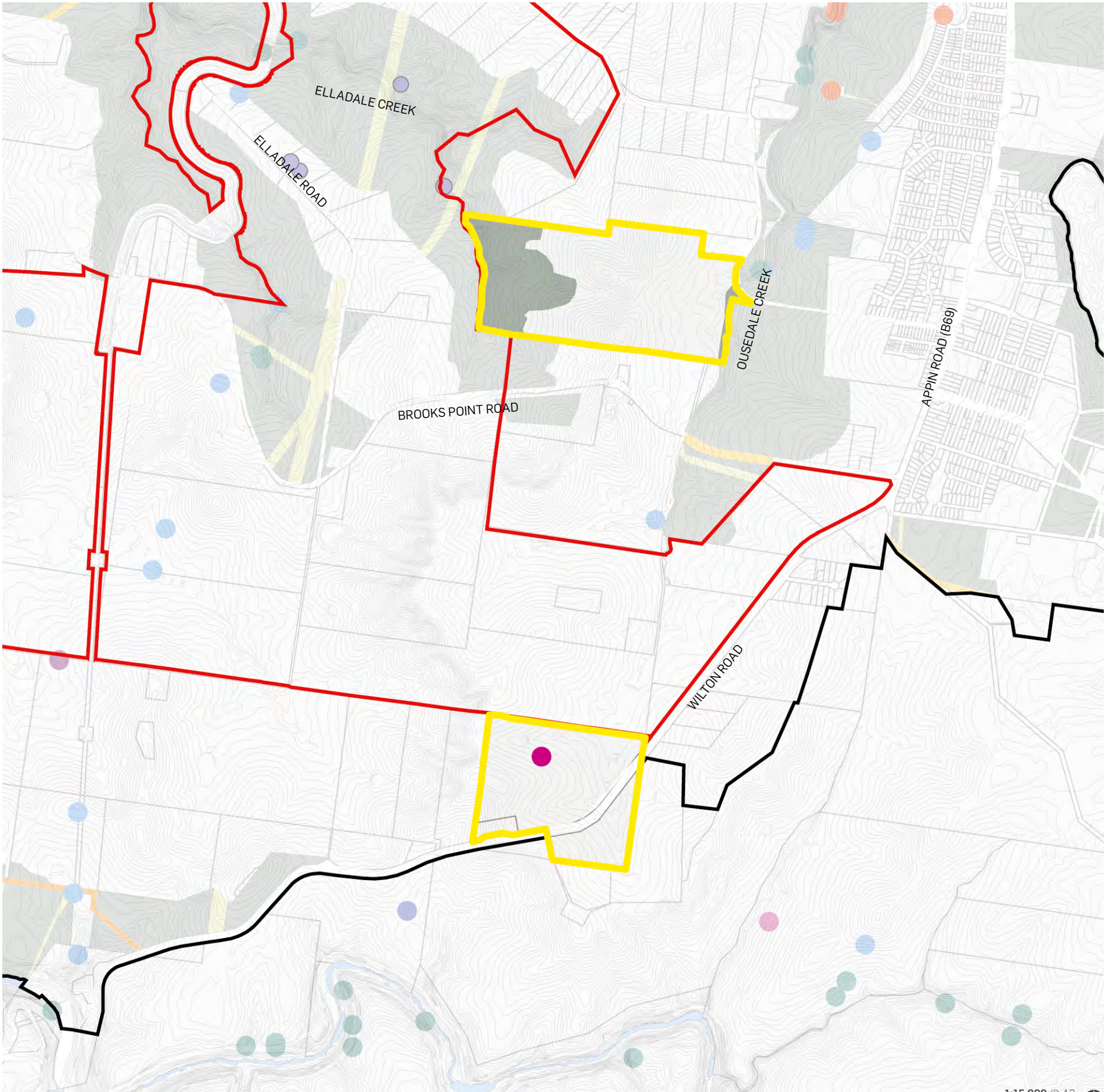


Figure 28 Aboriginal Cultural Heritage Plan

HERITAGE NSW –THE APPIN MASSACRE CULTURAL LANDSCAPE STATE LISTING

The NSW State Heritage listing was recently finalised in March, 2023. The Appin (Part 2) Precinct comprises the following heritage curtilage sites:

North Site: There are no heritage curtilage sites that fall within the subject site.

South Site: McGees Hill is located adjacent to the western boundary and north-western corner of the site.

Relationship to Country

Relationship to Country and place is a living cultural process that is central to First Nations identities. Complex webs of interactions with specific places, layered through time and extending into the future, map Country and people together. For Appin this includes:

- This mapping is of spatial locations within the Appin area holding cultural values relating to living on, using, and managing Country.
- Country, Dreaming Stories, Ceremony, movement across Country, teaching places and the history of dispossession and colonial violence.
- This Country holds a wide range of other values that are not spatially specific including the cultural values of the fauna and flora linked to this place and the knowledge of the skies and seasons.

Regional Cultural Landscape and Linking Country

The cultural places and values of Appin sit within the regional cultural landscape and connect to places across Country. The regional diagram Linking Country shows a few of the cultural places linked through Story and by the movement of people across Country. Movement routes, or pathways, link peoples and places in a complex network of social, economic and ceremonial connection across Country.

- Appin is located on the southern end of the Cumberland Plains with the Woronora Plateau on its east falling down to the Illawarra coastline.
- Culturally significant waterways border the site with the Nepean and Cataract Rivers on the south-western border and the Georges River to the east.
- The Country that Appin sits within is part of an extensive cultural network that links together the Blue Mountains, the Cumberland Plains, the Southern Highlands, the Woronora Plateau, the Illawarra Escarpment and the coastline and oceans.

LEGEND

Appin & North Appin Precincts

Appin (Part 1) Precinct

Appin (Part 2) Precinct

Existing Waterways

NSW State Heritage Listing Curtilage (Place of First Nations Cultural Landscape) SHR 02067 Plan 3294

Conservation area (CPCP)

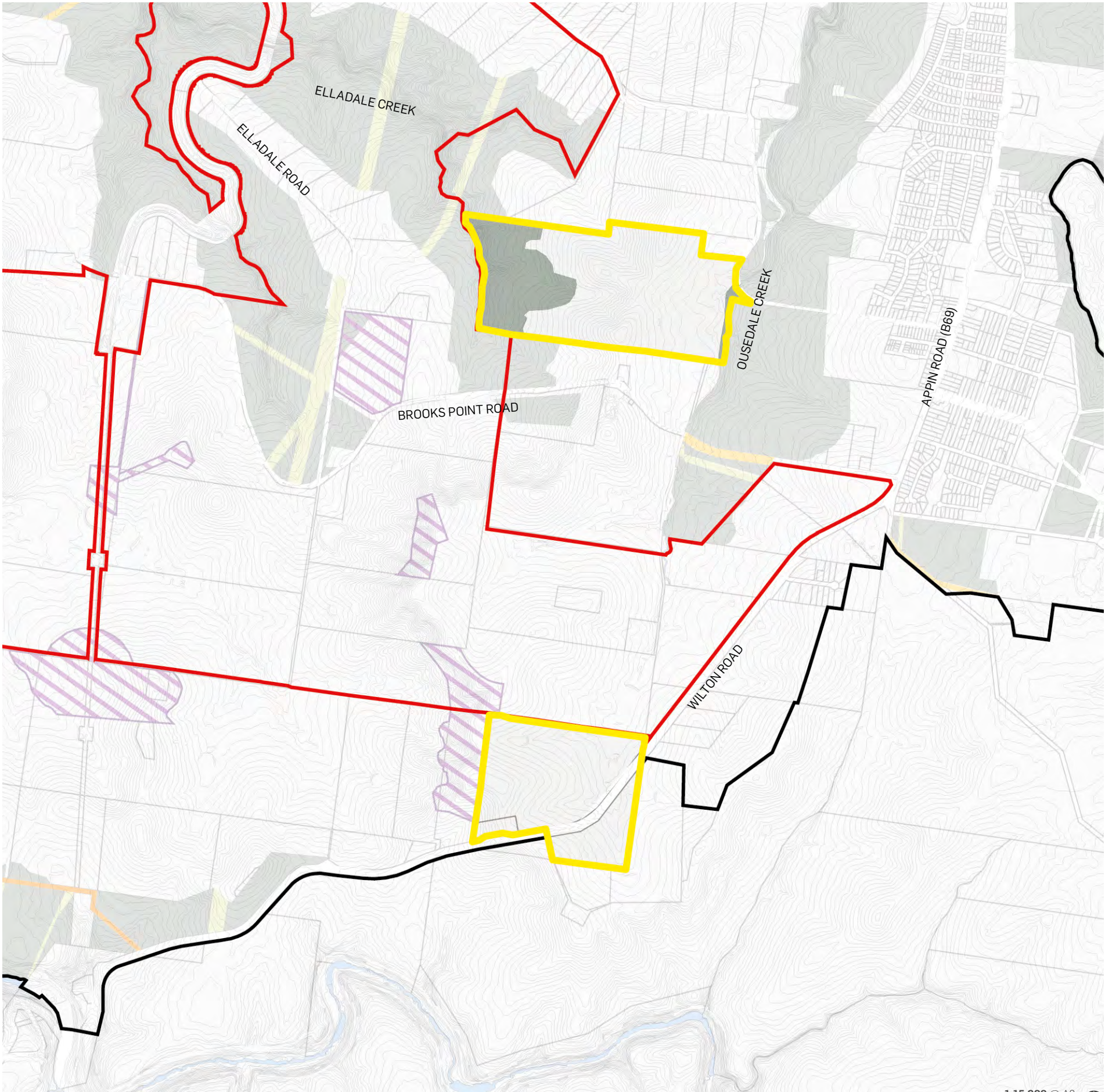


Figure 29 NSW State Heritage Listing Curtilage (Place of First Nations Cultural Landscape)
(Source: State Heritage Register)

EUROPEAN HERITAGE

No Local Listed Items are located within the Appin (Part 2) Precinct. The southern site is in proximity to the Windmill Group local listing however is separated by Wilton Road.

LEGEND

Appin & North Appin Precincts

Appin (Part 1) Precinct

Appin (Part 2) Precinct

Existing Waterways

Conservation area (CPCP)

EUROPEAN HERITAGE ITEMS

1

Northamptondale Group (60-80 Northamptondale Road West, Appin)

2

Windmill Hill Group

(NB: The local listing has slightly different boundaries to the State listing)

3

Windmill Hill Group (Brennan's Farm, Larkin's Farm, Winton's Farm)

Figure 30 Findings of European Cultural Heritage Investigations

32

Appin (Part 2) Precinct Urban Context Report

NOISE & AIR QUALITY

The Appin (Part 2) Precinct is subject to the following noise and air quality impacts:

- **North Site:** No current noise or air quality impacts identified within or immediately adjacent the North site.
- **South Site:**
 - **Wilton Road:** Wilton Road passes through the South Site from north-east to south-west and is identified as a Major Road noise source. The land on the south-eastern side of Wilton Road is not developable as it is identified as commercial holdings.
 - Is located in close proximity to an emission source located to the east of the site, outside Appin and North Appin Precinct.
 - An assessment of these has indicated that a combination of relatively common architectural treatments and noise control such as construction of noise barriers, can be employed to achieve an adequate acoustic amenity for future residences.
 - It is anticipated that with appropriate land use planning and design and consideration of appropriate regulatory standards and guidelines, existing and proposed identified sources of air emissions will not form a significant constraint on the Proposal.

Key Findings

- Based on the findings of the *Strategic Environmental Noise Assessment* noise is not considered a key constraint that will preclude future development of the site.
- There are no air quality constraints for the Appin (Part 2) Precinct sites.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Identified noise source - Major Roads
- ✱ Identified environmental noise source - enduring
- Identified emissions source

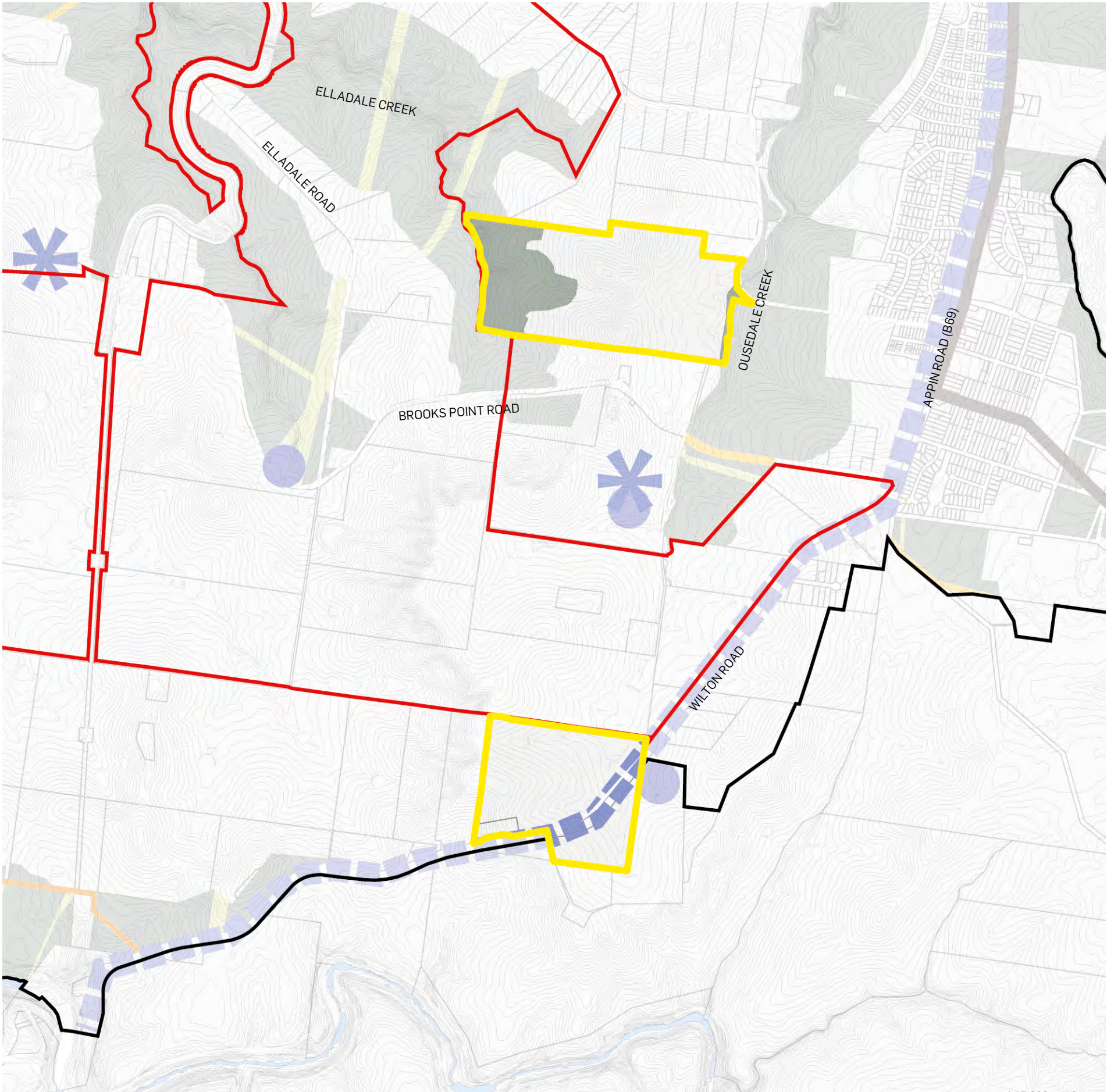


Figure 31 Existing Noise and Emissions Sources

EXISTING INFRASTRUCTURE & EASEMENTS

There is existing infrastructure and easements that traverse the subject sites. Investigations undertaken by IDC and Walker identified infrastructure that will need to be retained and that which will comprise components of the Appin (Part 2) Precinct Structure Plan infrastructure delivery.

WATER SUPPLY EASEMENT

A 10-15m wide water supply easement runs north through the precinct from the Macarthur WFP will need to be retained. It can be located in residential, commercial and open space, however cannot contain development/works with the exception of road crossings.

- **North Site:** Runs predominantly north-south through the eastern extent of the site with a 135 degree kink half-way through the site.
- **South Site:** Runs immediately adjacent to the eastern boundary within the Macarthur WFP site but is not located within the site.

ELECTRICITY TRANSMISSION EASEMENT

- **North Site:** A 60m wide Transgrid easement for 330KV powerline runs north-south through the centre of the North Site and will need to be removed.
 - Potential uses that can be incorporated into the easement include passive open space, dog parks and road crossings.
 - There is an opportunity to incorporate active recreation walking and cycle pathways into the length of the easement and provide destination open space zones to provide key points of passive surveillance to encourage use of easement corridor.
- **South Site:** N/A.

GAS EASEMENT PIPELINE

- **Gas Pipelines & Easements:** There are 3 high pressure gas transmission lines that traverse the Appin & North Appin Precincts.
- **Additional Restrictions:** There are additional restrictions to certain development in proximity to the gas easement pipelines. A detailed assessment in accordance with *AS2885 Safety Management Statement* and *ALARP Assessment* has been completed and recommends:
 - Pipeline protection measures that allow residential development interface with the pipeline easements.
 - **200m Buffer:** No sensitive use development (such as schools, childcare facilities, hospitals or aged-care facilities) within 200m of the Jemena Central Trunk Main (CTM).
 - **747m Pipeline Measurement Length:** Specific safety management statement required for sensitive uses within this measurement length.
- **North Site:** The 200m buffer and 747m pipeline measurement length both extend across the north site.
 - The **200m Buffer** is located within the CPCP Avoided Land and therefore will not contain any development.
 - The **747 Pipeline Measurement Length** extends into the site and a safety management statement will be required.

A10-15 meter wide water supply easement passes along the eastern end of the site.

- **South Site:** A10-15 meter wide water supply easement passes along the site, South of Wilton Road.

Key Findings

- Discussions with key Utility Authorities and findings from various services studies/assessments for the area indicate that capacity in the existing network is available in the interim through additional infrastructure and service line upgrades.
- Future growth during the course of the development will require augmentation to the infrastructure with planning underway with the utility authorities to accommodate the proposed growth for the area.

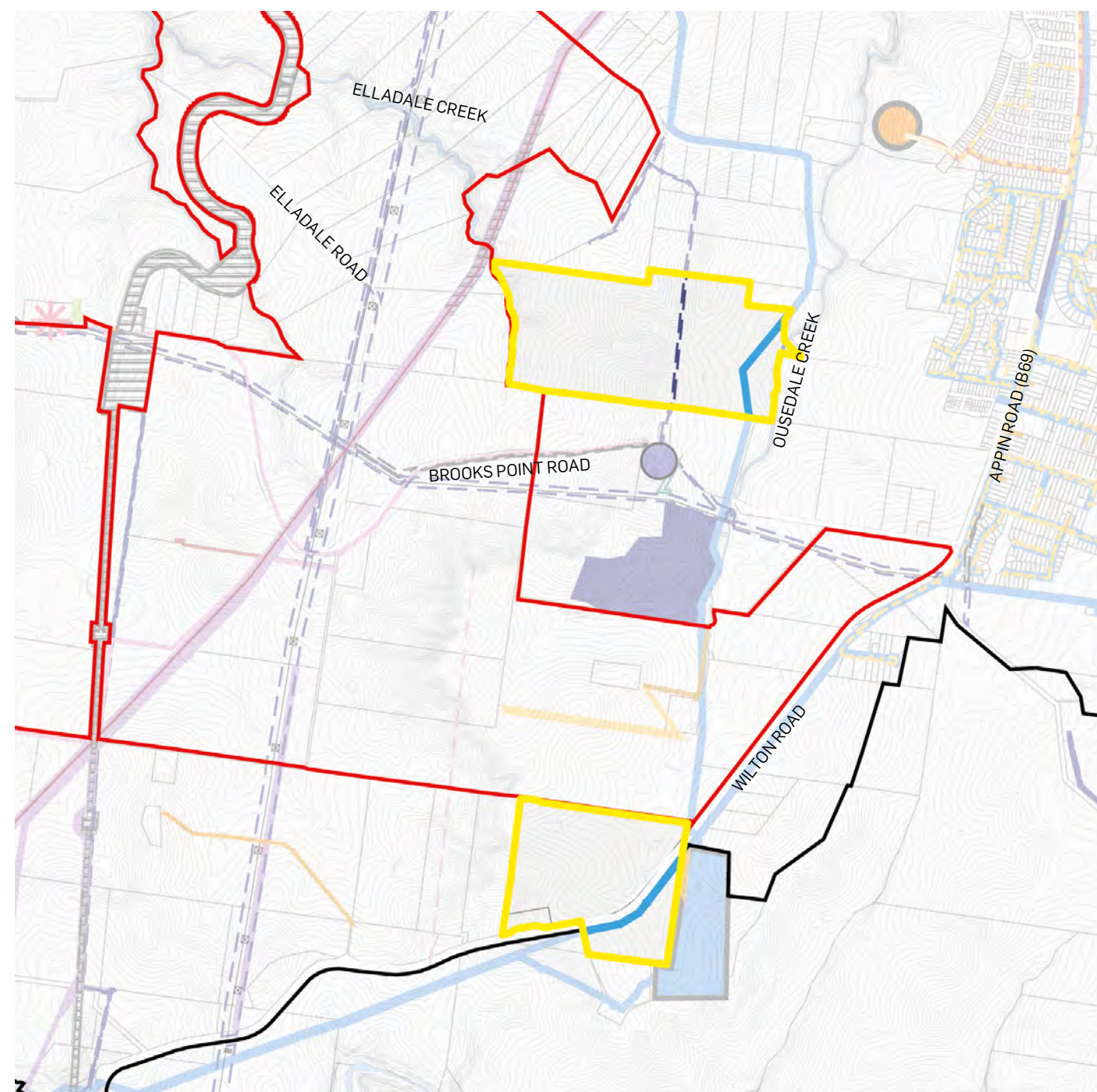


Figure 32 Existing Infrastructure and Easements

LEGEND

— Appin & North Appin Precincts

— Appin (Part 1) Precinct

— Appin (Part 2) Precinct

WATER & SEWER

— 10-15m wide Water Supply Easement - Retained.

--- Existing Sewer Lines - Appin Village

Upper Canal

Existing Macarthur Water Filtration Plant

GAS

— High Pressure Gas Transmission Pipeline Easements - Retained

- Jemena JGN Main.
- Eastern Gas Ethane
- APA Sydney Moomba Ethane

747m wide Pipeline Measurement Length - Safety Management Statement required for sensitive uses.

200m Pipeline Easement Buffer - No Sensitive Uses

ELECTRICITY

--- 60m wide Transmission Easements 330KV Powerline - Retained

* DPE investigation undertaken prior to the Appin Vale AS2885 Safety Management Statement and ALARP assessment. These more detailed assessments recommend pipeline protection measures that will allow residential development interface with the pipeline easements.

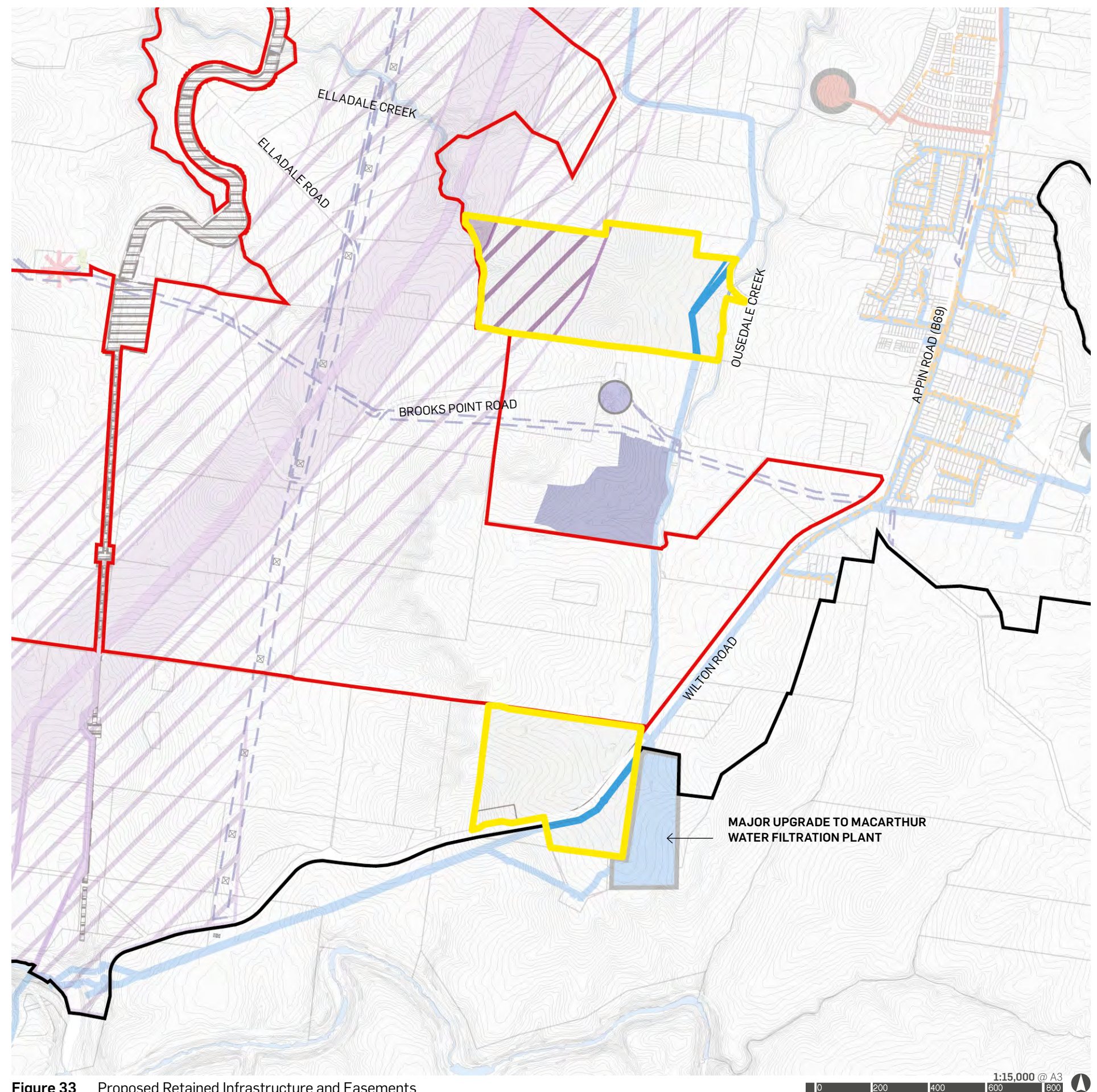


Figure 33 Proposed Retained Infrastructure and Easements

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BUSHFIRE

A Strategic Bushfire Assessment was undertaken by EcoLogical and WSP to review the Appin (Part) Precinct Structure Plan in relation to the strategic planning principles outlined in *Planning for Bushfire Protection (PBP) 2019 (NSW RFS, 2019)*.

The Appin (Part 2) Precinct is subject to the following bushfire impacts:

- **North Site:** The eastern part of the site contained existing vegetation identified as CPCP Non-Certified Avoided and will be retained. This is identified as Vegetation Category 1 and Vegetation Category 2. A Bushfire Prone Land Buffer is required adjacent to this vegetation.
- **South Site:** No current bushfire vegetation is identified within the site. There is a small area of bushfire prone buffer sits to the western boundary of the site.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Existing Waterways
- ⦿ Neighbourhood Safer Places (NSPs)
- Bush Fire Prone Land Category
 - Vegetation Category 1
 - Vegetation Category 2
 - Bushfire Prone Land Buffer

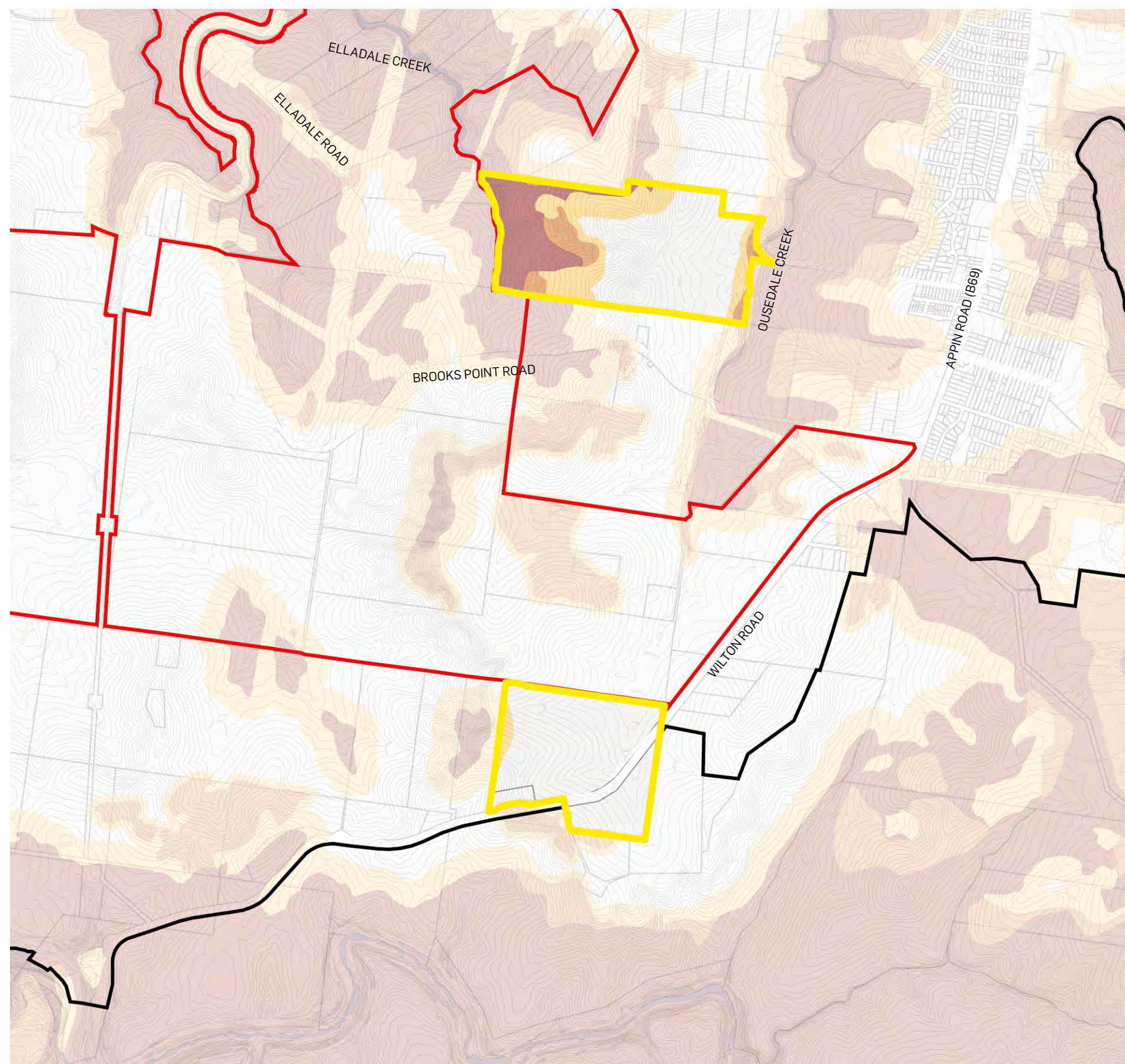


Figure 35 Bushfire Hazard

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SHAPING THE STRUCTURE PLAN

Technical studies were also undertaken to provide more detail on the requirements and outcomes for the entire Appin (Part 2) Precinct. These outcomes have been identified as a series of key directions that set out the structuring elements and requirements for the Appin (Part 2) Precincts Indicative Plan.

Additionally, the following assumptions around development have formed the basis of these investigations:

Table 8 Technical Investigations Assumptions

ITEM	ASSUMPTION
Housing	1,312 Dwellings
Population	3,709 People

KEY INVESTIGATIONS



01 STRATEGIC TRANSPORT NETWORK ASSESSMENT

Refinement of the strategic transport infrastructure and regional connectivity required through the Appin & North Appin Precincts in accordance with *Future Transport 2056* and *GMGA 2040* directions.



02 RETAIL, CENTRES AND EMPLOYMENT

Refinement of the centres hierarchy and retail provision required to provide a network of complementary, mixed-use centres throughout the Macarthur Region in accordance with *Western Parkland City District Plan* and *GMGA 2040*.



03 SOCIAL INFRASTRUCTURE ASSESSMENT

Identification of the social infrastructure provision for the Appin & North Appin Precincts aligned with best practice benchmarking, Government Agency guidance and local Council requirements.



04 OPEN SPACE & RECREATION NEEDS ASSESSMENT

Identification of the open space provision for the Appin & North Appin Precincts aligned with best practice guidance, local Council requirements and responding to the unique place characteristics and natural features of the Appin & North Appin Precincts.



05 UTILITIES AND SERVICES ASSESSMENT

Identification of the required utilities and servicing requirements to support the development of the Appin & North Appin Precincts aligned with Service Providers requirements and infrastructure plans.

STRATEGIC TRANSPORT NETWORK

The Strategic Transport Network outcomes identified for the Appin (Part 2) Precinct sites have been depicted as per the refined alignment set out in the Appin Precinct Indicative Plan. The refined alignments are consistent with the GMGA 2040 Interim Plan and Draft SIC. The site specific outcomes are identified below.

EAST WEST CONNECTION ROAD

North Site: Aligned north-south to the west of the local centre.

South Site: N/A.

Includes the following key outcomes as per the Appin (Part 1) Precinct planning proposal:

- **Function:** Sub-arterial road.
- **Design:** 40m wide corridor with 2 lanes in either direction. Future proofed to be upgraded to 3 lanes in either direction if required. Proposed 60km/hr design speed.
- **Alignment:** Refined intersection with Transport Corridor and crossing location through Ousedale Creek.
- **Intersections:**
 - Signalised intersection proposed with Transit Corridor in the south of the site.
 - Additional controlled intersections where 4 way intersections are required.
 - Where possible, limit intersections to main connecting roads such as Collector roads or otherwise provide left in/left out treatments where required.

MACARTHUR TRANSPORT CORRIDOR

North Site: Aligned north-south to the east of the local centre.

South Site: N/A.

This is identified to provide high quality bus (or similar) services that are fast, frequent and direct from day one of occupation as per TfNSW commitments to public transport programs for residents of new release areas in *Future Transport 2056*. Key outcomes are:

- **Function:**
 - High capacity (trunk) service from the Appin Development to Macarthur along the Transit Corridor with a service every 2 to 3 minutes is required.
 - A future possible extension of the Transport Corridor to Douglas Park Station.
- **Design:** 45.2m wide corridor width
 - Public transport lane in either direction
 - 2 vehicle lanes in either direction
 - Active Transport lanes
 - Bus stops or equivalent with shelter, seating, bicycle locking and next bus arrival displays.
- **Alignment:**
 - Refined intersection with the East West Connection Rd crossing Ousedale Creek to the north and aligned through the local centre.
- **Intersections:**
 - Signalised intersection proposed at East West Connection Road.
 - Additional controlled intersections where 4 way intersections are required throughout the development due to size of corridor. Where possible, limit intersections to main connecting roads such as Collector roads or otherwise provide left in/left out treatments where required.

APPIN ROAD UPGRADE AND BYPASS

North Site: N/A.

South Site: Proposed sign-controlled intersection along the existing Wilton Road falls within the site.

LOCAL AND COLLECTOR ROADS

North Site: Applicable.

South Site: Applicable.

All local and collector roads are to provide for and encourage active transport modes through wide footpaths and controlled pedestrian crossings at signalised junctions.

- It is envisaged that the local bus network would include local services connecting each neighbourhood to the Appin Town Centre with 10 services per hour.
- Road corridor widths and configuration to generally align with the Wilton DCP.
- Neighbourhood Centres would typically sit adjacent key Collector Roads.
- Perimeter Roads would be delivered around the Biodiversity corridors to align with RFS guidelines.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- LGA Boundary
- Conservation Land (CPCP)
- Public Transport Corridor
- East-West Connection
- Proposed Traffic Signals
- Proposed Sign-controlled
- Roundabout
- Excluded Land

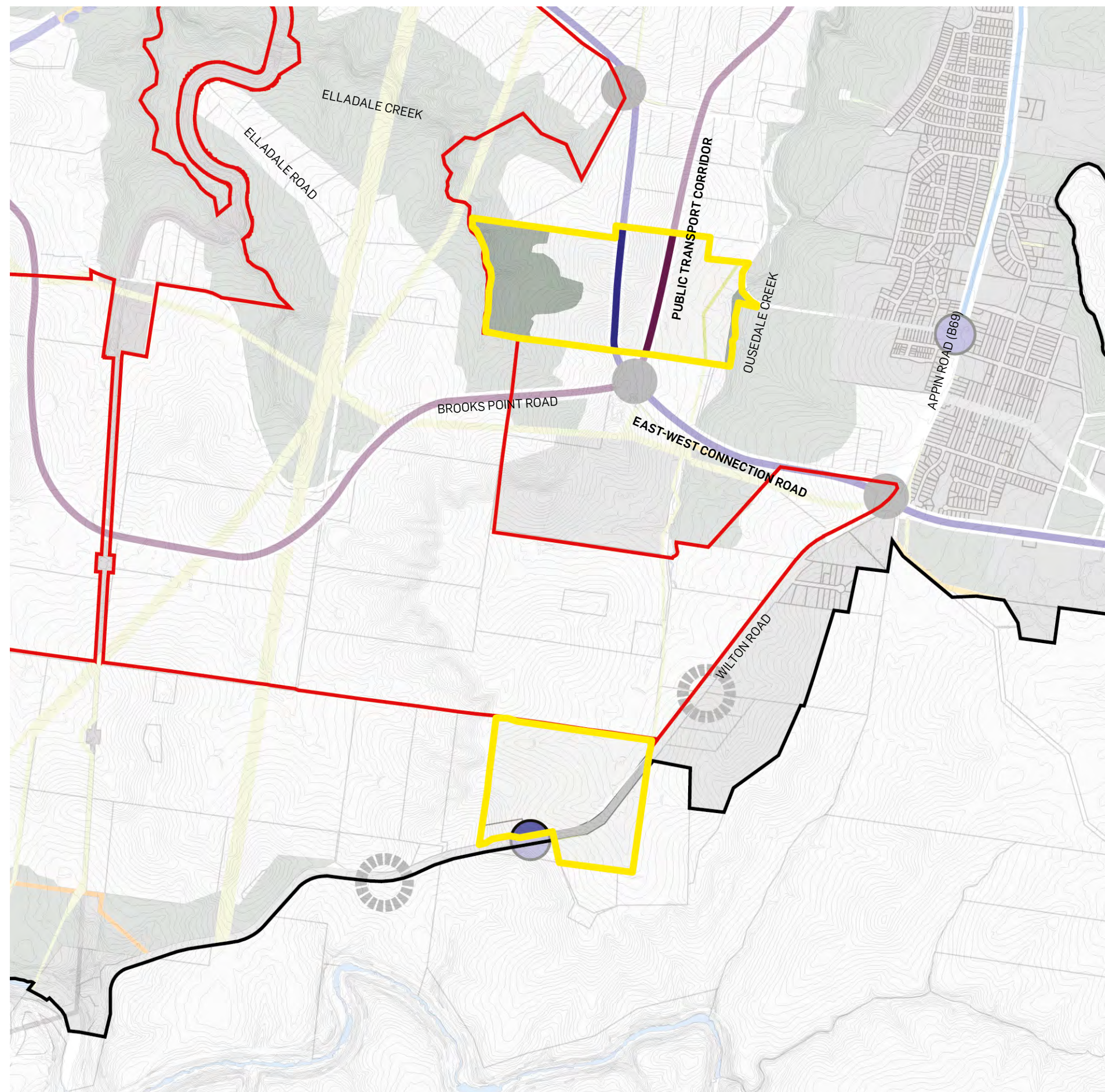


Figure 36 Future Movement Network Plan

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RETAIL, CENTRES & EMPLOYMENT

The Retail and Centres Strategy prepared by Urbis for the Appin (Part 1) Precinct has been updated to accommodate the changes to the GMGA 2040 - 2022 Structure Plan Update. In 2022, DPE provided an update to the GMGA 2040 Structure Plan which provided updated centres and employment strategies. A summary of this has been provided in Part A of this Report.

RETAIL AND CENTRES PROVISION

This section of the report has been updated from the Appin (Part 1) Precinct Urban Context Report to reflect the GMGA updates.

North Site: Accommodates the proposed Appin Local Centre which is identified in the Appin (Part 1) Precinct Planning Proposal as:

- **Appin Local Centre:** Based on existing and future projected retail provision one larger Local Centre in Appin could support **30,400 sq.m of retail and ancillary non retail floorspace at capacity**, including the following:
 - 7,000 sq.m DDS
 - 9,500 sq.m of supermarket floorspace based on two full line supermarkets (4,000 sq.m each) and a smaller format supermarket (1,500 sq.m)
 - 2,300 sq.m of mini major floorspace
 - 6,400 sq.m of retail specialty floorspace
 - 5,200 sq.m of non retail and ancillary floorspace, including a mix of gym, medical, childcare, personal services, entertainment, civic and office floorspace.

South Site: No centre proposed. Located within approx. 2km walking distance of a Neighbourhood Centre.

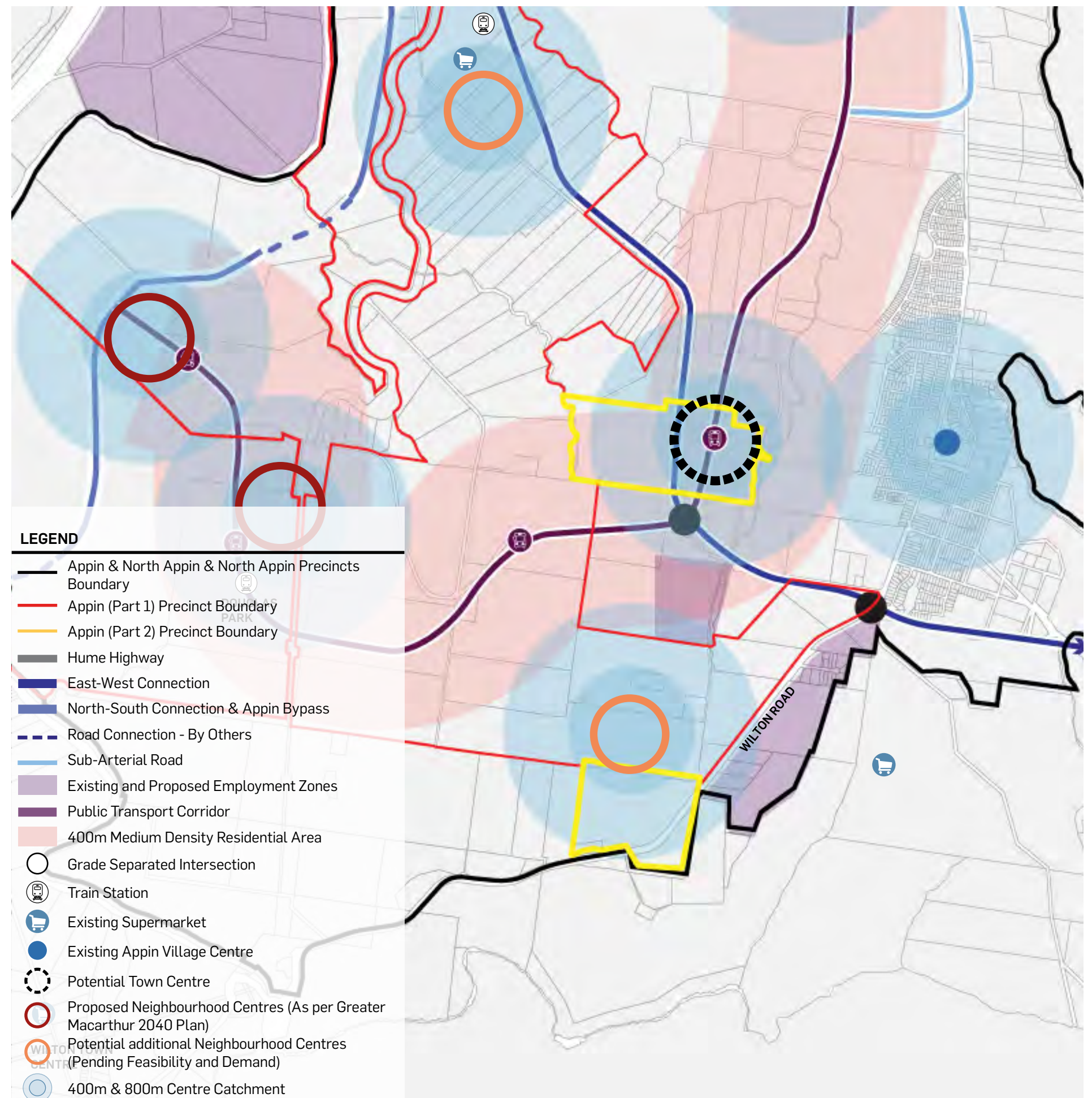


Figure 37 Retail, Centres and Employment Directions

SOCIAL INFRASTRUCTURE, OPEN SPACE & RECREATION NEEDS ASSESSMENT

The Appin (Part 2) Precinct Social Infrastructure and Open Space Assessment prepared by Urbis is based on the Social Infrastructure and Open Space and Recreation Needs Assessment's for the Appin & North Appin Precincts. It recommends the following outcomes for the Appin (Part 2) Precinct:

LOCAL SOCIAL INFRASTRUCTURE

Future Local Services Requirements

- Multi-purpose Community Centres:
 - 1 x District facility with an integrated library of approximately 4,420 sq.m, comprising of a multi-purpose community space, library space, and shared meeting spaces, staff spaces and amenities. Co-located with Local Centre.
- Education:
 - One co-located primary and high school.
- Childcare:
 - 1 - 2 long day care centres: average of 90 children.
 - 1 - 2 outside of hours school care centre with an average of 80 children.
- Health:
 - Look to provide adaptable spaces within community facilities to accomodate health services.

LOCAL OPEN SPACE

Future Local Open Space Requirements

- **10% NDA for District and Local Open Space provision** equates to 9.07 ha. This includes structured and unstructured recreation spaces.
- **District Parks** : total 7.08 ha recommended
 - District Parks for structured recreation should be 2-4ha in size. A total of 1.20 ha is recommended - need breakdown for each north and south site.
 - District Parks for unstructured recreation to be approximately 5.88 ha.
- **Local parks:** Based on open space provision above, an additional 1.99 ha of local parks is required to be distributed throughout the Appin (Part 2) Precinct Structure Plan Residential neighbourhoods from 0.5-2ha in size. Accessibility is to be 400-500m from most houses.

Recreation Facilities:

- Identified population growth is likely to generate demand for a range of outdoor recreation facilities, including:
 - double playing fields
 - outdoor courts
 - play spaces
 - outdoor fitness stations.

NOTE: Regional Park provision for the whole of the Appin & North Precincts is identified to be located at the Gathering and Resource Cultural Value place located between Elladale and Simpsons creeks and framed by Conservation Land. No provision is required to be provided by the Appin (Part 2) Precinct.

UTILITIES & SERVICES ASSESSMENT

IDC have prepared an Infrastructure Phasing Plan to support the Appin (Part 2) Precinct. The purpose of this study was to identify requirements for staged implementation of trunk utilities and Special Infrastructure Contribution (SIC) infrastructure and provide a high-level strategy for servicing the precinct and to guide future detailed design.

This assessment was informed by:

- Existing utility services within the vicinity of the site
- Current and planned utility projects including capacity
- Planned SIC infrastructure
- Indicative yield and staging of the proposed development
- Potential servicing strategies for the proposed development within and outside the precinct
- Topography assessment.

Key Findings

- Based on the findings of various services reports, additional infrastructure and service upgrades will be required to accommodate future growth.
- Priority services can be augmented to service the development within the Appin (Part 2) Precinct Structure Plan.

LEGEND:

- Appin & North Appin & North Appin Precincts Boundary
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- - - LGA Boundary
- Existing Water Supply Network
- Excluded Land

* Infrastructure location subject to detailed design

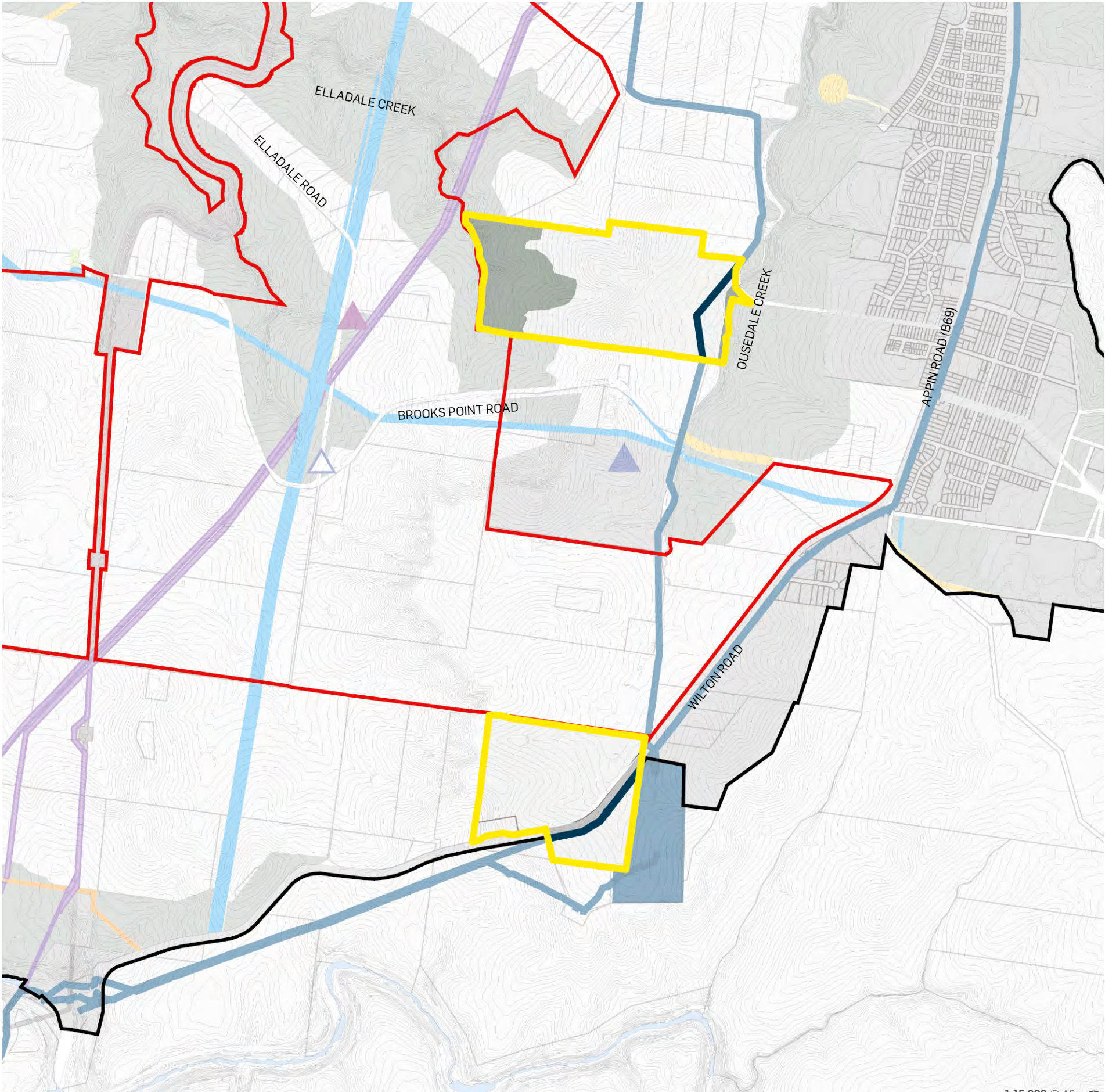
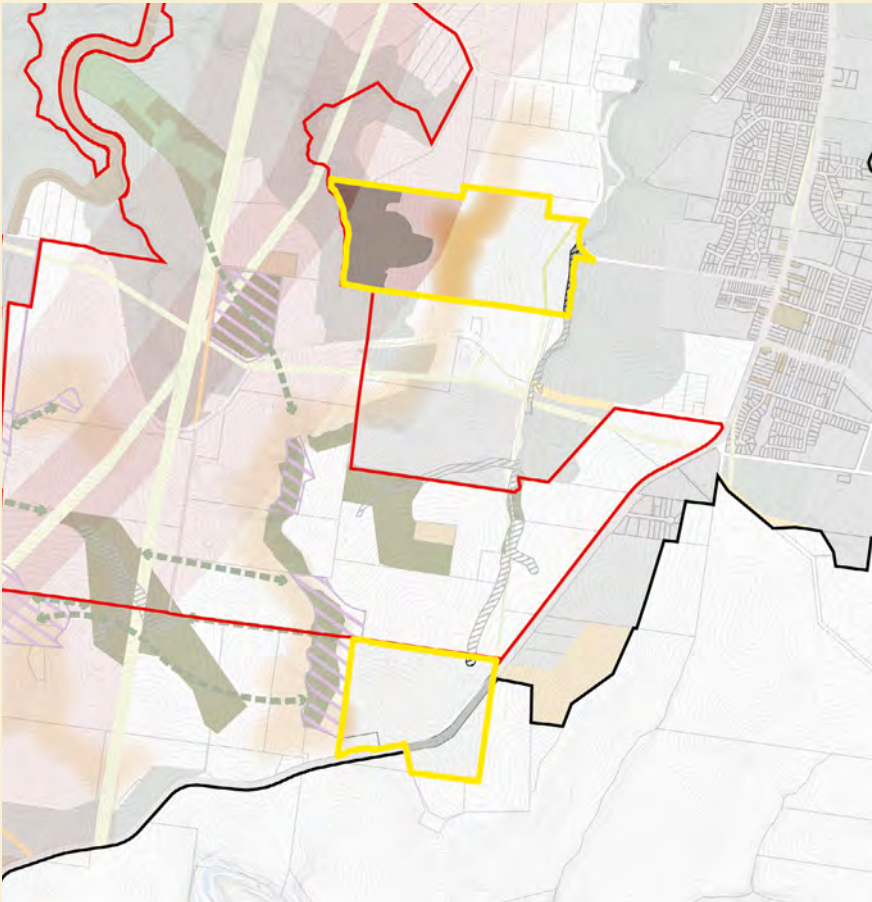


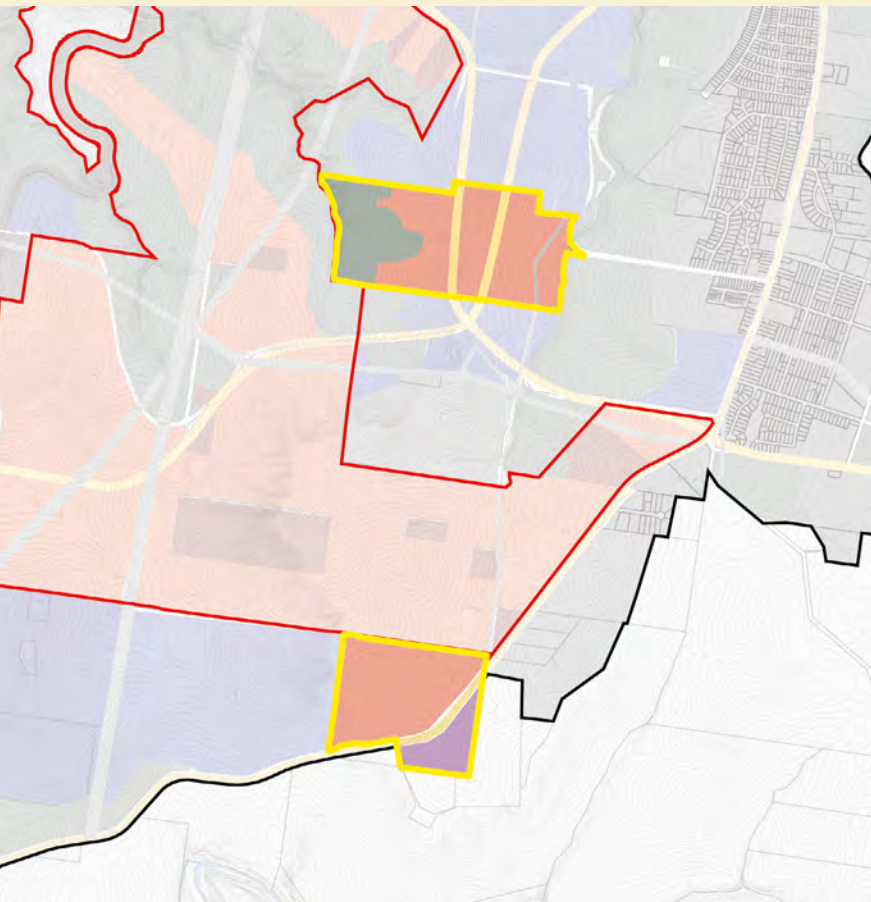
Figure 38 Utilities and Services Assessment

CONSOLIDATED SITE CONSTRAINTS



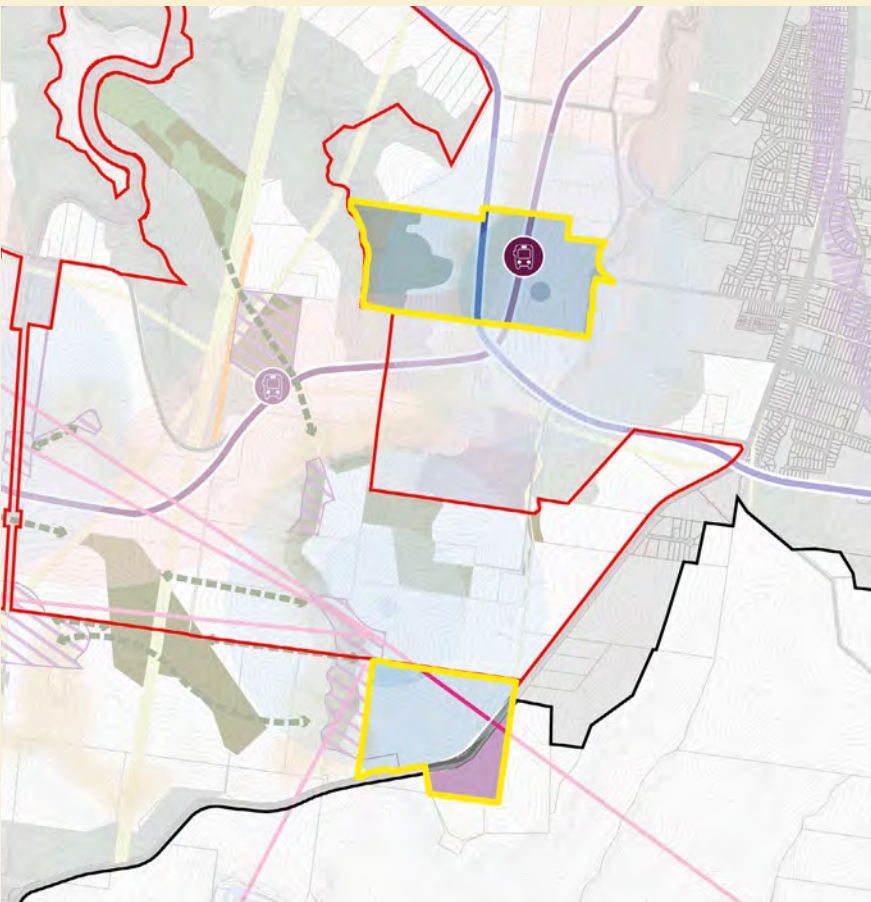
The consolidated site constraints sets out the key development restrictions for the precinct. It is noted that these restrictions do not present any issues in facilitating overall redevelopment of the Precinct.

NET DEVELOPABLE AREA



The net developable area plan identifies the excluded areas and key infrastructure required to facilitate development. This also inform calculations regarding key outcomes such as open space.

APPIN (PART 2) PRECINCT STRUCTURING ELEMENTS



The Appin & North Appin Precincts Structuring Elements sets out the key recommendations for development and layers them on top of one another to provide the framework for the Appin (Part 2) Precinct Structure Plan.

CONSOLIDATED SITE CONSTRAINTS

Synthesis of the existing site conditions and outcomes of the technical studies and ground-truthing have identified a consolidated list of site constraints. Assessment of these constraints have confirmed:

- There are no major issues that prevent redevelopment of the precinct.
- The majority of the land within the Appin (Part 2) Precinct is not constrained for development.
- Areas of 'no development' also present opportunities to incorporate place and cultural values outcomes into the precinct providing Connection to Country.
- Existing easements and required buffers can be managed and present the opportunity for active and passive recreation opportunities and well a urban biodiversity outcomes.
- Location specific responses to topography present an opportunity to provide housing diversity and create distinctive neighbourhoods.

Key Constraints: Topography, Vegetation & Waterways

North site:

- **Conservation:** CPCP Non-Certified - Avoided land is to become C2 Conservation Land and dedicated for conservation.
- **Bushfire:** Establish definitive Asset Protection Zones addressing category 1 of Bush Fire Prone Vegetation for the Appin (Part 2) Precinct structure plan.
- **Topography:** Consider location specific design responses to steep land through the detailed design phase where possible.

South site:

- **Topography:** Consider location specific design responses to steep land through the detailed design phase where possible.

Key Constraints: Heritage & Cultural Values

South site:

- Retain **Connections with Country** through:
 - Retain sight lines between key locations.

Key Constraints: Infrastructure

North site:

Easements: Existing easements will need to be retained within Appin (Part 2) Precinct Structure Plan:

- **10-15m wide Water Supply Easement:** along Ousedale Creek alignment within the Northern site. It can be located in residential, commercial and open space land, however cannot contain development/works with the exception of road crossings.
- **The Jemena JGN Main Gas pipeline:** The 747m and 200m buffer sit within the North site.
 - **747m Buffer:** Sensitive uses development permitted.
 - **200m Buffer:** No sensitive uses development permitted. Excluded uses are schools, hospitals

NET DEVELOPABLE AREA

The *Net Developable Area (NDA)* identified for the Appin (Part 2) Precincts is the area that is suitable for development after all the excluded areas are removed.

Table 9 Net Developable Land Calculations

CATEGORY	APPIN (PART 2) PRECINCT	
	AREA (HA)	AREA (%) GROSS
TOTAL APPIN (PART 2) PRECINCT	100.10	100%
	8.38	8.37%
Employment Lands	8.38	
NET DEVELOPABLE EXCLUSIONS	22.37	22.35%
Conservation Land Dedication	17.64	
Easements	0.47	
Proposed SP2 Roads	4.25	
NET DEVELOPABLE AREA	69.35	69.28%

LEGEND

Appin & North Appin Precincts

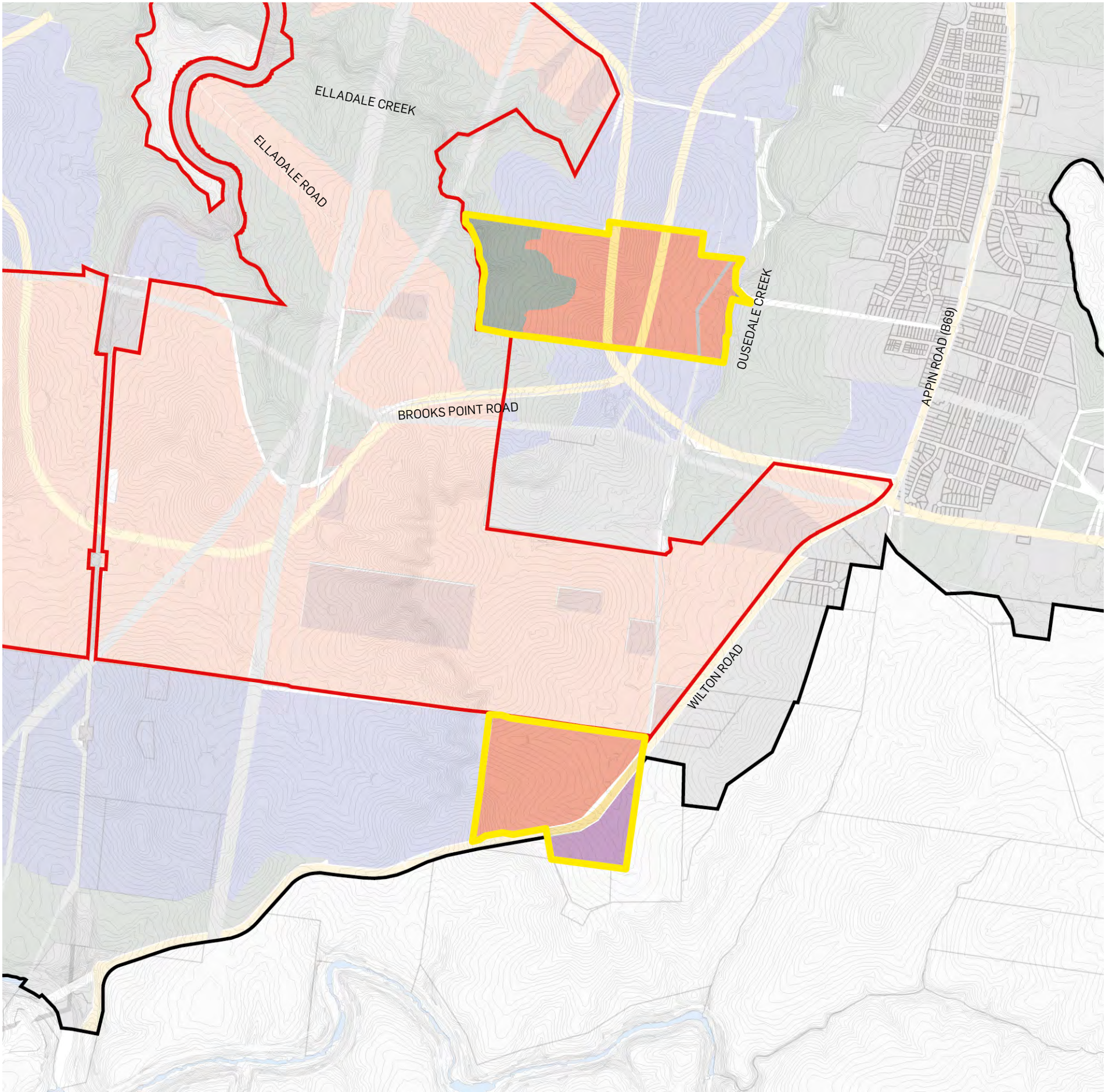
Appin (Part 1) Precinct

Figure 39 Appin (Part 2) Precinct Net Developable Area Plan

APPIN (PART 2) PRECINCT STRUCTURING ELEMENTS

The following refinements to the Structuring Elements for the Appin (Part 2) Precinct Plan were identified through these technical studies:

- **Both Sites:**
 - Identification of cultural values and Connecting with Country outcomes for the precinct.
 - Identification of open space, social infrastructure and recreational requirements to support the provision of approx 1,312 homes and 3,709 people within the precinct.
 - Confirmation that infrastructure to support the precinct can be delivered and is being planned for.
- **North Site:**
 - Protection of CPCP Non-Certified Avoided lands outcomes whilst delivering key infrastructure requirements.
 - A refined alignment for the Macarthur Public Transport Corridor in response to local topography and additional site constraints.
 - Part of the Strategic Road Network supported by TfNSW comprising part of the East-West Connection road through the North Site connecting Macquaridale Road bypassing to the south of Appin Village to Appin Road.
 - A mixed-use Local Centre.
- **South Site:**
 - Protection of Water Catchment Land by dedicating as open space within the precinct.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- LGA Boundary
- East-West Connection
- Public Transport Corridor
- Ⓡ Bus Stop (indicative)
- Conservation Area
- Employment Lands
- Excluded Land
- Important View Lines
- ▨ Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape)
- Ⓢ Local Centre
- 400m Medium Density Residential Area around area amenity and transport provision

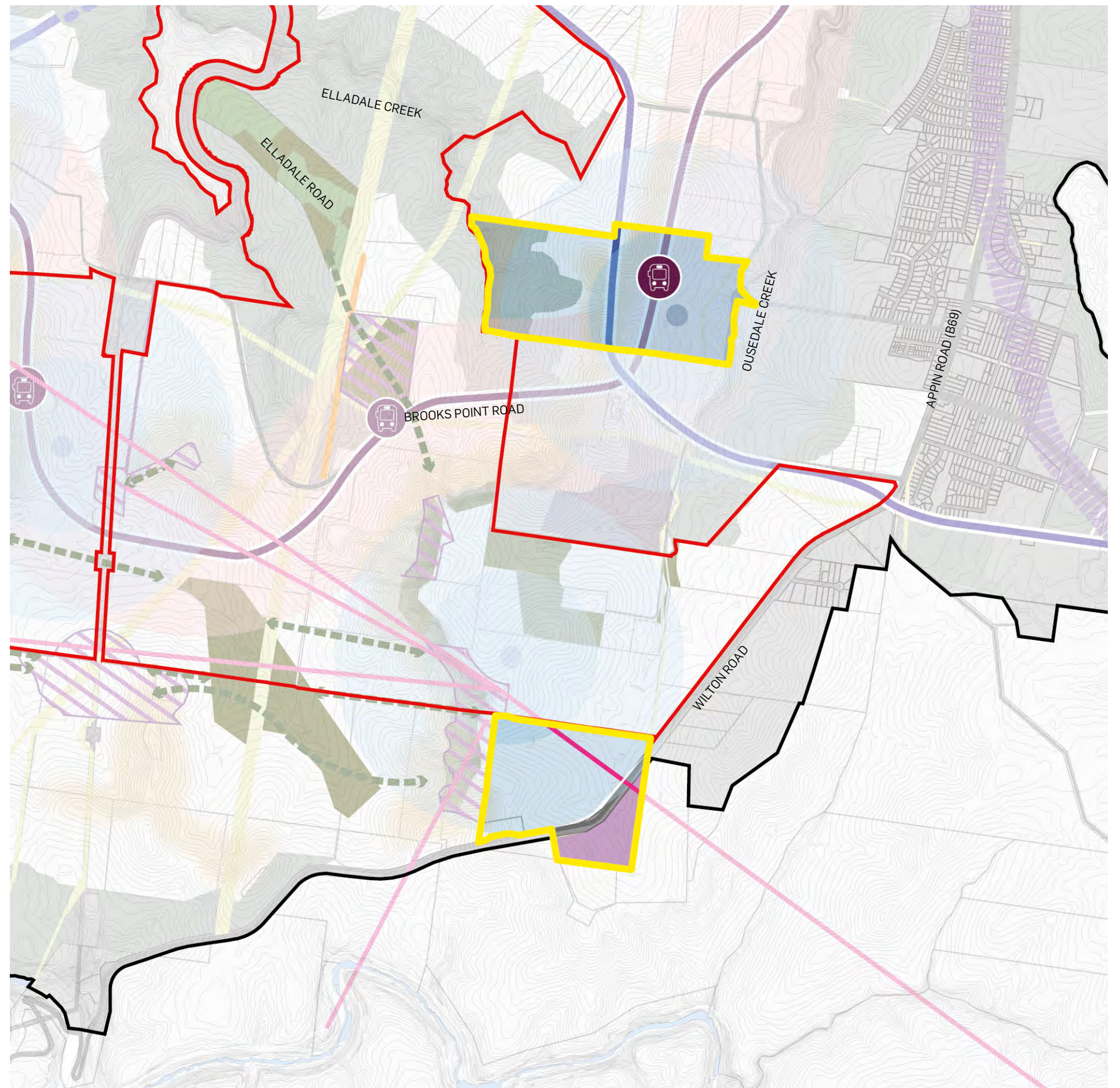


Figure 40 Appin (Part 2) Precinct Structuring Elements

APPIN (PART 2) PRECINCT STRUCTURE PLAN

PART C

The Appin (Part 2) Precinct Structure Plan aligns leading practice principles with the current planning policy framework and local place characteristics of Appin to create a framework for a unique, resilient, connected and self-contained community. The Precinct Plan for Appin (Part 2) Precinct aligns with the Structure Plan and proposes the statutory mechanisms to achieve the precinct outcomes.

This section of the report articulates the vision, design principles and outcomes of the Appin (Part 2) Precinct Structure Plan in the context of the Appin & North Appin Precincts Indicative Plan as a series of layered strategies.

APPIN & NORTH APPIN INDICATIVE PLAN

The Appin (Part 2) Precinct Structure Plan aligns with the Appin and North Precincts Indicative Plan which lays the foundation for a transit-connected community of self-contained, inclusive, mixed-use and walkable urban neighbourhoods set within one of the most unique natural settings in Australia.

The place ethos for the Appin (Part 1 & 2) Precincts is a contemporary urban settlement, framed by the Nepean and Cataract Rivers and serviced by an intermediate transit network. Significant local employment opportunities will offer a unique lifestyle for residents where community living is underpinned by a sense of adventure and exploration. The urban structure delivers diverse urban neighbourhoods, with discernible centres and well-defined edges, placing most residents daily needs within walking distance.

The key principles and objectives underpinning the urban structure are:

Neighbourhood Structure: Foster a sense of community through the creation of urban neighbourhoods, each with a distinct theme and character - sufficient to sustain locally-based community facilities and services, enabling all residents to be within a 5-10 minute walk of community amenities and open space. The ability to work from home and the provision of local workplaces, close to home, will be a central tenet of the urban structure.

Place Identity: Create a contemporary community with its own identity, achieved through caring and planning for Country, cohesive landscapes, built form which respects and reflects the landscape, public art and investment in the early provision of community facilities.

Respecting Nature: Retain and celebrate the site's natural features including riverine corridors, koala habitats, wetland landscapes, remnant vegetation and unique landforms .

Array of Open Spaces: Create a network of open spaces encompassing ecological corridors and greenways that integrate with adjoining conservation reserves.

Inclusive: Support community diversity through the provision of a range of housing forms for all ages and incomes.

Efficiency: Achieve efficiencies in project delivery, including cost efficient infrastructure solutions, efficient design, and private and public sector partnerships.

Innovation & Adaptability: Be innovative in all facets of planning, design and implementation and to ensure the development is able to adapt to advances in technology, community lifestyle and housing preferences.

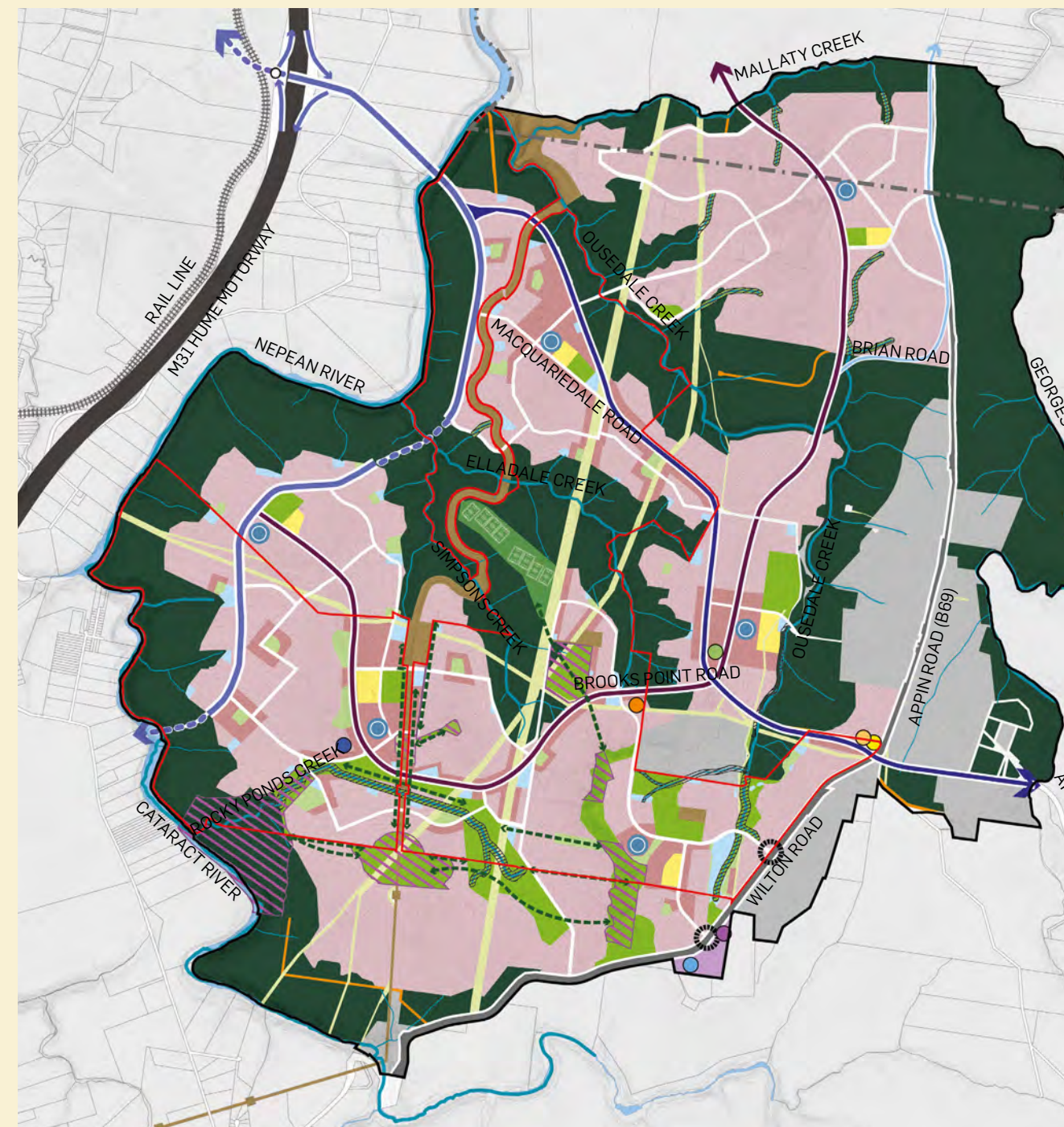


Figure 42 Appin & North Appin Precincts Indicative Plan

APPIN (PART 2) PRECINCT STRUCTURE PLAN

The Appin (Part 2) Precinct Structure Plan is set out opposite.

LAND USE

Appin & North Appin Precincts

Appin (Part 1) Precinct

Appin (Part 2) Precinct

Waterways

CPCP Non-Certified Avoided

District Open Space

Local Park

Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape) SHR 02067 Plan 3294

Mixed Use Centres (including retail, schools and district ovals)

School

Standard Density Residential

Medium Density Residential

East-West Connection

Public Transport Corridor

Employment Lands

Collector Roads

Roundabout

Proposed RFS Depot

Proposed Water Recycling Plant

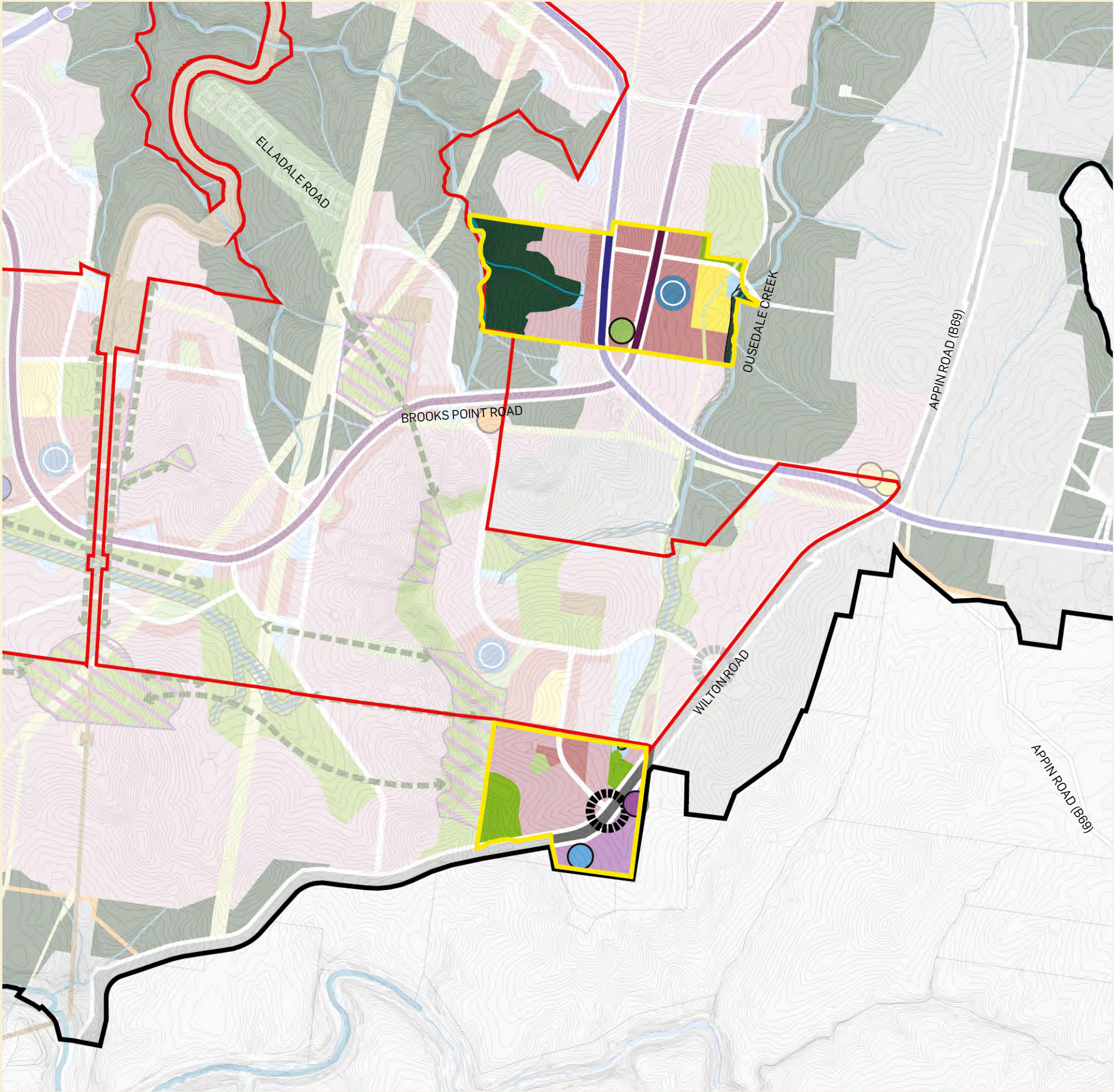
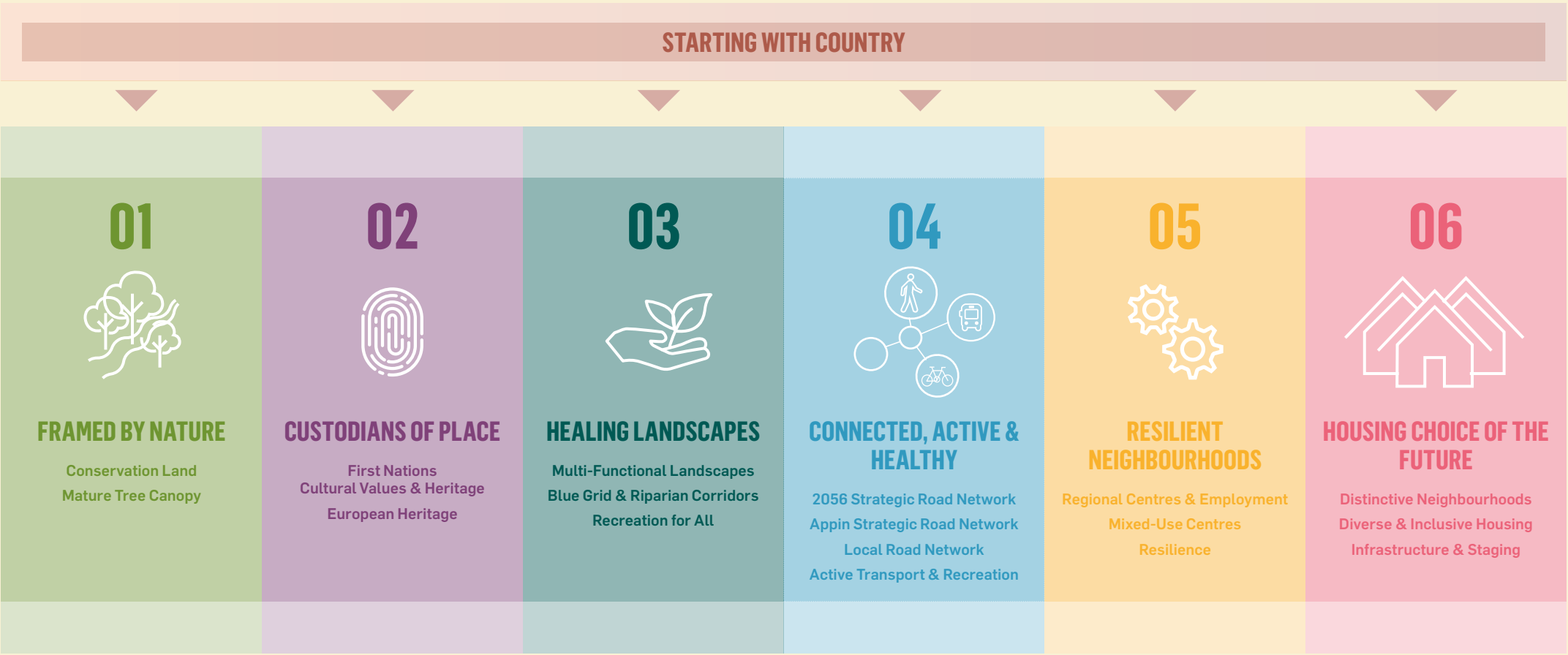


Figure 43 Appin (Part 2) Precinct Structure Plan on the Appin & North Appin Precincts Indicative Plan



6 DESIGN PRINCIPLES

Six Design Principles have informed the Appin (Part 2) Precinct Structure Plan. These are presented as a series of themed Layered Strategies and describe the key planning, design and place outcomes that will shape individual rezoning applications, ensuring they come together into a cohesive and integrated place for people. To ensure alignment with the GANSW Connecting with Country Framework, a Country centred approach to Design underpins our approach for each principle.



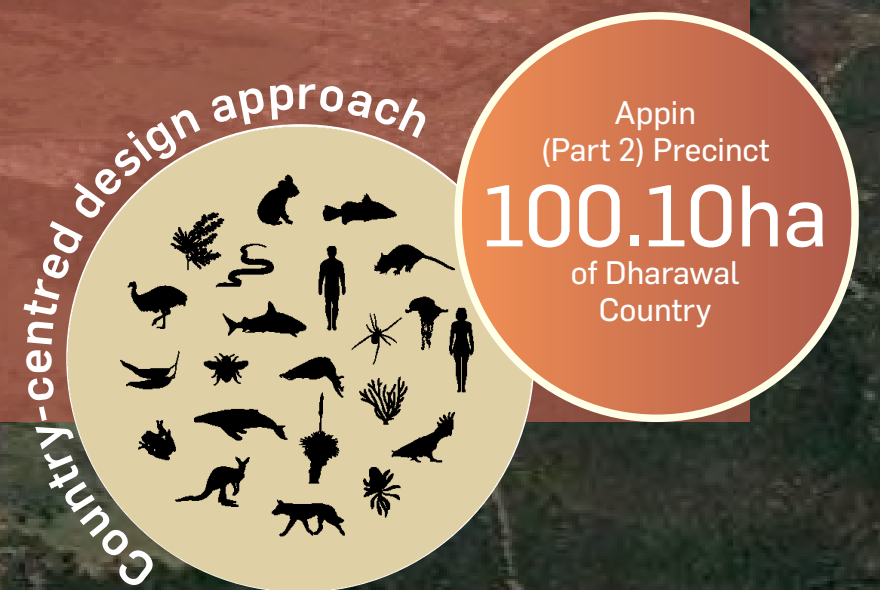
00

STARTING WITH COUNTRY

Located on the Woronora Plateau, aligned to Greater Sydney's Cumberland Plain ridgeline and bound by its incised river gorges, Country is paramount. From the Hawkesbury-Nepean catchment to the Razorback and Blue Mountains, the presence of Country is overwhelming.

Nestled amongst the Cumberland Plain forests, the undulating hills create well defined places, framed in green.

This is Dharawal Country.



STARTING WITH COUNTRY

We acknowledge the Traditional Owners of the land at Appin, and respect the connection of First Nation's people to Country as well as the cultural values, sensitivities and colonial history that exists.

To move forward respectfully, First Nations cultural mapping and the principles of connecting to Country have formed a primary influence for the Appin & North Appin Indicative Plan. The Appin (Part 2) Precinct Structure Plan has been prepared adopting the same six approaches being::

- Adopting a Country-centred design approach.
- Respecting Country
- Caring for Country
- Connecting to Country
- Contribute to Reconciliation.
- Reflect First Nations cultural and spatial knowledge of Country.

SENSING COUNTRY - APPIN

The Appin (Part 2) Precinct is located in the Appin Precinct and comprises the following topography:

- **North Site:** Located on the secondary north-south ridgeline runs through the centre of the site and marks the transition from the Eastern Plateau to the east and the undulating hills to the west. The secondary ridgeline is a distinctive feature of the site and contains localised areas of steep terrain.
- **South Site:** Located at the confluence of the primary and secondary ridgelines and sitting on the Eastern Plateau. This land is afforded with regional and district views towards the Razorback Ranges in the west and across Country through to the south and south-east.

LEGEND

Appin & North Appin Precincts

Appin (Part 1) Precinct

Appin (Part 2) Precinct

2m contours

Low - High

*

Localised High Points

Steep Slope

Primary Ridgeline

Secondary Ridgeline

Plateau

Undulating Hills

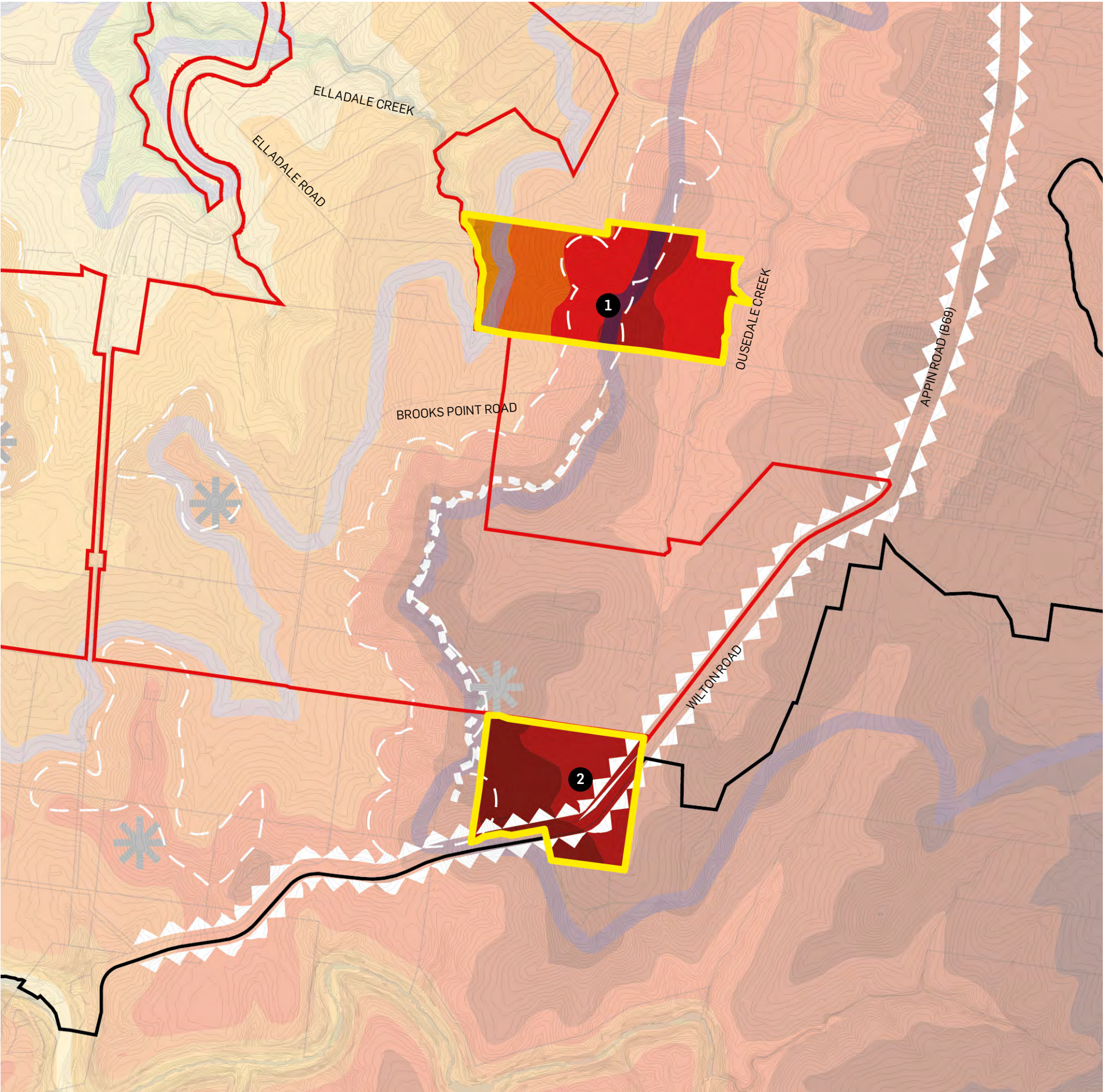


Figure 44 Appin (Part 2) Precinct Topography



01

FRAMED BY NATURE

Appin is located amongst the Cumberland Plain woodlands and framed by the gorges of the Nepean and Cataract rivers.

This woodland will be protected for Koala corridors and biodiversity will be enhanced.

17.6%
of Appin (Part 2) Precinct
dedicated as
conservation land





CONSERVATION LAND

PROPOSED C2 ENVIRONMENTAL CONSERVATION ZONE

The proposed area of C2 Environmental Conservation zone within the Appin (Part 2) Precinct is generally consistent with the CPCP and comprises the following:

- CPCP Non Certified-Avoided**
 - Areas of high-value biodiversity:** Land with threatened ecological communities listed under Schedule 2 of the BC Act, including Protected Koala Habitat and Avoided Koala Habitat Restoration.
 - Riparian corridors and steep slopes.**
- Outcomes for Appin (Part 2) Precinct Structure Plan:**
 - Access:** Will be fenced off.
 - Vegetation:** Ecological restoration of native vegetation will be required.
 - Uses:** Limited access into this area for walking trails to be established with further investigation.

Table 11 Proposed Zoning Outcomes - C2 Environmental Conservation

APPIN (PART 2) PRECINCT		AREA (HA)	%
	PROPOSED C2 ENVIRONMENTAL CONSERVATION ZONE	17.64 ha	100%
	• CPCP Non-Certified Avoided	17.64ha	100%
	• Excluded Land - Existing Easements	-	-
	• Existing roads - proposed to be extinguished	-	-

- NOTES:
- Excluded Land within the CPCP comprises existing roads and easements between CPCP Non-Certified Avoided Land. This land is excluded from the CPCP strategic biodiversity certification and strategic assessment under the BC Act and EPBC Act. These areas will not receive any biodiversity approvals under the CPCP Plan.
 - It is proposed that the zoning of all existing roads within the proposed C2 Environmental Conservation Zone will be considered on a case by case basis either to be retained or to be extinguished.

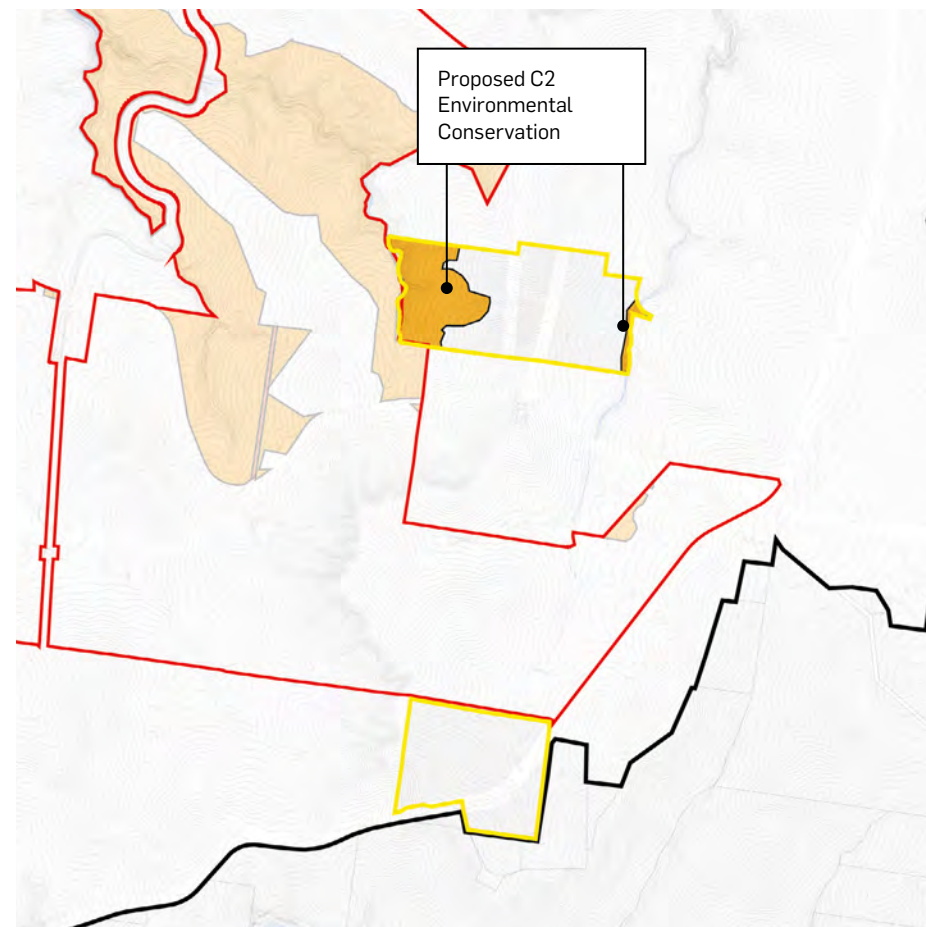


Figure 45 Proposed C2 Environmental Conservation Zone

LEGEND

- Appin & North Appin Precincts
- Appin (Part) Precinct
- Appin (Part 2) Precinct

PROPOSED ZONING

- C2 Environmental Conservation

CONSERVATION LAND COMPONENTS

- CPCP Non-Certified Avoided

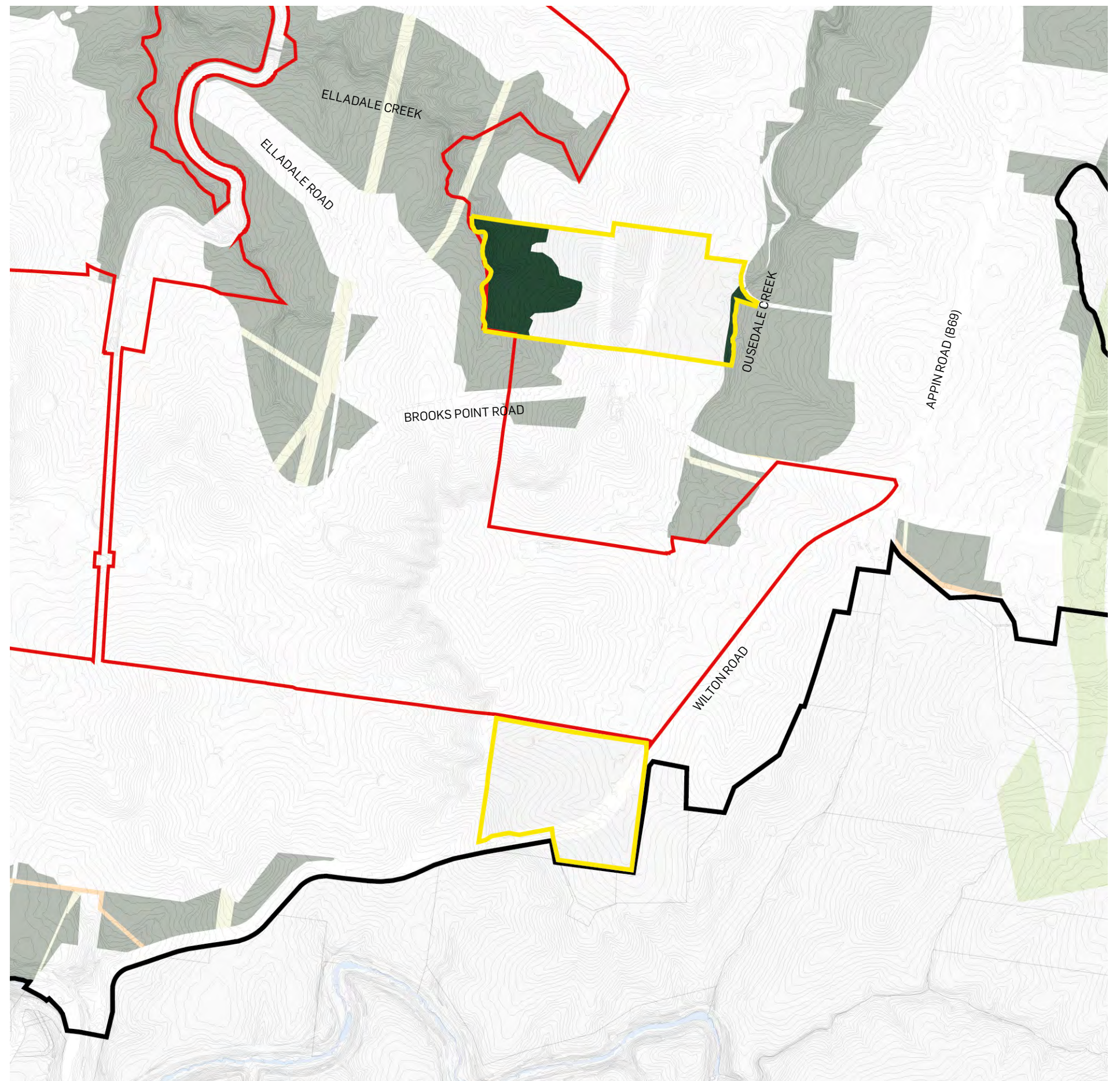


Figure 46 Proposed C2 Environmental Conservation Zone by Component

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02

CUSTODIANS OF PLACE

Country is amplified through interpretation, education, shared language and cultural events. Appin is Dharawal land.

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FIRST NATION'S CULTURAL LANDSCAPE AND HERITAGE

First Nation's Cultural Landscape & AHIMS

The Appin (Part 2) Precinct comprises of the following cultural landscape and heritage features:

- **North site:**
 - There are no areas of cultural and heritage landscape.
- **South site:**
 - One of the five listed areas of the Appin Massacre Cultural Landscape is located immediately adjacent to the north-west boundary of the site.
 - The lines of sight and connection runs through the north-eastern corner from the north-west to the south-east

The First Nation's Cultural Landscape and Heritage Strategy identifies locations of areas of significant Aboriginal cultural landscape that will either be protected from development or could be sensitively integrated within development or open spaces subject to further development through a Designing with Country framework. This includes:

1 Dharawal and Gundungurra Cultural Route

- **Lines of Sight** - development needs to be sensitive to the need to maintain the vistas along these lines

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape) SHR 02067 Plan 3294
- Visual Lines of Sight

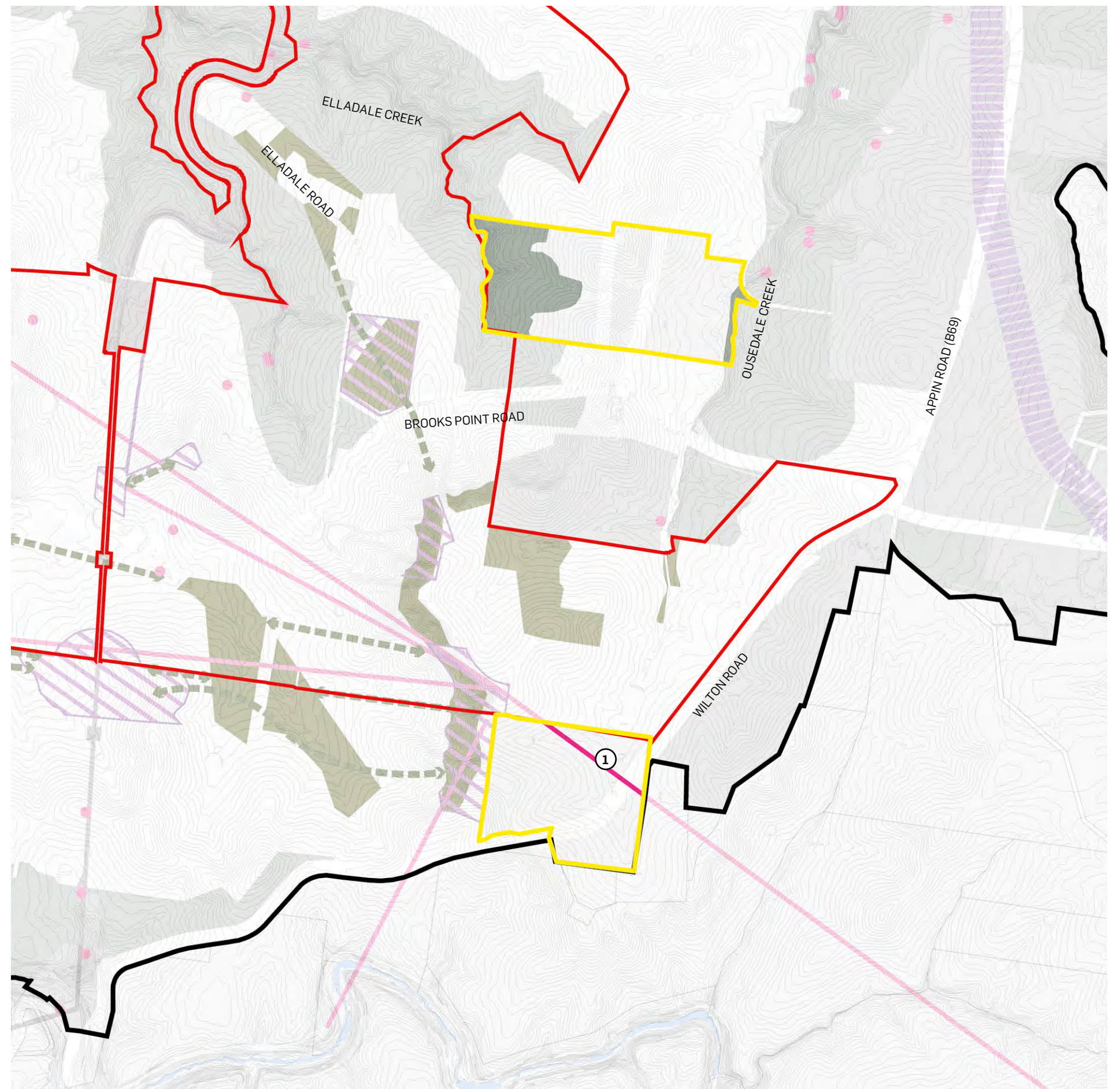


Figure 47 Proposed First Nation's Cultural Landscape Outcomes

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EUROPEAN HERITAGE

The Appin (Part 2) Precinct has no european heritage items, however both sites are within close proximity of local heritage items:

- **North site:**
 - Is within proximity to the Elladale House.
- **South site:**
 - Is within proximity to areas of archaeological constraints to the north of the site.

LEGEND:

Appin & North Appin & North Appin Precincts Boundary

Appin (Part 1) Precinct

Appin (Part 2) Precinct

Local Heritage Item - Homestead

①

Northamptondale House

②

Elladale House

Areas of Archaeological Constraints - numbered items are currently being considered for heritage listing by OEH

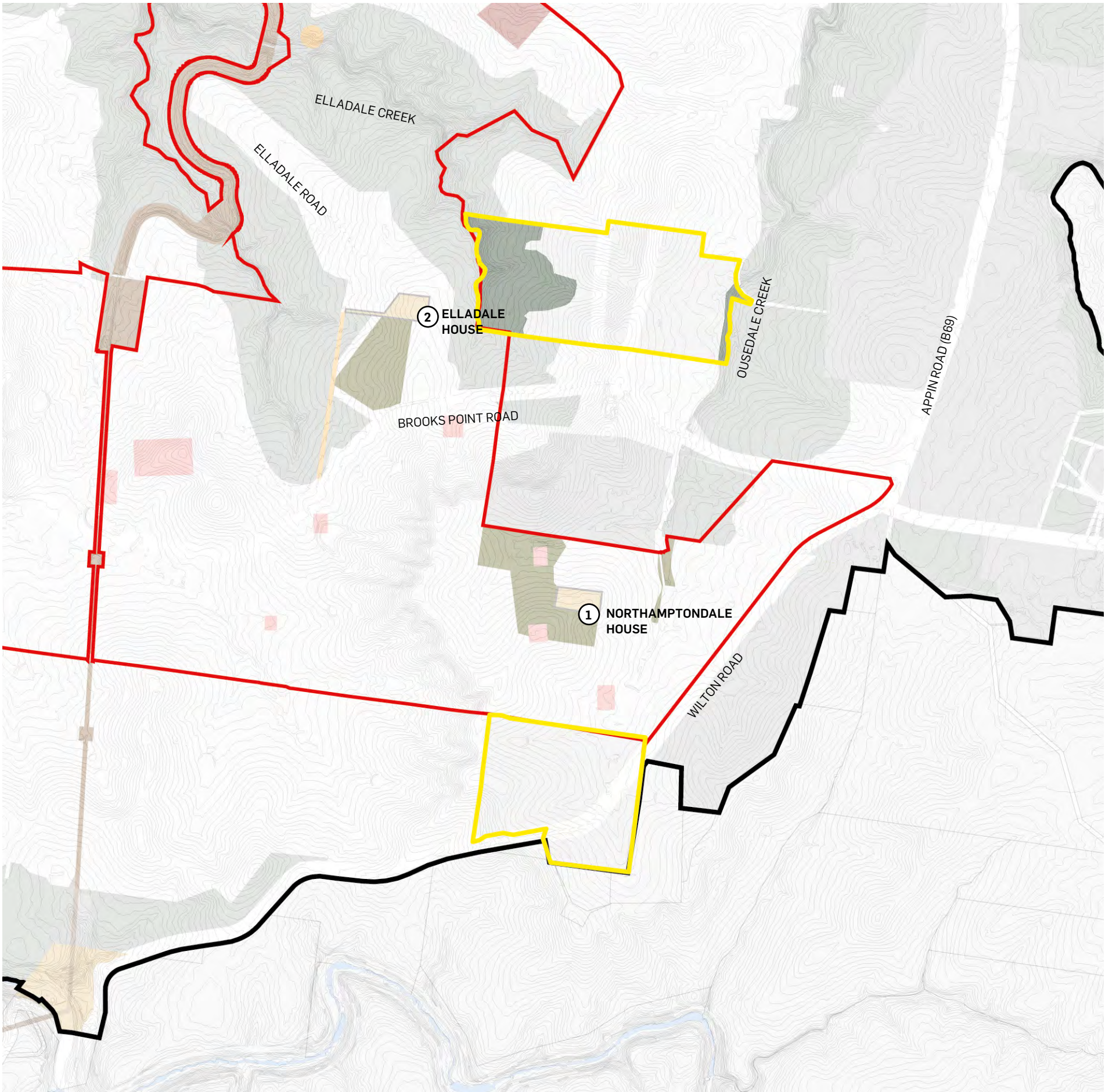


Figure 48 Proposed European Heritage Values Outcomes

03

HEALING LANDSCAPES

Defined by ridgelines and connected through water, each neighbourhood has its own unique character.

Healing landscapes weave throughout, connecting community to place.

Retained mature tree canopy is embellished with tree lined streets and green links.

Our neighbourhoods and centres retain water in the landscape to reduce the urban heat island effect.

26.71ha

Green and Blue Grid
in Appin (Part 2)
Precinct

MULTI-FUNCTIONAL LANDSCAPES

HEALING LANDSCAPES

26.71 ha (26.68%) of Appin (Part 2) Precinct is dedicated to green and blue grid.

To begin and achieve the process of healing we propose to do the following:

- The North and South sites are connected into wider Appin and North Appin Precincts green-blue grid.
- Natural systems provide services for the ecosystem through a combination of physical and biological processes – they are living systems, self-perpetuating growth, transformation and regensis.
- Re-use and re-purpose - materiality and composting: Propose to re-use materials on the site within the construction where possible. Where this is not possible, locally sourced materials that have a significant connection to the site will be prioritised.
- We also propose to have composting facilities at all the community gardens, bush markets and productive garden locations.

Conservation Area

This comprises the identified CPCP Non-Certified Avoided land. It will be fenced and protect koala corridors and habitat.

UNSTRUCTURED RECREATION AND NATURAL AREAS

Riparian Corridors

Riparian restoration and connection of fragmented vegetation with endemic and native ecological communities and species in the area will enhance biodiversity and reinforce the blue-green grid strategy.

Waterways

Ground-truthed waterways will be retained and incorporated into open space areas.

STRUCTURED RECREATION

District Parks - Active






District Oval - these are sporting fields associated with schools. This is co-located with a school to provide formal recreation space.

Linear or Passive District Parks - this are large area of open space that include existing mature vegetation or riparian areas, or have identified cultural values for First Nations people and connection to Country.

Local Parks (not depicted at this scale)

These are neighbourhood parks dotted throughout the Appin (Part 2) Precinct structure plan providing additional civic focus to the neighbourhoods. They are usually surrounded by development with only a few located adjacent to Proposed Open Space and Excluded Land - Existing Vegetation.

Table 12 Breakdown of green and blue grid elements

GREEN AND BLUE GRID ELEMENT	APPIN (PART 2) PRECINCT		
	HA	% P	% NDA
TOTAL AREA	100.10ha	100%	
 Net Developable Land	68.81 ha	68.78%	100%
 Active Open Space	5.32 ha	5.31 %	7.73 %
 Passive Open Space	3.75 ha	3.73%	5.45 %
 Other Green Grid Elements	-	-	-
TOTAL GREEN SPACE (% NDA)	9.07 ha	9.06%	13.18%
 Total Conservation Land	17.64 ha	17.62 %	-
TOTAL GREEN BLUE GRID (Total Precinct)	26.71ha	26.68 %	-

The following open space sit within the Appin (Part 2) Precinct:

- 3

District Oval: sits along the northern boundary of the North site.
- 7

Water Management, Treatment and Health: Re-management of the Sydney Water Catchment Land as open space will maintain and improve water quality in this location.

LEGEND

Appin & North Appin Precincts

Appin (Part 1) Precinct

Appin (Part 2) Precinct

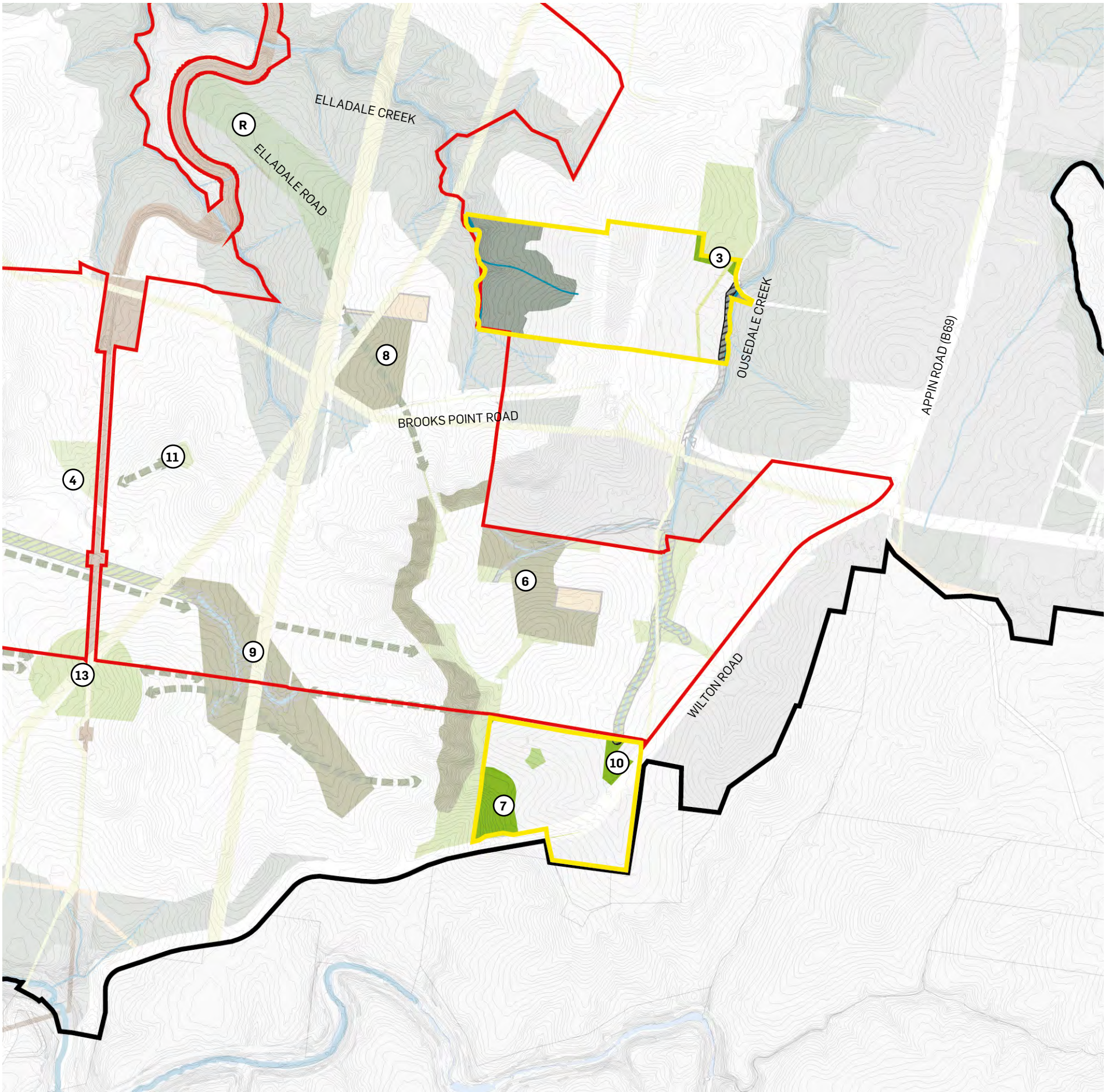


Figure 49 Proposed Multi-Functional Open Space

BLUE GRID & RIPARIAN CORRIDORS

BLUE GRID & RIPARIAN CORRIDOR OUTCOMES

Detailed investigations and ground-truthing of all waterways and riparian corridors within Appin (Part 2) Precinct reveal that most of these are entirely contained within the CPCP or Excluded Land - Existing Vegetation areas.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Stream Order Riparian Corridors
- Stream Order 1- 10 VRZ Buffer
- Water Management
- Riparian Corridor
- Open Space Network
- Open Space

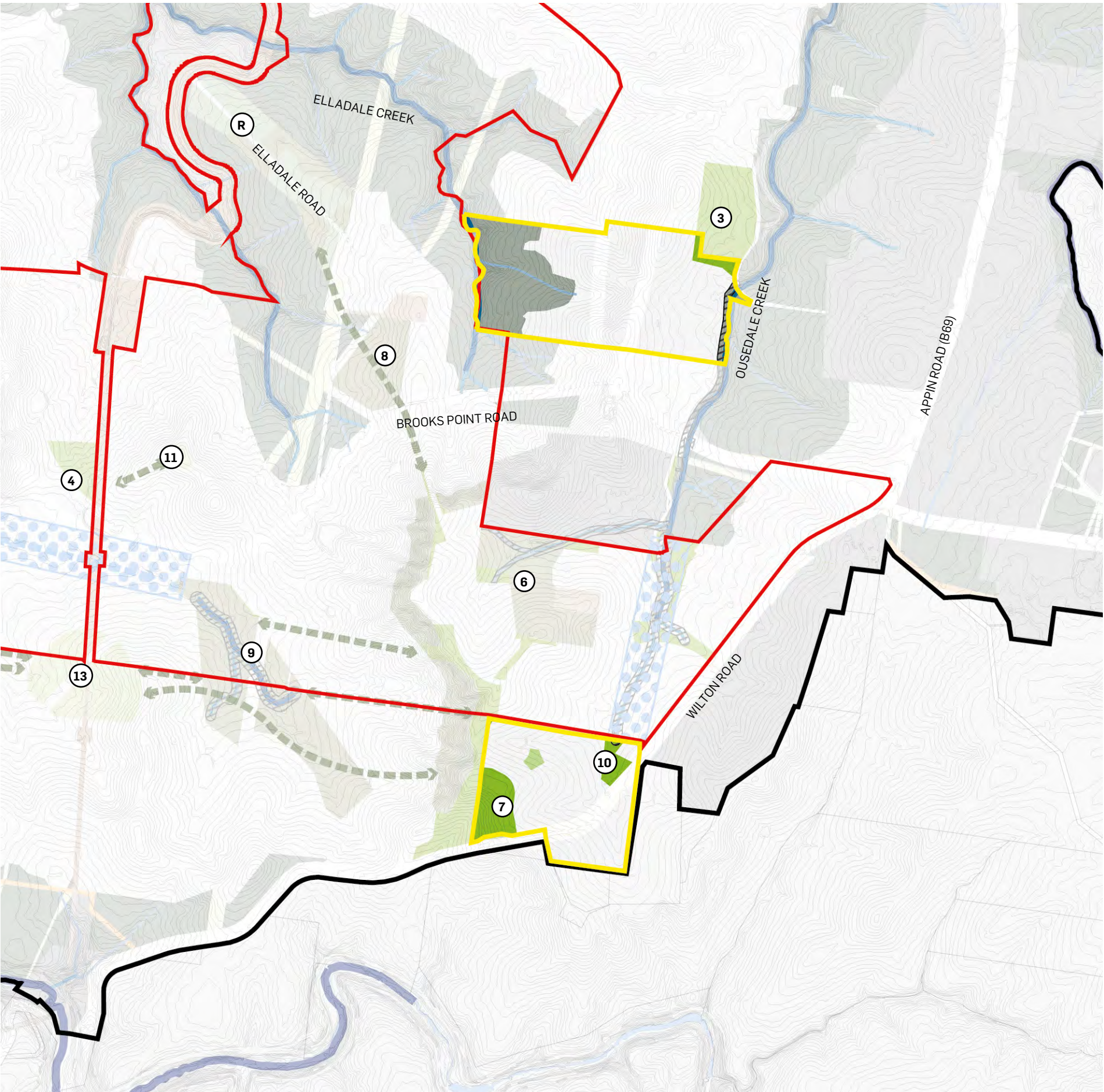


Figure 50 Proposed Blue Grid and Riparian Corridors

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RECREATION FOR ALL

OPEN SPACE PROVISION

The provision of Open Space for Recreation has been considered at both the Appin & North Appin Precincts and Appin (Part 2) Precinct scales to ensure equitable access and provision for the whole community across the variety of scales.

Quantitative:

- % of Net Developable Area (NDA) provided as district and local open space: 10% (Benchmark 10%)
- 13-15% of Net Developable Area provided as open space for recreation.
- Providing for both structured and unstructured recreation.
- Structured open space accounts for 1.7% of the NDA in the Appin (Part 2) Precinct.

Table 13 Open Space for Recreation Provision Calculations

REZONING	APPIN (PART 2) PRECINCT	
	HA	%
NET DEVELOPABLE AREA	68.81ha	68.74%
Total Open Space (% NDA)	9.07 ha	9.06%

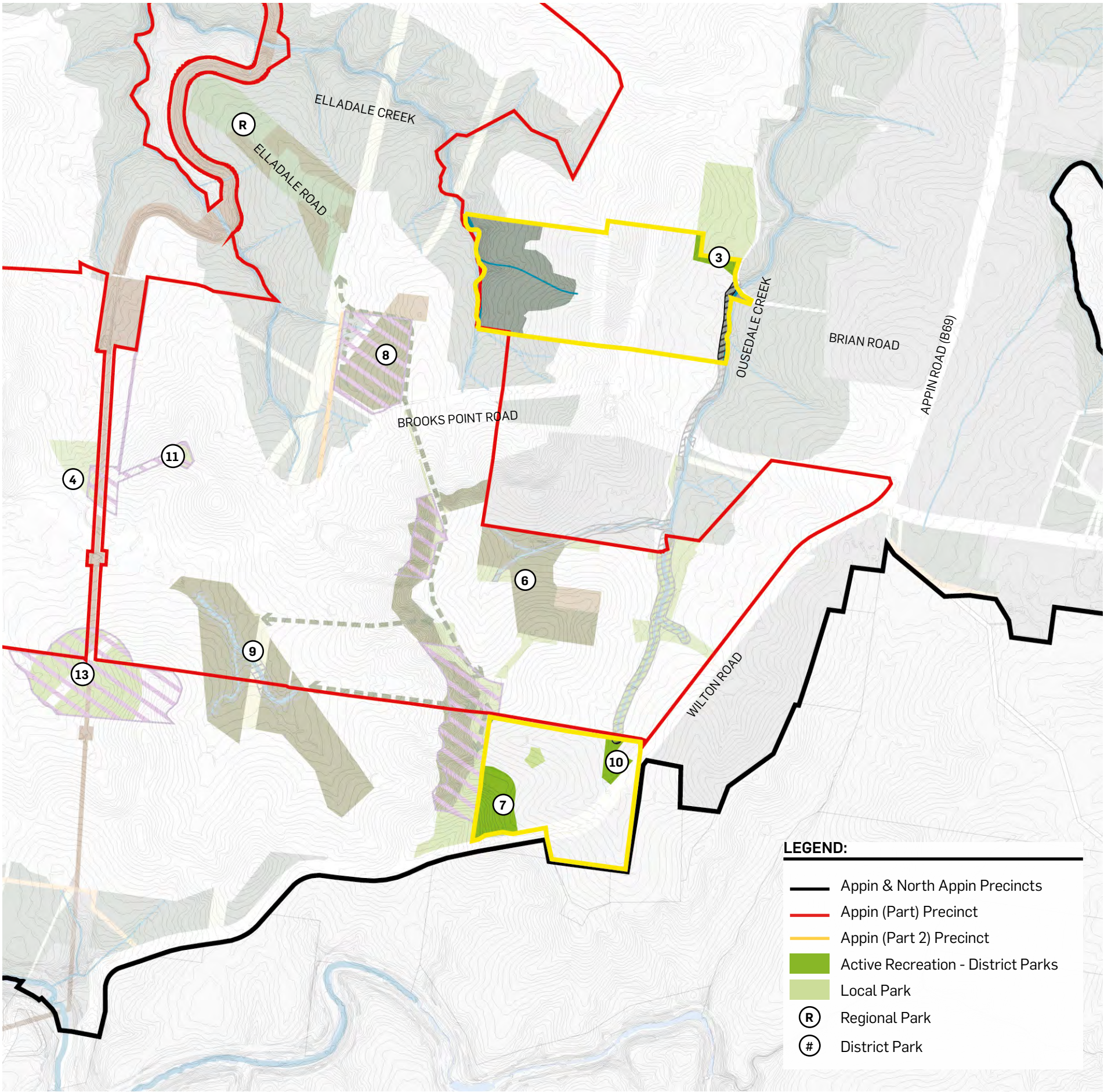


Figure 51 Proposed Open Space Recreation Function Plan

OPEN SPACE HIERARCHY

In addition to recreation classifications, open space is also typically planned for in a hierarchy of provision, with different scales of open space areas servicing varying sized catchments. The following hierarchy has been used in this assessment, aligned to the GANSW draft Greener Places Design Guide:

- District Park:
 - District Ovals
 - Linear Parks and Excluded Land - Existing Vegetation
- Local Park

Table 14 Open Space Breakdown by Hierarchy and Recreation Type

OPEN SPACE CHARACTER	AREA (HA)		ACTIVE		PASSIVE		
	APPIN & NORTH APPIN PRECINCT PLAN	APPIN (PART 2) PRECINCT	ACTIVE RECREATION	PLAYING FIELDS	RIPARIAN VALUES	EXCLUDED LAND	CULTURAL VALUES
(R) Regional Park	20.99	-					
SUB-TOTAL REGIONAL	20.99	-	-			-	
(1) District Ovals	2.00	-					
(2) District Ovals	4.00	-					
(3) District Ovals	4.07	0.83					
(4) District Ovals	4.00	-					
(5) District Ovals	2.00	-					
(6) Northamptondale Nature Reserve	17.46	-					
(7) Ridgeline Linear Park	34.45	4.74					
(8) District Nature Reserve	9.54	-					
(9) Rocky Ponds Creek East Linear Park	31.15	-					
(10) Ousedale Creek Linear Park	10.00	1.51					
(11) Hilltop Park	0.98	-					
(12) Rocky Ponds Creek West Linear Park	1.78	-					
SUB-TOTAL DISTRICT	121.43	7.08	83 (%)				17(%)
LOCAL PARKS	48.64	1.99	100 (%)				-
TOTAL OPEN SPACE	191.1	9.07	87 (%)				13(%)

APPIN REGIONAL PARK

North site: falls within the 4km regional park catchment.

South site: falls within the 4km regional park catchment

Catchment: All residents of Appin with be within 4km.
(GANSW Greener Places Guide recommends up to 30 minutes travel time / 5km active transport distance).

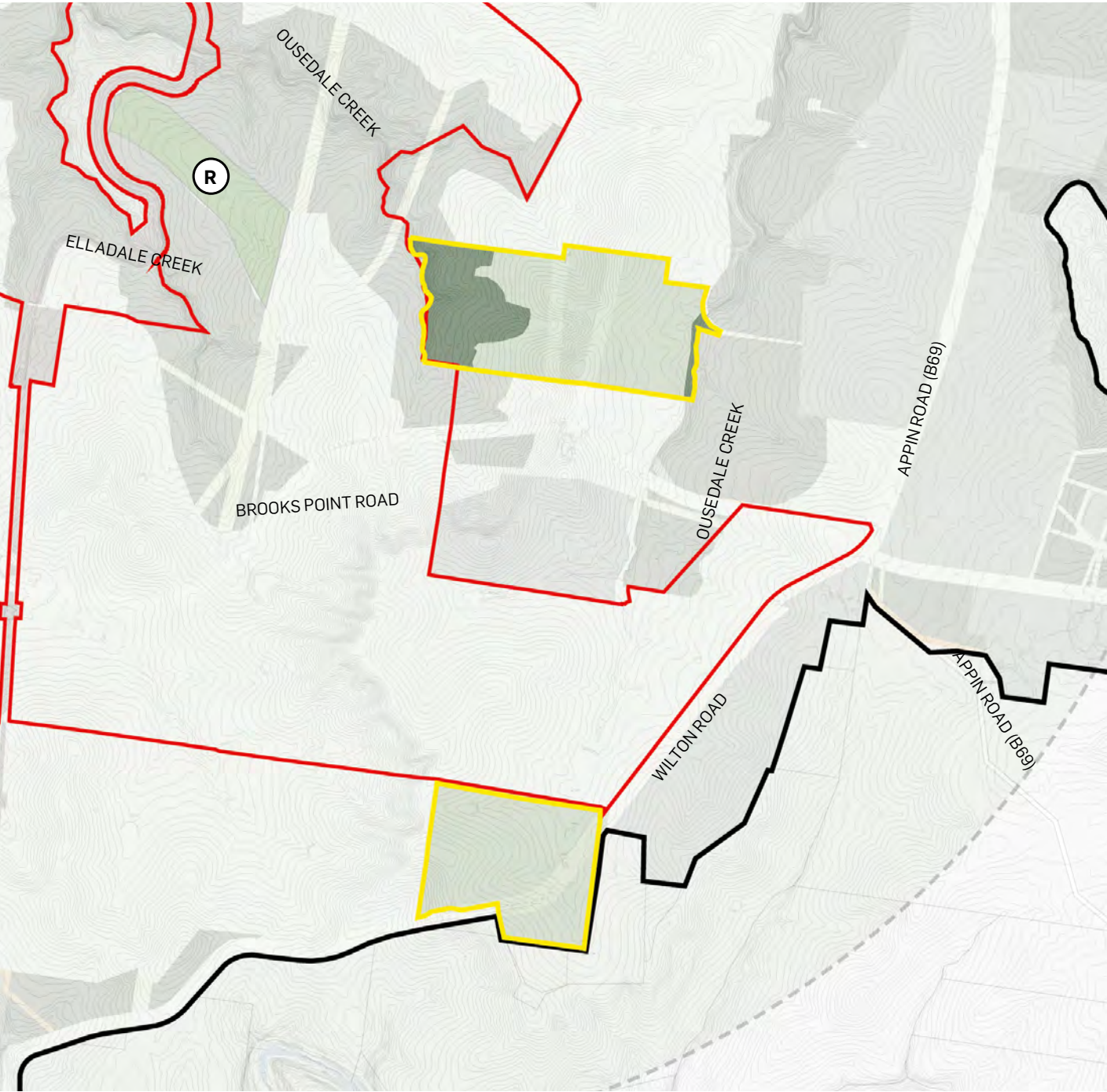


Figure 52 Proposed Regional Open Space Provision

DISTRICT PARKS

Function: Serving multiple neighbourhoods, diverse user groups and accommodating large community gatherings or events.

Indicative facilities: Appin (Part 2) Precinct contains two types of district parks being:

- **Linear Parks:** Including riparian corridors and natural areas that allow for nature trails, active recreation links, fitness pods and passive recreation.

Size and Quantity: 7.08ha total (GANSW Greener Places Guide recommends 2-5ha).

- **Districts Parks(7 & 10):** Ranging in size from 0.2ha to 5ha.
- They indicatively comprise 1.20ha (17%) structured and 5.88ha (83%) unstructured.

Catchment: All residents of Appin (Part 2) Precinct will be located within 2km of a District park, Linear Parks and Excluded Land - Existing Vegetation are located in response to natural conditions and place outcomes. (GANSW Greener Places Guide recommends 2km from most houses).

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- District Ovals
- Linear Parks & Excluded Land - Existing Vegetation
- 2km District Park Catchment
- Local Open Space
- 400m Local Park Catchment

LOCAL PARKS

Function: Located in residential areas and serves local community.

Indicative facilities: Provision of one or more recreational elements such as seating, play spaces, gardens or outdoor exercise equipment.

Size and Quantity: 1.99 ha in total. Ranging from 0.5-2ha each. (GANSW Greener Places Guide recommends 2-5ha). Local parks are predominantly structured.

Catchment: All residents of Appin (Part 2) Precinct will be within 400m of a local park. (GANSW Greener Places Guide recommends 400m from most houses).

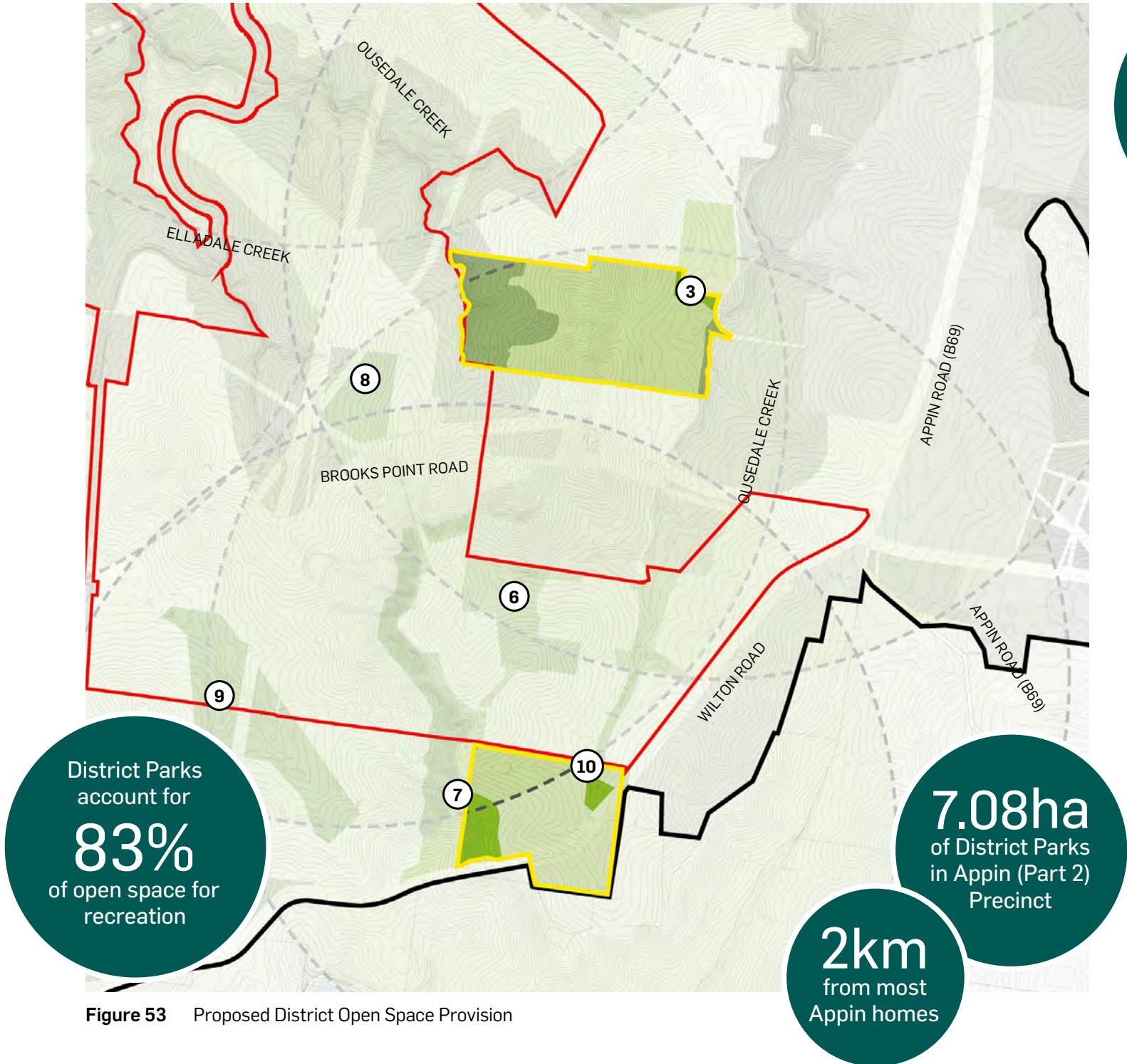


Figure 53 Proposed District Open Space Provision

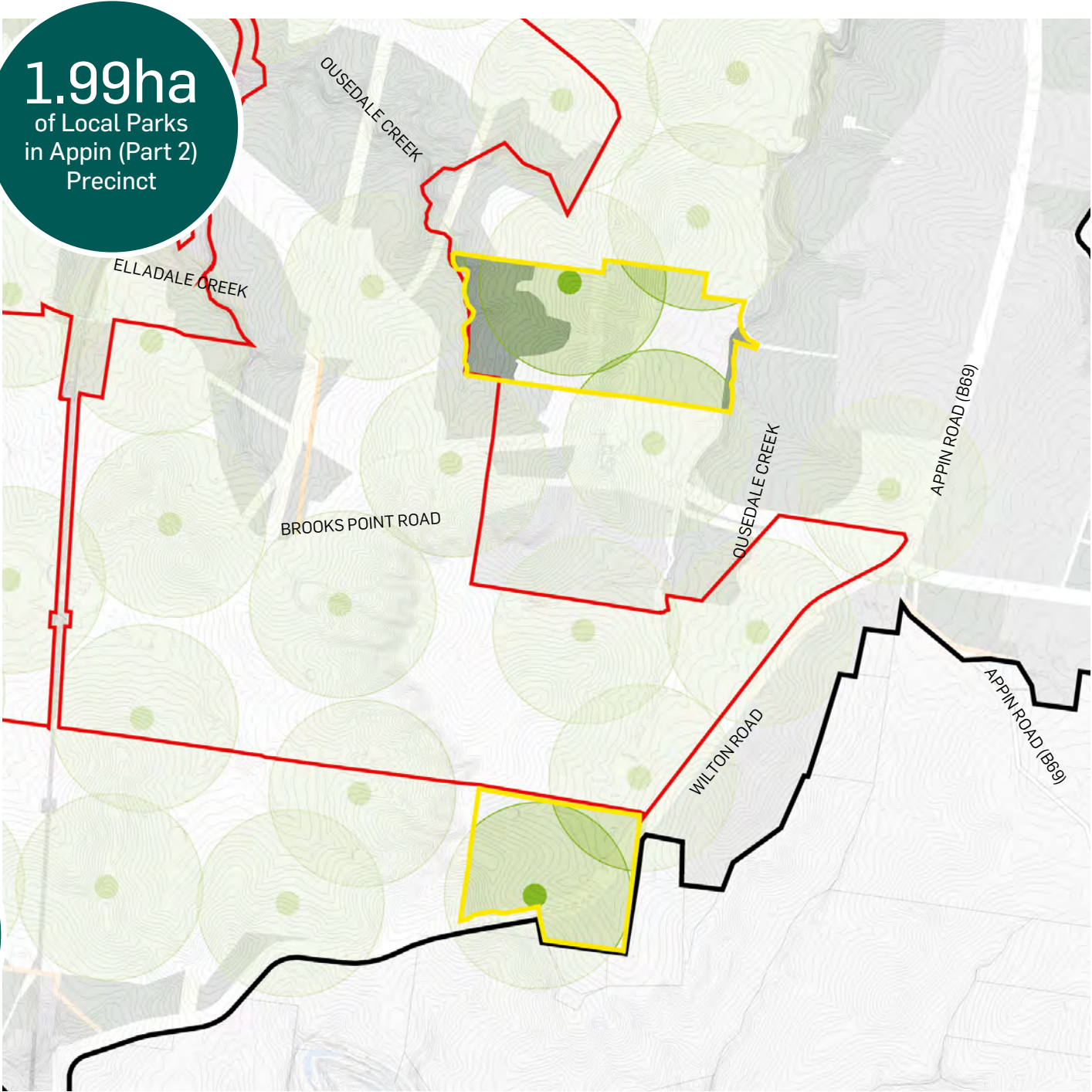


Figure 54 Indicative Local Open Space Provision - subject to detailed design

04

CONNECTED ACTIVE & HEALTHY

Transit-oriented development makes efficient use of infrastructure investment prioritising active and sustainable mobility.

Regional transit connections link the precinct to jobs, improve inter-regional connectivity and reduce the use of the car.

Connected, active and healthy lifestyles result in more compact, connected and mixed-use walkable communities.

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APPIN STRATEGIC ROAD NETWORK

NEW STRATEGIC ROAD CONNECTIONS - WITHIN APPIN (PART 2) PRECINCT

In addition to upgrades of existing roads, new strategic roads pass through the Appin (Part 2) Precinct being:

East-West Connection Road: New east-west connection road for Appin and North Appin Precincts and regional connection between Hume Motorway and Appin Road south of Appin Town Centre as identified in GMGA 2040 plan. The East-West Connection road passes through the North Site of Appin (Part 2) Precinct.

▪ **Alignment Considerations:**

- Centre: Topographical considerations and location of intersection with Transit Corridor.
- ection with provision for a third lane within the median and a design speed of 60 km/hr. There will be a dedicated cycle path one each side and landscaped verges. Road Corridor width is based on a 40m wide road reserve, see *Figure 53* for indicative section)

▪ **Connectivity:**

- Appin Local Centre: Signalised Intersection with Transit Corridor
- Appin Road: Off-set interchange.

- **Public Transport Corridor:** Road Corridor width is based on a 45.2m wide road reserve as derived from the GMGA 2040. Integrated transit modes including: See *Figure 54* for indicative section.
 - A four-lane collector standard road.
 - Public transport lane
 - Active transport infrastructure
 - Road layout configuration subject to detailed design to ensure an adequate response is made to safety and connectivity around Neighbourhood Centres, Road Crossings and Appin Bypass.
- **Connectivity:**
 - East West Connection Rd - At-grade Signalised Intersection.

Requirements:

The guidance for locating public transport stops, as outlined in the Draft Urban Design Guide (2021), is as follows:

- Integrate public transport nodes into the heart of centres and clusters
- Prioritise provision of homes in residential areas with accessible, safe and secure routes to high-service-frequency public transport within 800 m.
- In less frequently serviced residential areas, locate homes within 400 m of public transport.

Appin (Part 2) Precinct Structure Plan:

The structure plan locates public transport stops within, or close, to each of the centres, as well as some additional stops.

- **Interim Staging:** The use of existing roads to provide access is part of the key approach for interim staging of the road network until ultimate road network is in place. The key roads that are part of the South site is Wilton Road.

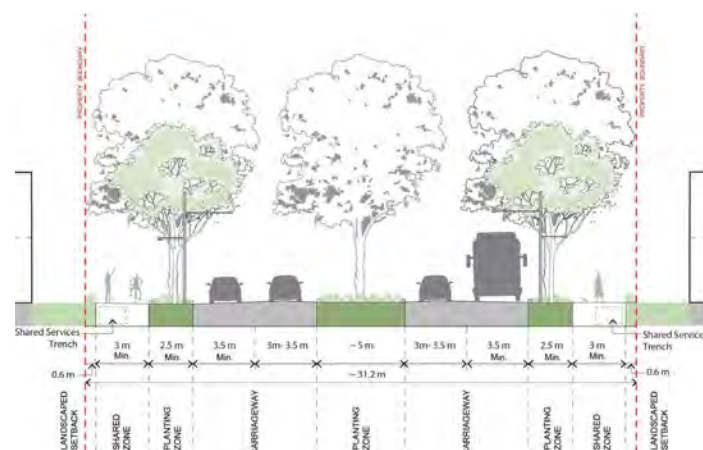


Figure 55 Typical Sub-Arterial Section (Source Wilton Growth Areas DCP)

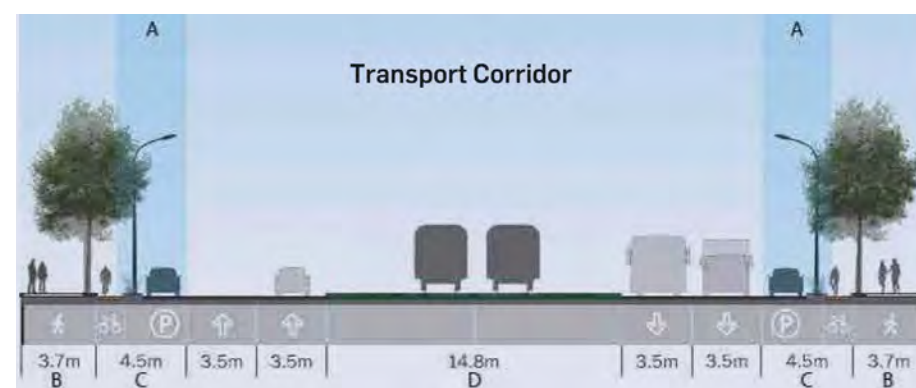


Figure 56 Indicative Transport Corridor Cross Section (Source GMGA 2040 - subject to detailed design)

LEGEND:

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- East-West Connection
- Public Transport Corridor
- Indicative Bus Stop
- 400 & 800m catchments
- Signalised Intersection
- Roundabout
- Proposed Sign-controlled
- Areas of steeper land

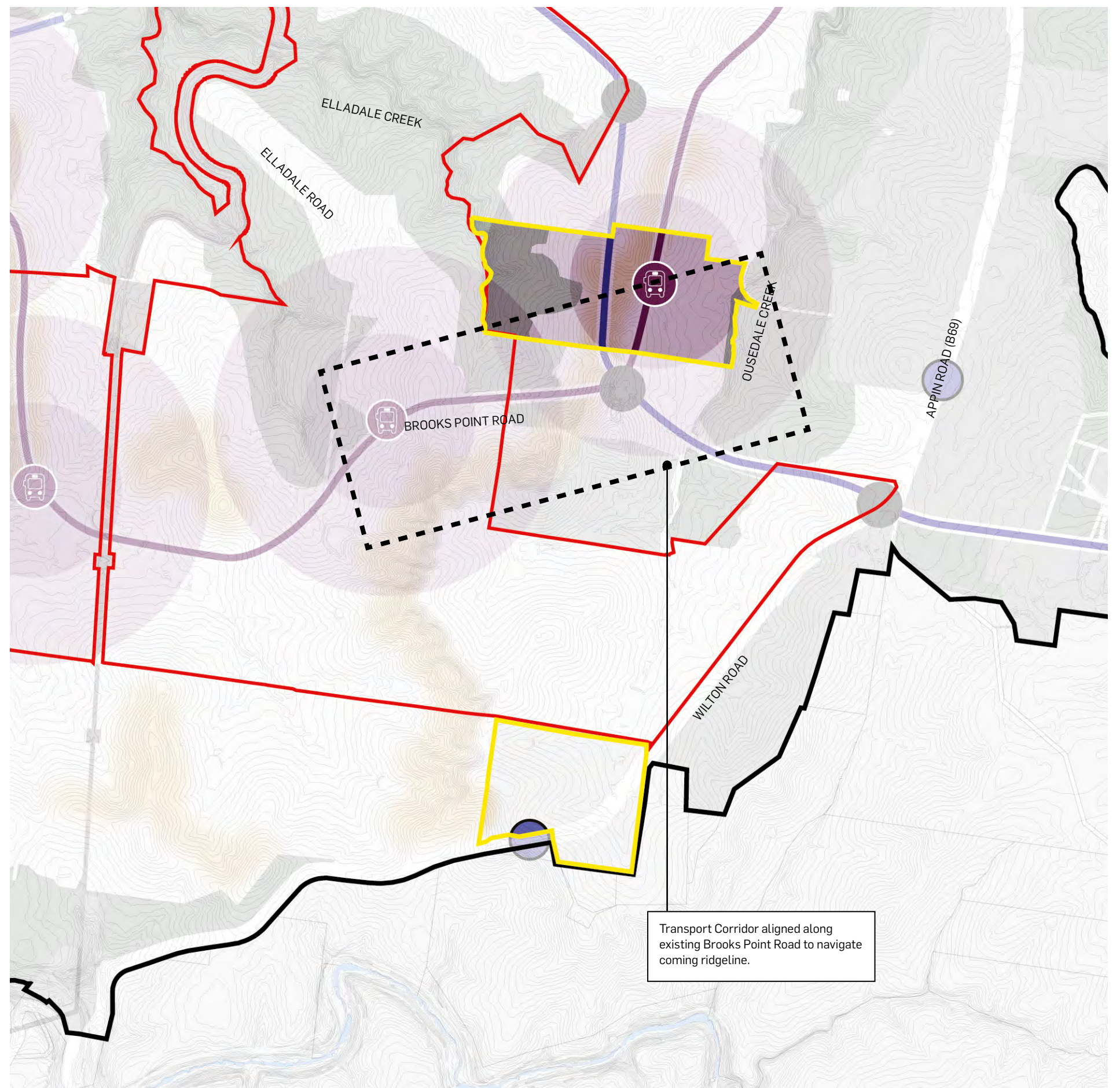


Figure 57 Proposed Appin (Part 2) Precinct Strategic Road Network

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LOCAL ROAD NETWORK

COLLECTOR ROADS

New collector roads network will link residential neighbourhoods to centres across the North and South site and the strategic road network.

- **Collector Roads:** This local road network will balance both movement and place outcomes to contribute to a connected and vibrant community.
 - **Alignment Considerations:** The collector roads generally follow topography lines and circumnavigate steep areas.
 - **Form of road:** Collector roads are one lane in each direction with a design speed of 60km/hr. They provide for and include provision for public transport route, active transport modes through wide footpaths, provision for a dedicated cycle path on one side and landscaped verges. Main Street outcomes may be considered at neighbourhood centre locations to balance movement and place outcomes.
 - **Connectivity:** Controlled pedestrian crossings at signalised junctions.

LOCAL ROADS

Local roads provide access to residential dwellings and link to collector roads.

Form of road: The road is one lane in each direction with a design speed of 50km/hr. This will typically align with Wilton DCP for Local Roads. See indicative section on adjacent page.

ACTIVE TRANSPORT & RECREATION

To achieve an active and healthy lifestyle the following is proposed:

- Integrated active transport provision through sub-arterial and collector road networks
- Future-proofed pathways for micro-mobility
- 20 minute walkable neighbourhoods structure
- Network of regional and precinct recreation trails including along easements.
- Optional Cultural Values Trail

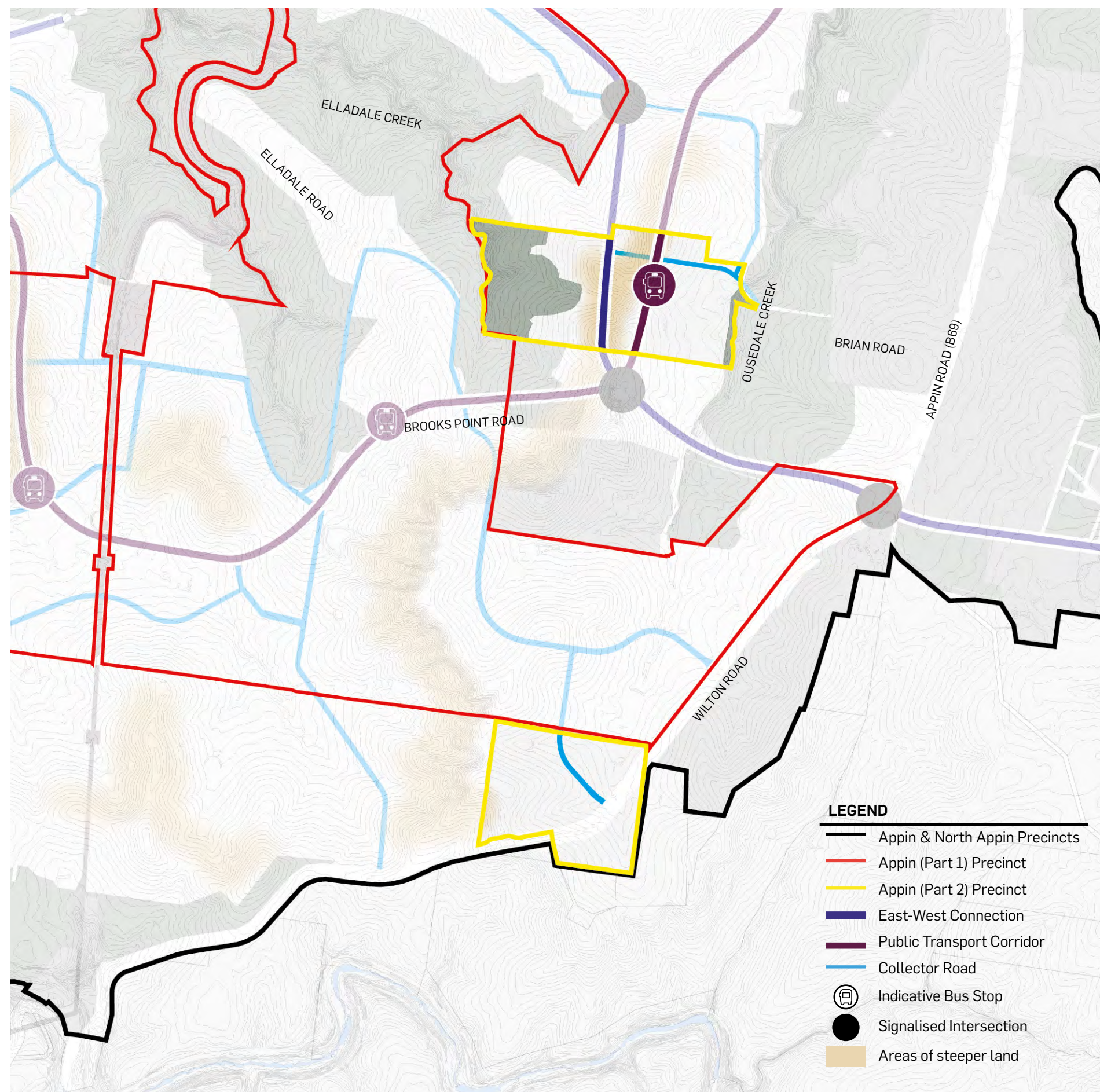


Figure 58 Proposed Local Road Network and Active Transport

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- LEGEND**
- Appin & North Appin Precincts
 - Appin (Part 1) Precinct
 - Appin (Part 2) Precinct
 - Environmental Conservation
 - Open Space
 - The Water Journey

ACTIVE & PASSIVE RECREATION TRAILS

The opportunity for an active and adventurous lifestyles will be enhanced by the existing landscape features and natural topography. Healthy lifestyles can be tailored to education, interpretation, sharing of cultural values and the history of the site. The following active recreation trail offer whole an extensive network of pathways to embed active lifestyle opportunities into the community.

THE WATER JOURNEY

Runs through the North and South site along Quesdae Creek in the east of both the subject sites. It presents a unique opportunity to interact with waterways.

This trail offers a variety of opportunities for education and interaction with water including:

- Potential to connect the centres, these locations present opportunities to create kids water play parks, and public art water features.
- Wetlands and bio-filtration ponds to deal with water management of the site with interpretive signs educating the community of the function of the water quality system.
- Along riparian corridors and providing opportunities to connect with nature, understand natural flora and fauna and considering providing board walks, natural trails and stepping stones.

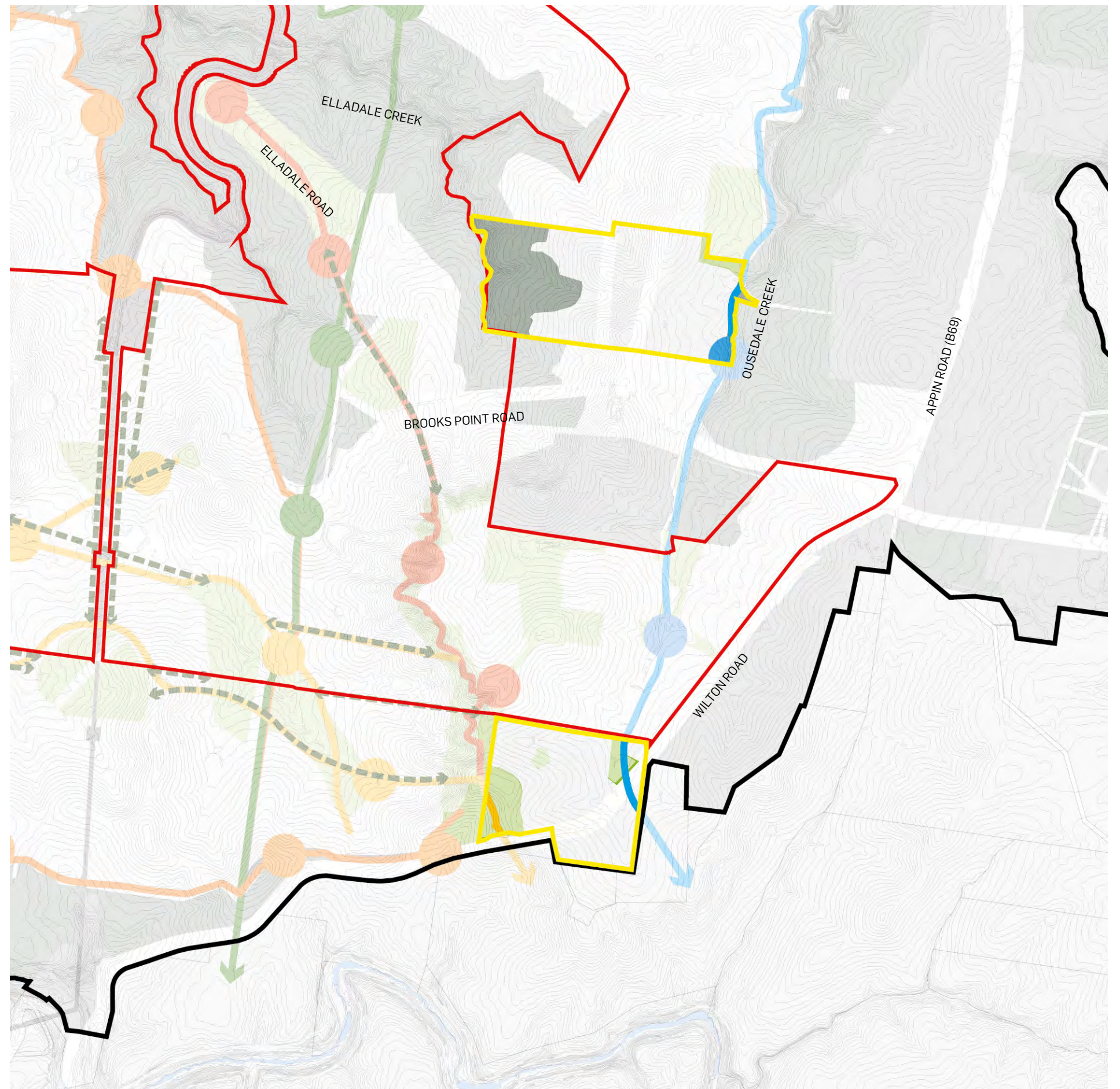
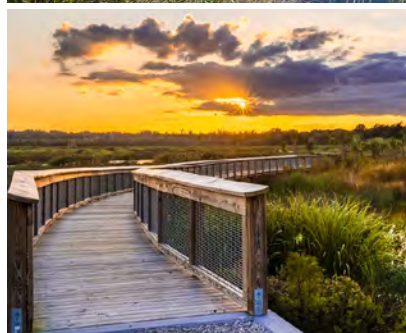


Figure 59 Proposed Active & Passive Recreation Trails

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05

RESILIENT, THRIVING NEIGHBOURHOODS

A network of distinctive and walkable neighbourhoods are anchored by mixed-use centres.

Containing schools and local services, these neighbourhoods offer a range of uniquely local attractions and foster new industries, local jobs and community shops.

MIXED USE CENTRES

RETAIL PROVISION

The proposed Appin retail provision in the Appin (Part 2) Precinct includes:

Retail Strategy Summary		
1 x Local Centre:	TOTAL Indicative retail floorspace	30,400 sq.m
	▪ 1 x Discount Department Store	7,000 sq.m
	▪ 2 full-line Supermarkets and a small format supermarket	9,500 sq.m
	▪ A range of Mini-Majors	2,300 sq.m
	▪ Food specialities	1,900 sq.m
	▪ Non-Food specialities	3,600 sq.m
	▪ Retail Services	900 sq.m
	▪ Non-Retail & Ancillary uses (mix of gym, medical, childcare, personal services, entertainment, civic and office)	5,200 sq.m

EDUCATION

Schools

The Appin (Part 2) Precinct structure plan accomodates for 1 x K-12.

A social infrastructure need and provision study was undertaken to identify the following requirements for schools within the whole of the Appin (Part 2) Precinct.

- **North Site:** Community school (K-12): 4ha

Adapted from the SINSW School Site Selection and Development Guidelines (2020)

- **South Site:** Serviced by adjoining proposed K-6 school to the north.

Type of school	Site size*	Capacity*	School Year Grades	Opportunity for co-located with sports field
Community School	4ha	Up to 3,000 students	K-12	Yes

SOCIAL INFRASTRUCTURE

Other uses within the centres include community facilities, health facilities and emergency services as identified in the Urbis Social Infrastructure study:

Facility Type	School Year Grades	Area (ha)
District multi-purpose community facility and library	One multi-purpose district community centre with an integrated library of approximately 4,420 sq.m, comprising of approximately: <ul style="list-style-type: none">▪ 2,000 sq.m multi-purpose community space▪ 2,000 sq.m library space▪ 420 sq.m shared meeting spaces, staff spaces and amenities.	Located within the local mixed use centre within the Appin (Part 2) Precinct, with direct access to the public transport corridor.
Childcare	Approximately 1 or 2 long day childcare centres with an average of 80 children to meet expected demand for 104 places. Approximately 2 out of hours school care centres with an average of 80 children to meet expected demand for 147 long places.	Locate facilities within the neighbourhood and local centres to maximise accessibility and user convenience, in line with market demand. Out of hours school care centres should be accommodated within or co located with the school sites.
Community health clinics	Look to provide adaptable spaces within community facilities to accommodate health services. Larger clinics to be provided by the private market and/or by LHD as required over time.	Located within facilities which are highly accessible by public transport or co located with other services.
General Practice Clinics	Provision of one medical centre within the mixed use centre, provided by the private market.	Located within the mixed use centre.

LOCAL EMPLOYMENT

- It is estimated that the development of Appin (Part 2) Precinct will generate demand for around 1,217 jobs upon completion across the economy.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Mixed-Use Centre
- 400m & 800m Catchment
- Proposed school
- Integrated K-12 School
- District Oval
- District Community Facility
- Existing school
- East-West Connection
- Public Transport Corridor
- Bus Stop
- Roundabout

NOTE: Indicative location of services and facilities subject to further investigations and overall timing and staging of development.

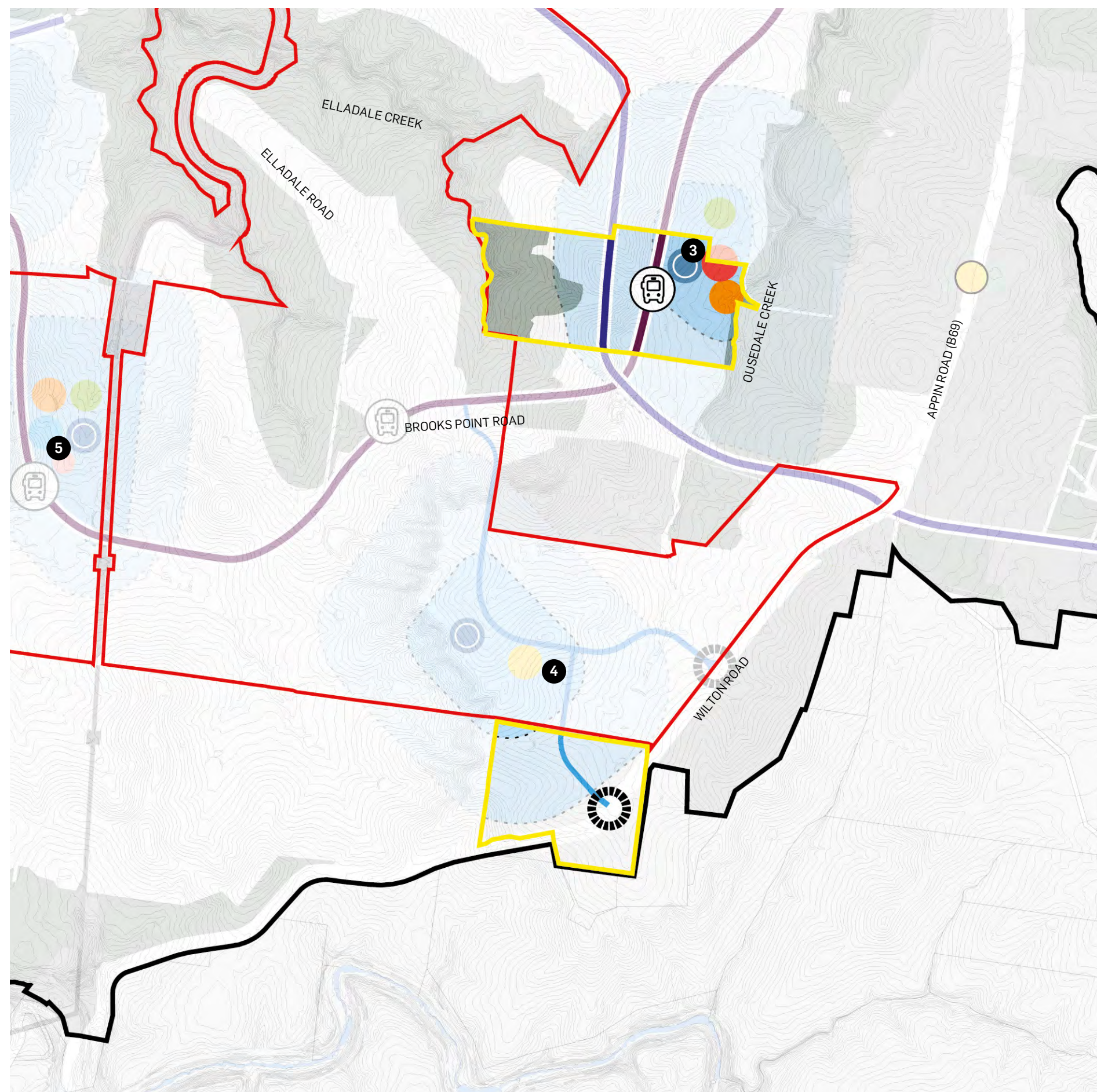


Figure 60 Proposed Mixed Use Centres

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RESILIENCE

INTEGRATING RESILIENCE IN THE URBAN FORM

A Sustainable Development Opportunities Report has been prepared by Urbis for the Appin & North Appin Precincts to:

- Identify the range of existing strategic and policy considerations for achieving sustainable and resilient outcomes.
- Present a range of opportunities for sustainable and resilient outcomes for consideration as part of the development of the Precinct Plan for the Appin (Part 2) Precinct and future Development Control Plan.
- Set the foundation for further refinement and incorporation of sustainable and resilient development outcomes as the Proposal progresses to further detailed design and preparation of a Development Control Plan.

Other technical investigations identified the following conditions or opportunities for the Appin & North Appin Precincts:












- The 1% AEP is wholly contained within the Nepean and Cataract gorges.
- Standard practices adopted to mitigate Bushfire hazards.
- Provision of pipeline protection measures in accordance with outcomes of Safety Management Statement process.
- Canopy Coverage in conservation areas, open space areas and in the urban neighbourhoods to manage urban heat.
- Delivery of neighbourhoods that facilitate micro-mobility.
- Future-proof neighbourhoods for future adoption of technological advancements.

Strategic Directions

Additionally, This study identified strategic directions for integrating sustainability and resilience into the urban form under three focus streams:

- Green Infrastructure
- Blue Infrastructure
- Grey Infrastructure

Table 16 Sustainability and Resilience Opportunities for Appin & North Appin Precincts

BLUE INFRASTRUCTURE	GREEN INFRASTRUCTURE OPPORTUNITIES	GREY INFRASTRUCTURE
<div>Integration of waterways Existing natural waterways and waterbodies are unique features that should inform and be part of a master plan.</div>	<div>Retention of existing trees Planted trees can take decades to mature to provide its long-term benefits. Retaining existing mature and significant trees contributes to the character, value and environmental outcomes of a new community.</div>	<div>Lot layout The master plan should be designed to maximise efficiency through orientation, lot size and depth to enable passive ventilation and appropriate solar access</div>
<div>Water Sensitive Urban Design Urban heat mitigation starts with retaining water in the landscape</div>	<div>Protect biodiversity and wildlife corridors Biodiversity is vital in supporting human life on Earth. It supplies clean air and water, and fertile soils. It cannot be done just by setting aside land in national parks and reserves and must be integrated into our urban areas</div>	<div>Active transport Transport contributes to a significant amount of carbon emissions and pollution in urban areas. Active transport allows for healthier lifestyles and reduced impacts on the environment</div>
<div>Smart water infrastructure Utilising smart technology can improve operational outcomes and provide data on future decision making that can save time, money and resources over the lifecycle of the built form.</div>	<div>Green Cover Greater green cover such as tree canopy and vegetation has shown to have a major impact on urban heat by increasing evapotranspiration and shading adjacent surfaces</div>	<div>Roof colour and surfaces The concentration of many houses with dark roof colours not only contributes to increased urban heat but they can also increase the temperature inside the individual houses.</div>
	<div>Pervious and cooling surfaces Non-permeable and human made surfaces have been identified as major heat sources in urban areas. Increasing areas of pervious surfaces will reduce urban heat effect and increase groundwater absorption.</div>	<div>Efficient built form Reducing our reliance on fossils fuels is imperative if we want to reduce the effects of climate change. Building more energy efficient buildings and changing energy consumption habits is also imperative for mitigating the effects of urban heat on the population.</div>



06

HOUSING
CHOICE
FOR THE
FUTURE

Housing choice for the future creates an inclusive community. Smart homes, distinctive neighbourhoods and walkable streets provide flexible housing options for whole of life communities.

DISTINCTIVE 20 MINUTE NEIGHBOURHOODS

The 20-minute neighbourhood strategy is based on the principle of 'living locally' where residents have most of their daily needs walking distance from their home. In a spatial sense, it is based on the 800m (10 minute) walking catchment from a collection of local shops, a primary school, public transport and a supermarket or grocery store, noting that while it is preferential to co-locate these some services might be on the other side of the neighbourhood.

This is a good outcome because:

- It facilitates local living, grow local economies and promotes walkability
- It provides for centres and nodes that build social resilience
- It enables a shift away from car use
- It enables vibrant and productive communities including weekend and night-time economies.

The distribution of centres, alignment of transport infrastructure and identification of discernible neighbourhoods for Appin has been based on 20 minute neighbourhoods whilst also considering the local place conditions that naturally define and characterise different places. This includes:

- **North site:** sits within neighbourhood 3 and includes a mixed-use centre.
- **South site:** sits within neighbourhood 4.

Both of the neighbourhoods have unique characteristics including local topographical features, framed in green vegetation, benefit from riparian amenity.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Mixed-Use Local Centre
- 400m & 800m Catchment
- Distinctive 20 Minute Neighbourhoods
- Employment Lands
- Areas of steeper land
- East-West Connection
- Public Transport Corridor
- Bus Stop
- Signalised Intersection
- Roundabout

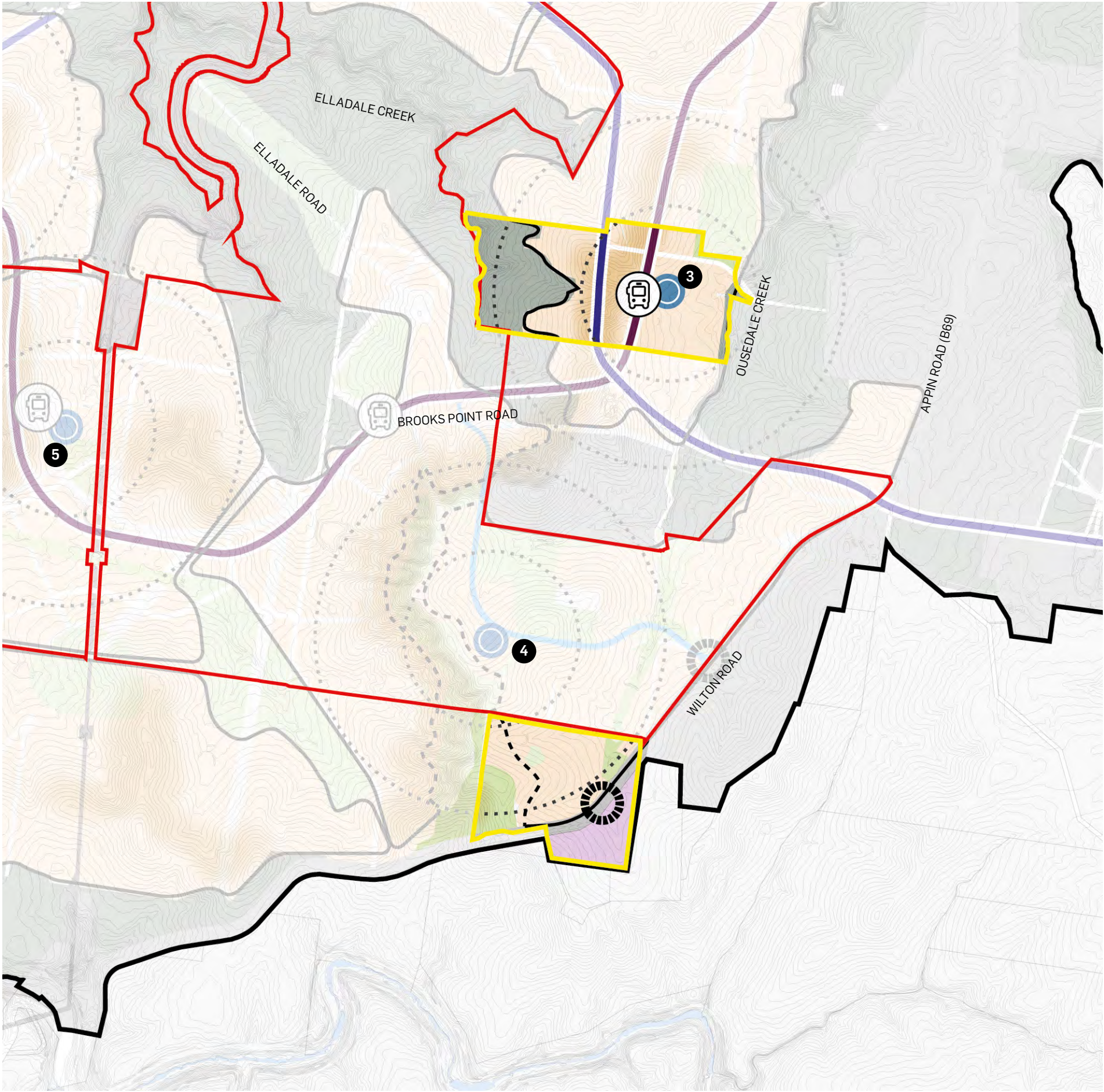
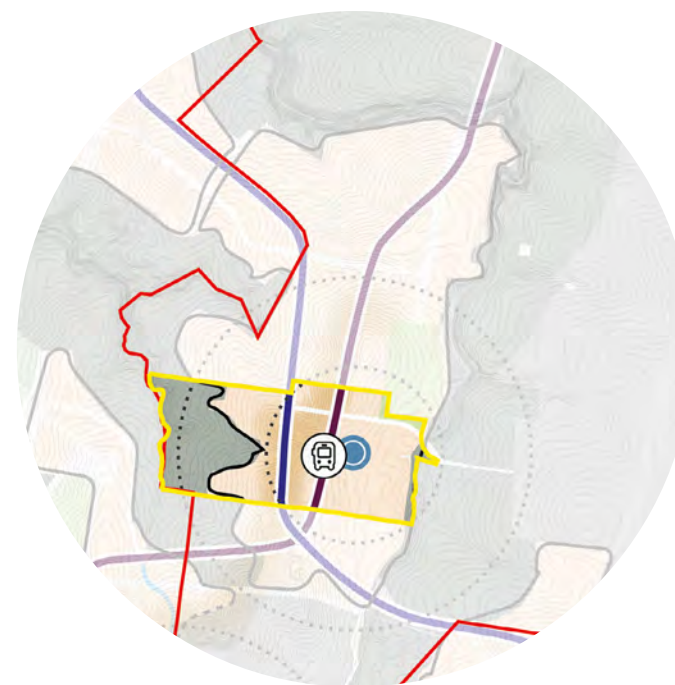
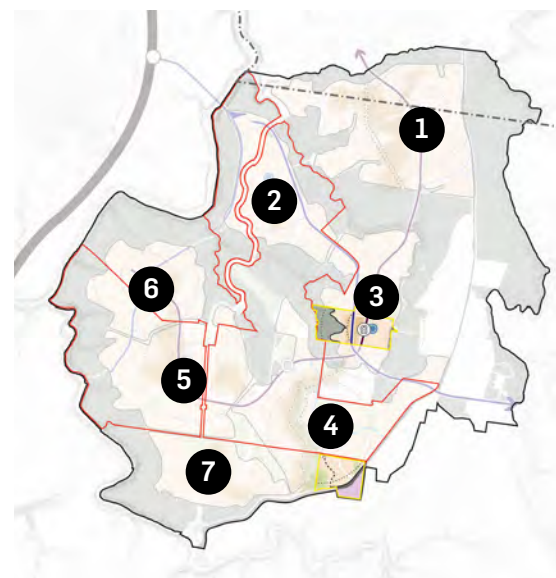


Figure 61 Proposed 20 Minute Neighbourhoods

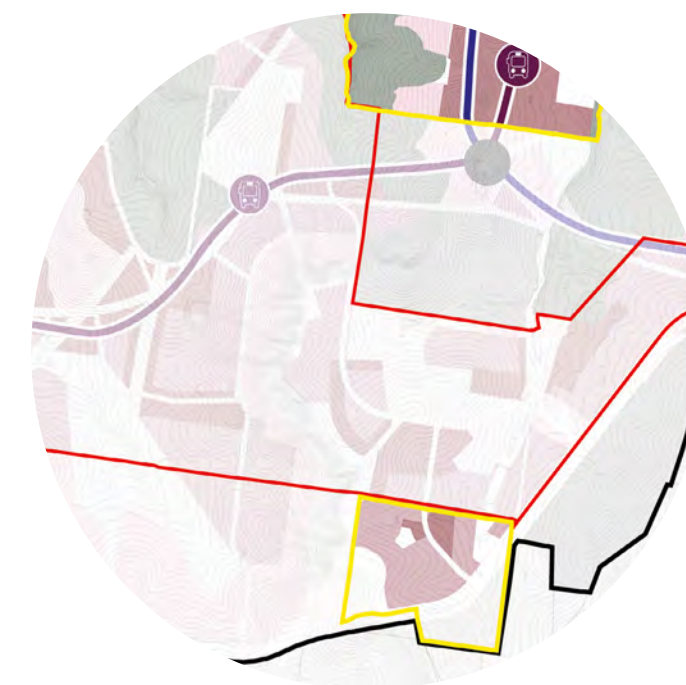
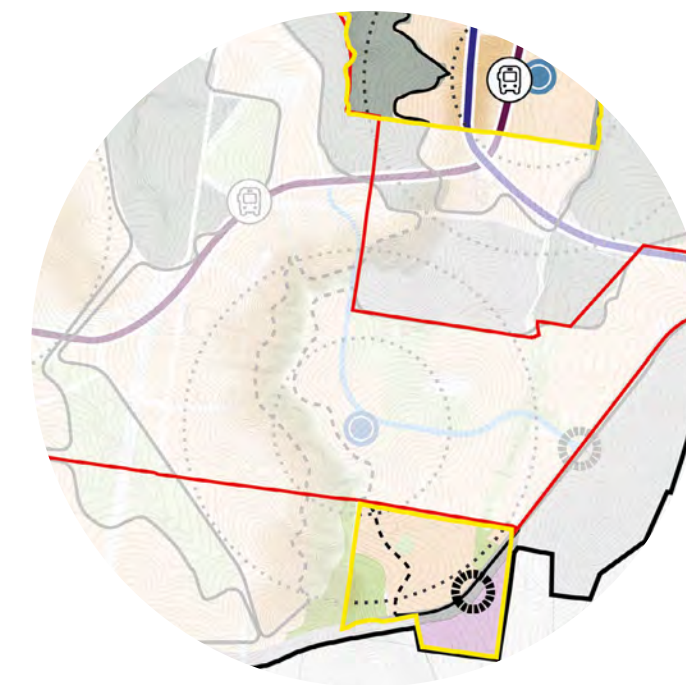
DISTINCTIVE NEIGHBOURHOODS



3 CENTRAL NEIGHBOURHOOD

Centre: the centre is located in at the intersection of the East-West arterial road and the Public Transport corridor. It is up on the plateau and is the closest centre to the existing Appin Village.

Neighbourhood: the neighbourhood is clearly defined by the surrounding Valued Conservation Areas and passive open space. The north-western boundary occurs where the topography falls towards the undulating hills. A gas pipeline easement also forms the western boundary.



4 SOUTHERN VILLAGE NEIGHBOURHOOD

Centre: the centre is located on the North site of the Appin (Part 2) Precinct.

Neighbourhood: the neighbourhood is clearly defined by surrounding Valued Conservation Areas, Appin Road and a steep section of topography within protected passive open space. A part of the neighbourhood is on the northern side of the East-West arterial road.

DIVERSE & INCLUSIVE HOUSING

A range of densities is a good outcome for a precinct as it helps to provide a mix of housing types and creates a diversity of character, activity and interest within the neighbourhoods.

Housing density will be managed by density bands to provide flexibility for a long term development and changes to the market.

The Appin (Part 2) Precinct structure plan has four housing types which each have their own associated densities, these are:

- Small Lots/Medium Density
- Traditional lots
- Large lots
- Local Centre apartments

Density	Area (ha)	Yield (dwellings)	% Of overall yield
Local Centre	4.08	302	23.01%
Medium (25-45 dw/h)	13.34	414	31.55%
Low Density - Traditional (15-25 dw/h)	24.76	508	39.71%
Low Density - Site Responsive (10-15 dw/h)	10.87	87	6.63%
Total	53.05	1,312	100%

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Medium Density Residential
- Low Density Residential - Traditional
- Low Density Residential - Site Responsive
- East-West Connection
- Public Transport Corridor
- Signalised Intersection
- Bus Stop

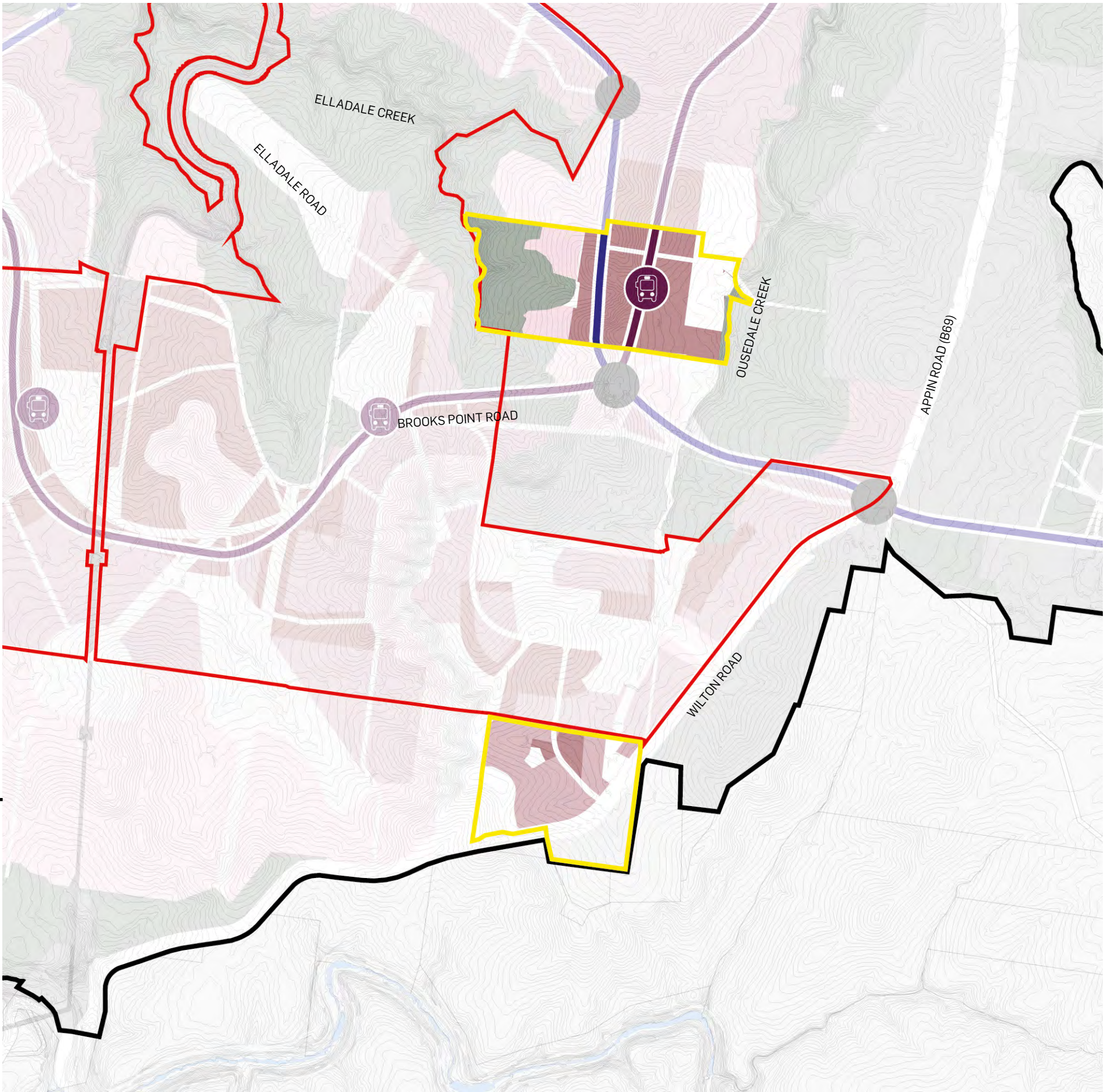


Figure 62 Diverse Inclusive Neighbourhoods

FRAMED BY NATURE

INFRASTRUCTURE & STAGING

CUSTODIANS OF PLACE

DEVELOPMENT STAGING

- Stages 3A and 4A Rrepresent the Appin (Part 2) Precinct Rezoning.
- Infrastructure planning has assumed indicative staging and indicative dwellings and development across the subject site.
- Infrastructure Planning is based on lot triggers with estimated delivery timing as developments may be delivered at similar times. Current assumptions assumes a stages by stage approach.
- Staging sequence considers infrastructure requirements to coincide with existing services and new upgrades.
- Include new head end units and reticulation services during the course of development

DESCRIPTION	TOTAL AREA	DWELLINGS	APPROX. NOTES	POPULATION	APPROX. NOTES
Appin & North Appin Precincts	3826 ha	21,865	Approx. 21,000+	65,595	Approx. 65,000+
Appin (Part 2) Precinct	100.10 ha		Approx. 1,312	3,709	Approx. 3,709+
Appin Vale Sub Precinct Release Area 1	395 ha		Approx. 3,500	10,500	Approx. 10,000+
Employment				4,130	Approx. 4,000+
Schools	16.6 ha	(3 x K-6) & (3 x K-12)		12,000	Approx 12,000 kids
Stages		S1 = 3,405	All approx. and is subject to detailed design.		
		S2 = 3,468			
		S2A = 4,354	Estimated dwellings are not considered a Cap.		
		S3 = 3,351			
		S3A = 2,300			
		S4 = 2,798			
		S4A = 630			
		S5 = 1,559			

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Stage 1 Area
- Stage 2 Area
- Stage 3 Area
- Stage 4 Area
- Balanced Land Staging

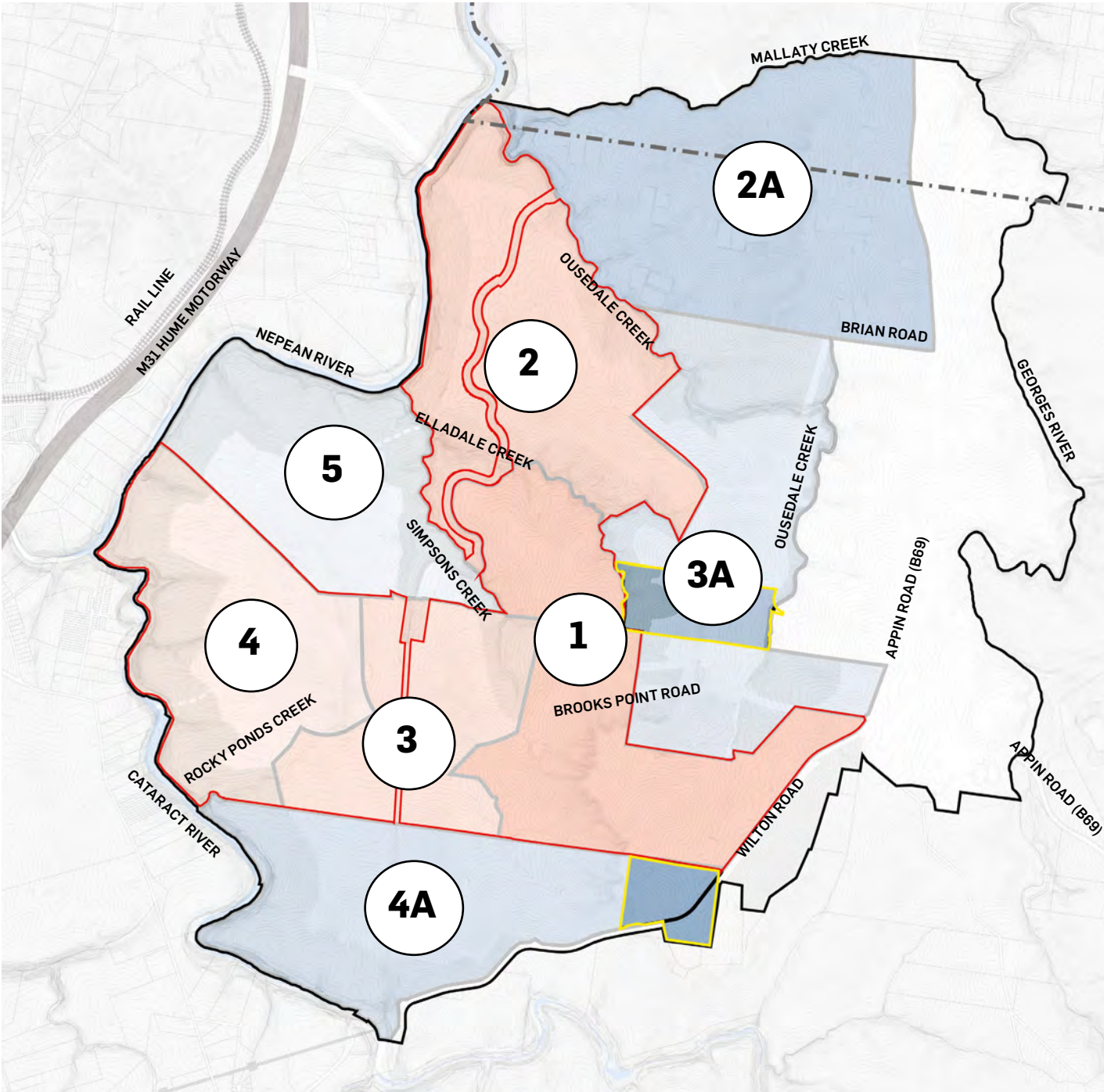


Figure 63 Indicative Staging

SERVICES AND UTILITIES

- There is an existing water supply running north through both the north and south subject sites from the Macarthur Water Filtration Plant.

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Existing Water Supply Network
- Sewer Pump Station (typically at the low points and around the perimeter of the site)

** Infrastructure location subject to detailed design*

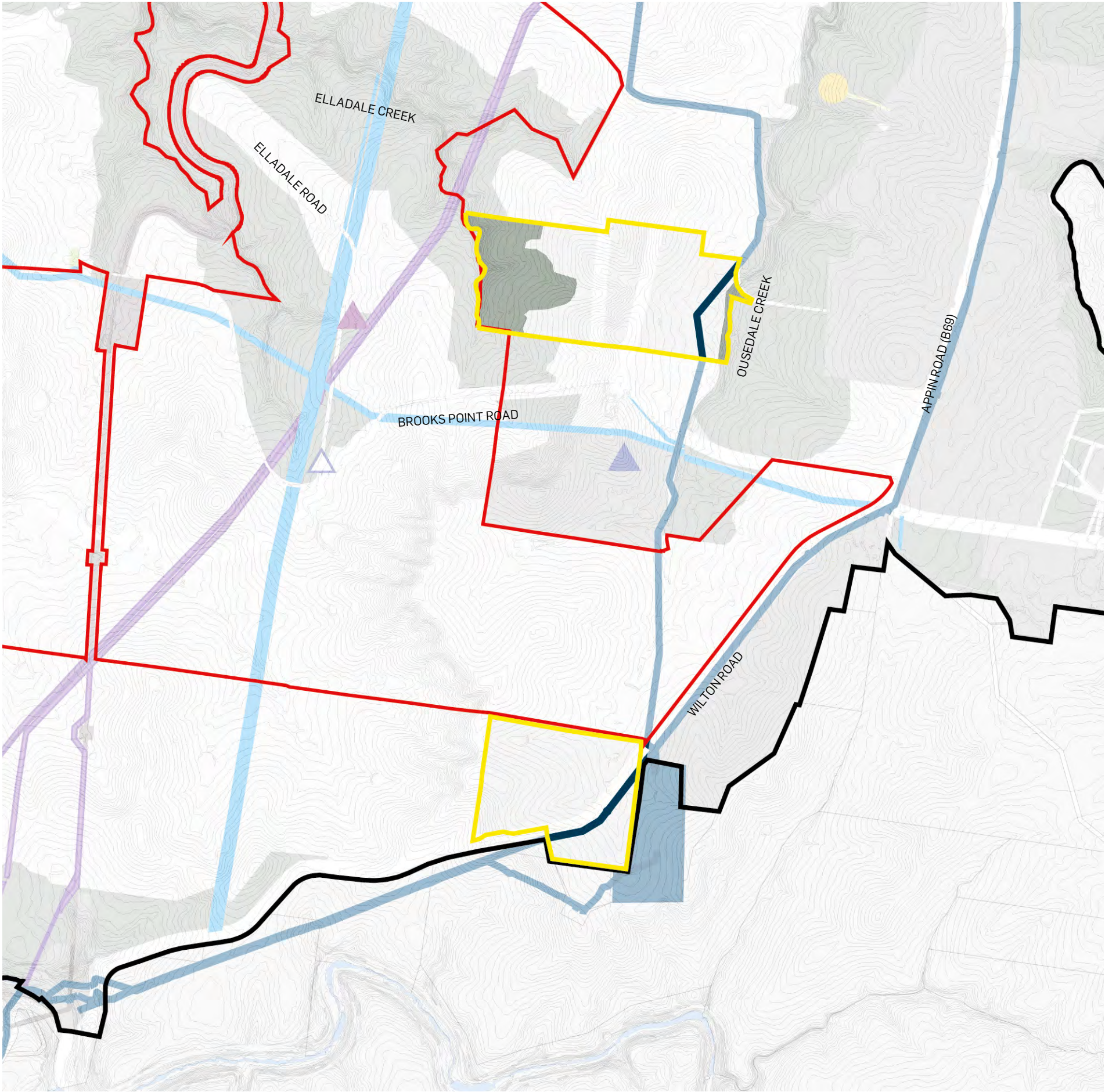


Figure 65 Servicing and Utilities Plan

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APPIN INFRASTRUCTURE DELIVERY PLAN

An infrastructure Delivery Plan has been prepared for West Appin to Appin (Part 2) Precinct Infrastructure Delivery Plan (IDP):

- Identifies the infrastructure required to support the proposed Appin (Part 2) Precinct.
- Describes the required infrastructure by infrastructure type and responsibility,
- Sets out how the infrastructure will be provided and the particular legislative mechanisms that can be used to ensure they are provided,
- Outlines a preliminary staging schedule for the infrastructure that aligns with the development of the land for housing and other purposes,
- Outlines a proposed arrangement and assignment of responsibility for the ongoing management, ownership and maintenance of different types of local infrastructure following the completion of each stage of the development.

This considers:

State & Regional Infrastructure

- State and regional infrastructure:
 - Transport road infrastructure and access
 - Education
 - Regional open space
 - Other social infrastructure
- Utility / site servicing
 - Potable water and wastewater
 - Electricity
 - Telecommunications
 - Gas (Non-mandatory)
- Infrastructure requirements based on schedule of works in draft Macarthur SIC
- Working with DPE on the scope of a VPA to address state or regional infrastructure

Local Infrastructure

- Working with Council in identifying S7.11 Contributions or alternative VPA arrangement.
- Local infrastructure
 - Transport and access
 - Water cycle management strategy
 - Open space and recreation
 - Community / cultural facilities
 - Post-development ownership and maintenance

LEGEND

- Appin & North Appin Precincts
- Appin (Part 1) Precinct
- Appin (Part 2) Precinct
- Waterways
- Collector Road
- District Community Facility
- Local Community Facility
- Existing School
- District Open Space
- ▨ Riparian Corridor
- ▨ Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape) SHR 02067 Plan 3294
- Local Heritage Item - Homestead

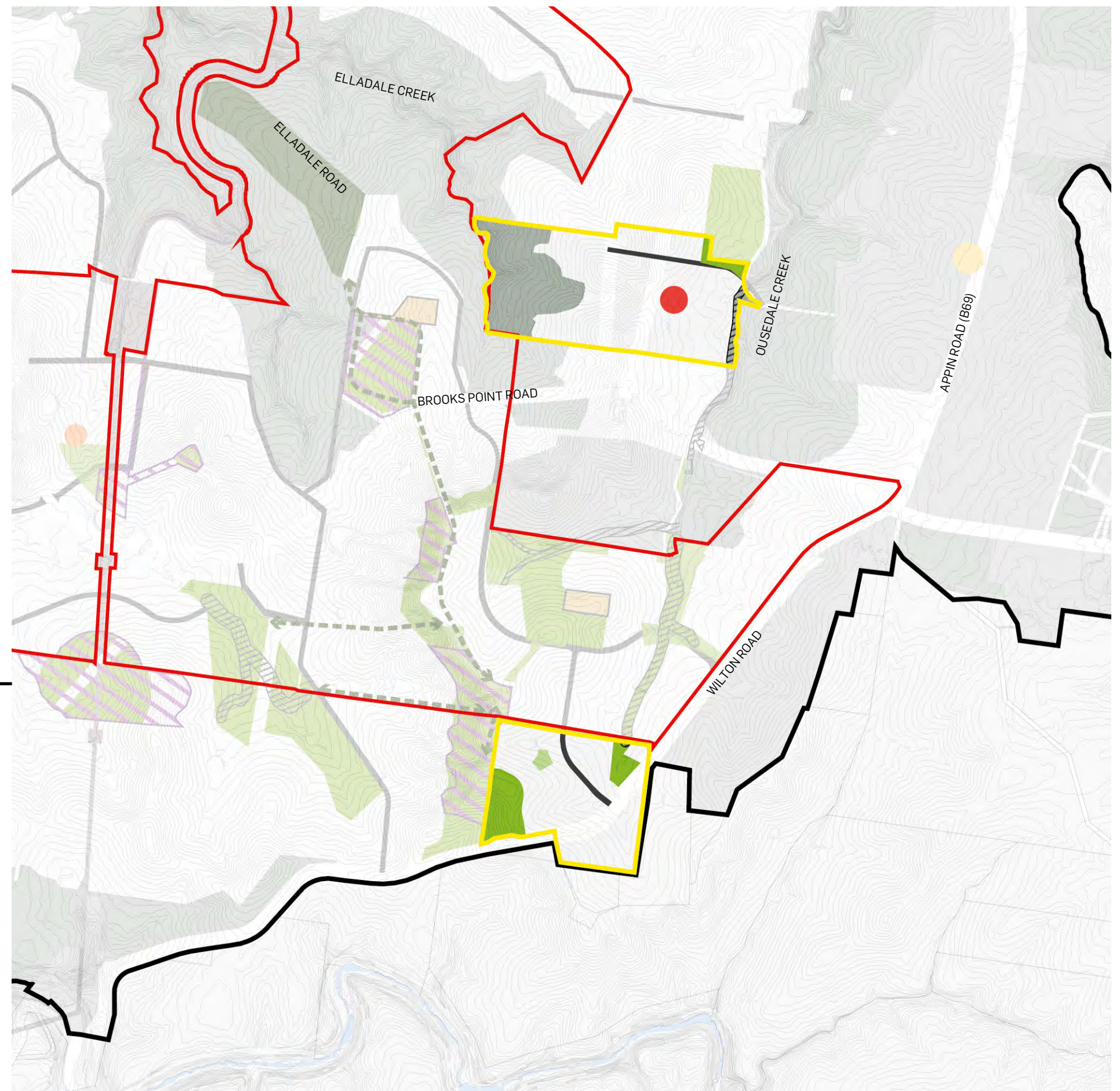


Figure 66 S711 Local Infrastructure Contributions

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SUMMARY OF USES

The following table outlines the proposed distribution of uses across the Appin (Part 2) Precinct. This includes:

- open space
- roads
- other infrastructure,
- land for residential
- land for centres

Table 17 Breakdown of uses across North and South sites on Appin (Part 2) Precinct

USES	NORTH SITE		SOUTH		TOTAL
	HA	%	HA	%	HA
Total Appin (Part 2) Precinct Area	62.08 ha	62 %	29.64 ha	32.31 %	100.10 ha
Proposed Open Spaces	2.82 ha	4.54%	6.25 ha	21.08	9.07 ha
District	0.83 ha		6.25 ha		7.08 ha
Local	1.99 ha				1.99 ha
Roads	5.55 ha	8.94 %	1.21 ha	4.08 %	6.76 ha
Proposed East-West Connection	2.13 ha		-		2.13 ha
Proposed Transit Corridor	2.12 ha		-		2.12ha
Collector Roads	1.30 ha		1.21 ha		2.51 ha
Land for Residential	26.79 ha	43.15 %	22.18ha	72.03 %	48.97 ha
Medium Density Housing	11.76 ha		1.58 ha		13.34 ha
Low Density Residential (Traditional)	4.16 ha		20.60 ha		24.76 ha
Low Density Residential (Site Responsive)	10.87 ha		-		10.87 ha
Land for Centres	4.80 ha	7.7 %			4.80 ha
Mixed Use Neighbourhood Centres	4.80 ha		-		4.80 ha
Land for Education	4.00 ha	6.4%			4.00 ha
Schools	4.00 ha		-		4.00 ha
CPCP	17.64 ha	28.4 %			17.64 ha
CPCP Non-Certified Avoided	17.64 ha		-		17.64 ha
Employment Land	-		8.38	8.37%	8.38 ha
Other	0.48 ha	0.8 %			0.48 ha
Easements retained in Structure Plan	0.48 ha		-		0.48 ha

PART D

THE PROPOSAL

The Appin (Part 2) Precinct Planning Proposal is strategically aligned with the intent, objectives and principles of the Greater Sydney Region Plan, the Western City District Plan, the Greater Macarthur 2040 Plan and the Wollondilly Local Strategic Planning Statement and satisfies the relevant statutory considerations.

This section of the report articulates the Proposal which presents the opportunity:

- To realise the vision for the Greater Macarthur Growth Area.
- Zone land and secure the delivery of an additional 1,312 home on two sites contiguous with the Appin (Part 1) Precinct.
- Contributing to a greater housing supply and diversity in the Western Parkland City.
- Connect new state, regional and local infrastructure services, amenities and recreational facilities to serve the new and existing Appin communities.

APPIN (PART 2) PRECINCT REZONING

The Proposal comprises the Appin (Part 2) Precinct Plan to be incorporated into the *State Environmental Planning Policy (Precincts—Western Parkland City) 2021 (WPC SEPP)* and containing the provisions (clauses and maps) that will apply to ‘the site.’

It has been prepared to coordinate with the Appin and North Appin Indicative Plan and the Appin (Part 1) Precinct Plan.

1. Appin (Part 2) Precinct Plan (1,312 Dwellings)

To be incorporated into the State Environmental Planning Policy (Precincts—Western Parkland City) 2021 (WPC SEPP) and containing the provisions (clauses and maps) that will apply to ‘the site.’



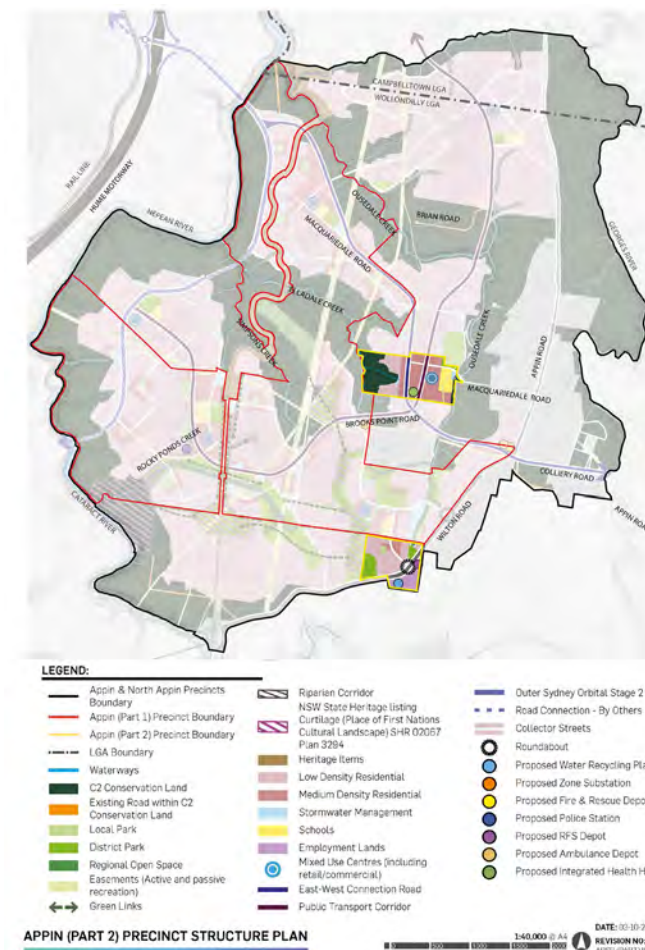
A statutory mechanism, providing the land zoning and development standards. Proposed zones are:

- C2 Environmental Conservation
- UD Urban Development

This is generally compliant with the Strategic Conservation Planning SEPP. An amendment to the Strategic Conservation Planning SEPP has been prepared under separate cover to support this rezoning. Please refer to the Planning Report for more information.

2. Appin (Part 2) Precinct Structure Plan (1,312 Dwellings)

Structure plan for the Appin (Part 2) Precinct site.

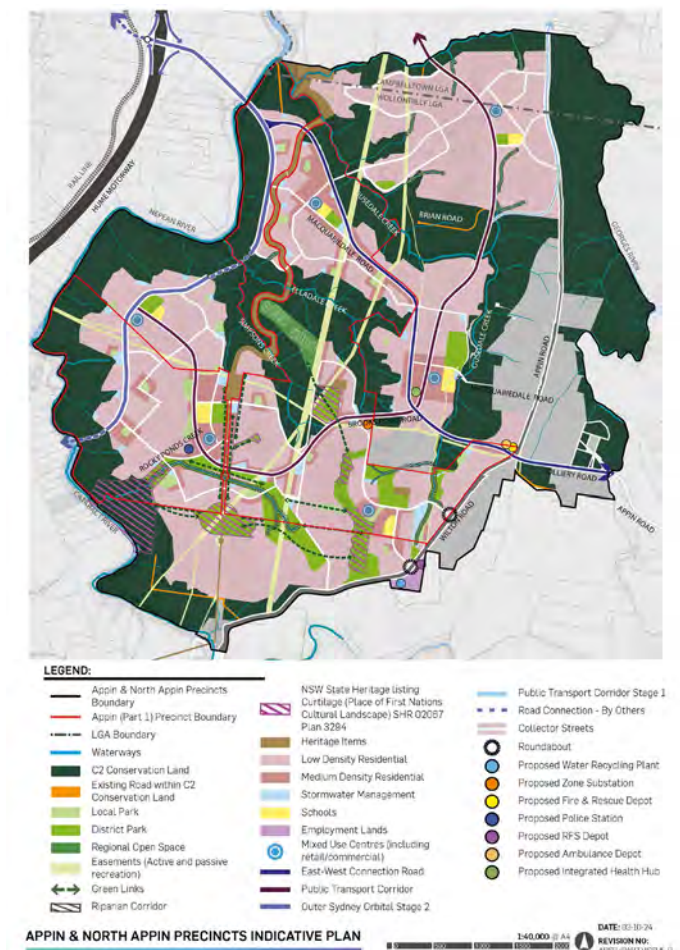


Development is to be generally consistent with the structure plan. It illustrates land use components including (but not limited to):

- Low and medium-density residential
- Retail and employment centres
- School
- Open space
- Drainage network/basins
- Transport network

Information Only - Appin & North Appin Precincts Indicative Plan (21,000+ Dwellings)

Broader context and for information purposes only. It has no statutory weight.



It identifies broader context within which the Appin (Part 2) Precinct Structure Plan is located including:

- Higher-order transport network
- Centres hierarchy
- School sites
- Conservation areas
- Residential areas
- Cultural sites and connections

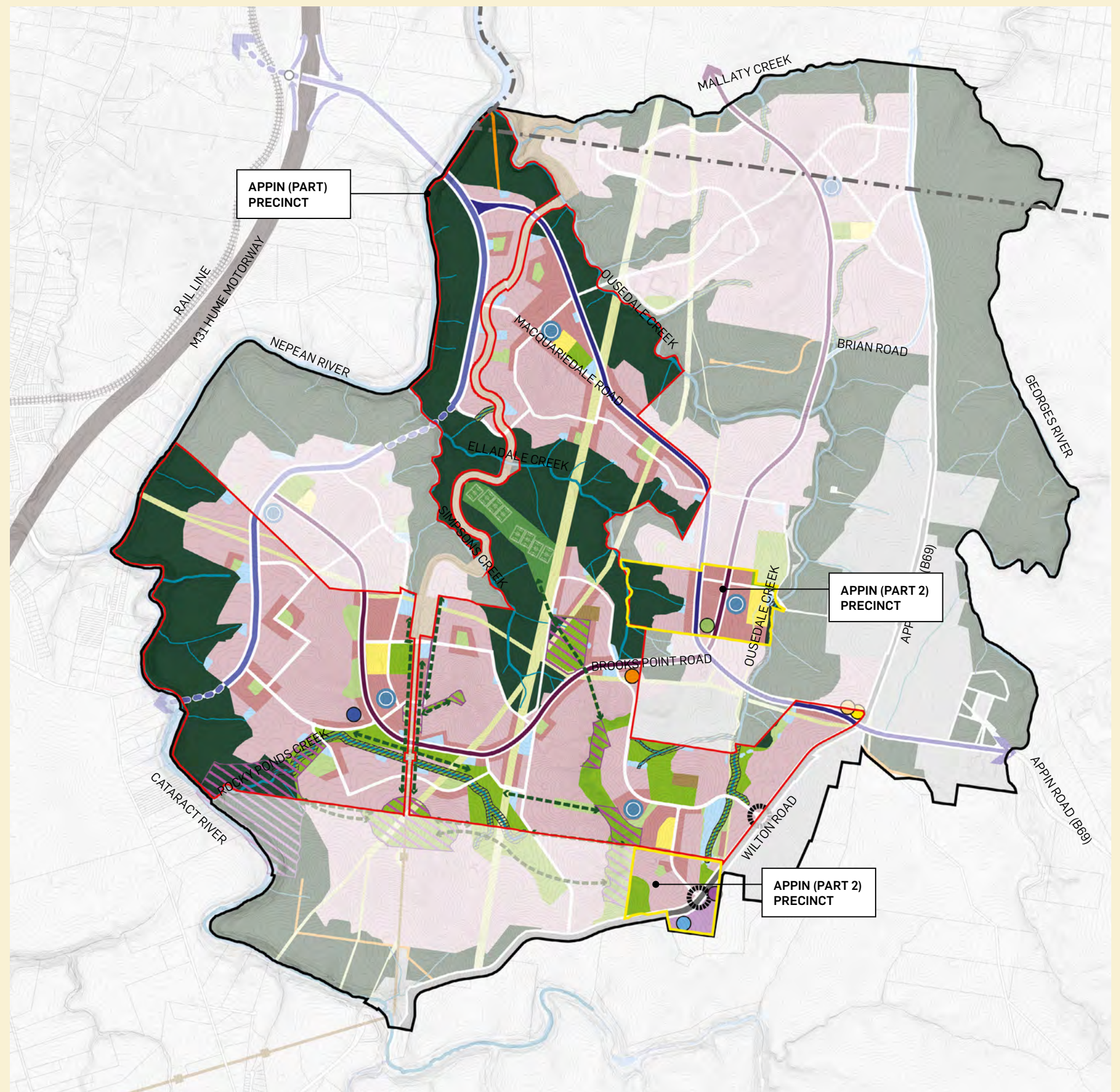
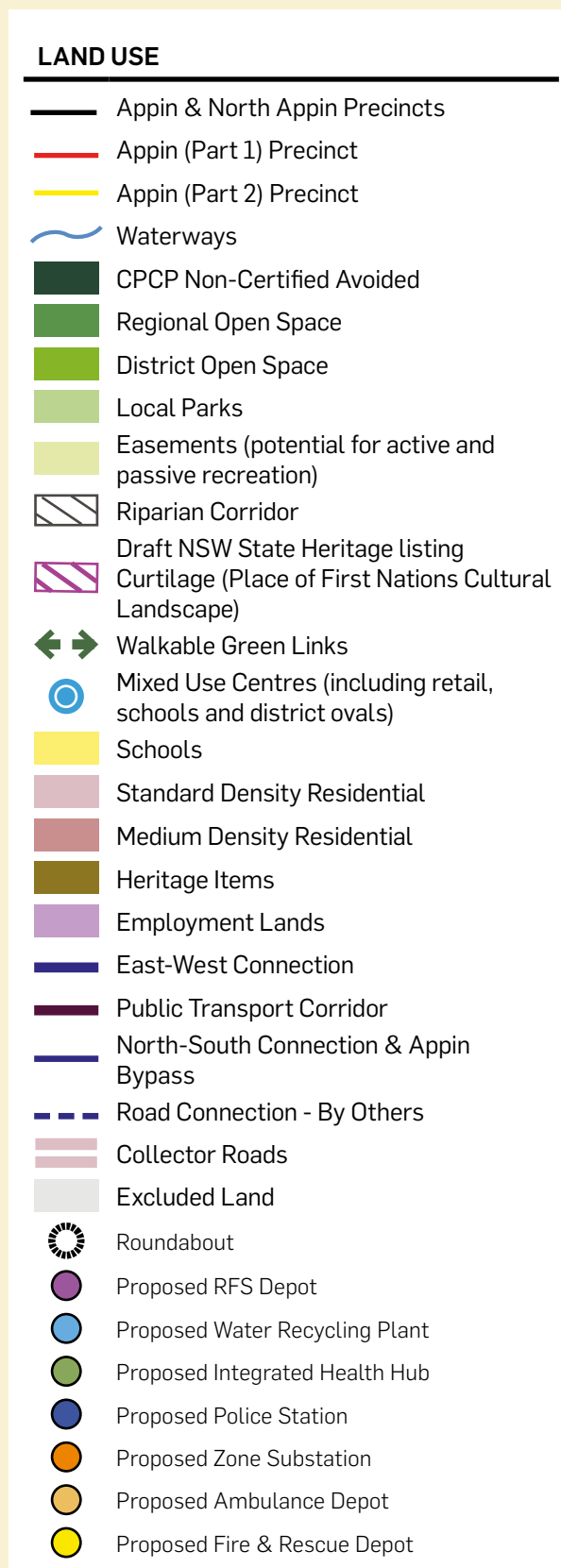


Figure 67 Appin (Part 2) Precinct Structure Plan (in the context of the Appin & North Appin Precincts Indicative Plan)

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State Environmental Planning
Policy (Sydney Region
Growth Centres) 2006

Greater Macarthur Growth Area
Appin (Part 2) Precinct Plan
Land Zoning Map

Legend

- Appin & North Appin Precincts
Boundary
- Land to which the Appin (Part 2)
Precinct Plan applies
- Greater Macarthur Growth Area
Boundary
- Cadastre (DFSI-SS, 07/2021)

Table 19 Breakdown of land zoning on Appin (Part 2)
Precinct

	AREA (HA)
APPIN (PART 2) PRECINCT	100.10
C2 Environmental Conservation	17.64
UD Urban Development	82.46

DRAFT



Figure 68 Proposed Appin (Part 2) Precinct Plan - Land Zoning Map

State Environmental Planning
Policy (Sydney Region
Growth Centres) 2006

Greater Macarthur Growth Area
Appin (Part 2) Precinct Plan
Lot Size Map

Legend

- Land to which the Appin (Part 2) Precinct Plan applies
- Appin & North Appin Precincts Boundary
- Greater Macarthur Growth Area Boundary
- Cadastre (DFSI-SS, 07/2021)
- Minimum Lot Size
- 40ha

DRAFT







Figure 69 Appin (Part 2) Precinct Plan - Proposed Minimum Lot Size

State Environmental Planning
Policy (Sydney Region
Growth Centres) 2006

Greater Macarthur Growth Area
Appin (Part 2) Precinct Plan
Land Application Map

Legend

-  Land to which the Appin (Part 2) Precinct Plan applies
-  Appin & North Appin Precincts Boundary
-  Greater Macarthur Growth Area Boundary
-  Cadastre (DFSI-SS, 07/2021)

DRAFT

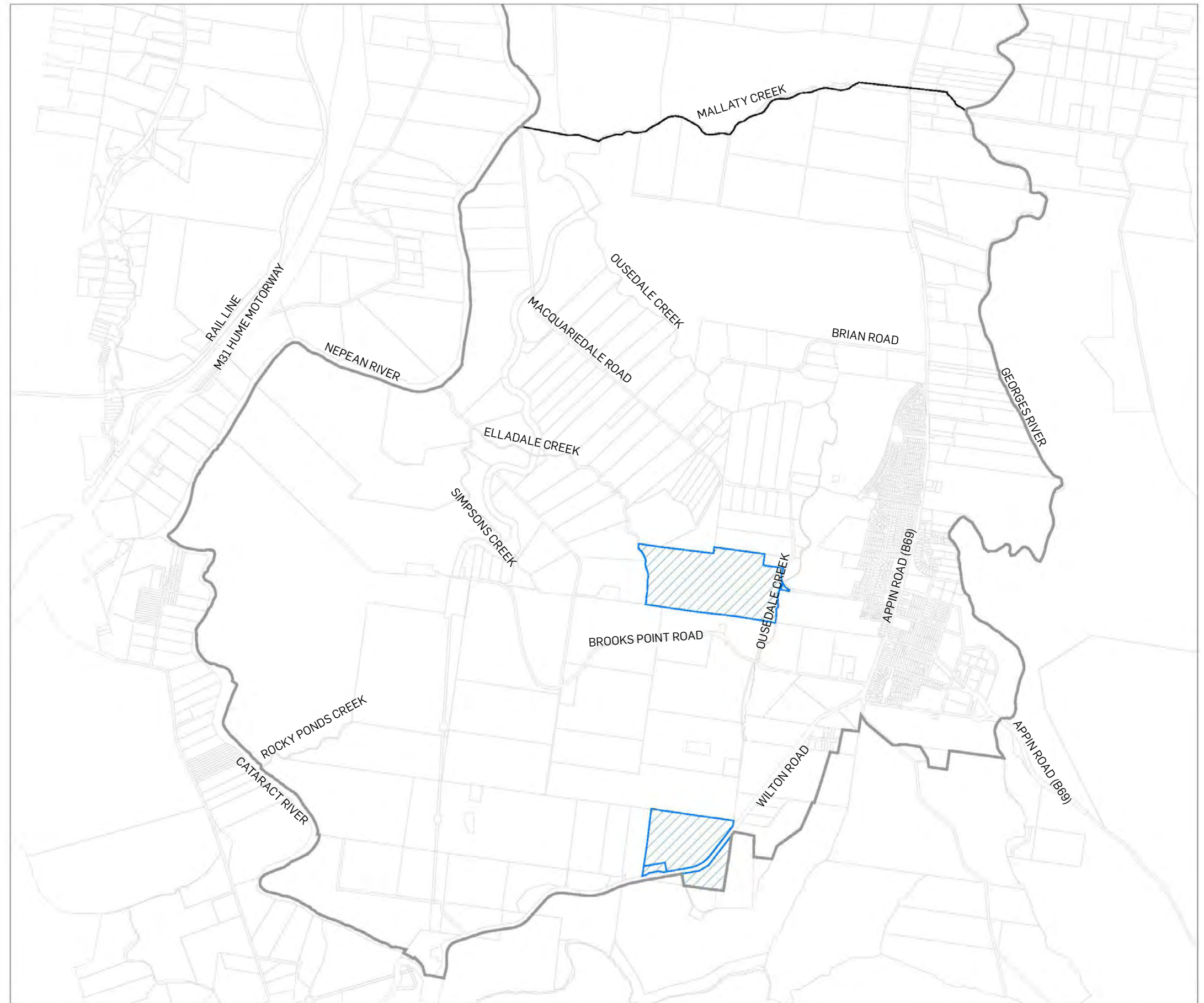


Figure 70 Appin (Part 2) Precinct Plan - Land Application Map



Planning and
Environment

State Environmental Planning Policy (Precincts—Western Parkland City) 2021

Greater Macarthur Growth Area
Appin (Part 1 & 2) Precincts Plan
Transport Corridors Map
Sheet TRC

- Transit Corridor (45.2m)*
- OSO2 Corridor (60m)**
- East-West Road
- Land to which the Appin (Part 1) Precinct Plan
- Land to which the Appin (Part 2) Precinct Plan

Precinct Boundary

- Greater Macarthur Growth Area
- Greater Macarthur Growth Area Precinct

Cadastral

- Cadastral 26/04/2023 © Spatial Services

* TfNSW require a 45.2m transit corridor, this width and alignment may be refined and reduced based on further detail design and subject to TfNSW approval.
** TfNSW require a 60m OSO2 corridor, this width and alignment may be refined and reduced based on further detail design and subject to TfNSW approval.



Projection: GDA 2020
MGA Zone 56
Scale: 1:30,000 @ A3

Map Identification Number: SEPP_SRGC_GMA_TRC

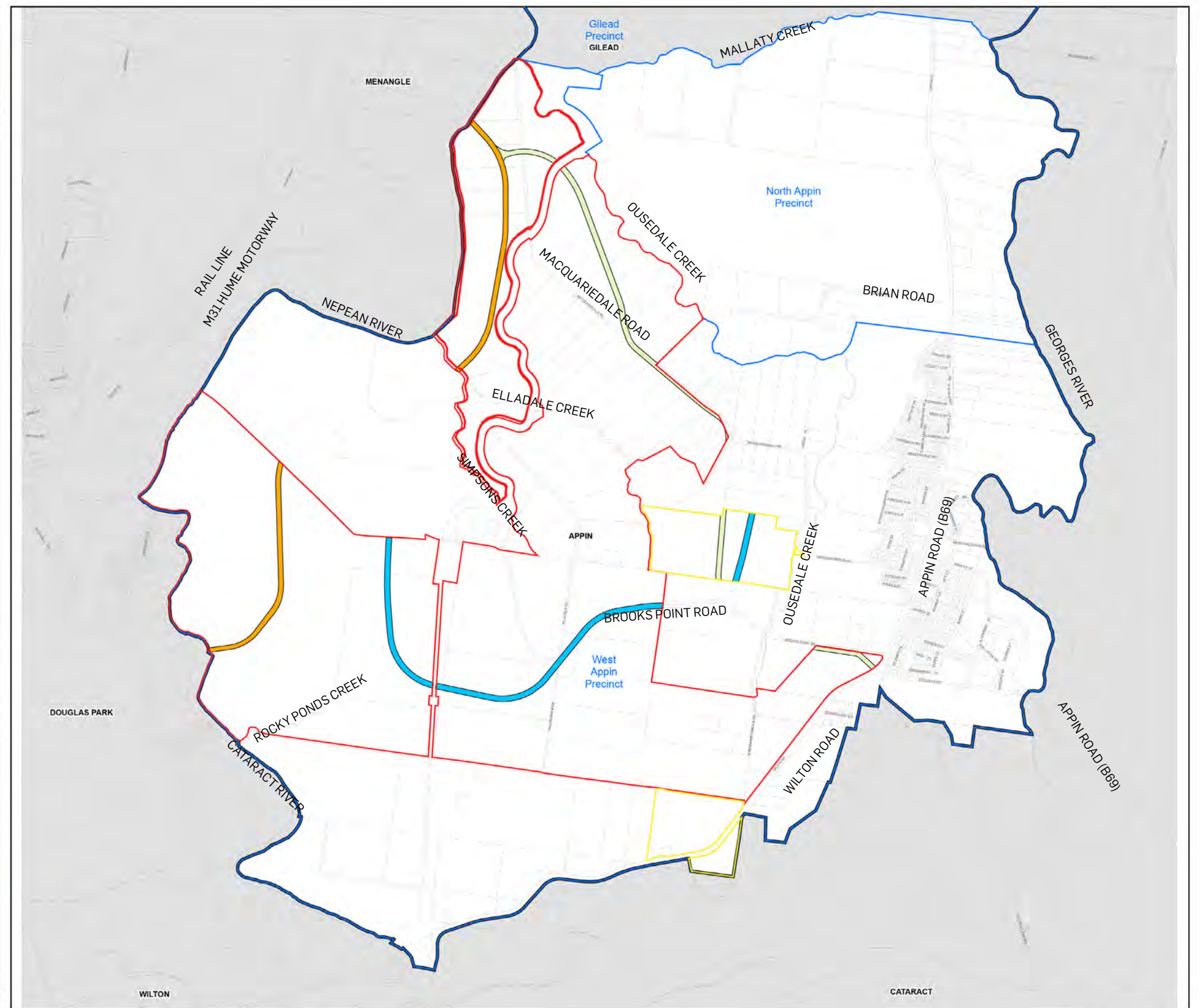


Figure 71 Appin (Part 2) Precinct Plan - Transport Corridors Map

