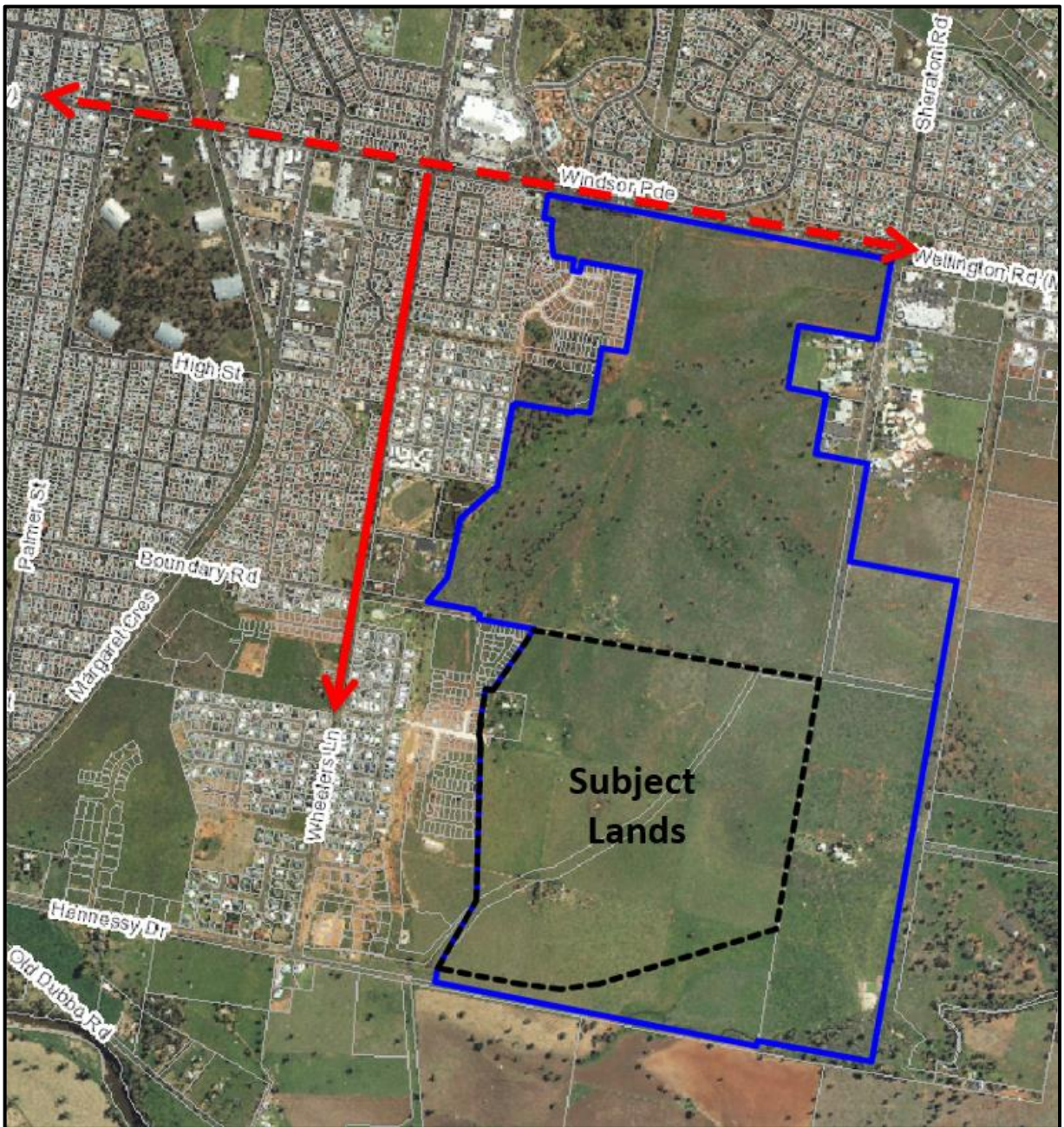


South-East Dubbo Residential Urban Release Area STAGE 1 STRUCTURE PLAN



Adopted by Council 25 May 2016

TABLE OF CONTENTS

1. Introduction	1
Figure 1: South-east Dubbo structure planning subject lands	1
2. Function	2
2.1 Background	2
2.2 Structure Plan Staging	3
Figure 2: Proposed staging of the structure planning process	3
3. Objectives	4
4. Planning Context and Role of the South-East Residential Urban Release Area	5
4.1 Dubbo Urban Areas Development Strategy	5
Figure 2: South-East Precinct – Dubbo Urban Areas Development Strategy	5
4.2 Dubbo Local Environmental Plan 2011 (DLEP)	6
Figure 3: Dubbo Residential Urban Release Areas – Dubbo Local Environmental Plan 2011	6
4.3 Residential Release Strategy: South-East Dubbo	7
Figure 4: Lands included in the South-East Residential Release Strategy	7
5. Constraints and Opportunities Analysis	8
5.1 Demographics	8
5.2 Geology	8
Figure 5: Soil types across in the southern section of the subject lands	9
Figure 6: Rock depths across Keswick Estate	10
5.3 Groundwater and Salinity	10
Figure 7: Hydrogeological Landscapes	11
Figure 8: Dubbo Local Environmental Plan 2011 – Natural Resource – Groundwater Vulnerability Map	12
5.4 Soil Classification and Type	12
5.5 Contamination	13
5.6 Slope and Terrain	13
Figure 9: Stormwater and topography map	14
5.7 Flooding	15
Figure 10: Flooding Map	15
5.8 Aboriginal and European Heritage	15
Figure 11: Location of K-OS-4	16
Figure 12: Items of archaeological significance	17
5.10 Acoustic	18
Figure 13: Acoustic Analysis Map	18
5.11 Biodiversity	19
Figure 14: Dubbo Local Environmental Plan 2011 – Natural Resource – Biodiversity Map	19
Figure 15: Ecological Analysis Map – Keswick Residential Estate	20
5.12 Surrounding Land Use Context	20

Figure 16: Surrounding land use constraints and opportunities	21
6. Strategic Residential Growth Principles	22
6.1 Strategic Objectives	22
6.2 Desired Future Character and Urban Form	22
6.3 Neighbourhood Centre Development	23
6.4 Land Subdivision	24
Figure 17: Poor ICI Ratio	25
Figure 18: Good ICI Ratio	26
6.5 Open Space and Recreation	27
6.6 Access and Movement	27
Figure 19: Access and Movement Map	28
6.7 Infrastructure	29
Figure 20: Servicing Constraints	30
6.8 Environment	31
6.9 Zoning Southlakes and other lands	32
6.10 Development Density Southlakes and other lands	33
7. Staging of Development	34
Figure 21: Development staging	34
8. Monitoring and Review	35

1. Introduction

The South-East Dubbo Residential Urban Release Area consists of approximately 354 hectares of land situated at the south-eastern edge of the established urban area of Dubbo, as shown in Figure 1. Eulomogo Creek traverses the precinct in the south-east, providing connectivity to the Macquarie River. The subject lands considered as a component of this Structure Plan include the residue of Keswick Estate and land referred to as 'Hillview' or the Southlakes Estate.

The majority of the subject lands (apart from the residue of Keswick) are classified as Urban Release Area under the provisions of the Dubbo Local Environmental Plan 2011. This and other lands in the area, place a focus on strategic planning and especially structure planning to ensure neighbourhoods are created that support future growth and provide comfortable living environments with a high level of amenity, identity and sense of community today and in the future.

The precinct is predominately zoned R2 Low Density Residential with the eastern edge of the land zoned R5 Large Lot Residential due to the close proximity of the land to an existing adjoining hard rock quarry to the east.

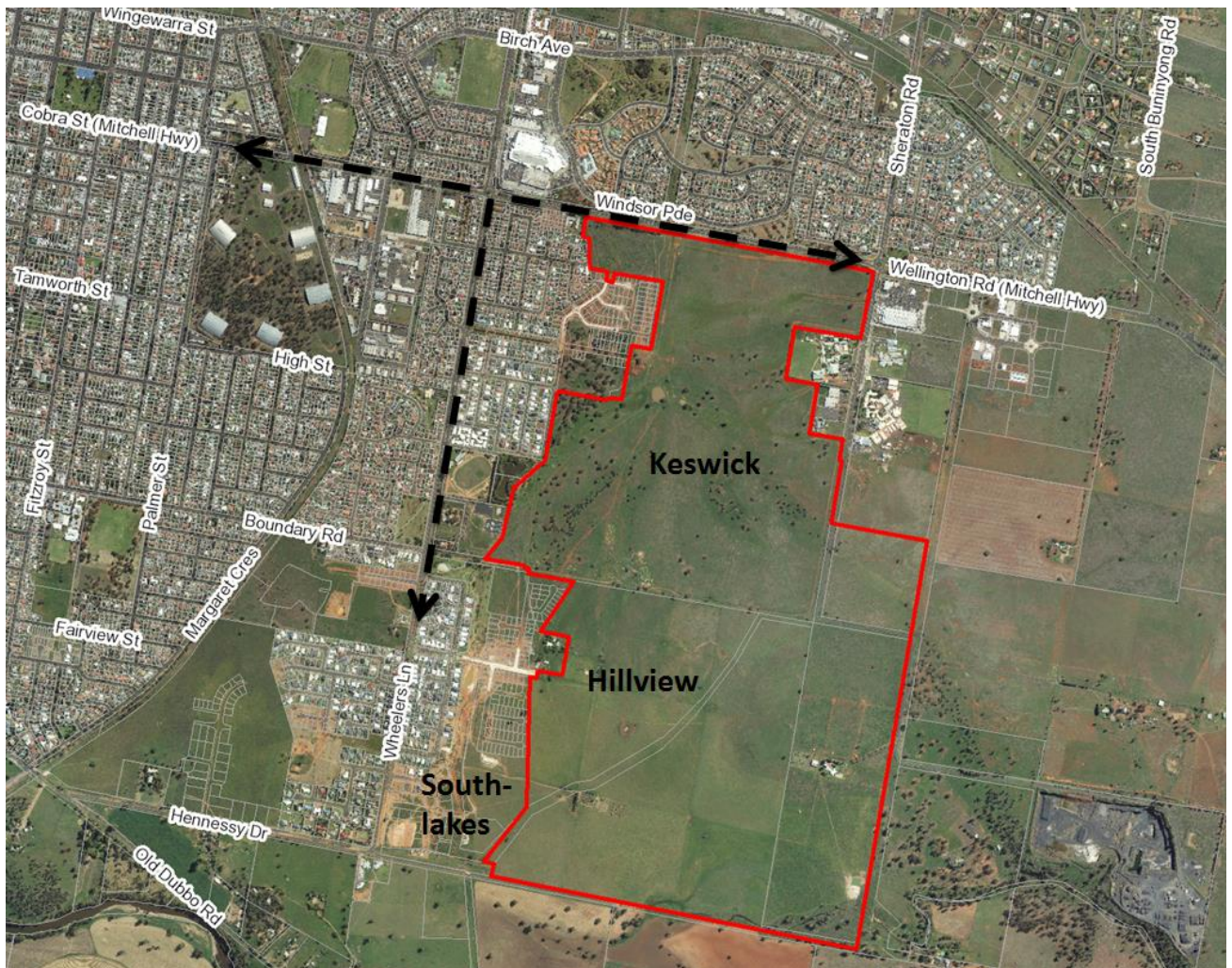


Figure 1: South-east Dubbo structure planning subject lands

2. Function

2.1 Background

The former Dubbo City Council, at its meeting on 23 September 2013, considered a report from independent Property and Town Planning Consultants, Hill PDA, in respect of the status and success of the Dubbo Residential Areas Development Strategy and the state of the Dubbo Housing Market.

The former Dubbo City Council, in consideration of this report, resolved to prepare a number of Structure Plans to assist future development within the defined Residential Urban Release Areas (URAs) in the Dubbo Local Environmental Plan 2011 (DLEP) and other areas where an investigation of development potential was considered appropriate. Council, in resolving to prepare Structure Plans, aimed to ensure a continuity of supply of residential housing would be guaranteed and to ensure the Dubbo Housing Market could continue to supply the correct mix of residential housing options and price-points across Dubbo.

In resolving to prepare Structure Plans for the defined URAs, the former Dubbo City Council resolved for each Plan to give consideration to the following issues as a minimum:

- i. Flora and fauna;
- ii. Groundwater;
- iii. Salinity;
- iv. Infrastructure provision;
- v. Flooding;
- vi. Overall development design;
- vii. Minimum requirement for small lot housing and medium density housing in the Urban Release Areas; and
- viii. Affordable housing.

As a component of the preparatory work required to prepare a Structure Plan, the land owner of the Hillview Land (Southlakes Estate) undertook a number of background studies that would achieve the purpose of informing the Structure Plan in respect of the Southlakes Estate and any future development application the developer would be lodging with Council. This included the following background reports:

- Flooding;
- Acoustics;
- Flora and Fauna;
- Groundwater and Salinity; and
- Aboriginal Archaeology.

Council acknowledges the continued engagement and cooperation of the owner of the Hillview Land (Southlakes Estate) in the preparation of this Plan.

In undertaking the structure planning for the south-east Residential Urban Release Area, the former Dubbo City Council engaged consultants, Moir Landscape Architecture, to undertake an analysis of the key constraints and opportunities within the area. This consultancy also included an analysis of the background studies provided by the owner of the Hillview Land (Southlakes Estate), topography, flooding, ecological, geological, acoustic, contamination, archaeological, pedestrian, traffic and surrounding land use of the study area.

A comprehensive Stormwater Management Review was also undertaken for the subject area by Northrop Consulting. The result of this analysis also informs the Structure Plan.

2.2 Structure Plan Staging

This Structure Plan is the first component of a staged process that aims to ensure residential development opportunities continue to be delivered in Dubbo and in particular the South-East Residential Urban Release Area.

The subject lands included in the Structure Plan are dominated by two separate estates in the Keswick Residential Estate and land known as Hillview, which will form a future extension of the Southlakes Estate. The Structure Plan also includes other lands to the east of these estates on Sheraton Road.

The role of this Structure Plan is to set the overall direction for development in the South-East Residential Urban Release Area, inform land use decisions in the DLEP and allow the developers of the Southlakes Estate to pursue a partial development of the Estate having regard to overall infrastructure and servicing constraints.

This Structure Plan does not attempt to provide any guidance in relation to future zoning and land use density provision for the Keswick Estate. The consideration of zoning and overall density of Keswick Residential Estate and the other lands included in Stage 2 as shown in Figure 2 will form the components of a separate Stage 2 South-East Dubbo Residential Urban Release Area Structure Plan.

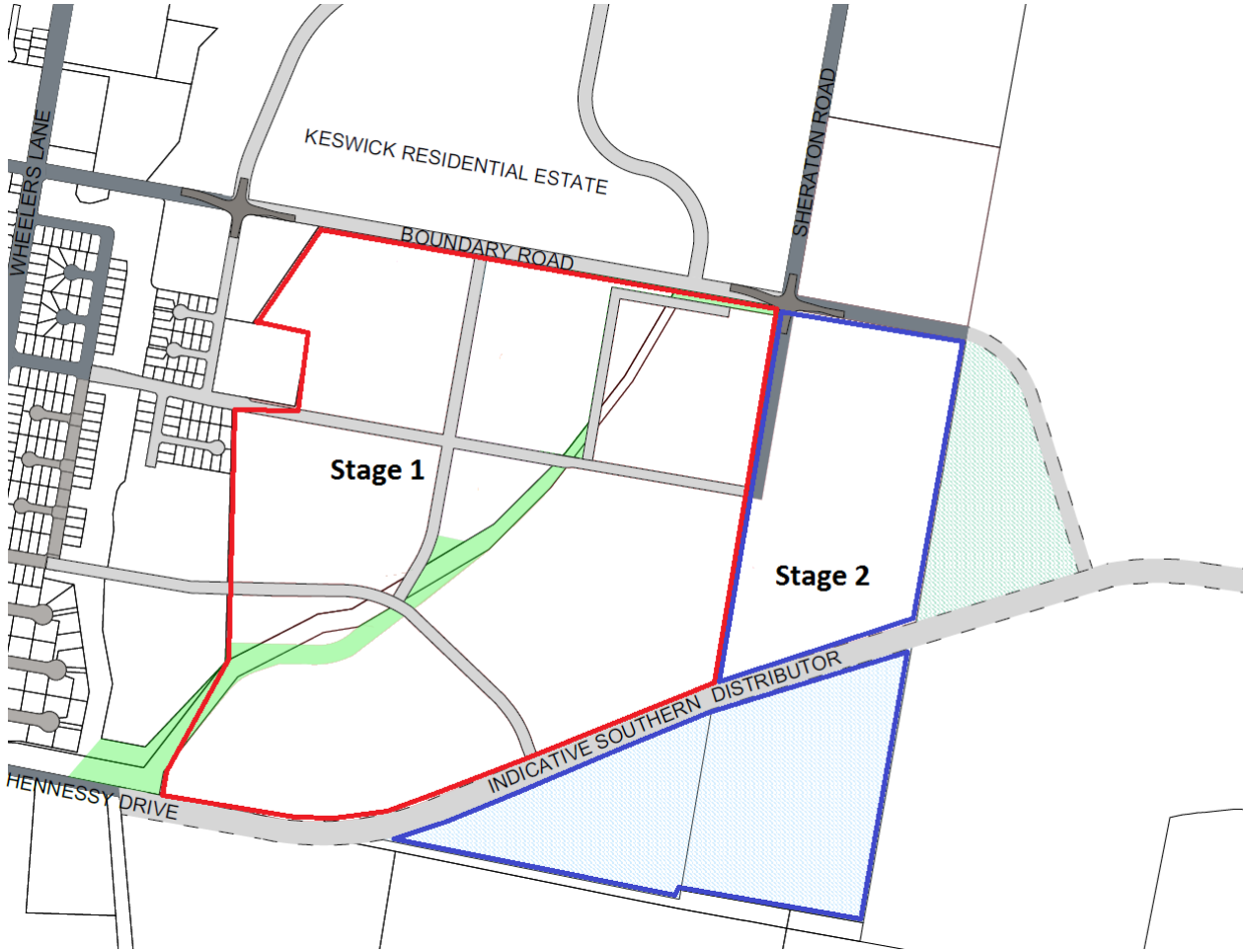


Figure 2: Proposed staging of the structure planning process

3. Objectives

The objectives of this Structure Plan are to:

- Identify the opportunities and constraints of the land and the anticipated needs of the community;
- Broadly indicate the likely future development potential of the study area;
- Enable the characteristics of the study area to determine the most appropriate location and form for future development;
- Provide a broad context of the consideration, by Council, of individual rezoning submissions within the study area; and
- Establish a vision and set of development objectives which future development proposals will be required to meet.

4. Planning Context and Role of the South-East Residential Urban Release Area

4.1 Dubbo Urban Areas Development Strategy

The Dubbo Urban Areas Development Strategy (including the Dubbo Residential Areas Development Strategy) was first adopted by Council in 1996. The Strategy forms the basis for land use zoning and planning controls provided in the Dubbo Local Environmental Plan 2011.

The land included in this Structure Plan is contained in the South-East Dubbo Precinct. The relevant stated objectives for land use in this precinct are as follows:

- Ensure potential for conflict between residential development and quarry/crushing/trucking operations, agriculture, and greyhound track are resolved prior to zoning for residential use;
- Based on the Keswick Structure Plan 1996 and other considerations, commit this as the final major area for fully-serviced residential development east of the Macquarie River;
- Resolve concerns related to aquifers and Eulomogo Creek in the event of a decision to allow suburban residential development;
- Consolidate Hawthorn Street light industrial area; and
- Resolve traffic conflicts at Hawthorn Street junction.

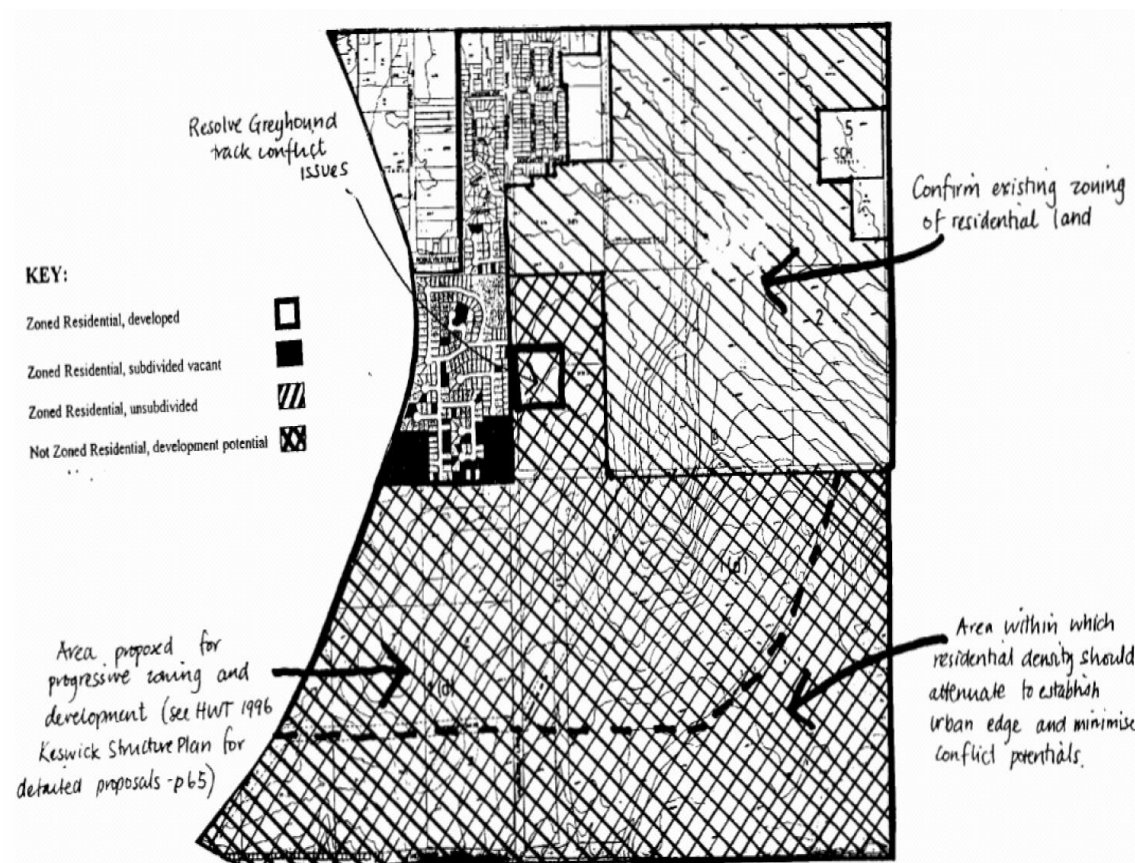


Figure 2: South-East Precinct – Dubbo Urban Areas Development Strategy

At the core of the Dubbo Residential Areas Development Strategy is the significant emphasis of further residential development being undertaken in west Dubbo which would ensure the Dubbo Central Business District is situated at the centre of the Dubbo urban area. The Strategy also provides for further infill development to be undertaken in the south-east area of Dubbo.

The Strategy was reviewed by the former Dubbo City Council in 2007 as part of the review of the Dubbo Urban Areas Development Strategy with the preparation of the Dubbo Urban Areas Development Strategy Discussion Paper. It was considered that the Strategy review process, including community consultation, did not reveal a justified and substantive need for the further densification of the subject lands as a result of that review.

The Strategy was again reviewed in 2009 in the process of preparation of the Dubbo Local Environmental Plan 2011. The Strategy was also reviewed in 2013 by consultants Hill PDA who found that the Strategy was operating effectively however, recommended that the former Dubbo City Council undertake structure planning for lands situated in the designated Residential Urban Release Areas in the DLEP to aid development of these areas.

4.2 Dubbo Local Environmental Plan 2011 (DLEP)

The Dubbo Local Environmental Plan 2011 (DLEP) was gazetted on 11 November 2011. The DLEP zoned additional lands in the City to allow for residential development in defined Residential Urban Release Areas.

The DLEP zoned an additional 200 hectares of land for residential development. These lands were previously zoned 1(e) Urban Expansion in the former Dubbo Local Environmental Plan 1998 – Urban Areas.

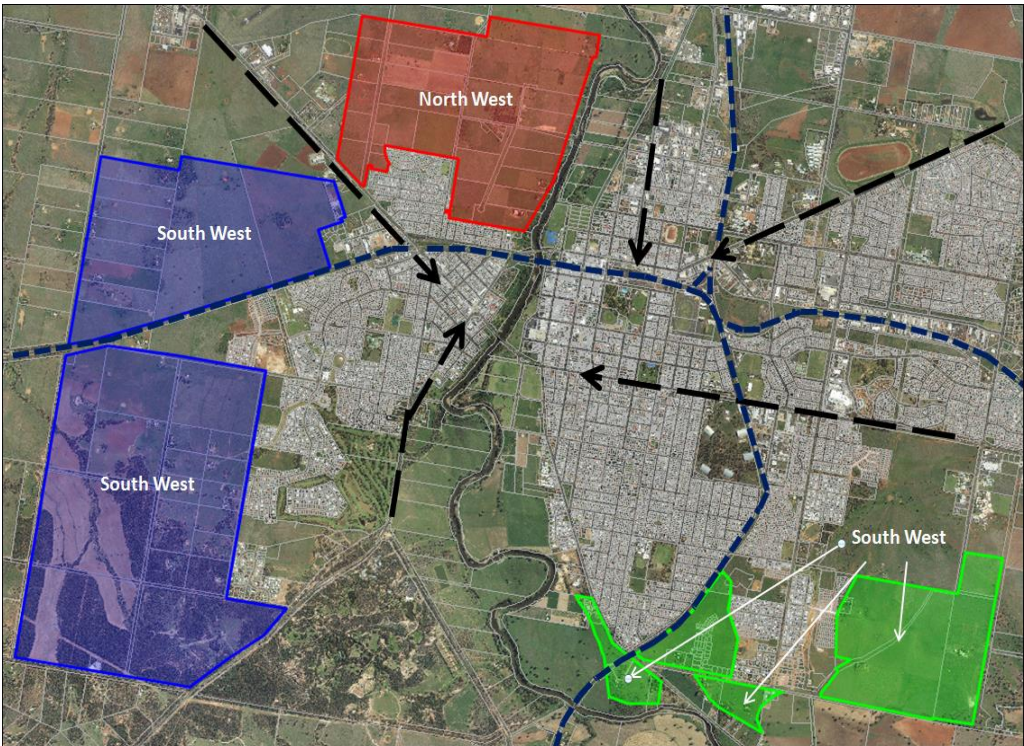


Figure 3: Dubbo Residential Urban Release Areas – Dubbo Local Environmental Plan 2011

Highway Connections - - - - ->
Rail Connections - - - - -

4.3 Residential Release Strategy: South-East Dubbo

The role of this Residential Urban Release Strategy for South-East Dubbo is to provide the appropriate mechanisms and controls to ensure the orderly residential development of the South-East Dubbo Urban Release Area having regard to the following:

- Location of lands;
- Environmental capability of lands;
- Effective provision of required infrastructure without undue cost to the community;
- Ability for residential development to be within close proximity to community service facilities and employment networks;
- For development to be undertaken in a staged manner reflecting market aspirations and the needs of the community; and
- Affordable housing opportunities.

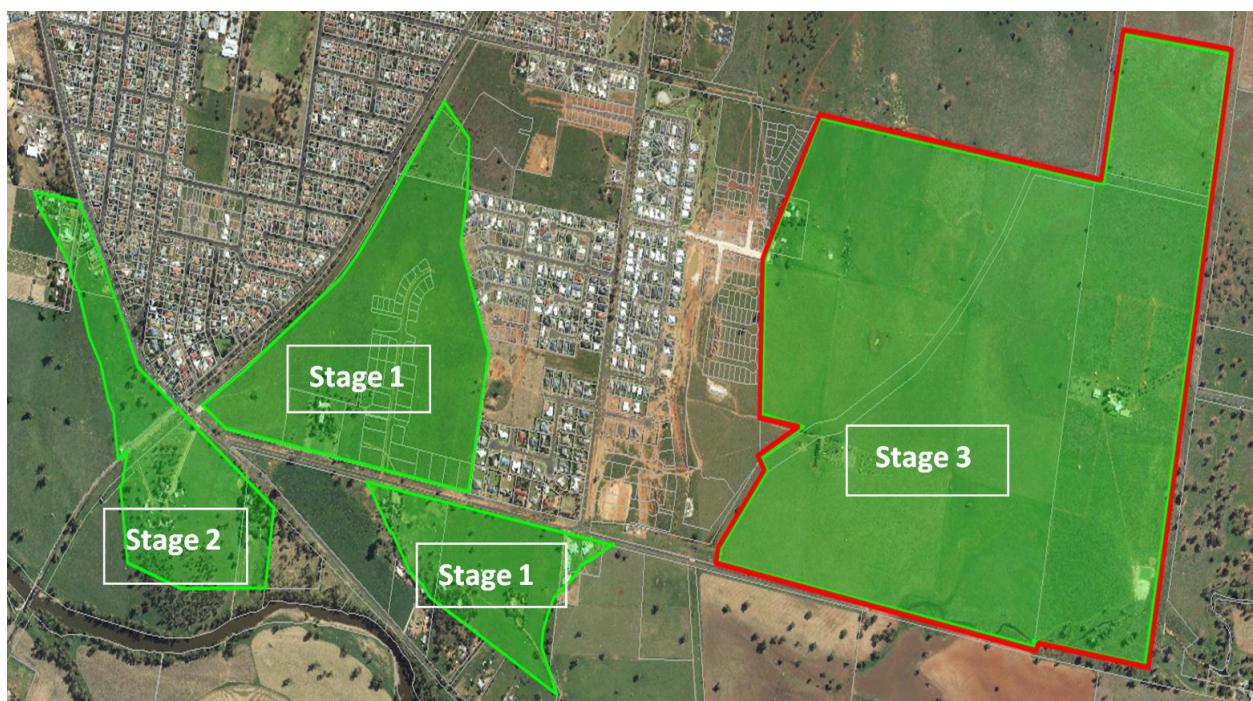


Figure 4: Lands included in the South-East Residential Release Strategy

The Residential Urban Release Strategy guides the implementation of the recommendations of the Urban Areas Development Strategy and Review, the Dubbo City Planning and Transportation Strategy 2036 and the Dubbo Local Environmental Plan 2011. The Strategy also provides indicative development staging as included in Figure 4.

5. Constraints and Opportunities Analysis

This section of the Structure Plan provides an overall constraints and opportunities analysis for the overall land area subject to structure planning. This area includes the land which is subject to this Stage 1 Structure Plan and the lands that will be included in the separate Stage 2 Structure Plan.

In consideration of constraints and opportunities, it is important that the constraints of all lands in the precinct can be understood to facilitate efficient and effective structure planning processes.

5.1 Demographics

Dubbo is one of the State's largest inland cities with an estimated resident population of 41,934 people in 2015 (ABS, 2016). The City of Dubbo services a catchment population in excess of 120,000 people.

Dubbo has a high proportion of young and elderly people, with 24% of the population aged between 0 and 15 years and 14.5% of the population aged 65 and over. The median age is 36 years.

Dubbo has 15,814 households of which 69.74% are family households. The dominant dwelling structures are three and four bedroom dwellings which make up 70.58% of private, occupied dwellings, 38.5% and 32.08% respectively. One bedroom dwellings make up only 2.91% of the total occupied private dwellings in the City. The proportion of home ownership is comparable to the State average, 62.81% in Dubbo compared to 63.4% in New South Wales. Of the total dwellings, 28.72% are rented. The average household size in Dubbo is 2.6 persons.

Population projections undertaken by KPMG for Dubbo in 2012 provided low, medium and high scenarios, with the medium series projecting Dubbo's population to 47,786 by 2026 and 51,550 by 2036.

The NSW Department of Planning and Environment's population projections for Dubbo have estimated the population to be 45,150 by 2026 and 46,500 by 2031. It is acknowledged that the estimates prepared by the State Government are conservative in nature and do not take full account of the likely development activity undertaken in the City and the Central West and Orana Region.

The south-east Dubbo residential area is expected to experience the majority of residential growth in the City up to and including 2026.

5.2 Geology

The majority of the area sits within the Goonoo Slopes which is characterised by extensive undulating landscapes and stepped low hills with long slopes of sub-horizontal Triassic/Jurassic quartz sandstone, conglomerates, siltstone, shale and coal. The ridgelines are defined by sandstone outcrops and stony yellow earths, giving strong contrast to the yellow harsh texture soils in shallow valleys. Volcanic rock outcrops are visible on the north-east corner of the site.



Figure 5: Soil types across in the southern section of the subject lands

The area north of Boundary Road has a significant area that is affected by shallow rock above 1m in depth.

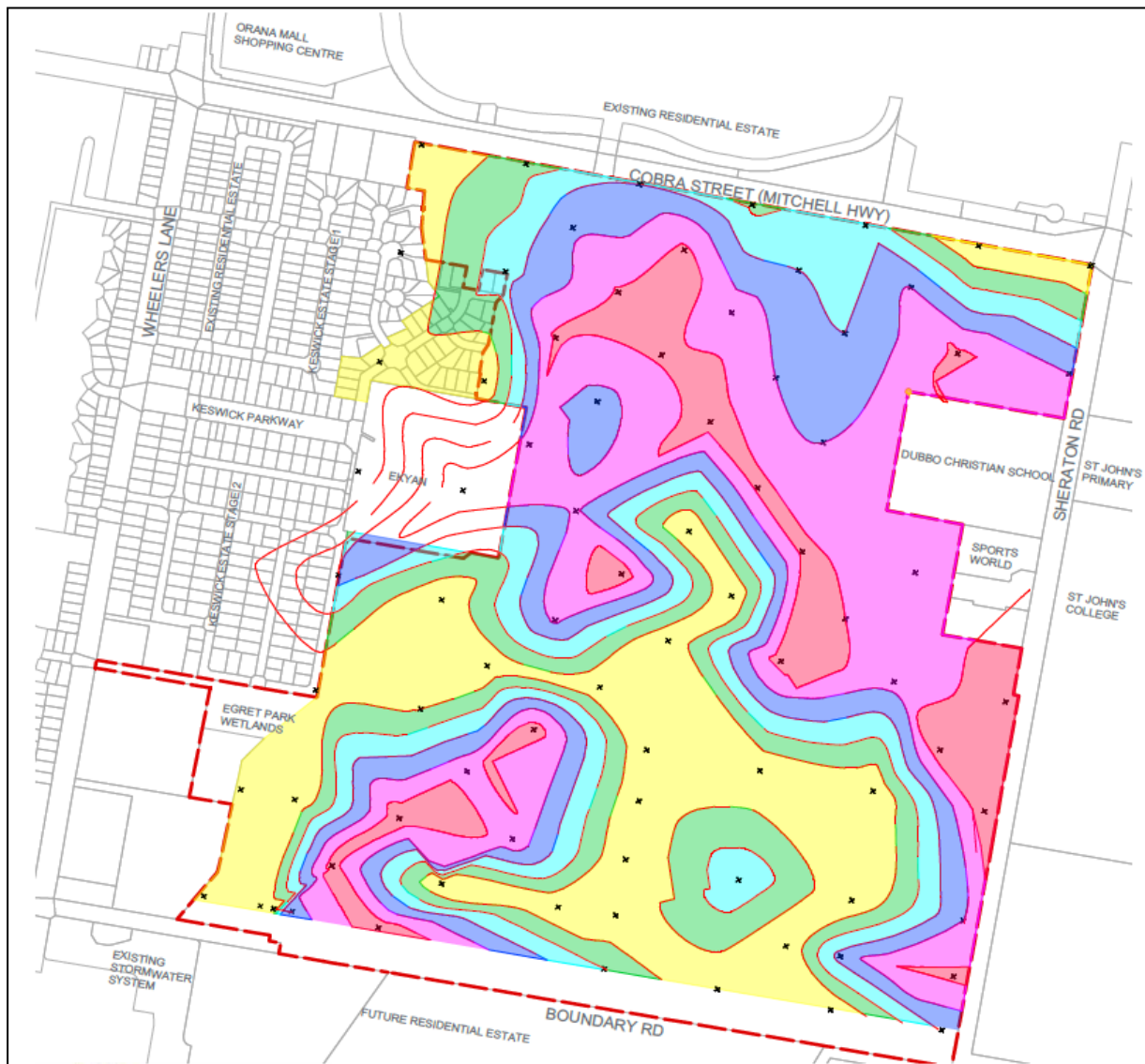


Figure 6: Rock depths across Keswick Estate

5.3 Groundwater and Salinity

The subject area is largely contained within the Dubbo Basalt, Old Dubbo Road and Peachville Hydrogeological Landscapes (HGLs), with a small portion of the area part of the Macquarie Alluvium.

The following table identifies the assessed salinity data for the HGLs in the area:

Hydro-geological Landscapes	Land Impact	Salt Load Export Impact	Impact on Water Quality	Overall Hazard
1 Macquarie Alluvium	Low	Moderate	Low	Medium
5 Dubbo Basalt	Moderate	Moderate	Low	Medium
15 Old Dubbo Road	Low	Moderate	Low	Low
18 Peachville	Low	Moderate	Low	Low

Source: Dubbo Urban Salinity Implementation Plan

The area south of Boundary Road contains five groundwater bores licensed for stock and domestic supplies and monitoring. The Envirowest preliminary contamination assessment found that stock and domestic bores had water bearing zones from 20 m in gravel and coarse sand. Standing water levels were 19.8 m. Monitoring bores were up to 10 m deep and installed to monitor unconfined groundwater. The standing water level in one bore was 8.6 m and was not encountered in two.

Figure 7 shows the Hydrogeological Landscapes across the subject lands. This mapping was undertaken as a component of the Dubbo Urban Salinity Interpretation Project in 2009 which was prepared by Council in association with the Department of Primary Industries. The main aim of this project was to provide a greater level of understanding of the impact of water movement across Dubbo on the various characteristics of the landscape.

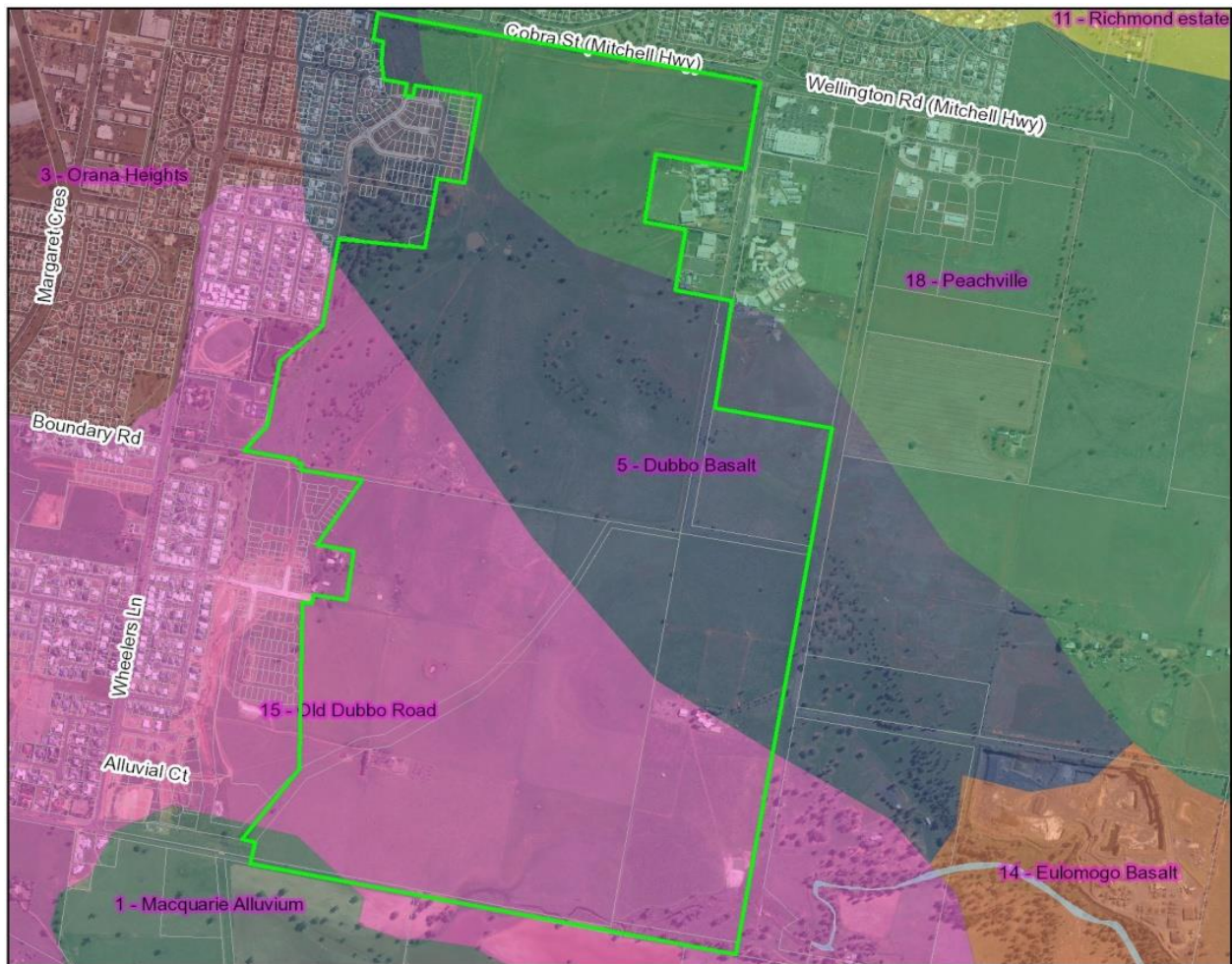


Figure 7: Hydrogeological Landscapes

Figure 8 as provided below shows the overall groundwater vulnerability of the subject lands as contained in the DLEP. This shows the majority of the site to have a moderately high groundwater vulnerability classification. This effectively means that residential subdivision should consider the impacts of recharge on groundwater health.

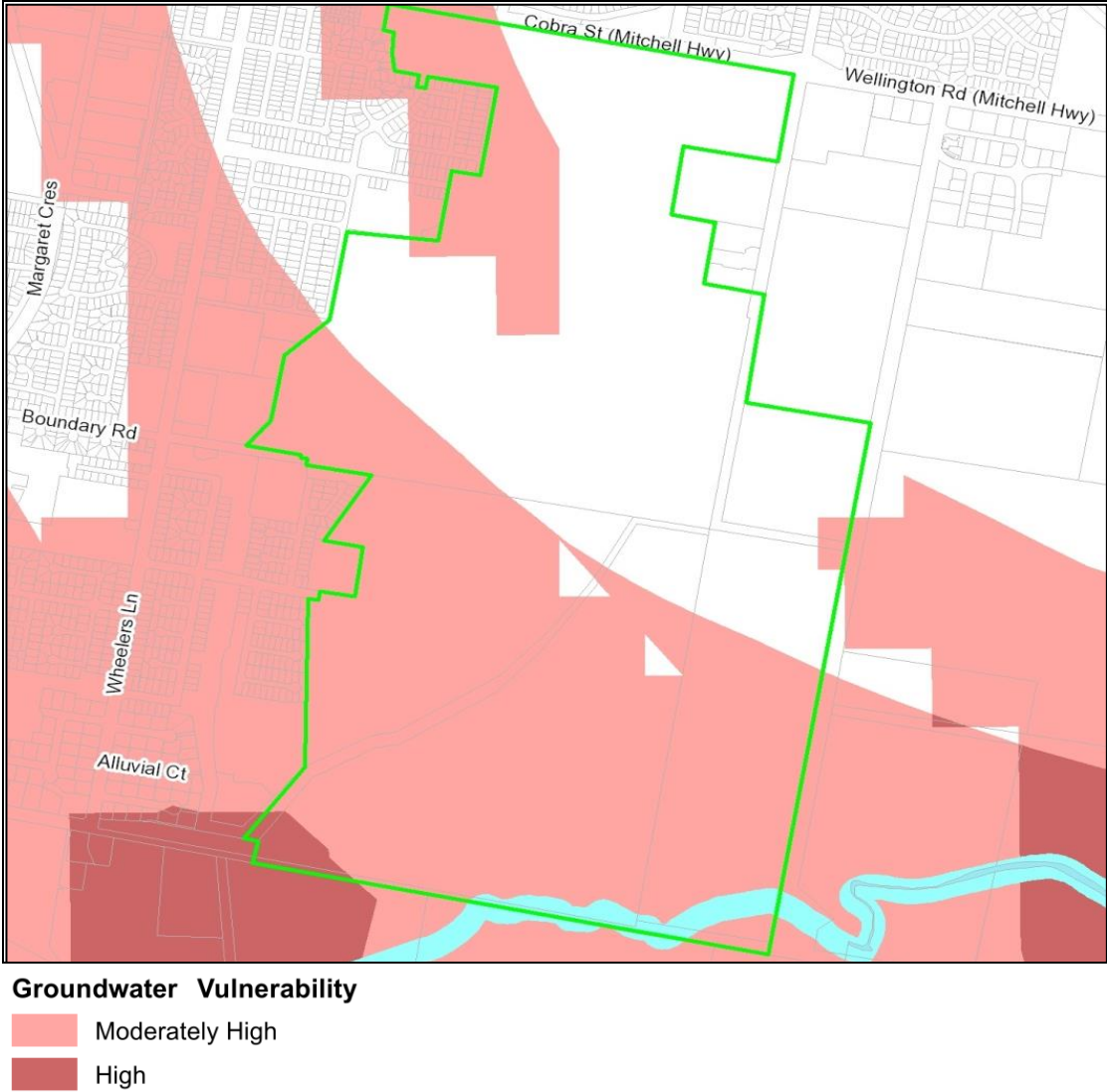


Figure 8: Dubbo Local Environmental Plan 2011 – Natural Resource – Groundwater Vulnerability Map

5.4 Soil Classification and Type

The site is within the Bunglegumbie and Wongarbone Soil Landscape (Murphy et al. 1998). Bunglegumbie landscape consists of red-brown earths comprising dark brown, sandy loam topsoil with bleached silty loam to reddish-brown, medium clay subsoil. Red earths comprise dark reddish-brown loamy sands over a reddish-brown, fine sandy clay loam. The soil has a moderate fertility and generally low erodibility. Soil in the Wongarbone Soil Landscape (Murphy et al. 1998) consists of Euchrozems and red and brown crack clays. The soil has a moderate to high fertility and a moderate to high erodibility.

Soils in the Dubbo Basalt HGL are moderately fertile, generally thin, friable and have a high water-holding capacity with moderate shrink-swell potential. Surface flow from this HGL contributes saline flows to the Troy Creek constriction HGL and throughout the catchment, increasing the significant salinity damage. The landscape provides fresh water run-off as an important dilutions flow source.

5.5 Contamination

A preliminary contamination assessment of the Hillview land was completed by Envirowest Consulting. The levels of all substances evaluated in the contamination assessment were below the Environment Protection Authority investigation threshold for residential and recreational land use, concluding that no contamination was found. Several stockpiles consisting of soil, timber and trace general refuse were located across the site. The stockpiles are an amenity hazard and will require removal followed by an assessment of the stockpile footprint. The investigation concluded that the site is suitable for residential and recreational activities.

A number of contamination investigations have been carried out in respect of the Keswick Residential Estate. The results of these investigations will be further considered as a component of Stage 2 of the structure planning process.

5.6 Slope and Terrain

The subject lands have a gently undulating topography with the land generally sloping towards the south. The site has several raised rocky outcrops located in the eastern and northern section of the site. The site drops off in the south-eastern corner of the site to a wet drainage area at Eulomogo Creek. The site contains two small dams relating to previous agricultural activities.

The site has provided two dominant movements of water through the landscape.

The white lines as shown in Figure 9 show the dominant water movement through the land with the movements following natural drainage patterns through the land.

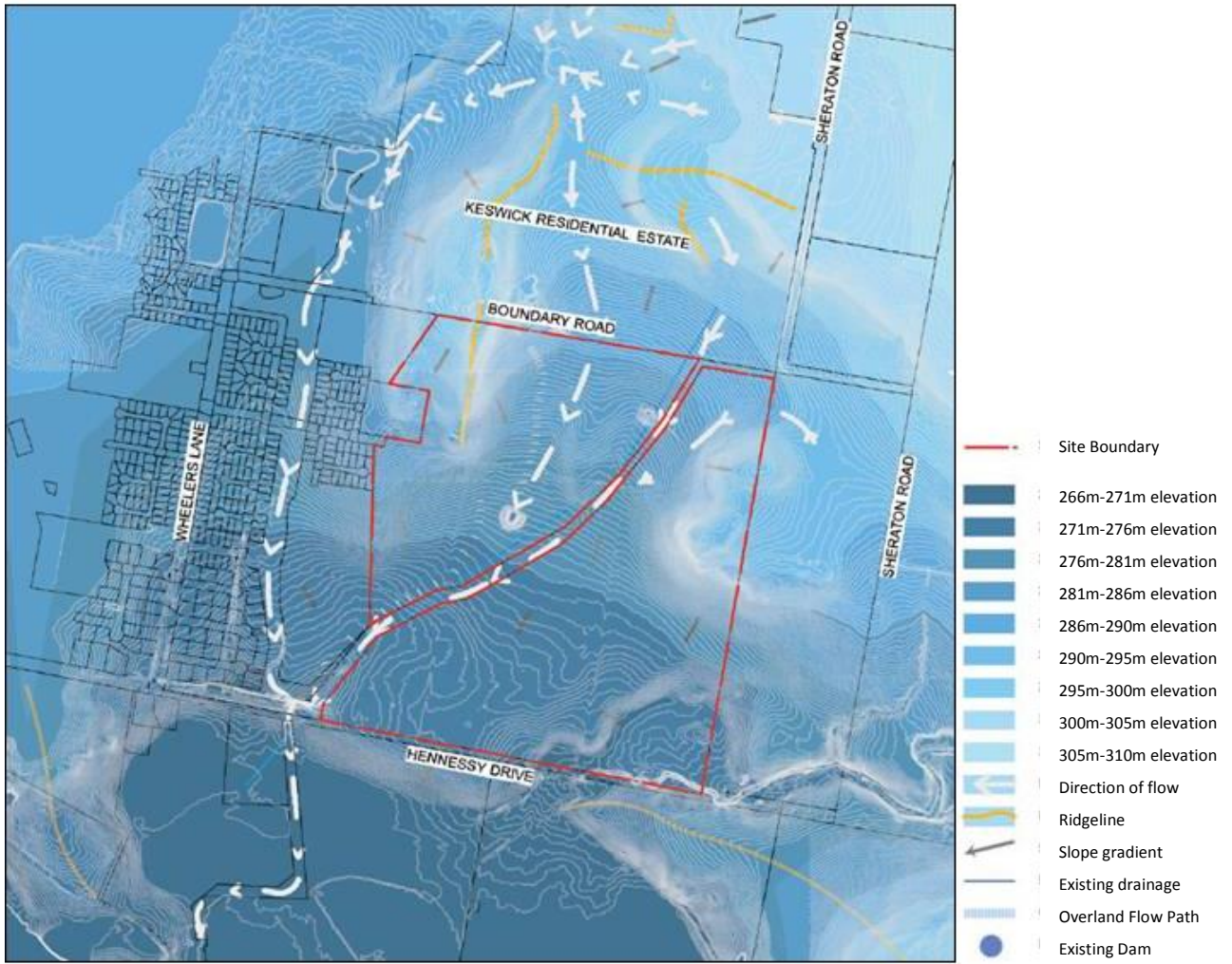


Figure 9: Stormwater and topography map

5.7 Flooding

Consultants Cardno have undertaken a Flood Investigation for Eulomogo Creek to determine the location and extent of the 1% flood level across the land. The Cardno Flood Investigation found the south-eastern corner of the area to be subject to flooding. The impacted area is subject to 1 in 100 year flood events reaching depths of 1.7 m with velocity ranging from 0.1 to 1.5 m/s (higher velocities were recorded closer to the Macquarie River). The extent of the 1% flood event will guide the location of urban development in this area of the land.

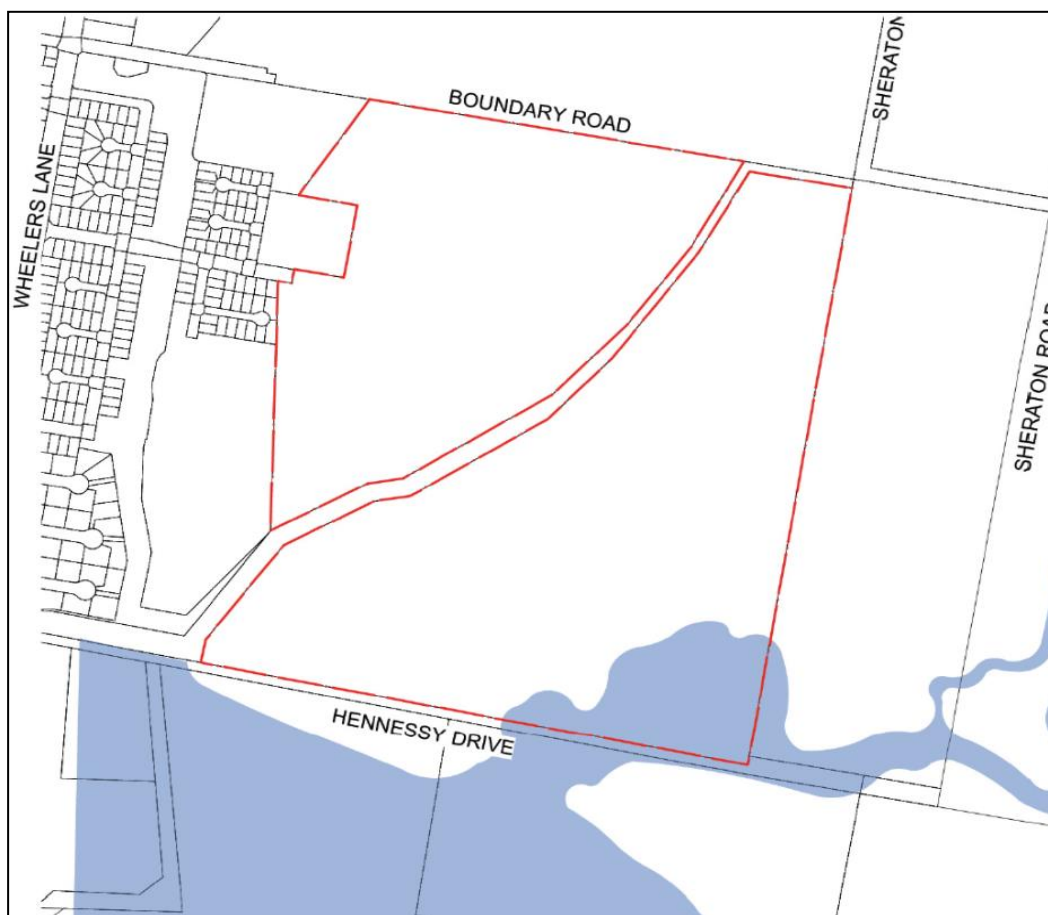


Figure 10: Flooding Map

5.8 Aboriginal and European Heritage

An Aboriginal Archaeological Assessment for the area south of Boundary Road was undertaken by OzArk in 2015. The Assessment was unable to locate a previously recorded AHIMS site 'K-OS-4' due to extensive grass coverage. However, the land contains an open artefact scatter of 50 to 100 stone artefacts within a 240 m x 50 m area at the southern boundary of the area, which is shown in Figure 11.

The extent and location of the site will be required to be further considered at the rezoning and/or development stage.

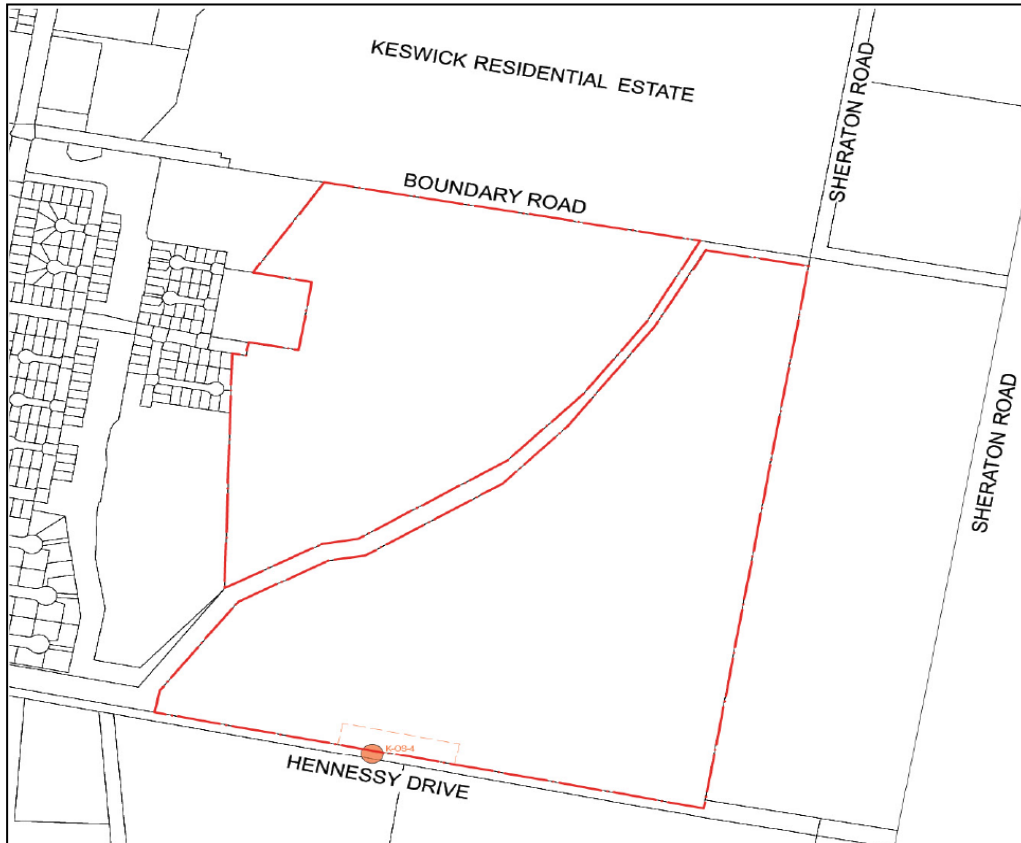


Figure 11: Location of K-OS-4

In the area north of Boundary Road, several items of archaeological significance were identified including scar trees, remnants of a farmhouse and a well as shown in Figure 12.

The extent and location of the sites and other items will be required to be further considered at the rezoning and/or development stage in accordance with State Government legislation.



Figure 12: Items of archaeological significance

5.10 Acoustic

Acoustic analysis was prepared by Environmental Resources Management (ERM) Australia to identify the noise emissions produced by the neighbouring quarry located approximately 1,000 m east of the subject site boundary.

The location of the Boral Quarry in the south-east of the City and its acoustic impacts in addition to Eulomogo Creek and the southern distributor form the urban edge of the City.

Any further extractive industries in this area of the City are not encouraged as they are likely to be incompatible with the status and role of the area as a Residential Urban Release Area.

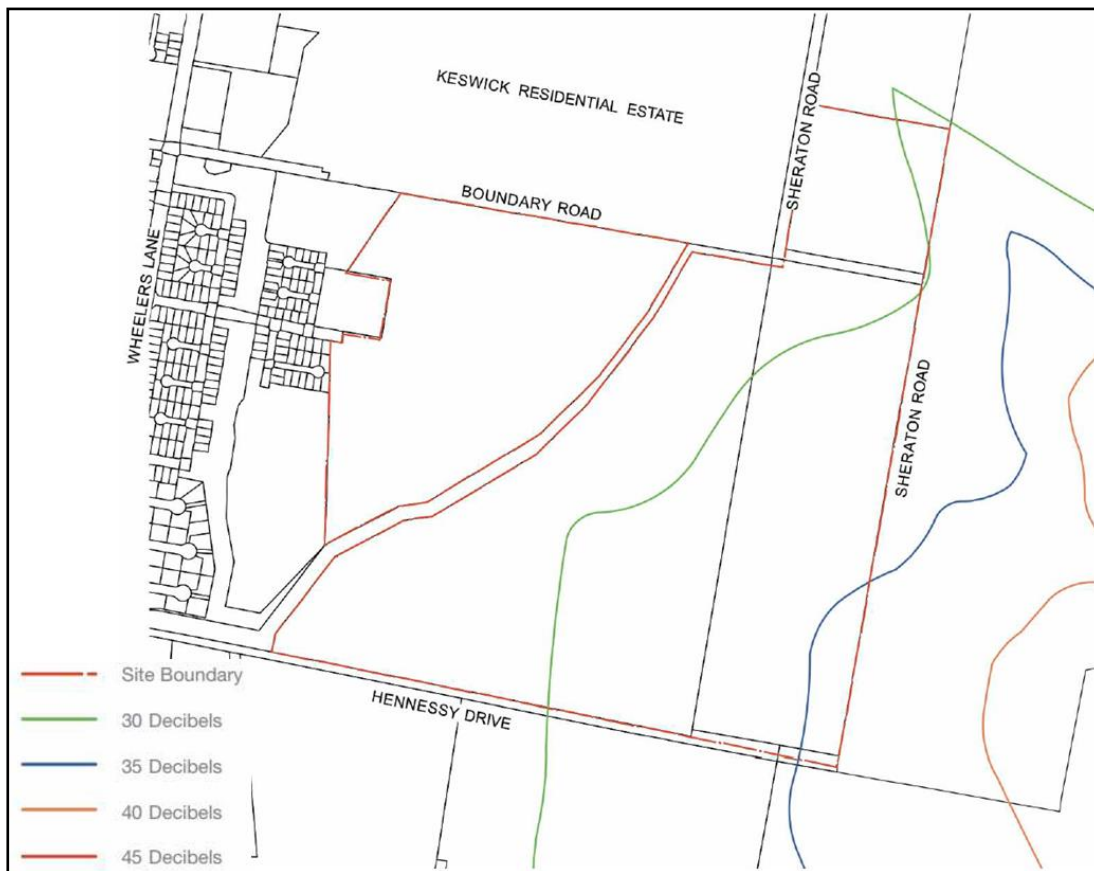


Figure 13: Acoustic Analysis Map

5.11 Biodiversity

An Ecological Assessment of the area south of Boundary Road by OzArk identified the former condition of the Hillview lands (Southlakes Estate) of cleared woodland being completely cleared, ploughed and disturbed with only a few remaining isolated trees as a result of intensive and continuous grazing. Native tussock grasslands prevail within the site however the long term viability of the community has been compromised by routine agricultural activities and stockpiling, which prevents it from recovering to a Pre-European state. It is noted that Eulomogo Creek, which provides connectivity to the Macquarie River, is in poor condition.

The area north of Boundary Road contains a significant area mapped as high biodiversity in the DLEP containing pockets of Fuzzy Box, Grey Box, White Box, Yellow Box and Blakely Red Gum. In addition, nesting sites and foraging areas for the vulnerable Grey Crowned Babbler were also identified along the north-western boundary of the site. This is a constraint to development in the immediate areas.

Figure 15 shows a detailed analysis of the Keswick Estate lands. Of particular reference is the area shown in red. This area of the site has been shown to contain a remnant area of Fuzzy Box Woodland Endangered Ecological Community. Future management of this land will be required to carefully consider the legislative responsibilities associated with Endangered Ecological Communities and a suitable development regime.

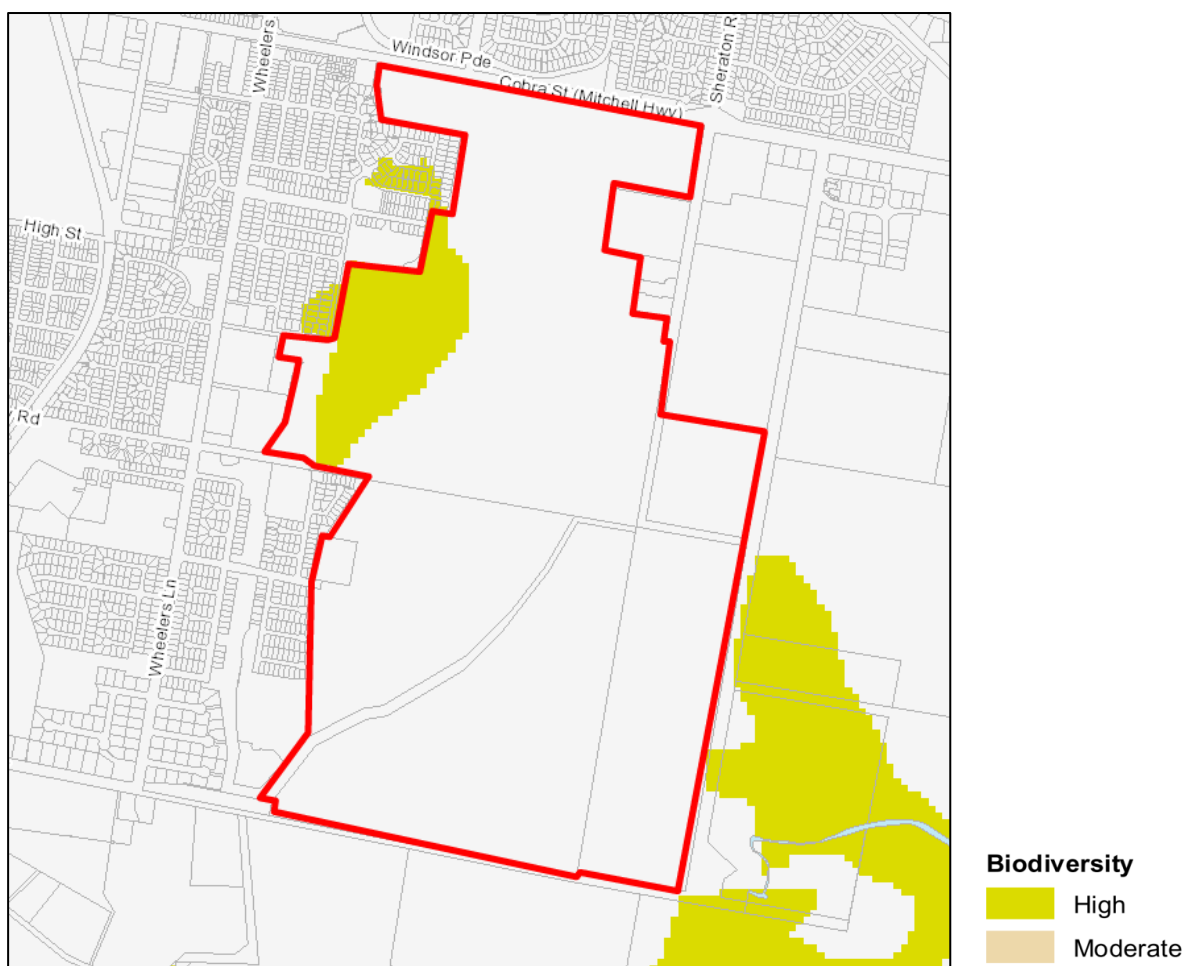


Figure 14: Dubbo Local Environmental Plan 2011 - Natural Resource - Biodiversity Map



Figure 15: Ecological Analysis Map – Keswick Residential Estate

5.12 Surrounding Land Use Context

The South-East Dubbo Residential Urban Release Area has been identified as the last ‘greenfield’ land in Dubbo, suitable for residential use east of the Macquarie River. Figure 16 provides a broad overview of the surrounding land use context.

Land to the south of the Urban Release Area is dominated by agricultural uses and is zoned RU2 Rural Landscape and RU1 Primary Production under the provisions of the Dubbo Local Environmental Plan 2011. Land to the east of the Urban Release Area is zoned RE2 Private Recreation, which acts as a buffer to the IN3 Heavy Industrial area and an existing hard rock quarry to the east. In addition, the Blueridge Business Park is situated to the north-east of the Urban Release Area, which includes land zoned B5 Business Development and B7 Business Park allowing for a range of bulky goods, warehousing, office and light industrial uses. Key components of the Blueridge Estate Master Plan have been incorporated into Figure 16 to indicate how the land may be developed in the future.

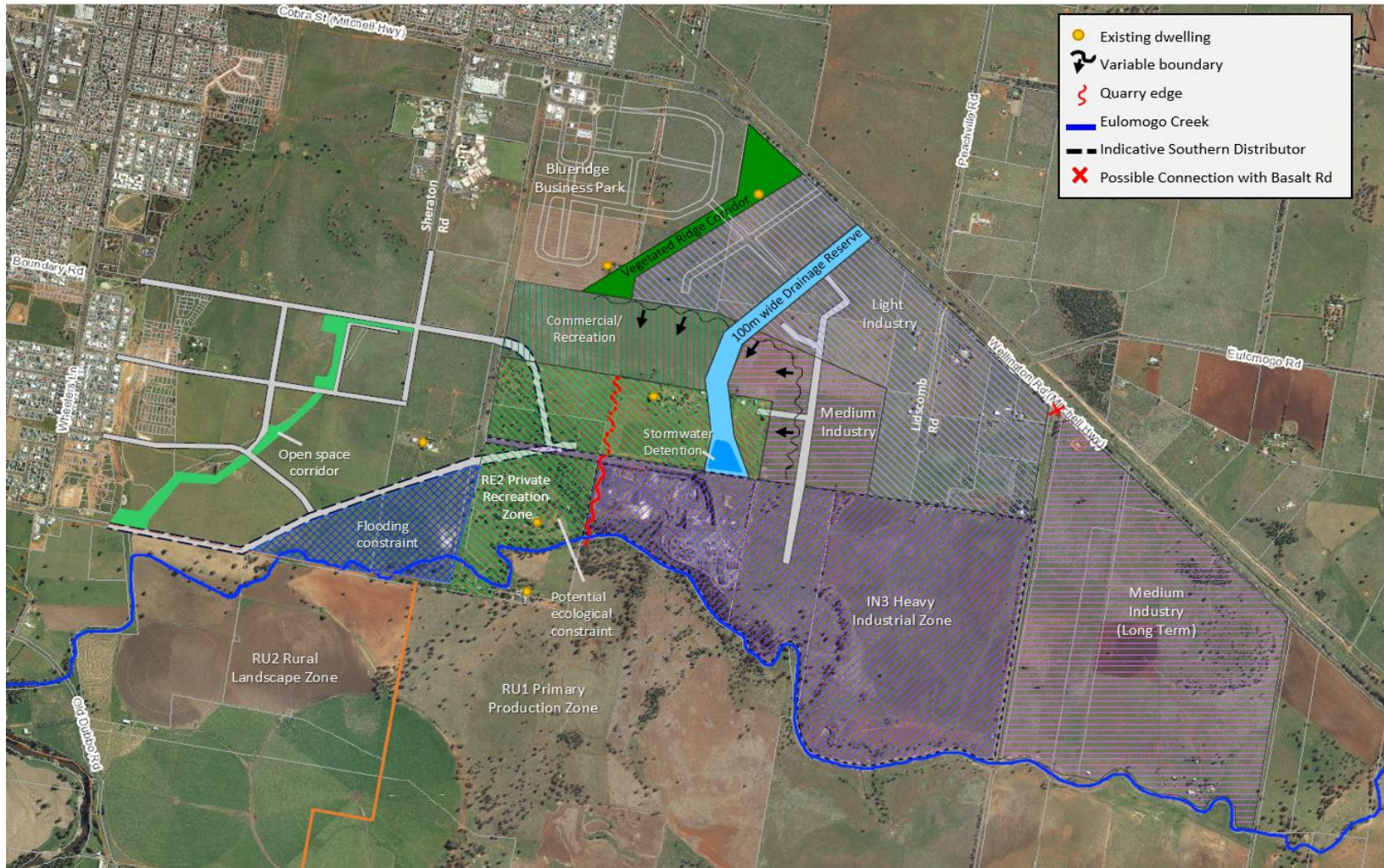


Figure 16: Surrounding land use constraints and opportunities

6. Strategic Residential Growth Principles

6.1 Strategic Objectives

The South-East Dubbo Residential Urban Release Area is the last 'greenfield' land in Dubbo, suitable for residential use east of the Macquarie River. This role and status of the South-East Dubbo Residential Urban Release Area will drive residential development opportunities in south-east Dubbo and add effectively to the housing stock

There will be an increased need for further housing diversity and housing choice in this area of the City and across Dubbo more generally. This will enable a variety of housing options at different price points in the Dubbo housing market.

There will be an increased need for public transport, extended pedestrian and cycle paths throughout the area to connect to the Orana Mall Marketplace to the north, the Tracker Riley Cycleway, the Macquarie River and the Taronga Western Plains Zoo to the south-west and more generally the future neighbourhood shopping centre adjacent to Boundary Road. The subject land will also have an important relationship and connections to the schools situated on Sheraton Road and the Blueridge Estate.

The subject area includes the provision of land which could be used for the purposes of a neighbourhood shopping centre. Any neighbourhood shopping centre would only be of a scale which would service residential development in the precinct and limited servicing of adjacent development in the immediate locality.

The objectives, strategies and actions to achieve the vision have been included below in the following key elements:

- Desired future character and urban form;
- Neighbourhood Centre development;
- Land Subdivision;
- Open Space and recreation;
- Access and Movement;
- Infrastructure; and
- Environment.

The following section of the Structure Plan provides guiding strategic growth principles for each key element of the Structure Plan.

6.2 Desired Future Character and Urban Form

Objective Statement

Housing will be diverse in size and form, be of a sufficient quality to meet a number of price points in the Dubbo housing market and be provided in a suitable quantity to guarantee a continuation of supply.

Statement of Rationale

Traditionally, the Dubbo housing market has centred upon the provision of housing allotments to accommodate second homes without the required importance being placed on first homes and associated housing flexibility for all members of the community.

The South-East Dubbo Residential Urban Release Area can accommodate some 2,075 allotments, which based on the projected household size of 2.3 by 2026 could accommodate 4,772 people. It will be important to ensure the future population of some 48,150 by 2026 (KPMG mid scenario, 2012) can be accommodated across a number of formats.

A decrease in household size will place further pressure on the provision of appropriate housing stock across a range of price points, formats and locations.

The strategic residential growth principles aim to ensure a variety of housing stock can be provided at a number of price points in the Dubbo housing market.

Strategic Residential Growth Principles

1. Higher density residential development is encouraged at key locations in the Estate that ensure residents will have a high level of access to public transport, facilities, services and amenity;
2. Seniors housing is encouraged to be provided in locations and formats that provide for integration with residential neighbourhoods, areas of public open space and neighbourhood centre development;
3. Dual occupancy development is encouraged and promoted on land with an area greater than 900 m² and a frontage of greater than 17 m;
4. Dual occupancy development is specifically suited and encouraged as an efficient and effective urban design outcome for corner lots which allows each unit to have a separate frontage and address to a different street;
5. Small format and small lot housing in the R1 General Residential zone should be provided with a zero lot line on one side boundary to encourage design quality and protect the amenity of residents;
6. Council will prepare a Residential Design Guide for the use of the Dubbo Development Industry that will encourage site-responsive design and variety of housing offer;
7. Where applicable and practicable, the provision of shop top housing is encouraged as a mechanism to further activate residential and commercial lands and add further variability in development types; and
8. Small format and integrated housing is encouraged where it can adequately mix with residential neighbourhoods and actively encourage social inclusion.

6.3 Neighbourhood Centre Development

Objective Statement

Neighbourhood centre development meets the everyday needs of residents in the area and the immediate locality and is situated in the centre of a catchment population that can have a number of ways to access the centre including walking, cycling, private car or public transport.

Statement of Rationale

It is considered that the level of future residential development in this area of Dubbo may necessitate the future provision of a neighbourhood shopping centre. This centre should meet the level of daily needs of

residents and facilitate access by a variety of methods including walking, cycling, by private car and by public transport.

Any neighbourhood centre in this location should only be of a local scale with limitations placed on the floor area of any shop to ensure parity with the Delroy Neighbourhood Shopping Centre in west Dubbo. The Structure Plan provides specific strategic residential growth principles that will require any future planning proposal to rezone land for commercial purposes to include a detailed economic analysis which will assess the impact of providing commercial development in this location and size configuration on the Central Business District, the Orana Mall Marketplace and other neighbourhood shopping centres.

This category of neighbourhood shopping centre in Dubbo does not currently exist in the retail hierarchy as defined in the Dubbo Commercial Areas Development Strategy.

Strategic Residential Growth Principles

9. Any future amendment to the Dubbo Local Environmental Plan 2011 to introduce a commercial zoning to facilitate a neighbourhood centre be required to include a maximum floorspace limitation to limit the size and configuration of any commercial development to a neighbourhood scale.
10. Any Planning Proposal to introduce a commercial zone to allow for neighbourhood centre development will be required to provide an economic impact assessment which provides an assessment of such a proposal on the Dubbo Central District, the Orana Mall Marketplace and other neighbourhood centres.
11. A variety of access provisions are to be provided to any neighbourhood centre development including facilities for walking, cycling onsite public transport provision and suitable parking for private cars.
12. Any neighbourhood centre development will be of a local scale which will not impact the residential amenity of development.

6.4 Land Subdivision

Objective Statement

Land is subdivided into allotment sizes and shapes that provide variety and interest to the streetscape whilst ensuring integrated neighbourhoods are created with opportunities for a mixture of housing type and design.

Statement of Rationale

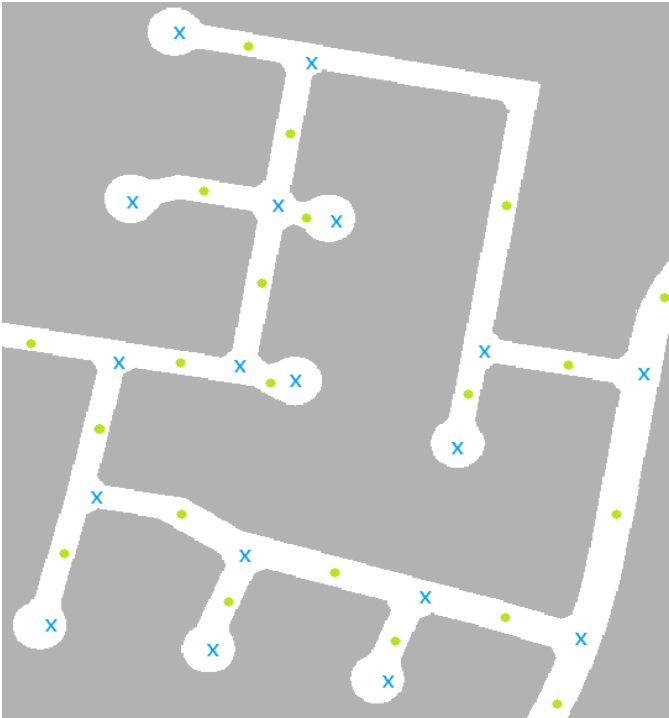
Effective and efficient land subdivision is situated at the centre of well-connected and legible neighbourhoods. Effective and efficient land subdivision should provide variance in lot size and dimension which in turn facilitates variation in housing type, style and price point.

The design and layout of a new neighbourhood sets the nature of the urban form. A well-planned neighbourhood:

- Sets the urban character and design of the area;
- Provides the footprint for public spaces that allows for social interaction;
- Defines access and movement networks that will encourage active transport; and
- Identifies land for a range of uses, eg shops, community centres, parks, and enables a community to meet most of their daily needs within walking or cycling distance of home.

It is also important to ensure land subdivisions are designed in a manner as to provide an appropriate level of connectivity to focus points and to encourage general ease of access throughout the subdivision. A

measure of the connectivity of a subdivision is the Internal Connectivity Index or ICI. The ICI is calculated by the number of street links divided by the number of street nodes. A street link is a segment of road between two intersections or from an intersection to a cul-de-sac, including road segments leading from the adjoining highway network or adjacent development. A node is an intersection or the end of a cul-de-sac, but does not include the end of a stub-out at the property line or intersection with the adjoining highway network. The higher the internal connectivity index, the more connected the roadway network. ICI examples are provided in Figures 17 and 18.



Internal Connectivity Index (ICI)

$$\begin{aligned}
 \text{ICI} &= \frac{\text{Linkages}}{\text{Nodes}} \\
 &= \frac{21 \text{ linkages (green circles)}}{18 \text{ nodes (blue crosses)}} \\
 \text{ICI} &= 1.17
 \end{aligned}$$

Figure 17: Poor ICI Ratio



Internal Connectivity Index (ICI)

$$\text{ICI} = \frac{\text{Linkages}}{\text{Nodes}}$$

$$= \frac{43 \text{ linkages (green circles)}}{32 \text{ nodes (blue crosses)}}$$

$$\text{ICI} = 1.3$$

Figure 18: Good ICI Ratio

This Structure Plan aims to ensure any land subdivision is consistent with the principles of the modified grid and introduces the internal connectivity index as a subdivision planning and design tool to aid the Dubbo development industry and the community in explaining the relative merits of subdivision planning and design.

Strategic Residential Growth Principles

13. Residential subdivision establishes a clear urban structure and hierarchy that promotes the creation of active neighbourhoods and encourages alternative forms of transport.
14. The natural attributes of the land should be used and reinforced in subdivision design through the placement of visible key landmark features such as parks and other focal points.
15. The natural topography of the land shall be used in the design of residential subdivision. The natural site topography is an important design feature to add variation and interest to residential neighbourhoods.
16. Residential subdivision shall optimise outlook and proximity to public and community facilities.
17. Residential allotments shall be provided with a range of lot frontages which actively promotes streetscape variance and allow variation in the size and style of residential housing.
18. Any residential subdivision should comply with the minimum internal connectivity index score of 1.3.
19. Residential development shall not be provided backing on to areas of open space and should be separated by a road or other key access point *unless the development provides a suitable level of access to open space areas in accordance with the requirements of Western Plains Regional Council, has open and transparent fencing and promotes living areas fronting open space.*

6.5 Open Space and Recreation

Objective Statement

Public open space is visible and located for ease of use by the community for the purposes of walking, cycling and other recreating.

Statement of Rationale

The former Dubbo City Council adopted the Dubbo City Park and Open Space System Master Plan in 2009. This Master Plan provides strategies for the future development of the Dubbo open space system.

The Master Plan identifies ready access to open space and recreation facilities as a key feature of the character of Dubbo. The Plan provides a quantitative and spatial analysis of the current and future demand for open space compared to current supply. The Master Plan also provides recommendations for developing and expanding the green web to support current and future populations.

In respect to the subject lands, the Master Plan provides for the embellishment of land situated in the Hillview lands (Southlakes Estate) to be used for the purposes of a pedestrian walkway and cycleway to link through to the Tracker Riley Cycleway and ultimately the Taronga Western Plains Zoo. This land will also fulfil a stormwater drainage function. The precise location of this land may be subject to alteration based on maintenance of future stormwater drainage functions and subdivision design.

The Master Plan also includes the further embellishment of the remnant Fuzzy Box Woodland Endangered Ecological Community in the Keswick Estate.

Strategic Residential Growth Principles

20. Any embellishment of current or future lands for the purposes of public open space over and above the requirements of the Dubbo Section 94 Contributions Plan-Open Space and Recreation Facilities shall be at the cost of the developer.
21. Any developer undertaking embellishment in accordance with Strategic Growth Principle 20 shall be required to enter into an appropriate agreement/s with Council in respect of long term maintenance.
22. Public access and movement shall be maintained across and throughout areas of public open space.
23. In any situation where an allotment may have one of its boundaries to public open space, any fencing of this boundary shall be of an open and transparent nature.
24. The pedestrian and cycleway shall maintain legibility and ease of access to promote safe walking and cycling.

6.6 Access and Movement

Objective Statement

An access and movement system is provided that allows for the safe and efficient movement of pedestrians, cyclists and vehicular traffic through the subject lands and achieves an effective integration with the surrounding current and future road network.

Statement of Rationale

The subject lands are situated in an area of Dubbo which is projected to undergo considerable residential growth in the next 10 years. With this growth comes the need to provide a safe and efficient access and movement system for pedestrians, cyclists and vehicular traffic.

At the core of this access and movement system in this area and the overall City is the construction of the southern distributor which will effectively link with Macquarie Street through the existing alignment of part of Hennessy Road and also link through to the Mitchell Highway in the east. The indicative location of the southern distributor and its relationship with the land is shown in Figure 19.

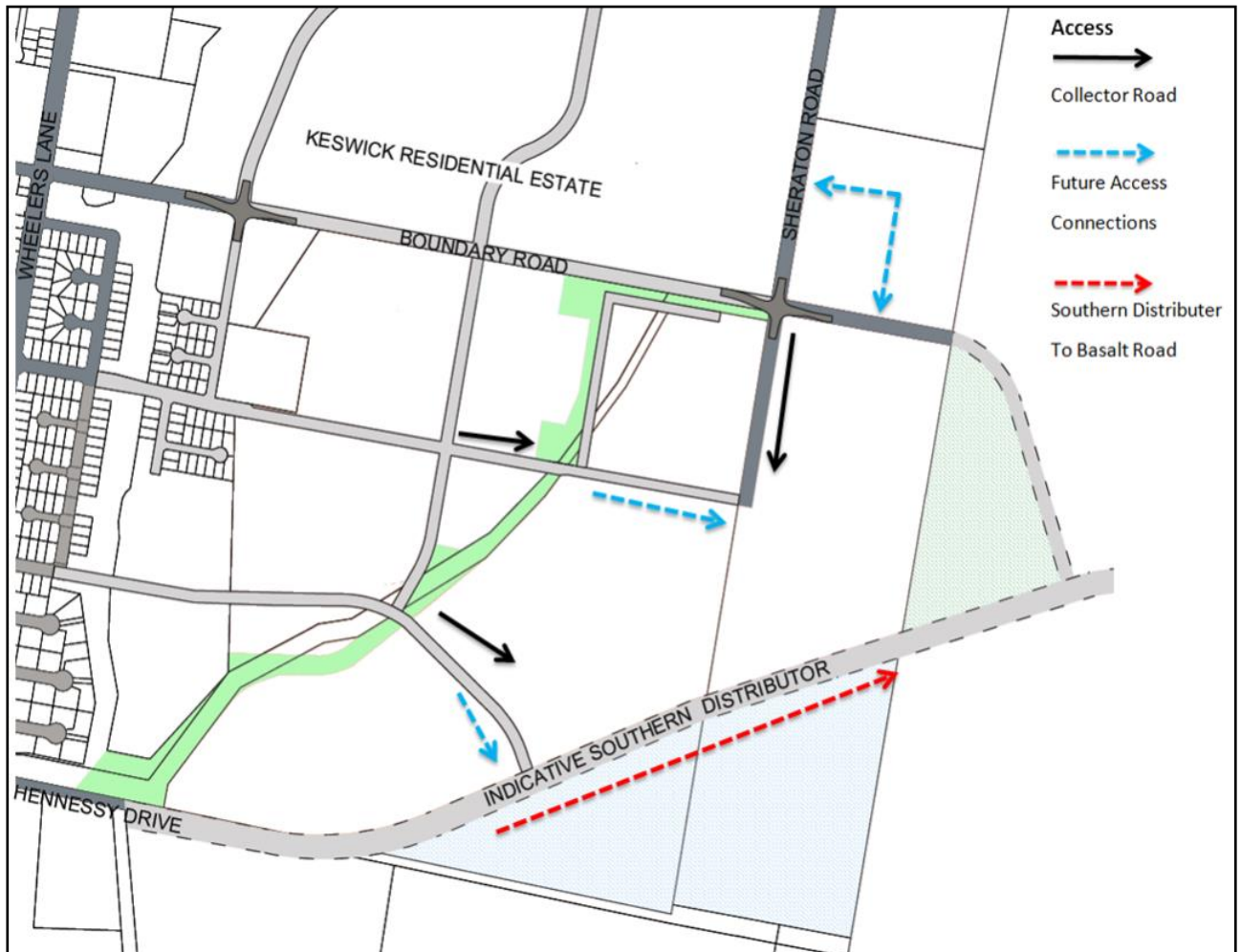


Figure 19: Access and Movement Map

The indicative location of the Southern Distributer and its relationship with the subject land has been guided in part by the level of the 1% Flood Event in the Eulomogo Creek to the south as can also be seen in Figure 19.

Subject to appropriate traffic impact assessment modelling as deemed suitable by Council, access to the southern distributor could be available from an extension of Argyle Avenue and the extension of Boundary Road to the east.

Boundary Road also separates the subject land from east to west. At the current time Boundary Road has not been constructed from Wheelers Lane to the east. Boundary Road is proposed to be constructed through

to an intersection with Sheraton Road to join the Southern Distributor to the east of the residential lands. There is proposed to be two direct connections from Boundary Road into both Keswick residential estate and the Southlakes Estate lands.

In respect of the Southlakes Estate, Azure Avenue and Argyle Avenue are proposed to continue from west to east to undertake the function of major collector roads through the Estate.

An appropriate intersection treatment will be required at the intersection of Sheraton Road with Boundary Road and a new road to the south that will provide access into the R5 Large Lot Residential zoned land to the east. This land will also have access through an extension of Azure Avenue.

The land situated on the north-east corner of Boundary Road and Sheraton Road, which will provide for the development of 2,000 m² lots will have the ability for two separate access points which will allow access to the land from both Boundary Road and Sheraton Road. However, both access points will be required to be provided at a location considered to be a suitable distance from the future Boundary Road and Sheraton Road intersection.

Strategic Residential Growth Principles

26. New growth areas have a variety of destinations within walking or cycling distance and the density of residential development supports the provision of required infrastructure.
27. A movement network is created and maintained that provides for an interconnected cycling/walking path network and a coordinated network of streets with bicycle lanes that allows the safe interaction and movement for all road users.
28. Major public transport access is provided throughout the land including connections to the Dubbo Central Business District (CBD).
29. A hierarchy of interconnected streets is established that gives safe, convenient and clear access points within and beyond individual subdivisions in the subject area.
30. The design of access and movement systems in the area ensures environmental impacts associated with groundwater and salinity are avoided or minimised.
31. The access and movement system shall ensure the design of future subdivisions provides for energy efficient lot layouts and building orientation.
32. Dubbo is maintained as a '10 Minute City'.

6.7 Infrastructure

Objective Statement

Regular urban infrastructure including gravity sewerage, reticulated water and stormwater is economically provided to the subject lands, with fair and equitable costs borne by the relevant developer/s.

Statement of Rationale

Gravity Sewerage

Gravity sewerage can be adequately extended to meet the requirements of development to be undertaken in Keswick Estate. Gravity sewerage can ‘in principle’ be extended to service future development of the Southlakes Estate on Lot 12 DP 1207280, No. 32 Azure Avenue, Dubbo and Lot 399 DP 1199356, Boundary Road, Dubbo.

Further investigation will be required to be undertaken to ascertain how the lands situated on Sheraton Road can be economically conducted to Council’s existing gravity sewerage infrastructure.

Reticulated Water

Reticulated water can be adequately extended to meet the requirements of development to be undertaken in Keswick Estate. Reticulated water can ‘in principle’ be extended to service the eastern side of the Southlakes Estate.

Reticulated water will be required to be extended at the cost of the developer to service residential subdivision situated on Sheraton Road.

Stormwater

Consultants Cardno prepared the Keswick Drainage Review in 2010 (Report No. W4823-1). Stormwater management for the land covered by this Structure Plan needs to be in accordance with this adopted drainage review.

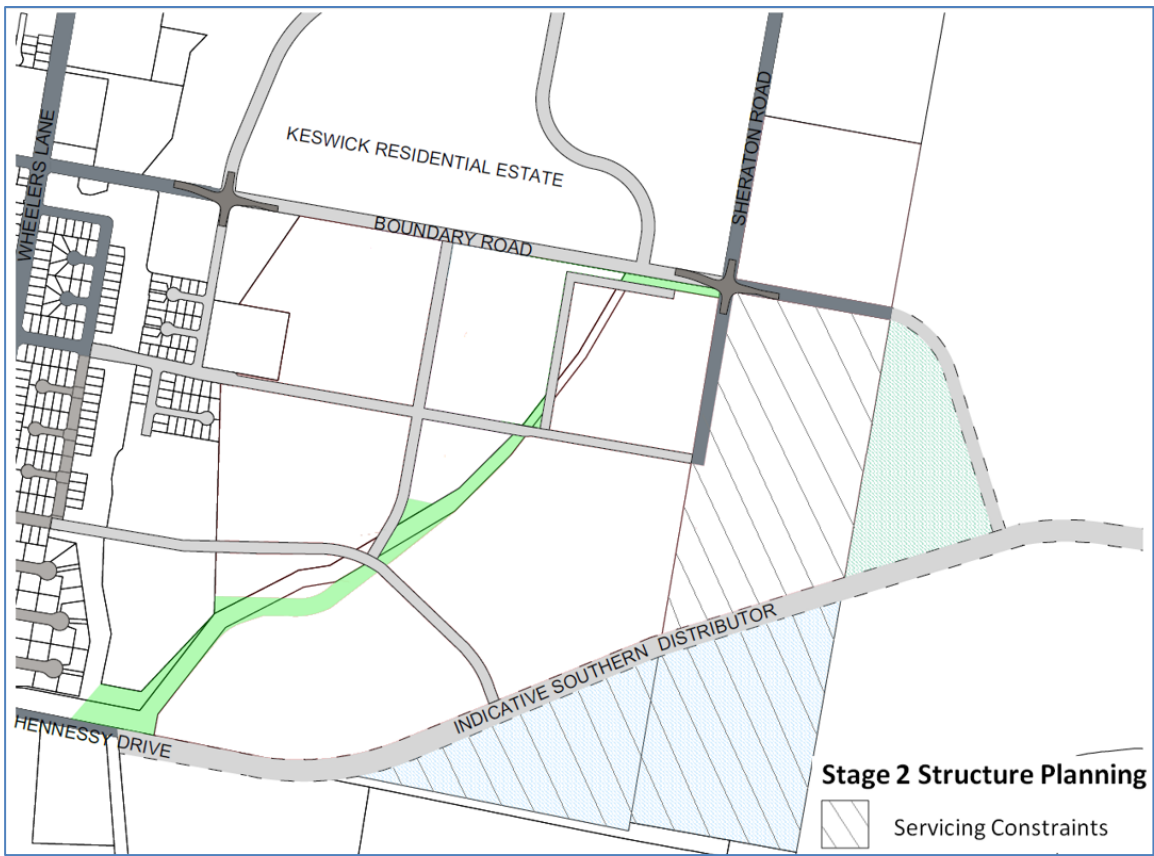


Figure 20: Servicing Constraints

Strategic Residential Growth Principles

33. Based on the information included in Figure 20, the balance of the Hillview land (Southlakes Estate) shall only be developed to the location as shown in Figure 20. Land situated in the Stage 2 Structure Plan area will require the preparation of an infrastructure and servicing strategy for the overall land area.
34. The Infrastructure and Servicing Strategy referred to in Principle 33 above shall be prepared by the owners of the subject lands.
35. The Cardno Keswick Drainage Review, August 2010 (Report No. W4823-1) is the adopted strategy for the provision of stormwater infrastructure to service the subject lands. Any developer seeking a variance to the regime included in the Strategy shall be required to prepare an independent stormwater drainage strategy that can detail how the projected stormwater volumes can be managed on the subject lands and through to receiving waters. Council is under no specific requirement to approve any alternative stormwater drainage strategy.
36. Any future site-specific Development Control Plan for the Southlakes lands shall be required to include a detailed section providing overall infrastructure principles and information explaining how residential development is proposed to be serviced in accordance with Council's adopted Policies, plans and practices.

6.8 Environment

Objective Statement

The natural environment is maintained or improved so as to sustain a high level of environmental quality and minimise the negative impacts of development on the environment.

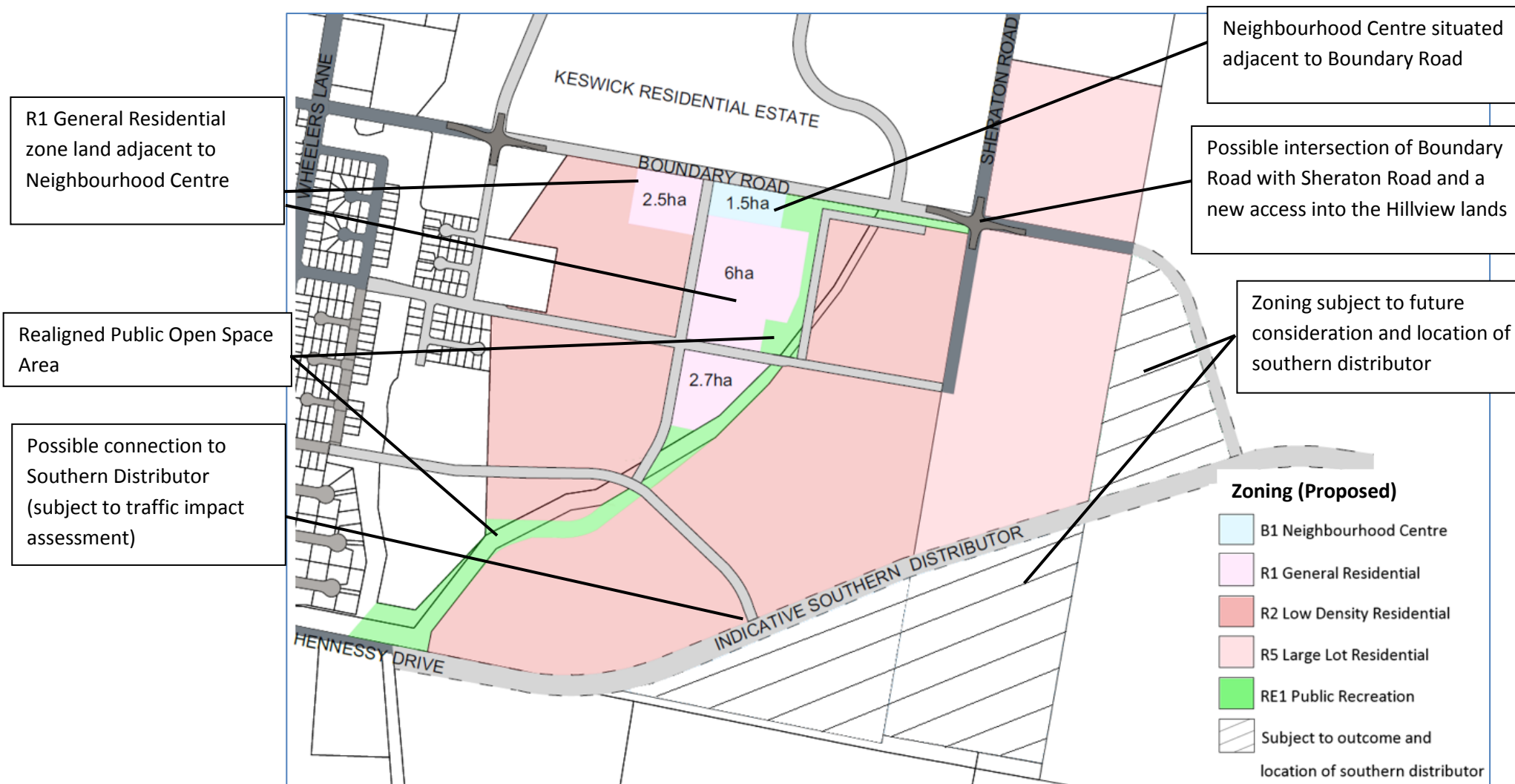
Statement of Rationale

The subject lands contain known areas of threatened species, including endangered ecological communities and habitat for threatened fauna. Development of the subject land should ensure that impacts on these species are avoided where possible or mitigated where necessary. Development should also seek to respect other features of the natural environment, including topography and the flow of water to the Macquarie River.

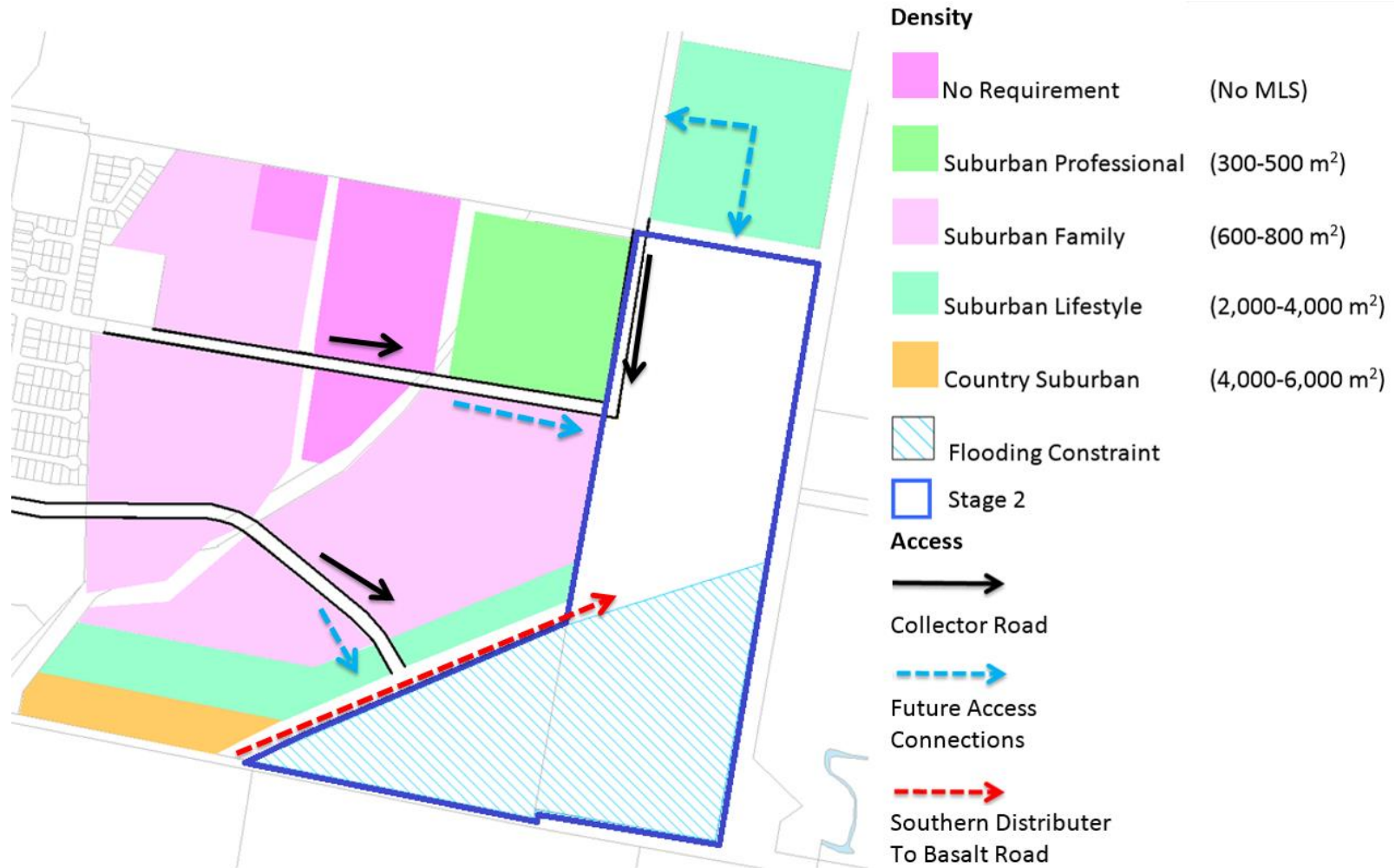
Strategic Residential Growth Principles

37. Land degradation and clearing is minimised and natural assets are maintained or enhanced.
38. Development meets the 'improve or maintain test' by avoiding impacts to areas of high conservation value and providing offsets for unavoidable impacts.
39. Any future development application for subdivision across the subject site will provide a detailed and comprehensive Salinity Study and Salinity and Groundwater Management Plan.
40. The Fuzzy Box Woodland Endangered Ecological Community contained in Keswick shall be protected from development and enhanced with further plantings and an appropriate management and maintenance regime.

6.9 Zoning Southlakes and other lands



6.10 Development Density Southlakes and other lands



7. Staging of Development

As discussed in the Structure Plan, the development of the Southlakes lands should be undertaken under a logical staging regime having regard to the servicing constraints associated with the land.

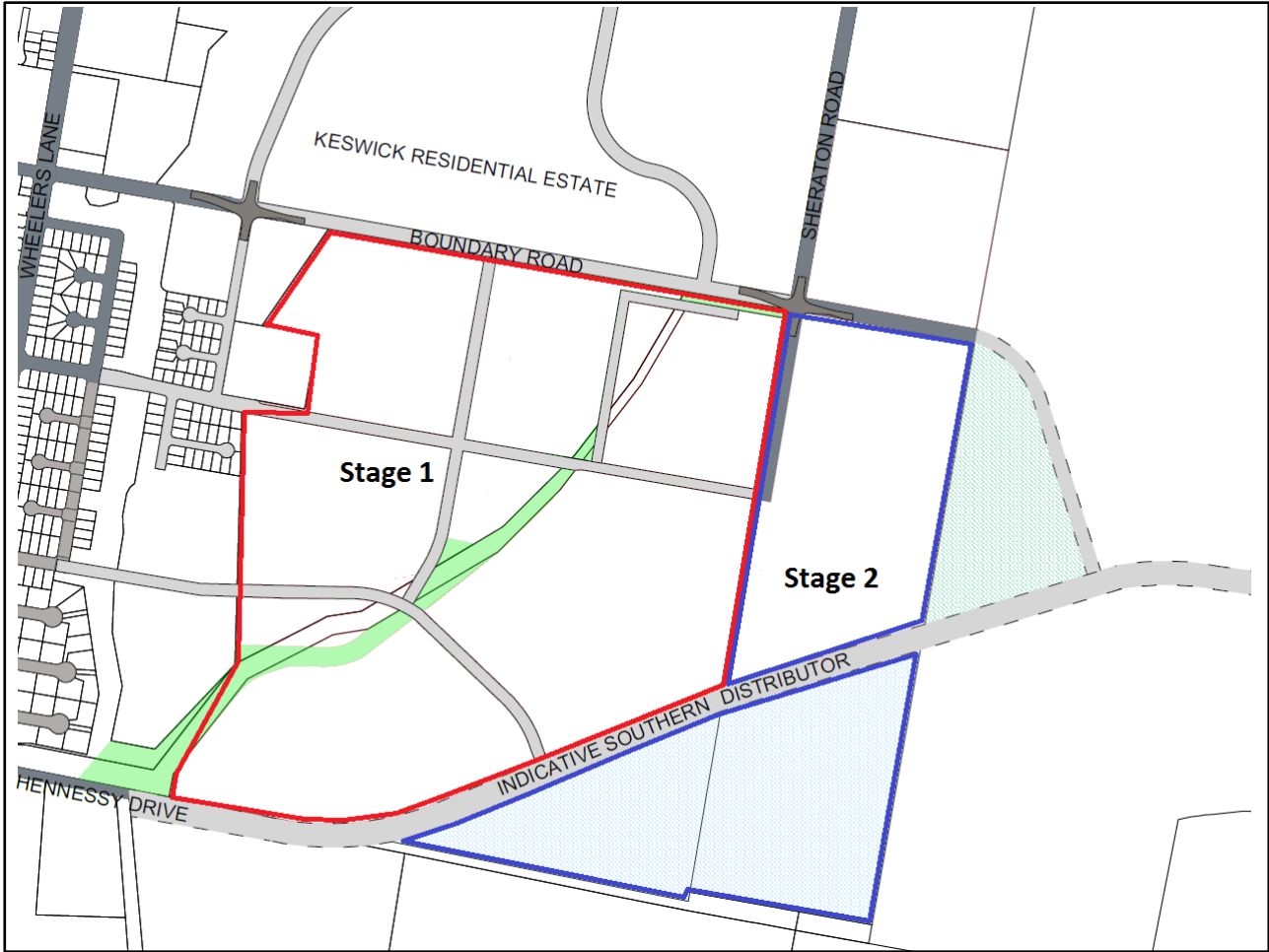


Figure 21: Development staging

8. Monitoring and Review

This Structure Plan will be reviewed by Council from time to time as a result of any proposed change in land use zoning and/or development density in this precinct or any change in the provision of access and movement infrastructure that may impact development of the area as envisaged by this Structure Plan.

It should be noted that any Planning Proposal considered by Council will be required to show consistency with the Strategic Growth Principles as included in the Plan and the indicative land zoning and development density across the area.

If an individual landowner wishes to seek variation to the provisions as contained in this Structure Plan, a formal request to vary the Structure Plan must be provided to Council. This formal request shall include details of the variation, the reasons for and a planning report explaining the proposed variations/s in the context of the overall aim of the Structure Plan. Council will reserve the right to place any requests for variation of this Structure Plan on public display to seek the views of the public and/or seeks the views of State Government Public Agencies in the process.

As previously detailed, this Structure Plan forms part of Stage 1 of the process of facilitating orderly residential and other ancillary development in the South-East Dubbo Residential Release Area and other lands. This Structure Plan has not attempted to arrive at an ideal land use zoning layout and/or development density in respect of Keswick to the north. This work will form a key component of Stage 2 of the South-East Dubbo Structure Planning process.

Stage 2 of the South-East Dubbo Structure Plan will also consider the servicing and other constraints associated with the orderly development of the eastern residue portion of the Hillview lands Southlakes Estate) and other lands.