# APPIN & NORTH APPIN PRECINCTS URBAN CONTEXT REPORT

PREPARED FOR

WALKER CORPORATION

11 NOVEMBER 2022 FINAL FOR SUBMISSION



HATCH RobertsDay

URBIS

# 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.

URBIS STAFF RESPONSIBLE FOR THIS REPORT: Director Project

Project C Reference

Version Report S Date:

Rev Da

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Code:	P0021279
ce:	16 RPT_Appin Structure Plan Urban Context Report
	Rev G
tatus:	Final
	02 November 2022

Date	Status	Prepared	Reviewed
4.04.2022	Work In Progress	KV	ML
7.06.2022	Draft	KV	ML
8.07.2022	Final Draft	KV	ML
2.07.2022	Final	ML	ML
4.10.2022	Final	KV	ML
2.11.2022	Final	KV	ML
1.11.2022	Final	KV	ML

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# EXECUTIVE SUMMARY

# **THE APPIN PROJECT**

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 region.

The NSW Government has identified Growth Areas as major development areas that will assist in accommodating this growth. The Greater Macarthur Growth Area (GMGA) is one such growth area and is a logical extension of the urban form of southwest 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 land is to be rezoned and released for development to achieve this goal. A submission has been prepared by Walker Corporation Pty Limited and Walker Group Holdings Pty Limited (the Proponent) to rezone 1,378 hectares of land (the site) within the Appin & North Appin Precincts from RU2 Rural Landscape to the following zones:

- Urban Development Zone: Zone 1 Urban Development (UD)
- Special Purposes Zone: Zone SP2 Infrastructure (SP2)
- Conservation Zone: Zone C2 Environmental Conservation (C2)

The submission is aligned with strategic land use planning, State and local government policies and infrastructure delivery. 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 1*.

 Table 1
 Title and Purpose of Plans

#### 1. APPIN & NORTH APPIN PRECINCTS INDICATIVE PLAN

Broader context & for information purposes only. It has no statutory weight. It identifies:

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

### 2. APPIN (PART) PRECINCT PLAN (THE PRECINCT PLAN)

The Appin (Part) 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.



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.

#### 3. APPIN (PART) PRECINCT STRUCTURE PLAN (THE STRUCTURE PLAN)

A structure plan has been prepared for the site and is shown on the Appin (Part) 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):

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



'The structure plan' envisages the delivery of 12,000+ new homes.

Release Area 1 is anticipated to deliver 3,500+ dwellings.

# INTRODUCTION

#### Urbis has been engaged by the Proponent to prepare an Urban Context Report to support the rezoning of the Appin (Part) Precinct.

This Part Precinct Urban Context Report presents:

- The Appin (Part) Precinct Structure Plan to illustrate the key land use components that underpin the Appin (Part) Precinct Plan.
- The Appin and North Appin Precincts Indicative Plan as the broader context & for information purposes only. It has no statutory weight.

A separate Urban Context Report has been prepared for Release Area 1. A summary of the three plans and their key attributes has been provided opposite.

The objectives of the report are:

- Summarise the existing strategic planning directions for the site that establish the strategic merit for the rezoning and the key outcomes it needs to accommodate to integrate with its surroundings.
- Present a summary of the opportunities and constraints for the site including the outcomes of technical investigations and ground-truthing. This summarises the findings of all of the technical reports prepared by others.
- Synthesise the opportunities and constraints to identify a series of key directions for the Appin (Part) Precinct Structure Plan.
- Establish the vision and design principles to underpin the Appin (Part) Precinct Structure Plan.
- Present the Appin (Part) Precinct Structure Plan as a series of layered strategies to demonstrate how the structure plan integrates with its surrounding context and delivers a place-based plan to unlock housing delivery in the Greater Macarthur Growth Area.

This report forms the basis for the rezoning and development provisions (clauses and maps) as set out in the Appin (Part) Precinct Plan. This Urban Context Report will inform the preparation of the Development Control Plan for the Appin (Part) Precinct which will be submitted under seperate cover.

The report demonstrates The Appin (Part) Precinct Plan:

- Has strategic merit being aligned to key directions for the site contained within state and local strategic planning policy.
- Delivers on strategic outcomes identified for the Appin and North Appin Precincts including protection of strategic conservation areas, provision for essential infrastructure and accommodating housing.
- Has been prepared using a place-based approach including incorporating GANSW guidance around Connecting with Country, Better Placed and Greener Places.
- Responds to site specific considerations including realising the benefits of identified opportunities and minimising the impacts of constraints of the site.

The Proposal can be supported in its current form.

#### THE APPIN AND NORTH APPIN & NORTH APPIN PRECINCTS INDICATIVE PLAN

#### Presented within this report for broader context and information purposes only.

The Appin and North Appin Precincts are the southernmost land release areas of the Greater Macarthur Growth Area (GMGA) – refer to Table 2 for key features of the precincts.

The Appin and North Appin Precincts immediately neighbour the suburbs of Gilead to the north, Wilton to the south and Douglas Park to the west. Dharawal National Park, a large protected national park, is located to the east. The precincts are predominately bound by waterways, with Mallaty Creek to the north, George's River to the east, Nepean River to the west and Cataract River to the south.

 Table 2
 Appin & North Appin Precincts Indicative Plan – summary of key attributes



Key Attribut	es	
Area	•	3,826 ha
LGA	•	Part Wollondilly Part Campbelltown
Proposed Dwellings	•	21,000+
Proposed Population	•	65,000+

#### THE APPIN (PART) PRECINCT PLAN AND STRUCTURE PLAN

#### The subject of this report.

The precinct and structure plan boundaries are Wilton Road to the east, the Nepean River to the west and Ousedale Creek to the north. Refer to *Table 3* for key attributes of the precinct plan and structure plan area.

The Appin (Part) Precinct Plan zones land for conservation, urban development and infrastructure and 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, 12,000+ dwellings can be delivered.

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

#### **Key Attributes** Location Area Total – 1,378 ha Walker – 1,284ha Private Ownership – 94ha LGA Primarily Wollondilly LGA Appin (Part) Precinct 12,000+ Proposed Dwellings • 36,000+ Proposed Population

#### THE APPIN (PART) PRECINCT STRUCTURE PLAN - RELEASE AREA 1

#### Presented within separate urban context report for ease of understanding.

Release Area 1 of the Appin (Part) Precinct Structure Plan is situated within the southeastern area of the site – refer to Table 4 for key attributes of Release Area 1. It is defined by Appin Road and Wilton Road to the east and Elladale Road to the west. The northern periphery of Release Area 1 is bordered by the Elladale Creek and the Simpsons Creek biodiversity corridors, which link to the Nepean River.

Release Area 1 has been chosen as the first development stage due to its proximity to existing infrastructure and serviceability. It has a direct interface with the existing Appin village and local centre along Appin Road. Development of Release Area 1 is to be undertaken in a well-planned and well-serviced manner in accordance with the structure plan. It will be a self-sufficient community supported by local amenities and open spaces.

 Table 4
 Appin (Part) Precinct - Release Area 1 – summary of key attributes



Key Attribut	es	
Area	•	Total – 395 ha Walker – 341.35ha Private Ownership – 44.47ha
LGA	•	Wholly Wollondilly LGA
Proposed Dwellings	•	3,500+
Proposed Population	•	12,000+

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This Appin (Part) 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 a contextual overview of the Appin and North Appin Precincts and their role and function in the growth of Sydney into a '*Metropolis of Three Cities*'.





# **INTRODUCTION**

The Appin and North Appin Precincts are identified land release precincts within the Greater Macarthur Growth Area. The Appin (Part) Precinct Plan and Structure Plan will enable the delivery of 12,000+ 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 and North Appin Precincts are the southern most land release areas within the Greater Macarthur Growth Area (GMGA) 2040. They provide a once in a generation opportunity to:





Dedicate 1,489 hectares of bushland for conservation.

**Deliver approximately** 21,000+ new homes.

The Appin (Part) Precinct is the subject of this Proposal. Comprising approximately 1,400 hectares of land, mostly in single ownership by Walker Corporation (93%), it represents the single largest land holding within the GMGA 2040, and the greatest opportunity to address housing supply issues in Greater Sydney.





**Dedicate 493 hectares** of bushland for conservation.

**Deliver** approximately 12,000+ new homes.





Create 4,000+ permanent jobs and 30,000+ construction jobs.



Secure strategic infrastructure corridors for Western Sydney.



Provide services and amenities for 36,000+ people.



**Deliver** approximately 224 ha new open space for active healthy lifestyles.

# **SITE LOCATION**

The Appin & North Appin Precincts are strategically located in South-West Sydney with excellent access to Campbelltown-Macarthur, the Illawarra Shoalhaven region, and the proposed Western Sydney Airport and Aerotropolis.

They are the southern of two land release precincts within the GMGA 2040, predominantly located in Wollondilly Shire Local Government Area (LGA) with a portion of the north in Campbelltown City Council LGA.

Located within Greater Sydney's Western Parkland City, the Appin & North Appin Precincts have excellent access to key jobs centres including Campbelltown-Macarthur 20 minutes (17km) to the north and Wollongong 30 minutes (37km) to the south-east. They are also immediately adjacent to the proposed Moreton Park Road Enterprise Area which will offer up to 10,000 jobs.

also provide direct access to Western Sydney Airport and Aerotropolis which will in turn significantly increase Macarthur region. Douglas Park station, located to the west of the precinct, is on the Southern Highlands Line providing connections from Campbelltown to Goulburn.

They also have excellent access to natural amenity. The unique coastline of Illawarra, located approximately 25 km, or a 20 minute drive, from the precinct includes Thirroul and Bulli Beaches. The locality also has access to over 25,000 hectares of national parks in the Royal, Heathcote and Dharawal National Parks.



WOLLONGONG

# PROPOSAL DESCRIPTION

Urbis has been engaged by the Proponent to prepare an Urban Context Report to support the rezoning of the Appin (Part) Precinct.

This Appin (Part) Precinct Urban Context Report presents:

- The Appin (Part) Precinct Structure Plan to illustrate the key land use components that underpin the Appin (Part) Precinct Plan.
- The Appin and North Appin Precincts Indicative Plan as the broader context & for information purposes only. It has no statutory weight.

A separate Urban Context Report has been prepared for Release Area 1. A summary of the three plans and their key attributes has been provided opposite.

Some of the land within the Appin and North Appin Precincts is identified as 'Excluded Land'. This land comprises existing infrastructure or development. It does not form part of the Proposal and has not been included in the Indicative Plan calculations. This excluded land is detailed in Table 5.

A Development Control Plan (DCP) for the Greater Macarthur Growth Area will detail development controls and guidelines for development applications. A series of schedules will be prepared for staged development within this DCP. A Schedule for the Appin (Part) Precinct - Release Area 1 will be prepared and submitted under seperate cover.

#### The proposal comprises: 1. Appin & North Appin Precincts - Indicative Plan

The Appin & North Appin Precincts are the southern most precincts of the Greater Macarthur Growth Area.

An indicative plan has bee provided for the Appin & North Appin Precincts to understand the broader spatial context annd for information only. It has no statutory weight.

> Appin & North Appin Precincts Indicative Plan Appin (Part) Precinct Moreton Park Road Enterprise Area Structure Plan

Excluded Land

.\_\_\_\_ LGA Boundary

LEGEND



 Table 5
 Appin & North Appin Precincts Excluded Land Summary

		APPIN & NO PRECII		APPIN (I PRECI	•
	CATEGORY	AREA (HA)	AREA (%)	AREA (HA)	AREA (%)
	TOTAL AREA - APPIN & NORTH APPIN PRECINCTS	3,826.33	100%	1,378.53	100%
	INDICATIVE PLAN EXCLUSIONS		11.1%	-	0.00%
1	Appin Village	246.18	6.43%	-	0.00%
2	Employment Land	44.84	1.17%	-	0.00%
3	Upper Canal	58.87	1.54%	-	0.00%
4	Existing SP2 Roads (Appin & Wilton Roads)	34.14	0.89%	-	0.00%
5	Power Station	18.27	0.48%	-	0.00%
6	Water Catchment SEPP Land	13.98	0.37%	-	0.00%
1	Cataract Dam	10.81	0.28%	-	0.00%
	APPIN & NORTH APPIN PRECINCTS INDICATIVE PLAN	3,399.24	88.9%	1,378.53	100.00%

#### 2. Appin (Part) Precinct - Plan and Structure Plan

The Appin (Part) Precinct is situated within the Appin & North Appin Precincts. This Proposal comprises:

- The Appin (Part) Precinct Plan: 'The precinct plan' shows the land proposed to be rezoned and incorporated into a new schedule in the Western Parkland City SEPP 2021. It contains the development provisions (clauses and maps) applicable to the site and is used in assessing development applications.
- The Appin (Part) Precinct Structure Plan: 'The structure plan' for the site illustrates key land use components. Development is to be generally consistent with the structure plan.







#### 3. Appin (Part) Precinct Structure Plan - Release Area 1

The Appin (Part) Precinct has been staged to ensure timely delivery. Release Area 1 is the first stage of the Appin (Part) Precinct and forms the south eastern portion defined by Appin Road and Wilton Road to the east

Release Area 1 has been identified on the Appin (Part) Precinct Structure

# **APPIN & NORTH APPIN PRECINCTS LAND OWNERSHIP**

There are 11 major landowners who collectively own over 65% of the land holdings within the Appin & North Appin Precincts. The balance of land comprises private, individual landowners or existing roads and infrastructure.

Of the 11 major landowners, three are developers being:

- Walker Corporation: The largest land owner owning approximately 1,284.23ha (33.5% of total land area) all located within the Appin sub-precinct (not including land owned within Appin Village).
- MIR Group: Own two large parcels, one in North Appin and one in the southern part of Appin totalling about 430ha (11.2%).
- Inghams: Owns one large parcel of 300ha (7.8%) located in North Appin.

The Tharawal Local Aboriginal Land Corporation own an area of land in the southern part of Appin comprising 57.37 ha adjacent to the Cataract River.

Appin Village also consists of 186.96ha (4.8%) of land of which Walker Corporation owns 20.29 ha of residential zoned land currently being developed.



AUST Telecommunications Commission

- Macarthur Motorcycle
- **Crown Reserve**
- STH 34
- Tharawal Local Aboriginal Land Council The Trustees of the Roman
- **Catholic Church**
- Public Trustee Illawarra Coal Holdings Pty Ltd
- Private Ownership
- (Rezoning)
- Private Ownership (Other)



LEGEND:

# **APPIN (PART) PRECINCT SITE DESCRIPTION**

Only a portion of the Appin & North Appin Precincts is the subject of the Precinct Plan. This portion, known as the Appin (Part) Precinct, comprises approximately 1,380 hectares of land, of which 1,284 ha (93%) is in Walker Corporation ownership. The other smaller landholdings within the Appin (Part) Precinct in private ownership have been included to ensure isolated unzoned land doesn't remain. It also includes components of three existing roads within the Proposal. A complete list of properties and their legal descriptions is provided at *Table 6*.

#### Appin (Part) Precinct Land Legal Site Descriptions and Areas Table 6

REF	LOT #	PLAN REF	ADDRESS	AREA (HA)	REF
WAL	KER O	WNED LAND			-
-	1	DP57337	435 Brooks Point Rd	311.2	-
-	1	DP32421	435 Brooks Point Rd	0.1	-
-	26	DP752012	435 Brooks Point Rd	85.4	-
-	28	DP752012	435 Brooks Point Rd	40.8	-
-	1	DP825014	365 Brooks Point Rd	44.0	-
-	2	DP825014	350 Brooks Point Rd	30.1	-
-	5	DP825014	765 Wilton Rd (293 Brooks Point Rd)	39.3	-
-	9	DP123069	291 Brooks Point Rd	39.7	-
-	2	DP808057	265 Brooks Point Rd	38.7	-
-	3	DP825014	230 Brooks Point Rd	30.2	-
-	4	DP825014	765 Wilton Rd (200 Brooks Point Rd)	13.3	-
-	60	DP850925	765 Wilton Rd	54.7	-
-	203	DP819476	60 Northamptondale Rd	35.5	-
-	2	DP249286	15 Brooks Point Rd	10.3	-
-	4	DP249286	865 Wilton Rd	10.7	-
-	6	DP209113	250 Macquariedale Rd	2.9	-
-	2	DP209113	264 Macquariedale Rd	2.8	-
-	3	DP209113	264 Macquariedale Rd	2.8	-
-	21	DP816862	280 Macquariedale Rd	10.7	-
-	22	DP572558	280 Macquariedale Rd	13.4	-
-	23	DP572558	280 Macquariedale Rd	13.7	-
-	41	DP816859	336 Macquariedale Rd	9.9	-
-	5	DP239247	350 Macquariedale Rd	15.9	-
-	3	DP239247	390 Macquariedale Rd	17.8	-
-	2	DP239247	390 Macquariedale Rd	17.8	-
-	9	DP563605	410 Macquariedale Rd	5.8	SUE
-	60	DP1064019	410 Macquariedale Rd	10.8	

REF	LOT #	PLAN REF	ADDRESS	AREA (HA)
-	62	DP1064019	455 Macquariedale Rd	53.9
-	1	DP248044	455 Macquariedale Rd	10.0
-	2	DP248044	455 Macquariedale Rd	10.0
-	3	DP248044	455 Macquariedale Rd	10.1
-	4	DP248044	455 Macquariedale Rd	9.9
-	5	DP248044	455 Macquariedale Rd	10.1
-	1	DP816861	455 Macquariedale Rd	57.7
-	26	DP242574	435 Macquariedale Rd	11.2
-	25	DP242574	415 Macquariedale Rd	10.1
-	24	DP242574	395 Macquariedale Rd	10.1
-	23	DP242574	395 Macquariedale Rd	10.1
-	22	DP242574	365 Macquariedale Rd	10.1
-	21	DP242574	345 Macquariedale Rd	10.0
-	6	DP557763	335 Macquariedale Rd	11.1
-	12	DP245396	Elladale Rd	10.2
-	11	DP245396	Elladale Rd	10.2
-	10	DP245396	Elladale Rd	10.4
-	9	DP245396	Elladale Rd	11.4
-	8	DP245396	Elladale Rd	10.8
-	7	DP245396	Elladale Rd	10.7
-	6	DP245396	Elladale Rd	10.1
-	5	DP245396	Elladale Rd	10.0
-	4	DP245396	Elladale Rd	12.5
-	3	DP245396	Elladale Rd	13.4
-	100	DP790844	Elladale Rd	18.3
-	1	DP 816238	635 Wilton Rd	13.5
SUE	B-TOTAL	-		1,284.2

REF	LOT #	PLAN REF	ADDRESS	AREA (HA)
OTH	ER PRIV	VATELY OWNE	ED LAND	
1	61	DP1064019	440 Macquariedale Rd	1.3
2	1	DP616327	370 Macquariedale Rd	7.5
2	2	DP616327	360 Macquariedale Rd	8.4
3	40	DP740878	340 Macquariedale Rd	2.0
4	1	DP209113	272 Macquariedale Rd	4.9
5	4	DP209113	260 Macquariedale Rd	2.8
5	5	DP209113	256 Macquariedale Rd	5.2
6	101	DP790844	80 Elladale Rd	2.2
7	61	DP586318	280 Brooks Point Rd	1.7
7	1	DP808057	285 Brooks Point Rd	2.4
8	1	DP986672	289 Brooks Point Rd	21.2
9	3	DP249286	875 Wilton Rd	10.5
10	201	DP819746	80 Northamptondale Rd	2.0
11	202	DP819476	90 Northamptondale Rd	2.0
12	61	DP850925	775 Wilton Rd	2.4
SUB	B-TOTAL			76.6
отн	ER LAN	ID (EXISTING	ROADS ETC)	
REF	DESC	RIPTION		AREA (HA)
A	Macqu	uariedale Road		5.7
B	Brooks	s Point Road		5.1
C	Ellada	le Road		5.2
SUB	B-TOTAL			16.0
тот	AL			1,378.8

-	
B	Brooks Point Road
C	Elladale Road
SUB	-TOTAL
TOT	AL

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

# **APPIN & NORTH APPIN PRECINCTS DESCRIPTION**

The Appin & North Appin Precincts comprises of North Appin and West Appin as identified in GMGA 2040. It is located predominantly in the local government area of Wollondilly, with a portion at the northern end in Campbelltown LGA. It has a total area of approximately 3,826 hectares.

#### APPIN & NORTH APPIN PRECINCTS SITE DESCRIPTION

The Appin & North Appin Precincts are adjacent to the suburbs of Gilead to the north, Wilton to the south and Douglas Park to the west. Dharawal National Park, a large protected national park, is located to the east.

The site is framed by waterways:

- Mallaty Creek to the north;
- Georges River to the east;
- Nepean River to the west; and
- Cataract River to the south.

Wilton Road defines the south-eastern boundary of the precinct.

North and West Appin are defined by Ousedale Creek as is the extent of the existing Appin Village.

#### **ACCESS & CONNECTIVITY**

Appin Road and Wilton Road together form a key northsouth transport connection along a prominent ridge line to the east of the site. The existing Appin Village sits along Appin Road, in the east of the precinct. The site gently falls away from this ridgeline to the west towards the Nepean and Cataract rivers.

Beyond the site to the west is the M31 Hume Motorway and Southern Highlands Intercity passenger railway connecting Campbelltown to Goulburn with Douglas Park station. Along the spine of these two transport corridors are residential clusters connecting many of Sydney's south western suburbs.

Appin Road (B69) extends east south of Appin Village connecting to the Illawarra.

#### PRECINCT CHARACTERISTICS

The precinct is undulating in character ranging from 70 metres to 250 meters and features a number of secondary ridge lines some of which include minor areas of steep slopes. The precinct is framed by vegetation along rivers and creeks which also define sub-precincts. These creeks include:

- Elladale Creek: Connects to the Nepean River in the west. Simpsons Creek is a tributary of Elladale Creek forming two green-blue spines at the centre of the Appin & North Appin Precincts.
- Ousedale Creek: Connects to the Nepean River in the north-west, Ousedale creek separates West Appin from North Appin and extends to the east before transitioning to a north-south alignment to the south of the precinct towards Wilton Road.
- Rocky Ponds Creek: Connects to the Cataract River in the south-west, and extends to the east towards Wilton Road.

The majority of the land within the precinct is cleared.

Vehicle access is currently limited to a small number of existing roads passing through the precinct being:

- Macquariedale Road: North-west to south-east road in the middle part of the precinct connects to Appin Road.
- Brooks Point Road: East-west road in the southern part of the precinct connects to Appin Road.
- Elladale Road: Internal road within the southern part of the precinct off Brooks Point Road.
- Brian Road: East-west road in the northern part of the precinct connects to Appin Road.
- Willabong Rise: North-south road extending south from Brooks Point Road directly opposite Elladale Road. It is currently an unsealed road providing access to a private property.

#### **KEY FEATURES**

There are several prominent features within the precinct. These include:

 Appin Village: Along Appin Road is the existing Appin township with low density housing and a range of local community facilities, services and amenities. The remainder of the site is mostly grazing land.

**Upper Canal:** The Upper Canal is a heritage-listed operational gravity-fed aqueduct that supplies 20-40% of the potable water for Sydney. The Upper Canal emerges by tunnel from Pheasant's Nest Weir on the Nepean River and extends through the local government areas of Wollondilly, Camden, Campbelltown, Liverpool, Fairfield, and Cumberland to terminate at the Prospect Reservoir. Within the Appin & North Appin Precincts it extends from Broughton Pass in the south at the Cataract River to Ousedale Creek in the north. Just south of Simpsons Creek it transitions from underground tunnels to an open channel.

Appin East Colliery: Commencing production in 1962, the Appin Colliery is owned and operated by Endeavour Coal Pty Ltd and mines Bulli seam coals to depths up to 550 meters.

**Appin Power Station:** Run by EDL Energy, the Appin Power Station is the world's largest waste coal mine gas (WCMG) power station.

**Macarthur Motorcycle Complex:** Off-road motor bike facility located in the North Appin & North Appin Precincts with approximately 70ha of land.

 Appin Technology Park: On Wilton Road is an existing light industrial park with a range of industrial and warehouse uses.

**Macarthur Filtration Plant:** Is located on Wilton Road. It extracts water from Broughton's Pass Weir to supply potable water to Camden, Campbelltown and Wollondilly Council Areas.

#### **APPIN (PART) PRECINCT DESCRIPTION**

The Appin (Part) Precinct occupies a central portion of the Appin & North Appin Precincts. It extends the full width of the precinct across the southern parts of West Appin from the Cataract and Nepean rivers in the west to Appin and Wilton Road in the east. It also extends through the centre of the precinct, on either side of the Upper Canal, to the Nepean River and Ousedale Creeks in the north. At its greatest extents it is approximately 6,130 m (eastwest) and 5,750 m (north-south).

It is bound by rivers, creeks, existing roads and adjoining rural land holdings. The Upper Canal and Appin Power Station both immediately adjoin the sub-precinct boundary in places. A small section of the sub-precinct is immediately opposite the existing industrial land on Wilton Road south of Appin Village.

The Appin (Part) Precinct includes the following key features:

- Existing roads including Brooks Point, Macquariedale and Elladale road and Willabong Rise.
- Parts of Ousedale, Elladale and Rocky Ponds Creeks.
- A series of buildings and out-buildings both modern and historical.

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





# **SITE PHOTOS**











9













# SCALE **COMPARISON**

The Appin & North Appin Precincts comprises an area in excess of 3,800ha with the ability to deliver 21,000+ new homes. The following scale comparisons are instructive in demonstrating the magnitude of the precinct when comparison to existing Sydney inner urban and greenfield settings.



Figure 22 Appin & North Appin Precincts Scale Comparison

LEGEND:



### WILTON GROWTH AREA

### **CITY OF SYDNEY LGA**

# WILTON GROWTH AREA 4,080 HA

Figure 23 Appin & North Appin Precincts Scale Comparison - Wilton

The Appin & North Appin Precincts is almost equal in scale to the Wilton Growth Area.



Figure 24 Appin & North Appin Precincts Scale Comparison -City of Sydney LGA

The Appin & North Appin Precincts is 40% larger than the City of Sydney LGA. The population of the City of Sydney LGA is 248,736 people (2020) which is four times than the projected population of Appin at 60,000 people.

	LEGEND:
North Appin Precincts	Appin & North Appin
ydney LGA	Oran Park
	Appin (Part) Precinct

#### LEGEND:



Wilton Growth Area

Appin & North Appin Precincts

#### LEGEND:





**ORAN PARK** 

than Oran Park.

Figure 25 Appin (Part) Precinct Scale Comparison - Oran Park

The Appin (Part) Precinct Area is 1,378 ha which is 25% larger

Precincts

# **STRATEGIC** PLANNING DIRECTIONS

The Appin (Part) 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 this section of the document.

### **OVERVIEW**

Planning in NSW is underpinned by a series of cascading strategic documents which align land use, transport and infrastructure between three tiers of government and across state agencies for the first time in a generation. Together these documents set out the key directions and place specific guidance for land release areas. The strategic merit for the development of the Greater Macarthur Growth Area, including the Appin & North Appin Precincts, is articulated within these documents, with the key outcomes captured on the following pages.

#### LOCATION SPECIFIC STRATEGIC DOCUMENTS

A review of strategic planning requirements for the site identified the following plans, strategies and requirements as relevant to the Appin & North Appin Precincts:

#### **Strategic Planning Documents:**

- Greater Sydney Region Plan
- Western City District Plan
- Greater Macarthur Growth Area (GMGA) 2040: An Interim Plan
- Campbelltown 2040 Local Strategic Planning Statement (LSPS)
- Wollondilly 2040: Local Strategic Planning Statement (LSPS)
- Wollondilly Local Housing Strategy (2021)

#### Infrastructure Planning

- State Infrastructure Strategy 2018-2038
- Future Transport 2056
- Outer Sydney Orbital:
  - Stage 1 Confirmed Corridor Alignment
  - Stage 2 Corridor Investigation

#### NSW state wide Policy & Guidance

Additionally, the following State Government Policies and Guidance are also applicable:

#### **Government Policy & Guidance:**

- SEPP
- ADG
- Ministerial Directions
- New Approach to Precinct Planning
- Connecting with Country / Designing with Country
- Greener Places
- Better Placed







### **CURRENT STATUS OF THE GMGA 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.

Key dates include:

- November 2018 February 2019: The draft Greater Macarthur 2040 and Special Infrastructure Contribution (SIC) were on public exhibition.
- 2019: Greater Macarthur declared as a Growth Area. An amendment was made to the State Environmental Planning Policy (Sydney Region Growth Centres) (2006) (Growth Centres SEPP) to identify the Greater Macarthur Growth Area.

The Department and Government Agencies have since undertaken additional technical studies to finalise the GMGA 2040 plan as part of the pilot Technical Assurance Process (TAP). This Proposal has been informed by the findings of these studies, the status of which are provided below.

Table / GMGA 2040 Additional Technical Studies Statt	Table 7	nal Technical Studies Status
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#	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	Finalising
7	Greater Macarthur Transport Network Plan	Finalising

# **KEY DOCUMENT SUMMARY**

The following snapshot provides an overview of the key strategic planning documents that identify outcomes for the GMGA 2040 and the Appin & North Appin Precincts.



#### WESTERN CITY DISTRICT PLAN

The Western City District Plan presents a vision to deliver the 30-minute city, where people live within 30-minutes of their job. The district is projected to grow from 740,000 people in 2016 to 1.1 million by 2036, and to well over 1.5 million by 2056.

The District Plan identifies Campbelltown -Macarthur as a future Metropolitan Cluster that will provide substantial housing and employment growth for the Western City District. It also acknowledges the Greater Macarthur Growth Area as a current initiative and opportunity for providing housing supply, choice and affordability.



#### DRAFT CUMBERLAND PLAIN **CONSERVATION PLAN**

The Draft Cumberland Plain Conservation Plan presents a conservation program designed to improve ecological resilience and function, and to offset biodiversity impacts from new housing, employment areas and infrastructure in the Western Parkland City.

It supports biodiversity and growth by protecting the region's important conservation values. It intends to do this through the creation of new reserves, conservation areas and green spaces for the local community.

Specific to the Appin & North Appin Precincts there is a focus on mitigating impacts to the Southern Sydney koala population, and deliver the Georges River Koala Reserve to protect threatened native vegetation and species.



#### **GREATER MACARTHUR 2040**

The Land Use and Infrastructure Implementation Plan for Greater Macarthur is essential to the vision for a thriving Western Parkland City focused on the planned Western Sydney Airport. The Greater Macarthur 2040 (November 2018) builds on Campbelltown Council's vision and describes the objectives and structure plan for this state designated growth area.

For the Appin & North Appin Precincts the structure plan identifies an indicative east-west connection and public transport corridor, urban capable lands including employment land and mixed use residential areas, as well as environmental conservation areas.



#### **PROPOSED SPECIAL INFRASTRUCTURE CONTRIBUTION - GREATER** MACARTHUR

The draft Special Infrastructure Contribution scheme for Greater Macarthur is proposed to help fund the costs of new and upgraded state and regional infrastructure required to support growth in Menangle Park, Gilead and North Appin, West Appin and Appin East at no additional cost to government.

For the Appin & North Appin Precincts the plan identifies special infrastructure contributions that includes new road infrastructure, a public transport corridor, education facilities, integrated health hubs, open space and conservation areas, emergency services, and overarching precinct planning and delivery contributions.

# **KEY DOCUMENT SUMMARY**



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#### WOLLONDILLY LOCAL STRATEGIC PLANNING STATEMENT

The Wollondilly Local Strategic Planning Statement presents the 2040 vision for the LGA and is anchored on the key themes of infrastructure, collaboration, liveability, productivity and sustainability. It is anticipated the total population within the Wollondilly LGA will reach 92,102 people by 2036.

The Wollondilly LSPS identifies Greater Macarthur as a major growth area within the LGA which is anticipated to accommodate approximately 15,000 new homes within a portion of the Appin & North Appin Precincts (i.e. West Appin only). The Council has prioritised critical infrastructure being in place within the growth area.

# WOLLONDILLY LOCAL HOUSING STRATEGY

The Wollondilly Local Housing Strategy (LHS) was completed in 2020 and prepared to support the Wollondilly 2040 LSPS and inform the Wollondilly Local Environmental Plan 2011 (LEP) review.

ARUP

The LHS outlines four directions for housing growth within Wollondilly, which include:

- **1.** Provide housing in areas that are adequately serviced by infrastructure.
- 2. Promote housing diversity ad affordability
- **3.** Plan and coordinate growth for emerging communities
- **4.** Build sustainable and resilient communities that protect and celebrate our environment.

# **TOPOGRAPHY**

#### **GSC - GREATER SYDNEY REGION PLAN**



Plan of Greater Sydney Topography Figure 26 (Source GSC Greater Sydney Region Plan) 2018

#### • • • Major Ridgeline

The Appin & North Appin Precincts sit on a regional north-south ridgeline that traverses the Greater Sydney catchment.





Figure 27 Plan of Greater Sydney Topography (Source GSC Greater Sydney Region Plan) 2018

#### • • • Hawkesbury-Nepean Catchment

The Appin & North Appin Precincts are located within the Hawkesbury-Nepean Catchment which flows away from the coastal areas, draining north to the Hawkesbury River.



Regi Sydı	onal Catchments of Greater ney
	Hawkesbury-Nepean Catchment
	South Creek Sub-Catchment
	Coastal Catchments
•••	<ul> <li>Major Ridgeline</li> </ul>

# **CONSERVATION & OPEN SPACE**

#### **CUMBERLAND PLAIN CONSERVATION PLAN (DPE)**



- **Non-Certified Avoided:** Avoided land is 'non-certified' and does not have biodiversity approval under the *BC Act* and *EPBC Act*. It will be protected by C2 Environmental Conservation zoning. Non-certified land was identified for two reasons within the Appin & North Appin Precincts:
- Avoided for Biodiversity: Land has high biodiversity values to be protected.
- Avoided for Other: Land cannot be feasibly developed due to slope of land or having an environmental feature (i.e. riparian corridor).

#### Additional Requirements & Approvals:

- **Exclusion Fencing:** Maintain separation between koalas and threats using exclusion fencing.
- Buffer: Includes buffer zones located within the avoided land (30 metres wide where fenced and wider to approximately 60 metres where fencing is not feasible), and trees should be 3 metres from the fence (to prevent tree branch damage to the fence).
- APZ: Located on urban side of the fence.
- Essential infrastructure: Essential infrastructure is infrastructure to service and support urban and industrial development in the plan's nominated areas. As defined in 'Appendix A. Accessing EPBC approval for essential infrastructure development in the avoided land', it includes development such as pipelines and pipeline corridors, roads and traffic, utility services and other communication facilities.



- Protected Koala Habitat: In accordance with the recommendation of the NSW Chief Scientist & Engineer Koala advice (May 2021), Koala corridors with an average minimum width of 390 425 metres were implemented along the western bank (primary corridor) of the Nepean and Cataract Rivers.
- Koala Habitat Restoration: Restoration of the areas within the strategic conservation area that are identified as either cleared or degraded, but with the potential to bring back to a recognisable target threatened ecological community or to enhance landscape connectivity.
- Primary koala corridors: Connected and
   contiguous koala habitat (greater than 390m width and gaps between trees less than 100m).

 Secondary koala corridors: Movement corridors
 less than 50m width or not connected at both ends to other koala habitat.



- **Excluded Land:** Excluded from NSW strategic biodiversity certification and strategic assessment under the *EPBC Act* and will not receive any biodiversity approvals under the CPCP due to any of the following factors:
- Is already identified for urban use, such as, existing urban areas or has specific urban zoning, such as business, industrial, residential or special purpose (either already developed or to be developed).
- Is in the nominated areas and already assessed as part of another development approval, or is progressing through an alternative development assessment and biodiversity certification approval process.
- Has approved major projects in the avoided land.
- Is environmentally protected, including reserves and existing offset sites.
- Is Commonwealth land
- Has roads or easements that intersect with areas of high biodiversity value (the avoided land).

mea calm koal dogs sens deve deve dogs syste cour CPC



**Certified - Urban Capable:** This category identifies where future urban development is likely to occur, subject to other approvals. Certifiedurban capable land will be subject to strategic biodiversity certification for development under Part 8 of the *Biodiversity Conservation Act 2016 (NSW)* (BC Act) and class of actions approval under Part 10 of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (EPBC Act). Development in these areas does not require further biodiversity assessment under the BC Act or EPBC Act, if consistent with the CPCP and its approvals.

**Koala-Sensitive Precinct Design DCP:** Urban design measures respectful of koala habitats includes traffic calming measures, planning of green space, avoiding koala feed trees in the urban footprint, ensuring domestic dogs are secured in neighbourhood backyards, and fauna sensitive design. A koala-sensitive DCP template was developed as part of the CPCP.

NOTE: Although the DCP template includes controls that require dog containment fencing be considered in development design, the regulation and containment of dogs in backyards is beyond the scope of the NSW planning system and may be regulated by council's guidelines. A council working group is being established as part of the CPCP's governance for issues such as these.

# **GREEN & BLUE GRID**

#### **GEO-SCIENCE AUSTRALIA**



#### **Riparian Corridors**

The overland flow path associated with the 1 in 100 flood event is contained within the river gorges.

#### Strahler Stream Order Classification (existing)

'Stream order' is used to describe the hierarchy of streams from the top to the bottom of a catchment. Riparian corridor widths vary depending on the Strahler stream order. The streams found within the precinct based on GIS dataset are as follows:

 Stream 7 - 40 m buffer each side of the watercourse
 Stream 6 - 40 m buffer each side of the watercourse
 Stream 4 - 40 m buffer each side of the watercourse
 Stream 3 - 30 m buffer each side of the watercourse
 Stream 2 - 20 m buffer each side of the watercourse
Riparian buffers

#### **GANSW GREEN GRID STUDY**



#### Priority Project - Upper Canal (Hydrological)

The Upper Canal Green Grid Project presents a unique opportunity to:

- Protect Sydney's drinking water infrastructure.
- Deliver a recreational open space link from the Nepean Dam to Prospect Reservoir: Making use of the under-easement lands along the canal as open space, urban greening and active transport linking many suburbs of the South West. The land along the Upper Canal could become an ideal cycling link due to the canal following a gentle gradient along its full length.
- Provide a key open space structuring device for the South West Growth Centre: Connecting to many other important Green Grid projects, including the Nepean River, South Creek, Mt Annan Botanic Gardens, Rileys Creek, The Scenic Hills, the South West Rail Line, Bringelly Road, Kemps Creek and the Western Sydney Parklands.



Green	Grid	<b>Projects:</b>
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	Georges River & Chipping Norton Lakes (Hydrological) Priority
	The Hawkesbury Nepean River (Recreational)
	Hume Highway Motorway Corridor (Transport)
	Bargo River and Nepean River Gorges

(Hydrological)

Southern Highlands Rail Corridors (Transport) 

Nepean Gorges Crossings (Transport)

# **VISUAL CHARACTER**

#### WOLLONDILLY SHIRE COUNCIL



Charact	ape Unit 10 Overview: Plan of Landscape ter Unit 10 (Source: Draft Wollondilly Scenic and Landscapes Study (WSCLS)) 2020
Α	Appin & North Appin Precincts Boundary
	andscape Unit 10 - Upper Nepean: Identifies xisting regional visibility of the site as:
•	Comprises more visible areas along the eastern escarpment
	The mid and upper slopes are the visually most prominent parts from a number of areas outside the LCU including the Picton Hills, Razorback Slopes, Razorback Plateau and parts of Pheasants Nest.
-	<ul> <li>Visibility of the undulating valley floor and lower slopes of the LCU is much lower, offering relatively greater potential for development to be located without affecting scenic qualities and important views.</li> </ul>
T v fr C d a	<b>Jational Parks, Management &amp; Conservation:</b> The protected natural areas provide an important isual backdrop for Greater Sydney generally and or many views across Wollondilly in particular. Due to their elevation, the natural areas provide a listinct silhouette against the skyline, providing an ttractive natural background from many vantage points.

# **FIRST NATIONS & EUROPEAN HERITAGE**

#### GMAC CULTURAL SENSITIVITY MAPPING

#### **AHIMS - HERITAGE NSW**



# **AHIMS Sites:** The Growth Area is located at the interface between land originally inhabited by the Darug, Dharawal and Gandangara people, who would have met to feast, plan events and perform ceremonies.

First Nations archaeological and cultural heritage investigations and engagement with the First Nations community have identified the presence of First Nations objects/sites of significance and areas of cultural value.

These sites and objects are mainly located along the Nepean River and its tributaries, which are precluded from development. Known or predicted sites of Aboriginal significance include important sites for subsistence activities along the lagoons and creeks, a traditional story place, and a massacre and burial site.

- Art
- Artefact
- Burial
- Grinding Groove
- Modified Tree (Carved / Scarred)
- Potential Archaeological Deposit (Pad)
- Stone Quarry

#### EUROPEAN - STATE & LOCAL HERITAGE LISTING (OEH)



European Heritage Listed Items: European heritage items reflect the area's pastoral history, including links to early farming activity by Macarthur at Camden Farm.

#### State Heritage Listing:

 01373 - Upper Canal System (Pheasants Nest Weir to Prospect Reservoir)

#### Local Heritage Listing:

- I11 Elladale
- I13 Northampton Dale Group
- I15 Upper Nepean Scheme Broughton Pass Weir
- I16 Upper Nepean Scheme Upper Canal
- I17 Windmill Hill Group (Brennan's Farm, Larkin's Farm and Winton's Farm)

NOTE: Heritage NSW is investigating a new State Heritage Listing for sites in Appin. Detail to be provided when draft plan is published by Heritage NSW.

#### Cultural Sensitivity Mapping:

DPE facilitated an engagement process with Cultural Knowledge Advisors to inform the final plan for Greater Macarthur Growth Area. Through the engagement process, cultural sensitivity mapping was developed. High-level sensitivity mapping identifies broad areas that require further assessment and engagement before any potential development.

NOTE: Detailed mapping for Appin & North Appin Precincts prepared and undergoing review by Cultural Advisors and Registered Aboriginal Parties.

# **TRANSPORT CONNECTIVITY**

#### **TFNSW - REGIONAL ROAD CONNECTIVITY (GMGA 2040 SIC)**



#### GMGA 2040: Draft SIC Transport Network Source TFNSW

In addition to this planned transport network for the GMGA, TfNSW has considered the need to protect land for the Outer Sydney Orbital (OSO). The OSO corridor is being investigated in three stages of which stage 1 and 2 are of relevance to Appin.



PART A: STRATEGIC ALIGNMENT

**OSO Stage 1:** Connection between Box Hill (north) and Hume Motorway near Menangle (south): Publicly exhibited 22 June 2018.

OSO Stage 2-Sector 1: During 2020 and 2021, TfNSW exhibited options for OSO Stage 2-Sector 1, through the Appin & North Appin Precincts, with a preferred corridor announced in August 2021. During the Appin TAP process, presentation of technical studies in late 2021 and early 2022 identified the preferred corridor would have impacts on the cultural landscape, koala corridors and provision of housing in accordance with the existing strategic and statutory planning framework.

In this context, TfNSW advised the TAP that an alternative road configuration and corridor within the Appin & North Appin Precincts be protected in alignment with the transport network identified in GMGA2040.

Road Infrastructure

**Public Transport Infrastructure** 

**GMGA 2040 - TRANSPORT CONNECTIONS** 

East-West Road Connection: SOURCE GMGA 2040

Three new east-west road connections between the Hume Motorway and Appin Road are required to provide sub-arterial road capacity for the GMGA 2040. One of these east-west connector roads is located within the Appin & North Appin Precincts indicatively located through the Macquariedale Road locality.

It is noted that the alignment of the transport infrastructure in this plan is notional and will be refined through the detailed design process.

NOTE: TfNSW is currently reviewing the Greater Macarthur Transport Network Plan to support the broader vision for the GMGA 2040 and surrounds and to enable detailed planning of local roads and walking and cycling routes during precinct planning.



#### North-South Transport Corridor: Source GMGA

Fast, frequent and reliable moderate-to high-capacity mid tier transit serving city-shaping and city-serving corridors enabling residents to reach city centres within 30 minutes. The rapid transport service may operate in a similar manner to existing Northern Beaches B-Line and will be supported by dedicated bus lanes, bus priority technology and high-quality bus stop infrastructure with a fleet responding to customer needs and consider zeroemission technology. Could include trackless trams and driver-less vehicles.

A route for the transport corridor will be confirmed as precinct planning progresses. This will inform investment decisions in land development throughout the corridor. Reliable, rapid and clean public transport is expected to stimulate diverse housing and employment investment adjoining the identified route.

Current best practice shows that people should be within a 10-minute walk of a local bus stop (around 800m).

It is noted that the alignment of the transport infrastructure in this plan is notional and will be refined through the detailed design process.

- GMGA



### Indicative Transport Corridor Cross Section: Source

Indicative transport corridor road section includes:

- Total width of 45.2m
- 10-14.8m wide median with kerb edge accommodates:
  - 7-12m wide transport corridor
  - 3m right turn lane at intersections
- 7m wide 2-lane carriageways on either side for general traffic.
- 5m zone on either side to accommodate parking and cycling.
- 3.7m wide zone on edges to accommodate 3m wide footpath and tree planting.

# **INFRASTRUCTURE & UTILITIES**

#### **UPPER CANAL, WATER NSW**



#### Water NSW Guideline for Development Adjacent to the Upper Canal (2021)

New adjacent development is required to:

- Construct appropriate, secure fencing:
  - Complying with WaterNSW's "Barriers, Fences and Gates – Installation and Maintenance Manual" (reference CD2011/547) and fencing specifications.
  - Be erected by the developer at their own cost to replace existing fencing with maintenance and management the responsibility of the adjacent landowner.
- Separate housing from Corridor boundaries by means of a local public road, road reserve or public open space for surveillance and security. Where roads are proposed, a soft landscaped verge, and/or footpath/bicycle path should be provided as a further buffer between the corridor boundaries and the carriageway.
- Trees are required to be planted no closer to the boundary than the expected drip line of the outer foliage at maturity (exact distance dependant on the tree species).

- Low-growing shrubs and grasses in plantings are required adjacent to the Corridor boundaries.
- Minimise new crossings to essential infrastructure only and provide justification including alternative options and why they were dismissed.
- Stormwater: WaterNSW requires that post development stormwater flows that enter or are to be conveyed across or under the Corridors, are equal to or less than the pre-development flows for each storm up to and including the 1% AEP event.
- Developments should accommodate the extra water from de-watering activities, with an allowance of an additional 25% de-watering flow accommodated in the design for possible future increases in capacity.

#### **GMGA 2040 - GAS EASEMENT SAFETY INVESTIGATION**



#### Land Use Safety Study - High Pressure Gas Pipelines **Risk Assessment**

Pipelines

The recommendations are:

- Implement a buffer zone between the pipelines and sensitive development as follows;
- For the majority of the GMGA growth area, where all three pipelines run parallel in a common corridor in a North-South direction.

deve the density above 0.0126 ppl/ sq.m unless accompanied by a hazard analysis consistent with HIPAP 6 and HIPAP 10, demonstrating the DPE individual and societal risk criteria are satisfied.

<ul> <li>Where the path of the EGP diverges from the CTM and MSE in the northern and southern regions of the GMGA land release area, there should be no:</li> </ul>
Residential development between the pipelines and the 1.0E-06 LSIR contours
Sensitive use development between the pipelines and the 0.5E-06 LSIR contours.
Consent should not be granted to any planning or development proposal within the measurement length of the respective pipelines that could increase population density above 0.0126 ppl/ sq.m unless accompanied by

# **CENTRES & EMPLOYMENT**

#### WESTERN CITY DISTRICT PLAN -CENTRES



#### **Centres Hierarchy - Strategic**

#### Metropolitan Cluster Centres:

- Campbelltown-Macarthur,
  - Liverpool: and
  - Western Sydney Airport-Badgerys Creek Aerotropolis

#### Strategic Centres - Narellan and Leppington

Future Transport 2056 proposes that by 2036, all strategic centres have connected walking and cycling paths, to provide the community with more healthy transport choices and support access to public transport links.

- Local Centres supermarket based centres
- No centre hierarchy identified for the GMGA Land Release Area



**GMGA 2040 - CENTRES** 

**Centres Hierarchy - Growth Areas:** A network of viable centres providing residents with convenient access to local shops and services.

- Strategic Centre: Potential for one centre within Appin & North Appin Precincts to be a larger strategic centre with supermarkets and discount department stores.
  - Location will be a function of timing, transport investment and catchment growth.
  - Each centre will be influenced by the role and growth of other centres.
- Major Centre: Wilton Growth Area to the south, will have a major centre with discount department stores and civic uses.
- Local Centres: 3 local centres within the Appin & North Appin Precincts, generally serving a local population.

Smaller-scale places vary from a few shops to a vibrant main street and provide a mix of retail, business and community uses serving the surrounding population:

- Small supermarket (1,500 to 3,000 sq.m) plus up to 2,000 sq.m of specialty shops, cafés and food services.
- Offices and retail services, with opportunities for small business ownership.
- Education, community buildings, child care, local health services, leisure and civic uses, open space and recreational facilities

#### GMGA 2040 - EMPLOYMENT LANDS



Employment Lands: In 2017, DPE prepared an Employment Lands Study to support GMGA 2040 which:

- Targeted an additional 20,000 jobs within or accessible to the release areas.
- Required each precinct to contain sufficient urban employment land to service the local population.

The Employment Lands Study study was updated in 2022 and confirmed:

Moreton Park Road Enterprise Area -Confirmed for employment uses: Land along Moreton Road as suitable for dedicated employment purposes due to excellent access to existing motorway and future OSO1 interchange. Potential to deliver a critical mass of economic activity and a source of employment in logistics and warehousing.

Wilton Road - Location for Urban Employment: Suitable for employment-generating development such as retail and commercial space, offices, service and re=pair, trades, manufacturing, warehousing, freight and logistics. Community facilities, open space and infrastructure may also be located on this land.

NOTE: Land for employment uses will no longer be required in the Macquariedale Road precinct as a result of the confirmation of the Moreton Park Road Enterprise Area.

#### An updated Retail and Employment Lands Study was prepared for the GMGA 2040. Commissioned by Walker Corporation and Mirvac and prepared by Urbis, it has been adopted by DPE as part of the GMGA Additional Technical Studies.

The purpose of the study was to update the 2017 Employment Lands Study for the Greater Macarthur Region (including both the Greater Macarthur Land Release Areas and Wilton Growth Area) with consideration for new planned precincts in both Greater Macarthur and Wilton Growth Area since 2017, as well as the announcement of new and potential infrastructure projects.

#### Assumptions:

Considers two scenarios in relation to the scale of residential development within the study area, as follows:

- **Base Case:** Adopts the dwelling potential identified in GMGA 2040 and Wilton 2040 reports.
- High Case: Presents a stronger view on dwelling capacity and allows for 50% more dwellings than the base case.
- Average household size for new dwellings is 2.85 persons per household
- The timing of delivery of dwellings is assumed to be constant under both scenarios (i.e. the high case assumes a stronger annual take up rate).
- The population threshold benchmarks used in the previous 2017 have been adopted.
- The fey findings from the study include:
  - Demand for employment generating uses within the study area identifies potential to create 39,500 to 43,600 jobs consisting of full time, part time and casual jobs.
  - A Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis of the GMGA and Wilton Growth Area's competitive advantages in attracting employment related uses compared to other regions illustrates:
  - The region has an abundant supply of serviced land and projected strong population growth as key factors it can leverage to attract employment generating uses.

Within Greater Macarthur and Wilton Growth Areas employment is forecast to comprise of:

- 29,700 to 33,700 jobs linked to serving the needs of the localised population. This will include retail, education, community services and health related uses. A proportion of this employment is also likely to come from home based employment and lower land intensive uses such as utilities, maintenance and construction.
- Around 19,800<sup>1</sup> jobs to be driven by strategic related employment uses expected to serve the needs of the local and broader regional population. This will primarily come from
  - Industrial land consisting of local and urban support services, manufacturing and distribution businesses.
  - "Out of the Box" tourism related uses such as an adventure theme park or biosphere. The uses have the potential to generate high visitation into the region, and provide substantial flow on effects to local businesses
  - Knowledge based industries such as health (private hospital) and higher education (TAFE).

At full development, the study area population has the potential to support the following uses:

- **Retail:** 12 retail centres comprising around 140,000 sq.m total retail floorspace being:
  - 2 sub-regional centres;
  - 10 supermarket-based centres; and
- 1 bulky goods precinct.
- Commercial: Between 35,800 sq.m to 53,100 sq.m of commercial floorspace, to be located within and around the centre. This would be suitable for businesses servicing a local population base, likely in the form of smaller strata offices.
- Education:
  - 17 to 27 childcare facilities;
  - 18 to 26 primary schools;
  - 7 to 10 secondary schools; and
  - 3 to 5 special needs schools.
- Community Services:
  - 8 to 12 local community centres;
  - 3 to 4 regional community centres;
  - 4 to 6 libraries;
- 8 to 12 youth centres;
- 3 to 4 club/pub premises; and
- 11 to 17 emergencies service hubs (ambulance, fire and police).
- Health Centres: 12 to 25 medical centres. A proportion of these centres would be attributed to non-retail uses within retail centres.
- Aged Care: Potential to provide co-located residential aged care and independent living unit facilities.
  - 8 to 12 residential aged care facilities; and
  - 8 to 12 independent living unit facilities.
- Recreational:
  - 3 to 5 indoor sports and recreational centre;
  - 4 to 6 aquatic centres; and
  - 14 to 20 gyms (with potential for these uses to be integrated into larger recreational centres); and
  - 4 to 5 cinemas.



Figure 28 Wilton 2040 Final Structure Plan



Figure 29 GMGA 2040 Interim Structure Plan

# **HOUSING & SERVICES**

#### GMGA 2040 - HOUSING



#### Housing

The transport network is designed to support around 40,000 dwellings in the land release precincts based on current assumptions around the provision of traditional transport – road-based, heavy rail and intermediate and local public transport.

If emerging technology produces improved public transport outcomes then a higher yield could be considered in the Growth Area. Greater Macarthur 2040 will be periodically reviewed to take stock of development and reassess infrastructure, including transport capacities.

Precinct planning will allow the yield and capacity to be refined.

• Appin will provide approximately 20,000 dwellings:

**North Appin** will provide opportunities for around 5,000 new dwellings separated from Gilead and West Appin by green corridors.

**Appin** will provide opportunities for around 15,000 new dwellings separated from North Appin and Wilton by green corridors.

Medium Density Residential Area

A mix of densities and housing types will provide housing choice. Planning for the right mix of densities will consider infrastructure provision and local character.

- Detached housing on medium sized lots is expected to make up the majority of homes in land release precincts. Density: 15-25 dw/ha.
- Medium density residential housing within 400m of transit corridor. Medium density housing types such as townhouses, terraces and low-rise apartments will be delivered close to essential infrastructure such as public transport, town and local centres, public amenity, waterways and open space. Density: 25-45 dw/ha.
- The built form of housing typologies need to respect and reflect the existing natural landscape character and allow for the outcomes of the Green Plan to be achieved.

#### GMGA 2040 - SOCIAL INFRASTRUCTURE

#### GMGA 2040 - BUSHFIRE



**Social Infrastructure:** In the land release precincts, a range of new or expanded facilities will be provided to service the future communities, including community, health and sports facilities. Potential social infrastructure includes:

- Two moderate district multi-purpose community centres (500 sq.m in Mount Gilead and 700 sq.m in Menangle Park)
  - **One local community centre** (120 sq.m within a local centre) and, a future facility in Appin.

(III) Library facilities

R

Cultural facility (500 sq.m in Gilead)

- Child care and out of school hours care
- Indoor sports facilities
- Indoor and outdoor aquatic/swimming facilities
- (iii) Youth recreation facilities

**Health** - This plan identifies the need for additional integrated health hubs, community health centres, primary health care clinics, required in stages as each precinct develops.

# **BUSHFIRE**

A Greater Macarthur **Strategic Bushfire Assessment** was prepared for DPE in 2021.

Identifies:

- Key objective is to plan, design and develop bushfire resilient communities across the Growth Area.
- The potential urban footprint of land release precincts will be influenced by bushfire risks.
- Despite risks to some areas, the Growth Area can accommodate urban development provided the appropriate Planning for Bushfire Protection (PBP) measures are implemented.
- Assessment of the adequate provision of bushfire protection measures will be required at precinct planning stage and subsequent development application stages.
- Precinct Planning must:
  - Comply with the provisions of Planning for Bush Fire Protection 2018 (PBP), and address compliance through a bushfire assessment report
  - Be referred to the NSW Rural Fire Service for comment
- Locate asset protection zones for bushfire protection purposes should be wholly within suitable land for new development, not within high biodiversity constrained land
- Include evaluation of evacuation and access.
# CONCLUSION

This series of strategic directions have been framed in the Greater Sydney context. Detailed investigations and groundtruthing 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.

Prepared by Urbis for Walker Corporation 37

# **BAR B**

PART B: TECHNICAL INVESTIGATIONS

pin (Part) Precinct

As part of the preparation of the Appin (Part) Precinct Structure Plan, Walker engaged a team of technical experts to undertake sitespecific investigations across the Precinct to groundtruth 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.





# **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) Precinct.

# **KEY INVESTIGATIONS**



INVESTIGATIONS

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



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

# **GEOTECH, SALINITY & SITE**

# **ECOLOGY & BIODIVERSITY**

#### **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) Precinct Structure Plan.

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



# 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) Precinct Structure Plan.



## AIR QUALITY, ACOUSTICS & BUSHFIRE INVESTIGATIONS **)**6

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) Precinct Structure Plan. Air Quality Review to identify existing and proposed sources of emissions with regard to the Appin (Part) Precinct Structure Plan.

#### LANDSCAPE FEATURES & VISUAL CHARACTER INVESTIGATIONS

# **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 8 Technical Investigations Assumptions

ASSUMPTION	APPIN & NORTH APPIN PRECINCTS	APPIN (PART) PRECINCT	APPIN (PART) PRECINCT STRUCTURE PLAN
Housing Dwellings)	Approx. 21,000+	Approx. 12,000+	Approx. 3,500
Population People)	Approx. 65,000+	Approx. 36,000+	Approx. 10,000+

# Top	Report Name bography and Land Ca	Technical Scope Ipability	Technical Consultant	Study Area			to the Precinct. This assessment has be consideration of Wollondilly Shire Coun Management Strategy and Policy (IWM 2020.	
1	Land Capability Assessment Contamination	<ul> <li>Preliminary geotechnical investigation to:</li> <li>Provide a preliminary evaluation of the geotechnical features of the site and its suitability, from a geotechnical standpoint, for future urban redevelopment.</li> <li>Preliminary review of the salinity characteristics of the site.</li> <li>Preliminary site investigation to assess the site for any</li> </ul>	Douglas Partners Douglas	Appin (Part) Precinct Appin (Part)	8	Water Cycle Management Strategy – Phase 2	The objective of this study is to prepare Management Strategy that supports th the Appin (Part) Precinct Structure Plar study includes a site-specific assessme quantity and quality management to en manageable local impacts and no impar Release Area.	
		significant contamination constraints ('PSI') to inform proposed rezoning of land.	Partners	Precinct	9	Appin (Part)	Landscape Design Report to support th	
Cul	tural Values And Heri	tage			_	Precinct Landscape Master Plan Report	Structure Plan and Release Area 1 of Structure Plan.	
3	3 Cultural Values Assessment/		Waters Consulting	Appin (Part) Precinct				
	Connecting with	Architects' draft Connecting with Country Framework (CwC			Infrastructure Assessment			
	Country Framework	Framework). In the context of the Heritage NSW Aboriginal cultural heritage assessment process, this report documents intangible Aboriginal cultural heritage values located within the study area. It provides recommendations and safeguards in relation to those identified values. This report supports the application of the principles and commitments of the CwC Framework through the development of specific project aims and recommended actions for implementation and in working to strengthen the Proponent and government agencies			10	Infrastructure Phasing Plan	<ul> <li>This report summarises the investigation staged implementation of trunk utilities infrastructure, as identified in the draft North Appin Precincts. Specifically, this</li> <li>Existing utility services within the vi</li> <li>Current and planned utility projects</li> <li>Planned SIC infrastructure</li> </ul>	
		understanding and respect for the cultural values of this Country. The cultural mapping, findings, aims and recommendations					Implications of the above and potential the proposed development within the P	
		in this report have been informed and guided throughout by engagement with First Peoples cultural knowledge holders and advisors with connection to this Country. <i>Draft Report prepared -</i> <i>currently in consultation with Registered Aboriginal Parties.</i>			11	Infrastructure Delivery Schedule	The infrastructure Delivery plan include land requirements, considers the appro sequencing of infrastructure delivery.	

	Technical Consultant	Study Area
sessment in accordance re for the Protection of 10).	Niche Environment & Heritage	Appin (Part) Precinct
ical associations and heans of defining heritage posed rezoning of the land. gement strategies will be may be required to mitigate ated with the rezoning of	Niche Environment & Heritage	Appin (Part) Precinct
is important to note this the project	Heritage Council of NSW (Source)	Appin & North Appin Precincts
re a Water Cycle the future rezoning of the ly includes an assessment anagement to ensure that and no impacts external been conducted with uncil's Integrated Water MS), adopted in December	JWP	Appin (Part) Precinct
re a Water Cycle the future development of an - Release Area 1. The nent of the stormwater ensure that there are pacts external to the	JWP	Appin (Part) Precinct - Release Area 1
the Appin (Part) Precinct the Appin (Part) Precinct	Urbis	Appin (Part) Precinct - Release Area 1
tions relating to the es and State and regional ft SIC for the entire Appin & his report will outline: vicinity of the site ts al servicing strategies for Precinct.	IDC	Appin & North Appin Precincts
des infrastructure and roximate project timing and	GLN	Appin & North Appin Precincts

# EN	Report Name /IRONMENTAL	Technical Scope	Technical Consultant	Study Area	# Tra	Report Name Affic & Transport	Technical Scope	Technical Consultant	Study Area
12 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	Niche Environment & Heritage	Appin (Part) Precinct	18	8 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	
		approach to mitigation measures related to the development of the Subject Land with reference to the CPCP.				using, Retail & Emplo	·		
13	13 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       North Star       Appin & Assessment         19 Economic & Retail Assessment       Assessment	<ul><li>This report examines and outlines the following:</li><li>The trade area that future retail facilities in Appin will likely serve.</li></ul>	Urbis	Appin & North Appin Precincts					
		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					<ul> <li>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.</li> <li>An analysis of the resultant employment levels within centres in Appin, and considering self-containment rates.</li> </ul>		
		rezoned for urban development land uses.			-				
14	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	Spectrum Acoustics	Appin & North Appin Precincts			<ul> <li>An assessment of potential impact on the scale and timing of Wilton Town Centre.</li> </ul>		
15	Urban Heat Island Effect	their impact on areas within the Appin & North Appin Precincts. 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	_ 20	0 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
16	Sustainability	The purpose of this report is to identify the range of existing strategic and policy considerations for achieving sustainable and	Urbis	Appin & North Appin	-				
		resilient outcomes and provide opportunities for sustainable and resilient outcomes for consideration as part of the development of the Appin & North Appin Precincts.		Precincts	21	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	Urbis	Appin & North Appin Precincts
17	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) Precinct and Appin & North Appin Precincts	-		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.		

# GEOTECH, SALINITY & SITE INVESTIGATIONS

### TOPOGRAPHY

The topography of the Appin & North Appin Precincts is gently undulating, broadly falling to the west from a prominent ridgeline along Appin and Wilton Road down to the Nepean and Cataract rivers. Overall there's a change in elevation of approximately 150m across the entire precinct, from 250m relative to Australian Height Datum (AHD) in the south west portion to approximately RL 106 m AHD near the escarpment of the Nepean River and tributaries.

The Appin & North Appin Precincts is characterised by four key topographical forms being:

- North-South Ridgeline: There is a north-south ridgeline located to the east of the site. The north-south ridgeline marks the transition from the Eastern Plateau and the undulating hills to the west.
- **Eastern Plateau:** East of the ridgeline and extending beyond Wilton and Appin roads, the Eastern Plateau comprises relatively flat, higher-ground. The eastern plateau forms part of a regional ridgeline that traverses the entire Sydney Basin from north to south. Prominent views from the western edge of this ridgeline are afforded the west towards the Razorback Ranges in the foreground and the Blue Mountains in the background.
- Undulating Hills: The majority of the central to western portion of the precinct is characterised by undulating hills with gentle slopes falling away in multiple directions towards the surrounding rivers and creeks. The lower level ridgelines provide local views to the surrounding riparian vegetation along the rivers and creeks framing local views and characterising local areas. There is one feature of undulating hills in the south-west of the precinct.
- Flat Terrain: There is an area of relatively flat terrain located between the Elladale and Simpson's creeks in the north-west of the site. Significant area of the site are relatively flat towards the rivers and creeks excluding the riparians corridors.

#### **Key Findings**

- There are two areas of steep land, comprising the ridgeline running north-south on the western side of the plateau. These include some areas of 10-15% slope which may require location specific responses through the detailed design phase.
- The best opportunities for capturing expansive views including to the Razorback Ranges in the west are from these ridgeline locations.
- The topography creates natural definition between locations providing opportunities to create defined neighbourhoods with unique characteristics.
- Apart from small areas of steep primary and secondary ridgelines, the site's overall topography is not considered a key constraint in precluding future redevelopment.



Figure 31 Photograph of flat grass plains



Figure 30 Photograph of local ridgelines across cleared farm land





#### LEGEND:





Figure 32 Topography and Landform Analysis

#### LEGEND

Appin & North Appin

Precincts

**SLOPE CONSTRAINTS** 



Figure 36 Slope Analysis

Regional geology mapping indicates:



10-15% Gradient: Areas of undulating topography

>15% Gradient: Areas of steep land comprising two features

River Escarpments: The topography of the Nepean and Cataract Rivers, and the tributaries of Simpson, Elladale and Ousedale creeks, are characterised by dramatic sandstone escarpments, some up to 30m in height. Their banks are located between approximately RL 70 and 110 m AHD.

**Distinctive Features:** The precinct features three distinct ridgelines that have a steep slope gradient greater than 20%. Two are located along the western edge of the eastern plateau, one in the north and one in the south of the precinct. The third comprises a ridgeline within the undulating hills located in the south-west of the precinct.

GEOTECH



Figure 34 Geotech (Source: Geological Survey of NSW Wollongong – Port Hacking 1:100 000 scale Geological Series Sheet 9029 - 9129, 1st Edition 1985)

Rock depths varied between 0.6 m and greater than 3 m. Shallow rock depth is likely to be a minor constraint to the economic and efficient development of the site, based on reduced production rates during earthworks and the requirement for additional machinery. The rock depths noted however will not preclude development of the site.

#### Regional geology mapping indicates:

- 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. Located across the majority of the precinct.
- Wianamatta Group (Bringelly Shale): Comprising laminite and darkgrey siltstones is primarily located along ridges and topographical high-points. Within Appin it is only found in a small part of the precinct along the southern ridgeline. To the west of the precinct it is found in the Razorback Mountains ridgeline.
- Hawkesbury Sandstone: Comprising medium to coarse-grained guartz sandstone with very minor shale and laminite lenses. Present around the site perimeter, including next to the Nepean River and topographical low-points across the site.

#### **REGIONAL SOILS MAPPING**



Regional soils mapping, as presented and referenced above, indicates that the majority of the site is mapped as

Luddenham soils (light pink): Located in the south east and portions of the northern and western parts of the site and 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.

Figure 35 Soil (Source Soil Conservation Service of NSW, Soil Landscapes of the Penrith 1:100 000 Sheet)

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.

Hawkesbury soils (dark pink): Located along the Nepean River and tributaries associated with drainage lines dissecting Hawkesbury Sandstones. Which are colluvial lithosols/siliceous sands comprising podzolic soils, siliceous sands and secondary yellow earths.



#### Figure 38 Salinity Soil Plan

Regional salinity mapping captured in the adjacent plan indicates that the site has the following characteristics:

9	Salt: No salt areas within Appin & North Appin Precincts.
	<b>High Salinity Potential:</b> Three clusters of high salinity potential to the southern end of the site.
	<b>Moderate Salinity Potential:</b> Across the majority of the precinct approximately 90%);

Low Salinity Potential: Along the Nepean River and tributaries;

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.

#### MINING



Figure 3	7 Mining	Constraints

Completed Longwall Mining: Long wall mining has largely been completed for the Appin & North Appin Precincts.

Planned Longwalls 720-724: Five small longwalls remain to be mined (720-724). These are located beneath Macquariedale Road in West Appin and are part of the approved Bulli Seam Operation. Based on current extraction rates extraction could take place between 2035 and 2040. If development occurs prior to mining, it is anticipated that it would be designed in accordance with Surface Development Guideline 5 (SA NSW, 2018).

Mining operations have progressed north west of the Appin & North Appin Precincts, west of the Hume Highway in Areas 7 & 9. Mine infrastructure, such as gas pipelines, vent shafts and coal washery remain in Appin 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.

Mine Pit Tops: The Appin East Colliery is located to the west of Appin Road. This is still in operation will be excluded from the net development area of the Appin & North Appin Precincts.

#### SOIL CONTAMINATION

Contamination: Localised evidence of contamination on the site was observed, (i.e. PAEC low – medium range) which was typical for a site of this type and for the general region. The study concluded that the potential for significant, widespread contamination to be present at the site with respect to future development is generally low. As such the site is deemed suitable (from a contamination perspective) for proposed rezoning for mixed land uses including residential. Targeted investigations should be undertaken, in the form of a Detailed Site Investigation (DSI) to inform any future DA for the proposed development.

#### ACID SULPHATE SOILS

The lowest elevation on site is RL 70 m AHD and this is well above the level at which acid sulphate soils are known to occur. For this reason, there is no government-produced mapping in this region. Acid sulphate soils is not considered to be a constraint to development.

#### **Key Findings**

- The land capability assessment did not identify any issue that would preclude the urban development of the site.
- 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

The identification and management of important ecological and biodiversity values and considerations on the site is guided by the *Cumberland Plain Conservation Plan* (CPCP). It specifies the boundaries of the urban capable land, where new development may occur across the site recognised within *Greater Macarthur 2040* (refer to adjacent plan).

Subject to the suitability of sites and the final CPCP, Walker Corporation intend to work with specialised consultants to develop measures to protect koalas within the Non-Certified Avoided land.

As part of the preparation of the Appin (Part) Precinct structure plan, ground truthing and strategic transport infrastructure alignment investigations were undertaken to understand the translation of the CPCP mapping into proposed Zoning mapping. These investigations are presented in the following pages of Part B of this document. Please refer to these for more detail and rationale for the ground-truthing identified on this page.

Consi	stency	y with CPCP Mapping		6	East-West
Additio	onally, t	hese investigations revealed the following:		(3e)	
1 Existing Roads - Proposed to be extinguished (if practical).			(3f)	Road conne	
G	Envir	e are four existing roads that would sit within the proposed C2 onmental Conservation zoning or may not be required upon opment of the Appin (Part) Precinct structure plan.		3g)	North-Sou
	la	<b>Brian Road</b> - Access to Macarthur Motorcycle Club which is proposed to be removed.		3h	North-Sou
	(1b)	<b>Macquariedale Road (part)</b> - Northern extent only is a paper road only. Existing vegetation in this location.		(3i)	future Nor by Others.
	lc	<b>Elladale Road (part)</b> - East-west section west of the Transgrid Transmission Line Easement. Will become Regional Park.		(3j)	future Nor by Others.
	ld	<b>Unnamed Road (south of Wilton road)</b> - Paper road only. Appin (Part) Precinct Structure Plan requires perimeter road in this location.	4	There	uded Land - e is one locat e ground-tru to Figure 40
2	Exist	ing Roads - Proposed to be retained.		Kelei	
	Envir acces	e are three existing roads that would sit within the proposed C2 commental Conservation zoning that offer important connectivity or as outcomes for the Appin (Part) Precinct structure plan or existing atructure. There is potential for this land to be re-vegetated.			
	(2a)	<b>Elladale Road (part)</b> - North-south section east of the Transgrid Transmission Line Easement. Connects Brooks Point Road to proposed regional park.			
	(2b)	<b>Brooks Point Road (part)</b> - Between Northamptondale Road and Appin Road.			
	2c	Macquariedale Road (part) - East of Ousedale Creek.			
3	CPCF for ap	P Non-Certified Avoided mapping. The CPCP makes an allowance proximately 11 ha of CPCP Non-Certified Avoided land for egic transport infrastructure.			
	lt is p	roposed this land is zoned SP2.			
	(3a)	Transport Corridor from Gilead to North Appin.			
	3b	Transport Corridor from North Appin to Appin.			
	3c	Transport Corridor from Appin to Douglas Park Station.			
	(3d)	East-West Connection Road - east			

t Connection Road - west.

ection from North Appin to Maquariedale Road.

uth Connection - north

uth Connection Road south

rth-South Connection Road Elladale Creek crossing -

rth-South Connection Road Cataract River crossing -

#### Existing Vegetation - Proposed to be UDZ.

tion of Excluded Land - Existing Vegetation identified uthing revealed there is no existing riparian function. O on page 50.

#### **Key Findings**

- Non-certified land includes sensitive areas of threatened ecological species and koala habitat. Accessibility to these areas for the future community will need to be considered and determined throughout the rezoning process.
- The future development footprint is predominantly identified as urban capable and will be biodiversity certified through the Cumberland Plain Conservation Plan.
- There are some areas of Koala Habitat Restoration that do not currently have vegetation therefore can be realigned to accommodate essential infrastructure (including roads) while still meeting the objectives of the CPCP.





l	_egend	

- Appin & North Appin Precincts
- Appin (Part) Precinct
- ----- LGA Boundary
- Existing Waterways

Final SEPP CPCP Mapping - Excluded Land

Excluded land<sup>1</sup> - Existing Vegetation - this land is proposed to be passive open space.

#### Excluded land<sup>1</sup> - Existing Easements to be retained.

Excluded land<sup>1</sup> - Declassified Riparian Areas - proposed UDZ Urban Development Zone.

 $\mathsf{JWP}\xspace$  investigations assessed riparian corridors and concluded low order streams within close proximity of retained reparien corridors can be engineered through the subdivision stormwater network to enable development.

#### Land not included within the Appin & North Appin Indicative Plan

Please refer to notes on page 48 for details.

#### NOTES:

(#)

1. Areas excluded from NSW strategic biodiversity certification & strategic assessment under the EPBC Act.



	WEEKNRUSS
Legend	
Appin & North Appin Precincts	- ELLADALECREEK
Appin (Part) Precinct	
·—·- LGA Boundary	
Existing Waterways	
CPCP 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.	- BROOKS POINT ROAD
CPCP Certified Urban Capable Land	BROOKS POINT ROAD
Excluded Urban Greening proposed as UDZ Urban Development Zone.	
CPCP Certified Urban Capable Land - Proposed to be C2 Environmental Conservation	- SCREEK
Certified Urban Capable land proposed as C2 Environmental Conservation as an offset to accommodate the East-West Connection.	CREEK ROCKYPONDS CREEK
CPCP Non-Certified Avoided - Proposed to be UDZ Urban Development Zone.	T RIVER
<b>Excluded land<sup>1</sup> - Existing Vegetation</b> - this land is proposed to be passive open space.	
<b>Excluded land<sup>1</sup> - Declassified Riparian Areas</b> - proposed UDZ Urban Development Zone.	
Land not included within the Appin & North Appin Indicative Plan	
<b>Proposed Classified Road Alignment.</b> Proposed SP2 Zone. Aligned to TfNSW Strategic Transport Network.	
NOTES: 1. Areas excluded from NSW strategic biodiversity certification & strategic assessment under the EPBC Act.	2 A A A

Figure 41 Findings of Cumberland Plain Conservation Plan Investigations - Certified Urban Capable



# **RIPARIAN ASSESSMENT &** WATER CYCLE MANAGEMENT

#### WATERWAYS

The Appin & North Appin Precincts are bound by two significant river catchments, being the Nepean River to the west and Georges River to the east. Majority of the site falls within the Nepean River catchment, with a number of its tributaries running across the site, including:

- Elladale Creek and Simpsons Creek run east to west across the northern half of the site;
- Ousedale Creek runs parallel with the northern site boundary;
- Five small unnamed creeks and drainage lines are present in the south west portion of the site;
- Cataract River binds part of the southern precinct boundary;
- Mallaty Creek binds part of the northern precinct boundary.

## **FLOODING ASSESSMENT**

The overland flow path associated with the 1 in 100 chance per year flood event is wholly contained within the watercourse gorges given that they are generally deep. While the probable maximum flood must be considered in establishing land of urban capability, the minimal extent of the 1 in 100 year flood zone means this is not a major constraint to the site.

## **RIPARIAN CORRIDORS**

Ground surveys of riparian and ecological function of waterways within the precinct completed by consultants *J Wyndam Prince and Niche Environment and Heritage* found some corridors located within the urban capable land lacked any riparian and ecological function. They have been declassified on the adjacent diagram.

#### Key Findings

- Flooding is not a key constraint to the site, as the 1 in 100 year flood level is wholly contained within the deep gorges of the Nepean River, it's tributaries and riparian zone.
- 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.
- JWP investigations assessed riparian corridors and concluded that several riparian corridors can be relinquished.
- Low order streams within close proximity to retained riparian corridors can be engineered through the subdivision stormwater network to enable development.

#### LEGEND:



- Appin (Part) Precinct
- Riparian Corridor
- Sydney Water Catchment

## Strahler Stream order Vegetated Riparian Zone

- Strahler Stream 7 40m Buffer
- Strahler Stream 6 40m Buffer
- Strahler Stream 5 (no stream order 5 identified on site) 40m Buffer
- 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 47 Existing GIS Mapped Stream Orders (2020 dataset) - Source: Geoscience Australia



Photograph of Upper Nepean Figure 48



Figure 49Photograph of Upper Nepean

#### LEGEND:

Appin & North Appin Precincts
Appin (Part) Precinct
LGA Boundary
CPCP Non-Certified Avoided
Sydney Water Catchment
Stream Order Riparian Corridors
Stream Order 4 - 40 VRZ Buffer
Stream Order 3 - 30 VRZ Buffer
Stream Order 2- 20 VRZ Buffer
Stream Order 1- 10 VRZ Buffer
Removed
<ul> <li>Declassified streams</li> </ul>
Riparian Corridors

Riparian corridors to be retained



# LANDSCAPE CHARACTER & VISUAL ASSESSMENT

### LANDSCAPE AND VISUAL CONTEXT

The Draft Wollondilly Scenic and Cultural Landscape Study (WSCLS) prepared by Wollondilly Shire Council seeks to "enhance and protect views of scenic and cultural landscape from the public realm Wollondilly Shire Council LGA". The study identifies twelve Landscape Character Units across the entire LGA. Appin is predominantly categorised within the Upper Nepean Unit 10 (refer to adjacent Plan). This character unit comprises areas between the foot slopes of the Razorback Range and the edge of the protected natural areas east of Wilton and Appin Roads.

The study describes Character Unit 10 as an undulating landscape with extensive cleared areas that allow for long-distance views across the lower-lying areas to the surrounding hills. The landscape is bisected by steep sandstone gorges associated with the Nepean, Cataract, and Georges Rivers. From some select locations along the ridgeline, the top of the vegetated Razorback Range to the west can be seen as a dark ribbon in the background However, due to dense vegetation cover and the existing topography in Appin views are limited.

The study identifies key visual elements to protect Character Unit 10. In relation to Appin these include:

- The mostly rural outlook from the rail line/s;
- Vegetated riparian corridors and steep sandstone gorges, including remnant bushland bands along the Nepean River and creek lines flowing towards it;
- Scenic values of the Nepean and Cataract River gorges;
- Rural land as buffer zones to bushland corridors;
- Open pastures and remnant vegetation on the mid and upper slopes in Appin that define the background of the view from many areas in Wollondilly; and
- Views to the Razorback Range from Appin Road/Wilton Road, Wilton Park Road and Wilton Airport.

The study highlights that Landscape Character Unit 10 has a rich history, with multiple historic associations, development patterns and rural landscape. The visual relationship with elevated areas surrounding the Upper Nepean valley is integral to its character.

While the recommendations of this study highlight current visual amenity and their historic and cultural context, there appears to be little reference to future character with the Appin slopes progressively being transformed by urban development in accordance with its Growth Centre status and land use infrastructure plan.

Appin is largely only visible from within the Appin landscape itself, with limited external viewpoints having visibility of the site resulting from surrounding topography and vegetation, and the claim in the WSCLS that identifies visibility of the mid and upper slopes from many parts of the Shire is less relevant for the Appin site.

The landscape and visual analysis have identified several landscape character areas within the site, with the predominant areas being pastoral landscapes and significant vegetation groupings, with further discreet character areas within them. These two predominant character areas both allow for views over the site within pastoral areas, as well as often limiting longer distance views due to the blocking effect of mature vegetation stands.

Views to and from the site are largely defined by topography and vegetation both within the site and surrounding it. Close range views within the site are highly restricted and are located to the north of the site at a small number of locations due to their elevated positions and sight lines through surrounding vegetation, with views form the immediate east, south and west not possible due to the Cataract River and gorge and high level of vegetation.

Localised high points and ridgelines within the site allow for views to surrounding distant elements such as the Razorback Ranges and the Blue Mountains due to their elevation and visual clearance over the vegetative groupings within the site. Similarly, distant views from certain locations such as the Razorback Ranges are possible to elevated positions within the site, but these would be viewed in a wide visual context of varied components and would not be overly visually intrusive or dominant in the visual composition.



Figure 51 Plan of Landscape Character Unit 10 (Source: Wollondilly Scenic and Cultural Landscape Study)

LEGEND

	Appin & North Appin Precincts
	Appin (Part) Precinct
	LGA Boundary
ands	cape Character Areas
	<b>Pastoral Landscapes (R1):</b> 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.
	<b>Rural Small Holdings (R2):</b> Small pockets of semi-rural living with larger lots than Appin township but smaller than surrounding landscape, often forming small clusters of residential dwellings with visual accessibility to one another and medium to close distance views of the surrounding landscape resulting from surrounding vegetation and topography.
	<b>Township / Suburban Settlement:</b> Visually established suburb typically characterised by a grid system road layout and settlement pattern of small lot living and mature vegetation and gardens. The settlement is noticeably different from the surrounding
	<b>Recreational:</b> Highly modified landscape for the purposes of recreation in which the landscape is distinctly separate from its surrounds due to the highly specialised nature if its use.
	<b>Commercial Holdings:</b> Commercial enterprises such as the Colliery that are at odds with the surrounding built-form scale (both commercial and residential).
	<b>Visually Contained Green Area:</b> Visually secluded area characterised by mature trees surrounding an open grassed area. Views of the highly modified surrounding landscape and infrastructure are largely obscured, creating a noticeably separate area from the rest of the site.
	<b>Significant Vegetation Groupings:</b> 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.
	Existing Easements
	Excluded Land
	Excluded Urban Greening
Photos	of various Landscape Character Areas are on the following page.



#### PHOTOS OF LANDSCAPE CHARACTER AREAS



Figure 53Mature vegetation groupings (Wilton Road looking west)



Figure 55 Semi-rural living (400-440 Brooks Point Road)



Figure 54 Undulating pastoral landscape (looking south from Brooks Point Road)



Figure 56 Macquariedale Road, Appin township

#### ELLADALE ROAD VISUALLY CONTAINED GREEN AREA



Figure 57 Elladale Road

#### TOWNSHIP



Figure 58Former Appin Courthouse and Gaol (Heritage building)

#### PASTORAL LANDSCAPES (R1)



Figure 59 Elevated pastoral landscape, looking west

#### PASTORAL LANDSCAPES (R1)



Figure 60 Pastoral Residential - 350 Brooks Point Road

#### VISUAL RESOURCES AND EXTERNAL VISIBILITY

A mixture of infrastructure and natural elements are located across the site and are noticeable visual components of the landscape. These include:

- Infrastructure Elements
- Electricity Transmission Pylons
- Power Lines
- Upper Canal
- Appin Power Station
- Substation
- Gas Easement
- Natural Elements
- Significant Mature Vegetation
- Ridgelines
- High Points

The visual components of the landscape also define the external visibility of the site. Noticeably, the surrounding mature vegetation to the east, south and west create a visual barrier obstructing views to within the site. To the north and northwest, surrounding topography creates opportunities for views of localised high points and ridgelines, but views of the larger site are limited.

#### LEGEND

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

#### Zone of External Visibility

- **Blocking Vegetation**
- \* View Cones
  - Significant Vegetation Groupings

#### Infrastructure Elements

- $\bigcirc$ **Appin Power Station**
- Ο Power Substation
- Upper Nepean canal
- Gas Easement Pipelines
- Electrical Transmission Line
- Transmission Towers

#### **Topography and Landform**

- \* Localised High Points
- 57)<sub>29</sub> Ridgelines



#### **OPPORTUNITIES WITHIN THE SITE**

#### Maintain views to:

- Razorback Ridge, Blue Mountains, Heritage sites and Teston Farm
- Long distance views north from Teston Farm area towards Camden scenic hills

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.

#### Towards the site

Maintain ridgelines and localised high points clear of development where possible to protect perceived scenic quality and long-distance views towards the site for the surrounding landscape and community. Maintaining these elements in their current form helps to visually maintain an aspect of the 'sense of place' for people when viewing the site.

#### **Key Findings**

- Wollondilly Scenic and Cultural Landscape Study (WSCLS) does not acknowledge the committed urban capable designation of land within the Appin & North Appin Precincts and the consideration this has on visual character outcomes for the precinct and key visual elements to protect. Additionally more detailed ground-truthing reveals there are some inaccuracies about the views in and out of Appin.
- Views to and from the site are largely defined by topography and vegetation both within the site and surrounding it.
- Close range views to within the site are highly restricted due the retained mature vegetation the frames the site to the west.
- Localised high points and ridgelines within the site allow for views to surrounding distant elements such as the Razorback Ranges and the Blue Mountains.

#### LEGEND



- Appin (Part) Precinct
- ----- LGA Boundary

#### Views

- **~--**Key Views
- €----Secondary View
- Ο Indicative View Point Location
- Wollondilly Scenic Study Identified 4 Views
  - Visually Contained Areas

#### **Topography and Landform**

- \* Localised High Points
- Ridgelines







Figure 66 Example of water source (Photo courtesy of Niche)





Figure 65

# **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) 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.

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.

The Appin & North Appin Precincts comprises predominantly two existing conditions being:

- Vegetated areas along the rivers and water courses: Includes numerous landscape features that are likely to indicate the presence of Aboriginal objects, being located within 200 meters of waters, in proximity to ridge lines and associated with outcropping sandstone in the form of rock overhangs and shelters.
- Large areas of RU2 Rural Landscape zoned land predominantly for grazing purposes: The potential for insitu Aboriginal objects is lower on land that has been disturbed by more recent European land use.

#### Aboriginal Heritage Information Management System (AHIMS)

An extensive search of the AHIMS was conducted in July 2020 with the following findings:

- A total of eighty-three (83) Aboriginal cultural heritage sites were identified within the wider search area.
- Nineteen (19) of these Aboriginal cultural heritage sites are located within the Appin (Part) Precinct area. Within the activity area:
  - The most common site type is Open Camp Sites (9) followed by Shelter \_ with Art (4)
  - A burial site is also recorded on the southern boundary of the activity area.
- Within the wider search area:

PART B: TECHNICAL INVESTIGATIONS

- The most common site types recorded on the AHIMS database are similarly Open Camp Sites (27) and Shelter with Art (15) with Shelter with Deposit (9), Axe Grinding Grooves (7) and Scarred Trees (6) also particularly common.
- No Aboriginal Places are recorded within the activity area or wider AHIMS search region.
- A total of seven previously unrecorded Aboriginal cultural heritage sites were identified during the site inspection. These include:

- One shelter with artefacts (WA-7 AHIMS ID# to be registered),
- Two scarred trees (WA-2 AHIMS ID# to be registered and WA-6 AHIMS ID# to be registered); and
- Four isolated artefacts (WA-1 AHIMS, WA-3 AHIMS, WA-4 AHIMS ID# and WA-5 AHIMS ID# all to be registered). The sites were all identified on terraces above or within drainage lines and creek gullies.

NOTE: The distribution of registered sites does not reflect patterns of occupation, but rather is often indicative of survey coverage and conditions.

#### Additional Sources of Information:

- Appin Massacre: The 1816 Appin Massacre was a part of a concentrated official military campaign undertaken on the orders of Governor Macquarie against the Aboriginal peoples of the Cumberland Plain.
  - The campaign was aimed at ending the warfare that was occurring as Aboriginal people across the Cumberland Plains and the wider region actively resisted the British occupation of their Countries.
  - Governor Macquarie's aim was to suppress Aboriginal resistance in order to provide security for the expansion of British settlement across the Cumberland Plain.
- From 1814 1816 a series of incidents occurred in the Appin & North Appin Precincts and culminated in a massacre where at least 14 people of the Dharawal tribe were killed by soldiers.
- Oral History: The site card for the burials Rocky Ponds Creek/Brook's Point (AHIMS ID#52-2-1933) details the oral history relating to the burials associated with the Appin massacre, likely to be those of Durelle and Cannabayagal. It situates the site at the historical corner of Teston Farm - on the boundary of the Appin (Part) Precinct area.

#### 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.



Figure 63 Example of sandstone overhang (Photo courtesy of Niche)

Rock motif (Photo courtesy of Niche)



Artefacts at Brooks Point Road (Photo courtesy of Niche)

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



#### CULTURAL VALUES ASSESSMENT AND CONNECTING WITH COUNTRY FRAMEWORK

The draft Proposal is within Country with marked cultural sensitivity, particularly associated with the Appin Massacre of 1816 and the specific sites where that event unfolded.

GHD, in partnership with Zion Engagement and Planning (Zion) and Waters Consultancy, were engaged by the Department of Planning and Environment (DPE) to guide application of the NSW Government Architect's (NSWGA) draft Connecting With Country Framework (CwC Framework) during the Greater Macarthur 2040 Plan update, and to inform preparation of the draft Proposal.

The engagement process produced the Greater Macarthur Growth Area (GMGA) cultural sensitivity mapping, which identified broad areas with high-level sensitivity where further assessment and engagement was required before plans for urban development could be finalised.

To ensure early engagement of stakeholders, the proponent engaged Waters Consultancy to simultaneously prepare 'The Appin Project: Cultural Values Assessment and Connecting to Country Report" (CVAR), which addressed the Heritage NSW Aboriginal cultural heritage assessment process and the CwC Framework. The draft cultural mapping, findings, aims and recommendations in the CVAR were informed and guided by engagement with Registered Aboriginal Parties (RAPs), First Peoples cultural knowledge holders and cultural knowledge advisors with connection to this Country.

The CVAR states that the locations, physical features, and cultural values identified must be understood as interconnected elements within Country that link people, place, and Story. The draft CVAR documents the intangible Aboriginal cultural heritage values present in Appin (Part) Precinct and recommends appropriate safeguards. The draft CVAR includes recommended actions to conserve, protect and interpret the seventeen areas of specific cultural value that have been identified within the Appin and North Appin Precincts, and within Appin (Part) Precinct. The aim is to safeguard the cultural values of the cultural sites and support the health and wellbeing of Country.

The draft CVAR supports the CwC Framework by setting out ten commitments to inform implementation of its principles and commitments to strengthen Walker and government agencies' understanding and respect for the Country's cultural values.

A total of forty-one draft recommended actions are identified to safeguard the identified cultural heritage values and meet the CwC commitments. The draft CVAR mapping and recommended actions have informed the development of the proposed precinct and structure plans.

The draft CVAR is currently being reviewed in response to the TAP Assurance advice of 21 September 2022, and the revised CVAR will be finalised and submitted following review by the RAPs, cultural knowledge holders and cultural knowledge advisors, consistent with the Heritage NSW assessment process.

#### **CULTURAL VALUES MAPPING**

#### **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.



Figure 68 Linking Country (Source: Waters Consultancy)

#### HERITAGE NSW -THE APPIN MASSACRE CULTURAL LANDSCAPE STATE LISTING

In July 2021 the Heritage Council of NSW and the Aboriginal Cultural Heritage Advisory Committee (ACHAC) co-nominated the Appin Massacre Cultural Landscape for listing on the State Heritage Register in recognition of its shared Aboriginal and non-Aboriginal cultural heritage values. The GMGA engagement process and CVAR cultural mapping process contributed to the cultural heritage assessment process conducted by Heritage NSW.

In September 2022 the Heritage Council recommended that the Minster for Environment and Heritage direct listing the Appin Massacre Cultural Landscape as a State Heritage register item comprising five areas.

NOTE: Detailed mapping for Appin & North Appin Precincts prepared and undergoing review by Cultural Advisors and Registered Aboriginal Parties.



## LEGEND

	Appin & North Appin Precincts
	Appin (Part) Precinct
	LGA Boundary
	Existing Waterways Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape) Conservation area (CPCP)
_	Easement within conservation area (CPCP)
	Existing Road within conservation area (CPCP)
_	Proposed Road within conservation area (CPCP)

# **EUROPEAN HERITAGE**

There is evidence of the following historical phases within the Appin & North Appin Precincts:

- The Pre-European Landscape;
- Early European Exploration of the Appin area: The first Europeans arrived in the Appin region in the 1790s, and expeditions to explore and map the region took place in the early 1800s.
- European Settlement and large estates (1811 to mid-19th century): Large parts of the subject site were granted to early settlers by Governor Lachlan Macquarie in 1811.
- The first estates that came from these grants were the Lachlan Vale and the Macquariedale Estate.
- As more grants were issued and the larger ones subdivided, other estates such as Teston Farm, Hardwick and Middle Point were formed.
- A significant portion of the land clearing occurred at this time as the area was primarily used for Agricultural and pastoral purposes.
- Some of these original estates are recorded in the shared history of the Appin Massacre.
- Subdivision of large estates into smaller estates (mid-19th century to late 19th century): By the mid-19th century and into the 20th century, many of the large estates were subdivided and into smaller farming lots.
- 20th century farming: Residential dwellings and ancillary buildings related to the 19th and 20th century occupation still stand today.



Figure 72 Upper Canal

The following are existing Heritage Listings:

**State Heritage Listed Sites:** There are no State Heritage Register listed items within the Appin & North Appin Precincts. However there are two items which adjoin the precinct as follows:

- The Upper Canal (SHR #I01373): The Water NSW Upper Canal System (UCS), is a state heritage-listed gravity-fed aqueduct that supplies some potable water to Sydney from the Cataract River.
- It is listed for its importance in the development of late 19th century infrastructure to support a growing Sydney region.
- The Upper Canal sits within lots that bisect the Appin & North Appin Precincts and thus will be flanked by the proposed Appin (Part) Precinct along its length through the Appin & North Appin Precincts.
- The southern half of the UCS flows through the Cataract Tunnel and emerges near Brooks Point Road near the centre of the site where it flows for the remainder of the site through an aqueduct. It is excluded from the Appin & North Appin Precincts Indicative Plan and Appin (Part) Precinct Plan.
- Broughton Pass Weir: Located at the southern end of the precinct within the CPCP, it is part of the Upper Nepean Water Supply Scheme.
  - Built in the 1880's it diverts water from the Cataract River to the Upper Canal.



Figure 73 Elladale House (right)

Figure 74 Northamptondale Cottage

 There is no access to the weir area as it is a restricted area of Sydney Water Catchment.

**Two Local Listed Items** are located within the Appin (Part) Precinct being;

- Elladale (80 Elladale Road, Appin):
- The cottage was built in 1838 and has undergone modern restoration.
- The surrounding area has been developed with assorted farming structures and residences.



 This assessment considers that the entire curtilage of this listing is historically and archaeologically sensitive.

Northamptondale Group (60-80 Northamptondale Road West, Appin): Is situated at Brook's Point Road Appin.

 The Northamptondale cottage was built prior to 1840, and has undergone modern renovations.

 The group also includes stables, feed shed and a water tank that date to approximately 1856. The extant buildings are thought to have been preceded by two earlier buildings. Many of the outbuildings have fallen into disrepair and ruin.

 Investigations recommended a reduction in the size of the curtilage surrounding Northamptondale Group retaining all the significant elements and features (including landscape values and vistas) of the estate and likely containing all archaeological potential associated with the estate within this.

#### LEGEND



(22) Stone Ruin (45 Whitticase Lane, Douglas Park)



Figure 76 Findings of European Cultural Heritage Investigations

#### CONSOLIDATED OPPORTUNITIES AND CONSTRAINTS

This map depicts the synthesised outcomes of the European Cultural Heritage investigations into a consolidated opportunities and constraints plan for the Appin (Part) Structure Plan.

#### LEGEND

Appin & North Appin Precincts Appin (Part) Precinct ----- LGA Boundary **Existing Waterways** Conservation area (CPCP) Easement within conservation area (CPCP) **EUROPEAN HERITAGE ITEMS** Sandstone Quarries - within Appin (Part) Precinct State Heritage Register (1)The Upper Nepean Canal 2 **Broughton Pass Weir** Local Heritage Significance - Within Appin & North Appin Precincts 4 Elladale (80 Elladale Road, Appin) (5) Northamptondale Group (60-80 Northamptondale Road West, Appin) Northamptondale Estate - Proposed reduction in curtilage and removal from heritage listing Extant Building with Archaeological Constraints 21 Site of Original Macquariedale Estate







Figure 78 Teston Farmhouse (centre)



Figure 79 Elladale House



#### **Key Findings**

- Sites of state and local heritage significance will have site specific parameters and curtilage that will need to be accommodated in the Appin (Part) Precinct structure plan.
- The management of impacts of development on the heritage matters will be investigated as detailed planning work, specifically as part of the Statement of Heritage Impact Assessment process is completed.
- Integrating heritage into the urban environment is achievable and benefits the ongoing retention and restoration of items.
- The Appin (Part) Precinct Structure Plan should make accommodations for the following sites:
  - Graves associated with the Appin Massacre
- Teston Farm
- Elladale Cottage (#16)
- Sandstone quarries

 Table 11
 Additional Items of Significance

ITEM	DESCRIPTION	IM	IPORTANCE	GRADING	SIGNIFICANCE CRITERIA
Burials associated with Appin Massacre	Important regional elements within this key aspect of NSW and Australian history.		particularly the Dharawal and Gundungara of the	High	State
	Highly significant and material link to events surrounding the Appin massacre, Cumberland War and broader history of the Indigenous experience of the colonisation of Australia.		local region; and the relations of those buried at the site. The burials are significant for their socio-historical		
			and contemporary cultural importance. Associations with Teston Farm and Estate.		
Lachlan Vale House	The Lachlan Vale estate (1811) was among the first granted by Governor Macquarie in the Appin region.	•	Extant fabric has aesthetic significance. "Occupies a commanding landscape setting"	Moderate	State
		•	Rarity as an 'estate' class of early colonial farms		
Teston Farmhouse	Combination of English and vernacular characteristics of early agricultural frontier houses and outbuildings	•	Extant fabric has aesthetic significance.	High	State
		•	Associations with several key historical figures and with the Appin massacre.		
Macquariedale House	Early Appin land grant and combination of English and vernacular characteristics of early agricultural frontier houses and outbuildings.	•	Aesthetic, associated with several key historical figures and understanding of early frontier houses.	Moderate	Local / State
Workers Huts	Associated with Lachlan Vale Estate.	•	Archaeological relics	Moderate	Local / State
Moon's Cottage:	Early member of the working class on Maquariedale Estate.	•	Archaeological relics	Moderate	Local / State
Sandstone Quarries	Three historical sandstone quarries, likely associated with the construction of the Upper Canal system.	•	Aesthetic and direct relationship to Upper Canal.	Moderate	Local



**Figure 80** Northamptondale Cottage (previous renovation)

- Lachlan Vale Estate (including the estate huts)
- Macquariedale Estate (including Moon's cottage)

- Northamptondale Group (#I18) - reduced curtilage

# **NOISE & AIR QUALITY**

A Strategic Environmental Noise Assessment prepared by Spectrum Acoustics identified existing and potential future significant noise sources and suggests adopting a number of strategies to mitigate noise impacts. Overall, existing ambient noise could be described as common place in rural/suburban setting. There are several known existing and proposed significant noises sources in the area:

- Appin Motocross Track Proposed to be removed as located in east-west Koala Corridor.
- Appin Power Station To be retained.
- South 32 Ventilation Shafts To be retained.
- East-West and North-South Connection roads Proposed.
- Hume Highway, and Wilton and Appin roads Existing.

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.

An Air Quality Constraints and Opportunities Assessment prepared by Northstar Air Quality identified existing and potential future sources of emissions located within the recommended distance guidelines for the Appin & North Appin Precincts:

- Main line gas valve
- Methane power station
- Water filtration plant
- Proposed major roads.

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.
- Based on the findings of the Air Quality Constraints and Opportunities Assessment existing and proposed identified sources of air emissions will not form a significant constraint on the Proposal.

#### LEGEND

- Appin & North Appin Precincts
- Appin (Part) Precinct
- ----- LGA Boundary
- **Existing Waterways**
- **Existing Major Roads**
- Identified noise source Major Roads
- Identified environmental noise source enduring
- \* Identified environmental noise source - to be removed



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# **EXISTING INFRASTRUCTURE & EASEMENTS**

There is existing infrastructure and easements that traverse the Appin & North Appin Precincts. Investigations were undertaken by IDC and Walker to identify infrastructure that will need to be retained and that which will comprise components of the Appin (Part) Precinct Structure Plan infrastructure delivery.

### WATER AND WASTEWATER

- Existing Infrastructure: The major existing infrastructure relevant for Appin & North Appin Precincts is the Macarthur Water Filtration Plant (WFP), Appin Reservoir, Appin Sewer Pump Station and Glenfield Waste Water Treatment Plan (WWTP). All of these are located in land excluded from the Appin (Part) Precinct Structure Plan.
- Appin Village: Has reticulated water and waste water services via an existing trunk main in Wilton Road.
- Water Supply Easement: There is a 10-15m wide water supply easement running north from the Macarthur WFP that 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.

#### ELECTRICITY

- Existing Infrastructure: The existing electrical infrastructure in Appin comprises a Zoned Substation, 66kV/11kV powerlines and 330kV power lines. All of these will need to be retained.
- There is an **Existing Methane Power Station** which will be retained. This is excluded from the Appin (Part) Precinct structure plan.
- Transmission Easements: A 60m wide Transgrid easement for 330KV powerline runs north-south through the entire precinct and will need to be retained.
  - 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.

#### GAS

- BHP Gas Easement Pipelines: Existing low pressure mine gas pipeline is proposed to be relocated within future road corridors subject to discussions with South 32.
- Gas Pipelines & Easements: There are 3 high pressure gas transmission lines that traverse the Appin & North Appin Precincts, each owned and managed by different entities:
  - Jemena JGN Main pipeline, Eastern Gas Ethane pipeline and APA Sydney Moomba Ethane pipeline.
  - APA Sydney have landscape guidelines for agreed outcomes within the easement.
  - Agreement has been obtained from Jemena and APA for provision of linear active recreation pedestrian and cycle paths within the easements.
  - There is an opportunity to explore the provision of active and passive recreation uses within these corridor.
- Additional Restrictions: There are additional restrictions to certain development in proximity to these 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 agedcare facilities) within 200m of the Jemena Central Trunk Main (CTM).
  - 700m Pipeline Measurement Length: Specific safety management statement required for sensitive uses within this measurement length.

#### OTHER

It is proposed (where practical) to remove all low voltage and inactive overhead and underground power lines and mains, as well as access and service roads and right of way carriageways.

#### **Kev 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 83 Existing Infrastructure and Easements

\* 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.

#### LEGEND Appin & North Appin Precincts Appin (Part) Precinct ----- LGA Boundary WATER & SEWER 10-15m wide Water Supply Easement - Retained. **Existing Sewer Lines** - Appin Village Upper Canal **Existing Sewer Pumping Station** $\bigcirc$ Existing Appin Reservoir $\bigcirc$ Existing Macarthur Water Filtration Plant GAS High Pressure Gas Transmission Pipeline Easements - Retained • Jemena JGN Main. • Eastern Gas Ethane • APA Sydney Moomba Ethane 700m wide Pipeline Measurement Length - Safety Management Statement required for sensitive uses. 200m Pipeline Easement Buffer - No Sensitive Uses BHP Gas Easement Pipelines - Proposed Relocation ---- Easement by DCDB not in CT \* Existing Switching Station - Retained ELECTRICITY 60m wide Transmission Easements 330KV Powerline - Retained **Electrical Transmission Line** Transmission Towers Appin Zone Substation - Retained **Appin Power Station** Overhead Power Lines - Removed Powerlines - Removed Overhead & Underground Mains - Removed SERVICES Access and service roads - Removed Right of Way Carriageway - Removed



# **BUSHFIRE**

The Appin & North Appin Precincts are currently mapped as **Bushfire Prone** Land on the Wollondilly Shire Council Bush Fire Prone Land map as published by DPE on the NSW planning portal (DPE, 2022).

A Strategic Bushfire Assessment was undertaken by EcoLogical and WSP to review the Appin (Part) Precinct Structure Plan and Appin (Part) Precinct Plan in relation to the strategic planning principles outlined in *Planning for Bushfire Protection (PBP) 2019 (NSW RFS, 2019).* It is prepared in advance of consultation with stakeholders including the NSW RFS and Wollondilly and Campbelltown Councils. It is designed to inform future discussions and be a catalyst for further, more detailed assessment once further details are known. The key objective is to undertake a Strategic Bushfire Study as per the strategic planning principles, 'inappropriate development' exclusions and assessment considerations outlined in PBP.

This assessment concluded:

- Bushfire Hazard Assessment: The Appin & North Appin Precincts is holistically assessed as having low bushfire risk exposure.
- Proposed Land Use Assessment: The location and type of land uses included within the proposal are considered appropriate for the site, given the level of bushfire landscape risk, the nature of the subject land, the characteristics of the land uses proposed which follows broader precinct planning principles, and the ability for bushfire protection measures to be provided.
- Asset Protection Zones (APZ): Are required for the following:
  - Residential, Commercial and Industrial development
  - Special Fire Protection Purpose (SFPP) development: uses such as childcare centres, tourist accommodation, education facilities, hospitals and seniors living.
- Bushfire Prone Property:
  - A large proportion of the planned urban land will be greater than 100 m from the closest bushfire hazard. These lands are exposed to a low risk from bushfire and one which diminishes with distance from the hazard.
  - Area of future development located within 100m from bushfire hazard interface.
    - » Bushfire protection measures are applied to development.
    - » Evacuation or refuge need is primarily considered for occupants of this land.

- Early off-site evacuation: Provide adequate infrastructure associated with emergency evacuation and fire fighting operations.
  - Subject to timely decisions to commence the evacuation, the proposed road network has sufficient capacity to facilitate the evacuation of the number of residents planned in the Appin & North Appin Precincts.
  - The primary evacuation route is identified as being north to Campbelltown along Appin Road (subject to the prevailing bushfire conditions).
  - The use of multiple evacuation routes for some or all of the evacuation would significantly reduce the evacuation times by up to a half.
- Safe On-site Refuge: Opportunities to provide Neighbourhood Safer Places (NSP's). Typically, NSPs provide 'a temporary safe place and include a building or an open space that may provide for improved protection of human life during the onset and passage of a bush fire' (RFS 2017).
  - Indicative NSP setback requirements highlights the capacity for the site to accommodate both built and open space NSPs, with modelled for Walker Lands (Stage 1, 2, 3 & 4) and buffered based on the deemed to satisfy requirements for other stages (2A, 3A, 4A & 5)

The findings of this study indicate that the Rezoning Proposal of the Appin (Part) Precinct:

- Does not trigger the "inappropriate development" exclusion requirements of PBP.
- That the Acceptable Solution bushfire protection measures within PBP can be met by the future development contemplated and that there is opportunity for protection measures beyond the minimum compliance under PBP.
- Compliance with PBP is not reliant on the intervention / response by emergency services or hazard management on adjoining land.
- The rezoning proposal will not adversely impact the bushfire safety of occupants of nearby existing development and wherever possible, will actually lower the risk.

Given the above, the Appin is assessed as compliant with the strategic bushfire planning requirements of *Chapter 4 of PBP*.

#### **Key Findings**

- Based on the findings of the Bushfire Strategic Study the site is constrained by category 1 of Bush Fire Prone Vegetation. Definitive Asset Protection Zones therefore need to be established and considered in future rezonings and detailed planning.
- There are various existing Neighbourhood Safer Places (NSPs) in proximity to the Appin & North Appin Precincts. There is further opportunity for planned community spaces within the Appin (Part) Precinct Plan to be established as additional NSPs.


# LEGEND

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

# **SHAPING THE STRUCTURE PLAN**

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

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

 Table 12
 Technical investigations Assumptions

ITEM	ASSUMPTION
Housing	21,000+ Dwellings
Population	65,000+ People

# **KEY INVESTIGATIONS**



Refinement of the strategic transport 2040 directions.



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.

# STRATEGIC TRANSPORT NETWORK ASSESSMENT

infrastructure and regional connectivity required through the Appin & North Appin Precincts in accordance with Future Transport 2056 and GMGA

# **RETAIL, CENTRES AND**



# 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.



plans.



# 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.

# 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

# STRATEGIC TRANSPORT NETWORK

WSP have prepared an update to the GMGA 2040 Strategic Transport Assessment undertaken by Jacobs to identify the Strategic Transport Network for the Appin & North Appin Precincts.

This assessment identified the following four key outcomes for the Strategic Transport Network requirements to facilitate the Appin & North Appin Precincts development consistent with the direction of the TAP, Transport for NSW discussions and the relevant strategic and statutory framework:

- A new East-West Connection: Between the Hume Motorway and Appin / Bulli Road
- A new North-South Connection: From the East-West Connection and future provision for connection to Picton Road from the Hume Highway
- The **Transport Corridor:** Public Transport infrastructure to provide connections to Macarthur/Campbelltown in the north and Douglas Park in the west long term.
- Appin Road: Upgrades and Bypass considerations.
- Hume Motorway Interchange: connection of the precinct to the motorway to provide connections to Sydney suburbs in the north and Wilton to the south

The updated Strategic Transport Assessment was based on the following additional information:

- TfNSW advice to the TAP in June 2022 on the outcomes of the OSO1-Sector 1 requirements and alternative road configuration for the Appin & North Appin Precincts (refer to Part A for details).
- An update of the internal road network.
- Revised position and density of dwellings.
- Viable staging to cater for the needs of the Appin Development as well as traffic passing through and immediately adjacent to Appin.

The following outcomes were identified in this assessment.

# EAST WEST CONNECTION

An East-West Connection road through the Appin & North Appin Precincts consistent with the GMGA 2040 Interim Plan and Draft SIC connecting the Hume Highway to Appin / Bulli Road.

The alignment of the road has been refined in the structure plan in response to additional opportunities and constraints, local conditions and in accordance with movement and place principles. Key outcomes are:

- Function: Sub-arterial road to improve movement and connections for the Appin & North Appin Precincts.
- 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:
  - West of the Precinct aligned to the proposed boundary of the Conservation Zone along the northern side of the precinct.
  - Central area of the Appin & North Appin Precincts - Refined intersection with Transport Corridor and crossing location through Ousedale Creek.
  - East of the Precinct: Linking Wilton Road and Appin Road (heading west) south of Appin Village to enhance the Appin bypass.
- Intersections:
  - Transit Corridor, North-South Connection Rd and Wilton 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.

# NORTH-SOUTH CONNECTION

A North-South Connection road through the western side of the Appin & North Appin Precincts consistent with the GMGA 2040 Interim Plan and Draft SIC providing future land provision for connection to Picton Road.

The alignment of the road has been refined in the Appin (Part) Precinct structure plan in response to additional opportunities and constraints, local conditions and in accordance with movement and place principles. Key outcomes are:

- Function: Sub-arterial road to provide local access and connection
- Design: 31.2m wide corridor with 2 lanes in either direction. Proposed 60km/hr design speed.
- Alignment:
  - Connects to the new East-West Connection road.
  - North of Elladale Creek aligned to the proposed western boundary of the Conservation land.
  - South of Simpsons Creek aligned through neighbourhood centre and to avoid areas of Cultural sensitivities and topography constraints.
  - Crossings over biodiversity corridors (incl. waterways) - subject to further investigations by TfNSW and to be delivered by others.

### Intersection:

- Signalised Intersections at the East West Connection Rd and Transit Corridor
  - 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.

# LOCAL AND COLLECTOR ROADS

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.

A transport corridor through the Appin & North Appin Precincts is identified in the GMGA 2040 Interim Plan and Draft SIC connecting future development to Campbelltown-Macarthur metropolitan cluster centre in the north and (future connection) to Douglas Park train station in the west. 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.

The alignment of the Transport Corridor through the Appin & North Appin Precincts has been refined in the structure plan in response to local topographical conditions, additional opportunities and constraints including heritage and cultural values, the revised alignment of the east-west connection road, considering updated centres hierarchy and retail provision recommendations, and in accordance with movement and place principles. This is identified to be:

# MACARTHUR TRANSPORT CORRIDOR

# 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:

- North of Appin & North Appin Precincts: aligned through neighbourhood centre and to avoid topography constraints linking at the southern end to the Appin Bypass intersection node.
- Central Area of Appin & North Appin Precincts: Refined intersection with the East West Connection Rd crossing Ousedale Creek to the north and aligned through the local centre.
- West of the Appin & North Appin Precincts: alignment utilising sections of Brooks Point Rd and crossing over the ridgeline, avoid culturally sensitive areas, topography constraints and be centrally positioned for broader community with alignment adjacent key neighbourhood centres.

## Intersections:

- Signalised intersection proposed at Appin Bypass, East West Connection Rd and North South Connection Rd.
- 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**

Sections of Appin Road require upgrading. Options were investigated to minimise traffic impacts on Appin Township.

# Outcomes

- Appin Road will require upgrading north of Appin through to South Gilead to two lanes in each direction. It will be a 40m wide road cross section which can accommodate a third lane in the future (if required). Currently 80km/h design speed.
- Provision of a link between the Macarthur Transport Corridor and Appin Road, north of Appin Village, to provide for a bypass of the village for through traffic.
- Provision for a link between Appin Road and Wilton Road south of Appin Village and through to the Macarthur Transit Corridor to enhance the Appin bypass.
- Intersections:
  - Appin Road A: Signalised intersection or roundabout at North Appin for \_ the northern bypass.
  - Appin Road B: Signalised intersection or roundabout north of Appin Village.
  - Wilton Road A: Roundabout south of Appin Village opposite the Industrial \_ Precinct.
  - Wilton Road B: Priority sign south of Industrial Precinct.
  - Wilton Road C: Roundabout further south west. \_

LEGEN	ND
	Appin & North Appin Precincts
	Appin (Part) Precinct
	LGA Boundary
нннн	Railway
	Conservation Land (CPCP)
	Easements
	Excluded Land
	OSO Stage 1
	East-West Connection
	North-South Connection
	North-South Connection - by others
	Public Transport Corridor
	Appin Road Upgrade
	Proposed Traffic Signals
ALL	Proposed Roundabout
0	Proposed Sign-controlled
0	Grade Separated Intersection



Figure 86 Future Movement Network Plan

# **RETAIL, CENTRES & EMPLOYMENT**

A Retail and Centres Strategy was prepared by Urbis. The purpose of the strategy was to assess retail floorspace demand and employment potential within the Appin & North Appin Precincts, based on the 2022 Employment Lands Study.

# **RETAIL AND CENTRES PROVISION**

In 2017, DPE prepared an Employment Lands Study to support GMGA 2040. This study was updated in 2022. The updated Employment Lands Study identified the following potential for retail and centres provision within the entire Greater Macarthur Precinct:

- 12 retail centres comprising around 140,000 sg.m total retail floorspace provided in the following retail and centres hierarchy:
  - 2 sub-regional centres;
  - 10 supermarket-based centres; and
  - 1 bulky goods precinct.
- This is consistent with the GMGA 2040 which identified:
  - Two sub-regional shopping centres: One within Wilton Town Centre and the potential for a second sub-regional shopping centre within one of the Appin centres.
  - Nine local centres: 3 in Wilton and 6 in the GMGA with three of those located in Appin.

This strategy examined and outlined the following:

- Identification of Main Trade Area to be served by future retail facilities in Appin.
- The existing and planned local and regional retail context of West Appin.
- An assessment of demand and timing for retail uses within West Appin, and the resultant supportable floorspace and mix requirements for centres.
- Assessment of potential impact on scale and timing of Wilton Town Centre.
- An analysis of the resultant employment levels within centres in West Appin, and considering self containment rates.

# **Trade Area Definition**

The Main Trade Area for a Appin is defined as:

- Primary Trade Centre: The whole of the Appin & North Appin Precincts including North Appin, West Appin and Appin Village. Estimated to be 21,865 homes and 68,322 population.
- Secondary Trade Area: Comprises two locations being:
- Southern portion of the Gilead Growth Area excluding the Mount Gilead area. Estimated to be 6,650 homes and 18,950 population; and
- Established residential area west of the Nepean River bounded by Menangle Road in the west, Moreton Park Road in the north and Nepean River in the south and east. Estimated population 1,916 with no additional arowth.

# **Existing Centres and Retail Provision**

Retail provision needs to consider the creation of a complementary network of centres and retail provision. The competitive context of retail provision in Appin has been considered in the context of the following existing and planned provision.

- Appin: Existing small supermarket and collection of retail tenancies.
- Wilton: Existing small supermarket, convenience retail and dining options. Proposed 50,000 sq.m Wilton Town Centre by 2046, including a range of retail, business and community uses to service the region.
- Picton: Existing supermarket and small format DDS centre. Other retail including an IGA supermarket, convenience retail, cafes and restaurants.
- **Tahmoor:** Existing supermarket and supporting specialty retail centre. Other retail uses including small format supermarket and a range of small, independent cafes and restaurants.
- Menangle Park/Gilead: No existing supermarket however expected to support a mix of local centres comprising a small supermarket, up to 2,000 sg.m of specialty shops, cafes and food services, education and child care, local health services and recreational space and facilities.
- Campbelltown-Macarthur: Significant retail provision with two major shopping centres providing residents in the area with a vast range of higher order shopping, dining and entertainment options.

# Indicative Appin Retail Floorspace Provision

- 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 sa.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.
- 5 Neighbourhood Centres:
  - A small supermarket 1,500 to 3,000 sg.m, up to 2,000 sg.m of specialty shops, cafés and food services, offices, business and retail services, community and civic uses, education, child care, local health services and facilities, and leisure, recreation and open space.
  - Other floorspace: Around 500 sq.m to 1,000 sq.m of other floorspace considered at each local centre could include the likes of urban services, non-retail showrooms, servicing and light industrial uses, driving additional employment and increasing amenity for surrounding residents.
- Indicative staging of centres based on population growth.

# **Regional Hierarchy**

area.

The development of retail facilities within Appin will not impede on the scale, mix, role or function of the Wilton Town Centre.

### Locational Considerations

The following are key success factors for viable and thriving retail development in new communities precincts.

- directions (to home and to work).
- cross utilisation.

# **EMPLOYMENT**

It is estimated that the combination with the local population serving employment, and dedicated employment areas within and immediately adjacent to the Appin & North Appin Precincts could support up to 12,867 jobs, a proportion of which would be occupied by future residents of the Wollondilly LGA. This comprises:

- centres within Appin are:
- operational jobs
- operational jobs upon completion.

- across each neighbourhood centre.

Wilton Town Centre is currently earmarked to support up to 50,000 sq.m by 2046 and expected to perform the highest order retail provision in the hierarchy of the

 Accessibility: Prominent location on transit corridors, arterial routes or major local roads is desirable, with simple and efficient ingress and egress from all directions (not just left in left out), to capitalise on vehicular flows in both

• **Timing:** Early retail provision, prior to the immediate catchment fully establishing, can support residential development and creates more attractive amenity and activation for potential residents.

Land use mix: Collocating centres near public open space, schools, community and recreation facilities is desirable and facilitates higher levels of

• **Parking:** In greenfield contexts, at grade parking is highly desirable, especially for local centre or supermarket based centres.

Population Serving Employment: Estimated employment outcomes for the

- Proposed Appin Local Centre: Expected to generate over 1,200 direct

- Proposed Neighbourhood Centres network: Support 770 direct

**Indirect jobs:** Additional indirect jobs expected to be generated through suppliers and expenditure of those employed with the Appin Town Centre.

• Additional Employment Areas: There are two clear opportunities to accommodate future employment lands for Wollondilly Shire Council in proximity to the Appin & North Appin Precincts:

Moreton Park Road Enterprise Area: Estimated 10,000 additional jobs. The Wilton Road Employment Precinct: Estimated 880 additional jobs.

It is estimated that the development of Appin and North Appin will generate demand for around 9,100 jobs upon completion across the economy.

It is estimated that around 50% (4,550) of job demand could be created locally within the Appin & North Appin Precincts. An indicative distribution of these employment opportunities suggests around 2,230 jobs could be supported within the Appin Local Centre, with between 370 and 756 jobs supported

Key Insights and Directions for Appin (Part) Precinct Structure Plan

- **5 Neighbourhood Centres:** A network of 5 supermarket anchored neighbourhood centres will likely be required within the Appin & North Appin Precincts.
- Appin Local Centre: The Appin & North Appin Precincts population growth can support a Local Centre of approximately 30,400 sq.m of retail and ancillary non retail floorspace at capacity.
- Locational considerations for centres include:
  - Prominent location on major road network
  - Co-location with public open space, schools and community facilities.
- The development of retail facilities at Appin Local Centre and surrounds will be supported by the immediate resident catchment, and will not impede on the scale, mix, role or function of Wilton Town Centre.

### Two employment precincts for Appin being:

- Moreton Park Road Enterprise Area: Estimated 10,000 additional jobs.
- Wilton Road Employment Precinct: Estimated 880 additional jobs.
- Population serving employment: 1,987 within the local and neighbourhood centres.

## LEGEND

- Appin & North Appin & North Appin Precincts Boundary
- Appin (Part) Precinct Boundary
- Hume Highway
- OSO 1 Alignment
- East-West Connection
- Sub-Arterial Road
- Sub-Arterial Road by others
- Existing and Proposed Employment Zones
- Public Transport Corridor
- 400m Medium Density Residential Area
- С Grade Separated Intersection
- Train Station
- Existing Supermarket
- Existing Appin Village Centre
- $\bigcirc$ Potential Town Centre Hub
- Proposed Local Centres (As per Greater Macarthur С 2040 Plan)
- Potential additional Local Centres (Pending Feasibility and Demand)
- 400m & 800m Centre Catchment



# **SOCIAL INFRASTRUCTURE** ASSESSMENT

Urbis have prepared a Social Infrastructure Needs Assessment for the Appin & North Appin Precincts. The purpose of this study was to provide recommendations for the provision of social infrastructure facilities to support the needs of the incoming population.

This assessment was informed by:

- Review of relevant strategies, policies and guidelines to understand the strategic directions for facility provision across the area
- Review of the structure plan documentation for the Precinct, including constraints and opportunity mapping
- Demographic analysis of the current and future population in Appin including development of the expected demographic profile of the incoming population (refer Table 13 below).
- Audit of existing social infrastructure near the site.
- Consultation with key stakeholders including Wollondilly Council, Schools Infrastructure NSW, South Western Sydney Local Health District and representatives from relevant emergency services organisations.
- Benchmarking and gualitative assessment to identify the future demand for social infrastructure.
- Review of best practice social infrastructure delivery in precincts of a similar context to the site.

# Table 13 Population Assumptions

EXPECTED DWELLING MIX	VIELD VIELD	OCCUPANCY RATE PERSONS / DW	EXPECTED POPULATION
Low Density	16,710	3.1	51,801
Medium Density	5,155	2.6	13,403
Total	21,865	-	65,204

# **REGIONAL INFRASTRUCTURE & OPEN** SPACE

# **Existing Facilities and Services**

Appin is currently serviced by higher-order, regional facilities in Campbelltown. Given the size and intended service catchment of these facilities, it's expected this role will continue with the incoming population.

- Community facilities: 2 x community facilities both located on Sportsground Parade, adjacent to Gordon Lewis Oval being Community Hall and Men's Shed,
- University: 1 x The Western Sydney University Campbelltown campus.
- Hospital: Campbelltown Hospital is a major health facility for the Greater Macarthur Region.
- Emergency facilities: The closest police and ambulance stations to Appin are in Campbelltown.
- Conservation land and bushland: Surrounds the eastern and western boundary of the urban area and includes several trails that are generally accessible for passive recreation use.

# **Future Regional Services Provision**

Wilton Town Centre will become the major strategic centre for the LGA. Wilton is anticipated to provide regional level facilities for the broader growth areas including Appin. The following key regional infrastructure, which is expected to be delivered in this area, (as identified in GMGA 2040 and Wilton 2040) includes:

- A 5ha regional open space in the North Wilton Precinct (10.5km from the site).
- An integrated health facility at Wilton Town Centre, which will be dependent on the service models within the facility (8.5km from Appin).
- A 500 sq.m cultural facility in Wilton Town Centre.
- A 2,000 sg.m fire and rescue station, a 2,000 sg.m police station and an ambulance hub in Wilton Town Centre.

# LOCAL SOCIAL INFRASTRUCTURE & **OPEN SPACE**

# **Existing Facilities and Services**

Most of the existing social infrastructure and open space facilities are concentrated in the existing Appin Village, which is contained within the Appin & North Appin & North Appin Precincts Boundary but excluded from the Appin (Part) Precinct Structure Plan area. These facilities are local level facilities and predominately service the existing residential community. These facilities are unlikely to support any needs of the incoming population and include:

- **Community facilities:** 2 x community facilities both located on Sports ground Parade, adjacent to Gordon Lewis Oval being Community Hall and Men's Shed,
- Education facilities:
  - **Primary School:** 1 x being Appin Public Primary School.
  - Secondary School: Students required to travel Camden LGA or Campbelltown to access.
- Childcare facilities:
  - Childcare: 2 x Early Learning facilities on Rixon Road and Winton Road,
  - Out of School Hours Care: 1 x co-located with Appin Public School.
- Health facilities: 1 x General Practice being Appin Family Practice.
- Emergency facilities: 1 x Appin Rural Fire Brigade Station is an unmanned volunteer station and one of the busiest brigades in the Wollondilly Shire.
- Open space and recreational facilities: There are two main recreational facilities in Appin:
  - Gordon Lewis Oval: A double sports oval co-located with Appin Community Hall.
  - Appin Park Reserve: A large, outdoor playing area that supports various activities.

# **Future Local Services Requirements**

The Draft Social Infrastructure and Open Space Assessment prepared by Urbis recommends the following:

# Multi-purpose Community Centres:

- 1 x District facility with an integrated library of approximately 4,420 sq.m, comprising of a multipurpose community space, library space, and shared meeting spaces, staff spaces and amenities. Colocated with Local Centre.

- 3 x Local facility providing a flexible floor layout and the provision of meeting rooms of approximately 935 sq.m. Co-located with schools or other activity generating uses in neighbourhoods centres.

# Education:

- Primary School: 3 x K-Year 6

- **Community School:** 3 x K-Year 12

## Childcare:

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- Long day care centres: 25 x average of 80 children

 Out of hours school care: 23 x average of 80 children Health:

- **Primary health clinic:** Look to provide adaptable spaces within community facilities to accommodate health services.

- Private general practice: Up to 13 General Practice clinics with five GP's in each located in centres.

# Key Insights and Directions for Appin (Part) **Precinct Structure Plan**

**Regional Social Infrastructure** provision is expected to be provided by Campbelltown-Macarthur and Wilton Town Centre.

■ Local Social Infrastructure provision for the Proposal includes:

- Multi-purpose Community Centres: 1x district and 3x local.
- Education: 3 x K-6 and 3 x K-12.
- **Childcare:** 25 x long day care centres and 23 x Out of hours school care.
- Health: Primary health clinic facilities accommodated within adaptable spaces in community facilities and up to 13 General Practice clinics (5 GPs each).

The Proposal does not rely upon existing facilities in Appin Village.

### APPIN VILLAGE INSET

LEGEND

Appin & North Appin Precincts

B1 Neighbourhood Centre

C4 Environmental Living

R2 Low Density Residential

R5 Large Lot Residential

**RE1** Public Recreation

RU2 Rural Landscape

W1 Natural Waterways

community centres, police, fire

Aquatic Centre / natural pool

SP2 Infrastructure

Active open space

(Future) open space

**Appin Family Practice** 

Greyhound Track

**Broughton Pass** 

Light Industrial Zone

Appin Rural Fire Brigade

(Macarthur Motorcycle Club)

**II** Railway and station

Schools

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3

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Shed

R3 Medium Density Residential

IN2 Light Industrial

- Appin (Part) Precinct

----- Appin Township Inset

B2 Local Centre B4 Mixed Use



# **OPEN SPACE & RECREATION NEEDS ASSESSMENT**

Urbis have prepared an Open Space and Recreation Needs Assessment for the whole Appin & North Appin Precincts. The purpose of this study was to provide recommendations for the provision of open space facilities to support the needs of the incoming population.

This assessment was informed by:

- Review of relevant strategies, policies and guidelines to understand the strategic directions for open space and recreation provision across the area
- Review of the structure plan documentation for the Precinct, including constraints and opportunity mapping
- Demographic analysis of the current and future population in Appin including development of the expected demographic profile of the incoming population (refer *Table 13* on previous page).
- Audit of existing open space near the site.
- Consultation with key stakeholders including Wollondilly Council.
- Benchmarking and qualitative assessment to identify the future demand for open space.
- Review of best practice open space delivery in precincts of a similar context to the site.

# OPEN SPACE PERFORMANCE BASED CRITERIA

This assessment uses a multi-criteria analysis to identify the open space needs of the future Appin & North Appin Precincts community. This includes:

- Adopting a hierarchy of provision for open space across the Precinct, based on state and local standards.
- Considering both performance based and quantitative spatial standards for open space.
  - Performance based criteria has been adopted from the GANSW draft Greener Places Design Guide. (Refer Table 14).
  - Quantitative spatial standards have been sourced from best practice approaches around Australia.

## **Open Space Types**

Open space comes in a variety of forms, from natural ecosystems to synthetic sports fields. All open space types have a role in supporting the social, environmental and economic needs of communities. The types of open space that can support recreation can be classified into two key categories:

- Open space for structured recreation: Open space areas that predominately support directed, physical activity such as outdoor sport or formal play. Generally consists of:
  - Sports fields and grounds
- Playgrounds
- Outdoor exercise areas.
- Open space for unstructured recreation: Open space areas that predominately support casual, physical, social or cultural activities, such as picnicking, walking or group gatherings. Generally consists of:
- Natural areas and bushland
- Linear trails and accessible riparian areas
- Gardens and parklands

## Table 14 Open space performance based criteria

CRITERIA	DESCRIPTION
Quantity	Provision of a diverse range of public open space is essential to compensate for reduced areas of private open space to support active living and contribute to more liveable neighbourhoods.
Accessibility and connectivity	Ease of access is critical for the community to be able to enjoy and use public open space and recreation facilities.
Size and shape	Size and shape of open space has a direct bearing on the capacity of that open space to meet and accommodate recreation activities and needs.
Quality	The quality of design and ongoing maintenance and management is critical to attracting use and activating the open space network.
Distribution	The ability of residents to gain access to public open space within an easy walk from home, workplaces, and schools is an important factor for quality of life. The geographic distribution of open space is a key access and equity issue for the community.
Diversity	The range of open space setting types within an urban area will determine the diversity of recreation opportunity for communities.

# Hierarchy

The open space hierarchy for the Appin & North Appin Precincts is largely based on the three categories identified in the *draft GANSW Greener Places Design Guide* being:

• **Regional:** Destination parks serving multiple districts.

- <u>Size</u>: Greater than 5ha

- <u>Catchment</u>: Up to 30 minutes travel time on public transport or by vehicle.

**District:** Serve multiple neighbourhoods.

- Size: Greater 2 - 5ha

- Catchment: Approx 2km from most houses.

• Local: Within residential areas.

<u>Size</u>: 0.5 - 2ha

- <u>Catchment</u>: 400-500m from most houses.

Two additional open space classifications have been included which reflect the significant natural assets unique to the Appin & North Appin Precincts. These are retained and incorporated into the Appin (Part) Precinct Structure Plan and which have an ability to support unstructured recreation uses being:

 Urban Greening: Natural areas such as riparian corridors, steep slopes or existing mature bushland suited for unstructured recreation activities, and contributing to amenity, cooling and biodiversity outcomes. (NOTE: This land is categorised as Excluded in the CPCP, the NSW strategic biodiversity certification.)

 Linear Parks: Open space connection between parks or natural systems, such as along riparian corridors or bushland conservation and suitable for recreation activities such as walking, outdoor exercise and play. GANSW suggests linear parks provide minimum 50% road frontage or public space access.

### **Quantity Assessment**

This study adopts 10% of net developable area (NDA) for local and district parks and sports fields as a benchmark for open space provision within the Appin & North Appin Precincts based on as assessment of best practice approaches across Australia.

### Net Developable Area (NDA) assumptions:

Based on synthesis of best practice definitions for the purposes of open space provision, the following definition of NDA has been adopted for the Appin (Part) Precinct Structure Plan for calculating open space provision:

- Excluding: Encumbered land, conservation land, easements, utilities, classified roads, railways corridors, significant heritage, regional open space.
- Including: Commercial centres, local centres, schools, community facilities, residential land, local roads and streets, publicly accessible local and district open space.

The NDA for Appin & North Appin Precincts is 1,739ha requiring 173.9ha of local and district open space. (Refer Table 15 below).

 Table 15
 Open space quantitative Provision Assessment

BENCHMARK	AREA (HA)	% TOTAL PRECINCT	% NDA
Total Area	3.826.33	100%	-
Exclusions	1,892.07	49.45%	-
NDA	1,739	45.21%	100%
10% Provision (District and local)	173.9		10%
2.83ha / 1,000 persons benchmark (Regional, district and local)	184.5	3.4ha / 1, peopl	

# **RECREATION REQUIREMENTS**

The provision of recreation requirements have been identified through application of the benchmarks for the Wilton Priority Growth Area Community Needs Assessment to the proposed Appin & North Appin Precincts population as set out in Table 16 below.

 Table 16
 Recommended Recreation Provision

FACILITY TYPE	BENCHMARK	BENCHMARK APPLICATION	RECOMMENDED PROVISION
Aquatic centres	<ul> <li>1 for every 30,000 - 60,000 people</li> </ul>	1 centre	Demand for a public facility will be met through the development of a planned indoor aquatic centre in the Wilton Growth Area. It is recommended a private learn to swim facility is provided within the Appin & North Appin Precincts to supplement this provision and accommodate some localised needs of the incoming population.
Indoor recreation facilities	<ul> <li>1 for every 50,000 - 100,000 people</li> </ul>	0.7 centres	The incoming population will not generate the need for a standalone facility in the Appin & North Appin Precincts. Demand will likely to be met through planned facilities at Menangle Park and Wilton.
District sports grounds	<ul> <li>Two double playing fields and amenities per 10,000 people</li> </ul>	Six double playing fields	To be located adjacent to schools and within the regional park.
Multi- purpose outdoor courts	<ul> <li>1 for every 4,200 people</li> <li>0.5ha per court plus runoff space and amenities</li> </ul>	15 outdoor courts	To be distributed among district and some well located local spaces. Some of the latter may be half court facilities for informal local games. Consideration should also be given to potential joint use arrangements with schools.
Play spaces	<ul> <li>1 playground for every 500 children aged 0 -4 years</li> <li>50 sq.m minimum within a park</li> <li>1 play space for every 500 children aged 5-11 years</li> <li>100 sq.m minimum within a park</li> </ul>	Up to 25 playgrounds and play spaces total	<ul> <li>Rather than 25 local play spaces, it is strongly recommended there be a range of play spaces distributed across the Precinct. There is potential for:</li> <li>A large regional space with a wide range of play opportunities, located within the regional park and including all abilities play</li> <li>Nature based play spaces, incorporated within urban greening areas and linear parks</li> <li>District play spaces located with outdoor courts or half courts to provide for a range of age groups and preferences</li> <li>Local play spaces within walking distance of homes and key destinations.</li> </ul>
Outdoor fitness stations	<ul> <li>1 station per 15,000 people</li> </ul>	4 outdoor fitness stations	At least four outdoor fitness stations, to be distributed among district spaces, and potentially the linear parks where free of environmental and topographical constraints.

# Key Insights and Directions for Appin (Part) Precinct Structure Plan

### **Open Space Provision:**

- 1 Regional Park: Based on other inputs into the Appin (Part) Precinct Structure Plan it is recommended this is located at the gathering and Resource Cultural Value place located between Elladale and Simpsons creeks and framed by Conservation Land. The area of this land is 21ha.
- 10% NDA for District and Local Open Space provision equates 78.1ha. This includes structured and unstructured recreation spaces.

### District Parks

- District Parks for structured recreation should be 2-4ha in size. A total of 20.3ha is recommended.
- District Parks for unstructured recreation to be approximately 64.6ha
- Local parks: Based on open space provision above, an additional **21.8ha of local parks** is required to be distributed throughout the Appin (Part) 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.

# **UTILITIES & SERVICES** ASSESSMENT

IDC have prepared an Infrastructure Phasing Plan to support the Appin (Part) 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

PART B: TECHNICAL INVESTIGATIONS

- Indicative yield and staging of the proposed development
- Potential servicing strategies for the proposed development within and outside the precinct
- Topography assessment.

# WATER AND WASTEWATER

Sydney Water indicates that there is adequate bulk water available to service planned growth in Appin including sewer infrastructure in place to cater for the capacity required within the precinct in the interim (up to 10 years) and ultimate.

Existing Infrastructure: The major existing infrastructure relevant for Appin is the Macarthur Water Filtration Plant (WFP), Appin Reservoir and Glenfield Waste Water Treatment Plan (WWTP). The Appin Village has reticulated water and waste water services.

Precinct Plan (Appin & North Appin Precincts): Sydney Water has confirmed that:

- Initial Stages: Development can be supported via the Glenfield WWTP and Macarthur WFP.
- Future Stages: Additional capacity will be required in the future through upgrades and new infrastructure to increase capacity for the ultimate development.
- Current Planning: For growth in Appin as per the Sydney Water Growth Servicing Plan 2019-2024.
- Recycled Water: There is currently no recycled water within the region. However, Sydney Water is considering planning for its as part of the Options Study underway for GMGA.

 Table 17
 New Utility Infrastructure Area requirements

NEW UTILITY INFRASTRUCTURE	AREA (HA)*
Water Reservoir x 1	0.50 ha each
Electrical Zone Station x 2	1.15 ha each
Transgrid Bulk Supply Point x 1	2.60 ha each
Other Infrastructure (Comms Head Ends, Gas Cocon Unit)	Varies

\*Area indicative, subject to detailed design and consultation with the key utility authorities.

# ELECTRICITY

Investigations revealed that there is adequate capacity available to service planned growth in the interim with upgrades required for ultimate development.

Existing Infrastructure: The existing electrical infrastructure in Appin comprises a zoned Substation, 66kV/11kV powerlines and 330kV power lines.

Precinct Plan (Appin & North Appin Precincts): Future development at Appin would require additional electrical infrastructure, as the existing substation at Appin can only supply an additional 1,200-1,400 residential lots. Preliminary studies indicate the following requirements:

- 2 x new Zone Substations plus associated feeders from Douglas Park Transmission Substation.
- 1 Bulk Supply Point from Transgrid.
- New High Voltage Feeders.

# **TELECOMMUNICATIONS**

- NBN have advised that future development at Appin can be serviced.
- Existing Infrastructure: There is a reticulated communications network within the Appin Village.
- Precinct Plan (Appin & North Appin Precincts): Network will be upgraded extended within the development

# GAS (NON ESSENTIAL SERVICE)

- Appin falls within the Jemena Supply Area.
- Existing Infrastructure: There are three gas transmission lines that traverse Appin - the Eastern Gas Pipeline, Jemena JGN Main, and the APA Sydney Moomba Ethane pipeline.
- There is a reticulated gas network in the Appin Village, serviced via the Appin Package Off-Take Station (POTS) site on Elladale Road.

# Precinct Plan (Appin (Part) Precinct):

- POTS can be upgraded and new network built to service population.
- There are potential setbacks for certain development uses specifically sensitive use such as schools, childcare facilities, hospitals or aged-care facilities.

# **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) Precinct Structure Plan.

# LEGEND:

	Appin & North Appin & North Appin Precincts Boundary
	Appin (Part) Precinct Boundary
	LGA Boundary
	Electrical Transmission Line Easement
	Gas and Ethane Transmission Line Easement
	Macarthur Water Filtration Plant
	Existing Water Supply Network
	Existing Sewer Pump Station
	Existing Water Reservoir
	New Water Reservoir
	Existing Zone Substation
$\bigtriangleup$	New Zone Substation
	New Bulk Supply Point
	Sewer Pump Station (typically at the low points and around the perimeter of the site)





# **CONSOLIDATED SITE CONSTRAINTS**

# **NET DEVELOPABLE AREA**



as open space.

**ELEMENTS** 



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



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.

# **APPIN & NORTH APPIN PRECINCTS STRUCTURING**

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) 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 & North Appin Precincts 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

- Conservation: Non-Certified Avoided land C2 Conservation Land and dedicate for conservation.
- Mature Vegetation: Retain areas of mature trees in the CPCP Excluded land as passive open space.
- **Riparian Corridors:** Retain identified riparian corridors within the urban capable land being:
  - Rocky Ponds Creek: east and west
  - Ousedale Creek and identified tributaries
- Bushfire: Establish definitive Asset Protection Zones addressing category 1 of Bush Fire Prone Vegetation for the Appin (Part) Precinct structure plan.
- **Topography:** Consider location specific design responses to steep land through the detailed design phase where possible.

# Key Constraints: Heritage & Cultural Values

### **Cultural Values:**

- Protect First Nation's Sites of Cultural Significance associated with the Appin Massacre as locations for no development being:
  - Rocky Creek Massacre site
  - Rocky Creek Burial site
- Retain sites with cultural values as open space being:
  - Gathering and Resource Place between Elladale and Simpsons creeks as regional open space.
  - Ridgeline Movement Corridor as linear open space.
- Retain Connections with Country through:
  - Retain sight lines between key locations.
  - Provide green corridors between key places.
- Heritage: Incorporate sites of state and local heritage significance into the Appin (Part) Precinct structure plan providing appropriate curtilage being:
  - Graves associated with the Appin Massacre
  - Lachlan Vale Estate (including the estate huts)
  - Macquariedale Estate (including Moon's cottage)
  - Teston Farm
  - Elladale Cottage (#16)
  - Northamptondale Group (#118) adopting a reduced curtilage to the cottage
  - Sandstone quarries

### **Key Constraints: Infrastructure**

**Easements:** Six existing easements will need to be retained within the Appin (Part) Precinct Structure Plan:

- The Jemena JGN Main Gas pipeline: 24m wide easement. No development within the easement however agreement to allow linear pedestrian/ cycle path along its length subject to detailed design. The following buffers also apply:
  - 700m Buffer: Sensitive uses development permitted.
  - 200m Buffer: No sensitive uses development permitted. Excluded uses are schools, hospitals
- Eastern Gas Ethane pipelines: 20m wide easement.
- APA Sydney Moomba Gas Ethane pipeline: 20m wide easement. APA Sydney have landscape guidelines for agreed outcomes.
- **330KV Transgrid Powerline:** Runs north-south through Release Area 1 and will need to be retained. Contained within **60m wide Transmission Easement.**
- 66kV Transgrid Powerlines: Runs east-west in the vicinity of Brooks Point Road. Contained within 33-55m wide Transmission Easement.
  - Potential uses to be incorporated into the easements include passive open space, dog park and road crossings.
  - Explore opportunities to incorporate recreation active cycle pathways into the length of the easement.
- 10-15m wide Water Supply Easement: along Ousedale Creek alignment. It can be located in residential, commercial and open space land, however cannot contain development/works with the exception of road crossings.

Existing Zoned Sub-Station: Retain existing zoned sub-station on Brooks Point Road.

# **NET DEVELOPABLE AREA**

The Net Developable Area (NDA) identified for the Appin & North Appin Precincts is the area that is suitable for development after all the excluded areas are removed. For land within the Appin (Part) Precinct, this is based on updated technical information identified within the GMGA 2040 TAP Process as well as the technical studies undertaken to prepare this Proposal. For the balance of the Appin & North Appin Precincts, it is noted this is indicative only.

# LEGEND

 Appin & North Appin Precincts
 Appin (Part) Precinct
 LGA Boundary
 Railway
 C2 Environmental Conservation
 Net Developable Area - Appin & North Appin Precincts (Walker Land)
 Net Developable Area - Appin & North Appin Precincts (Other Land)
 Net Developable Area - Appin & North Appin Precincts (Balance)
 SP2 Road Network - Existing & Proposed
 Excluded Land

 Table 19
 Net Developable Land Calculations

	APPIN & NORTH APPIN PRECINCTS		REZONING	
CATEGORY	AREA (HA)	AREA (%)	AREA (HA)	AREA (%) GROSS
TOTAL APPIN & NORTH APPIN PRECINCTS (BOUNDARY)	3,826.33	100%	1,378.53	100%
STRUCTURE PLAN EXCLUSIONS	360.40	11.1%	-	-
- Appin Village	246.18	6.43%	-	-
- Employment Land	44.84	1.17%	-	-
- Upper Canal	58.87	1.54%	-	-
- Existing SP2 Roads	34.14	0.89%	-	-
- Water Catchment SEPP Land	13.98	0.37%	-	-
- Power Station	18.28	0.48%	-	-
- Cataract Dam	10.81	0.28%		
NET DEVELOPABLE EXCLUSIONS	1,671.59	43.69%	576.46	41.82%
Conservation Land Dedication	1,489.94	38.94%	493.75	35.82%
Listed Heritage Sites (European)	5.21	0.14%	5.21	0.38%
Proposed Utility Assets	6.00	0.16%	4.65	0.34%
Easements	76.15	1.99%	36.70	2.66%
Proposed SP2 Roads	94.29	2.46%	36.15	2.62%
NET DEVELOPABLE AREA	1,794.34	45.21%	802.07	58.18%



Figure 90 Net Developable Area Plan

# **APPIN & NORTH APPIN PRECINCTS STRUCTURING ELEMENTS**

The following refinements to the Structuring Elements for the Appin & North Appin Precincts Indicative Plan were identified through these technical studies:

- 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.
- A Strategic Road Network supported by TfNSW including:
  - An East-West Connection road through the Macguariedale Road precinct and bypassing to the south of Appin Village to meet Appin Road.
  - A potential North-South Connection road from the East-West Connection road noting crossing through the CPCP are to be undertaken by others.
- A confirmed centres network of 6 mixed-use neighbourhood centres with the potential for one of these to become a higher order local centre.
- Support for proposed employment areas in close proximity to the precinct.
- Protection of additional sites of significance including European Heritage Items and First Nations Cultural 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 21,000+ homes and 65,000+ people within the precinct.
- Confirmation that infrastructure to support the precinct can be delivered and is being planned for.

## LEGEND

- Appin & North Appin Precincts Appin (Part) Precinct ----- LGA Boundary East-West Connection North-South Connection North-South Connection (by others) Public Transport Corridor Ø Bus Stop (indicative) Existing Waterways Existing Roads Conservation Area **Employment Land** Important View Lines
- Draft NSW State Heritage  $\sim$ listing Curtilage (Place of First Nations Cultural Landscape)
  - Heritage
  - Urban Greening
  - Regional Park
  - $\leftarrow \rightarrow$ Walkable Green Links
    - Excluded Land
    - Local Centre
    - 400m Medium Density Residential Area around area amenity and transport provision







The Appin (Part) 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) 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) Precinct Structure Plan in the context of the Appin & North Appin Precincts Indicative Plan as a series of layered strategies.

**PART C: APPIN STRUCTURE PLAN** 





# **APPIN VISION**

# APPIN IS FRESH AIR AND FREEDOM FOR THE FAMILY TO GROW AND EXPLORE





# **STRATEGIC** POSITIONING

# WHERE THE PARKLAND CITY **MEETS THE BUSH LIFESTYLE**

Appin is set amongst vast natural landscapes including Dharawal National Park and the Upper Nepean State Conservation Area, offering immense outdoor recreational value. From Appin its only a 20 minute drive to the northern Illawarra escarpment and coastline with its many walking trails, beaches and parks, adding to the diversity of recreational opportunities on offer.

The major centres of Campbelltown-Macarthur and Wollongong City Centre, are only 15 and 30 minute drive respectively from Appin, providing a wide variety of employment, community, cultural, retail, commercial and recreational uses within reach of the new community.

Appin will also benefit from direct access to the Western Sydney Airport and planned Aerotropolis via the Outer Sydney Orbital connection at the Hume Highway. And the Moreton Park Road Enterprise Area will offer up to 10,000 jobs adjacent to the precinct.



# LEGEND

Appin & North Appin Precincts
Moreton Park Road Enterprise Area
Growth Area
Urban Land
Metropolitan City Centre
Metropolitan City Cluster
 Major Road Network
 Train Lines
 Outer Sydney Orbital
 Beaches

# APPIN (PART) PRECINCT STRUCTURE PLAN

**PART C: APPIN STRUCTURE PLAN** 

Appin's urban structure lays the foundation for a transitconnected community of self-contained, inclusive, mixed-use and walkable urban neighbourhoods set within one of the most unique natural settings in Australia.



Figure 93 Appin & North Appin Precincts Indicative Plan

The place ethos for the Appin (Part) Precinct 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.

# LAND USE

Appin & North Appin Precincts Appin (Part) Precinct ---- LGA Boundary Waterways CPCP Non-Certified Avoided CPCP Non-Certified Avoided - Additional Koala Corridor Excluded Land - Existing Vegetation **Regional Open Space District Open Space** Easements (potential for active and passive recreation) **Riparian Corridor** Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape) ♦ ♦ Walkable Green Links Mixed Use Centres (including retail, schools and district ovals) **Residential Neighbourhoods** Heritage Items East-West Connection Public Transport Corridor North-South Connection & Appin **Bypass — — —** Road Connection - By Others Collector Roads Excluded Land

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 .

100

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 95 Appin (Part) Precinct Structure Plan on the Appin & North Appin Precincts Indicative Plan

# **6 DESIGN PRINCIPLES**

Six Design Principles have informed the Appin (Part) 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.

**N1** 

# **FRAMED BY NATURE**

Conservation Land Mature Tree Canopy







# CUSTODIANS OF PLACE

First Nations Cultural Values & Heritage

**European Heritage** 

# **STARTING WITH COUNTRY**





# **HEALING LANDSCAPES**

**Multi-Functional Landscapes Blue Grid & Riparian Corridors Recreation for All** 



# **CONNECTED, ACTIVE & HEALTHY**

2056 Strategic Road Network Appin Strategic Road Network Local Road Network **Active Transport & Recreation** 

# RESILIENT **NEIGHBOURHOODS**

**Regional Centres & Employment Mixed-Use Centres** Resilience



# 06

# **HOUSING CHOICE OF THE FUTURE**

**Distinctive Neighbourhoods Diverse & Inclusive Housing** Infrastructure & Staging

# 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.



Appin & North Appin Precincts **3,826ha** 

of 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 (Part) Precinct Structure Plan including:

- Adopting a Country-centred design approach: The Appin & North Appin Precincts has its foundations in sensing Country.
- Respecting Country by respecting topography with careful alignment of infrastructure and positioning of urban development to integrate with the landscape and ensuing connectivity with lines of sight and walkable green corridors.
- Caring for Country (land, plants, animals, sky, water) by retaining mapped riparian corridors, Cumberland Plain Woodland and Koala habitats with one third of the rezoning site set aside for conservation and a commitment to support First Nations people's capacity to manage and care for Country.
- Connecting to Country by retaining areas of traditional and ongoing cultural value for passive uses, retaining and integrating ridgeline movement corridors and local and regional lines of sight and connection, and facilitating access to undertake cultural practices on Country.
- **Contribute to reconciliation** through acknowledging and telling the shared history of Appin, preserving identified locations free of development for future planning in conjunction with First Nations people and contributing to economic, educational capacity and opportunities for First Nations people.
- Reflect First Nations cultural and spatial knowledge of Country by creating walkable and inclusive neighbourhoods with legible centres, edges, and connections, culturally appropriate social infrastructure and an open space network that supports movement, gathering, living cultural practices, storytelling and caring for Country.



# **SENSING COUNTRY - GREATER SYDNEY**

Local Governme Area Boundary <50 metre conto 50-100m contou 100-200m contou 200-300m conto 300-400m contou 400-500m contour

>500m contour

Figure 96 Greater Sydney's Topography

- Sits within the Hawkesbury-Nepean Catchment flowing away from the coast to the north towards the Hawkesbury River.
- The regional ridgeline has also been identified as a First Nations regional trail connecting the Illawarra to the Hawkesbury.

Aligned on the western side of the north-south ridgeline that traverses Greater Sydney and the Cumberland Plain.



# **SENSING COUNTRY - APPIN**

2

4

5

Retaining and responding to Country is a key strategy of the Appin (Part) Precinct Structure Plan. This understanding of Country has underpinned the development of infrastructure, neighbourhoods and special places that will connect Appin to Country. There are five distinct topographic features of the site that have been integrated into the structure plan. These include:

The Eastern Plateau - the land between the Appin Road ridgeline and the secondary ridgelines to the west form a higher plateau with regional and district views towards the Razorback Ranges. There are three local/ neighbourhood centres within the plateau including the larger local centre. Additional building height in the mixed use zone will benefit from the views.

Primary ridgelines - Appin and Wilton roads are aligned along the primary ridgeline which is where the regional ridgeline touches the eastern extent of Appin & North Appin Precincts.

Secondary ridgelines - A series of secondary ridgelines are located west of the primary ridgeline. The secondary ridgelines are distinctive features of the site and contain localised areas of steep terrain.

2a The southern part of the secondary ridgeline Includes the highest point within the Appin & North Appin Precincts and provides 270 degree views to the south and west. It marks the western extent of the Eastern Plateau.

**2b** The northern part of the secondary ridgeline provides expansive views to the Razorback Ranges and Blue Mountains and also marks the western extent of the Eastern Plateau.

20 A local ridgeline within the south-western extent of the precinct provides local definition and visual connection into the site and the green riparian areas of the Nepean and Cataract rivers.

Waterways - the lowest areas of the site are along the river and creek corridors. These Nepean and Cataract Rivers and riparian areas define the western extent of the precinct while the Elladale, Simpsons, Rocky Ponds and Ousedale creeks extend into site defining local areas.

Undulating Hills - The areas between the ridgelines and the waterways are predominantly gently undulating land.

LEGEND
Appin & North Appin Precincts
Appin (Part) Precinct
2m contours
Low - High
✤ Localised High Points
Steep Slope
AAA Primary Ridgeline
Secondary Ridgeline
Plateau
Undulating Hills



Figure 98 Appin & North Appin Precincts Topography

### 104 Appin (Part) Precinct Urban Context Report

# FRAMED BY NATURE



More than 2x

Centennial Parklands

494ha within Appin (Part) Precinct (31%) for environmental conservation

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.

> Over 3.5km of koala corridors

> > Prepared by Urbis for

# **CONSERVATION LAND**

# **PROPOSED C2 ENVIRONMENTAL CONSERVATION** ZONE

The proposed area of C2 Environmental Conservation zone within the Appin (Part) 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) 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.

## CPCP Excluded<sup>1</sup>: Existing Easements - to be retained

Comprises cleared easements between identified areas of CPCP Non-Certified Avoided.

## Outcomes for Appin (Part) Precinct Structure Plan:

- Access: Publicly accessible.
- Vegetation: Is cleared of vegetation and required to maintained as cleared to provide access to utilities infrastructure.
- Uses: Provision of regional linear active recreation links and opportunities for active and passive recreation facilities.

## CPCP Excluded<sup>1</sup>: Existing Roads<sup>2</sup> - proposed to be extinguished

Comprises predominantly 'paper' roads that exist within the cadastre however have not been constructed:

- Part of Macquariedale Road: North-south portion from Water NSW Upper Canal to junction of Ousedale Creek and the Nepean River.
- Un-named Road: North-east portion from Macquariedale Road to Ousedale Creek in the vicinity of the Transgrid Electricity Easement.
- Part of Elladale Road: East-west portion west of Transgrid Electricity Easement.

## Outcomes for Appin (Part) Precinct Structure Plan:

- Access: Will be fenced off and predominantly inaccessible to humans.
- Vegetation: Predominantly existing vegetation. Potential to undertaken ecological restoration of native vegetation as per CPCP Non-Certified Avoided to reduce fragmentation of conservation land.
- Uses: Limited access into this area for walking trails to be established with further investigation.

# PROPOSED SP2 SPECIAL PURPOSES **INFRASTRUCTURE ZONE**

There proposed area of SP2 Special Purposes Infrastructure Zone within the Appin (Part) Precinct is consistent with the CPCP and comprises the following:

# Proposed Roads through CPCP Non-Certified Avoided

The CPCP recognises that additional essential infrastructure may be needed outside the urban capable areas to support growth. EPBC Act approval is being sought for certain essential infrastructure development, such as utilities, local roads and recreational development on non-certified land in the nominated areas, provided it is taken in accordance with 'Appendix A. Guidelines for essential infrastructure development'.

An avoidance target of no more than 20 hectares in the Greater Macarthur Growth Area has been established for limiting cumulative direct impacts over the life of the Plan from essential infrastructure to the EPBC-listed Shale Sandstone Transition Forest TEC within noncertified land.

Areas for proposed Classified Roads that will go through the CPCP Non Certified-Avoided are identified as being:

- Within Appin Vale Precinct Plan area:
- Proposed East-West Connection Road: Crossing the Nepean River in the north-west extent of the rezoning area.
- For the remainder of the Appin (Part) Precinct Structure Plan (indicative only for the purposes of calculating the potential total area required for Classified Roads as a component of essential infrastructure) being:
- Proposed Transit Corridor: Crossing Mallaty Creek in North Appin, Ousedale Creek between North Appin and West Appin, and the Nepean River in West Appin outside of the Appin (Part) Precinct area.
- Proposed East-West Connection Road: Crossing the northsouth section of Ousedale Creek in West Appin.

NOTES:

- **1.** 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.
- **2.** 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.

# PROPOSED UD URBAN DEVELOPMENT ZONE



# Table 20 Proposed Zoning Outcomes - C2 Environmental Conservation

APPIN (	PART) PRECINCT	AREA (HA)	%
	PROPOSED C2 ENVIRONMENTAL CONSERVATION ZONE	493.75 ha	100%
	CPCP Non-Certified Avoided	471.42ha	95.48%
	Excluded Land - Existing Easements	20.75 ha	4.20%
	<ul> <li>Existing roads - proposed to be extinguished</li> </ul>	1.59 ha	0.32%

The proposed area of UD Urban Development zone within the Appin (Part) Precinct is consistent with the CPCP and comprises the following:

# CPCP Excluded<sup>1</sup>: Existing Roads<sup>2</sup> - to be retained

Comprises existing roads between identified areas of CPCP Non-Certified Avoided that provide precinct connectivity outcomes of benefit to the Appin (Part) Precinct Structure Plan.

Part of Elladale Road: North-south portion from Brooks Point Road to east of Transgrid Electricity Easement.

Part of Macquariedale Road: East-west portion between Northamptondale Road to Appin Road across Ousedale Creek.

Part of Brooks Point Road: East-west portion between Northamptondale Road to Appin Road across Ousedale Creek.



Figure 99 Proposed C2 Environmental Conservation Zone

# LEGEND

— A	ppin & North Appin Precincts			
— A	ppin (Part) Precinct			
PROPOSED ZONING				
SI	P2 Infrastructure			
C	2 Environmental Conservation			
CONSERVATION LAND COMPONENTS				
CI	PCP Non-Certified Avoided			
Ea	asements to be retained			
E	xisting Roads to be retained			
E	xisting roads - proposed to be extinguished			
Pi	roposed Roads through Non-Certified Avoided			
E	xcluded Land			
$\sim$ Ex	xisting Rivers / Creeks			
Ke Ke	oala Corridor			
🔆 Pa	otential Koala Crossing			



# **RETENTION OF MATURE TREE CANOPY**

In additional to the Non-Certified Avoided land, Appin (Part) Precinct Structure Plan will retain existing vegetation in excluded land as follows:

# PROPOSED OPEN SPACE

The **proposed area of proposed passive open space** within the Appin (Part) Precinct comprises the following:

## CPCP Excluded<sup>1</sup>: Existing Vegetation

Areas of existing mature vegetation required to be retained and identified as Excluded within the CPCP due to their location surrounded by Urban Capable Land.

# Outcomes for the Appin (Part) Precinct Structure Plan:

- Access: Publicly accessible.
- **Vegetation:** Opportunities for enhancement and ecological restoration of native vegetation.
- **Uses:** Provides unstructured recreation outcomes including opportunities for passive recreation and trails.

# CPCP Excluded - Existing Vegetation<sup>1</sup>: Existing Easements - to be retained

Comprises cleared easements between identified areas of Excluded Land - Existing Vegetation.

### Outcomes for Appin (Part) Precinct Structure Plan:

- Access: Publicly accessible.
- **Vegetation:** Is cleared of vegetation and required to maintained as cleared to provide access to utilities infrastructure.
- **Uses:** Provision of regional linear active recreation links and opportunities for active and passive recreation facilities.

# NOTES:

**1.** 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.

### Table 21 Proposed Passive Open Space

	APPIN (PART) PRECINCT		APPIN & NORTH APPIN PRECINCT	
APPIN (PART) PRECINCT	AREA (HA)	%	AREA (HA)	%
PROPOSED OPEN SPACE IN EXCLUDED	70.39 ha	100%	92.57 ha	100%
CPCP Excluded <sup>1</sup> : Existing Vegetation	68.78 ha	97.71%	90.96 ha	98.26%
Existing Easements through Excluded Land - Existing Vegetation - to be retained	1.61 ha	2.29%	1.61 ha	1.74%
LEGEND				
-------------------------------	-------------------			
Appin & North Appin Precinct	S			
Appin (Part) Precinct				
Existing Rivers / Creeks				
PUBLIC RECREATION LAND COMPO	ONENTS			
Excluded Land - Existing Vege	etation			
Easements to be retained				
Proposed Roads through Non-	Certified Avoided			
Excluded Land				
Excluded Land				



# CUSTODIANS OF PLACE



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

Bert

Prepared by Urbis for Walker Corporation 111

### FIRST NATION'S CULTURAL LANDSCAPE AND HERITAGE

### First Nation's Cultural Landscape & AHIMS

Informed by the following investigations:

- 1. Detailed cultural values Mapping: Technical investigations for Heritage NSW Aboriginal Cultural Heritage assessment.
- 2. Detailed Cultural Values Mapping in collaboration with key knowledge holders.
- **3.** Heritage NSW recommended listing to include the five areas identified in the Appin Massacre Cultural Landscape Proposed Curtilage for investigation plan.

Key places identified include:

- The five listed areas of the Appin Massacre Cultural Landscape
- Other areas of traditional and ongoing cultural value.
- Ridgeline movement corridors local and regional and key sight lines from these.
- Lines of sight and connection.
- Importance of waterways and endemic vegetation species and communities.

The First Nation's Cultural Landscape and Heritage Strategy identifies locations of areas of significant Aboriginal cultural landscape along with AHIMS sites 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. These include:

- 1816 Appin Massacre Sorry Place
   1814 Rocky Ponds Creek Burial Sorry Place
- 3 Teston Farm and Lachlan Vale Shared Histories Place
- 4 Dharawal and Gundungurra Cultural Route
- **5** Dharawal and Gundungurra Cultural Route Corridor to Gathering Place
  - Lines of Sight development needs to be sensitive to the need to maintain the vistas along these lines
- AHIMS Sites there is potential to incorporate these into the Appin (Part) Precinct Structure Plan.

- Appin & North Appin Precincts
- Appin (Part) Precinct
- Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape)
- (1)1816 Appin Massacre Sorry Place
- 2 1814 Rocky Ponds Creek Burial Sorry Place
- Teston Farm and Lachlan Vale Shared Histories 3 Place
- 4 Dharawal and Gundungurra Cultural Route
- Dharawal and Gundungurra Cultural Route 5 Corridor to Gathering Place
- Visual Lines of Sight
- Open Space District Park
- IIIII Indicative Pathway
- ← → Walkable Green Links
- AHIMS Sites



## **EUROPEAN HERITAGE**

**State Heritage Listed Items:** There are two State Heritage Listed items within the Appin & North Appin Precincts however neither of these area part of this Proposal. Development in the vicinity of these items will consider the identified heritage values and respond accordingly.

1 Water NSW Upper Canal (SHR #I01373): (Not part of the Proposal).

The Upper Canal is state heritage-listed, gravity-fed aqueduct that supplies some potable water to Sydney from the Cataract River.

It is working NSW Water infrastructure and while it passes through the Appin & North Appin Precincts, it is excluded for the purposes of the Appin & North Appin Precincts Indicative Plan and Precinct Plan for Appin (Part) Precinct. It is owned and controlled by Water NSW on separate title.

No development can occur on the canal system. It comprises an underground section south of Brooks Point Road being the Cataract Tunnel before emerging above ground and weaving through the landscape in the form of an open channel or aqueduct.

The easement on ground level is not under Walker ownership which limits access however it has been identified in the Green Grid plan as ideally suited for a cycleway link due to its even grade with opportunity for accompanying interpretive signage.

### **Broughton Pass Weir**

There is no access to the weir area as it is located within a restricted area of the Sydney Water Catchment. It is not included within the identified **Nominated Areas of the CPCP** and therefore is excluded from the Appin (Part) Precinct Structure Plan.

**Local Heritage Listed Items:** There are two heritage listed items within the Appin (Part) Precinct. These will be retained and integrated into the new development with respect to ongoing protection and restoration requirements.

#### Northamptondale House: To be retained

(1)

Northamptondale Cottage is a historic structure which has been retained in the Appin (Part) Precinct structure plan. The aim is conserve the built structures, landscape and archaeological heritage values of the site so that it can be a place for the community. It has undergone modern renovations and is in private ownership.

It is proposed to retain the cottage and associated items within a reduced curtilage and integrate it into the Release Area 1 Neighbourhood Centre. A Significant proportion of the original curtilage is retained in its current form as excluded land - existing vegetation while unlocking access for the public enjoyment and benefit. The site of the cottage is not in Walker Corporation ownership.

(2) Elladale House: (80 Elladale Road) To be retained

Elladale Cottage is a historic structure which has been retained in the Appin (Part) Precinct structure plan. The surrounding area has been developed with assorted farming structures and residences. This assessment considers that the entire curtilage of this listing is historically and archaeologically sensitive. It has undergone modern renovations and is in private ownership.

It is proposed to retain the cottage and its curtilage and integrate it into the Appin (Part) Precinct - Release Area 1. It sits adjacent to an area of excluded land - existing vegetation which provides an accessible area of passive open space adjacent. The site of the cottage is not in Walker Corporation ownership.

- 3 Additional identified historic items and archaeology: The following items have been identified as being of significance and are subject to more detailed investigations. They will be accommodated in the structure plan.
- Macquariedale Estate House Early Appin land grant and combination of English and vernacular characteristics of early agricultural frontier houses and outbuildings.
- **Teston Farm:** Combination of English and vernacular characteristics of early agricultural frontier houses and outbuildings.

Workers Huts: Associated with Lachlan Vale Estate.

**Moon's Cottage:** Early member of the working class on Maquariedale Estate.

**Sandstone Quarries:** Three historical sandstone quarries, likely associated with the construction of the Upper Canal system.

2

Appin & North Appin & North Appin Precincts Boundary Appin (Part) Precinct State Heritage Item - Water NSW Upper Canal 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 3 Teston Farm House 4 Site of Lachlan Vale Estate Extant Building with Archaeological Constraints 5 Macquariedale Estate House - For further investigation Sandstone Quarries -For further investigation Excluded Land - Existing Vegetation -in proximity to heritage items





# 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.



HEALING LANDSCAPES

# MULTI-FUNCTIONAL LANDSCAPES

### HEALING LANDSCAPES

Multi-functional landscapes produce net-positive benefits beyond singular use spaces. Benefits such as clean air, wildlife habitat, biodiversity, carbon storage, urban cooling, water management, human mental and physical health and more. They are living, natural systems integrated into our neighbourhoods and urban centres, offering perpetual benefits.

633.18 ha (45.93%) of Appin (Part) Precinct is dedicated to green and blue grid which will significantly contribute to the 40% tree canopy target. This is representative of the whole Appin & North Appin Precinct Area for which 1,746.72ha (45.65%) is dedicated to the green and blue grid.

Appin's cultural history and ecological history, there are multiple layers of healing within the site that must be achieved. The healing opportunities in this site are ecological, educational and cultural. And underpin the overarching principle of connection to country. To begin and achieve the process of healing we propose to do the following:

- Appin is blessed with a generous 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 regenesis.
- 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.

### **OTHER GREEN GRID ELEMENTS**

### **Existing Easements**

Retained with opportunities for linear active recreation links and potential for active and passive recreation facilities.

### UNSTRUCTURED RECREATION AND NATURAL AREAS

### **Walkable Green Links**

Green connections through the urban areas offer walkable connections and may include planting, They have cultural value.

### **Excluded Land - Existing Vegetation**

Is passive or informal open space usually associated with mature vegetation, riparian corridors or on steep slopes. It is primarily linear in form and will be incorporated into cycling and walking routes (which are still be to be determined) subject to biodiversity assessment.

### Table 22 Breakdown of green and blue grid elements

	APPIN (PART) PRECINCT			APPIN & NORTH APPIN PRECINCT		
GREEN AND BLUE GRID ELEMENT	HA	% <b>P</b>	% NDA	HA	% <b>P</b>	% NDA
TOTAL AREA	1,378 ha	100%		3,826 ha	100%	
Net Developable Land	827.17ha	60.0%	100%	1,739.16 ha	45.45%	100%
Active Open Space	52.8 ha	3.83%	6.38%	113.2 ha	2.96%	6.51%
Passive Open Space	66.0 ha	4.79%	7.98%	92.3 ha	2.41%	5.31%
Other Green Grid Elements	36.70ha	2.66%	4.4%	76.25 ha	1.99%	4.4%
TOTAL GREEN SPACE (% NDA)	155.5 ha	11.28%	18.8%	281.75 ha	7.36%	16.2%
Total Conservation Land	468.78 ha	34%	-	1,464.97 ha	38.94%	-
TOTAL GREEN BLUE GRID (Total Precinct)	624.28 ha	45.3%	-	1746.72 ha	45.65%	-

Riparian Corridors

Riparian restoration and connection of fragmented vegetation with endemic and native ecological communities and species in the area

### Waterways

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

will enhance biodiversity and reinforce the blue-green grid strategy.

### STRUCTURED RECREATION

### **Regional Parks - Active**

This is a large area of open space that falls within the culturally significant Gathering and Resource Place and is suitable for passive or active recreational uses. It is made up of both Precinct Open Space and Excluded Land - Existing Vegetation landscape types. Its size means it could be a Regional Park (>5ha) thus the role and function of the park will need to be developed further.

### **District Parks - Active**

District Ovals - these are sporting fields associated with schools. Each one 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) 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



Appin & North Appin

Appin (Part) Precinct **Conservation Area** 

Existing Easements

Heritage Homestead

Excluded Land - Existing

Existing Road within CPCP Proposed Road within

Precincts

CPCP

**Green Links** 

Vegetation **District Parks** 

### **BLUE GRID & RIPARIAN CORRIDORS**

### STARTING WITH COUNTRY INSIGHTS

The project area is bounded on the west and south by the Nepean and Cataract Rivers with the Georges River located to the east (outside the project area). Within the project area there are multiple smaller water courses that hold cultural value.

There are six water courses that offer opportunities for Designing with Country outcomes, cultural interpretation and story telling being:

> The Nepean River: Runs along the north-west boundary of the study area. The Nepean River is a highly culturally significant waterway being both an important resource and a Dreaming Story Track.

- The Cataract River: Runs along the south-west boundary of the study area. The Cataract River is culturally significant waterway both as an important resource area and for the key Dreaming places located on it (outside the project area).
- The Elladale and Simpsons Creek: Are central to the value of some of the First Nations Cultural sites.
- Ousedale Creek: Includes a Chain of Ponds of cultural value in the section that runs north to south parallel to Appin Road.

Rocky Ponds Creek: An important part of the cultural landscape.

### **BLUE GRID & RIPARIAN CORRIDOR OUTCOMES**

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Detailed investigations and ground-truthing of all waterways and riparian corridors within Appin (Part) Precinct reveal that most of these are entirely contained within the CPCP or Excluded Land - Existing Vegetation areas. The following describes the Key Outcomes for the Blue Grid and Riparian Corridors:

River awareness and story telling: While the Nepean and Cataract rivers will predominately be inaccessible due to containment within the Proposed Conservation Area, there is an opportunity to provide interpretation, story-telling and education about these waterways. This includes:

- As part of natural systems including their role in water catchments, flows and journeys across Greater Sydney,
- First Nation's cultural values and dreaming stories

This can be incorporated into the proposed recreational trail within the perimeter road and alongside the Conservation Area.

Elladale and Simpsons Creek: While remaining inaccessible, the Regional Park offers a key opportunity to provide interpretation, storytelling and education about these waterways.

**Ousedale Creek:** While the east-west section running between North Appin and West Appin remains inaccessible, the north-south section in the east sits alongside the edge of the Conservation Area. Key outcomes include:

- Ousedale is a 3rd order stream under the Strahler stream classification with a x30m vegetated riparian zone (VRZ) for most of its length. This is wholly contained within the Conservation Land and is thus protected from development.
- There is an opportunity to provide a recreational cycling/walking trail alongside the corridor with waterway health education and interpretation.
- · Water management opportunities are identified at the southern end and potentially the northern end too which will provide more visible and accessible water health features. This builds on the cultural value of the Chain of Ponds.
- · The alignment has the potential to 'touch' three of the proposed centres with opportunities for playful water interaction to engage the community.

6

Rocky Ponds Creek: Rocky Ponds Creek is the only creek within the Appin (Part) Precinct which is wholly accessible. Detailed investigations and ground-truthing reveal that the natural creek line has been degraded at the centre. It connects to the Cataract River. Key outcomes include:

- bushland linear park.
- design.

**Riparian Restoration:** 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.

Water Management, Treatment and Health: Treatment of water run off, cleaning and filtering water and managing overland flow will be undertake through exploring opportunities for bio-retention basins and /or wetlands.

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6



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 Rocky Ponds Creek is a 3rd order stream under the Strahler stream classification with a 30m vegetated riparian zone (VRZ). This is wholly contained within the Excluded Land - Existing Vegetation and thus will be retained as public open space in the form of a

 There is an opportunity to provide a recreational trails through the retained mature vegetation and alongside the creek allowing the community access to natural areas .

Repairing the degraded area of Rocky Ponds Creek to connect the two sides of the creek. The outcome will be subject to detailed

WSUD: Where possible investigation of WSUD to the streets creates a whole site water quality treatment system.













- Appin & North Appin Precincts Appin (Part) Precinct Stream Order Riparian Corridors Stream Order 4 - 40 VRZ Buffer Stream Order 3 - 30 VRZ Buffer Stream Order 2- 20 VRZ Buffer Stream Order 1- 10 VRZ Buffer Water Management Riparian Corridor Open Space Network Open Space Existing Easements ♦ ♦ Walkable Green Links



## **RECREATION FOR ALL**

Open space comes in a variety of forms, from sports fields to natural ecosystems.

All open space types have a role in supporting the social, environmental and

The provision of public open space which can support recreation uses in the

• Outdoor recreation: Encompasses a variety of activities that people

socialising, picnicking, walking and informal group activities.

provided to meet the recreation needs of the community.

maximises benefits for people and the environment.

 Table 23
 Open Space for Recreation Provision Calculations

for everyone and accessible to all.

REZONING

NET DEVELOPABLE AREA

Total Open Space (% NDA)

Appin (Part) Precinct Structure Plan has been prepared in accordance with the principles of the draft GANSW Greener Places: An Urban Green Infrastructure

undertake when engaging in leisure for fun, relaxation or fitness including

formal sport, self-directed endurance activities, appreciation of nature,

areas such as formal parks, undeveloped spaces, natural areas, buffers,

High-performing, multi-functional landscapes: Enabling a wide range of the community to gather in one location and engage in multiple uses and complementing these activities with natural features and functions

linear systems riparian and waterfront areas, sports fields and gardens. It is

important a balanced and broad range of open space areas and settings are

Equitable and inclusive spaces for everyone: The creation of usable spaces

HA

1.739.16 ha

205.5 ha

**APPIN & NORTH** 

APPIN PRECINCTS

%

100%

11.8%

• Variety of settings and uses: The public open space network includes

PRINCIPLES

economic needs of communities.

Design Framework for NSW (2020). This includes:

### **OPEN SPACE USE CLASSIFICATIONS**

The following classifications consider the balanced provision of the open space areas for recreation.

- **Open space for structured recreation:** Open space that predominately supports directed, physical recreation activity, such as outdoor sport or formal play. Generally consists of the following open space areas:
  - Sports ovals and sports grounds; \_
  - Playgrounds; \_
  - Outdoor exercise areas.
- Open space for unstructured recreation: Open space that predominately supports casual, physical, social or cultural activities, such as picnicking, walking or group gatherings. Generally consists of the following open space areas:
  - Natural areas and bushland;
  - Linear trails and accessible riparian areas; \_
  - Gardens and parklands; . \_

### **OPEN SPACE PROVISION**

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

#### **Ouantitative:**

APPIN (PART)

PRECINCT

%

100%

14.4%

HA

827.17 ha

118.8 ha

- % of Net Developable Area (NDA) provided as district and local open space: 12-13% (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 6.5% of the NDA in the Appin & North Appin Precincts and 6.4% of the NDA in the Appin (Part) Precinct.















- Appin & North Appin Precincts
- Appin (Part) Precinct
- Excluded Land Existing Vegetation
- Active Recreation District Parks
- Active Recreation Regional Park
- ←→ Green Links
- R Regional Park
- # District Park



### **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:

- Regional Park
- District Park:
  - District Ovals
  - Linear Parks and Excluded Land Existing Vegetation
- Local Park
- Table 24
   Open Space Breakdown by Hierarchy and Recreation Type





4km Catchment

### **APPIN REGIONAL PARK**

Function: Destination parkland located at the geographic centre of, and serving, the Appin & North Appin Precincts. Supports multiple users at once with variety of recreational facilities and supporting amenities to enable people to stay all day.

Indicative facilities: Ovals, playing fields, hard courts, bush food garden, nature and adventure park, kids playground, skate park, dog park, flexible open space for weekend market and outdoor community events.



		AREA (	HA)	AC	TIVE		PASSIVE	
	OPEN SPACE CHARACTER	APPIN & NORTH APPIN PRECINCT PLAN	APPIN (PART) PRECINCT	ACTIVE RECREATION	PLAYING FIELDS	RIPARIAN VALUES	EXCLUDED LAND	CULTURAL VALUES
R	Regional Park	20.99	20.99					
SUB	TOTAL REGIONAL	20.99	20.99	13.	58 (65%)		7.	4 (35%)
	District Ovals	2.00	-					
2	District Ovals	4.00	-					
3	District Ovals	4.00	-					
4	District Ovals	4.00	4.00					
5	District Ovals	2.00	2.00					
6	Northamptondale Nature Reserve	17.46	17.46					
7	Ridgeline Linear Park	34.45	8.24					
8	District Nature Reserve	9.54	9.54					
9	Rocky Ponds Creek East Linear Park	31.15	13.40					
10	Ousedale Creek Linear Park	10.00	9.79					
11	Hilltop Park	0.98	0.98					
(12)	Rocky Ponds Creek West Linear Park	20.61	7.14					
13	Cultural Park	13.52	3.46					
SUB	TOTAL DISTRICT	153.71	76.01		24(%)			76(%)
	LOCAL PARKS	48.8	21.8		85 (%)			15 (%)

223.5

118.8

41(%)

59(%)



Figure 107 Proposed Regional Open Space Provision

TOTAL OPEN SPACE

Size: 21ha total comprising 13.8ha (66%) structured and 7.2 ha (34%) unstructured. (GANSW Greener Places Guide recommends <5ha).

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

Key Characteristics: Gentle, flat terrain, with areas of mature tree canopy and surrounded by natural areas provides a unique escape from urban development.

### **DISTRICT PARKS**

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

Indicative facilities: Appin & North Appin Precinct contains two types of district parks being:

- District Ovals: Located in centres with multiple elements such as play spaces, organised sport fields, and supporting amenities (e.g. toilets, carparking).
- Linear Parks: Including riparian corridors and natural areas that allow for nature trails, active recreation links, fitness pods and passive recreation.

Size and Quantity: 134.9 ha total (GANSW Greener Places Guide recommends 2-5ha).

- 5 x Sportsfields (1-5): Ranging from 2-4ha each. 6 x Districts Parks (6-11): Ranging in size from 1ha to 34ha.
- They indicatively comprise 53.4ha (39%) structured and 82.5ha (61%) unstructured.

Catchment: All residents of Appin will be located within 2km of a District Oval. Linear Parks and Excluded Land - Existing Vegetation are located in response to natural conditions and place outcomes. (GANSW Greener Places

### LEGEND



Local Open Space

400m Local Park Catchment

### LOCAL PARKS

ELLADALE CREEK

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: 49ha 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 with be within 2km of a District Oval with Linear Parks provided where mature vegetation, cultural values and riparian corridors are located in response to place. (GANSW Greener Places Guide recommends 400m from most houses).



Figure 109 Indicative Local Open Space Provision - subject to detailed design



# **MULTI-FUNCTIONAL LANDSCAPES**

### **HEALING LANDSCAPES**

Multi-functional landscapes produce net-positive benefits beyond singular use spaces. Benefits such as clean air, wildlife habitat, biodiversity, carbon storage, urban cooling, water management, human mental and physical health and more. They are living, natural systems integrated into our neighbourhoods and urban centres, offering perpetual benefits.

633.18 ha (45.93%) of Appin (Part) Precinct is dedicated to green and blue grid which will significantly contribute to the 40% tree canopy target. This is representative of the whole Appin & North Appin Precinct Area for which 1,764.72ha (46.77%) is dedicated to the green and blue grid.

Appin's cultural history and ecological history, there are multiple layers of healing within the site that must be achieved. The healing opportunities in this site are ecological, educational and cultural. And underpin the overarching principle of connection to country. To begin and achieve the process of healing we propose to do the following:

- Appin is blessed with a generous 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 regenesis.
- 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.

### OTHER GREEN GRID ELEMENTS

### Existing Easements

Retained with opportunities for linear active recreation links and potential for active and passive recreation facilities.

### UNSTRUCTURED RECREATION AND NATURAL AREAS

### ♦ ♦ Walkable Green Links

Green connections through the urban areas offer walkable connections and may include planting, They have cultural value.

### **Excluded Land - Existing Vegetation**

Is passive or informal open space usually associated with mature vegetation, riparian corridors or on steep slopes. It is primarily linear in form and will be incorporated into cycling and walking routes (which are still be to be determined) subject to biodiversity assessment.

### Table 22 Breakdown of green and blue grid elements

	APPIN (PART) PRECINCT			APPIN & NORTH APPIN PRECINCT		
GREEN AND BLUE GRID ELEMENT	HA	% P	% NDA	HA	% <b>P</b>	% NDA
TOTAL AREA	1,378 ha	100%		3,826 ha	100%	
Net Developable Land	827.17ha	60.0%	100%	1,739.16 ha	45.45%	100%
Active Open Space	52.6 ha	3.82%	6.4%	96.8 ha	2.53%	5.57%
Passive Open Space	75.1 ha	5.45%	9.1%	126.7 ha	3.31%	7.3%
Other Green Grid Elements	36.70ha	2.66%	4.4%	76.25 ha	1.99%	4.4%
TOTAL GREEN SPACE (% NDA)	164.4 ha	11.92%	17.6%	299.75 ha	7.83%	17.2%
Total Conservation Land	468.78 ha	34%	-	1,464.97 ha	38.94%	-
TOTAL GREEN BLUE GRID (Total Precinct)	633.18 ha	45.93%	-	1764.72 ha	46.77%	-

Riparian Corridors

Riparian restoration and connection of fragmented vegetation with endemic and native ecological communities and species in the area

### Waterways

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

will enhance biodiversity and reinforce the blue-green grid strategy.

### STRUCTURED RECREATION

### Regional Parks - Active

This is a large area of open space that falls within the culturally significant Gathering and Resource Place and is suitable for passive or active recreational uses. It is made up of both Precinct Open Space and Excluded Land - Existing Vegetation landscape types. Its size means it could be a Regional Park (>5ha) thus the role and function of the park will need to be developed further.

### **District Parks - Active**

District Ovals - these are sporting fields associated with schools. Each one 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) 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.



Appin & North Appin

Appin (Part) Precinct **Conservation Area** 

Existing Easements

Heritage Homestead

Excluded Land - Existing

Existing Road within CPCP Proposed Road within

Precincts

CPCP

**Green Links** 

Vegetation **District Parks** 

### **BLUE GRID & RIPARIAN CORRIDORS**

### STARTING WITH COUNTRY INSIGHTS

The project area is bounded on the west and south by the Nepean and Cataract Rivers with the Georges River located to the east (outside the project area). Within the project area there are multiple smaller water courses that hold cultural value.

There are six water courses that offer opportunities for Designing with Country outcomes, cultural interpretation and story telling being:

> The Nepean River: Runs along the north-west boundary of the study area. The Nepean River is a highly culturally significant waterway being both an important resource and a Dreaming Story Track.

- The Cataract River: Runs along the south-west boundary of the study area. The Cataract River is culturally significant waterway both as an important resource area and for the key Dreaming places located on it (outside the project area).
- The Elladale and Simpsons Creek: Are central to the value of some of the First Nations Cultural sites.
- Ousedale Creek: Includes a Chain of Ponds of cultural value in the section that runs north to south parallel to Appin Road.

Rocky Ponds Creek: An important part of the cultural landscape.

### **BLUE GRID & RIPARIAN CORRIDOR OUTCOMES**

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Detailed investigations and ground-truthing of all waterways and riparian corridors within Appin (Part) Precinct reveal that most of these are entirely contained within the CPCP or Excluded Land - Existing Vegetation areas. The following describes the Key Outcomes for the Blue Grid and Riparian Corridors:

River awareness and story telling: While the Nepean and Cataract rivers will predominately be inaccessible due to containment within the Proposed Conservation Area, there is an opportunity to provide interpretation, story-telling and education about these waterways. This includes:

- As part of natural systems including their role in water catchments, flows and journeys across Greater Sydney,
- First Nation's cultural values and dreaming stories

This can be incorporated into the proposed recreational trail within the perimeter road and alongside the Conservation Area.

Elladale and Simpsons Creek: While remaining inaccessible, the Regional Park offers a key opportunity to provide interpretation, storytelling and education about these waterways.

**Ousedale Creek:** While the east-west section running between North Appin and West Appin remains inaccessible, the north-south section in the east sits alongside the edge of the Conservation Area. Key outcomes include:

- Ousedale is a 3rd order stream under the Strahler stream classification with a x30m vegetated riparian zone (VRZ) for most of its length. This is wholly contained within the Conservation Land and is thus protected from development.
- There is an opportunity to provide a recreational cycling/walking trail alongside the corridor with waterway health education and interpretation.
- · Water management opportunities are identified at the southern end and potentially the northern end too which will provide more visible and accessible water health features. This builds on the cultural value of the Chain of Ponds.
- · The alignment has the potential to 'touch' three of the proposed centres with opportunities for playful water interaction to engage the community.

6

Rocky Ponds Creek: Rocky Ponds Creek is the only creek within the Appin (Part) Precinct which is wholly accessible. Detailed investigations and ground-truthing reveal that the natural creek line has been degraded at the centre. It connects to the Cataract River. Key outcomes include:

- bushland linear park.
- design.

**Riparian Restoration:** 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.

Water Management, Treatment and Health: Treatment of water run off, cleaning and filtering water and managing overland flow will be undertake through exploring opportunities for bio-retention basins and /or wetlands.

8

6



0

2

3

4

5

 Rocky Ponds Creek is a 3rd order stream under the Strahler stream classification with a 30m vegetated riparian zone (VRZ). This is wholly contained within the Excluded Land - Existing Vegetation and thus will be retained as public open space in the form of a

 There is an opportunity to provide a recreational trails through the retained mature vegetation and alongside the creek allowing the community access to natural areas .

Repairing the degraded area of Rocky Ponds Creek to connect the two sides of the creek. The outcome will be subject to detailed

WSUD: Where possible investigation of WSUD to the streets creates a whole site water quality treatment system.













- Appin & North Appin Precincts Appin (Part) Precinct Stream Order Riparian Corridors Stream Order 4 - 40 VRZ Buffer Stream Order 3 - 30 VRZ Buffer Stream Order 2- 20 VRZ Buffer Stream Order 1- 10 VRZ Buffer Water Management Riparian Corridor Open Space Network Open Space Existing Easements ♦ ♦ Walkable Green Links



## **RECREATION FOR ALL**

# CUSTODIANS OF PLAC

### PRINCIPLES

Open space comes in a variety of forms, from sports fields to natural ecosystems. All open space types have a role in supporting the social, environmental and economic needs of communities.

The provision of public open space which can support recreation uses in the Appin (Part) Precinct Structure Plan has been prepared in accordance with the principles of the *draft GANSW Greener Places: An Urban Green Infrastructure Design Framework for NSW (2020).* This includes:

- Outdoor recreation: Encompasses a variety of activities that people undertake when engaging in leisure for fun, relaxation or fitness including formal sport, self-directed endurance activities, appreciation of nature, socialising, picnicking, walking and informal group activities.
- Variety of settings and uses: The public open space network includes areas such as formal parks, undeveloped spaces, natural areas, buffers, linear systems riparian and waterfront areas, sports fields and gardens. It is important a balanced and broad range of open space areas and settings are provided to meet the recreation needs of the community.
- High-performing, multi-functional landscapes: Enabling a wide range of the community to gather in one location and engage in multiple uses and complementing these activities with natural features and functions maximises benefits for people and the environment.
- Equitable and inclusive spaces for everyone: The creation of usable spaces for everyone and accessible to all.

	APPIN & NORTH APPIN PRECINCTS		APPIN (PART) PRECINCT		
REZONING	НА	%	HA	%	
NET DEVELOPABLE AREA	1,739.16 ha	100%	827.17 ha	100%	
Total Open Space (% NDA)	223.5 ha	13%	127.7 ha	15%	

### Table 23 Open Space for Recreation Provision Calculations

### **OPEN SPACE USE CLASSIFICATIONS**

The following classifications consider the balanced provision of the open space areas for recreation.

- **Open space for structured recreation:** Open space that predominately supports directed, physical recreation activity, such as outdoor sport or formal play. Generally consists of the following open space areas:
  - Sports ovals and sports grounds;
  - Playgrounds;
  - Outdoor exercise areas.
- Open space for unstructured recreation: Open space that predominately supports casual, physical, social or cultural activities, such as picnicking, walking or group gatherings. Generally consists of the following open space areas:
  - Natural areas and bushland;
  - Linear trails and accessible riparian areas;
  - Gardens and parklands; .

### **OPEN SPACE PROVISION**

The provision of Open Space for Recreation has been considered at both the Appin & North Appin Precincts and Appin (Part) 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: 12-13% (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 5.6% of the NDA in the Appin & North Appin Precincts and 6.4% of the NDA in the Appin (Part) Precinct.















- Appin & North Appin Precincts
- Appin (Part) Precinct
- Excluded Land Existing Vegetation
- Active Recreation District Parks
- Active Recreation Regional Park
- ←→ Green Links
- R Regional Park
- # District Park



HEALING LANDSCAPES

### **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:

- Regional Park
- District Park:
  - \_ District Ovals
  - Linear Parks and Excluded Land Existing Vegetation \_
- Local Park
- Table 24
   Open Space Breakdown by Hierarchy and Recreation Type





PASSIVE

4km Catchment

ACTIVE

### **APPIN REGIONAL PARK**

Function: Destination parkland located at the geographic centre of, and serving, the Appin & North Appin Precincts. Supports multiple users at once with variety of recreational facilities and supporting amenities to enable people to stay all day.

Indicative facilities: Ovals, playing fields, hard courts, bush food garden, nature and adventure park, kids playground, skate park, dog park, flexible open space for weekend market and outdoor community events.





#### ACTIVE RECREATION APPIN & EXCLUDED LAND **OPEN SPACE** APPIN RIPARIAN VALUES NORTH APPIN **PLAYING FIELDS** (PART) PRECINCT PRECINCT PLAN Regional Park 20.99 20.99 20.99 20.99 7.4 (35%) 13.58 (65%) SUB-TOTAL REGIONAL 2.00 District Ovals District Ovals 4.00 -**District Ovals** 4.00 \_ 4.00 4.00 **District Ovals** District Ovals 2.00 2.00 6 17.46 17.46 Northamptondale Nature Reserve 7 34.45 17.12 **Ridgeline Linear Park** 8 9.54 District Nature Reserve 9.54 9 Rocky Ponds Creek East Linear Park 31.15 13.40 (10) Ousedale Creek Linear Park 10.00 9.79 (11) Hilltop Park 0.98 0.98 (12) Rocky Ponds Creek West Linear Park 20.61 7.14 13 13.52 3.46 Cultural Park 153.71 84.89 24(%) 76(%) SUB-TOTAL DISTRICT

48.8

223.5

21.8

127.68

85 (%)

41(%)

15 (%)

59(%)

AREA (HA)



Figure 107 Proposed Regional Open Space Provision

LOCAL PARKS

**TOTAL OPEN SPACE** 

Size: 21ha total comprising 13.8ha (66%) structured and 7.2 ha (34%) unstructured. (GANSW Greener Places Guide recommends <5ha).

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

Key Characteristics: Gentle, flat terrain, with areas of mature tree canopy and surrounded by natural areas provides a unique escape from urban development.

### **DISTRICT PARKS**

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

Indicative facilities: Appin Vale contains two types of district parks being:

- District Ovals: Located in centres with multiple elements such as play spaces, organised sport fields, and supporting amenities (e.g. toilets, carparking).
- Linear Parks: Including riparian corridors and natural areas that allow for nature trails, active recreation links, fitness pods and passive recreation.

Size and Quantity: 154 ha total (GANSW Greener Places Guide recommends 2-5ha).

- 5 x Sportsfields (1-5): Ranging from 2-4ha each. 6 x Districts Parks (6-11): Ranging in size from 1ha to 34ha.
- They indicatively comprise 68.7ha (45%) structured and 85.3ha (55%) unstructured.

Catchment: All residents of Appin will be located within 2km of a District Oval. Linear Parks and Excluded Land - Existing Vegetation are located in response to natural

### LEGEND



Places Guide recommends 2-5ha). Local parks are predominantly structured. Catchment: All residents of Appin with be within 2km of a District Oval with Linear Parks provided where mature vegetation, cultural values and riparian corridors are located in response to place. (GANSW Greener Places Guide recommends 400m from most houses).



### 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: 49ha in total. Ranging from 0.5-2ha each. (GANSW Greener





126 Appin (Part) Precin



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ANSA KULAD SALE

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.



### 2056 STRATEGIC ROAD Network

### SURROUNDING EXISTING STRATEGIC ROAD NETWORK

A number of upgrades are required to the existing strategic road network to facilitate development of the Greater Macarthur Growth Areas. These have been prepared to accord with the draft SIC infrastructure schedule, and will be undertaken by Walker and others as required. This includes:

- M31 Hume Motorway: Located immediately to the west of the Appin & North Appin Precincts, is a North-South inland interstate connection from Sydney to Melbourne.
  - Lane Configuration: It is currently a motorway standard, limited access, divided carriageway comprising two lane in each direction.
  - Posted Speed: 110km/h.

**Appin Road:** Intra-regional connection from Campbelltown to Appin and Appin to Princes Highway near Bulli and Wollongong.

- Lane Configuration: It is a rural highway, with undivided carriageway. There is some direct property access and prioritycontrolled intersections. 1 lane in each direction with overtaking lanes provided (Appin to Bulli).
- Posted Speed: 80 km/h (Campbelltown to Appin) 90 km/h (Appin to Bulli).

**Wilton Road - Appin Road:** Intra-regional connection from Wilton to Campbelltown via Appin Rural highway. Undivided carriageway. 80 to 100 km/h. 50 km/h through Appin town centre. 1 lane per direction.

- Lane Configuration: Undivided carriageway with 1 lane in each direction.
- Posted Speed: 80 to 100 km/h generally. 50 km/h through Appin Town Centre.

### STAGING & DELIVERY OF STRATEGIC ROAD NETWORK UPGRADES - EXTERNAL TO APPIN & NORTH APPIN PRECINCTS

A number of upgrades are required to the existing strategic road network to facilitate development of the Greater Macarthur Growth Areas. These have been prepared to accord with the draft SIC infrastructure schedule, and will be undertaken by Walker and others as indicated.

- Gilead to South Gilead: Widen to four lanes.
- Responsibility: By others
- Indicative Staging / Timing: by 2029<sup>1</sup>
- South Gilead to North Appin: Widen to four lanes.
  - Responsibility: Walker or other North/West Appin land holder
  - Indicative Staging / Timing: 3,400 lots<sup>1</sup>

**Appin / Wilton Road Intersections:** New access intersections are proposed to Appin Road and Wilton Road as follows:

- North Appin A: Signalised intersection / roundabout (2030<sup>1</sup>)
- North Appin B: Signalised intersection / roundabout (2034<sup>1</sup>)
- Macquariedale Road: Traffic calming to eastern end (existing)
- Wilton Road A: Roundabout (2026<sup>1</sup>)
- Wilton Road B: Priority sign (2051<sup>1</sup>)
- Wilton Road C: Roundabout (2051<sup>1</sup>)

NOTE:

1. All timeframes are subject to proposed development yield forecasts and subject to change.

#### Table 25 Indicative Staging of Road Infrastructure Upgrades

STAGE#	# DWELLINGS (CUMULATIVE)*	ROADS	DELIVERABLE REQUIRED BY
1	3,405	Wilton Road access intersection	Any part of subdivision requiring access via Wilton Road
		Appin Rd & Church Street, Appin Signalised Intersection	1,051st registered residential lot
		Appin Rd upgrade between North Appin & South Gilead	3,001st registered residential lot
		Transit Corridor Part 1 (Stage 1 to Stage 2A)	3,001st registered residential lot
2^	6,873	East West Connection Rd Part 1 (Hume Motorway & Stage 2)	8,001st registered residential lot (which ever development between Stage 2 and Stage 2A triggers the requirement first)
2A^	11,227	East West Connection Rd Part 1 (Hume Motorway & Stage 2)	8,001st registered residential lot (which ever development between Stage 2 and Stage 2A triggers the requirement first)
3^	14,578	East West Connection Road Part 2 (Stage 2 to Bulli-Appin Rd)	14,001st registered residential lot
3 <b>A</b> ^	16,878	North South Transit Corridor Part 2 (Stage 3A to North of Stage 2A)	14,601st registered residential lot
4۸	19,676	N/A	N/A
4A^	20,306	N/A	N/A
5	21,865	N/A	N/A
		North South Transit Corridor Part 3 (Stage 5 to Morton Park Road)	Subject to government strategy of delivering the Transit Corridor infrastructure and connections to existing Train Stations.
			1 had over a second secon

NOTES:

- Triggers are based on Option 1 of the WSP Report proceeding
- $\#\, {\rm Stage}\, {\rm order}\, {\rm indicative}\, {\rm and}\, {\rm is}\, {\rm subject}\, {\rm to}\, {\rm approvals}\, {\rm and}\, {\rm market}\, {\rm conditions}$
- \*Yield is indicative for each stage and subject to detailed design

### $^{\rm A}{\rm Stage}$ may occur concurrently with other landholders

### LEGEND

- Appin & North Appin Precincts
- Appin (Part) Precinct
- Indicative Development Staging
- Transit Corridor Part 1
- Transit Corridor Part 2
- Transit Corridor Part 3
- East-West Connection Road Part 1
- East-West Connection Road Part 2
- North-South Connection Road
- ---- Road Connection (by others)
- Spring Farm Parkway & Appin Road Upgrade (North of Appin by others)
- Appin Road Upgrade (South Gilead North Appin)
- Appin Road Upgrade / Bypass Options
- Wilton Road Upgrade 1 lane to 2 lanes in each direction.
- OSO1 Alignment
- O Hume Highway Interchange
- Signalised Intersection



### **APPIN STRATEGIC ROAD NETWORK**

### **NEW STRATEGIC ROAD CONNECTIONS - WITHIN APPIN & NORTH APPIN PRECINCTS**

In addition to upgrades of existing roads, a number of new strategic roads is required to service the Appin & North Appin Precincts being:

East-West Connection Road: New east-west connection road for West Appin and regional connection between Hume Motorway and Appin Road south of Appin Town Centre as identified in GMGA 2040 plan.

- Alignment Considerations:
  - West Alignment to cross Nepean River at narrowest point for connection to the Hume Motorway.
  - North-west: Road alignment located along the northern boundary of Urban Capable Land to minimise severance of local neighbourhood and reduce number of four-way intersections required. Additionally provides further protection of Conservation Area and limits acoustic treatment to one side of the road.
  - Centre: Topographical considerations and location of intersection with Transit Corridor.
  - South-east: Aligned to bypass Appin Village to the south and connect to existing Appin Road east of Appin Village.
- Form of road: the road comprises two lanes in each direction 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 111 for indicative section)
- Connectivity:
- Hume Motorway: Interchange
- West Appin Town Centre: Signalised Intersection with Transit Corridor
- Appin Road: Off-set interchange.



Figure 111 Typical Sub-Arterial Section (Source Wilton Growth Areas DCP)

North-South Transport Corridor: New north-south transport corridor connecting the new communities within the Greater Macarthur Growth Areas with Campbelltown Macarthur Strategic Centre in the north and the existing train station at Douglas Park (long term) to the west, as identified in GMGA 2040 plan. Within Appin & North Appin Precincts is the primary public transport route and internal collector/distributor road parallel to Appin Road and Wilton Road.

- Alignment Considerations: Refined from GMGA alignment to:
  - Respond to local topographical changes.
  - Respond to Cultural Sensitivities of the site.
  - Provide link option to create Appin Bypass around existing Township.
  - Provide a central road alignment within the new residential community to provide general access to the Public Transport infrastructure.
  - Avoid traversing areas of steep land where possible.
  - Using existing road alignment to minimise cut and fill if possible including utilising existing Brooks Point Road to come off eastern plateau south of east-west connection.
- Form of road: Road Corridor width is based on a 45.2m wide road reserve as derived from the GMGA 2040. Integrated transit modes including: See Figure 112 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.
  - Appin Bypass option Utilisation of road carriageway to deliver a bypass route around Appin's existing township.
  - Hume Motorway Grade Separated Intersection.
  - Collector & Local Roads At-grade intersections connect to each neighbourhood.
- North: Campbelltown-Macarthur connection is subject to other developments proposed north of Appin.
- West: Douglas Park connection is long-term.
- 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 this approach include Macquariedale Road and Brooks Point Road.

### PUBLIC TRANSPORT CORRIDOR

The Public Transport Corridor will provide a high-frequency service with a number of stops along its length within the precinct.

#### **Requirements:**

Design Guide (2021), is as follows:

- public transport.

#### Appin (Part) Prefcinct Structure Plan:

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





IECTED, ACTIVE & HEALTHY Ś

- The guidance for locating public transit stops, as outlined in the Draft Urban
- 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

Figure 112 Indicative Transport Corridor Cross Section (Source GMGA 2040 - subject to detailed design)



Appin & North Appin Precincts Appin (Part) Precinct East-West Connection Public Transport Corridor North-West Connection & Appin Bypass Road Connection (by others) 9 Indicative Bus Stop 400 & 800m catchments Grade Separated Intersection Signalised Intersection Areas of steeper land

## LOCAL ROAD NETWORK

### **ACTIVE TRANSPORT &** RECREATION

### **COLLECTOR ROADS**

LOCAL ROADS

New collector roads network will link residential neighbourhoods to centres across Appin 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 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

Staging - interim connections (Please refer to ILP for

indicative section on adjacent page.

### **EXISTING ROADS**

Integration with existing roads: Existing roads are integrated into the Appin (Part) Precinct structure plan where appropriate including:

- This section of Brooks Point Road is integrated into the local collector 0 road network
- This section of Macquariedale Road is integrated into the local collector 2 road network
- This section of Macquariedale Road that connects to Appin Village is 3 integrated into the local collector road network

### PERIMETER ROAD

A Perimeter Road will be delivered in accordance with RFS requirements where APZs are required. This is typically at the interface with the proposed C2 Environmental Conservation zone land.

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



Appin & North Appin Precincts Appin (Part) Precinct East-West Connection Public Transport Corridor North-West Connection & Appin Bypass Road Connection (by others) Collector Road 0 Indicative Bus Stop Grade Separated Intersection С Signalised Intersection Roundabout Priority sign Areas of steeper land



### **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 trails offer whole an extensive network of pathways to embed active lifestyle opportunities into the community.



### CULTURAL CONNECTIONS

Connecting the ridgeline to Rocky Ponds Creek, the cultural trail is an opportunity to be explored through First Nation's engagement. Themes to explore may include:

- Shared history of the Appin Massacre to contribute to reconciliation and healing.
- Interpretation of Rocky Ponds Creek and its cultural significance.
- Cultural Centre including outdoor gathering spaces and interpretation.
- Visual hubs as opportunities for embedding interpretation materials that raise awareness and engage with Country.

### **REGIONAL ACTIVE TRANSPORT LINKS**

Provision of regional active transport connections along existing easements to provide direct regional active transport connections including to the Regional Park.

- An opportunity for regional cycle-way through Greater Macarthur Growth Areas.
- Connecting BBQ, picnic and shade facilities along the trail within local parks adjacent to the easement.



### **RIDGELINE TO RIVER EXPLORATION**

Connecting the southern ridge line to the Regional Park, the ridgeline trail centre offers opportunities to capture view lines across Country and into Country including:

- Opportunities for viewing decks at key vista points along with areas for respite to take, vegetation and panoramic views to regional connections to the Razorback Ranges and Blue Mountains.
- Local viewing platforms to look into Country and understand natural features and systems.
- A series of explorative trails along the ridgeline exploring cultural values of First Nation's people.
- Gathering and resource opportunities within the Regional Park.
- Explore opportunities for cultural interpretation, education and storytelling as part of on-going Connecting with Country engagement.

### LEGEND





### THE FITNESS LOOP

Provision of fitness and recreation loop around the western edge of the site adjacent to the Conservation Area to facilitate healthy lifestyles and cultural stories relating to the Nepean and Cataract rivers including:

- A continuous recreation path on the conservation side of the perimeter road.
- Opportunities for with outdoor fitness facilities
- Cultural nodes located along trail
- Connecting the community to key cultural nodes of culturally significant locations across the trail



 Cultural Connections
 Regional Active Transport Links
 Ridgeline to River Exploration
 Fitness Loop
 The Water Journey



### THE WATER JOURNEY

Connects the Appin & North Appin Precincts from north to south, aligned along Ousedale Creek in the east, 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 three of 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.


















# RESILIENT, THRIVING NEIGHBOURHOODS



A network of distinctive and walkable neighbourhoods are anchored by mixeduse centres.

OLWORI HS

food bar

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

Aller



### **REGIONAL CENTRES & EMPLOYMENT**

The Appin & North Appin Precincts Centres and Employment Strategy is underpinned by a regional context of existing and committed centres. This ensures it is complementary to, not competing with, the wider network of provisions and services. It is underpinned by:

- Developing a hierarchy of activity centres of varying scales and roles that are mutually productive.
- Responding to local and regional market demands as well as the spatial context within the precinct.

### EXISTING AND COMMITTED REGIONAL CENTRES AND EMPLOYMENT

The Appin & North Appin Precincts's regional centres and employment context is:

- Campbelltown-Macarthur is the Metropolitan Cluster Centre for the Macarthur Region and is home to the highest order health, education, employment and services. Strategic directions for the Western Parkland City support the growth of homes close to jobs aligned to the 30 minute city.
- Wilton Town Centre: Wilton Town Centre is currently earmarked to support up to 50,000 sq.m by 2046 and expected to perform the highest order retail provision in the hierarchy of the area.
- **Appin Village:** The existing Appin centre is of a limited scale, providing convenient amenity for local residents to undertake top-up shopping. It is estimated there is around 2,600 sq.m of retail floorspace within the existing centre.
- Moreton Park Road Enterprise Area: 500ha land area to accommodate a high-tech business park will provide 10,000 jobs adjacent to the precinct.



Figure 116 Regional Centres and Employment

140

Appin & North Appin Precincts

Appin (Part) Precinct Urban Context Report

- Appin (Part) Precinct
- Public Transport Network
- Employment Land
- Appin Village
- Wilton Town Centre



### **MIXED USE CENTRES**

### **RETAIL PROVISION**

There are 6 mixed-use, local population serving centres identified for Appin. The location and size of each centre have been influenced by:

- Overall site features including the topography, protected open spaces and local amenity opportunities including waterways, views, open space, mature trees etc.
- The location of proposed roads and public transport network to support compact, accessible and walkable neighbourhoods for healthy communities.
- Requirements for retail, schools, community facilitates and services.
- Distribution of centres in relation to one another, and considering Appin Village and Wilton Town Centre, to support complementary, diverse and inclusive neighbourhoods that provide housing choice.
- The creation of walkable neighbourhoods including consideration of defining site features for each the neighbourhood.

This results in a network of complementary and distinctive centres that have an authentic sense of place and identity.

The proposed Appin retail hierarchy, in addition to the existing Appin Village, includes:

Retail Strategy		
1 x Local	TOTAL Indicative retail floorspace	30,400 sq.m
Centre:	1 x Discount Department Store	7,000 sq.m
	<ul> <li>2 full-line Supermarkets and a small format supermarket</li> </ul>	9,500 sq.m
	<ul> <li>A range of Mini-Majors</li> </ul>	2,300 sq.m
	<ul> <li>Food specialities</li> </ul>	1,900 sq.m
	<ul> <li>Non-Food specialities</li> </ul>	3,600 sq.m
	Retail Services	900 sq.m
	<ul> <li>Non-Retail &amp; Ancillary uses (mix of gym, medical, childcare, personal services, entertainment, civic and office)</li> </ul>	5,200 sq.m
5 x	TOTAL Indicative retail floorspace	14,000 sq.m
Neighbourhood Centres:	Per neighbourhood centre	2,500 - 4,000 sq.m
	<ul> <li>Supermarket</li> </ul>	1,500 - 3,750 sq.m
	<ul> <li>Other floorspace, including</li> <li>Urban services</li> <li>Non-retail showrooms</li> <li>Servicing and</li> <li>Light industrial uses</li> </ul>	500 - 1000 sq.m
Total	<u> </u>	44,400 sq.m

### 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	<ul> <li>One multi-purpose district community centre with an integrated library of approximately 4,420 sq.m, comprising of approximately:</li> <li>2,000 sq.m multi-purpose community space</li> <li>2,000 sq.m library space</li> <li>420 sq.m shared meeting spaces, staff spaces and amenities.</li> </ul>	Located within the local mixed use local centre, with direct access to the public transport corridor
ocal multi- purpose community acility	Three local level multi-purpose facilities of approximately 935 sq.m.	Locate facilities within the neighbourhood mixed use centres. Facilities should be located close to public transport and co located with other services such as the school sites, recreational facilities or retail services.
hildcare	Approximately 15 long day childcare centres with an average of 80 children to meet expected demand for 1,162 places. Approximately 13 out of hours	Locate facilities within the neighbourhood and local centres to maximise accessibility and user convenience, in line with market demand.
	school care centres with an average of 80 children to meet expected demand for 1,067 long places.	Out of hours school care centres should be accommodated within or co located with the school sites.
Community lealth clinics	Look to provide adaptable spaces within community facilities to accommodate health services.	Located within facilities which are highly accessible by public transport or co located with other
	Larger clinics to be provided by the private market and/or by LHD as required over time.	services.
General Practice Clinics	Up to 13 General Practice clinics, with five GP's in each. The needs of the community could be met through a smaller number of clinics, with a larger number of practitioners working from each.	Located within the neighbourhood and local centres

### **EDUCATION**

#### Schools

ecincts.

- and local centres.
- catchment.
- - Stage 1 primary school: 1.5ha
  - Stage 2 primary school: 1.5ha

- Stage 5 primary school: 1.5ha

Type of school	Site size*	Capacity*	Indicative Number required
Primary School	1.5ha	Up to 1,000 students	3
High school	2.5ha	Up to 2,000 students	-
Community School	4ha	Up to 3,000 students	3

#### ppin (Part) Precinct Structure Plan

ne Appin (Part) Precinct structure plan is allowing for 1 x K-12 and 2 x K-6, and e breakdown per centre is below:

Centre	School Year Grades	Area (ha)	Opportunity for co-located with sports field
2	K-6	1.5	Yes
4	K-6	1.5	Yes
5	K-12	4.0	Yes
Total Site Area		7.0 ha	

Opportunities for corner shops in areas with less accessibility to neighbourhood centres or pending future ones

A social infrastructure need and provision study was undertaken to identify the llowing requirements for schools within the whole of the Appin & North Appin

Opportunity to Co-locate schools with sports fields within the neighbourhood

Locate community schools (K-12) in the local centre and on the public transport corridor to provide maximum connectivity to serve the wider school

Three primary schools and three community schools (Kindergarten to Year 12). School sites will be of the following approximate sizes:

- Stage 2a community school (K-12): 4ha

- Stage 3 community school (K-12): 4ha

- Stage 3a community school (K-12): 4ha

Future upgrade to Appin Public School, in consultation with SINSW, during the early stages of the Appin & North Appin Precincts development.

### LOCAL EMPLOYMENT

It is estimated that the combination with the local population serving employment, and dedicated employment areas within and immediately adjacent to the Appin & North Appin Precincts could support up to 12,757 jobs, a proportion of which would be occupied by future residents of the Wollondilly LGA. This comprises:

- **Population Serving Employment:** Estimated employment outcomes for the centres within Appin are:
  - Proposed Appin Town Centre: Expected to generate over 1,200 direct \_ operational jobs
  - Proposed local centres network: Support 770 direct operational jobs upon completion.
  - Indirect jobs: Additional indirect jobs expected to be generated through \_ suppliers and expenditure of those employed with the Appin Town Centre.
- It is estimated that the development of West and North Appin will generate demand for around 9,100 jobs upon completion across the economy.
- It is estimated that around 50% (4,550) of job demand could be created locally within the Appin & North Appin Precincts. An indicative distribution of these employment opportunities suggests around 2,230 jobs could be supported within the Appin Local Centre, with between 370 and 756 jobs supported across each neighbourhood centre. LEGEND
  - Appin & North Appin Precincts Appin (Part) Precinct Mixed-Use Centre  $\bigcirc$ 400m & 800m Catchment Neighbourhood Centres Local Centre Integrated K-12 School Primary School **District Oval District Community Facility** Local Community Facility 0 Existing Appin School East-West Connection Public Transport Corridor North-West Connection & Appin Bypass Collector Road Road Connection (by others) Ο Hume Highway Interchange 0 Bus Stop

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



### 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) 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 micromobility.
- 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 26
 Sustainability and Resilience Opportunities for Appin & North Appin Precincts

### **BLUE INFRASTRUCTURE**

### Integration of waterways

Existing natural waterways and waterbodies are unique features that should inform and be part of a master plan.

### **GREEN INFRASTRUCTURE OPPORTUNITIES**

Retention of existing trees

### **GREY INFRASTRUCTURE**

### 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.

Protect biodiversity and wildlife

Biodiversity is vital in supporting human

water, and fertile soils. It cannot be done

life on Earth. It supplies clean air and

just by setting aside land in national

parks and reserves and must be

integrated into our urban areas

corridors

Planted trees can take decades



### water in the landscape

### Water Sensitive Urban Design Urban heat mitigation starts with retaining



### 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.



### 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

### 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.





### 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



### 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



### 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.



### 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.

# 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.

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### **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 nighttime 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:

- Seven distinctive neighbourhoods have been identified for Appin, six of these anchored by a mixed-use centre.
- Many of these have unique characteristics including local topographical features, framed in green vegetation, benefit from riparian amenity.

### LEGEND

- Appin & North Appin Precincts
- Appin (Part) Precinct
- Mixed-Use Neighbourhood Centre
- 400m & 800m Catchment
- Distinctive 20 Minute Neighbourhoods
- Areas of steeper land
- East-West Connection
- Public Transport Corridor
- North-West Connection & Appin Bypass
- Road Connection (by others)
- Release Area1 Collector Road
- $(\square)$ Bus Stop
- Grade Separated Intersection
- Signalised Intersection
- Roundabout



### **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) 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
Medium (25-45 dw/h)	162.17	5,153	23.6%
Low Density - Traditional (15-25 dw/h)	928	15,298	70%
Low Density - Site Responsive (10-15 dw/h)	388.92	1,413	6.5%
Total	1,479.09	21,865	100%

#### LEGEND

Appin & North Appin Precincts Appin (Part) Precinct Medium Density Residential Low Density Residential - Traditional Low Density Residential - Site Responsive East-West Connection Public Transport Corridor North-West Connection & Appin Bypass Road Connection (by others) Grade Separated Intersection Signalised Intersection 0 Bus Stop



### **DISTINCTIVE NEIGHBOURHOODS**









### **1** NORTH APPIN

**Centre:** the centre is located on the Public Transport Corridor and up on the plateau in one of the highest points of the precinct. There is a steep section of topography just west of the centre and the land falls down towards Ousedale Creek.

**Neighbourhood:** the neighbourhood is clearly defined by the surrounding Valued Conservation Areas.

### 2 MACQUARIEDALE ROAD NEIGHBOURHOOD

**Centre:** the centre is located in the lower, undulating hills section of the precinct. It is on a local collector road that is aligned with the existing Macquariedale Road which connects to the East-West arterial road. This centre is in close proximity to the potential Employment Lands identified in the GMGA2040.

**Neighbourhood:** the neighbourhood is clearly defined by the surrounding Valued Conservation Areas. The eastern boundary occurs where the topography rises up towards the plateau. A gas pipeline easement also forms the eastern boundary.







### **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 northwestern boundary occurs where the topography falls towards the undulating hills. A gas pipeline easement also forms the western boundary.









### SOUTHERN VILLAGE NEIGHBOURHOOD

**Centre:** the centre is located on the plateau in the south-eastern part of the precinct. It is located on protected passive open space which connects to the wider green network.

**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.



### **5** VALLEY NEIGHBOURHOOD

**Centre:** the centre is located on the Public Transport corridor. It is located between a steep topography area and the Upper Canal System easement.

**Neighbourhood:** the neighbourhood has varied topography with a hill in the centre. It is defined by the surrounding Valued Conservation Areas and cultural open space associated with the Appin Massacre. The eastern boundary is the electrical transmission easement. There is no clear boundary to the north where it merges into the adjacent neighbourhood.



### **6** NEPEAN RIVER NEIGHBOURHOOD

**Centre:** the centre is located to the north of the Public Transport corridor and is away from the middle of the neighbourhood. The centre avoids a steep section of topography.

**Neighbourhood:** the neighbourhood has varied topography with a hill in the centre. It is defined by the surrounding Valued Conservation Areas on the west, north and east. There is no clear boundary to the south where it merges into the adjacent neighbourhood.



### **7** SOUTH APPIN

This area is topographically isolated from the Southern Village Neighbourhood by a steep section of protected open space. The gas pipeline easement disconnects it from the Valley Neighbourhood. There is no centre to service this neighbourhood and most of this area is more than a 10 minute walk from the nearest centre.

### MEDIUM DENSITY RESIDENTIAL

### **Key Principles**

- Medium density housing is located closer to high levels of amenity and services (attached product) to achieve affordability and quality.
- **Density band:** 25 45 dw/ha to provide flexibility for a long term development and changes in housing market and product.
- Lot sizes: Less than 200 sq.m.
- No dwelling cap: Density managed through performance outcomes.
- Development approval: either through Council Development Application or Green Housing Code

### Typical Characteristics

- Located within the walking catchment of centres, high amenity locations including green or blue corridors and public transport routes.
- Predominantly small lot housing (2-3 storeys) with some multi-dwelling housing, manor homes and residential flat buildings (4–6 storeys)
- Incorporates laneways, rear access and shared driveways.
- Activates the public domain, including streets and public open space through the orientation, design of buildings and communal spaces.

Density	Area (ha)	Yield (dwellings)	% Of overall yield
Medium (25-45 dw/h)	162.17	5,153	23.6%











150 Appin (Part) Precinct Urban Context Report

#### LEGEND

Appin & North Appin Precincts Appin (Part) Precinct Medium Density Residential East-West Connection Public Transport Corridor North-West Connection & Appin Bypass Road Connection (by others) Grade Separated Intersection ()Signalised Intersection Roundabout Priority sign  $\bigcirc$ Bus Stop



### LOW DENSITY RESIDENTIAL

### **Key Principles**

Low density housing neighbourhoods are the predominant density type across the Appin & North Appin Precincts. Comprises both:

- Traditional Lot Housing:
  - Density band: 15-25 dw/ha to provide flexibility for \_ a long term development and changes in housing market and product.
  - Lot sizes: Range from 200-600 sq.m.
  - No dwelling cap: Density managed through \_ performance outcomes.
  - Mix of detached dwelling houses, semi-detached dwellings and dual occupancies (1-2 storeys)
  - Up to 3 storeys on land with slope or Merit Based Assessment
  - Potential for secondary dwellings on larger lots.
  - Focused areas of small lot dwelling houses in high amenity locations.
  - Multiple dwellings on corner lots.

### • Site Responsive Housing:

- **Density:** 10-15 dw/ha to provide flexibility for site \_ responsive outcomes and housing diversity.
- Lot sizes: Greater than 600 sq.m.
- In proximity to conservation areas and sensitive lands to accommodate suitable buffer distances and steeper topography.

Density	Area (ha)	Yield (dwellings)	% Of overall yield
Low Density - Traditional (15-25 dw/h)	928	15,298	70%
Low Density - Site Responsive (10-15 dw/h)	388.92	1,413	6.5%
Total	1,316.92	16,712	76.5%









Figure 122 Proposed Low Density Housing Locations



#### LEGEND

- Appin & North Appin Precincts
- Appin (Part) Precinct
- Low Density Residential Traditional
- Low Density Residential Site Responsive
- East-West Connection
- Public Transport Corridor
- North-West Connection & Appin Bypass
- Road Connection (by others) Collector Road
- Grade Separated Intersection С
  - Signalised Intersection
  - Roundabout
  - Priority sign
- $\textcircled{\label{eq:eq:expansion}}$ Bus Stop



### **INFRASTRUCTURE & STAGING**

### **DEVELOPMENT STAGING**

- Stages 1-4 & 5 (part) Represent the Appin (Part) Precinct Rezoning
- Balance land (Stages 2A, 3A, 4A, 5 (Part)) is the remaining areas of Appin & North Appin Precincts controlled by others.
- Infrastructure planning has assumed indicative staging and indicative dwellings and development across the entire precinct.
- 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	3826ha	21,865	Approx. 21,000+	65,595	Approx. 65,000+
Appin (Part) Precinct	1,378ha		Approx. 12,000+	36,000	Approx. 36,000+
Appin Vale Sub Precinct Release Area 1	395ha		Approx. 3,500	10,500	Approx. 10,000+
Employment				4,130	Approx. 4,000+
Schools	16.6ha	(3 x K-6) & (3 x K-12)		12,000	Approx 12,000 kids
Stages		S1 = 3,405	All approx. and		
		S2 = 3,468	is subject to detailed design.		
		S2A = 4,354	Estimated		
		S3 = 3,351	dwellings are not		
		S3A = 2,300	considered a Cap.		
		S4 = 2,798			
		S4A = 630			
		S5 = 1,559	-		



Figure 124 Indicative Staging

### LEGEND

Appin & North Appin Precincts

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

### LAND USE

	Appin & North Appin Precincts
	Appin (Part) Precinct
$\sim$	Waterways
	Staging Boundary
	LGA boundary
#	Proposed Staging
	CPCP Non-Certified Avoided
	Regional Open Space
	District Open Space
	Easements (potential for active and passive recreation)
$\sim$	Riparian Corridor
	Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape)
<b>+ &gt;</b>	Walkable Green Links
$\bigcirc$	Mixed Use Centres (including retail, schools and district ovals)
	Residential Neighbourhoods
	Heritage Items
	East-West Connection
	Public Transport Corridor
	North-South Connection & Appin Bypass
	Road Connection - By Others
	Collector Roads
	Excluded Land



### SERVICES AND UTILITIES

- Essential services required for the Proposal include:
  - \_ Potable Water
  - Wastewater
  - Electrical \_
  - Communications \_
- Sydney Water confirmed there is capacity in their network to accommodate the development via the Glenfield Waste Water Treatment Plan and Macarthur Water Filtration Plant.
- During the course of development upgrades include, new water reservoir, new Sewer Pump Stations, Rising/Gravity Lines, New Upper Nepean Waste Water Treatment Plant.
- Endeavour Energy confirmed initial capacity for the development through existing infrastructure with future upgrades include zone/residential sub stations, new feeders/reticulation services during the course of development.
- NBN Co confirmed initial capacity for the development through existing infrastructure with future upgrades include new head end units and reticulation services during the course of development

### LEGEND

- Appin & North Appin Precincts
- Appin (Part) Precinct
- **Electricity Transmission Line Easement**
- Gas and Ethane Transmission Line Easement
- Macarthur Water Filtration Plant
- Existing Water Supply Network
- **Existing Sewer Pump Station**
- Existing Water Reservation
- New Water Reservoir
- Existing Zone Substation
- New Zone Substation  $\bigtriangleup$
- New Bulk Supply Point Sewer Pump Station (typically at the low points and around the perimeter of the site)

\* Infrastructure location subject to detailed design



### **APPIN INFRASTRUCTURE DELIVERY PLAN**

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

- Identifies the infrastructure required to support the proposed Appin (Part) Precinct rezoning, with more specific detail for the land known as "Appin Vale" which forms the initial stages of development including Appin Vale Release Area 1.
- 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,
- Identifies the local infrastructure for Appin Vale Release Area 1 that may be included in a site-specific section 7.11 contributions chapter of the Wollondilly Shire Council's (Council's) current contributions plan, or in a planning agreement negotiated between Walker and the Council, and
- 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) Precinct
- Waterways
- Collector Road
- **Regional Open Space**
- **District Open Space**
- $\square$ **Riparian Corridor**
- Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape)
- **{ }** Walkable Green Links
  - Residential Neighbourhoods Heritage Items
- **District Community Facilities**
- Local Community Facilities
- Existing Appin School



### **SUMMARY OF USES**

The following table outlines the proposed distribution of uses across Walker Corporation owned land and non-Walker Corporation owned land within the Appin (Part) Precinct. This includes:

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

The table demonstrates that Walker Corporation is providing on their land:

- 100% of the Regional open space
- 100% of the Local open spaces
- 100% of Other Infrastructure
- 100% of land for Centres
- 100% of land for Schools

Table 28 Breakdown of uses across Walker and non-Walker owned land on Appin (Part) Precinct

	WALKER OWNED LAND		NON-WALKER OWNED LAND		TOTAL
USES	HA	%	HA	%	HA
Total Appin (Part) Precinct Area	1282.16ha	93.01%	96.37ha	6.99%	1378.52h
Proposed Open Spaces	121.91 ha	95.62%	5.58	4.38%	127.49h
Regional	20.99 ha	100%	-	0%	20.99 h
District	79.31 ha	93.43%	5.58 ha	6.57%	84.89 h
Local	21.61 ha	100%	-	0%	21.61 h
Roads	203.86 ha	96.76 %	6.82 ha	3.24%	210.68 h
Proposed East-West Connection	10.11 ha	87.08 %	1.49 ha	6.82%	11.61 h
Proposed North South Connection	11.56 ha	100%	-		11.56 h
Proposed Transit Corridor	12.27 ha	94.53 %	0.71 ha	5.47%	12.98 h
Collector Roads	40.67 ha	89.79%	4.62 ha	10.2 %	45.29 h
Local Roads	126.56 ha	100%	-	0%	126.56 h
Existing Roads to be retained	2.69 ha	100%		0%	2.69 h
Other Infrastructure	4.65 ha	100%	-	0%	4.65 h
New Utility Assets - Water Reservoir	0.50 ha	100%	-	0%	0.50 h
New Utility Assets - Sewer Pump Stations	0.40 ha	100%	-	0%	0.40 h
New Utility Assets - Zone Pump Stations	1.15 ha	100%	-	0%	1.15 h
New Utility Assets - Transgrid Bulk Supply Pt	2.60 ha	100%	-	0%	2.60 h
Land for Residential	612.95 ha	93.02%	46 ha	6.98%	658.95 h
Medium Density Housing	121.63 ha	96.07 %	4.97 ha	3.93%	126.60 h
Low Density Residential (Traditional)	426.03 ha	91.86%	37.75 ha	8.14%	463.78 h
Low Density Residential (Site Responsive)	65.29 ha	95.22%	3.28 ha	4.78 %	68.57 h
Land for Centres	10.31 ha	100%	-	0%	10.31 h
Mixed Use Neighbourhood Centres	10.31 ha	100 %	-	0%	10.31 h
Land for Education	7.01 ha	100%	-	0%	7.01 h
Schools	7.01 ha	100 %	-	0%	7.01 ha



### LEGEND

- Appin & North Appin Precincts
- Appin (Part) Precinct
- .\_\_\_\_ LGA Boundary
- ----- Collector Road
- Walker Land Ownership



# PART

This 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 for 12,000+ homes on one large consolidated land holding and secure the delivery of the first 3,500+ homes.
- Contributing to a greater housing supply and diversity in the Western Parkland City.
- Provide new state, regional and local infrastructure services, amenities and recreational facilities to serve the new and existing Appin communities.



# **APPIN (PART)** PRECINCT REZONING

### The Proposal comprises:

- 1. The Appin (Part) 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.'
- 2. The Appin (Part) Precinct Structure Plan.

The (Part) Precinct Plan envisages the delivery of 12,000+ new homes. It is supported by:

3. The Appin & North Appin Precincts Indicative Plan. Provides broader context and for information purposes only. It has no statutory weight.

The Indicative Plan envisages 21,000+ new homes in accordance with the Greater Macarthur Growth Area Plan.

### 1. Appin (Part) Precinct Plan (12,000+ 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
- SP2 Infrastructure (Road)

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) Precinct Structure Plan (12,000+ Dwellings)

Structure plan for the Appin (Part) Precinct site, showing Release Area 1.

- 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) Precinct Structure Plan is located including:

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



### LAND USE

<ul> <li>Appin &amp; North Appin Precincts</li> <li>Appin (Part) Precinct</li> <li>Waterways</li> <li>CPCP Non-Certified Avoided</li> <li>Regional Open Space</li> <li>District Open Space</li> <li>Easements (potential for active and passive recreation)</li> <li>Riparian Corridor</li> <li>Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape)</li> <li>Walkable Green Links</li> <li>Mixed Use Centres (including retail, schools and district ovals)</li> <li>Residential Neighbourhoods</li> <li>Heritage Items</li> <li>East-West Connection</li> <li>North-South Conridor</li> <li>North-South Connection &amp; Appin Bypass</li> <li>Road Connection - By Others</li> <li>Collector Roads</li> <li>Excluded Land</li> </ul>		
<ul> <li>Waterways</li> <li>CPCP Non-Certified Avoided</li> <li>Regional Open Space</li> <li>District Open Space</li> <li>Easements (potential for active and passive recreation)</li> <li>Riparian Corridor</li> <li>Draft NSW State Heritage listing</li> <li>Curtilage (Place of First Nations Cultural Landscape)</li> <li>Walkable Green Links</li> <li>Mixed Use Centres (including retail, schools and district ovals)</li> <li>Residential Neighbourhoods</li> <li>Heritage Items</li> <li>East-West Connection</li> <li>Public Transport Corridor</li> <li>North-South Connection &amp; Appin Bypass</li> <li>Road Connection - By Others</li> <li>Collector Roads</li> </ul>		Appin & North Appin Precincts
<ul> <li>CPCP Non-Certified Avoided</li> <li>Regional Open Space</li> <li>District Open Space</li> <li>Easements (potential for active and passive recreation)</li> <li>Riparian Corridor</li> <li>Draft NSW State Heritage listing Curtilage (Place of First Nations Cultural Landscape)</li> <li>Walkable Green Links</li> <li>Mixed Use Centres (including retail, schools and district ovals)</li> <li>Residential Neighbourhoods</li> <li>Heritage Items</li> <li>East-West Connection</li> <li>Public Transport Corridor</li> <li>North-South Connection &amp; Appin Bypass</li> <li>Road Connection - By Others</li> <li>Collector Roads</li> </ul>		Appin (Part) Precinct
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Collector Roads	—	
		Road Connection - By Others
Excluded Land		Collector Roads
		Excluded Land





Figure 131 Proposed Appin (Part) Precinct Plan - Land Zoning Map



Figure 132 Appin (Part) Precinct Plan - Proposed Minimum Lot Size



Figure 133 Appin (Part) Precinct Plan - Proposed Sequencing Development Map



Greater Macarthur Growth Area Appin (Part) Precinct Plan Height of Buildings Map



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Figure 134 Appin (Part) Precinct Plan - Height of Buildings



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