

Background information to support the Mount Gilead Planning Proposal

1.0 Strategic Planning Background

The Mt Gilead site is included both broadly and specifically in various State, regional and local strategic planning documents, and has been identified as providing a significant contribution towards meeting Government housing targets for the metropolitan area. The relevant Strategic planning framework is discussed below.

1.1 Metropolitan Plan for Sydney 2036

The Metropolitan Plan 2036 (The Plan) is the strategic plan that guides Sydney's growth to 2036. The Plan is an integrated, long-term planning framework that will significantly manage Sydney's growth and strengthen its economic development to 2036, while enhancing its unique lifestyle, heritage and environment.

The Plan sets five central aims to manage Sydney's growth by enhancing the city's liveability, strengthening economic competitiveness, ensuring fairness, protecting the environment and improving governance.

The Plan projects Sydney's population to grow by 1.7 million to almost 6 million people by 2036. To support the population growth, Sydney will need an additional 770,000 homes by 2036. In addition to the housing targets, employment growth is envisioned at 760,000 jobs across the City. The Plan sets capacity targets for each subregion to facilitate housing and economic growth through providing more jobs closer to home.

The Plan also aims to concentrate development in centres or transit nodes. Campbelltown – Macarthur is classified as a Major Centre servicing the South West subregion. Major Centres are the building blocks of the city and provide a focus for activity and public transport. Sydney has many centres of different sizes; concentrating a greater range of activities near centres well served by public transport. The Plan anticipates the South West to provide an additional 155,000 dwellings and 141,000 new jobs by 2036, with Campbelltown – Macarthur Strategic Centre contributing 11,000 of these jobs.

1.2 South-West Draft Subregional Strategy

The Metropolitan area is too large and complex to resolve all the planning aims and directions down to a detailed local level. Thus, the Metropolitan Plan sets the framework targets for 10 Metropolitan subregions to provide for major growth in housing and employment in the subregion.

The South West Draft Subregional Planning Strategy, which covers the local government areas (LGAs) of Liverpool, Campbelltown, Camden and Wollondilly (see **Figure 1**), sets the broad direction for additional dwelling and employment growth. The target for the South West is 155,000 additional dwellings and 89,000 new jobs by 2031.

Out of the 155,000 additional dwellings for the South West, the Subregional Strategy states that Campbelltown will aim to provide 73,618 dwellings by 2031, with 4,700 of these in the Campbelltown greenfield release areas.

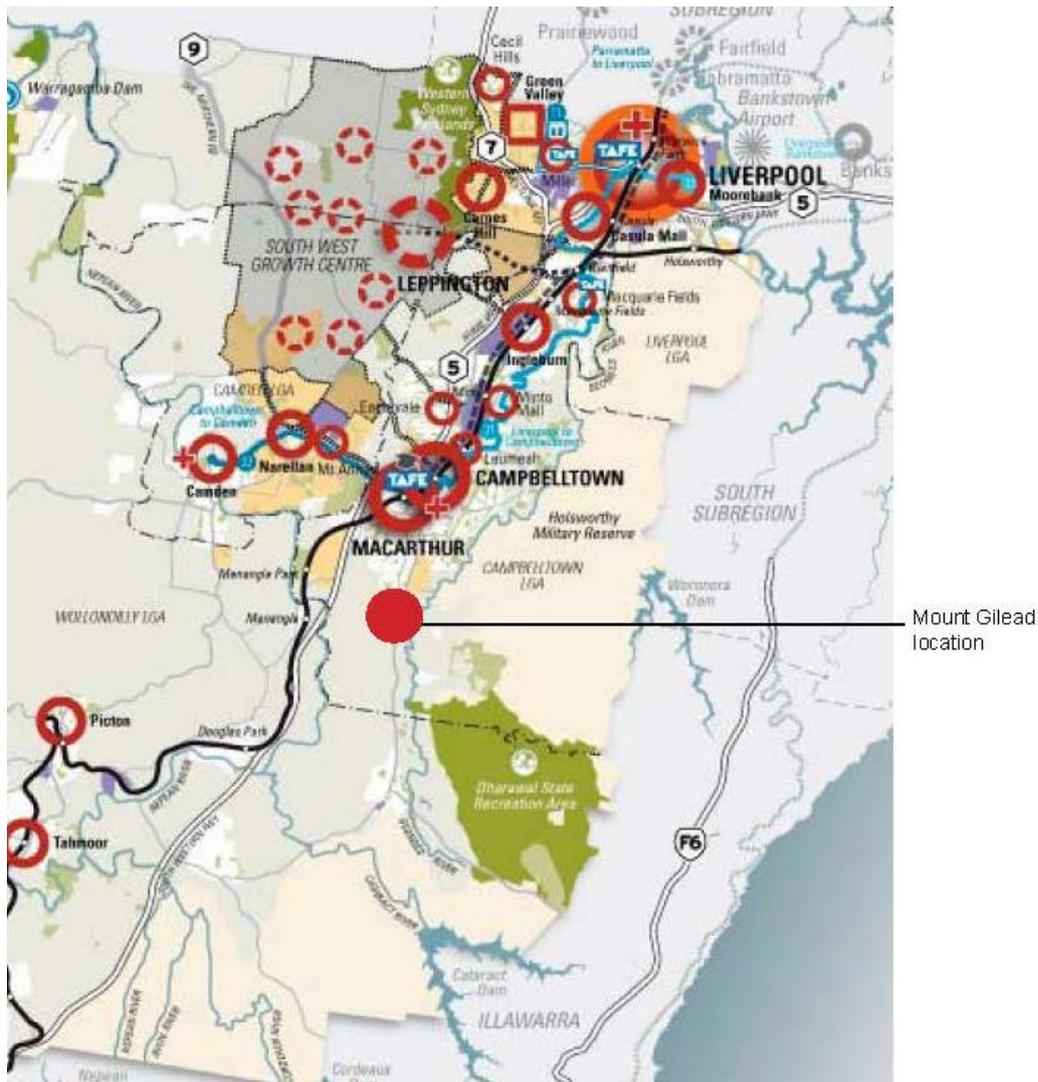


Figure 1 – Metropolitan Plan and the South West subregion indicating Mt Gilead
 (Source: Metropolitan Strategy)

The majority of jobs will be concentrated within the northern and eastern parts of the subregion, which includes Liverpool and Campbelltown, with the Campbelltown LGA specifically identified as having an employment capacity target of 26,000 additional jobs by 2031.

There is potential for Campbelltown-Macarthur to become a Regional City, providing a full range of business, government, retail, cultural, entertainment and recreational activities for Campbelltown, Camden, Wollondilly and Wingecarribee residents. The sub-regional strategy envisages Campbelltown to develop into a more integrated centre with a focus on its role as a major education, health, service and business centre for the South West.

To become a Regional City, it will be essential for Campbelltown to develop a more urban and better connected core, including a vibrant public domain, higher or larger footplate buildings and expanded residential areas with direct walking and transport access. The development of Campbelltown-Macarthur Centre as a Regional Centre will require both residential and employment growth.

The rezoning of the Mt Gilead site will have a direct impact on the Campbelltown-Macarthur Centre, as it will contribute to the dwelling target growth within the Centre through Greenfield land release and provide a choice of dwelling/lot sizes that would appeal to a people in a range of employment categories.

1.3 Metropolitan Development Program

The Metropolitan Development Program (MDP) 2010/ 2011 Report is the State Government’s key program for tracking and managing housing supply and covers major infill sites in existing urban areas as well as the release of greenfield areas typically on the metropolitan fringes.

The 2010 /2011 MDP Report (released 5th April 2012) includes an assessment of land supply and dwelling production. It incorporates a review of population growth and housing market activity and analysis of key greenfield land release sites. A main function of the MDP is to manage land supply to meet new housing needs from urban renewal and greenfield sites in Sydney.

The program is rolled forward annually and includes assessing future land supply to meet housing needs and maintaining housing and land supply databases.

The MDP identifies the Mt Gilead site as greenfield release land that is yet to be zoned (refer to **Figure 2** below), and indicates that the zoning and servicing timetable is yet to be determined.

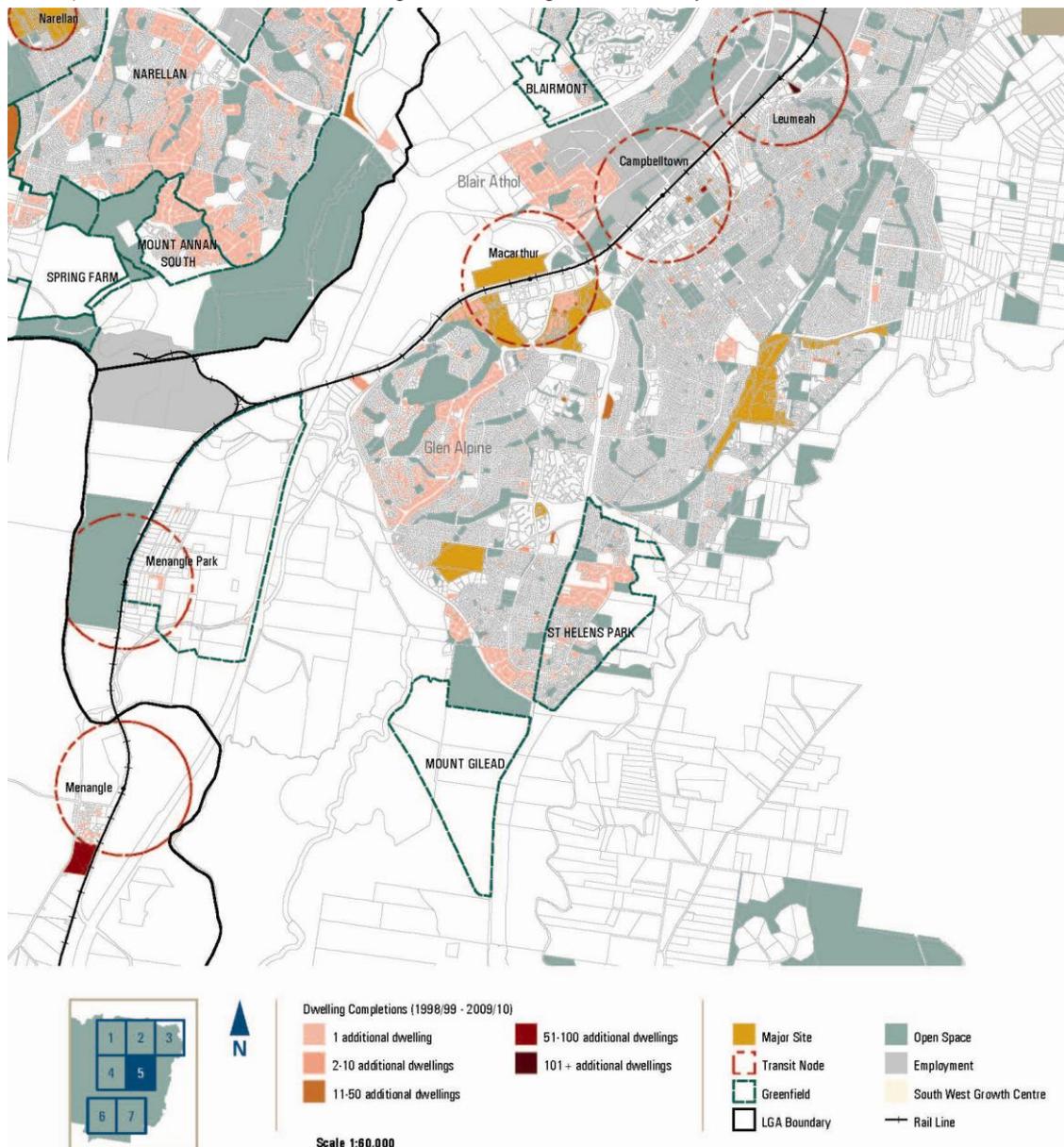


Figure 2 – Mt Gilead identified as Greenfield land within the MDP (Source: MDP 2010 / 2011)

1.4 Campbelltown Council Strategic Policies

Campbelltown City Council has adopted 'Campbelltown 2025 – Looking Forward' which provides an overarching planning strategy that sets social, environmental and economic foundations for the growth of the City. The document articulates a vision to provide a sustainable City by 2025. The vision sets out desired outcomes and 'focus areas' that will need to be considered in future development within Campbelltown. Their relevance to the Mt Gilead site is set out below.

Growing the Regional City

This focus area sets out a vision to ensure a sustainable future for Campbelltown city as a strong regional centre with regional facilities and employment opportunities. By supplying a range of lot sizes averaging 700sqm in area, development of the Mt Gilead site can make Campbelltown more attractive for investment in new enterprises and infrastructure so facilitating longer term sustainability and job growth.

Building a Distinctive Campbelltown Sense of Place

Campbelltown is to grow into a place that is distinctive in terms of natural and built environment, offering residents a relaxed, safe and scenic environment.

The proposal at Mt Gilead will produce a community that will build to the site's natural landscape features, achieving a natural and scenic surrounding environment, offering a relaxed community setting.

Getting Around the City

The development of the City is to be planned and integrated around transport needs. Future planning is to increase opportunities for accessibility and reduce the need for private cars with increased use of existing public transportation within the City.

Mt Gilead will be linked by bus to Campbelltown City Centre.

Building and Maintaining Quality Infrastructure

New development is to satisfy its own infrastructure requirements by means of direct provision on site or contributing proportionately to the broader infrastructure upgrades by Council.

The site is able to be serviced to support the incoming community.

Creating Education, Employment and Entrepreneurial Opportunities

The City's vision is to retain and create jobs to grow the supply of skilled and adaptable workers within the City. By catering for the mid to upper end of the housing market, Mt Gilead can facilitate the City's growth in professional and business jobs.

2.0 The Site

2.1 Legal Description and Ownership

The site consists of four lots (as shown in **Figure 3**):

Part Lots 1 and 2 in DP 807555 and Lot 59 752042, owned by Mt Gilead Pty Ltd, a company of the MacArthur Onslow family that has held property around the area since the 1940s.

Lot 61 in DP 752042, owned by S & A Dzwonnik.

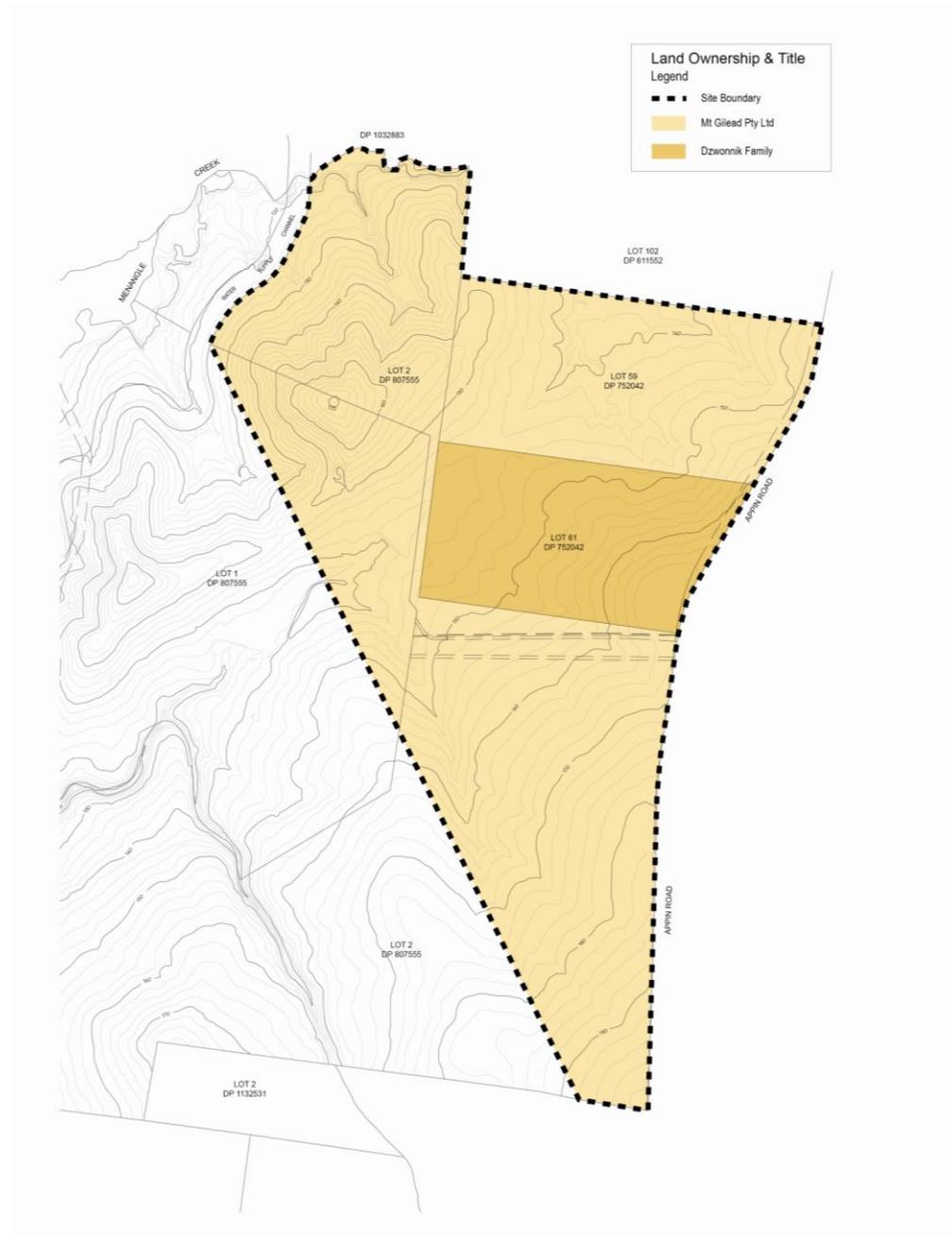


Figure 3 – Land titles and ownership (Source: Cox Richardson)

2.2 Site Location and Context

The Mt Gilead site, as defined in the MDP, is located in the Campbelltown LGA approximately 7 kilometres south of the Campbelltown city centre. Mt Gilead (herein referred to as 'the site') covers a total area of some 210 hectares, part of which is the long-established Mt Gilead rural property (see

Figures 4 and 5).



Figure 4 – Aerial photograph of the site (Source: Cox Richardson)

The site is bounded by:

Appin Road to the east;

Noorumba Reserve and Non-Urban land (being developed for seniors housing) to the north;

the Sydney Water Supply Canal (the Upper Canal) and rural land associated with the Mt Gilead homestead, Mill and farm to the west; and

the Beulah Biobanking bushland to the south.

Access to the site is currently via a driveway entry off Appin Road.

More broadly, the surrounding locality includes:

the low density residential suburbs of Rosemeadow and St Helens Park (including Kilbride Aged Care Facility and Retirement Village) located around one kilometre to the north;

the M5 motorway beyond the Mt Gilead Homestead and farm to the west;

the Nepean River about 2 kilometres to the west of the Mt Gilead Homestead

a number of rural land parcels along the eastern side of Appin Road adjoining the Dharawal State Recreation Area;

the Georges River approximately one kilometre to the east of Appin Road, and.

the Beulah Estate and rural residential land further to the south.

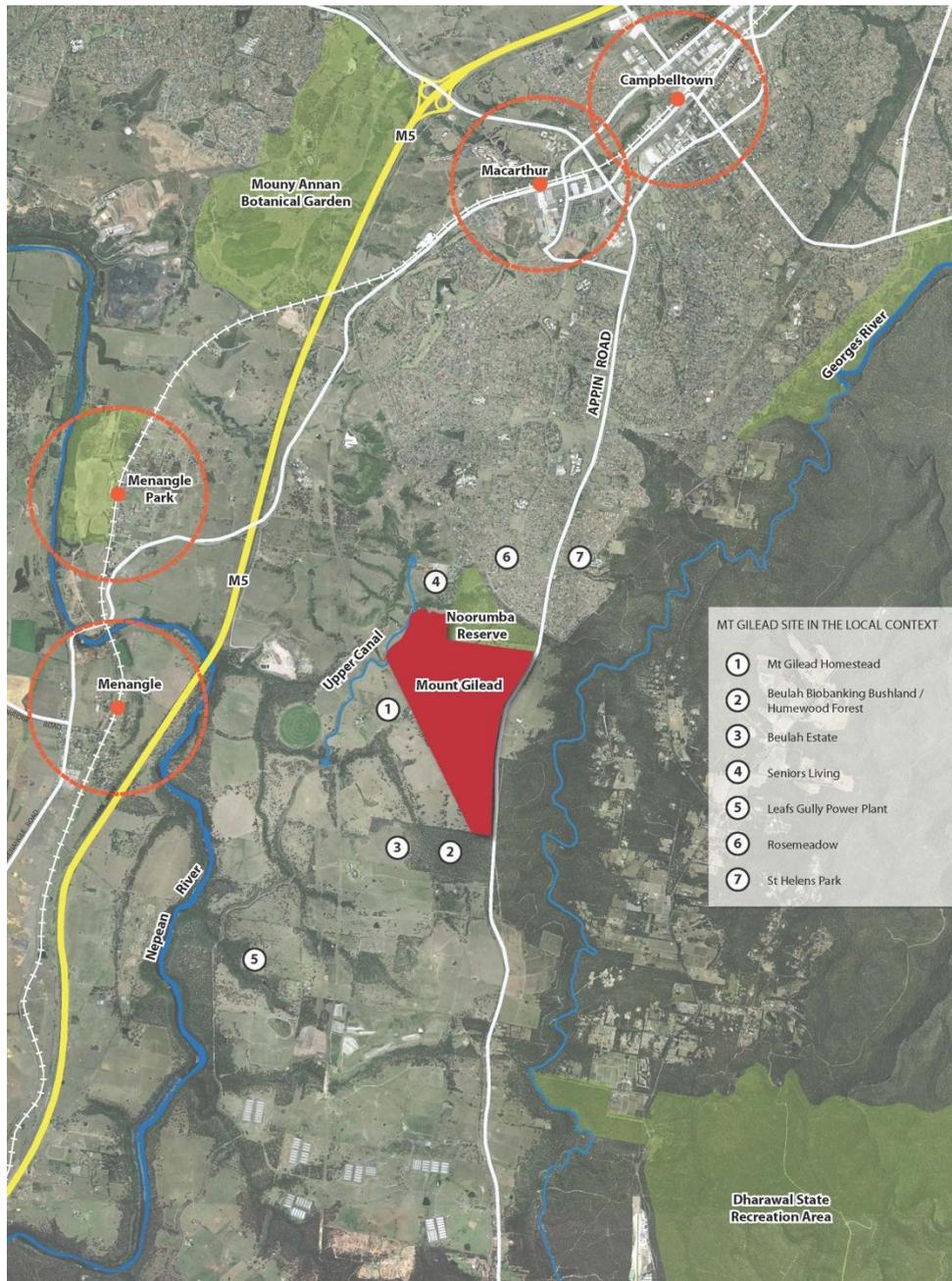


Figure 5 – Site Context (Source: Cox Richardson)

2.2.1 Relationship to Surrounding Development

The urban areas to the north of the site are predominately residential, forming the southern extent of residential development in Campbelltown. This land is categorised as low density, single dwelling development, while the Non Urban zoned land to the immediate northwest of the site is being developed for seniors living. As the

Mt Gilead site is located less than 1km to the south of the above development the proposed rezoning will provide a logical addition to the residential area (refer to **Figure 5**).

The Noorumba Reserve which part forms the northern boundary of the site is a significant local natural resource in that it contains Cumberland Plain Woodland including 39 plant species of regional significance.

2.2.2 Relationship to Leafs Gully Power Plant

The Mt Gilead site is located 2 to 3 kilometres to the north east of the site for the approved AGL Leafs Gully Gas-Fired Power Plant. Leafs Gully is located approximately 4.5km north-west of Appin and 14km south of Campbelltown CBD and currently operates as a trotting horse breeding and training facility.

The Gas-Fired Power Plant, approved by the (then) Department of Planning in August 2009, will utilise two open cycle gas turbines with a nominal power generating capacity of approximately 280-360 MW. The electricity generated from the plant would be fed into the 330KV transmission network via a new switchyard on the site. Natural gas will be supplied to the plant via existing pipelines. While it is likely that the plant will operate between two to three per cent of the year, the Director-General's Environmental Assessment Report assessed an operating scenario of 15 per cent of the year in order to determine worst case environmental impacts.

The Environmental Assessment Report considered the impacts of the power plant proximate to the residential land release of Mt Gilead, and concluded that due to the distance between the two land uses, the proposed 30 hectare area of additional vegetation, and a large vegetated earth mound, the resultant impacts on visual amenity, noise and air quality from the operation of the plant would be either nil or negligible (Source: Director-General's Environmental Assessment Report, August 2009).

2.3 Site Characteristics

The site has been predominantly used for agricultural purposes and thus contains cleared paddocks with improved pastures. Pockets of residual vegetation are located along drainage lines and steeper slopes. There are no buildings or other improvements on the land, other than a track to the Mt Gilead homestead. The land is currently used for cattle grazing and other agricultural activities.

Topographically, the land is generally undulating throughout. The steepest land is in the north-western corner with a gradient greater than 1:6, while the highest point is in the south-eastern corner bordering Appin Road (see **Figure 6**).

The available 1:100,000 geological maps show that the land is part underlain by Hawkesbury Sandstone and part by Wiannamatta Shales. Soils are generally of the Blacktown group.

Several drainage lines (dry creeks) traverse the site draining towards the Nepean River. A number of farm dams have been constructed to capture surface water flows.

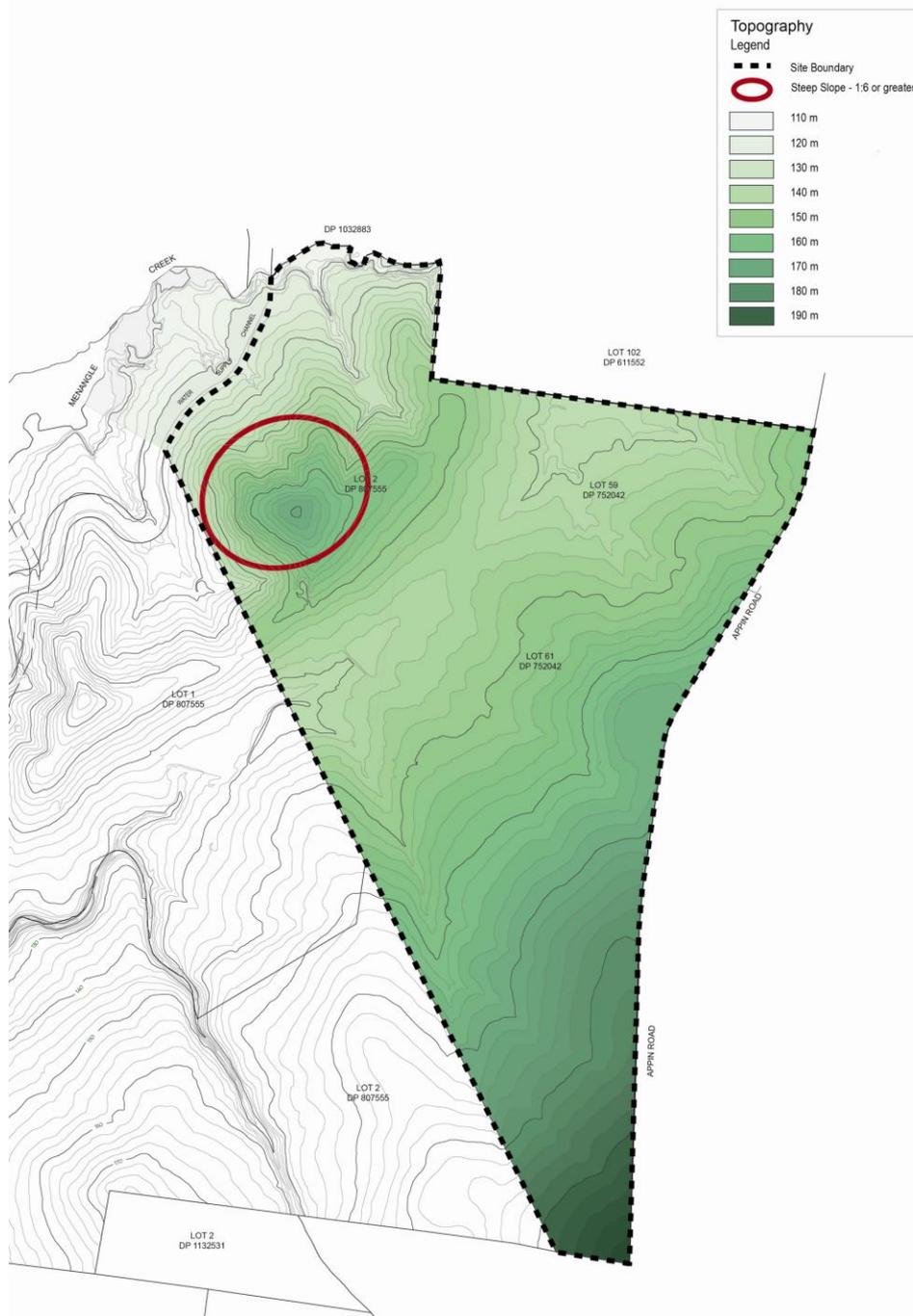


Figure 6 – Mt Gilead topography (Source: Cox Richardson)

2.4 Current Land Use Zoning

The site is zoned No. 1 (Non Urban) within the City of Campbelltown Interim Development Order No. 15 (IDO 15) as shown in **Figure 7**.

Essentially, the IDO does not permit subdivision in Zone 1 unless a minimum area of 100 hectares can be achieved. It has several other provisions relating to agriculture and rural uses and seeks to retain large lots for this purpose.

Under the IDO, the proposed residential development of the Mt Gilead land would not be permissible.

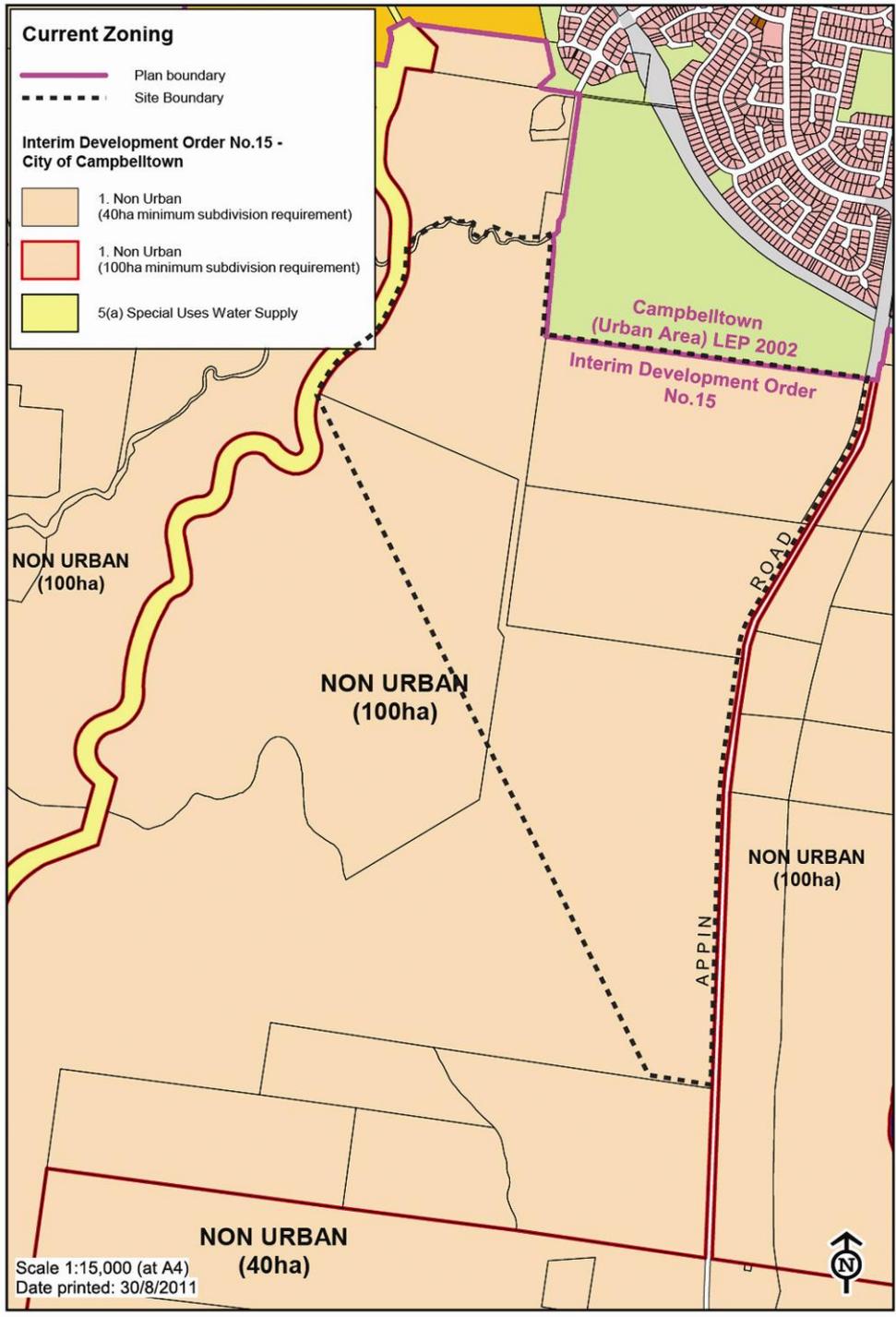


Figure 7 – Extract from land use zoning map

3.0 Land Proposed to be Rezoned

3.1 The MDP Site

The MDP identifies the site, the subject of this Planning Proposal, as essentially a triangle extending south of Campbelltown's urban footprint. The western boundary of the MDP site diagonally bisects Lot 1 in DP 807985 ending at the south eastern boundary of Lot 2 in DP 807555. The eastern boundary is Appin Road. The total land area of the MDP site is 210ha.

Figure 8 shows an indicative illustrative layout for the site to support the site configuration shown in the MDP. The MDP indicates a yield of 1500 dwellings from the Mt Gilead site. Based on the site area and environmental features and constraints, this would produce a range of lot sizes on average 700sqm in area - summarised indicatively in the following table.

The indicative illustrative site layout confirms that 1500 lots can be achieved in accordance with the requirements of the MDP.

Table 1 – Indicative development statistics

Site Area	210 ha
Total Developable Land	105 ha
Dwelling Yield	1500 lots
Average Lot Size	700sqm
Estimated % of undevelopable land (roads, infrastructure, riparian corridors) based on previous studies)	50%

3.2 Concept Plan

A concept plan will be provided as part of the final Planning Proposal, illustrating an indicative residential layout for a quality new suburb that is a natural and logical extension of the Campbelltown urban footprint.

It is intended that development of the site will deliver a broad range of lot sizes consistent with the natural features of the site, the need for environmental buffers and the provision of a legible street layout. Average lot size will be 700 sqm in area so providing a broad choice of dwellings types for potential buyers.

The key features of the Concept Plan will be to:

Incorporate and maximise the existing landscape and topographical characteristics of the site;

Retain existing native vegetation and protect and enhance biodiversity and sensitive habitats

Enhance the existing riparian corridors;

Protect visually prominent features such as ridgelines;

Enhance visual links to distant views, heritage features and open space;

Encourage passive surveillance and increase safety;

Facilitate sustainable transport and access;

Maximise solar access for future lots and sustainable design outcomes; and

Provide a legible and walkable neighbourhood.

The Concept Plan for Mt Gilead is founded on the aforementioned MDP boundary.

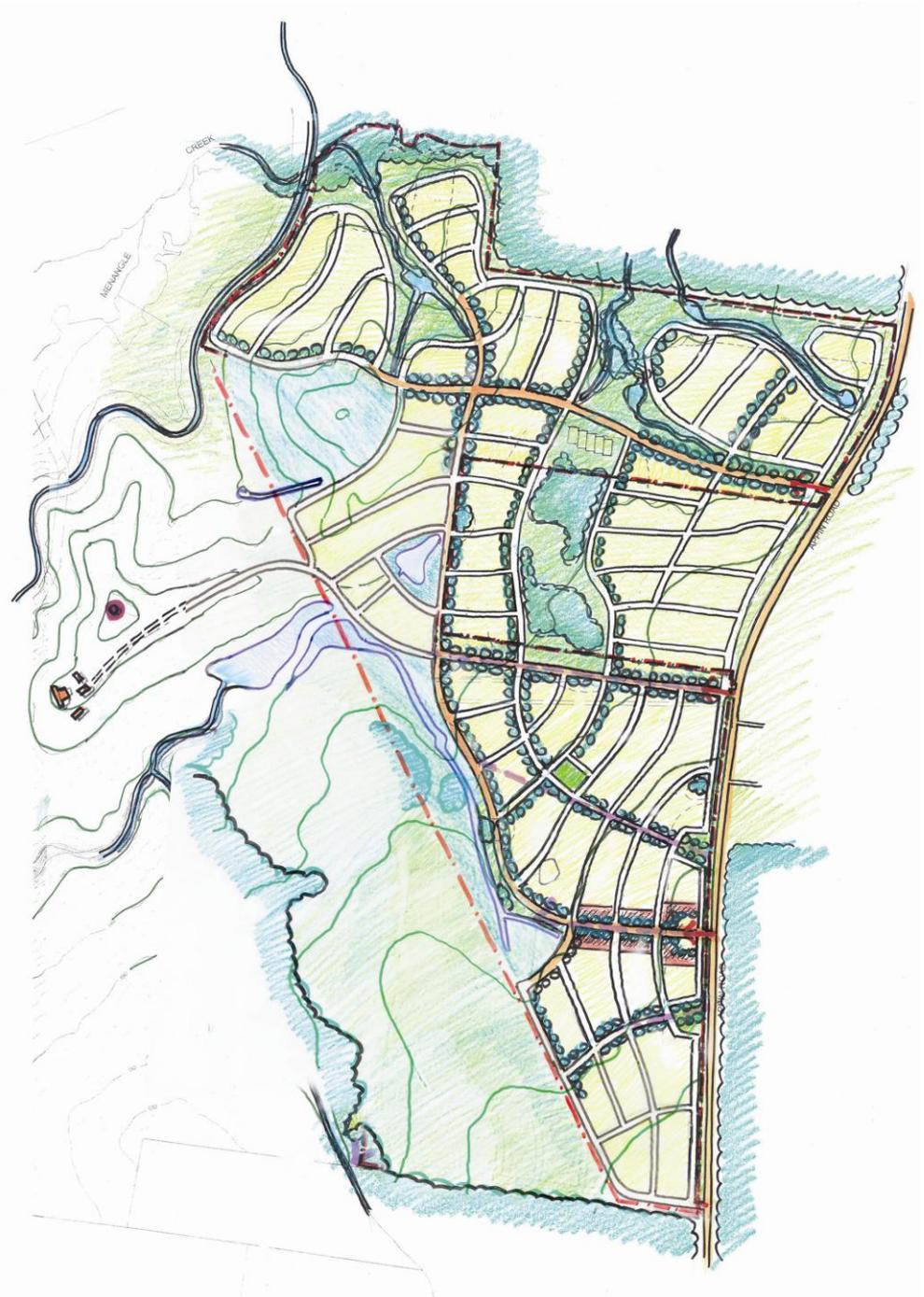


Figure 8 – Indicative layout (Source: Cox Richardson)

4.0 Key Planning Issues

The opportunities and constraints affecting the site are illustrated in **Figure 9** and the key planning issues relevant to the site are summarised in this section of the report. These will be investigated in detail to support the next stage of the rezoning process. Much of the information in this section is based on previous studies undertaken some years ago for a broader area than the current site but which excluded the Dzwonnik land. The issues are likely to apply to the Mt Gilead site the subject of this proposal and have been extrapolated to the Dzwonnik land.

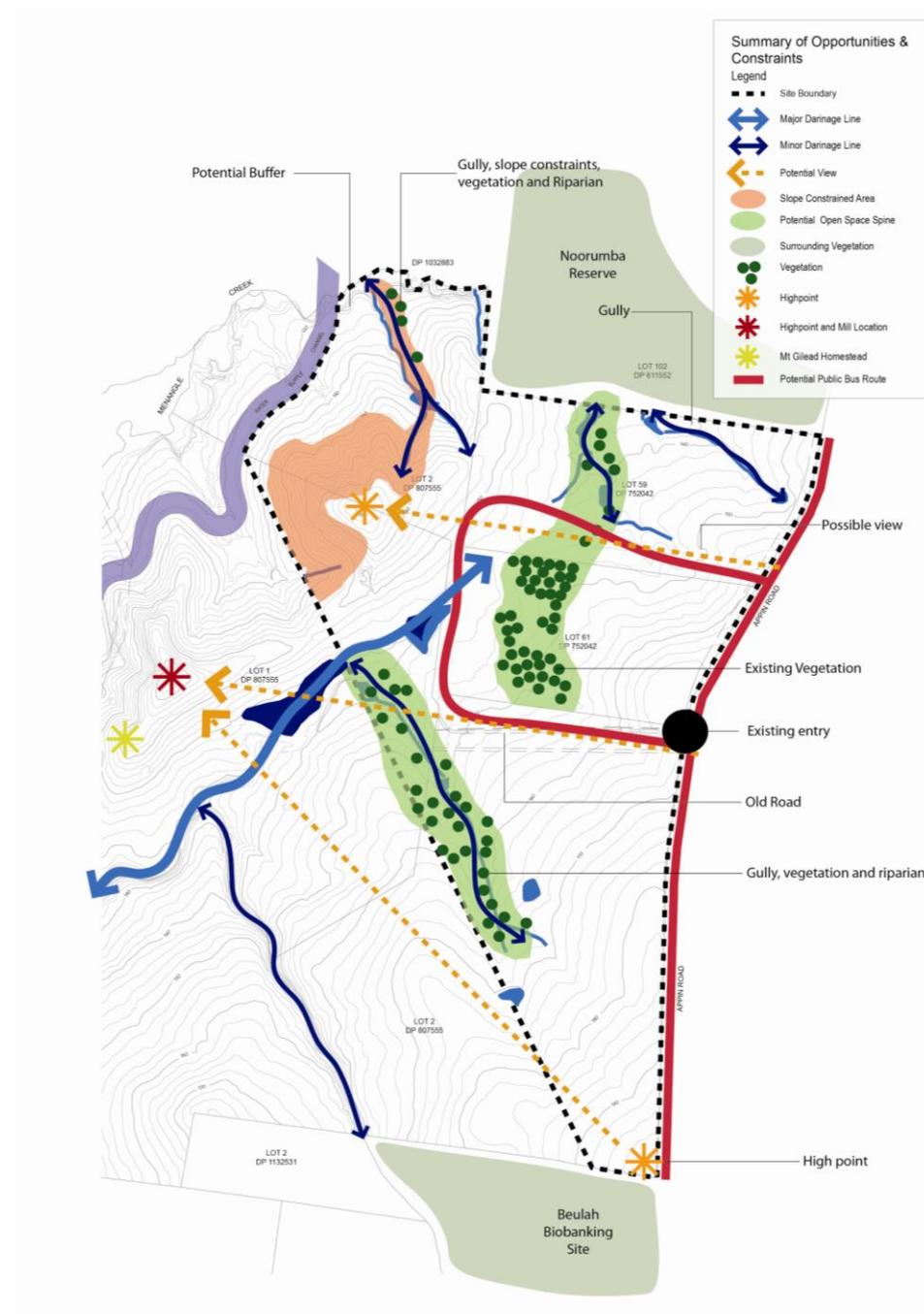


Figure 9 – Opportunities and constraints

4.1 Housing Supply

The following are the key issues in relation to the supply of housing in Campbelltown of relevance to the proposal:

- The LGA has a much higher proportion of public rental housing, and much lower private rental housing than the Sydney average.
- Relatedly, unemployment in the LGA is above Sydney's average (8.5% in comparison to 6.1% for Sydney as a whole in 2001) with high unemployment rates particularly concentrated in the public housing suburbs.
- Campbelltown has a much lower proportion of people in the white collar occupational categories (managers, administrators, professions) and a higher proportion in the less skilled categories.

Campbelltown-Macarthur is identified as a Major Centre in the Sydney Metropolitan Region, and the Metropolitan Plan 2036 has identified a range of measures - including State government support - for the growth of the centre. It is understood that CCC wishes to stimulate and broaden the area's economic base and range of business opportunities. A limitation in housing choice may limit the attractiveness of the Campbelltown area as a place to live for professional and business people. The proposed average lot size at the Mt Gilead could help redress this issue, so contributing to the growth of Campbelltown-Macarthur as a Major Centre in accordance with strategic directions articulated by the Metropolitan Plan 2036.

4.2 Noise and Air Quality

The site may be impacted by traffic noise and air quality from Appin Road to the east.

As the proposal intends to increase the residential density within the area, further noise and air quality investigations will be undertaken to identify any adverse impact on air quality and noise at the site and to provide measures to mitigate these.

4.3 Ecology

4.3.1 Flora

The majority of the land is cleared of vegetation as a result of its continued agricultural use. However, previous mapping and research of the site shows the limited presence of Shale Sandstone Transition Forest and Cumberland Plain Woodland listed as endangered ecological communities (EECs) under the *Threatened Species Conservation Act 1995* (TSC Act) and the Commonwealth *Environmental Protection & Biodiversity Conservation Act 1999* (EPBC Act).

The impacts of the proposal on any threatened flora species and endangered ecological communities within the site will be fully investigated as part of the next stage, as will mapping of significant vegetation and the management of vegetation features of the land. As a general principle, existing significant bushland and riparian corridors will be incorporated into local parks or into development sites with appropriate protection measures. Areas of vegetation are shown at **Figure 10**.

The site may support areas of potential koala habitat, and is well connected to other potential habitat both on and off site. Indicative koala food trees on the site are primarily forest red gum (*Eucalyptus tereticornis*), and grey gum (*Eucalyptus punctata*) and it is likely that these two species would have been abundant in areas that are now pasture. Remnant trees of these two species are still present in reasonable numbers at the edges of gullies or as pasture trees. In some areas, such as in the northeast region of the site, the pasture trees have become very large and could have high value for koalas, despite being some distance from neighbouring vegetation.

The broader locality is also considered to be important in providing connectivity for koalas between the Georges and Nepean River Catchments (see **Figure 11**).

The interface of the proposed urban area with the neighbouring bushland of Noorumba Reserve to the north and the Beulah Biobanking site to the south will be assessed and measures put in place to avoid any impacts on the ecological values of these areas.

The concept plan for the site (to be submitted with the final Planning Proposal) will also address the need, if any, for ecological buffers. Specifically, details on the location and width of buffers between future residential land and Noorumba and the biobanking site will be incorporated into the concept plan. Should they be necessary, the site area and potential range of lot sizes provide flexibility so removing any impact on overall dwelling yield.



Figure 10 - Vegetation

4.3.2 Fauna

Whilst most of the site has been cleared of the original vegetation communities, there are scattered trees and creek tributaries that can provide habitats for fauna species in the area. Fauna habitat that can provide potential environments for amphibians, birds, reptiles and mammals that were noted on site in previous assessments included a large number of hollow bearing trees; woody debris and leaf litter in vegetated communities; outcropping rock and rock crevices; and dams and creeks.

Only one threatened species listed in the TSC Act was recorded on the site during a previous assessment of the broader locality - the Brown Treecreeper, a bird species.

The koala is listed under the TSC Act as a vulnerable species with management of generally enacted through State Environment Planning Policy 44 – Koala Habitat Protection (SEPP 44). Previous studies of the broader locality did not establish the presence of koalas on the site despite the presence of koala food trees (as discussed above). However, breeding animals are known to exist in Wedderburn and the eastern suburbs of Campbelltown and koalas have also been recorded around Appin and other locations to the south.

CCC has a draft Koala Plan of Management (KPoM) which will be addressed in further studies to establish whether the site contains core koala habitat (under SEPP 44) and ensure potential koala habitats and corridors are not adversely impacted.

The site and surrounds provide potential opportunities to enhance and maintain the vegetated links between the Georges and Nepean Rivers which play an important role for fauna movements in the locality. Notwithstanding this, as shown in **Figure 11** the corridors and links are located outside the site area - and thus the proposed rezoning will have little impact on these corridors. Nevertheless, the Planning Proposal will investigate the impact of the proposal on potential fauna habitats and connections through the abovementioned flora and fauna report and the future residential layout will address any important wildlife corridors within the site.



Figure 11 – Indicative vegetation connections and corridors outside the site (Source: Cox Richardson)

4.4 Riparian Corridors

There are a number of drainage lines/creeks and several farm dams across the site. Based on previous investigations for part of the site, these are likely to be classified as 2nd, 3rd and 4th order streams (see **Figure 12**).

A detailed creekline corridor assessment and study of the hydrogeology of the site will be undertaken to inform the Planning Proposal. Requisite riparian corridors and buffers will be incorporated into the concept plan for the site. These will not affect the dwelling yield on the site.

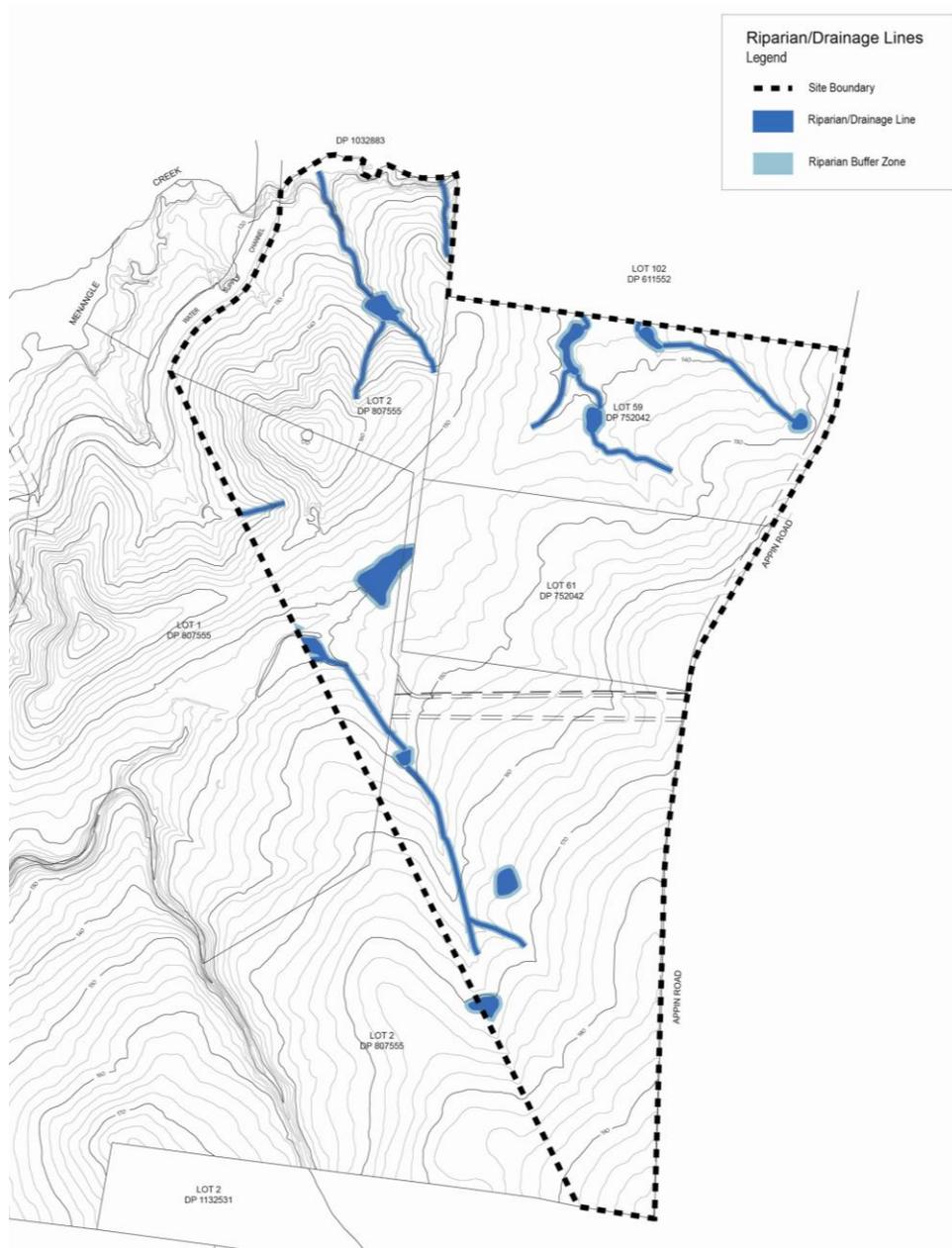


Figure 12 – Riparian corridors (Source: Cox Richardson)

4.5 Bushfire

A previous study of a broader area than the subject site indicates that the vast majority of the land has a low bushfire risk, due to clearing and pastoral uses and relatively moderate slopes. Nevertheless, the need for bushfire protection measures as identified in Planning for Bushfire Protection 2001 (PBP) such as Asset Protection Zones (APZs), will be addressed in the final planning proposal and incorporated into a site concept plan.

APZs will be provided at the interfaces with Noorumba Reserve and the Beulah Biobanking bushland - all off-site and categorised as Category 1 bushfire risk as per Campbelltown City Council's Bush Fire Prone Land Map.

It should be noted that should APZs and appropriate buffers be required, they will be incorporated into the development and are not expected to affect the dwelling yield of the site as the extent of land and proposed average lot size provide considerable flexibility.

4.6 Soils and Geotechnical Conditions

A few parts of the site are relatively steep (in the north west and south east). Slope stability and the geotechnical suitability of the land for residential development will be assessed for the detailed Planning Proposal. However, previous investigations indicate that there are no significant slope instability constraints to development on the gently sloping areas.

A previous inspection of the Acid Sulphate Soil Risk Map and Salinity Map for the broader locality indicates that the site presents a low risk of Potential Acid Sulphate Soils, and low soil salinity. This will be confirmed and addressed in the detailed Planning Proposal.

4.7 Resource Extraction

4.7.1 Mine Subsidence

The Mt Gilead site lies within the South Campbelltown Mine Subsidence District and is known to overlie coal resources in the Bulli and Balgownie Seams. It is therefore possible that underground coal mining could occur in the future with potential consequential subsidence of land and adverse impacts on surface infrastructure.

The level of damage to building structures has been assessed within previous studies across a broader site. The assessment indicates that any mining beneath the proposed urban areas at a depth of 490 to 580 metres is technically feasible, and that buildings and infrastructure can be designed to accommodate ground movements.

Future investigations specific to the site will be undertaken in support of the detailed Planning Proposal.

4.7.2 Coal Seam Gas

Mt Gilead Pty Ltd, the owner of the majority of the site, has not received any notices of coal seam gas (CSG) extraction on the MDP land under its ownership nor its broader land holdings. There is no indication of interest in the land for CSG extraction at this time.

4.8 Contamination

Previous site investigations assessed and reviewed the history of the broader area and sampled soils and dam water. These studies included a Phase 1 and limited Phase 2 environmental and geotechnical assessment (in 2003), as well as an inspection (in 2006) of a broader area of land than that covered by the current proposal.

No evidence of contamination from agricultural and other activities was found in the 2003 study and it was concluded that:

there was minimal likelihood of significant chemical contamination likely to compromise development for residential land use; and

pasture improvement activities had not compromised the site for residential land use.

Notwithstanding this and given the efflux of time, further investigations will be undertaken for the final planning proposal to ensure that activities subsequent to 2003 have not altered the above conclusion.

4.9 Heritage

4.9.1 Non-indigenous Heritage

There are number of non-indigenous heritage items within close proximity to, or abutting, the site (see **Figure 13**). These are:

The **Sydney Water Supply Upper Canal System**, also known as the Upper Canal, forms the north-western boundary of the site. It is listed on the NSW State Heritage Register; the Interim Development Order No 15; the Sydney Catchment Authority's Heritage and Conservation Register; and the Register of the National Trust of Australia (NSW). Both the NSW Heritage Council and the Sydney Catchment Authority will be consulted about the proposal, and development in the vicinity of the item will incorporate an appropriate buffer in accordance with the existing Conservation Management Plan for the Upper Canal.

The **Mt Gilead Homestead and surrounding buildings and structures, including the Mill** are outside of, but in close proximity to, the site to the west. The Homestead and associated buildings is a local heritage item listed in Campbelltown IDO No 15; and the Register of the National Trust of Australia (NSW). While the heritage items are located outside of the proposed development area, the Concept Plan for the site will consider and develop measures to protect their visual curtilage and privacy.

The **Beulah Estate** lies approximately 0.5 to one kilometre to the south of the site. Beulah, a State heritage item, is a cultural landscape containing early colonial structures and an important garden layout, and is listed on the State Heritage Register and the Register of the National Trust of Australia (NSW), and in IDO 15. It is shielded from the site by the Beulah Biobanking bushland.

Humewood Forest lies to the immediate south of the site and is part of the Beulah Biobanking area. Humewood, a stand of trees associated with the former home of the Hume family (see Meadowvale below), is a local heritage item listed in IDO 15 and is significant because of the landscape value of its vegetation.

Meadowvale (formerly known as Humewood) is situated south of the Beulah Biobanking bushland. Meadowvale, a house with colonial characteristics and a local heritage item listed in IDO 15, stands on the original land grant made to Andrew Hume, the colonial explorer of NSW.

As part of the detailed Planning Proposal, further investigations of European heritage will be undertaken and measures identified to manage potential impacts in accordance with the relevant provisions of the *NSW Heritage Act 1977* and relevant Conservation Management Plans.

Buffers, if required, to the Upper Canal and to protect the visual curtilage of the Mt Gilead Homestead will not impact on the dwelling yield of the proposal given the proposed average lot size and the size of the site.

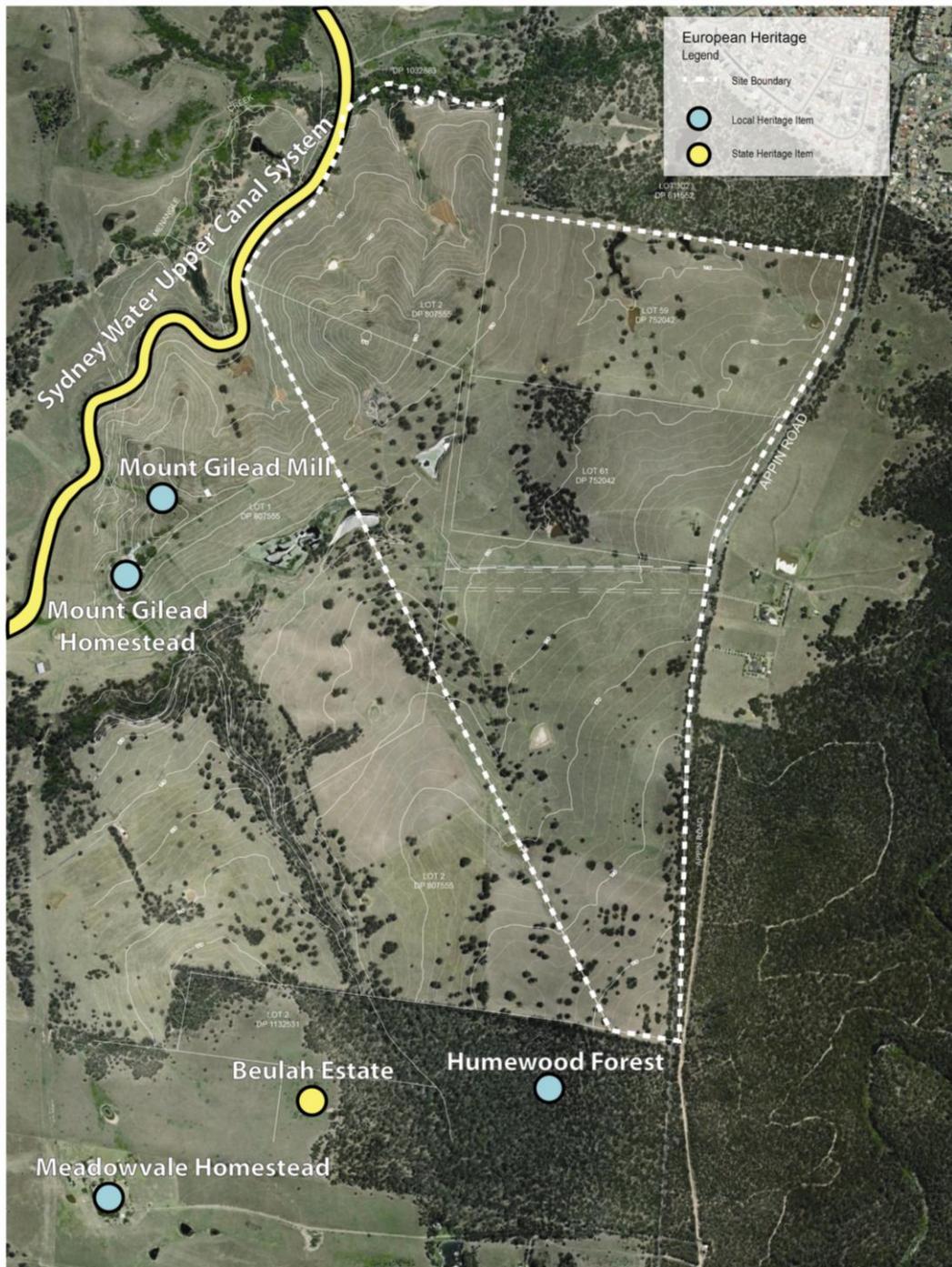


Figure 13 – Non-indigenous heritage items in the vicinity of the site (Source: Cox Richardson and JBA)

4.9.2 Indigenous Heritage

A search of the Aboriginal Heritage Information Management System (AHIS Search) managed by the NSW Office of Environment and Heritage was undertaken for the four lots on site.

A total of seven known Aboriginal objects / relics have been recorded over the lots. However, it is not known where specifically these objects lie on the land.

A detailed Aboriginal heritage study and consultation with Aboriginal stakeholder groups will be required to establish the significance and the location of the known Aboriginal items and the management of the items in accordance with the findings and relevant provisions of the *National Parks and Wildlife Act 1974*.

4.10 Visual Impact

Preliminary analysis indicates that the visual impact of the site on the surrounding district is minimal as views are contained by the natural topography of the site, and vegetation along creek lines and ridgelines. Two high points in the landform provide views across the site and beyond: the high point in the south eastern corner which falls gradually to relatively flat clear land, and the steep hill in the north-west corner. Despite the topography and existing vegetation, the site will be visible from Appin Road.

The Mt Gilead Homestead and Mill, located to the west, are important land marks in the immediate vicinity of the site, while a section of the Sydney Water Supply Canal forms a prominent landscape feature to the northwest.

The indicative layout plan responds to the visually prominent hills and ridges illustrated on the Views and Vistas plan (at **Figure 14**) as follows:

hill and ridge areas identified to the north west of the site are generally preserved as open space;
other vistas within the site to significant items such as the Mill will be maintained through the alignment of streets to create vistas

While the layout plan is illustrative only, the quantum of developable area and open space indicated allows for 1,500 lots at an average of 700sqm. There is therefore sufficient capacity within the site to both preserve visually sensitive areas as well as achieving the yield set out in the MDP

The landscape and visual assessment of the proposal to be undertaken for the final Planning Proposal will assess and make recommendations to maximise views and vistas within the site, while reducing the impact of development on the privacy of the Mt Gilead Homestead.

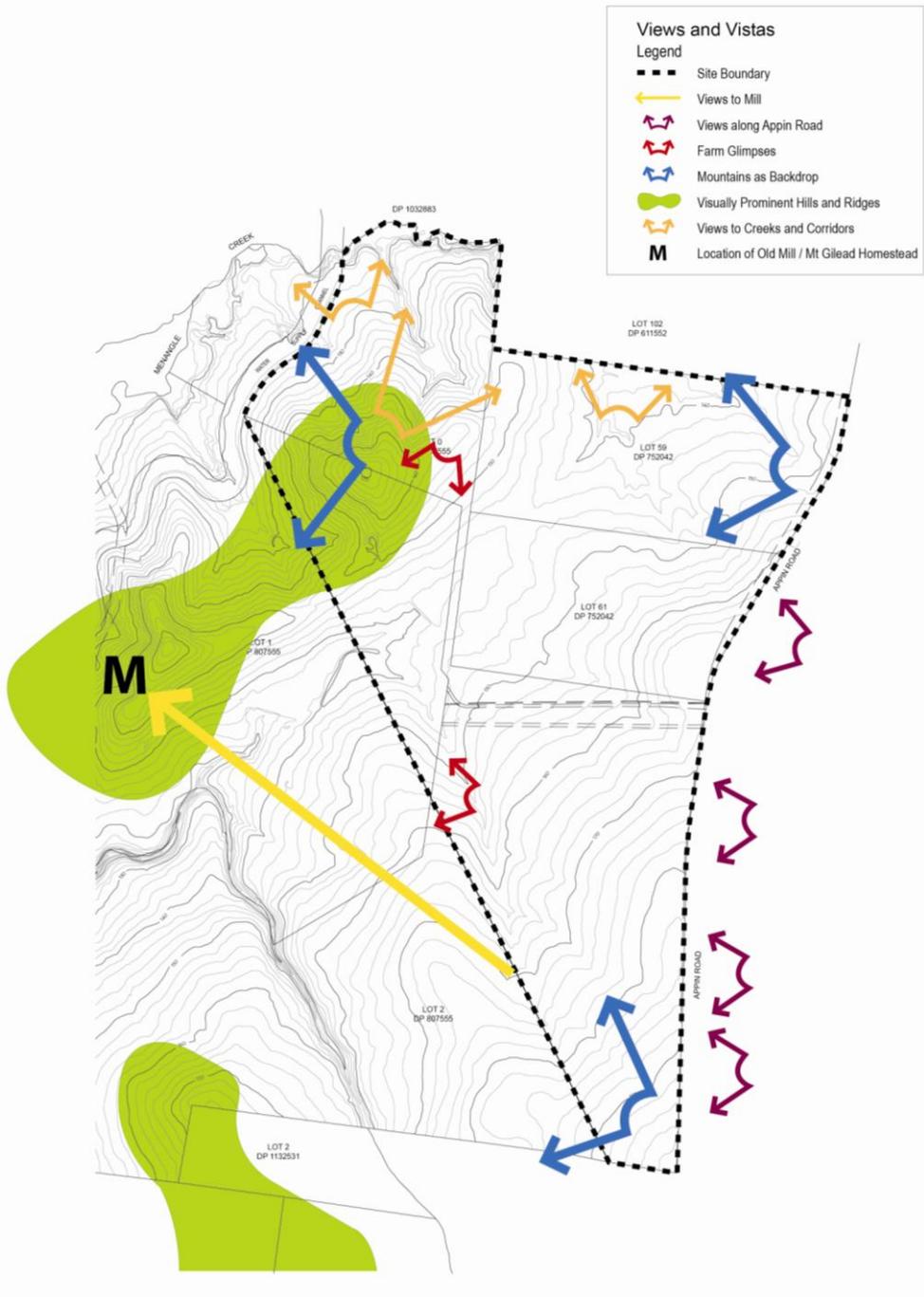


Figure 14 – Views and vistas (Source: Cox Richardson)

4.11 Infrastructure Servicing

Worley Parsons have undertaken preliminary investigations in relation to future servicing of the site. The findings include potential options to service the site which will be further investigated for the final Planning Proposal.

At this preliminary stage, it is proposed to construct the development in several stages so that services and infrastructure can be modified and improved to cater for increasing demand. This will allow the development to be appropriately serviced with progressive upgrades and extensions of existing services. Further investigations will be required as part of the final Planning Proposal to explore the options outlined below and provide the most suitable infrastructure on the site.

4.11.1 Water

Water supply to the site could potentially be drawn from the existing gravity fed water-main owned by United Utilities Australia. The water running through the main is provided by Sydney Water.

A connection junction was included in the main on Mt Gilead land at the time the main was constructed. This was paid for by Mt Gilead Pty Ltd in anticipation of future potential development on the Mt Gilead land. Negotiations to connect to this main will need to be undertaken with Sydney Water (these will occur once the Planning Proposal achieves a Gateway Determination).

4.11.2 Sewer

The site does not contain any Sydney Water owned or operated sewer infrastructure. The closest existing sewerage infrastructure to the site is located north in the residential suburb of Rosemeadow. Sewage from these sewers discharges into, and is treated at, the Glenfield Sewage Treatment Plant.

Research into the capacity of the Glenfield Sewerage System will be required to establish any spare capacity to receive flow from the proposed development. However, in the interim, an alternative sewer servicing strategy that is not reliant upon Sydney Water infrastructure during the early stages of development will be considered, including the potential for a Membrane BioReactor Sewage Treatment Plant, or similar.

Further technical studies will be undertaken for the final Planning Proposal into other treatment options, including site suitability and the potential to reuse treated water. .

4.11.3 Stormwater Management

To ensure that existing water courses and the drinking water catchment are not adversely impacted from development, proposed stormwater management strategies will ensure that pollutants contained within stormwater runoff are treated in accordance with the NSW Department of Environment Climate Change and Water (DECCW) stormwater pollutant reduction targets.

Proposed stormwater measures for the future development will include Gross Pollutant Traps, bio-retention swales, constructed wetlands and detention facilities.

It is intended that all residential dwellings will be equipped with a 4kL rainwater tank for toilet flushing, clothes washing and outdoor irrigation.

4.11.4 Electricity

Preliminary investigations indicated that there was some existing capacity available from the adjoining residential areas but that to meet the total power demands generated by the proposal a new zone substation would be required at some stage in the development.

A series of kiosk substations will need to be incorporated into the proposed development from the existing electrical supply and the future zone substation. The substations are typically capable of servicing between 75 and 85 residential dwellings.

A preliminary internal power network has been prepared generally following the internal road layout with the assumption being that power infrastructure would be located within a shared trench with telecommunication and gas services.

4.11.5 Gas

Gas services would be reticulated throughout the proposed development site generally in line with the proposed road layout in accordance with existing shared trenching arrangement with Integral Energy. It is envisaged gas connection to the site will not cause major concerns.

4.12 Transport and Access

4.12.1 Appin Road

Appin Road, which borders the development on the eastern boundary and is classified as a State Road under the control of Roads and Maritime Services (RMS) is the principal road to the site and links directly to Campbelltown and south through to Wollongong.

There has been preliminary investigation of proposed access arrangements off Appin Road to the site. However, the number and location of access points will be the outcome of a detailed traffic and access study and consultation with RMS and CCC.

The analysis to be undertaken for the final Planning Proposal and development of the concept plan will include future intersection/connection points on Appin Road, potential widening of Appin Road, impacts on intersections (roundabouts) further north on Appin Road, and effects on traffic performance in nearby urban areas.

4.12.2 Public Transport

Bus services in the region surrounding the Mt Gilead site link the centres of Narellan, Camden, Macarthur, Campbelltown, Leumeah and Minto. Busways Campbelltown is the primary provider of services in the region, although other operators such as Busabout, Picton Bus Line and Interline Bus Services also provide a limited number of services. There are two bus routes along Appin Road to/from Campbelltown City Centre and further south into Wollongong.

Preliminary investigations were undertaken into these bus services to find opportunities for bus stops along Appin Road, and as buses generally stop along Appin Road for hailing passengers, the provision of bus stops is not seen to be an issue. However, safety measures may need to be considered, including reducing the speed limit to 60kph, or constructing a service road parallel to Appin Road. As shown in **Figure 15**, most development within the site is able to be located within 400 metres walking distance of a bus stop.

Detailed investigation of the above matters will be the subject of the traffic and access report to be prepared for the final Planning Proposal.

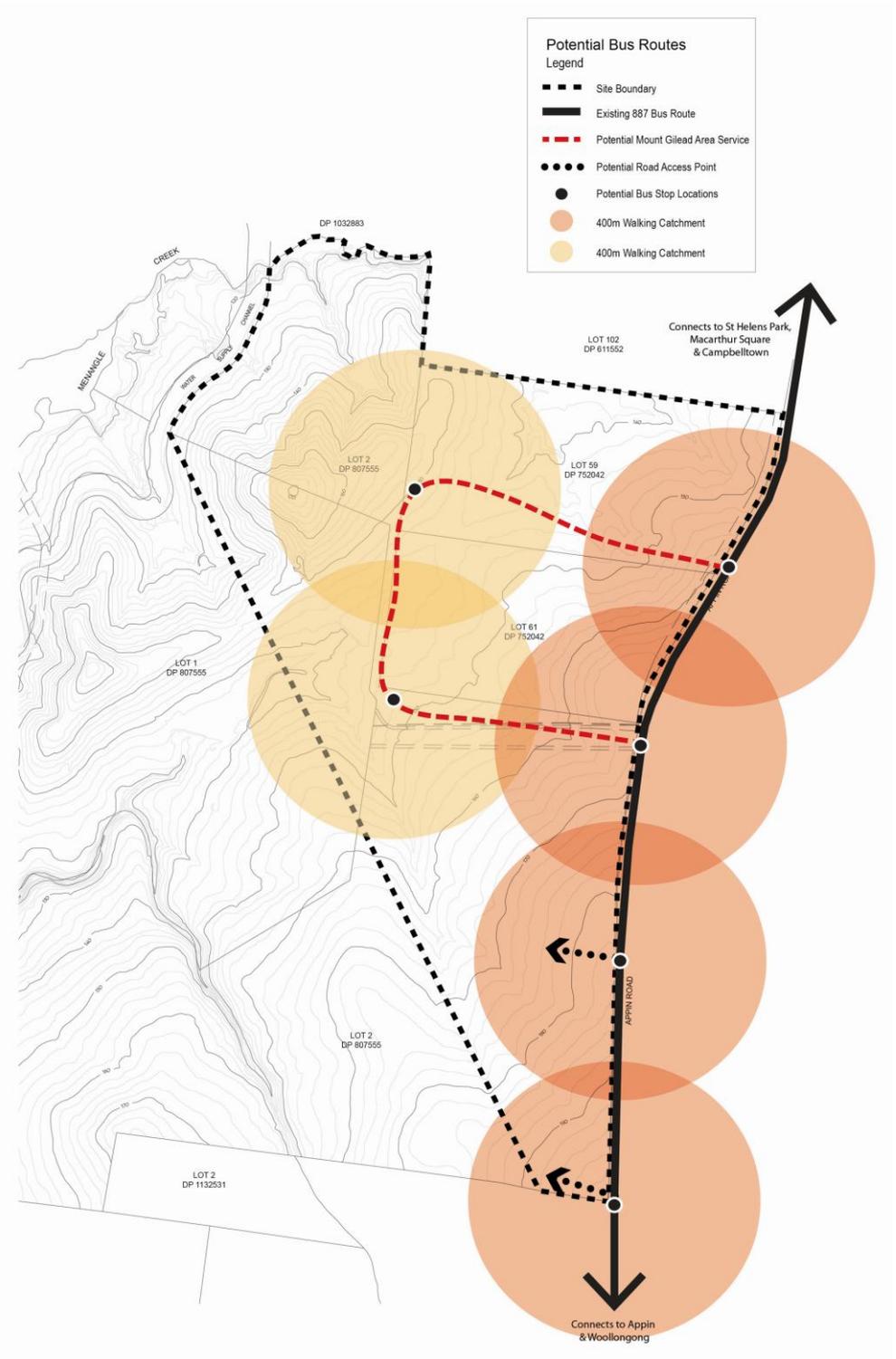


Figure 15 – Potential connections to Appin Road and bus stop locations (Source: Cox Richardson)

4.13 Community Infrastructure

The proposal will provide open space in accordance with CCC's open space policies and it is envisaged that existing pockets of vegetation on the site will be formed into small parks.

Future investigations will assess the site's requirements for community services and the capacity of services in adjoining suburbs (north of the site) such as schools, community halls, libraries and playing fields. The outcome of these investigations will determine the need for such community infrastructure /facilities within the development or nearby.

The quantum and distribution of the local open space will be the subject of further studies based on benchmarks proposed in Council's open space review (currently underway).