ORANGE CITY COUNCIL

Witton Place Candidate Area

Urban Design Study & Preliminary Concept Plan

Technical Report SP 24-001

Prepared by Orange City Council

November 2024

ORANGE CITY COUNCIL

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Acknowledgement of Country

This Urban Design Study was prepared on Wiradjuri Country.

Orange City Council acknowledges the Wiradjuri people as the Traditional Custodians of the land, waterways and skies to which this document applies. We acknowledge their living culture and relationship with Country, which have endured through deep time and which continue to inspire, teach and inform how to best understand the land and its people. We pay respect to their Elders past, present and emerging.

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1 Introduction

1.1 Background

This urban design study has been prepared by Orange City Council's urban planning team. The study is intended to guide long term land use planning and place design for the Witton Place Candidate Area.

The Witton Place Candidate Area is one of eight greenfield precincts (or "candidate areas") nominated by the Orange Local Housing Strategy as having the potential to meet the City of Orange's long term housing needs through future rezoning and development (Figure 1.1). The candidate area is located immediately west of Ploughmans Valley ("Area 4"), which has been subject to staged development as a low density residential precinct since its initial master planning in the late 1990s. The candidate area extends between the established Ploughmans Valley urban area and the City's local government area boundary to the west. As such, it forms a key visual gateway to Orange along the City's Cargo Road entrance.

The Witton Place Candidate Area comprises several landholdings with a combined area of 43.22 hectares. Stage 1 of the candidate area, comprising Lot A Lot A DP408148 (also known as No. 277 Cargo Road), has an area of 10.99 hectares and is currently subject to a planning proposal to rezone the land (PP-2023-934). Subject to future rezoning and site suitability assessment, it is anticipated that the Witton Place Candidate Area has the potential to yield around 300 dwellings.

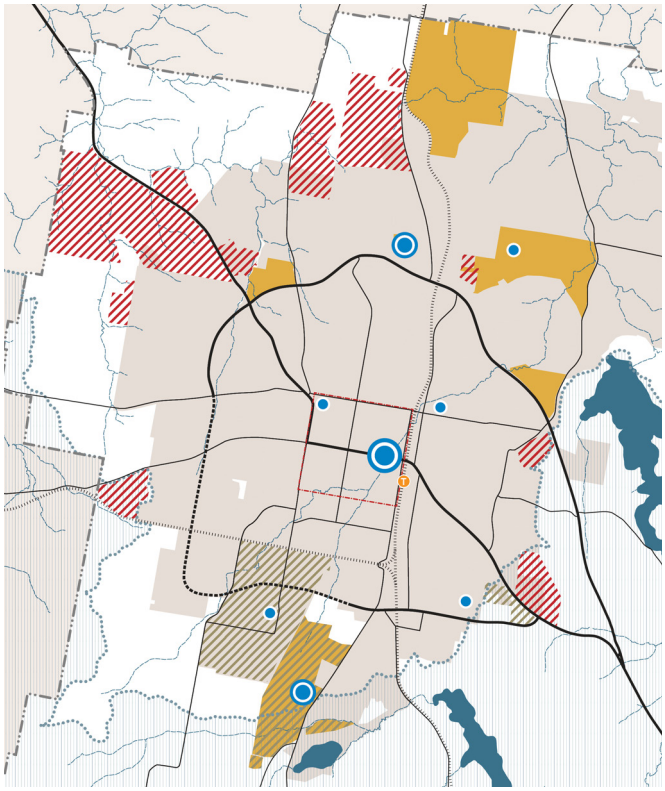


Figure 1.1 Candidate areas and urban growth precincts within the City of Orange

Key

- LGA Boundary
- Orange CBD
- Local Centre
- Neighbourhood Centre
- Urban Area (Existing)
- Urban Release Areas (Orange LEP 2011)
- Candidate Areas (Orange Local Housing Strategy)
- Other Growth Precincts
- Drinking Water Catchment

1.2 Purpose and scope

This study describes the outcomes of Council's urban design assessment of the Witton Place Candidate Area in general and the Stage 1 site in particular. It describes the urban design strategies and preliminary concept plan that are recommended to guide the candidate area's development as an holistic, sustainable and desirable residential precinct. In particular, the urban design study aims to—

(a) inform the preparation of current and future planning proposals for land within the candidate area,

(b) ensure sustainable neighbourhood design and place making in line with "green community" design principles,

(c) ensure housing provision is consistent with the City's overall social needs and Council's housing priorities (as articulated in the Orange Local Housing Strategy), and

(d) guide the preparation of place-based development controls (including both LEP and DCP controls).

While the urban design assessment has been informed by detailed technical studies prepared in relation to the Stage 1 site, analysis of the remaining land within the candidate area has been undertaken only at a desktop level. It is anticipated that this land will be subject to more detailed assessment as part of a future planning proposal (or proposals) prepared in relation to the land. Key technical studies that have informed the urban design study are listed in the References section of this document.

1.3 Document structure

The following sections of the urban design study comprise—

Section 2—Housing Growth Context	Describes the regional and local drivers of housing growth within the Witton Place Candidate Area.
Section 3—Site Analysis	Describes the key environmental, social and cultural features of the candidate area.
Section 4—Opportunities and Constraints	Describes the opportunities and constraints for sustainable place design and development.
Section 5—Urban Design Concept	Describes the urban design principles and preliminary concept plan that will inform future planning for the candidate area.
References	Lists the key information sources referred to by the study.

2 Housing Growth Context

2.1 Regional context

The City of Orange is located in the elevated, cool climate of the upper NSW Central Tablelands, a 200-kilometre (or 3-hour) drive west of Penrith. Along with Bathurst and Dubbo, Orange is one of three "regional cities" that anchor the centres hierarchy of the Central West and Orana region. Within this hierarchy, Orange and Bathurst are separated by only a 55-kilometre (or 45-minute) drive. The cities jointly act as the principal urban centres anchoring the "Central West Growth Corridor", which extends along the Mitchell Highway between Orange and Lithgow (see Figures 2.1, 2.2 and 2.3).

Orange occupies an influential location within the Central West and Orana's regional economic geography, enjoying strong connectivity to State and regional transport infrastructure, logistics networks, markets (eg, agriculture, mining, health care, education and tourism) and production flows (Figure 2.1). Within this network, the city is strategically located along key national, State and regional road and rail routes including the Mitchell Highway (A32), Broken Hill Railway Line (Adelaide) and Main West Railway Line (Sydney-Dubbo). In terms of travel distance, Orange enjoys a favourable location relative to other regional destinations and precincts, including Dubbo (150 kilometres, 1 hour and 45 minutes), the Parkes Special Activation Precinct (100 kilometres, 1 hour and 15 minutes) and the emerging Western Sydney Aerotropolis (215 kilometres, 3 hours).

Planning for the wider Central West and Orana region is undertaken in accordance with the Central West and Orana Regional Plan 2041 ("CW&ORP 2041"). Among other things, the CW&ORP 2041 explicitly recognises the strategic importance of applying urban design processes to place planning at the local scale. Strategy 9.3 of the plan requires local councils to "apply the seven urban design strategies for regional NSW" (as defined by Urban Design for Regional NSW) when planning for new urban precincts. These strategies have informed the place design principles and concept plan described in this Urban Design Study.

Figure 2.1 Regional transport context (Source: *Central West & Orana Regional Plan 2041*)

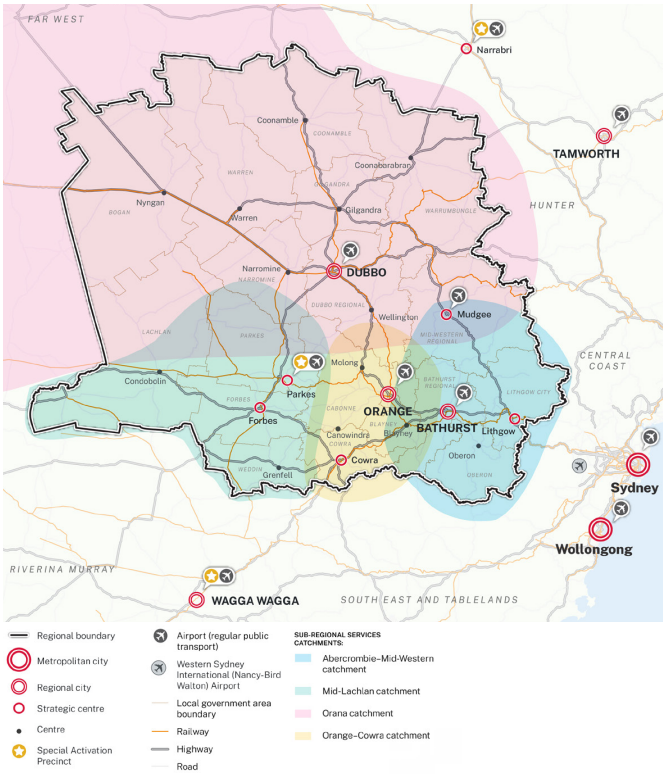


Figure 2.2 Regional centres and service catchments (Source: *Central West & Orana Regional Plan 2041*)

Figure 2.3 Central West and Orana regional vision (Source: *Central West and Orana Regional Plan 2041*)

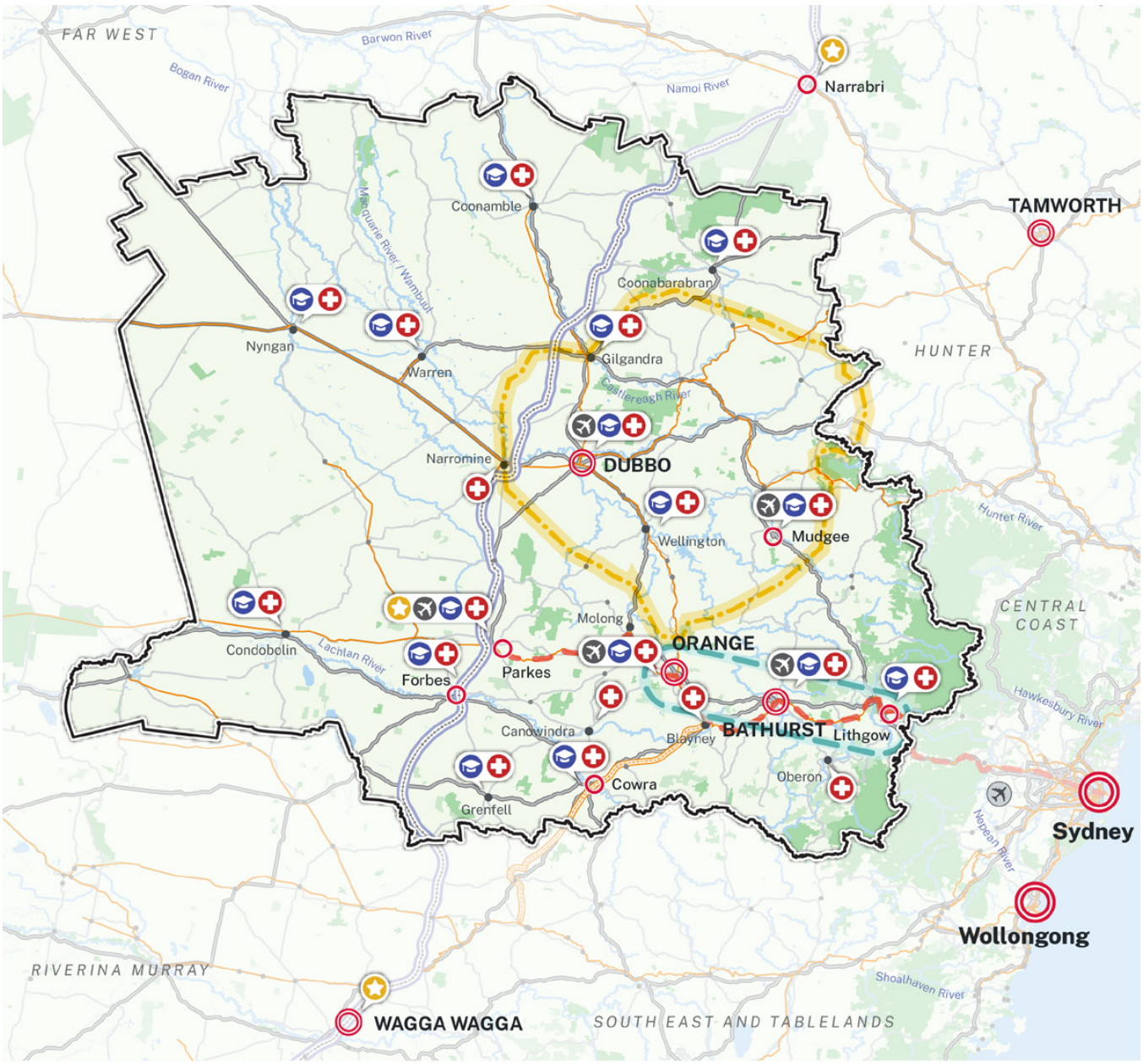


Figure 2: Vision map for the Central West and Orana

2.2 Functional economic region characteristics

At the sub-regional scale, Orange forms the principal urban centre within the Orange, Blayney and Cabonne Functional Economic Region (FER). Council's role in supporting population, labour force and economic growth within the FER is governed by the NSW Government's Orange, Blayney and Cabonne Regional Economic Development Strategy—2023 Update. This recognises the economic importance of well-located housing supported by good place design (see Tables 2.1 and 2.2 below).

Orange's role within the FER is threefold—

1. Orange services the FER through the provision of higher order (ie, regional) health care, education, housing, recreation, retail and other services needed to support the social reproduction of labour, including many of those less tangible qualities (such as healthy and attractive urban places) that help make up the FER's "liveability" and that support the attraction of new skills, knowledge, people, enterprises and investment.
2. Orange functions as a site for economic coordination and integration (eg, "head office" and producer services) through its capacity to offer a flexible diversity of office, service industry and production settings.
3. Orange plays a leading role in setting the FER's competitive brand through its association with the FER's unique territorial identity (or sense of *terroir*). This is expressed through the combination of images, feelings and impressions that are indelibly tied to people's experiences of the FER's unique combination of scenic hinterlands, recreation assets, wineries, orchards and urban townscapes, along with its distinctive "vibe" as a rapidly maturing destination for entertainment, hospitality, food and wine, cultural events and "good living".

Table 2.1 Relevant Orange, Blayney and Cabonne Regional Economic Development Strategy—2023 Update provisions

Strategies	Enablers
Enhance the liveability of the region by ensuring the future supply of housing, stable supply of water, community infrastructure and community amenity in Orange, Blayney and Cabonne as the region's population grows.	Support investments in community spaces, services and recreation infrastructure to improve amenity, diversify the visitor economy, and support attraction and retention of a working age population.

Table 2.2 Orange, Blayney and Cabonne Functional Economic Region (FER) population change, 2016-2021

LGA	LGA Population 2016	Share of FER Population 2016	LGA Population 2021	Share of FER Population 2021	LGA Population Change 2016-2021
Orange City	40,344	66.2%	43,512	67.2%	+7.9%
Blayney Shire	7,257	11.9%	7,497	11.6%	+3.3%
Cabonne Shire	13,386	21.9%	13,766	21.3%	+2.8%
FER Total	**60,987**	**100.0%**	**64,775**	**100.0%**	**+4.7%**

Source: ABS Census

2.4 Local population and housing drivers

2.4.1 Regional city comparisons

Like other regional cities in NSW, Orange is experiencing sustained high rates of population and housing growth that, over time, imply fundamental changes to the city's urban form, housing mix and place qualities (see Table 2.3 below).

An important consideration for Orange in this regard is the relatively small geographical size of its LGA when compared to other NSW regional cities. As well as having one of the state's highest annual rates of regional population growth, the City of Orange is by far and away the most densely populated inland regional city LGA in NSW (153.1 people/km²). In recent years, Orange's sustained high rates of attraction and growth have become entwined with the city's emergence as the leading agribusiness, health, education, lifestyle and tourist hub for inland NSW, a role that is expected to deepen into the future.

Table 2.3 NSW regional city LGA population change, 2016-2021

	LGA	LGA Population 2016	LGA Population 2021	LGA Population Change 2016-2021
1	Goulburn-Mulwaree	26,609	32,053	+20.5%
2	Maitland City	77,305	90,226	+16.7%
3	Queanbeyan-Pelarang Regional	56,027	63,304	+13.0%
4	Port Macquarie Hastings	78,539	86,762	+10.5%
5	Albury (NSW) & Wodonga (Vic)	90,427	99,346	+9.9%
6	Dubbo Regional	50,077	54,922	+9.7%
7	Wagga Wagga City	62,385	67,609	+8.4%
8	Shoalhaven City	99,650	108,531	+8.9%
9	Coffs Harbour City	72,994	78,759	+7.9%
10	Orange City	40,344	43,512	+7.9%
11	Tweed Shire (NSW)	91,371	97,392	+6.6%
12	Tamworth Regional	59,663	63,070	+5.7%
13	Griffith City	25,641	27,086	+5.6%
14	Bathurst Regional	41,300	43,567	+5.5%
15	Lismore City	43,135	44,334	+2.8%
16	Armidale Regional	28,587	29,124	+1.9%
17	Broken Hill City	17,708	17,588	-0.7%

Source: ABS Census

2.4.2 Local growth drivers

Population and housing forecasts used to support the Orange Local Housing Strategy ("OLHS", adopted 7 June 2022) were based on 2016 ABS Census data. These predicted that the City of Orange LGA's population would grow to 52,000 by 2041, requiring the City's functional housing stock to grow by 6,091 dwellings between 2016 and 2041.

The OLHS' projections have since been qualified by the more recent release of 2021 ABS Census data and the NSW Department of Planning, Housing and Infrastructure's 2022 NSW Population Projections. In addition, a more localised housing needs assessment has recently been undertaken in relation to Council's Redmond Place Precinct (Atlas Economics, July 2024). While not directly applying to the Witton Place Candidate Area, this latter assessment nevertheless provides important insight into the strategic justification and need for significantly greater housing diversity within the City's urban release areas.

Taken together, the data referred to above indicate a projected population size of 51,161 for the City of Orange by 2041, requiring an increase in the size of the City's functional housing stock of 5,630 dwellings (see Table 2.4 below). This equates to an average annual net demand for 282 additional dwellings up to 2041, a rate that is higher than the annual average construction rate of 273 dwellings witnessed between 2011 and 2010. It is worth noting that the implied dwelling requirement for the City in 2021 was 19,098 dwellings, indicating a shortfall of 428 dwellings in the City's existing housing stock (18,670 dwellings) at that time.

Table 2.4 Implied future dwelling requirements for the City of Orange LGA, 2031 and 2041

Existing Dwellings (2021)	Dwellings Required (2031)	Dwellings Required (2041)	Net Additional Dwellings Required (2021-2041)
18,670	21,897	24,300	5,630

Source: NSW Department of Planning, Housing and Infrastructure and Atlas Economics (July 2024)

Table 2.5 Projected share of household types for the City of Orange LGA (2021-2041)

	Year				
Household Type	**2021**	**2026**	**2031**	**2036**	**2041**
Lone person	25.6%	26.3%	26.7%	26.9%	27.1%
Couple only	28.6%	29.2%	29.6%	30.0%	30.3%
Single parent	12.1%	11.8%	11.7%	11.6%	11.5%
Couple with children	28.6%	27.9%	27.3%	26.8%	26.5%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Atlas Economics (July 2024)

In addition, the more recent analysis highlights the importance of looking beyond the delivery of overall dwelling numbers to consider the finer grain aspects of the City of Orange's future housing needs. In particular, the analysis highlights the following—

- A continuing decline in household sizes, with over 60% of households within the City of Orange now comprising one- or two-person households. Over 50% of smaller households (couple only or lone person households) comprise people over the age of 60 years, reflecting a large downsizer population (see Table 2.5).
- A continuing deterioration in housing affordability, with growth in the proportion of households spending more than 30% of household income on housing (mortgage repayments or rent).
- Structural misalignment across the City of Orange's existing housing stock, with this being dominated by large, detached dwellings (84%), leading to a clear misalignment between dwelling and household sizes. While smaller households generally prefer to live in smaller dwellings, there are far fewer opportunities to do so in the City of Orange than should be available.
- The large and growing proportion of smaller households includes significant numbers of older residents (downsizers) and young first home buyers aged 20-29 years. This emphasises the need for the City's housing stock to be adaptable to meet a range of housing needs across people's lifetimes, including the need to consider "ageing in place" principles.

A further dimension highlighted by the more recent housing analysis is the importance of understanding the relationship between housing choice and place quality. This brings in to play the strategic role of urban design in establishing the structural capacity of new neighbourhoods and urban precincts to cater for housing diversity at scale and through time. This not only helps to ensure new places respond effectively to site qualities and social needs, but also realise their potential in unlocking social and economic value.

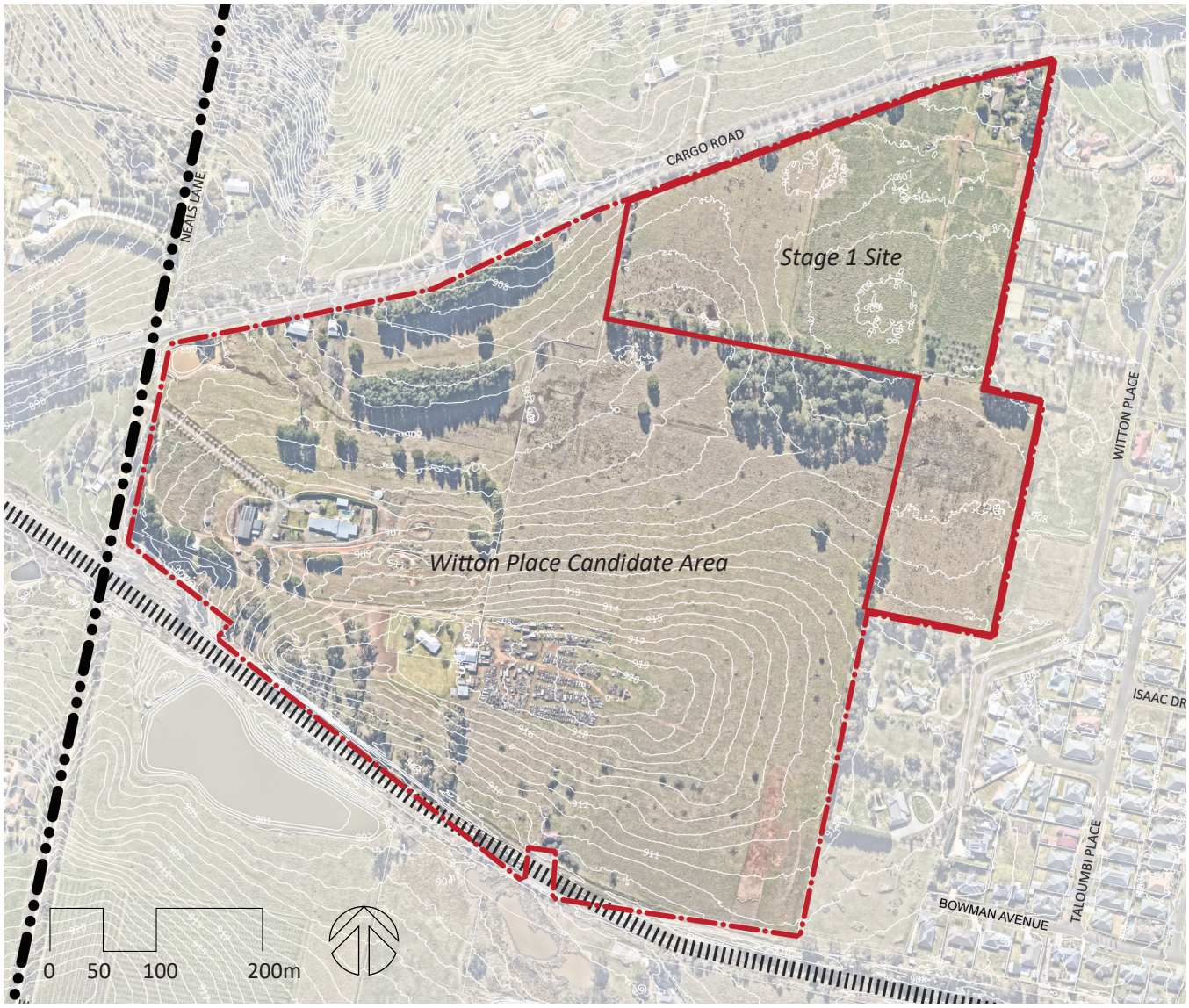
3 Site Analysis

3.1 Site description

The Witton Place Candidate Area is located on the western edge of Orange's urban area and is a key visual element defining the western entrance to the city along Cargo Road (see Figure 3.1). The site is located adjacent the southern-most portion ("Area 4") of the Ploughman's Valley residential area and approximately 3 kilometres west of the Orange Central Business District (CBD).

The candidate area is bounded by Cargo Road to the north, the Sydney to Broken Hill railway line to the south and Neals Lane to the west (Figure 3.1 below).

Figure 3.1 Witton Place Candidate Area location plan



3.2 Site history

The Witton Place Candidate Area has not been subject to any site-specific assessment of Aboriginal or non-Indigenous cultural heritage values. Basic aspects of the land's historical use are discernible from historical maps and aerial photographs (see Figures 3.2 and 3.3).

The candidate area is located within the Parish of Orange, Country of Wellington. Historical parish maps from 1897 to 1967 indicate that the site comprises of 6 portions, being part 93 owned by Mr W. Burrows, Part 94 and Part 95 owned by W. Wylde, Part 9 and Part 96 owned by J. West and part 10 owned by Dan Prass.

Historically, the area is known for apple orcharding and agricultural use including pasture improvement and livestock grazing. A review of historic aerial photographs, maps and plans since the 1960s indicates the area is utilised for mixed agriculture comprising of orcharding and grazing.

Land directly to the east of the site forms part of the Ploughmans Valley, which was subject to a Master Plan in 1997 commissioned by Council. The residential land directly east of the site forms the development area known as Area 4.

Source: Preliminary Contamination Investigation (Envirowest Consulting Pty Ptd, April 2023)

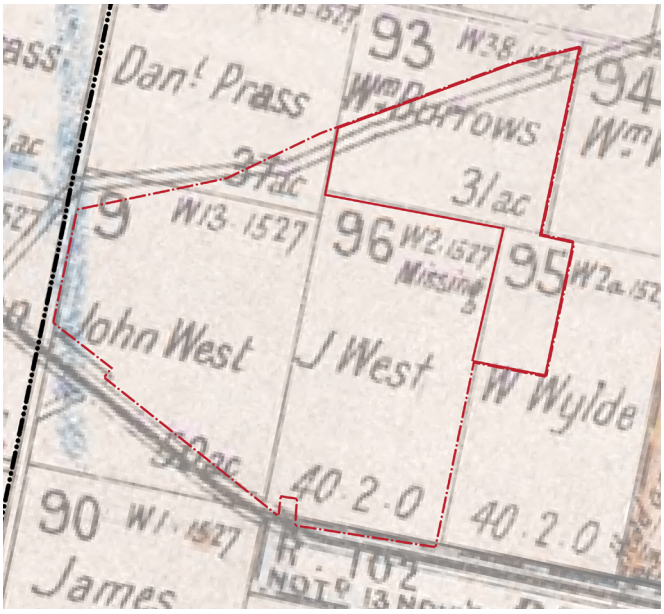


Figure 3.2 Parish of Orange (County of Wellington) Map, 1897

Figure 3.3 Orange Survey Map, 1936

3.3 Natural systems

3.3.1 Geology

The Stage 1 site is located within the Towac (K—to) soil landscape (see Figures 3.4 and 3.5). This soil landscape dominates the lower slopes and flanks to the north of Gaanha bula—Mount Canobolas, and is derived from basalt flows separated by layers of volcanic ash. Landform within this soil landscape is typified by undulating to rolling low hills ranging from 980 to 1,080 metres in elevation. The dominant soil grouping within the site is Krasnomen, typified by red, deep and well-structured soils graduating to increasing clay with depth. Drainage lines flow north to Molong Creek and Heifer Station Creek.

The eastern extent of the broader Candidate Area is located within the North Orange (RE—no) soil landscape that dominates the north western extent of the City of Orange, extending north to Boomey. This landscape comprises low hills ranging from 750 to 900 metres and is dominated by Red Earth soils. Soil structure is typically weaker than within the Towac soil landscape, comprising brown to dull reddish brown fine sandy loam to loam (topsoil), graduating to dark red to reddish brown loam or fine sandy clay loam (subsoil).

Land to the south west of the Candidate Area is located within the Spring Hill (K—sh) soil landscape that dominates the southern landscapes of the City of Orange. This landscape is characterised by gently undulating to undulating rises with broad flats. Elevation ranges from 900 to 980 metres.

Source: NSW Department of Climate Change, Energy, the Environment and Water 2024, Soil Landscapes of Central and Eastern NSW, version 3.0.1.

3.3.2 Topography

The Stage 1 site and broader candidate area are located to the West of the ridgeline that forms the prominent boundary to the Ploughmans Valley area (see Figure 3.6). The land generally slopes towards to the west and contains three prominent knolls at levels of 910 metres, 911 metres and 920 metres above sea level. The site drains towards the west through a valley which forms a headwater flow path.

3.3.3 Groundwater

The Witton Place Candidate Area is identified as "groundwater vulnerable" on the Orange LEP 2011's Groundwater Vulnerability Map (see Figure 3.7). All development applications on land within the candidate area are subject to assessment in accordance with clause 7.6 of the LEP.

Groundwater within the candidate area forms part of the Orange Basalt Groundwater Source. This groundwater source is closely associated with the fertile basalt soil landscapes of the Gaanha bula—Mount Canobolas hillscapes and plains that dominate the southern half of the City of Orange's landscapes. It comprises a fractured rock groundwater source that forms part of the larger NSW Murray-Darling Basin Fractured Rock Water Resource.

Groundwater has been identified at a minimum depth of 8 metres within the Stage 1 site. Any future development of the land will be required to address any direct or indirect impacts on groundwater quality and associated groundwater dependent ecosystems.

Source: Preliminary Contamination Investigation (Envirowest Consulting Pty Ptd, April 2023).

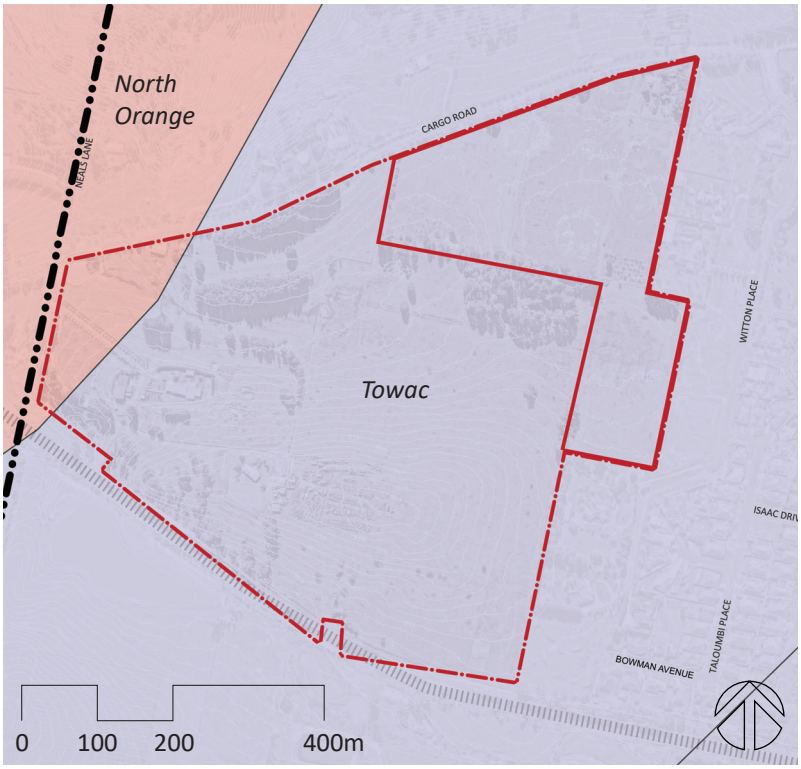


Figure 3.4 Soil landscapes

Key

LGA Boundary

Witton Place Candidate Area

Stage 1 Site

Soil Types

Krasnozems

Red Earths

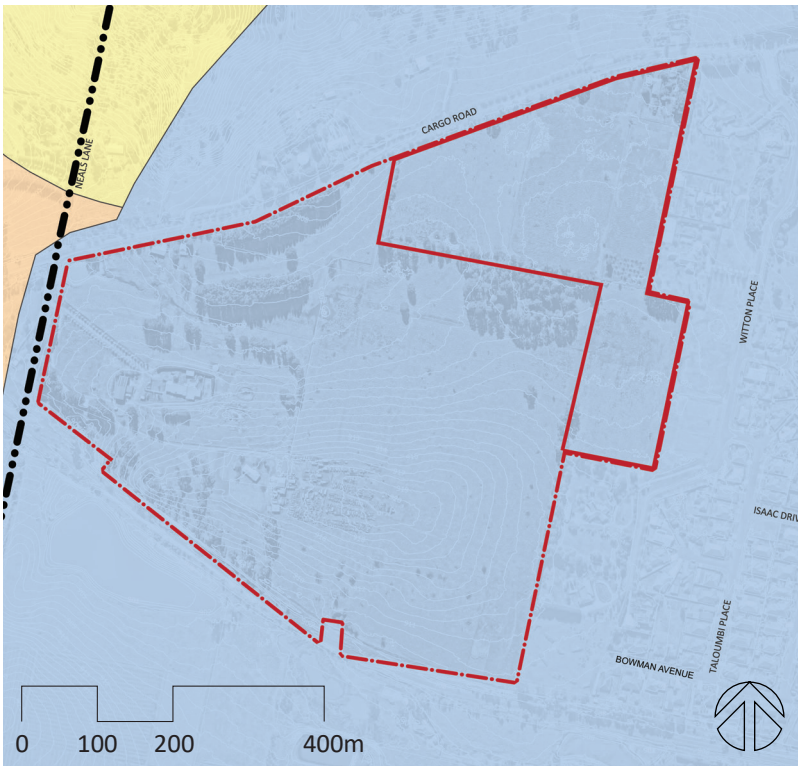


Figure 3.5 NSW hydrogeological landscapes

Key

LGA Boundary

Witton Place Candidate Area

Stage 1 Site

Land Categories

High Salinity

Moderate Salinity

Very Low Salinity

Site Analysis

Figure 3.6 Topography

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site
- High Points
- Ridgeline

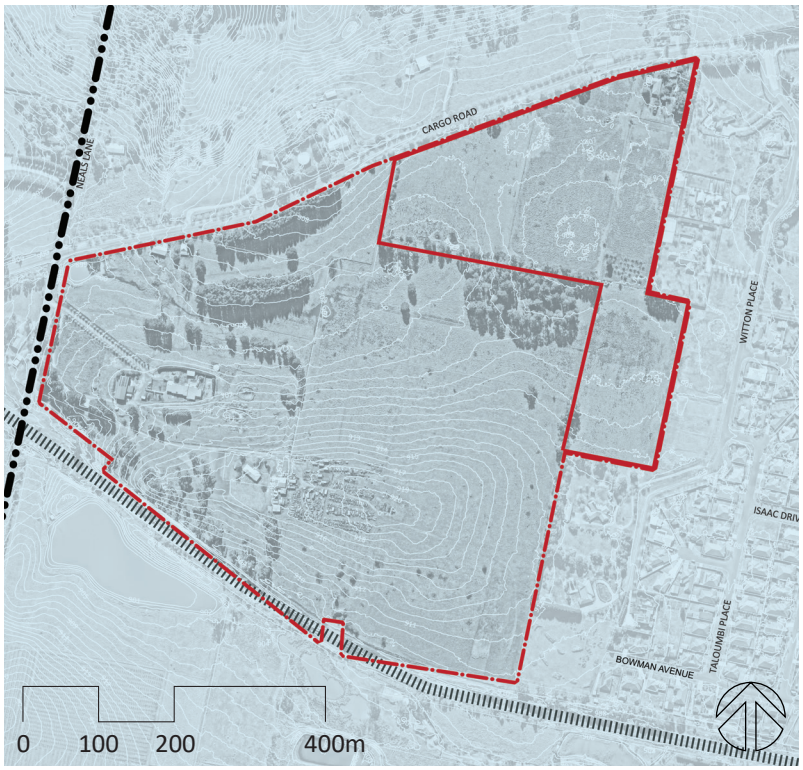


Figure 3.7 Groundwater vulnerability

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site
- Groundwater Vulnerability (Orange LEP 2011)

3.3.4 Waterways and hydrology

The Witton Place Candidate Area contains a headwater flow path, known as a first order stream under the Strahler stream ordering system. This stream forms part of Molong Creek catchment, within the mid-Macquarie tributaries (see Figure 3.8).

The southern most area of the Witton Place Candidate Area is identified as key fish habitat, noting that small headwater creeks are gullies that only flow for short periods are generally excluded from being identified

Source: NSW Department of Primary Industries and Regional Development (2024).

3.3.5 Biodiversity

Bioregional and subregional contexts

The City of Orange is located within the South Eastern Highlands Bioregion and Orange (SEH12) Bio-subregion as defined by the Interim Biogeographic Regionalisation for Australia (Version 7). Key features of the Orange Bio-subregion (SE12) are summarised in Table 3.1 below.

Flora

A 'Preliminary Flora and Fauna Assessment' has been prepared for the Stage 1 site (Envirowest Consulting Pty Ltd, 29 March 2023).

Within the Stage 1 site, the landscape has been extensively modified through historic orcharding practices and agricultural processes including pasture improvement and livestock grazing. Grasslands are the predominate vegetation type across the site. Small pockets of native vegetation are present, comprising Carex appressa (tall sedge) and Juncus usitatus (common rush). Gnaphalium involucratum (star cudweed) and Poa labillardierei (poa tussock) has been identified as isolated vegetation. No threatened or endangered species have been observed on the site.

Outside of the Stage 1 site, the NSW State Vegetation Type Map identifies two native vegetation plant community types in the south-western portion of the Witton Place Candidate Area. These comprise PCT 3366 (Grassy Woodlands—Central Tableland Clay Apple Box Grassy Forest) and PCT 3376 (Grassy Woodlands—Southern Tableland Grassy Box Woodland). Any future planning proposals for this land will be required to be supported by a Flora and Fauna Assessment (see Figure 3.9).

Table 3.1 Key features of the Orange bio-subregion (SE12) (Source: *The Bioregions of New South Wales: Their Biodiversity, Conservation and History*, NSW National Parks and Wildlife Service, 2003)

Geology	Landform	Soilscape	Vegetation
Ordovician acid volcanics and slates and phyllites and Silurian volcanics.	Low hilly to hilly plateau with Canobolas peaks rising above.	Deep structures red and brown loams on basalt and fine metasediments.	Yellow box and Blakely's red gum with red stringybark, white gum, broad-leaved peppermint across most of the plateau.
Extensive Tertiary basalts from Canobolas and small stocks of granite.	Numerous volcanic features: plugs, dykes and domes in the Canobolas complex.	Mellow texture contrast soils on any slopes with a sand component in the bedrock.	Ribbon gum on lower slopes, snow gum in cold patches and high levels of Canobolas.
Limited limestone and serpentinite.	Karst landscapes at Borenore and Molong.	Alluvial loams and black clays in swampy valley floors.	River oak along main streams.
		Limited areas of shallow organic loams at high altitude on Canobolas.	

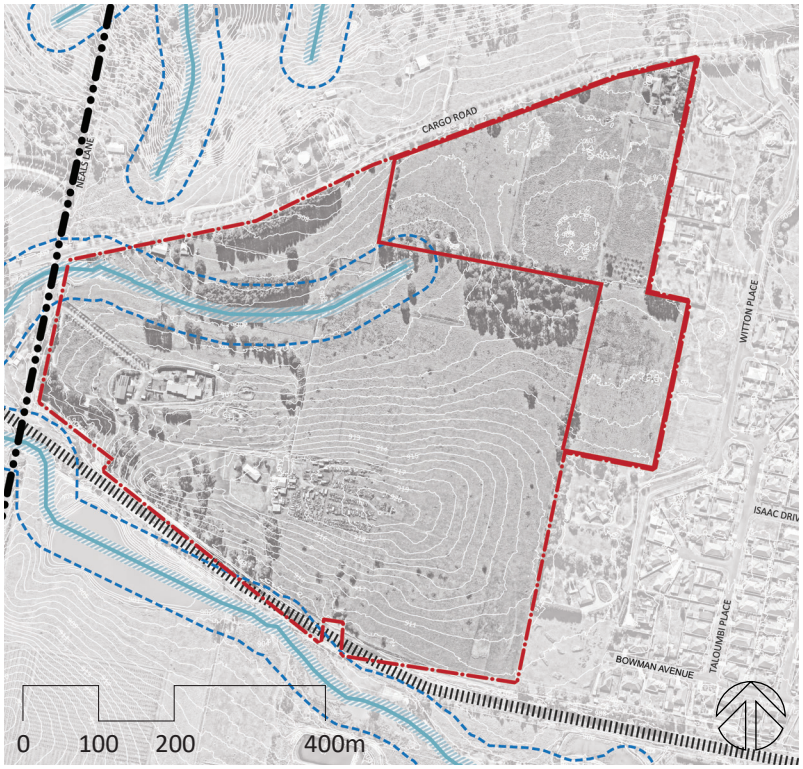


Figure 3.8 Waterways

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Waterways and Riparian Land

- Riparian Zone (40 metres)
- Strahler Stream Order 1
- Strahler Stream Order 2
- Riparian Buffer (BAM)

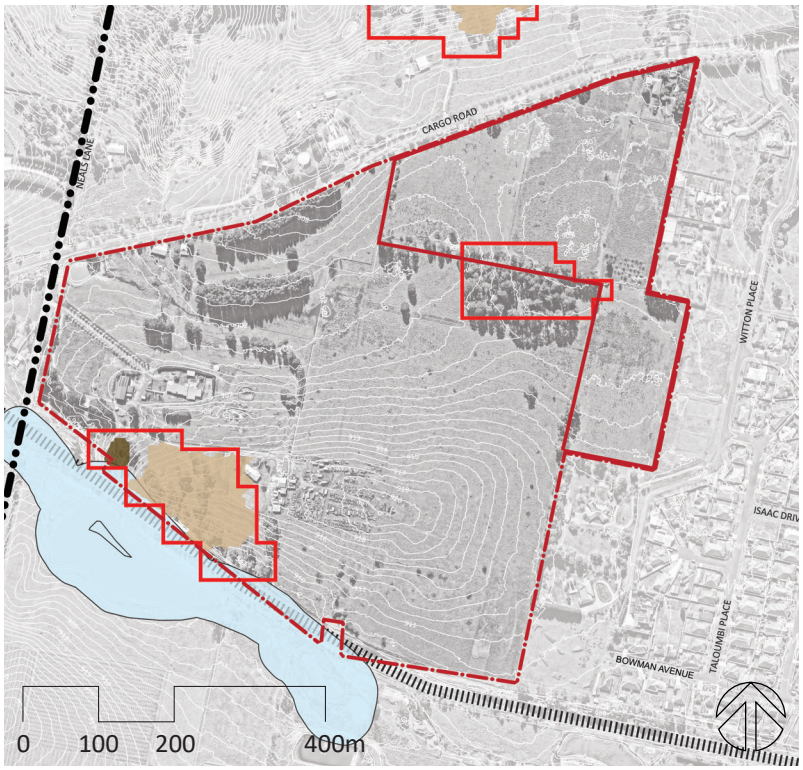


Figure 3.9 Terrestrial and aquatic biodiversity

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Biodiversity

- Terrestrial Biodiversity—High Sensitivity (Orange LEP 2011)
- Key Fish Habitat
- PCT 3366 (Grassy Woodlands—Central Tableland Clay Apple Box Grassy Forest)
- PCT3376 (Grassy Woodlands—Southern Tableland Grassy Box Woodland)

Fauna

Habitat attributes for the Regent Honeyeater, Bush Stone-Curlew, Speckled Warbler, Brown Treecreeper, White fronted Chat, Little Eagle, Booroolong Frog, Scarlet Robin, Flame Robin, Superb Parrot, Australian Painted Snipe, Yellow Bellied Sheath-Tail Bat and the Diamond Firetail are present within the Stage 1 site. The relatively small extent of habitat and the availability of alternative habitat sites within the surrounding locality indicate that there is likely to be limited habitation within the site. No threatened fauna species have been identified within the Stage 1 site.

Source: 'Preliminary Flora and Fauna Assessment' (Envirowest Consulting Pty Ltd, March 2023).

3.3.6 Climate

Orange has a cool temperate climate, experiencing cold wet winters and warm dry summers. High temperatures peak in January at an average of 26.6 °C and low temperatures dip in July to an average of 1.6°C. The city's climate, including annual rainfall, are strongly influenced at the local scale by the geomorphology of the Gaanha bula—Mount Canobolas volcanic complex. Among other factors, the mountain and adjoining elevated foothills are subject to higher average annual rainfall (900-949mm) than surrounding landscapes. Data from Orange Airport indicates an average annual rainfall of 945mm. Rainfall is most significant in November with an average of 94.1mm, April being the driest month of the year with an average of 45.3mm (see Figures 3.10 and 3.11).

Availability of soil moisture is lowest in summer and not usually limiting in winter when rainfall exceeds evaporation. Low winter temperatures restrict plant growth from May to September so that plan growth is most active during Spring and Autumn.

Climate change projections for NSW are prepared by the NSW and Australian Regional Climate Modelling (NARCliM) project and published by the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW). Current projections for the Witton Place Candidate Area are sourced from the Adapt NSW online Climate Projections Map and are summarised in Table 3.2 below. These indicate significant long term structural changes to the local climate, whether under 'Low' or 'High' modelling scenarios. In general, the projections indicate an increase in average mean, minimum and maximum temperatures, a substantial reduction in average rainfall. These changes will coincide with an increase in the number of hot days (35°C or above) during summer and a substantial decrease in cold nights (below 2°C) in winter. These latter trends in particular place great importance on the need for urban cooling to be considered as part of the urban design response for the candidate area.

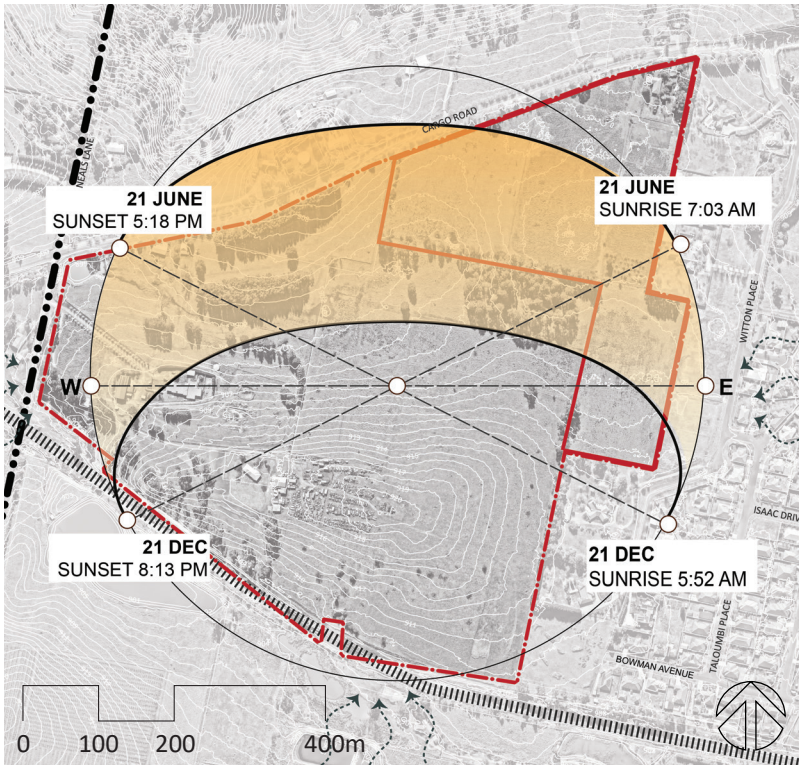


Figure 3.10 Local climate

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site
- Prevailing Winds

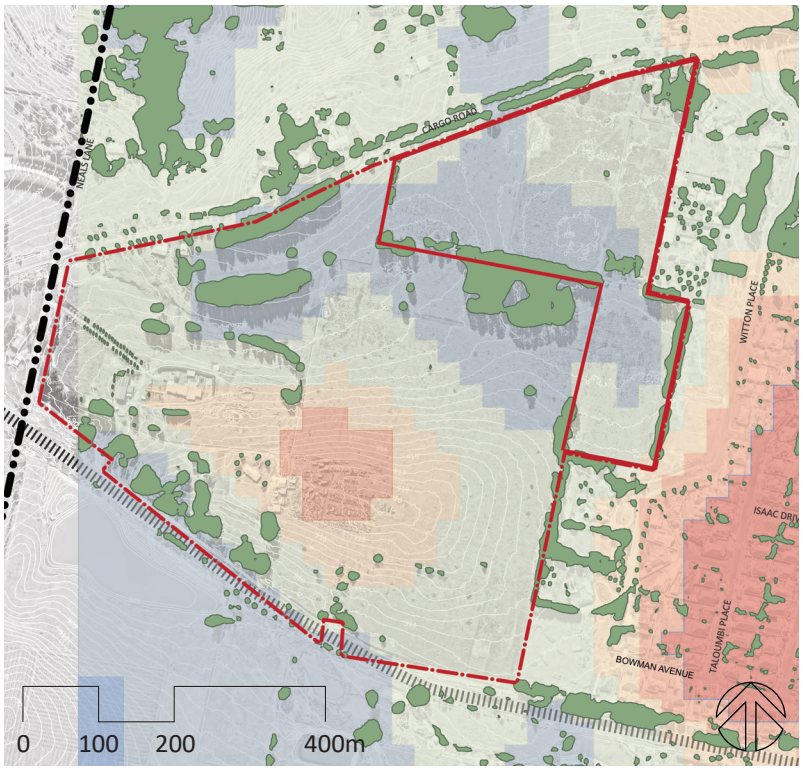


Figure 3.11 Urban heat (Landsat 8 thermal imaging, February 2022)

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Urban Heat (2022)

- Reference Band
- 0- 1.7
- 1.7- 2.9
- 2.9- 4.2
- 4.2- 5.3
- 5.3 >

Table 3.2 Climate change projections (NARCliM) for the Witton Place Candidate Area, 2030-49 and 2080-99

	2030-49		2080-99	
	Low Emissions (SSP1-2.6)	**High Emissions (SSP3-7.0)**	**Low Emissions (SSP1-2.6)**	**High Emissions (SSP3-7.0)**
Change in average mean temperature				
Summer (Dec-Feb)	+1.40°C	+1.67°C	+1.77°C	+4.41°C
Winter (Jun-Aug)	+0.73°C	+1.10°C	+1.02°C	+3.34°C
Annual (Jan-Dec)	+1.07°C	+1.37°C	+1.43°C	+4.04°C
Change in average maximum temperature				
Summer (Dec-Feb)	+1.54°C	+1.86°C	+1.92°C	+4.58°C
Winter (Jun-Aug)	+0.75°C	+1.19°C	+1.03°C	+3.54°C
Annual (Jan-Dec)	+1.16°C	+1.49°C	+1.51°C	+4.22°C
Change in average minimum temperature				
Summer (Dec-Feb)	+1.24°C	+1.50°C	+1.58°C	+4.28°C
Winter (Jun-Aug)	+0.70°C	+1.02°C	+1.00°C	+3.17°C
Annual (Jan-Dec)	+0.98°C	+1.26°C	+1.33°C	+3.85°C
Change in average rainfall				
Summer (Dec-Feb)	-7.76%	-11.53%	-12.29%	-1.02%
Winter (Jun-Aug)	-7.09%	-6.55%	-1.42%	-19.42%
Annual (Jan-Dec)	-8.95%	-8.55%	-9.59%	-14.30%
Change in hot days (35°C or above)				
Summer (Dec-Feb)	+2.94 days	+3.93 days	+4.44 days	+15.64 days
Winter (Jun-Aug)	+0.00 days	+0.00 days	+0.00 days	+0.00 days
Annual (Jan-Dec)	+3.18 days	+4.39 days	+4.97 days	+19.82 days
Change in cold nights (below 2°C)				
Summer (Dec-Feb)	-0.07 days	-0.05 days	-0.06 days	-0.08 days
Winter (Jun-Aug)	-10.16 days	-14.85 days	-14.09 days	-42.79 days
Annual (Jan-Dec)	-17.11 days	-23.13 days	-24.09 days	-62.47 days
Severe fire weather days (FFDI above 50)				
Summer (Dec-Feb)	+0.31 days	+0.25 days	+0.50 days	+1.44 days
Winter (Jun-Aug)	+0.00 days	+0.00 days	+0.00 days	+0.00 days
Annual (Jan-Dec)	+0.35 days	+0.40 days	+0.67 days	+2.30 days

Source: Adapt NSW Climate Projections Map (https://www.climatechange.environment.nsw.gov.au/projections-map), accessed 1 November 2024.

3.4 Hazards and risk management

3.4.1 Drinking water catchment

The Witton Place Candidate Area is located within the Molong Dam Drinking Water Catchment (see Figure 3.12). Molong Dam is operated by Cabonne Council and is the primary town water source for Molong, Cumnock and Yeoval. The Cabonne Settlement Strategy 2021-2041 (May 2021) contains the following provisions regarding the Molong Dam Drinking Water Catchment—

Drinking Water Catchment: Settlement growth should seek to minimise or mitigate development of land in key drinking water catchments, particularly the Molong Creek/Dam catchment, unless higher standards of water management demonstrate impacts can be avoided or mitigated.

The drinking water catchment status of the land means that water quality management infrastructure will need to be incorporated into the public open space planning for the candidate area.

3.4.2 Biophysical Strategic Agricultural Land

The Stage 1 site is mapped as Biophysical Strategic Agricultural Land ("BSAL") on the NSW Government's Biophysical Strategic Agricultural Land Map (see Figure 3.13). BSAL represent landscapes with high quality soil and water resources capable of sustaining high levels of agricultural productivity. The Towac and Spring Hill soil landscapes that dominate the southern half of the City of Orange are generally considered to comprise BSAL.

Source: NSW Department of Planning and Environment 2013, Biophysical Strategic Agricultural Land Map.

3.4.3 Flood risk

The Witton Place Candidate Area and Stage 1 site are located outside of the study area for the Blackmans Swamp Creek and Ploughmans Creek Floodplain Risk Management Study and Plan (Lyall & Associates, December 2020) (see Figure 3.14). Flood risk will need to be addressed as part of any future development application to subdivide the Stage 1 site, and will need to be addressed as part of any future planning proposal for other land within the Witton Place Candidate Area.

Source: Blackmans Swamp Creek and Ploughmans Creek Floodplain Risk Management Study and Plan (Lyall & Associates, December 2020).

3.4.4 Bush fire

Land within the Stage 1 site and broader Witton Place Candidate Area is identified as having bush fire potential on the NSW Bush Fire Prone Land Map (see Figure 3.15). Land is categorised as Vegetation Category 1 (Forest, woodlands, heaths (tall and short), forested wetlands and timber plantations) and Vegetation Category 3 (Grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands). The inclusion of the land on the NSW Bush Fire Prone land Map is a trigger for development proposals to undertake site-specific assessment of bush fire risk, including the determination of any management measures required under Planning for Bush Fire Protection (NSW Rural Fire Service, November 2019).

A 'Bushfire Strategic Assessment' (Barnson Pty Ltd and Envirowest Consulting Pty Ltd, 30 May 2024) has been undertaken for the Stage 1 site. This identifies the need for Asset Protection Zones (APZs) to facilitate residential development within the Stage 1 site (25 metres for land adjoining Vegetation Category 3 land and 11 metres for land adjoining grassland).

Source: Bushfire Strategic Assessment (Barnson Pty Ltd and Envirowest Consulting Pty Ltd, May 2024).

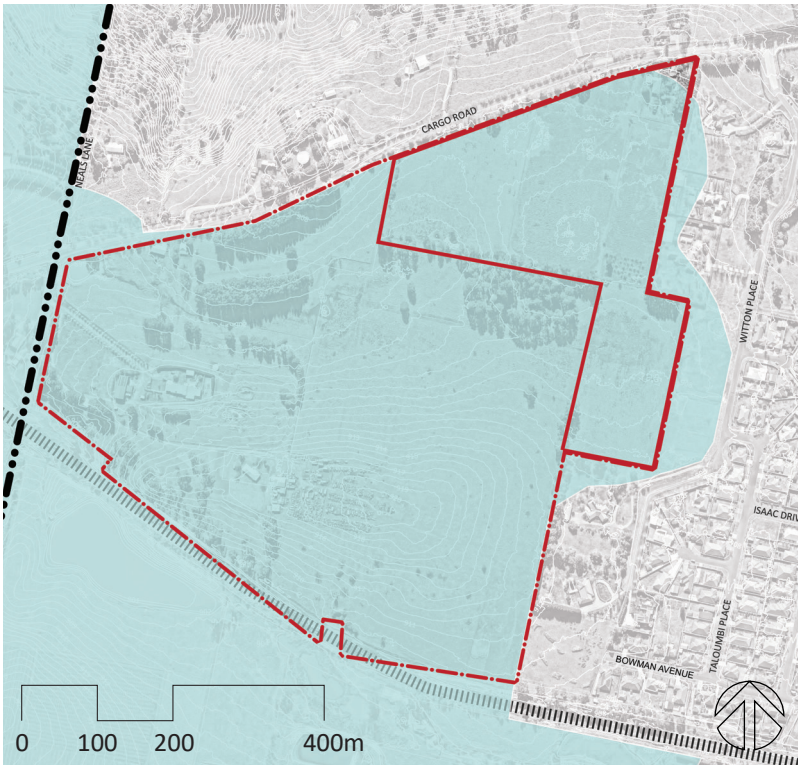


Figure 3.12 Drinking water catchment

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site
- Drinking Water Catchment (Orange LEP 2011)

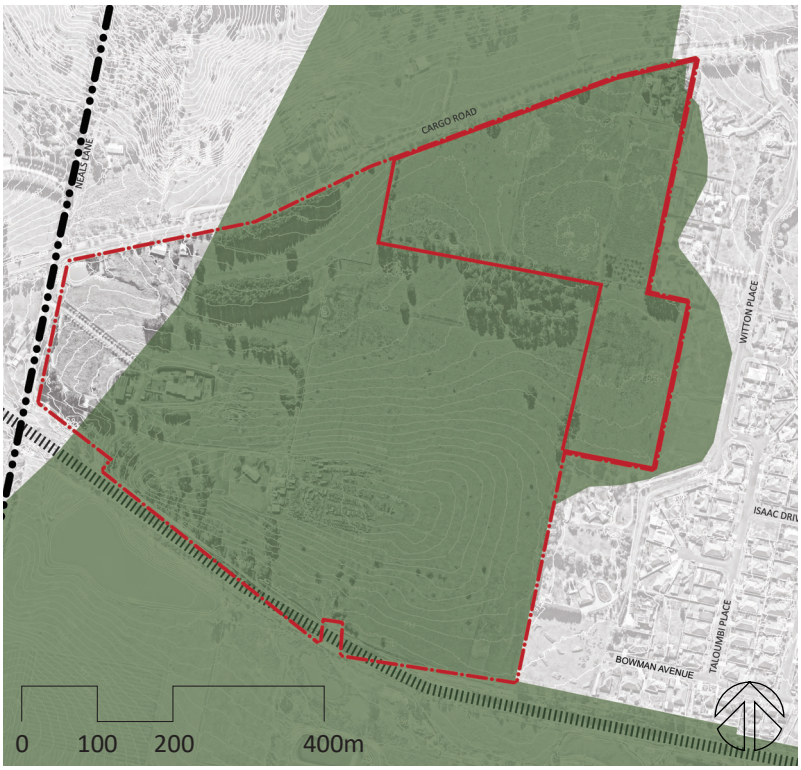


Figure 3.13 Biophysical strategic agricultural land

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site
- Biophysical Strategic Agricultural Land

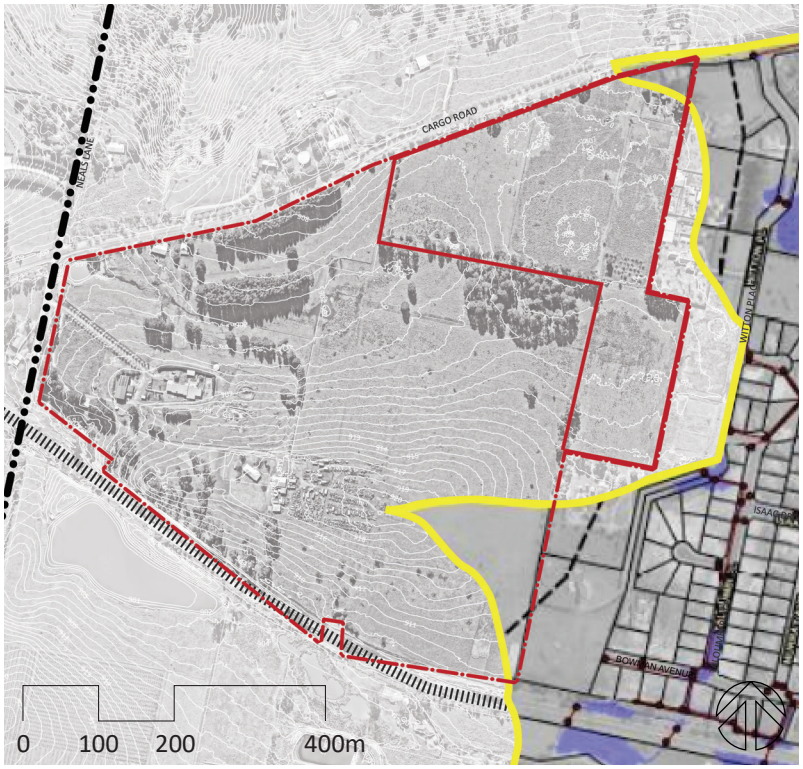


Figure 3.14 Flood risk

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Flood Planning (BSC&PC FRMP&S, December 2020)

- Catchment Boundary
- FRM Plan Study Area Boundary
- Probable Maximum Flood (PMF)
- Flood Planning Area (Mainstream)
- Flood Planning Area (Overland Flow)

Figure 3.15 Bush fire prone land

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Bush Fire Prone Land

- Vegetation Category 1
- Vegetation Category 3
- Asset Protection Zone (APZ)

3.4.4 Contamination

Due to the historic use of land within the Witton Place Candidate Area for agricultural and other specified purposes, remediation of the land is likely to be required in order to enable residential development on the land. A 'Preliminary Contamination Investigation' (Envirowest Consulting Pty Ptd, 14 April 2023) has been prepared for the Stage 1 site. This identifies the need for a Remediation Action Plan to accompany any future development application for future subdivision of the site.

Source: Preliminary Contamination Investigation (Envirowest Consulting Pty Ptd, April 2023).

3.5 Scenic protection and views

The Witton Place Candidate Area is located on the western entry into the City, which is currently characterised by planted rows of fruit, cedar and oak trees, which provide a buffer from viewing into and across the site (see Figure 3.16).

The broader area and the site are nominated as a Scenic Protection Zone under Council's Development Control Plan due to the height of the site. Larger lots present along the ridgeline of Witton Place creating a visual buffer to any development that occurs to the west.

Key views into the site are located at Neals Lane and from Witton Place and Bowan Avenue. Views to Gaanha Bula—Mount Canobolas are located within the site.

3.6 Cultural heritage

3.6.1 Aboriginal cultural heritage

The Stage 1 site is not identified within the Orange Aboriginal Heritage Report (OAHR) as a site of significance, located on a major watercourse or on land with significant topography or natural features. An AHIMS search was conducted with a 200m buffer, and no Aboriginal sites or places are recorded or have been declared in the search area. Future Development Applications for the site will need to be supported by an Archaeology Technical Report and engagement with the Orange Local Aboriginal Lands Council is required.

3.6.2 Non-Indigenous cultural heritage

Several items of local heritage significance are located in the vicinity (ie, within 1 kilometre) of the Witton Place Candidate Area. These are described in Figure 3.17 and Table 3.3 below.

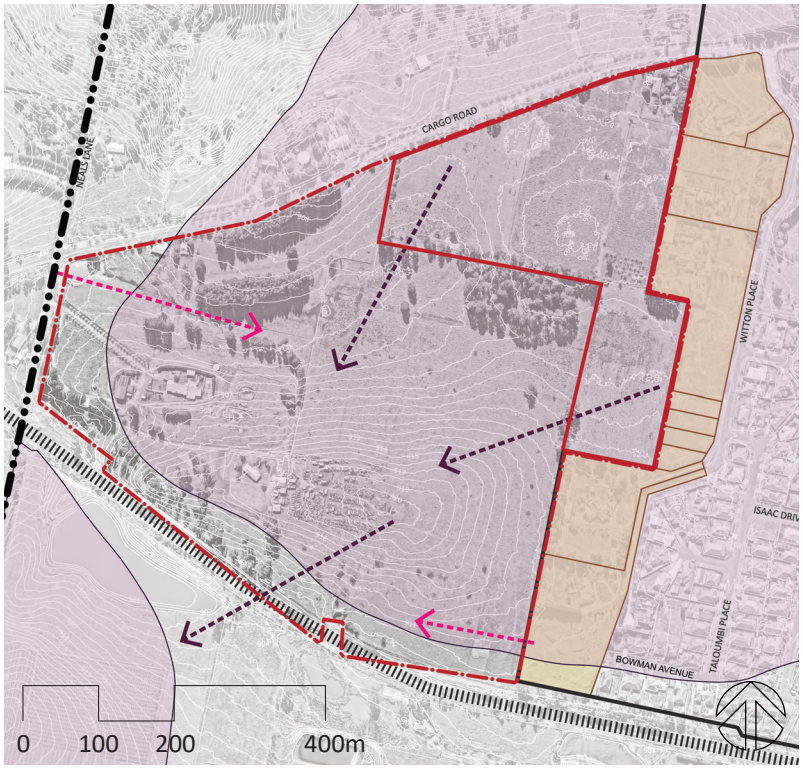


Figure 3.16 Scenic protection and views

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Soil Types

- Views into the site
- Views to Gaanha Bula—Mount Canobolas
- Scenic Protection Zone (Orange DCP 2004)
- Ridgeline

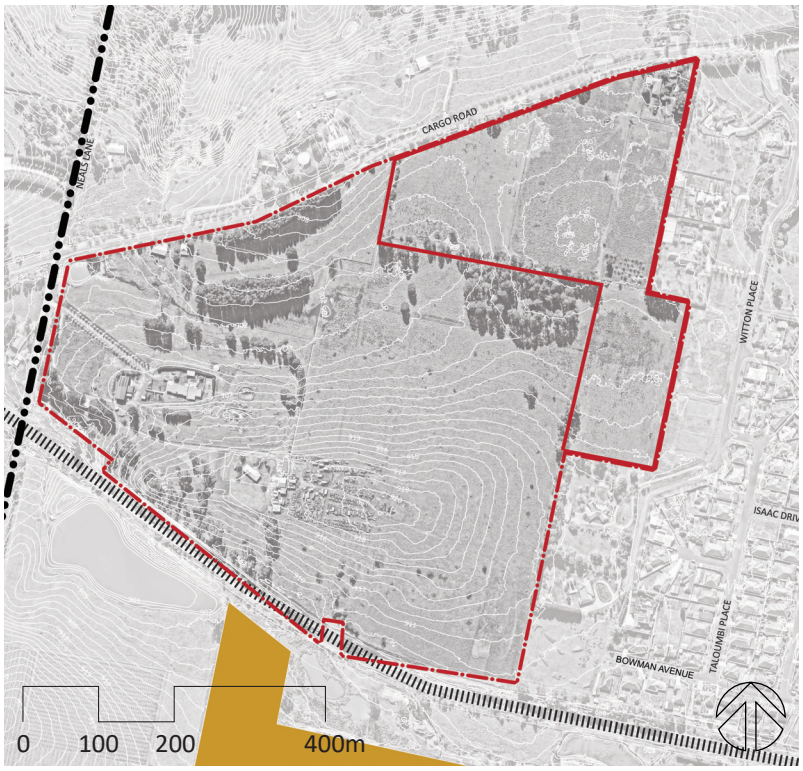


Figure 3.17 Cultural heritage

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site
- Heritage Item (Orange LEP 2011)

Table 3.3 Listed heritage items located in the vicinity of the Witton Place Candidate Area

Item Number	Significance	Name	Address	Description
I19	Local	"Glengarra" homestead	84 Mount Pleasant Lane	A substantial house from the Federation period, retains the distinctive original features and is set within a planned garden including mature plantings, complements streetscape and is a visual landmark in the area.
I324	Local	Rossi Orchard (brick barn and shed)	98 Mount Pleasant Lane	A pair of rare vernacular agricultural buildings probably associated with orcharding which retain their original character and complement the setting. The buildings comprise of a small timber framed, weatherboard and fibro clad building with corrugated iron gable roof and enclosed verandah, independent brick chimney. The second structure to the rear of large steel-clad sheds appears to be a multi-level brick storage barn with corrugated iron roof.
I325	Local	"Mount Pleasant" house and barn	101 Mount Pleasant Lane	A pair of large attached residential spaces including an earlier Edwardian residence with later inter-war extension, the site retains the original character and complements the rural setting.
I59	Local	"Melrya House"	119 Ploughmans Lane	The buildings retain their original Victorian character including distinctive roof form and skylight and perimeter verandahs and are complemented by a substantial garden including early planting. An excellent example of building of this period. Main house is unaltered.
I195	Local	"Carwoola" brick sheds	4 Gartrell Way	A pair of brick ancillary buildings that are rare within the area for their retention after being adapted for accommodation and storage and remain capable of interpretation.

3.7 Movement networks

3.7.1 Street network

The Witton Place Candidate Area currently has direct street frontage only to Cargo Road (north) and Neals Lane (west). Cargo Road is a classified regional road, and a 'Conceptual Intersection Layout' has been submitted in support of the planning proposal for the Stage 1 site.

Initial site analysis for the candidate area has identified the potential for new east-west street connections to Bowan Avenue and Witton Place. These would be subject to future development applications and the agreement of the respective landowners (see Figure 3.18).

3.7.2 Pedestrian and cycle networks

An existing shared path is located along Cargo Road linking Witton Place to the Ploughmans Wetlands in the east. This link forms part of a larger planned connection that will ultimately link Cargo Road to Orange's wider shareway network. It is noted that the transport analysis submitted in support of the planning proposal for the Stage 1 site proposes the extension of this existing Cargo Road shared path along the candidate area's northern boundary.

3.7.3 Public transport

The 537 bus route operates to the east of the candidate area, travelling along Witton Place, Isaac Drive, Murray Avenue and Bowman Avenue. This route forms a loop servicing Ploughmans Valley Areas 3 and 4, and links this to the Orange City Centre/ Orange Central Square area within the Orange CBD via Coronation Drive and Summer Street. The 537 route operates seven times a day Monday to Friday (6.58am, 8.58am, 10.58am, 12.58pm, 2.28pm, 4.28pm and 5.28pm) and five times on Saturday (8.58am, 10.58am, 12.58pm, 2.58pm and 4.58pm).

3.8 Land use and urban form

3.8.1 Cadastral pattern

The candidate area's present-day cadastral pattern has generally remained substantially the same since its subdivision in the late nineteenth century. Some of the eastern-most portions of the original land subdivision are now incorporated into the adjoining Ploughmans Valley neighbourhood (Area 4) (see Figure 3.19).

3.8.2 Land use zoning

The candidate area is currently zoned C3 Environmental Management and RU1 Primary Production. Land within the candidate area is subject to a minimum lot size standard of 100 hectares under the Orange LEP 2011 (see Figure 3.20).

3.8.3 Built form

The adjoining southern area of Ploughmans Valley is characterised by single lot dwelling houses as the dominant housing type. Dwelling houses are typically set back at least 5.5 metres from the front boundary of each lot. These include a large proportion of 4-5 bedroom dwellings. The primary material used throughout the area is brick, with some houses rendered. Land adjoining the candidate area immediately to the east is subdivided into larger lots located along the Witton Place ridgeline (see Figure 3.21).

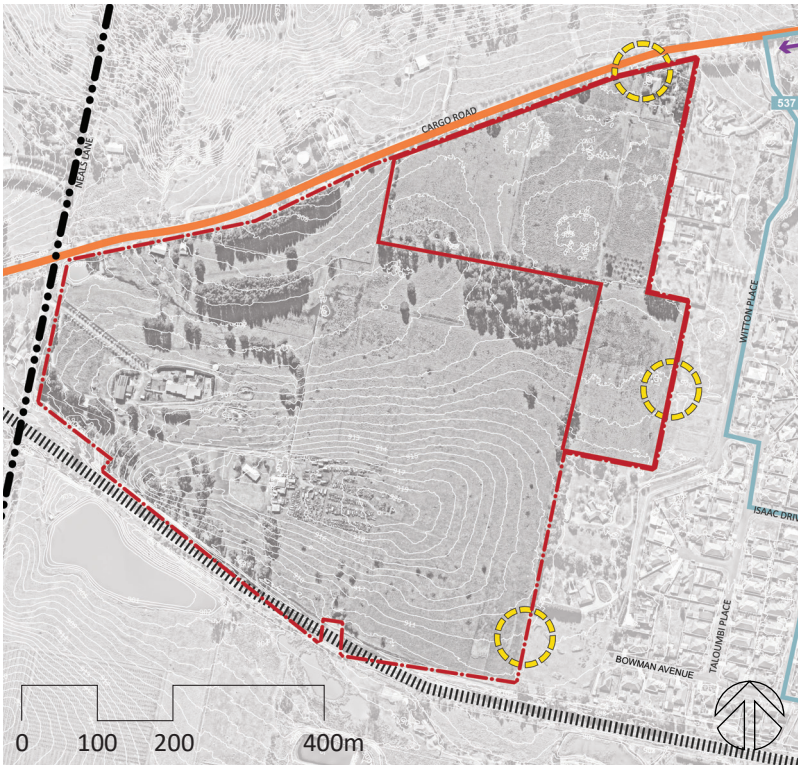


Figure 3.18 Movement networks

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Movement Networks

- Regional Road
- Shared Path
- 537 Bus Route
- Potential Road Connections (Orange Local Housing Strategy, June 2022)

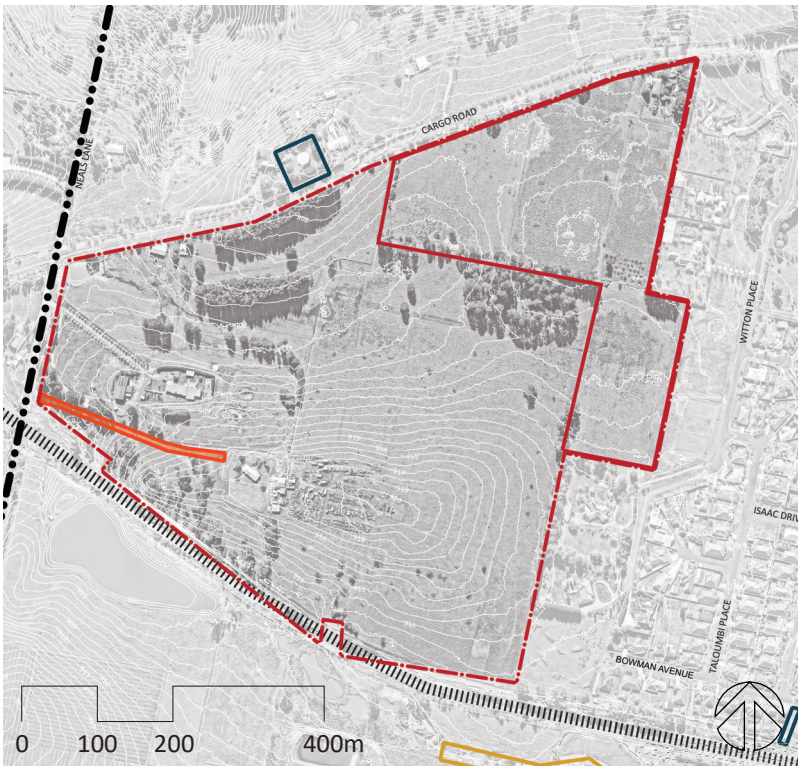


Figure 3.19 Ownership and easements

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Land Categories

- Council-owned Land
- Crown Land
- Easement

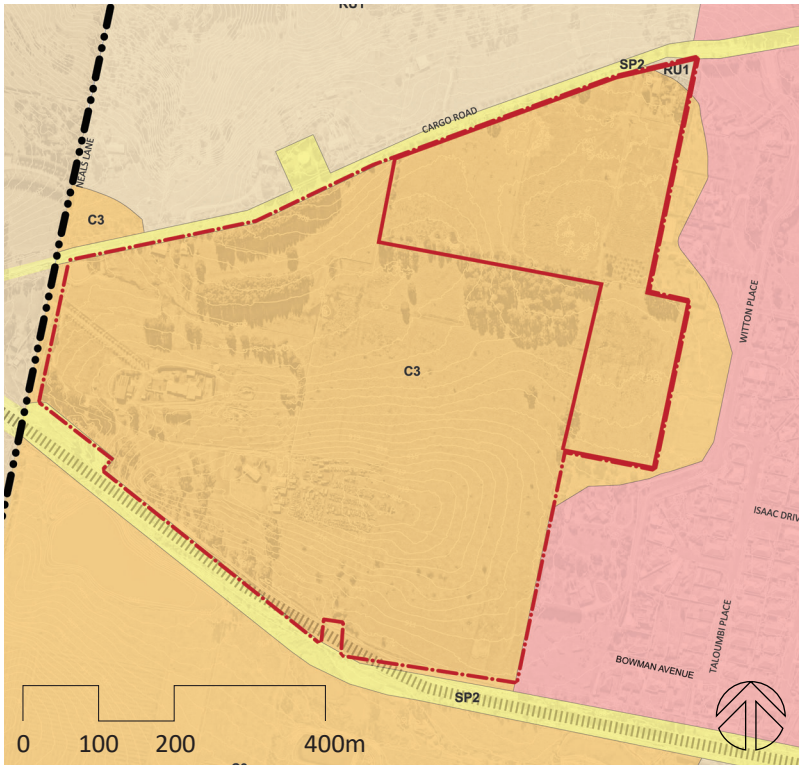


Figure 3.20 Land use zoning

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Land Use Zones

- C3 Environmental Management
- R1 General Residential
- R2 Low Density Residential
- RE1 Public Recreation
- RU1 Primary Production
- RU2 Rural Landscape
- SP2 Infrastructure

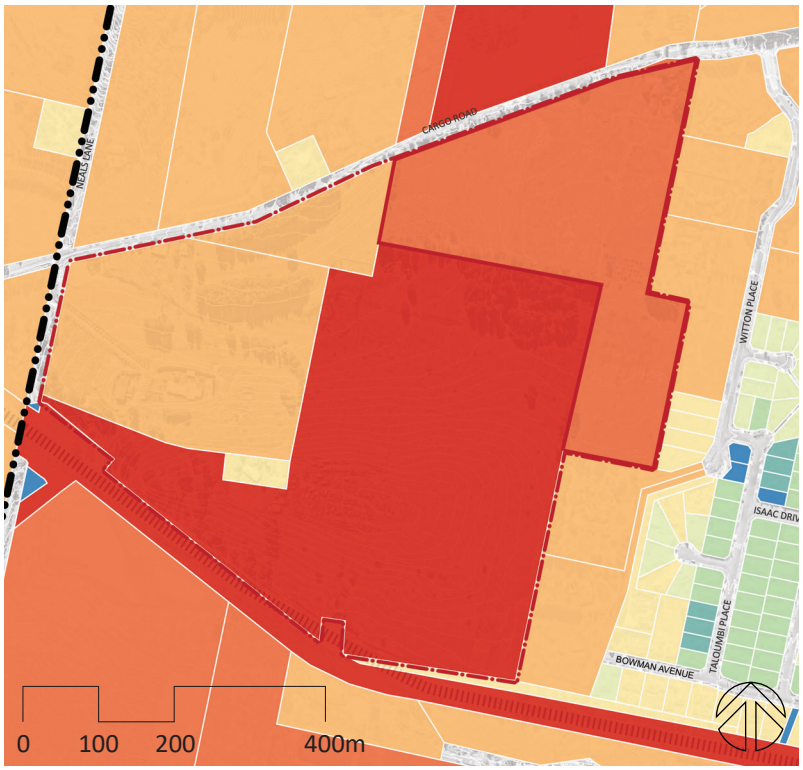


Figure 3.21 Lot sizes

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Lot Sizes

- < 800m^2
- 800m^2 - 900m^2
- 900m^2 - 1000m^2
- 1000m^2 - 1500m^2
- 1500m^2 - 1 ha
- 1 ha - 10 ha
- 10 ha - 20 ha
- > 20 ha

3.9 Social infrastructure

A range of social infrastructure facilities is available within 1 km, 2 km and 5 km of the candidate area, including:

- One playground within 1 km of the candidate area,
- the Ploughmans Valley Wetland Walk and Wetland Loop within 1km of the candidate area,
- Two pre-schools/early learning centres within 4 km of the area,
- One high school (Orange High School) within 4 km of the candidate area, and
- One primary school (Calare Public School) within 4 km of the candidate area.

There are no significant recreation facilities or social infrastructure located within convenient walking distance (400 metres) of the candidate area (see Figure 3.22).

3.10 Utilities and services

3.10.1 Water supply

The candidate area is currently serviced from the Ploughmans Valley Potable Water Booster Station, and is not within the Orange dual water supply zone. The Stage 1 site and candidate area are capable of being connected to the reticulated water supply (see Figure 3.23).

3.10.2 Sewerage

The candidate area is currently outside of existing gravity network catchments. The Stage 1 site and candidate area are capable of being connected into the network (see Figure 3.24).

3.10.3 Stormwater management

The candidate area is located outside of the outside of the Orange stormwater harvesting catchment, and currently sits within a rural catchment zone (see Figure 3.25).

Figure 3.22 Social Infrastructure

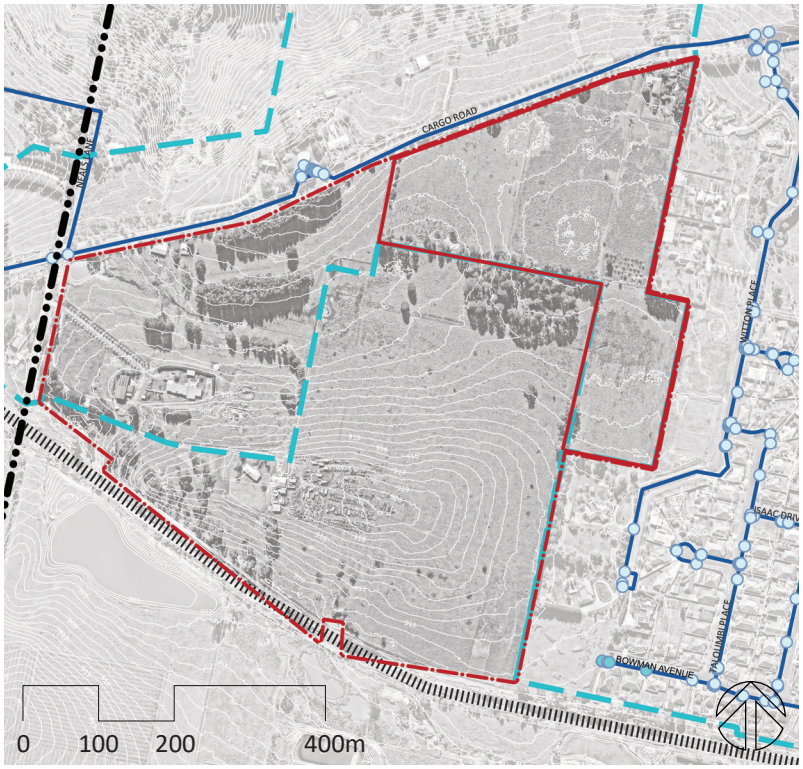


Figure 3.23 Water supply infrastructure

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Water Reticulation

- Water Zone
- Water Pipes
- Water Node

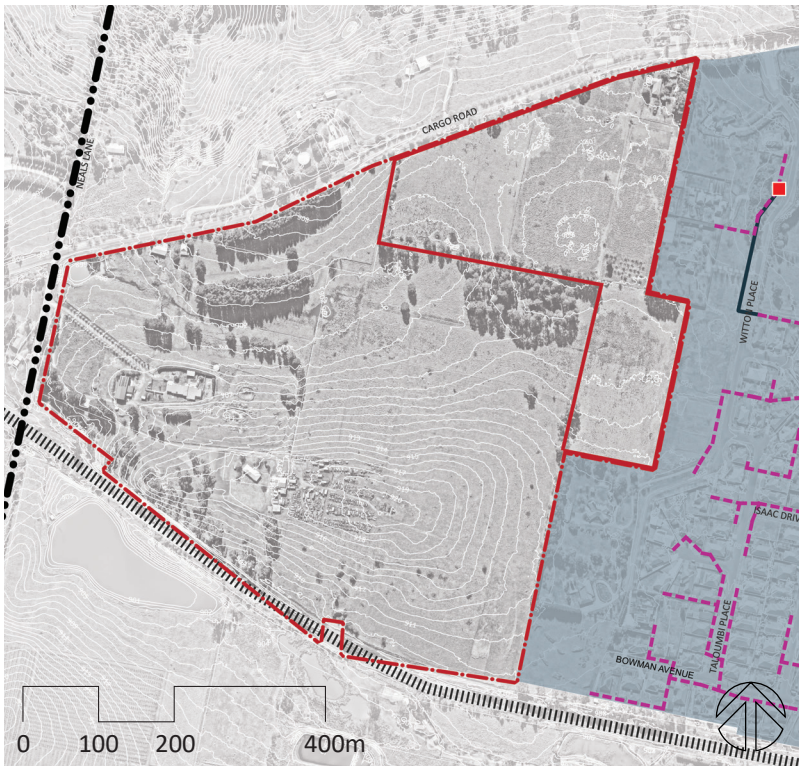


Figure 3.24 Sewer infrastructure

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Sewer Reticulation

- Sewer Gravity Main
- Sewer Rising Main
- Sewer Pump Station
- Sewer Basin

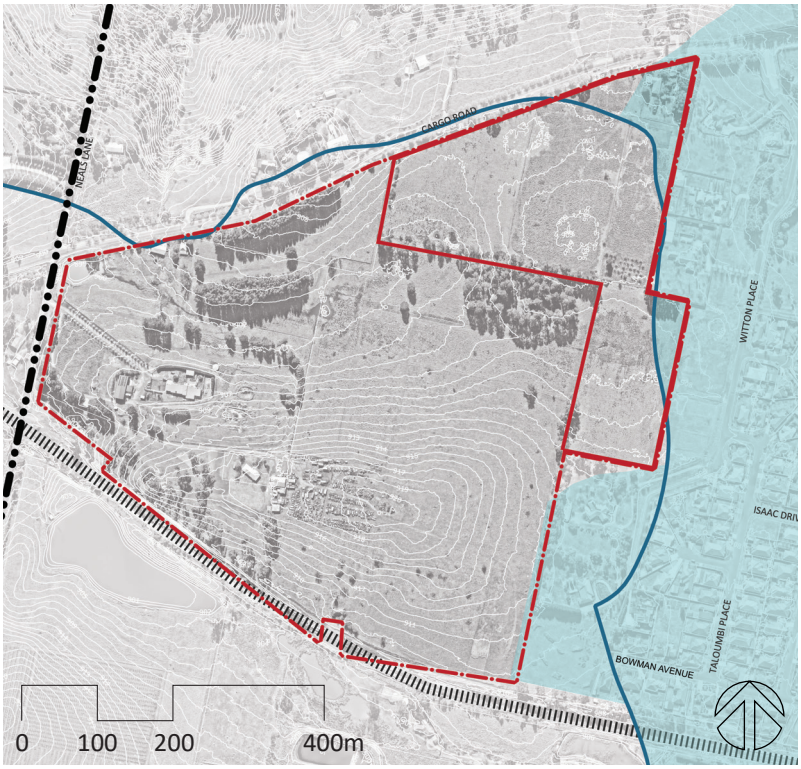


Figure 3.25 Stormwater catchments

Key

LGA Boundary

Witton Place Candidate Area

Stage 1 Site

Stormwater Catchments

Stormwater Catchment - Urban

Stormwater Catchment - Rural

4 Constraints and Opportunities

The unique landscape character, location and local context of the Witton Place Candidate Area provide opportunities for the delivery of a diverse range of housing types and settings within a framework of great place design. Realising this outcome requires a responsive approach to the analysis and prioritisation of site constraints and opportunities. These are summarised below.

Constraints		Opportunities	
Natural Systems			
C1	The candidate area contains a headwater flow path that forms part of the Molong Creek catchment (Molong Dam Drinking Water Catchment). Riparian buffers and on-site water quality treatment will be required.	O1	There is the opportunity to enhance neighbourhood character and amenity by integrating water quality management infrastructure into a connected green grid of public open space and waterways.
C2	The candidate area's hydrogeology forms part of the Orange Basalt Groundwater Source. Detailed site planning will be required to be supported by technical studies to identify direct and indirect impacts on the groundwater source and related groundwater dependent ecosystems.	O2	The site's soil landscape provides opportunities for a site-specific landscape response that guides species selection as an essential feature of neighbourhood character.
C3	A preliminary flora and fauna assessment has only been prepared for the Stage 1 site, although the remaining parts of the candidate area are known to contain significant examples of habitat. Detailed site planning for the candidate area will be required to be supported by additional biodiversity assessment reporting to identity risks and avoidance measures.	O3	There is an opportunity to retain and enhance native vegetation plant community types through appropriate site layout and ownership, including the design of the precinct's public open space network and identification of areas requiring ongoing conservation and management.
C4	The long-term impacts of climate change, including the increasing intensity and frequency of warm dry summers and extreme weather events, poses risks to human and animal health, infrastructure and landscapes and requires mitigation.	O4	There are opportunities to enhance neighbourhood character, resilience and amenity through the adopting of urban cooling measures, including— • water sensitive urban design • protection of riparian zones within the green space network • promotion of 'cool landscape' and 'cool building' design and materials • provision for urban tree canopy (public an private realms)

Constraints		Opportunities	
Hazards and Risk Management			
C5	Development will need to protect water quality within the Molong Dam Drinking Water Catchment.	O5	Water quality and flood risk management (including basins, green space and wetlands) has the potential to contribute to the character and amenity of the precinct if integrated into the public green space network.
C6	Future development will need to protect the productive potential of surrounding Biophysical Strategic Agricultural Land through appropriate buffers and land use transitions.	O6	The requirements for suitable land use and density transitions to surrounding agricultural land provide the opportunity to vary lot sizes according to their location within the candidate area.
C7	Flood studies have not been undertaken for the subject site. Development will need to ensure a neutral or beneficial post development flows.		
C8	Development will be required to address planning for bush fire protection requirements, including asset protection zones. Development within the Stage 1 site may require higher construction standards for perimeter lots.		
C9	Preliminary contamination assessment has only been carried out for land within the Stage 1 site. Remediation of this land is likely to be required in order to enable residential development.		
Scenic Protection and Views			
C10	The site forms part of the western entry into the City of Orange along Cargo Road and is nominated as a Scenic Protection Zone.	O7	There is an opportunity to preserve the low density visual character of the Cargo Road corridor through retention of the existing roadside trees and placement of larger lots along this frontage.
		O8	There is an opportunity for streets, open spaces and houses to capitalise on high quality views to Gaanha Bula—Mount Canobolas and beyond through appropriate site layout and view sharing.
		O9	The unique topography of the site provides an opportunity to align streets, public spaces and houses to the site's natural landform as an essential element of neighbourhood character.

Constraints and Opportunities

Constraints		Opportunities	
Cultural Heritage			
C11	Aboriginal cultural heritage and Connecting with Country associations with the candidate area have not been assessed in depth. There is a need to better understand if the candidate area has any archaeological significance. Further studies and engagement with local Aboriginal stakeholders (including the Orange Local Aboriginal Lands Council) is required.	O10	There are several non-Aboriginal heritage items located in vicinity of the site, some of which are partially visible from the site and reference the orcharding history. There are opportunities to acknowledge this shared history in the detailed public realm and open space design for the candidate area.
		O11	There is an opportunity for future stages of the candidate area to explore Connecting with Country opportunities with the local Aboriginal community, particularly through the design of the future public realm and open space network.
		O12	There are opportunities to protect and share public views to Gaanha Bula—Mount Canobolas and to protect existing streams and remnant native vegetation communities as important building blocks of a future Connecting with Country framework for the candidate area.
Land Use and Urban Form			
C12	The existing lot and landholding pattern within the candidate area is a potential constraint to efficient development staging and coordinated place making.	O13	The candidate area presents an opportunity for a diverse mix of sensitively located lot and housing types (ie, large lots, conventional lots and smaller lots) to enable housing affordability, ageing in place and social inclusion over time.
C13	There is limited housing variety within the adjoining Ploughmans Valley South area, which is zoned as R2 Low Density Residential. Lot sizes within the adjoining residential area vary between 800m2 and 1500m2, with lots sizes of 10 hectares located along the ridgeline in response to its scenic protection status. Concept planning will need to retain a low density interface with these areas.	O14	There are opportunities to provide new recreation and parkland within the candidate area to cater for a diverse range of local needs, serving both new residents and existing residents of Ploughmans Valley.
C14	The candidate area is not located within convenient walking distance (400 metres) of any existing recreation facilities or social infrastructure.	O15	There are opportunities to enhance local character and make better use of land fronting public open space through the sensitive location of smaller lot housing in these locations.

Constraints		Opportunities	
Movement networks			
C15	There are limited opportunities for direct connection of the candidate area to existing public road network, with potential future eastern connections (Witton Place and Bowman Avenue) requiring the establishment of public road reserves on private land.	O16	There are opportunities to improve traffic circulation and connectivity within the established Ploughmans Valley South street grid by creating new east-west street connections (Witton Place and Bowman Avenue) to the candidate area.
C16	The proposed road connection to Cargo Road (regional road) requires the consent of Transport for NSW, with no opportunities available for multiple connections. Development of the Stage 1 site will require secondary access (either to Cargo Road or Witton Place) for emergency vehicles.	O17	There are opportunities to promote active transport and reduce demand for private car use through appropriate design measures, including— • creation of a permeable street grid to disperse traffic and encourage slower driving • planning for internal and external active transport priority routes (on street and off street) • prioritisation of pedestrian convenience and safety (eg, lighting) • provision for the extension of the existing public transport (local bus) network
C17	The candidate area is poorly served by active transport (pedestrian and cycling) infrastructure, with limited opportunities to link the area with existing active transport networks limited to Cargo Road.	O18	There is an opportunity to support the use and viability of public transport and active transport routes through the appropriate location of higher density (smaller lot) and the creation of key activity nodes (recreation facilities, seating, bus stops).
C18	The likely high dependence on private cars for future residents requires mitigation measures to minimise carbon use and ensure a basic level of social inclusion and equity.	O19	Connection to the existing Cargo Road shared path is a strategic opportunity to connect the candidate area to the Orange CBD, wetlands loop and beyond.
Utilities and Services			
C19	Sewer servicing infrastructure is required to connect into the existing network.	O20	The site is capable of being connected into existing water, electricity, and other utilities.
C20	There are constraints on the ability to provide water supply above AHD 900 metres that will need to be resolved as part of future development of the candidate area.		

5 Urban Design Concept

This section describes Council's place design principles and preliminary concept plan for the Witton Place Candidate Area. These are intended to guide future planning for the candidate area, including the preparation of place-specific development controls. The place design principles and preliminary concept plan are based on the seven urban design strategies for regional NSW as described in the publication Urban Design for Regional NSW: A Guide for Creating Healthy Built Environments in Regional NSW (Government Architect New South Wales, June 2020, ISBN 978-0-6483700-6-2). These strategies and their accompanying objectives are attached as Appendix A to this report.

5.1 Place design principles

The place design principles for the Witton Place Candidate Area are described below. The principles reflect the housing growth context and the constraints and opportunities identified in sections 2 and 4 above. The place design principles aim to ensure future detailed planning responds to the unique characteristics of the candidate area and its existing Ploughmans Valley and scenic protection area contexts, while at the same time ensuring an holistic and layered approach to guiding future neighbourhood character, sustainable place-making and social inclusion in line with the housing priorities of the Orange Local Housing Strategy.

Place Design Principle	Key Elements	Urban Design Strategies for Regional NSW (Appendix A)
Principle 1—Respond to Country *Responding to Country is the starting point for good design. It means taking a Country-centred approach to place design that recognises the importance of traditional ways of connecting with and caring for the land. It also means understanding the unique landscape, cultural and ecological qualities of each site, and how these inform its 'place' as part of Country.*	1.1 Place design should prioritise opportunities for Connecting with Country in accordance with the processes, principles and design guidance described in the NSW *Connecting with Country* framework. 1.2 Place design safeguards potentially culturally significant features, including waterways and riparian zones, topographic features and views to surrounding landmarks, including Gaanha Bula—Mount Canobolas.	Strategy 1—Engage with the history and culture of places

Place Design Principle	Key Elements	Urban Design Strategies for Regional NSW (Appendix A)
Principle 2—Celebrate local character *Place design responds to the site's unique landscape and townscape qualities, and provides opportunities for great place making and a distinctive local character.*	2.1 Place design incorporates a legible hierarchy of streets and public open spaces. 2.2 Street and public open space layout supports opportunities for meeting places (activity nodes) and wayfinding. 2.3 Housing is located to face onto public open space, providing a well-designed built edge delineating the public and private realms. 2.4 Place design provides visual richness through a diversity of compatible housing types and styles, with smaller lot housing located close to amenity (eg, parks and green spaces).	Strategy 1—Engage with the history and culture of places Strategy 5—Balance urban growth
Principle 3—Protect scenic values and views *Place design preserves and enhances the unique scenic qualities and views associated with the site, including its role as a visual gateway to the City of Orange and its setting within the City's western (Canobolas sheet basalt) hillscapes.*	3.1 Place design recognises the site's setting as a visual gateway for the City. 3.2 Larger lots are located along the Cargo Road edge to preserve the road corridor's semi-rural character. 3.3 Place design views to Gaanha Bula—Mount Canobolas and surrounding rural hillscapes. 3.4 Larger lots and public open space are located in areas with higher visual prominence. 3.5 Open space is designed so that high points maintain their natural landform qualities and enable public views and vistas to Gaanha Bula—Mount Canobolas and surrounding countryside. 3.6 Streets and street blocks are oriented to enable a variety of public and private view sharing opportunities, and to maintain a strong visual connection between the site and its surrounding natural and rural landscapes.	Strategy 2—Integrate with the natural environment and landscape

Urban Design Concept

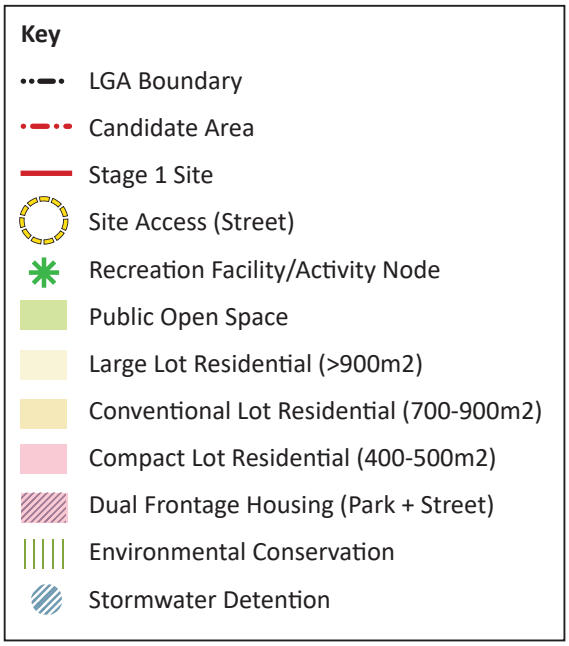
Place Design Principle	Key Elements	Urban Design Strategies for Regional NSW (Appendix A)
Principle 4—Fit with context *Place design achieves a good fit with its context, and complements and contributes to the City's wider character and liveability, including the site's established Ploughmans Valley context.*	4.1 Place design supports existing urban neighbourhoods by extending the City's green and social infrastructure, and by enabling the provision of new parks and recreational infrastructure accessible to existing residents. 4.2 Lot sizes along the candidate area's eastern edge are compatible with the established low density character of Ploughmans Valley. 4.3 Place design provides for a transition in residential lot and street block sizes along the candidate area's other edges to match in with different edge conditions (eg, Cargo Road to the north, railway line to the south). 4.4 Place design protects agricultural land through appropriate buffers and lot sizes. 4.5 Place design provides for future street connections to Witton Place and Bowman Avenue.	Strategy 5—Balance urban growth
Principle 5—Provide housing diversity and choice *Place design should provide for a diverse range of housing needs over time by enabling an adaptable mix of compatible lot sizes, housing types, tenures and affordability levels.*	5.1 Place design responds to the long-term social needs of the City, including those for housing diversity and affordability. 5.2 Street block and lot patterns enable robustness and adaptability to a variety of housing needs as these change over time. 5.3 Lot sizes and dwelling density are located to respond to variations in site qualities and topography. 5.4 Place design supports aging in place by providing for housing diversity at the neighbourhood scale. 5.5 Place design supports liveable housing outcomes in line with the *Livable Housing Design Guidelines*.	Strategy 5—Balance urban growth Strategy 6—Increase options for diverse and healthy living

Place Design Principle	Key Elements	Urban Design Strategies for Regional NSW (Appendix A)
Principle 6—Provide connected, healthy and inclusive places *Place design fosters a sense of belonging and community, and provides for safe, walkable and beautiful streets that connect people to homes, open spaces and surrounding communities.*	6.1 Provide opportunities for play, exercise and healthy living for people of all ages and abilities. 6.2 The street network responds to topography on the site and provides for a well-connected, comfortable public domain that creates opportunities for the community to easily move within and beyond the site. 6.3 A connected open space network provides opportunities for community focal points and opportunities to gather. 6.4 Green and blue spaces and networks are incorporated as building blocks of neighbourhood character and liveability.	Strategy 2—Integrate with the natural environment and landscape Strategy 6—Increase options for diverse and healthy living Strategy 4—Prioritise connectivity, walkability and cycling opportunities
Principle 7—Design with nature *Place design prioritises the protection of biodiversity 'hot spots', including riparian zones and remnant native vegetation communities, and protects natural site features including landform, hydrology, groundwater sources and geology.*	7.1 Areas of ecological importance, including areas of significant native vegetation and habitat, are strategically identified and protected. 7.2 Topography and natural landscape elements are expressed through the formation of the street and public open space (green grid) networks, and through responsive variations in lot and street block sizes. 7.3 Waterways and riparian zones are protected by being incorporated into the public open space (green infrastructure) network.	Strategy 2—Integrate with the natural environment and landscape

Place Design Principle	Key Elements	Urban Design Strategies for Regional NSW (Appendix A)
Principle 8—Protect water catchments *Place design should protect the drinking water catchment through the inclusion of appropriate water quality management and water sensitive urban design (WSUD) infrastructure.*	8.1 Waterways and stormwater management are integrated into the green infrastructure network. 8.2 Provision is made for appropriate water quality management infrastructure, including wetlands. 8.3 Place design is informed by total water cycle management principles. 8.4 Green and blue infrastructure supports natural rehydration of the landscape and regeneration of groundwater sources.	Strategy 2—Integrate with the natural environment and landscape
Principle 9—Sustainability and resilience *Place design should manage risks and hazards, including climate change, and promote sustainable neighbourhoods.*	9.1 Place design minimises demand for vehicle trips by incorporating a permeable and walkable street grid and public space network, optimising the feasibility of future public transport (bus) routes through the appropriate location of smaller lot housing, and by connecting to the City's strategic shared path network. 9.2 Urban heat is managed through the provision for cool landscapes at the neighbourhood scale, including the strategic allocation of green and blue spaces and provision for the incorporation of WSUD infrastructure in road reserves and other public spaces. 9.3 Place design supports the long-term expansion of the City's urban tree canopy in accordance with Council's adopted urban forest strategy.	Strategy 7—Respond to climate conditions and their impacts

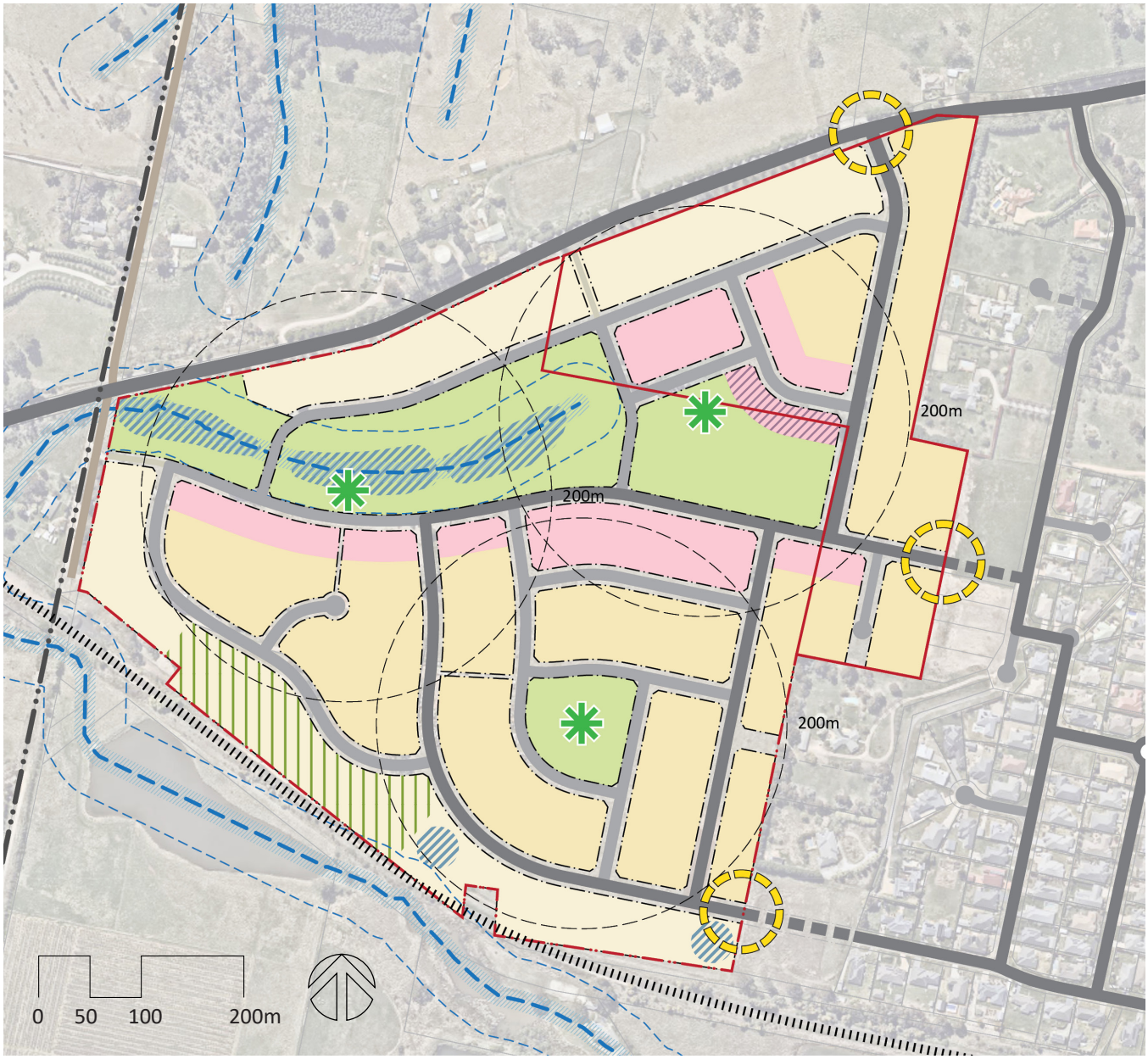
5.2 Preliminary concept plan

The preliminary concept plan for the Witton Place Candidate Area is described in Figures 5.1, 5.2 and 5.3 below. The plan embodies the place design principles described above and sets out an indicative street block, movement network, public open space and land use framework for the candidate area. This will form the basis of future detailed planning for the candidate area, including the preparation of place-specific development controls.



Urban Design Concept

Figure 5.1 Preliminary concept plan for the Witton Place Candidate Area



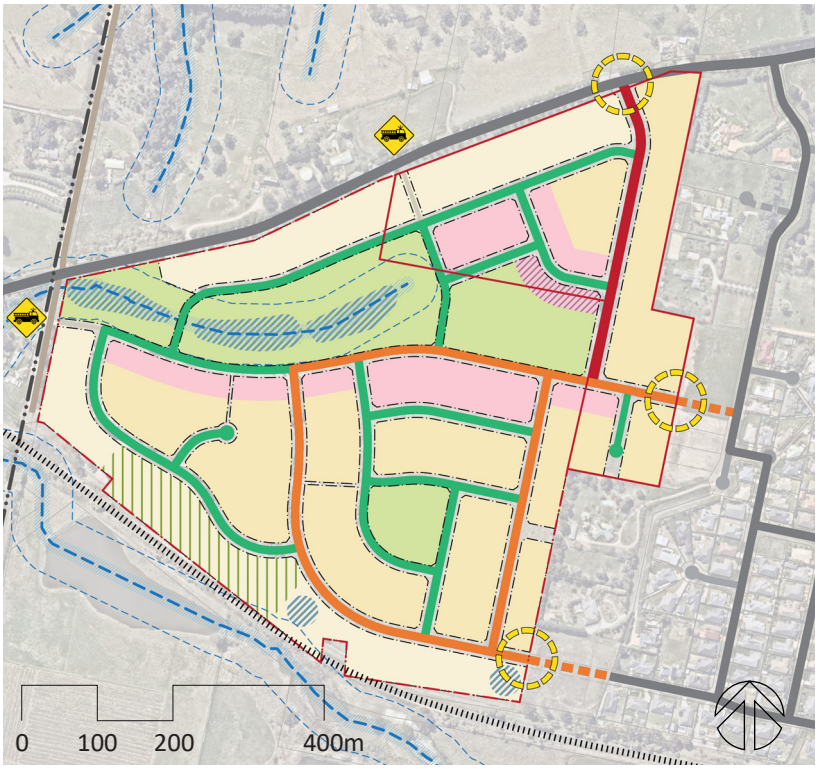


Figure 5.2 Conceptual street hierarchy

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Street Types

- Distributor (Main Entry)
- Collector
- Local Access
- Emergency Access

Access

- Street Access (Public)
- Emergency Vehicles Only

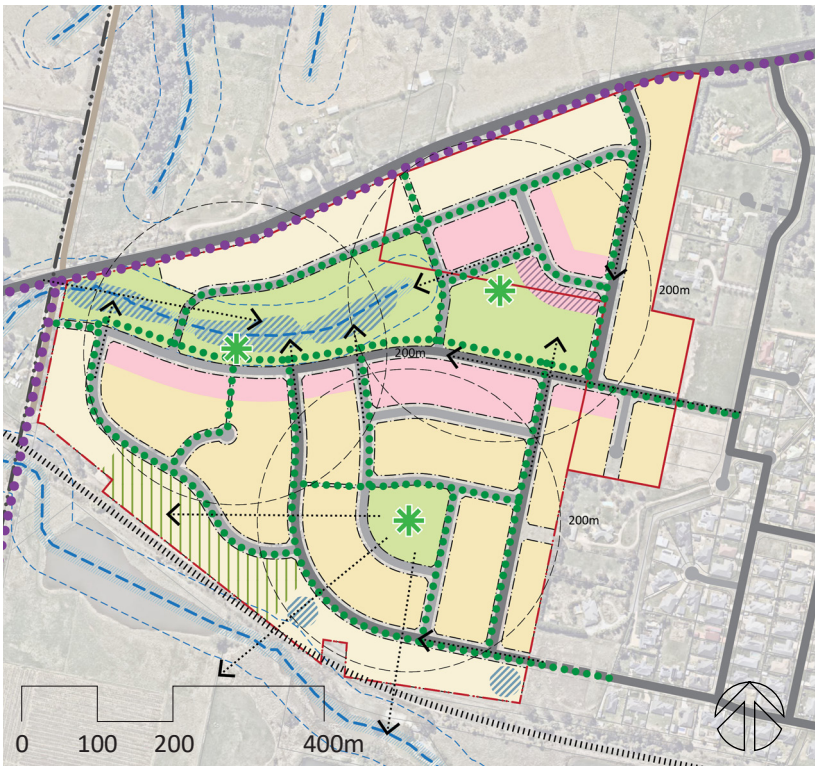


Figure 5.3 Conceptual active transport network

Key

- LGA Boundary
- Witton Place Candidate Area
- Stage 1 Site

Active Transport

- Regional Active Transport Route (Long Term)
- Local Active Transport Route
- Key Views and Sightlines
- Recreation Facility/Activity Node

References

NSW Government publications

Central West and Orana Climate Change Snapshot (NSW Department of Climate Change, Energy, the Environment and Water, August 2024, ISBN 978-1-76058-808-3)

Central West and Orana Regional Plan 2041 (NSW Department of Planning, Industry and Environment, December 2022, ISBN 978-1-76058-639-3)

Connecting with Country: Good Practice Guidance on how to Respond to Country in the Planning, Design and Delivery of Built Environment Projects in NSW (Government Architect NSW, November 2023)

Orange, Blayney and Cabonne Regional Economic Development Strategy—2023 Update (Department of Regional NSW, February 2023)

Urban Design for Regional NSW: A Guide for Creating Healthy Built Environments in Regional NSW (Government Architect New South Wales, June 2020, ISBN 978-0-6483700-6-2)

Planning for Bush Fire Protection: A Guide for Councils, Planners, Fire Authorities and Developers (NSW Rural Fire Service, November 2019, ISBN 978-0-646-99126-9)

Orange City Council policies and instruments

'Blackmans Swamp Creek and Ploughmans Creek Floodplain Risk Management Study and Plan', Revision 1.2 (Lyall & Associates, adopted 1 December 2020)

Greening Orange—Our Urban Forest Strategy (Orange City Council, adopted 6 August 2024)

Orange Contributions Plan 2024 (Orange City Council, adopted 2 April 2024)

Orange Development Control Plan 2004 (as amended)

Orange Local Environmental Plan 2011 (as amended)

Orange Local Housing Strategy (Orange City Council, adopted 7 June 2022)

Orange Local Strategic Planning Statement (Orange City Council, adopted 15 September 2020)

Orange Subdivision and Development Code (Orange City Council, adopted 2 April 2024)

Technical studies

'277 Cargo Road, Orange—Concept Layout Traffic Noise Assessment' (Acoustik, 27 April 2023)

'Bushfire Strategic Study—277 Cargo Road, Orange NSW' (Barnson Pty Ltd and Envirowest Consulting Pty Ltd, 30 May 2024)

'Concept Sewer Servicing Strategy—277 Cargo Road, Orange' (Heath Consulting Engineers, 13 December 2023)

'Concept Sewer Servicing Strategy Addendum' (Orange City Council and Heath Consulting Engineers, 25 September 2024)

'Conceptual Intersection Layout', Drawing No. 19073-INT01 (Heath Consulting Engineers, September 2023)

'Preliminary Contamination Investigation—277 Cargo Road, Orange NSW' (Envirowest Consulting Pty Ltd, 14 April 2023)

'Preliminary Flora and Fauna Assessment—Proposed Residential Subdivision, 277 Cargo Road, Orange NSW' (Envirowest Consulting Pty Ltd, 29 March 2023)

'Transport Assessment—West Orange Residential Planning Proposal' (ARC Traffic + Transport, 17 November 2023)

'Transport Assessment Addendum' (Orange City Council and ARC Traffic + Transport, 1 October 2024)

'Tree Canopy Benchmark Study & Thermal Imaging—2022 Data' (Active Green Services, 23 September 2022)

Other documents

Livable Housing Design Guidelines, 4th edition (Livable Housing Australia, 2017)

Appendix A—Urban Design Strategies for Regional NSW

Urban Design Strategy	Objectives
Strategy 1—Engage with the history and culture of places Urban environments in regional NSW are strongly defined by historic assets of European cultural heritage. However, these were preceded by places and landscapes tied to Aboriginal culture. Different histories and shared stories play out across all our regional cities, towns, and villages. Acknowledging and caring for the assets and landscapes that represent our histories and cultures supports community wellbeing, and helps to define places and contribute to their identity.	1.1 Enhance the sense of place and reinforce local identity; stronger connections to place support a sense of community and belonging. 1.2 Identify, protect, and improve awareness and respect for the unique characteristics and defining qualities of towns and urban areas; civic pride inspires people to better care for and protect their historical and cultural assets. 1.3 Respect the stories and memories of places, recognising cultural longevity and promoting its greater visibility (especially relating to Aboriginal culture and heritage). 1.4 Encourage economic activity and increase tourism by creating distinct and attractive places for businesses to trade and invest, and for people to visit. 1.5 Improve the value of the building or space and the overall place. 1.6 Provide opportunities for future generations to learn and benefit from significant buildings or spaces, their history and importance.

Urban Design Strategy	Objectives
Strategy 2—Integrate with the natural environment and landscape Connections with rural and natural landscapes are a unique aspect of daily life in many NSW regional areas. Most regional cities, towns, and villages have a strong connection with the natural environment, and with stories and experiences of Country. Careful planning and design is required to integrate urban development sustainably and appropriately.	2.1 Strengthen connection to Country, improving the health and wellbeing of people, places, and landscapes. 2.2 Provide amenity for local residents and visitors by creating interconnected networks of open space such as creek corridors and park systems – these offer expanded opportunities for walking and social activities to support people's health and wellbeing. 2.3 Mitigate climate impacts and temperature extremes by providing vegetation that can shade and cool urban areas. 2.4 Improve water and air quality by expanding green infrastructure. 2.5 Improve the quality and increase the value of the public realm; attractive and amenable streets and public spaces can enhance regional centres through good design and careful selection of landscaping and vegetation. 2.6 Support biodiversity and protect local flora and fauna by using local plant species which are particular to a regional area; using local species also creates a stronger connection with place and helps to strengthen nature-based local character and identity. 2.7 Strengthen and reinforce the environmental, economic, and social value of regional environmental elements such as bushland, rainforests, mountains, deserts, rivers, and lakes.

Appendix A

Urban Design Strategy	Objectives
Strategy 3—Revitalise main streets and town centres Main streets and town centres are the heart of many regional communities. They typically contain the biggest concentration of public and commercial facilities including places for people to gather and meet formally and informally. Main street buildings and public spaces record stories and histories, and carry a strong sense of local identity. They also host major events, parades, and festivals which celebrate the culture of an area and generate investment.	3.1 Create new or improved places for people and communities to gather, meet, and interact that are safe, enjoyable, and equitable; this makes towns more inviting, vibrant, and interesting, which attracts people to visit and live in the area. 3.2 Support new development, employment, business opportunities and prosperity by concentrating density and commercial activity. 3.3 Create a more diverse mix of uses and activities, attracting businesses and visitation through improved building and shopfront presentation designed to boost social and economic activity. 3.4 Encourage people to walk around town centres, and integrate pedestrian paths and cycling with vehicle access to create connections and networks that are safe and attractive as well as convenient and efficient. 3.5 Connect significant natural features, buildings, views, and cultural assets to make town centres more navigable, accessible, engaging and attractive, and to reinforce their local character.
Strategy 4—Prioritise connectivity, walkability and cycling opportunities For practical reasons relating to distances and population numbers, private cars are most likely to continue to be the dominant form of transport in many regional areas. However, there are opportunities to reduce car dependency near urban centres through good urban design, planning, and better public transport connections.	4.1 Facilitate increased activity and improved community health, including physical and mental health and wellbeing. 4.2 Create more walkable blocks, increasing pedestrian traffic in town centres; this improves local business exposure and reduces car dependency. 4.3 Allow development to be more sustainable, and reduce traffic congestion, car parking demand, and environmental impacts like noise and air pollution. 4.4 Make streets and spaces feel more vibrant, interesting, and safe, by having more people present, and facilitate social interaction and activity, which strengthens community cohesion. 4.5 Encourage active travel through walking and cycling to school by children and their carers.

Urban Design Strategy	Objectives
Strategy 5—Balance urban growth In many regional areas there is pressure for new housing development to occur at larger scales on greenfield sites outside town centres. However, the long-term impacts of dispersed, and sometimes isolated fringe development can have high economic and social costs. Urban design and strategic planning aim to achieve a sustainable balance between the consolidation and distribution of new development.	5.1 Manage development so that its density is appropriate across different urban settings, and respects local contexts and the sensitivity of heritage areas, environmental areas, and other influencing factors. 5.2 Find opportunities to provide new dwellings within a city or town centre which do not compromise local values relating to heritage and place. 5.3 Reduce car dependence and increase urban mobility through people living closer to town centres and in more walkable and sociable neighbourhoods. 5.4 Boost activity in main streets and town centres, through urban consolidation and increased local population living in close proximity. 5.5 Protect agricultural land around cities and towns—including for local food production. 5.6 Protect biodiversity and mitigate natural hazards by keeping urban development to a compact form and area rather than dispersed across the rural landscape. 5.7 Increase housing choice through offering mixed development types in both existing neighbourhoods and greenfield settings, and focus development on people's housing needs. 5.8 Retain and increase opportunities for the local production of fresh food.

Appendix A

Urban Design Strategy	Objectives
Strategy 6—Increase options for diverse and healthy living Regional populations are changing, and we need to respond by rethinking housing forms and densities, and providing new options. In particular, in many regional areas, design and planning needs to allow for the needs of older people. Proximity to essential services and a well-designed public realm make places attractive to live for both young and old.	6.1 Create built environments which are more diverse, varied, and vibrant. 6.2 Attract new residents through increasing housing choices and types, which can respond to varying needs and reinforce community stability. 6.3 Retain local populations and allow households to evolve and adapt over time in the same town, for example young people moving from the family home to a smaller home, and older people downsizing in their neighbourhood. 6.4 Support the sustained health of Country, the environment, the economy, people, and communities. 6.5 Create built environments which allow people of all abilities and ages to have access to healthy lifestyles that support mental health.
Strategy 7—Respond to climate conditions and their impacts Varied climate zones, landscapes, and topographies across NSW generate weather and temperature conditions that affect different regional urban settlements in different ways. Compared to long-term records the climate is changing—weather patterns are becoming less predictable, temperatures more extreme, sea levels are rising, and natural hazards such as bush fires, drought, and flooding are becoming more intense and more frequent.	7.1 Improve the amenity, health, and safety of the public realm, in day-to-day and extreme conditions. 7.2 Respond to and celebrate an area's predominant climate, for example a semi-tropical climate, or hot arid climate. 7.3 Mitigate risk and protect against natural hazards, such as bush fires, flooding, and extreme weather, to create safer, resilient towns and stable property values. 7.4 Reduce a development's environmental footprint, reducing carbon emissions through more compact and resource-efficient urban development. 7.5 Reduce energy costs by integrating passive environmental design features. 7.6 Mitigate and anticipate the particular impacts of climate change such as sea level rise, urban heat-island effect, prolonged drought, and increases in extreme weather events.

Source: *Urban Design for Regional NSW: A Guide for Creating Healthy Built Environments in Regional NSW*

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