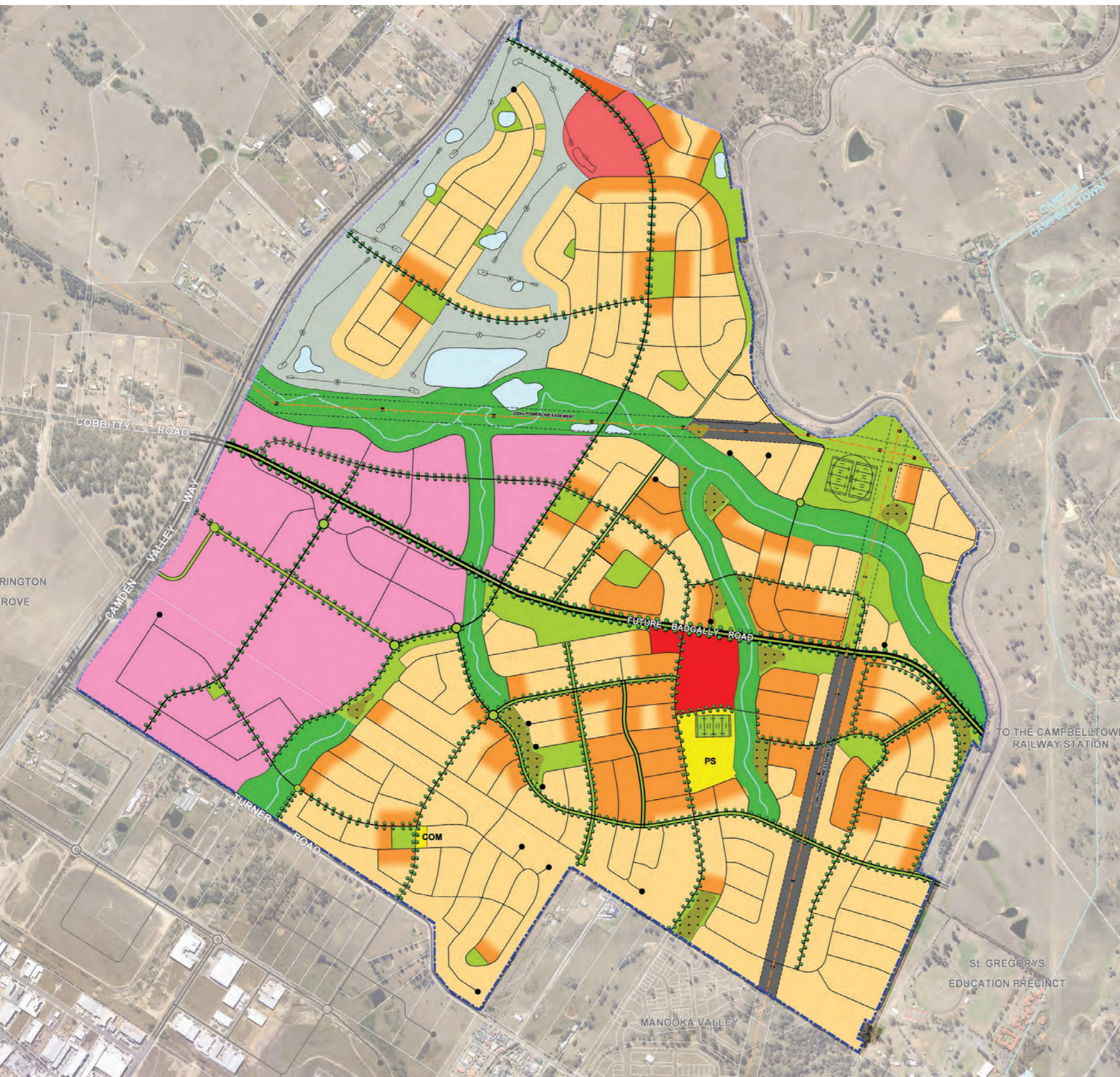




Precinct Planning Report Turner Road Precinct, Camden

May 2007





Prepared by
JBA Urban Planning Consultants
for the Growth Centres Commission

+ **TCW** Consulting

JBA Urban Planning Consultants Pty Ltd operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

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- 1 Compliance with the Growth Centres SEPP & Development Code
- 2 Special Infrastructure Contribution Report
- 3 Turner Road Precinct Next Steps

Appendices

- A Landscape Visual Assessment
Distinctive Landscape Planning
- B Land Capability and Contamination Assessment
Douglas Partners
- C Water Sensitive Urban Design Strategy
GHD
- D Ecological Assessment
Eco Logical Australia Pty Ltd
- E Bushfire Study
Eco Logical Australia Pty Ltd
- F Aboriginal Cultural Heritage Assessment
Jo McDonald Cultural Heritage Management Pty Ltd
- G Heritage Assessment
Godden Mackay Logan
- H Noise Impact Assessment
Renzo Tonin and Associates
- I Level 1 Odour Impact Assessment
Benbow Environmental
- J Transport Assessment
Maunsell Australia
- K Community Facilities and Open Space Assessment
Elton Consulting
- L Employment Land Study
MacroPlan Australia

1.0 Background

1.1 Introduction

In 2005 the NSW government launched the Metropolitan Strategy - City of Cities – a Plan for Sydney’s Future. The Plan positions Sydney for the next 25 years of growth and targets the provision of nearly 400,000 new dwellings and over 200,000 jobs in Western Sydney by 2031. As part of the Metropolitan Strategy the government released in June 2005 *Managing Sydney’s Growth Centres*. The Growth Centres Plans set out the direction and context for new communities in Sydney’s South West and North West that together will provide over 180,000 new houses. Of this, approximately 110,000 new dwellings will be delivered in the South West Growth Centre (SWG) over the next 25 to 30 years, at a rate of 3,500 to 4,000 per year.

In June 2006 the NSW government announced the first Precincts to be released for urban development in the North West and South West Growth Centres (see **Figure 1**). The Oran Park and Turner Road Precincts, both located in the Camden local government area (LGA) and amongst the first for release in the South West, were declared released for detailed precinct planning on 5 January 2007. These areas were selected because of their access to existing water and sewer services, their proximity to services at Narellan and Camden, and proposed major road upgrades in the locality. Overall, the 527 hectare Turner Road Precinct was expected to contribute 4000 new houses towards the target for the South West, as well as 80 hectares of employment land.

This Precinct Planning Report for the Turner Road Precinct has been prepared by JBA Urban Planning Consultants Pty Ltd (JBA) for the Growth Centres Commission (GCC). The GCC’s role is to prepare land use and infrastructure plans, recommend the sequencing of land release, and coordinate infrastructure delivery and funding in the North West and South West Growth Centres. The GCC has primary responsibility for overseeing, coordinating and driving precinct planning and is working closely with Camden Council in facilitating the process for Oran Park and Turner Road.

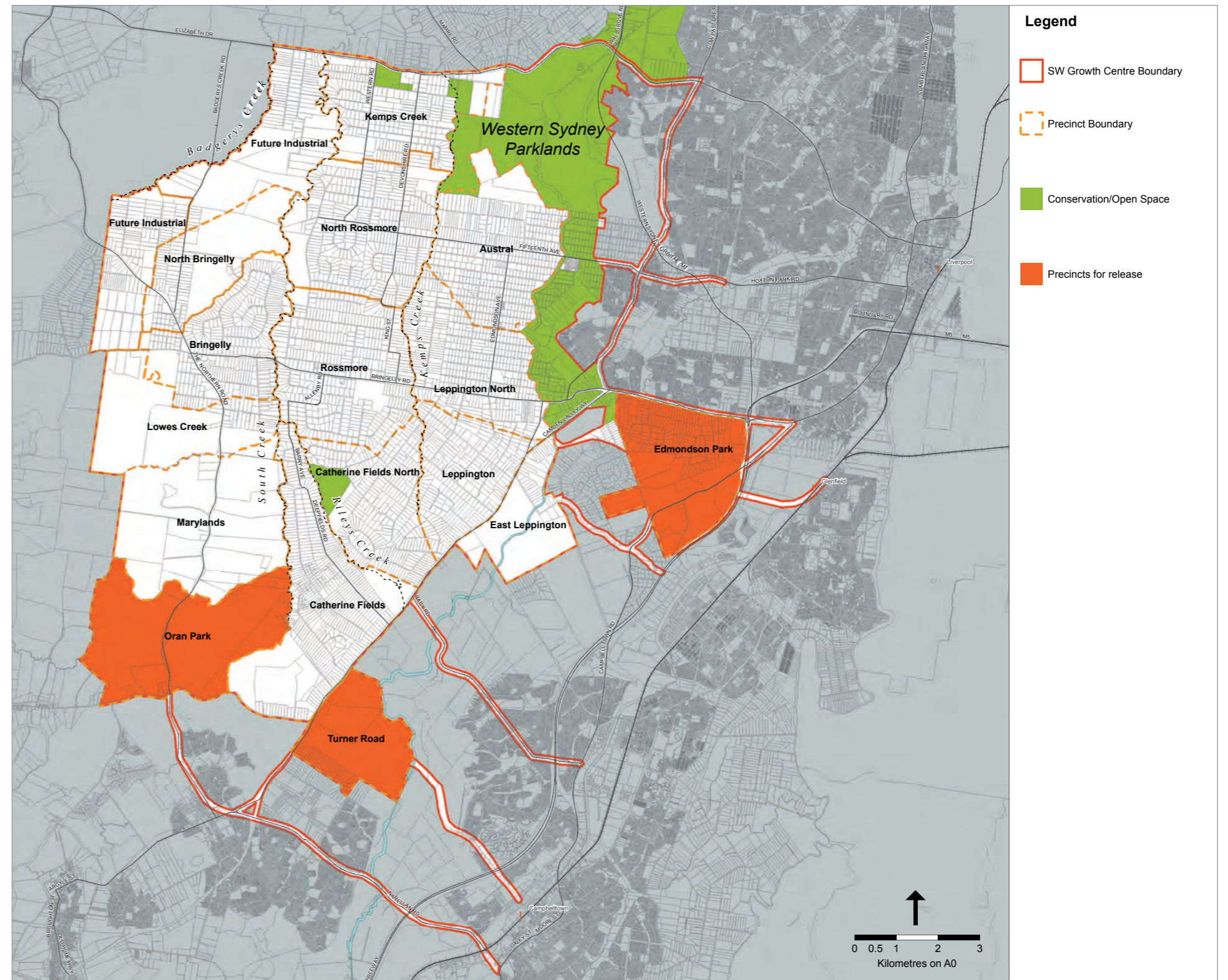


Figure 1 – Location of Turner Road Precinct within the South West Growth Centre

Source: Growth Centres Commission

1.2 Purpose of the report

The purpose of the Precinct Planning Report (PPR) is to support the precinct planning process by documenting and integrating the environmental analysis undertaken in support of the Indicative Layout Plan (ILP) and summarising the proposed approach to development. Specifically, the PPR demonstrates how the Turner Road Precinct Planning Process has addressed the requirements of the South West Structure Plan, the Growth Centres Development Code (GCDC), *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centres SEPP), and *Environmental Planning and Assessment Amendment (Sydney Region Growth Centres) Regulation 2006* (Regulation).

This report is designed to demonstrate the integrated manner in which investigations were undertaken and constraints and opportunities identified and addressed. It also reflects the attention given to the management of various issues, including:

- riparian corridors;
- water cycle management;
- the interface between residential and employment land;
- biodiversity;
- land capability;
- traffic and transport;
- noise attenuation; and
- provision of open space and community facilities.

1.3 The precinct planning process

The Growth Centres Development Code incorporates guidelines for undertaking the precinct planning process in the Growth Centres and sets out the process that will result in rezoning of the land. The process adopted for Turner Road was generally consistent with the GCDC as set out below:

- | | |
|------------------|---|
| ▪ Step 1: | Minister announced the precinct for release (29 June 2006); release declaration gazetted on 5 January 2007 |
| ▪ Step 2: | Precinct Project Control Group (PCG) established by GCC to oversee precinct planning; a Working Group set up to undertake detailed planning and design |
| ▪ Step 3: | Draft Indicative Layout Plan (ILP) prepared, supported by environmental studies and urban form analysis. Consultation undertaken with all landowners within the Precinct and State Agencies |
| ▪ Step 4: | Draft Indicative Layout Plan supported by PCG and State agencies |
| ▪ Step 5: | Draft statutory provisions prepared including land use zones, zoning map and draft Section 94 plan for Precinct |
| ▪ Step 6: | Draft Precinct Development Control Plan (DCP) prepared with detailed development controls for precinct |

- | | |
|-------------------|---|
| ▪ Step 7: | Exhibition (<i>we are now here</i>): <ul style="list-style-type: none"> - Precinct Planning Report - Draft Statutory Controls (SEPP amendment) - Draft Precinct DCP - Draft Section 94 Plan |
| ▪ Step 8: | Post Exhibition <ul style="list-style-type: none"> - SEPP, DCP and Section 94 Plan reviewed as a result of submissions - Final plans form the basis of State Agencies approvals |
| ▪ Step 9: | Minister approves the SEPP (or amends or not approves) <ul style="list-style-type: none"> - Precinct DCP adopted by Director-General of the Department of Planning |
| ▪ Step 10: | Camden Council approves s.94 Contributions Plan |
| ▪ Step 11: | Growth Centres SEPP amended. |



Figure 2 – View looking north-east from existing Badgally Road

Source: JBA Urban Planning Consultants

1.4 Stakeholder involvement

The preparation of the Turner Road Precinct Plan was characterised by ongoing active involvement of all relevant stakeholders - landowners, Camden Council and relevant State government agencies.

1.4.1 Public authorities

Camden Council supported, co-ordinated and project managed the Precinct Planning process in conjunction with the GCC.

A fundamental principle in the precinct planning process was that all stakeholders, including State agencies, participate in the process and support the outcomes reached. The process for State agency involvement in a traditional rezoning process as set out in the Environmental Planning and Assessment Act 1979 (e.g. Sections 62 and 65) does not apply to precinct planning for the Growth Centres. However, in accordance with the GCDC, processes were established to ensure all agencies maintained a role in the precinct planning process, working towards the granting of various approvals required under separate legislation (such as Part 3A permits under the Rivers and Foreshores Improvement hAct).

The principal means of State Agency involvement was the establishment of a Government Agency Reference Panel. The role of the Government Agency Reference Panel was to provide advice and input into the development of precinct plans so that issues could be resolved and sign-off achieved prior to gazettal.

This was achieved via the establishment of small panels of government agencies grouped around common themes - transport, environment and human services - which met in late November 2006 and in late January 2007 to be updated on progress and to be given opportunities to comment on the draft ILP. At other times, specific issues were discussed and resolved through separate meetings with individual agencies, including site inspections.

It should be noted that the environmental analysis undertaken in preparing the draft ILP was influenced by the statutory requirements of State agencies and that during precinct planning the GCC sought support from State agencies at a precinct level in relation to matters within their jurisdiction under other legislation such as the *Threatened Species Conservation Act* and the *Rivers and Foreshores Improvement Act*.

In accordance with the GCDC the following state agencies were consulted and provided comment on the ILP:

Human services agencies

- **Department of Education** Primary and high schools (including Catholic education)
- **Department of Health and Area Health Service** Community health centre
- **Department of Community Services** Family support services
- **Department of Sport and Recreation** Structured and unstructured sports regional facilities
- **Police** Community safety and crime prevention
- **Department of Housing** Provision of public housing

Environmental agencies

- **Department of Environment and Conservation** Biodiversity; Aboriginal heritage
- **Department of Natural Resources** Riparian corridors; stream classification; biodiversity; stormwater; salinity; and flood risk management
- **Department of Primary Industries** Fish habitat
- **Rural Fire Service** Bushfire and Asset Protection Zones
- **NSW Heritage Office** Cultural heritage management

Transport agencies

- **Roads and Traffic Authority** Traffic noise; pedestrian and cycle links; route strategies (Badgally Road & Camden Valley Way); Camden Valley Way & Cobbitty Road intersection
- **Ministry of Transport** Route strategies; bus corridors and local bus routes
- **Rail Corp** South West Rail Link extension

Sydney Water, Alinta and Integral Energy were also consulted regarding the provision of services in the Precinct.

1.5 Project management and team

A Project Control Group (PCG) consisting of representatives of the GCC and Camden Council has overseen the Precinct Planning Process.

The role of the PCG was to oversee, review and set the strategic direction for the precinct planning process, as well as to co-ordinate State agency input into the process. The PCG approved the draft ILP and reported this decision to the GCC Board and Camden Council. It was also the role of the PCG to resolve any disputes between stakeholders not resolved by the Working Group.

Reporting to the PCG was the Turner Road Working Group which had carriage for detailed planning and design. Day-to-day project management was undertaken by Camden Council. Development of the draft ILP, detailed investigations and environmental assessment, and preparation of the PPR, SEPP amendment and DCP was undertaken by the following specialist contractors:

- **Aboriginal Heritage** Jo McDonald Cultural Heritage Management Pty Ltd
- **Community Facilities & Open Space** Elton Consulting
- **Cultural Heritage** Godden Mackay Logan Pty Ltd
- **Biodiversity** Eco Logical Australia Pty Ltd
- **Bushfire** Eco Logical Australia Pty Ltd
- **Economics & Employment** Macroplan Australia Pty Ltd
- **Landscape and Visual Analysis** Distinctive Landscape Planning Pty Ltd
- **Land Capability & Contamination** Douglas Partners Pty Ltd
- **Noise** Renzo Tonin & Associates Pty Ltd
- **Odour** Benbow Environmental
- **Planning** JBA Urban Planning Consultants Pty Ltd
- **Transport** Maunsell Australia
- **Urban Design** Jackson Teece
Development Planning Strategies (NSW) Pty Ltd
LFA Architects
- **Water Cycle Management** GHD Pty Ltd
- **Project Management** APP Corporation Pty Ltd
- **Graphics** Jackson Teece and JBA Urban Planning Consultants Pty Ltd

The specialist contractors' final reports are contained in Appendices A to L. It should be noted that these studies were, by necessity, completed prior to the finalisation of this PPR and the final draft ILP. The specialist contractors reports will therefore include diagrams that contain some inconsistencies with the figures in this PPR and were based on earlier versions of the draft ILP which has since been modified partly in response to the recommendations contained in these reports. Earlier versions of the draft ILP used by the specialists also resulted in differences in expected dwelling yield, compared to that reported in this PPR.

These inconsistencies have been reviewed and are not considered significant with respect to the land use planning pattern or the environmental, social and economic outcomes. Other differences between the specialist contractors reports and this PPR which were considered relatively significant have all been addressed throughout this PPR.

2.0 Site context

This chapter briefly describes the land that makes up the Turner Road Precinct. Further detail is provided in the sections describing different elements of the existing environment.

2.1 Location

The Turner Road Precinct is 527ha in area and located in the Camden LGA, approximately 3 kilometres north of the Narellan Town Centre, 9 kilometres north-east of Camden and about 3.5 kilometres north-west of Campbelltown.

The Precinct is bounded by Turner Road and the Manooka Valley development to the south, the heritage listed Sydney Water Supply Canal to the east and north east, the boundary of the Camden Valley Golf Resort to the north, and Camden Valley Way to the west (see **Figure 3**).



Figure 3 - Location of the Turner Road Precinct within the Sydney Metropolitan Area

Source: Jackson Teece & JBA

The Precinct is generally surrounded by a variety of land uses: rural land and rural living activities to the east, north and north-west; light industrial uses to the south across Turner Road; and low density residential at Currans Hill and Manooka Valley to the south east. The employment land at Smeaton Grange, currently undergoing significant development is located immediately to the south across Turner Road, and St Gregory's College (a day and boarding school for boys) occupies a significant holding to the west of the Sydney Water Canal. Both are outside the Growth Centre.

The Growth Centre Precinct of Catherine Fields lies to the west of the Turner Road Precinct, while the Oran Park Precinct, currently also the subject of precinct planning is further to the west. The proposed residential development known as Harrington Park 2 lies to the west of Camden Valley Way, south of Cobbitty Road.

2.2 Site description

Three distinct land uses characterise the site as shown in **Figure 4**. The northern segment consists of an operating golf course with grassed fairways, vegetated landscaping, roads, other golf course structures and facilities including a clubhouse, small conference centre and motel. A large farm dam is situated to the south of the golf course.

330kV power lines traverse the site generally in the South Creek Corridor and north south through the eastern portion of the Precinct.

The central part of the Precinct – the largest area - is characterised as degraded open pasture containing a mix of native and exotic grasses and scattered stands of remnant native trees mostly along drainage lines. It includes several farm dams and a number of tributaries of South Creek.

The southern segment consists of small (2 hectare) rural residential lots (fronting Camden Valley Way and Turner Road) with houses, sheds and the like. Vegetation comprises scattered stands of trees of varying size and ecological value.

The topography of the site is undulating, varying from flat grades along South Creek and its tributaries (particularly in the vicinity of Camden Valley Way, to steep (6-10%) in the south-east corner. The majority of the site drains to South Creek, the remainder to the Narellan Creek catchment.

Camden has a sub-tropical climate with rainfall occurring predominantly in late summer and autumn. February is the wettest month. Summers are warm to hot with a mean maximum temperature for January of 29.2 degrees celsius, while winters are mild to cold with July the coldest month with a mean minimum temperature of 2.9 degrees celsius.

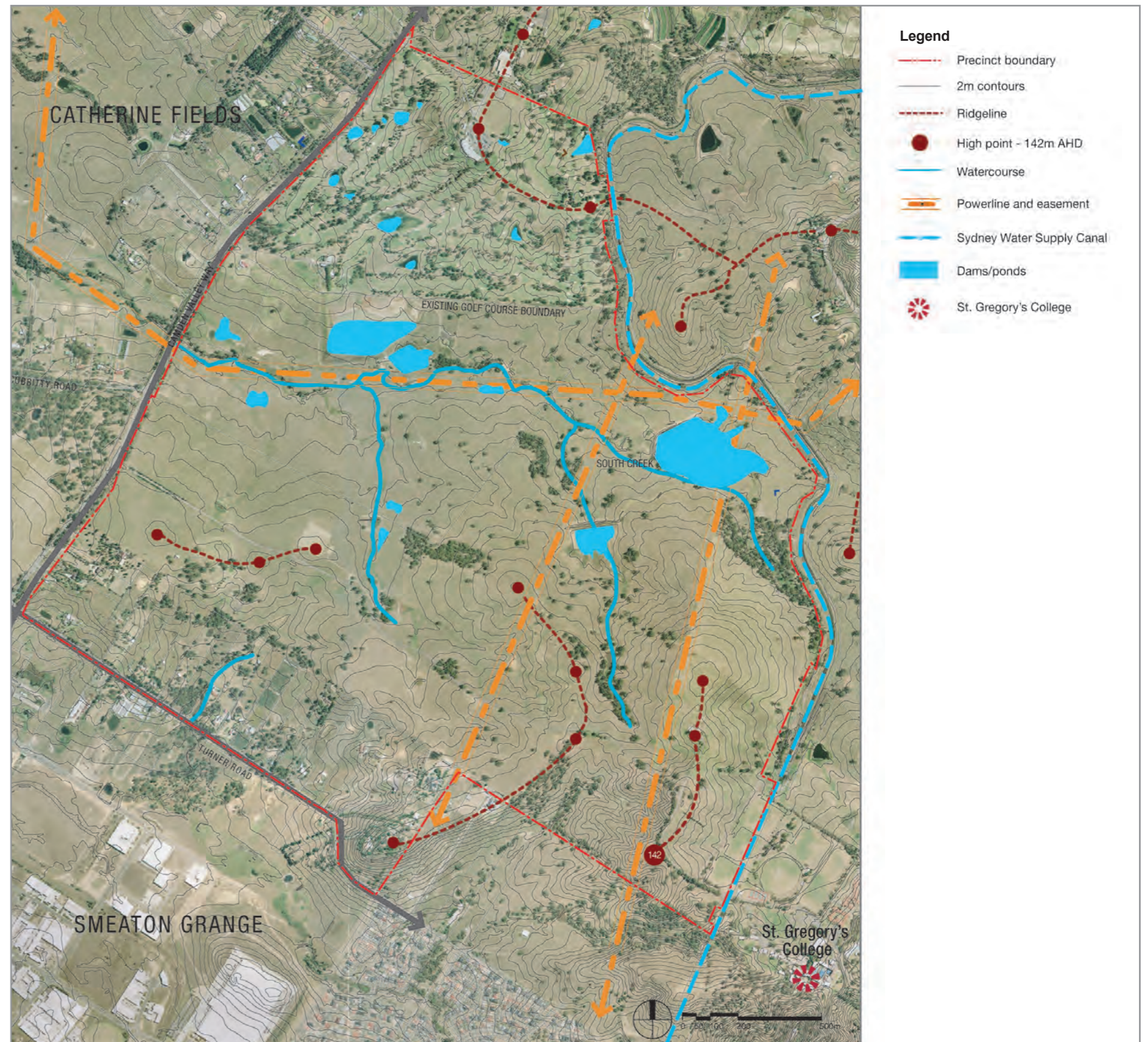


Figure 4 - Site Analysis

Source: Jackson Teece and JBA

2.3 Land use and zoning

As indicated above, the Precinct is characterised by three quite distinct land uses: recreation (golf); agriculture and education; and rural residential living.

The northern portion of the precinct contains the Camden Valley Golf Resort, consisting of a 27 hole private golf course and small conference centre and motel. The southern portion fronting Turner Road and Camden Valley Way consists of 28 individual 2 hectare rural residential holdings.

The large middle portion of the site has been continuously used for farming and grazing since purchased by the Marist Brothers in 1923 for the purposes of running a Farm School or reformatory. The land within the Precinct boundary is currently used for cattle grazing and hay production, and while the buildings and facilities of St Gregory’s College are not within the Precinct, it is noteworthy that the Marist Brothers maintain a community of some 15 Brothers at the College.

2.4 Land ownership

There are two major and 28 small landowners in the Precinct. The majority of land - 282 hectares - is part of a larger holding extending to the east while 55 hectares to the north is owned by the other major landowner. **Table 1** lists the properties covered by this Precinct Plan

Through participation in the Working Group, in ILP design workshops and landowner information sessions, the landowners have been actively involved in the development of the draft ILP and the overall precinct planning process.

Table 1 – Legal property description

Property Description		
Lot 1 DP 123066	Lot 2 DP 360116	Lot 1 DP 795836
Lot 1 DP 547127	Lot 3 DP 360116	Lot 3 DP 28024
Lot 4 DP 28024	Lot 12 DP 28024	Lot 13 DP 28024
Lot 14 DP 28024	Lot 15 DP 28024	Lot 16 DP 28024
Lot 17 DP 28024	Lot 18 DP 28024	Lot 19 DP 28024
Lot 20 DP 28024	Lot 21 DP 28024	Lot 22 DP 28024
Lot 23 DP 28024	Lot 24 DP 28024	Lot 25 DP 28024
Lot 26 DP 28024	Lot 27 DP 28024	Lot 31 DP 28024
Lot 32 DP 28024	Lot 33 DP 28024	Lot 1 DP 589609
Lot 2 DP 589609	Lot 300 DP 633808	Lot 301 DP 633808
Lot 1 DP 120358	Lot 1 DP 730902	Lot 5 DP 654863

2.5 Previous planning

The work undertaken by the Department of Planning (DOP) in preparing the Structure Plan for the South West Growth Centre in general and for the Turner Road Precinct in particular, has set the planning framework, principles and objectives, and Structure Plan outcomes for the Precinct - summarised in **Section 2.6**. It should be noted that the Turner Road Precinct was previously referred to by the Department of Planning as Badgally Road, Industrial and Turner Road. Turner Road was originally part of the Catherine Fields Precinct.

In addition, the GCDC set precinct development parameters in relation to housing density and lot sizes; employment and retail; and thresholds for provision of social infrastructure.

The two large landowners have been active for some time in preliminary site investigation and analysis. This preliminary work provided a solid foundation for the detailed work undertaken as part of the precinct planning process.



Figure 5 – The existing Badgally Road

Source: JBA

2.6 Precinct planning outcomes

The key precinct planning features and outcomes established for the Turner Road Precinct are set out below. Variations with these outcomes are discussed in **Section 4.4**. The Structure Plan is shown in **Figure 6**.

Dwellings & population (over 15 year development horizon)	<ul style="list-style-type: none"> ▪ 4000 dwellings ▪ Around 10,000 -11,000 people ▪ Low to medium density housing
Employment land	<ul style="list-style-type: none"> ▪ 80 ha ▪ Mixed use employment corridor along Badgally Road and Camden Valley Way
Neighbourhood Centres	<ul style="list-style-type: none"> ▪ 2 - 3 neighbourhood centres ▪ Within 400 metres of edge of walkable neighbourhoods each around 50 hectares in area
Major roads and public transport	<ul style="list-style-type: none"> ▪ Connect via Badgally Road to Campbelltown ▪ Provide for local and regional bus services ▪ Routed through neighbourhood centres
Scenic Hills	<ul style="list-style-type: none"> ▪ Scenic Hills area to be protected
Vegetation and habitat	<ul style="list-style-type: none"> ▪ Areas of high ecological and landscape value to be protected
Heritage	<ul style="list-style-type: none"> ▪ Curtilage of Sydney Water Canal to be protected

The above parameters provided a starting point for the planning of the precinct. Specialist studies and detailed urban design was undertaken to verify whether the targets could be achieved or where variations to the Structure Plan were warranted. As mentioned above, variances are discussed in **Section 4.4**.

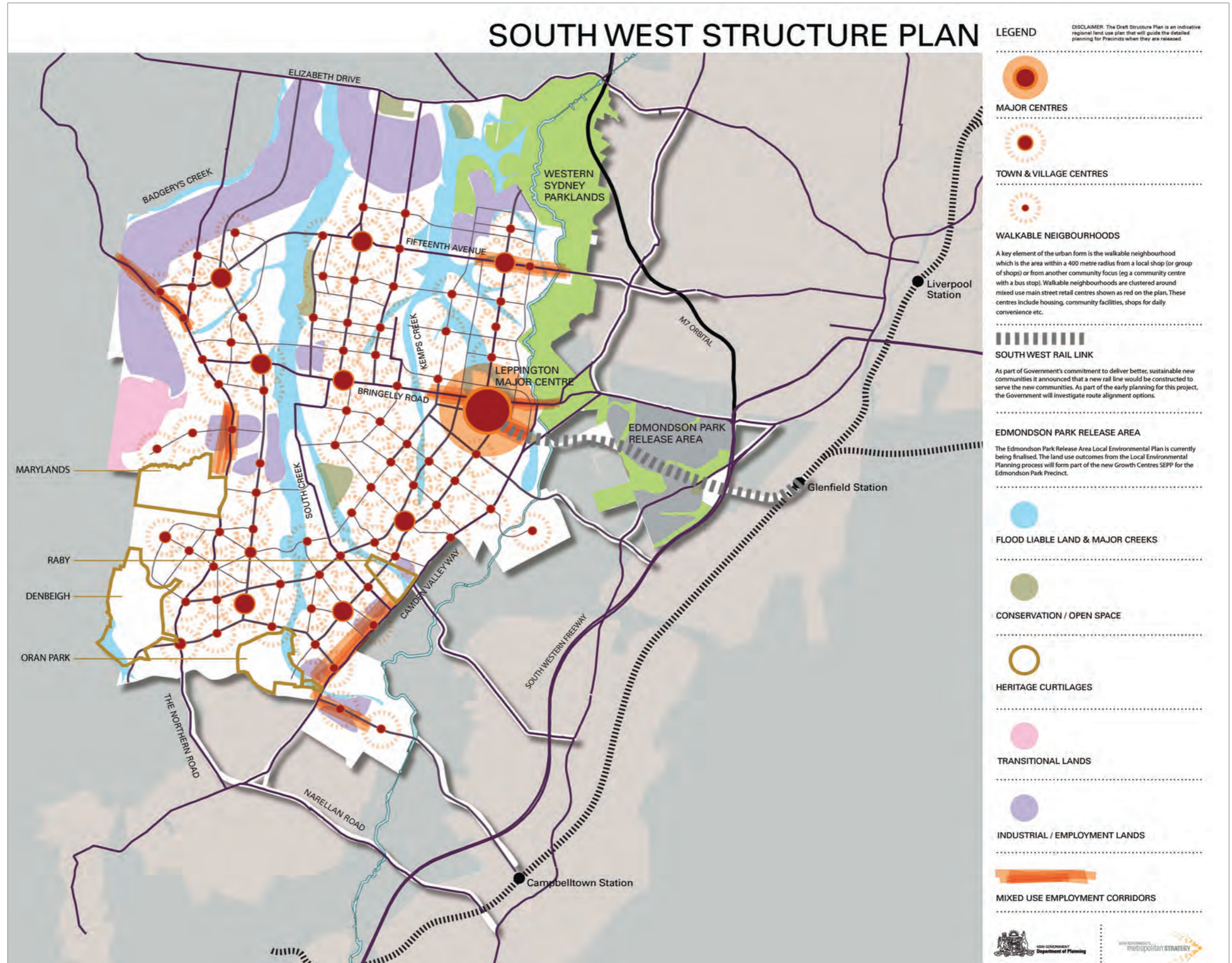


Figure 6 - South West Structure Plan

Source: NSW Department of Planning

3.0 Strategic and statutory framework

This chapter outlines the strategic and statutory planning framework within which the development and conservation outcomes for the Turner Road Precinct have been considered. **Attachment 1** assesses the draft ILP against the objectives of the Growth Centres SEPP and the Growth Centres Development Code.

3.1 State and regional strategic framework

3.1.1 Metropolitan Strategy

With the release in December 2005 of the Metropolitan Strategy – City of Cities, the New South Wales Government set the broad strategic framework to manage and promote growth in the Sydney region over the next 25 years. The strategy is the foundation for achieving region-wide outcomes in relation to:

- the economy and employment;
- centres and corridors;
- housing;
- transport;
- environment and resources;
- parks and public places; and
- implementation and governance.

The objectives in relation to these strategies relevant to the Turner Road Precinct are outlined below.

Economy and employment

The Strategy sets an employment target for the South West subregion of approximately 80,000 jobs by 2031. Accordingly, the Turner Road Precinct needs to provide sufficient land and infrastructure to meet employment land targets.

Centres and corridors

Centres need to provide places and locations for all types of economic activity and employment. The Turner Road Precinct needs to increase densities in centres whilst improving liveability, and concentrate activities near public transport.

Housing

In accordance with the Strategy, the Turner Road Precinct needs to ensure that an adequate supply of land and sites for residential development is provided to contribute to the 30-40% target for new housing in release areas.

The Precinct also needs to contain a mix of housing types, transport and services with residential development focused around town and neighbourhood centres. Housing affordability and the quality of new development needs to be improved.

Transport

In keeping with the Strategy, the Precinct needs to provide bus routes to serve new growth and improve transport between Sydney's centres. The design of the Precinct needs to encourage more sustainable travel and influence travel behaviour.

Environment and resources

In accordance with the Strategy, the Turner Road Precinct needs to protect Sydney's natural environment by improving the health of waterways and air quality, and protecting ecological diversity and Aboriginal cultural heritage. The Precinct must also conserve natural resources through sustainable use of water and by minimising waste.

Household exposure to unacceptable noise levels needs to be minimised.

Parks and public places

In keeping with the Strategy, access to quality parks and public places including waterways, bushland, parks and centres needs to be increased. Accordingly, the Precinct needs to include a diverse mix of parks, public places and local open space.

3.1.2 South West Sydney Sub-Regional Plan

One of the strategies identified in the Metropolitan Strategy is the development of sub-regional plans. The Department of Planning has been working with the four local Councils in the South West Sydney Region (Liverpool, Campbelltown, Camden and Wollondilly) to develop the South West Sydney sub-regional plan. One of the aims of the sub-regional planning process is the establishment of dwelling and job targets for the sub-region.

The plan is nearing completion and is not ready to be released to inform this precinct planning process.

3.1.3 Growth Centre Structure Planning

Released in June 2005, *Managing Sydney's Growth Centres* sets out the direction and context for growth in Sydney's South West and North West. Over 110,000 new dwellings will be delivered in the South West Growth Centre over the next 25 to 30 years.

The Structure Plan for the South West Growth Centre (June 2006) provides the blueprint for the detailed planning of individual precincts, by integrating land uses and transport within interconnected street networks, walkable neighbourhoods and town centres, promoting access to services, employment and transport (while reducing car dependence), and balancing environmental management and protection with urban development.

The Structure Plan is founded on principles and objectives in relation to land use and location; densities and their distribution; the hierarchy of centres (walkable neighbourhoods and town centres; local employment; community development; transport network and the environment).



Figure 7 – Turner Road

Source: JBA

The planning outcomes for the Precinct are summarised in **Section 2.6**. Variations from the Structure Plan are discussed in **Section 4.4** of the report.

3.1.4 The Growth Centres Development Code

The purpose of the GDCD is to set out the approach for, and provide the broad protocols and processes to be followed during, precinct planning. The objectives of the Code are to implement policies at the regional and neighbourhood levels, including, amongst other things, to:

- provide guidance on the precinct planning process;
- promote best practice urban design;
- increase housing choices;
- provide local employment;
- provide facilities and services at a local level;
- improve access to public transport;
- maintain the natural environment and visual character of the topography;
- integrate existing infrastructure;
- provide a range of commercial and retail opportunities;
- respect cultural heritage; and
- provide, protect and maintain a range of open space opportunities throughout the entire precinct.

The Development Code also includes policies at the block and lot level to, amongst other things:

- improve the quality of architecture;
- enable buildings to be energy efficient; and
- enable development to accommodate pedestrians and their comfort while also adequately accommodating vehicles.

The GDCD is integral to precinct planning for Turner Road.

3.1.5 Special Infrastructure Contribution

The Special Infrastructure Contribution (SIC), enabled under Sections 94ED to 94EM of the Environmental Planning & Assessment Act 1979, will be applied to all development within the North and South West Growth Centres as a means of contributing towards the funding of regional infrastructure in the Growth Centres. The additional infrastructure and services required as a result of the development within the Growth Centres to be funded via the SIC include: new and upgraded regional roads and heavy rail; bus services; educational services; health services; and provision of conservation lands. **Attachment 2** to this report describes the regional and state infrastructure to be funded by the Special Infrastructure Contribution.

3.2 Local strategic framework

The following section provides a summary of the extensive local strategic framework. This is provided as background information as the SWGC Structure Plan and the GDCD provide the policy context for the planning of the Turner Road Precinct.

3.2.1 Camden Structure Plan

The Camden Structure Plan was prepared in 1999 with the aim of providing a planning framework to facilitate growth while preserving the character of Camden. It did not envisage urban development of the Turner Road Precinct. As a consequence of this inconsistency between the South West Growth Centre Structure Plan and the Camden Structure Plan, Camden Council resolved on 27 February 2006 that Council should commence a formal review of the Camden Structure Plan. This process has yet to commence.

3.2.2 Camden 2025 Strategic Plan

The Camden Strategic Plan, prepared by Camden Council in 1999, establishes a 25 year vision to preserve the traditional rural qualities of Camden while accommodating future urban growth. The strategy aims to manage urban growth, enhance accessibility, protect the environment, strengthen the local economy and community, and provide efficient governance. Specifically, the Plan sets out to ensure that:

- landscapes and vistas are protected;
- local communities have access to resources and facilities;
- a range of housing opportunities are provided;
- ecosystems are restored and protected;
- rural activities continue in the area;
- the economic base is increased and diversified;
- local shops and facilities service the immediate needs of the new communities; and
- the community has a role in the future of the area.

3.2.3 Camden Residential Strategy

Camden Council adopted a residential strategy in 1997 to address the rapid urban growth occurring at that time. The objectives of the residential strategy were to:

- maintain and enhance local character and a sense of place;
- achieve sustainable development;
- provide for a wide range of housing aspirations in the community;
- identify lands suitable for higher density/alternative housing development;

- prepare clear and acceptable plans and design guidelines; and
- improve the quality and efficiency of the approval process.

Most of the proposals outlined in the residential strategy have been implemented, and as a result of this and continued rapid urban growth, Camden Council resolved in 2005 to review the residential strategy. This process is underway and is due for completion in July 2007.

3.3 Relevant legislation & regulations

This section summarises relevant State and Commonwealth legislation that applies to the planning of the Precinct.

3.3.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) protects the environment, particularly matters of National Environmental Significance (NES). Amongst other things, it streamlines national environmental assessment and approvals processes, protects Australian biodiversity and integrates management of important natural and cultural places. Cumberland Plain Woodland as an endangered ecological community is a matter of NES. However, as there will be no significant impact on the community at Turner Road, referral under the Act is not required.

3.3.2 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (the EP&A Act) and the 2000 Regulation set out amongst other things the:

- requirements for rezoning land;
- requirements regarding the preparation of a local environmental study as part of the rezoning process;
- matters for consideration when determining a development application; and
- approval permits and/or licences required from other authorities under other legislation.

Ministerial directions under Section 117 of the EP&A Act require Councils to address a range of matters when seeking to rezone land. While not directly relevant to the rezoning process adopted for the Growth Centres, these directions have nevertheless been addressed in planning the Turner Road Precinct. The draft Precinct Plan for Turner Road is consistent with relevant directions as summarised in **Attachment 1**.

The Precinct Plan for Turner Road has been prepared in accordance with the EP&A Act and Regulations. The Turner Road Precinct will be rezoned via the gazettal of an amendment to the Sydney Region Growth Centres SEPP 2006.

3.3.3 Environmental Planning and Assessment Amendment (Sydney Region Growth Centres) Regulation 2006

The purpose of the Growth Centres Regulation is to support the Growth Centres SEPP. The Regulation makes provision for the release of precincts for residential, employment and other urban development in the North West and South West Growth Centres. In particular, it requires the Minister to prepare a Development Code and Infrastructure Plan to assist with the precinct planning process. In accordance with the Regulation the Minister declared the Turner Road Precinct to be released for urban development in January 2007.

3.3.4 Threatened Species Conservation Act 1995

The *Threatened Species Conservation Act 1995* (TSC Act) identifies and protects threatened and endangered species, populations and ecological communities. The objectives of the TSC Act include:

- conserving biological diversity and promoting ecologically sustainable development;
- preventing the extinction and promoting the recovery of threatened species, populations and ecological communities;
- protecting critical habitats; and
- encouraging the conservation of threatened species, populations and ecological communities.

The Act also provides for the biodiversity certification of environmental planning instruments such as the Growth Centres SEPP. A Conservation Plan has been prepared and exhibited by the GCC which seeks to achieve certification of the Growth Centres SEPP as provided by the TSC Act.

The draft ILP has addressed the requirements of the TSC Act in relation to threatened and endangered species and ecological communities and incorporates measures to restore and protect these species and communities.

3.3.5 Water Management Act 2000

The *Water Management Act 2000* (WM Act) provides for the sustainable and integrated management of water resources of the State. Objectives of the WM Act relevant to the Turner Road Precinct include

- applying the principles of ecologically sustainable development;
- protecting, enhancing and restoring water sources, their associated ecosystems, ecological processes and biological diversity and their water quality;
- the classification of water courses;
- fostering the sustainable and efficient use of water; and
- integrating the management of water sources with the management of other aspects of the environment, including land, native vegetation and fauna.

The WM Act repeals and replaces a number of other pieces of legislation including the Rivers and Foreshores Improvement Act 1948. However, in certain circumstances, such as works within 40 metres of a natural or artificial water body, the provisions of the Rivers and Foreshores Improvement Act 1948 still apply (see below).

Precinct planning for Turner Road has addressed the requirements of the WM Act and the categorisation and management of riparian corridors is reflected in the draft ILP.

3.3.6 River and Foreshores Improvement Act 1948 (as amended)

The *Rivers and Foreshores Improvement Act 1948* protects natural and artificial water bodies, including the bank, shore or bed of those water bodies and adjacent land within 40 metres of the top of their banks or shores. Under section 22B of the Act, a Part 3A permit is required for any excavation or other works within 40 metres of a water course.

In accordance with the principles established for streamlining development assessment procedures for the Growth Centres, the GCC will be seeking an exemption from approval under Part 3A of the Act for the Turner Road Precinct.

3.3.7 Rural Fires Act 1997

Amongst its objectives, the *Rural Fires Act 1997* (RF Act) seeks to prevent, mitigate and suppress bush and other fires. Under Section 100B of the RF Act, a permit is required from the NSW Rural Fire Service should a development fall within the boundaries of a Bushfire Prone Area. The granting of this permit is dependent upon the development's compliance with standards regarding setbacks, provision of water supply and other matters necessary to protect persons, property or the environment from bushfire danger.

Precinct planning for Turner Road has addressed the requirements of the RF Act and the management of potential bushfires by way of Asset Protection Zones.

3.3.8 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) provides the primary basis for the legal protection and management of Aboriginal sites and relics within NSW (Sections 90 and 84). The Act requires amongst other things:

- consultation with the Department of Environment and Conservation (NSW) prior to development to determine the existence of items of Aboriginal heritage;
- consultation with local Aboriginal groups; and
- consent to disturb or destroy Aboriginal heritage sites/items.

Precinct planning for Turner Road has addressed the requirements of the Act through consultation with Aboriginal groups and the management of Aboriginal cultural heritage. Land containing an Aboriginal relic impacted by future development will be subject to an application for consent to destroy under Section 90 of the NPW Act.

3.3.9 Heritage Act 1977

The *Heritage Act 1977* includes a range of provisions for identifying and protecting items of environmental heritage. The Act controls development of, or in the vicinity of, a State heritage item. The State Heritage Register (SHR), established under Section 22, contains a list of items which have been assessed as being of 'State' significance.

The Sydney Water Supply Canal which forms the eastern boundary of the Turner Road Precinct is listed on the SHR. The Draft ILP addresses the significance of the item by way of vegetated buffers and perimeter roads.

3.4 State and regional statutory framework

This section summarises the relevant state and regional environmental planning instruments and policies that apply to the precinct.

3.4.1 SEPP (Sydney Region Growth Centres) 2006

The Sydney Region Growth Centres SEPP is the primary statutory plan governing the release and rezoning of land in the Sydney Region Growth Centres and establishes the broad planning controls required to oversee the development of the Growth Centres. In particular, the SEPP identifies areas of open space and environment conservation to be protected within the Growth Centres, as well as flood prone areas, major creeks and transitional lands that need to be further addressed in the precinct planning process. Specifically, the aims of the SEPP are to:

- co-ordinate the release of land for residential, employment and other urban development in the North West and South West Growth Centres of the Sydney Region;
- enable the Minister from time to time to designate land in those Growth Centres as ready for release for development;
- provide for comprehensive planning for those Growth Centres;
- enable the establishment of vibrant, sustainable and liveable neighbourhoods that provide for community well-being and high quality local amenity;
- provide controls for the sustainability of land in those Growth Centres that have conservation value;
- provide for the orderly and economic provision of infrastructure in and to those Growth Centres;
- provide development controls in order to protect the health of the waterways in those Growth Centres;
- protect and enhance land with natural and cultural heritage value; and
- provide land use and development controls that will contribute to the conservation of biodiversity.

The outcomes of the precinct planning process will result in an amendment to the SEPP to establish the future zoning and development controls for Turner Road. Minor adjustments will be made to the Precinct boundary to reflect detailed characteristics on the ground which were not recognised at the broad strategic planning level.

3.4.2 SEPP 11 – Traffic Generating Developments

SEPP 11 ensures that the Roads and Traffic Authority (RTA) is made aware of traffic generating development and is given the opportunity to provide comment. The RTA is actively involved in the planning process for the Turner Road Precinct in relation to major roads, transport corridors and bus routes. SEPP 11 will continue to apply to future traffic generating development proposals.

3.4.3 SEPP 19 – Bushland in Urban Areas

SEPP 19 aims to protect and preserve bushland within urban areas. Planning for Turner Road involves the conservation and enhancement of bushland. Future development will need to be managed in accordance with the SEPP.

3.4.4 SEPP 55 – Remediation of Land

SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. It specifically requires consideration when rezoning land and in determining development applications, and requires that remediation work meets certain standards and notification requirements. The requirements of SEPP 55 have been considered during precinct planning and will be further addressed during detailed design and development.

3.4.5 Draft SEPP 66 – Transport and Land Use Integration

Draft SEPP 66 aims to ensure that the urban structure, built forms, land use locations, subdivision and street layouts help achieve the following relevant planning objectives:

- improve accessibility to housing, employment and services by walking, cycling, and public transport;
- improve the choice of transport and reduce dependence solely on cars for travel purposes;
- moderate growth in the demand for travel and the distance travelled, especially by car; and
- support the efficient and viable operation of public transport services.

The objectives of the Draft SEPP are integral to precinct planning for Turner Road.

3.4.6 Sydney Regional Environmental Plan No. 20 – Hawkesbury Nepean River (No. 2 – 1997)

Sydney Regional Environmental Plan No. 20 (SREP 20) seeks to protect the environment of the Hawkesbury-Nepean River system. Development within the catchment is required to consider the general and specific principles and controls listed in the SREP to ensure that the impacts of future land use are considered in a regional context.

South Creek is a tributary of the Hawkesbury-Nepean system and therefore precinct planning needs to consider the impacts of the development on the health of the system.

3.5 Local statutory framework

The following sections summarise the local plans and policies that currently apply to the Precinct.

3.5.1 Camden Local Environmental Plan No. 48

Local Environmental Plan (LEP) 48, which was gazetted in 1992, applies to all rural land in the Camden LGA. The LEP aims to:

- consolidate planning controls for rural areas;
- maintain the rural atmosphere;
- maintain the agricultural productivity of the area;
- effectively manage subdivision and development within the rural areas; and
- conserve environmental heritage.

Under the LEP the Turner Road Precinct is zoned Rural 1(b) and Environmental Protection 7(d) Scenic. Once the Turner Road Precinct is rezoned under a draft amendment to SEPP (Sydney Region Growth Centres) 2006 this plan will no longer apply.

3.5.2 Draft Camden Local Environmental Plan

Camden Council is currently preparing a principal Local Environmental Plan for the local government area in accordance with the Standard Instrument (Local Environmental Plan) Order 2006. The plan will provide a consistent set of objectives and controls across Camden. The plan, which is still in its formative stages, will respond to the outcomes of the Turner Road Precinct planning process.

3.5.3 Other Plans

Camden Section 94 Contributions Plan and Camden Development Control Plan 2006 currently apply to the Turner Road Precinct. However, as part of the precinct planning process a site specific DCP and site specific contributions plan have been prepared. Once the SEPP amendment is gazetted and the site specific, Section 94 Plan and DCP are adopted, the Camden Section 94 Contributions Plan and Camden Development Control Plan will no longer apply to the Turner Road Precinct.



Figure 8 – An existing dam within Camden Valley Golf Resort

Source: JBA

4.0 Indicative Layout Plan

This chapter of the report describes the draft ILP and the urban design principles that set the foundation for its structure. Further detail is provided throughout the environmental assessment in the following chapters.

The draft ILP differs in some respects from the Structure Plan for the South West Growth Centre and this chapter describes and explains these variations. In addition, the planning provisions for the Turner Road Precinct included in the draft SEPP amendment and draft DCP provide for some changes to the draft ILP where the environmental assessment in the following chapters demonstrates that this is appropriate.

4.1 Urban Design principles

The overarching objectives for the design and planning of the Turner Road Precinct were to:

- facilitate the early provision of employment opportunities;
- incorporate a range of housing styles, products and lifestyle opportunities;
- respect and respond to the natural environment of the locality;
- ensure a balance between economic, social and environmental outcomes;
- be commercially sound, responsive to the market and utilise the land efficiently; and
- incorporate the existing golf course into the design.

The draft ILP enunciates the following main urban design principles:

- Well defined residential neighbourhoods and substantial employment land support and reinforce the neighbourhood centre and clubhouse precinct.
- Inter-connected major roads deliver a framework for housing, employment, community activities and shopping.
- The road structure connects to district and regional centres such as Oran Park, Leppington, Campbelltown, Narellan and Camden.
- Industrial and mixed use centres, residential neighbourhoods, and community infrastructure are accessible, attractive and safe.
- The location of land uses and activities considers environmental, social and economic criteria.
- The Precinct is to be a sustainable community where reliance on private vehicles is reduced through public transport, walking and cycling options.

4.2 Description of ILP

The draft ILP (shown in **Figure 9**) for the 527 hectare Turner Road Precinct integrates the existing Camden Valley Golf Course, the riparian corridors of South Creek and its tributaries with future employment and residential land. The precinct is bisected east west by the future Badgally Road connecting to Cobbitty Road in the west and, in the longer term, Campbelltown in the east.

Primarily characterised by a mix of employment land and low density housing the draft ILP also contains smaller areas for medium to high density residential, local retail, environmental and recreational uses. **Table 2** below represents the breakdown of land uses shown on the draft ILP.

Provision has been made for a neighbourhood centre containing a primary school, community facilities and local shops. The draft ILP incorporates a future arterial road between Oran Park to the west and Campbelltown to the east and contains easements for two 330kV powerlines.

Table 2 – Draft ILP land uses

Land Use	Area (ha)
Residential	266.5
Retail/Commercial	15.58
Employment	87.33
Open Space and Recreation	33.55
Riparian Corridors and Buffers	47.81
Community Facilities	3.85

4.2.1 Residential neighbourhoods

The 266.5 hectares of residential land provides approximately 4000 new dwellings. The majority of residential development generally occupies the eastern and south eastern sections of the Precinct with a small area of golf course related residential in the north-west. A mix of densities is intended to maximise housing choice, with higher density generally concentrated around areas of higher amenity such as parks and community facilities.

Higher density housing, including nearly 200 apartments, is located near the clubhouse precinct in the north of the Precinct to maximise access to the facilities. The envisaged break down of dwelling types is shown at **Table 3**.

The precinct is structured around a number of walkable neighbourhoods, (shown in **Figure 10**), generally focused around parks, shops and community facilities.

Table 3 – Proposed dwelling mix

Dwelling Type	Aproximate Number
Detached	2842
Attached and semi-attached	987
Apartments	191
Total dwellings	4020

The 4.5 hectare neighbourhood centre on the southern side of Badgally Road is co-located with a primary school and community centre and will contain up to 15,000 square metres of local retail including a small supermarket, other local shops, bank, post office and the like.

The nearly 6.5 hectare clubhouse precinct located to the north of the Precinct is intended to contain a mix of entertainment, recreation and leisure uses including restaurants, a hotel, child care facilities, gym and up to 3,500 square metres of retail floor space.

4.2.2 Employment

The Turner Road Precinct contributes over 87 hectares of employment land to the SWGC. Located in the south western quarter of the Precinct with access to Camden Valley Way and future Badgally Road, the land will accommodate industrial, warehouse and distribution uses. Bulky goods retail will front sections of Camden Valley Way and Badgally Road to maximise exposure. The location maximises access to two major regional public transport routes and takes advantage of the proposed extension of the future Badgally Road linking the Precinct to Campbelltown.

This substantial employment precinct will be supported by some convenience retail and other ancillary services and facilities such as child care services, gyms and the like.

4.2.3 Open space

The open space system comprises playing fields, local parks, riparian corridors and private open space in the form of a golf course. Generous vegetated buffers separate employment and residential uses and the Sydney Water Supply Canal.

A feature of the Precinct is the 38 hectare nine-hole golf course with the neighbourhoods to the north of South Creek integrated around the course in a parkland setting.

Core vegetation along the water courses and other remnant Cumberland Plain Woodland are retained and enhanced. Restored and revegetated riparian corridors of variable width will protect biodiversity. Employment and residential uses front the riparian corridors to provide casual surveillance and maximise amenity.

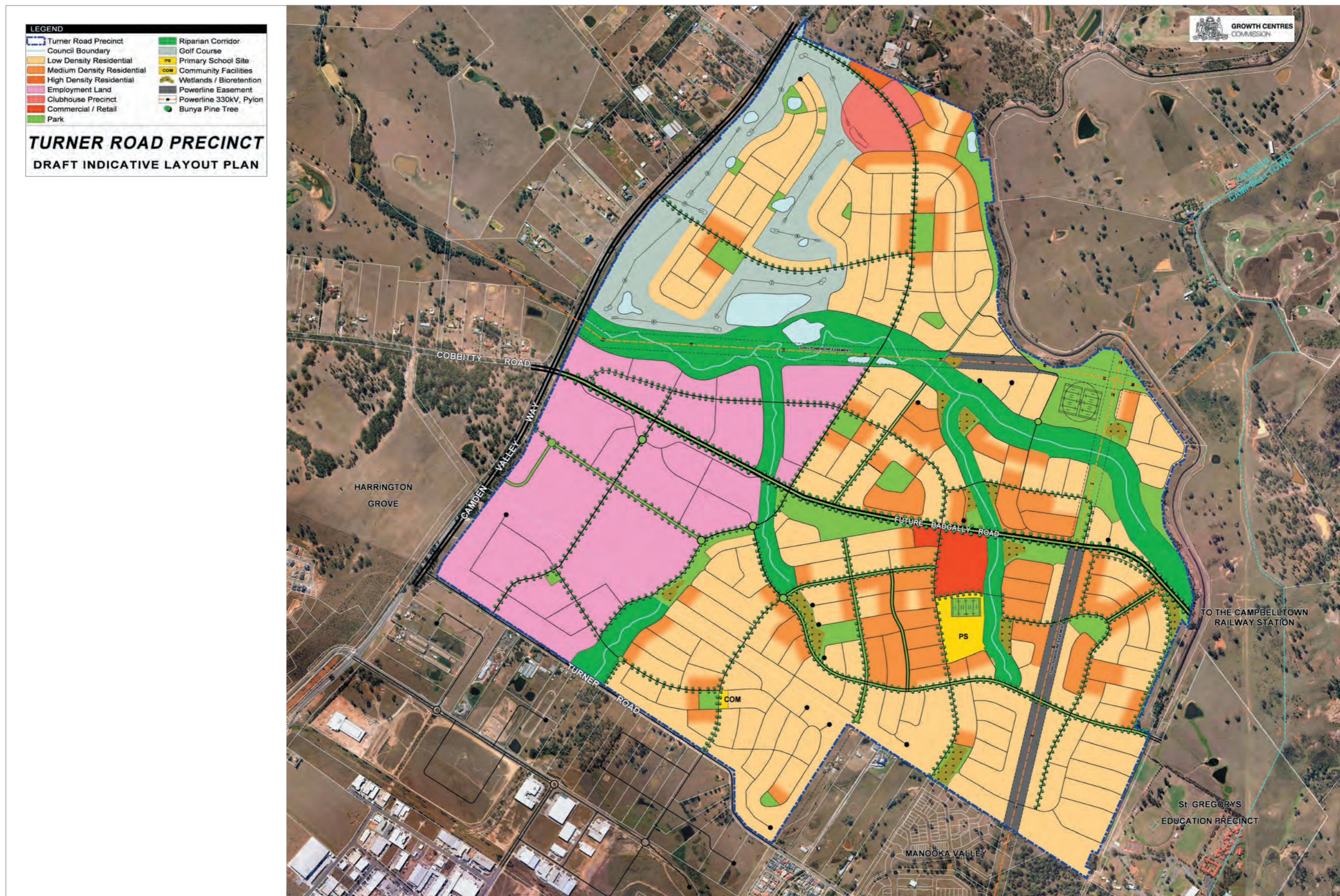


Figure 9 – Draft Indicative Layout Plan

Source: Jackson Teece, Development Planning Strategies (NSW) Pty Ltd and LFA Architects

4.2.4 Transport

The road hierarchy facilitates residential amenity, traffic efficiency and safety. Two arterial roads, Camden Valley Way and Badgally Road, are connected with spine roads through the Precinct (see **Section 5.10**). The street layout has been integrated with the natural topography of the Precinct and is characterised by a relatively even distribution of north-south and east west local streets to encourage walking and choice of movement.

4.3 Infrastructure Provision

The following section briefly summarises the arrangement for key services and infrastructure to the Precinct.

4.3.1 Water and sewer

A key factor shaping the decision to release the Oran Park and Turner Road Precincts is their comparative advantages in being able to be serviced for water and sewer. The West Camden Sewage Treatment Plant is already being expanded and will be able to cater for the Turner Road Precinct. Water will be supplied from the existing Narellan South Reservoir.

Sydney Water is currently finalising a detailed strategy for the SWGC and Oran Park and Turner Road are being taken into account in its preparation. The strategy will confirm the precise arrangements for water supply and the sewerage system.

4.3.2 Power

Integral Energy is the electricity supply authority in south-western Sydney and has been closely involved in the planning for both Oran Park and Turner Road.

Turner Road will be served from the existing Narellan zone substation and will require the provision of an 11kV feeder line from the Precinct to the existing zone substation which is being upgraded.

4.3.3 Gas and telecommunications

Both gas and telecommunications are delivered by private sector providers and are generally negotiated as the likely development yield becomes more certain. Provision of trunk infrastructure is generally undertaken by the respective utility on a commercial basis. The scale of Turner Road makes it highly likely that gas will be a viable commercial proposition and will be provided. Telecommunications are routinely provided in association with new development.

4.4 Variations from the South West Structure Plan

The Structure Plan for the SWGC set out the key planning parameters for the Turner Road Precinct (see **Figure 6**). As a result of the detailed investigation and design undertaken for precinct planning, there are a number of differences between the Structure Plan and the draft ILP for the Turner Road.

Described below, none of the proposed departures detract from the intended overall outcome for the SWGC and all facilitate and enhance the planning outcomes for the Turner Road Precinct.

4.4.1 Boundary realignment

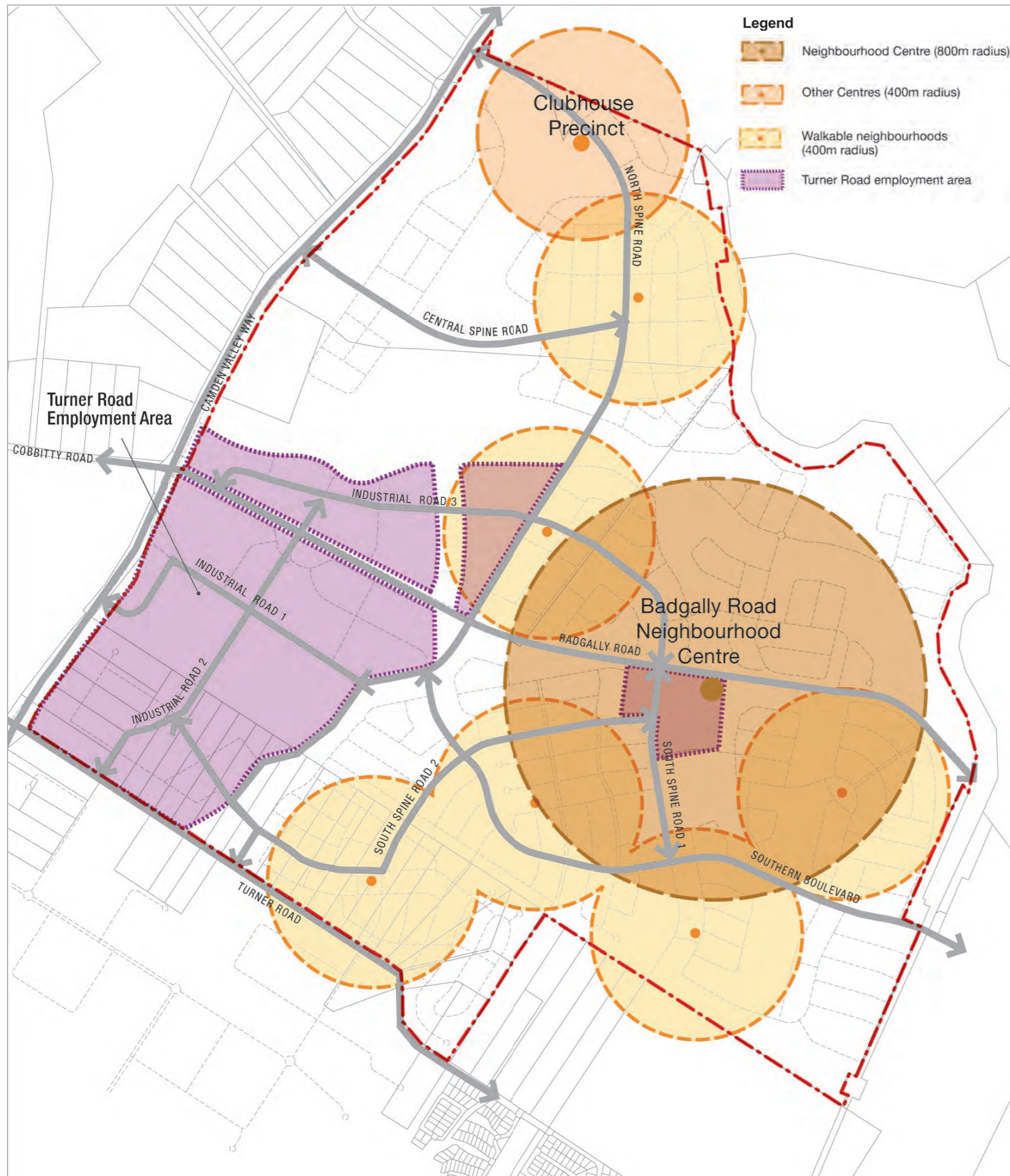
The western boundary of the precinct has been moved so that it is now east of Camden Valley Way. This change aligns the boundary along the length of Camden Valley Way to make it consistent with the position at the northern end. The realignment has no effect on land take and does not affect the proposed development outcomes of the Precinct.

4.4.2 Employment lands

The Structure Plan nominates 80 hectares of land for employment purposes. The draft ILP increases this to nearly 90 hectares. This has come about as a result of better utilisation of flat land and the extension of employment uses to natural boundaries (such as creeklines) and adjoining existing employment land at Smeaton Grange. In addition, the location maximises access and exposure to Camden Valley Way and Badgally Road.

The draft ILP also positions employment uses in the south-western corner of the Precinct rather than in a linear form along the new arterial road as shown in the Structure Plan.

The increase in employment land does not affect achieving the residential development target and has the added advantage of increasing amenity by reducing the interfaces between residential and employment uses and therefore the need for buffers. Importantly, the additional land helps to deliver jobs early – a fundamental objective for the Growth Centres, provides more jobs locally, is well located in relation to public transport, and will help the early delivery of Badgally Road.



4.4.3 Badgally Road alignment

While outside of the Turner Road Precinct, work has commenced to determine the alignment of the Badgally Road corridor to the east towards Campbelltown. Preliminary survey and design work for the extension has identified that the route shown on the Structure Plan would require significant excavation or bridging to avoid excessively steep grades. An alternative route is being investigated that aligns the road more closely with the existing topography. Subject to more detailed survey and design work, it is considered an alternative alignment than that shown on the Structure Plan will be required.

Within the Precinct, the alignment of Badgally Road generally conforms with the Structure Plan.

4.4.4 Walkable neighbourhoods

Walkable neighbourhoods (shown in **Figure 10**) are defined as the area within a 400 metre radius from a community focal point such as a local shop (or group of shops), a neighbourhood park, a community facility, playing fields, a public school and the like. The Structure Plan shows two walkable neighbourhoods for the Turner Road Precinct.

The provision of two to three walkable neighbourhoods in the Structure Plan was considered inadequate to serve the needs of the future population. The draft ILP now provides several walkable neighbourhoods, so increasing amenity, providing a focus for the community and incorporating the expansion of the clubhouse precinct associated with the golf course.

Figure 10 – Walkable neighbourhoods

Source: Jackson Teece

5.0 Environmental Analysis

This chapter of the report draws on the work undertaken by specialist contractors and summarises the existing environment at Turner Road. The purpose is to provide an understanding of how the existing physical conditions and features of the precinct have shaped and informed the ILP and how, in turn, precinct planning potentially impacts on these environmental features and conditions. The management response to any issues and impacts identified in the environmental analysis is discussed.

Specifically, in accordance with the GDC, the Structure Plan and, where relevant the SEPP, planning at a local and regional level must improve access to public transport, encourage walking and cycling and reduce dependence on private vehicles; maintain the natural environment and visual character of vegetation, riparian corridors and topography; improve environmental benefits; respect cultural heritage; and protect and maintain open space. A network of transport corridors needs to be provided and existing infrastructure integrated into the ILP.

The draft ILP's compliance with the Growth Centres SEPP and Development Code is summarised in **Attachment 1** of this report.

5.1 Landscape and visual character

The Development Code requires that new development within the Growth Centres should be sustainable and integrate with the existing environment. In order to understand the existing landscape characteristics of the Turner Road Precinct, a landscape and visual character assessment was prepared (see **Appendix A**). The aim was to establish the landscape characteristics of the Precinct and how the development could be successfully integrated into it.

5.1.1 Existing conditions

The landform of the Precinct is gently undulating, with some pockets of steeper terrain. There are pockets of remnant Cumberland Plain Woodland with no under-storey vegetation due to grazing and the presence of the golf course. The site also contains several farm dams and forms the headwaters of the South Creek catchment.

The site forms part of the foreground to the Scenic Hills, but is not part of the designated Scenic Hills range. Significant view lines to the Scenic Hills Range can be captured from Camden Valley Way over the flood plain of South Creek.

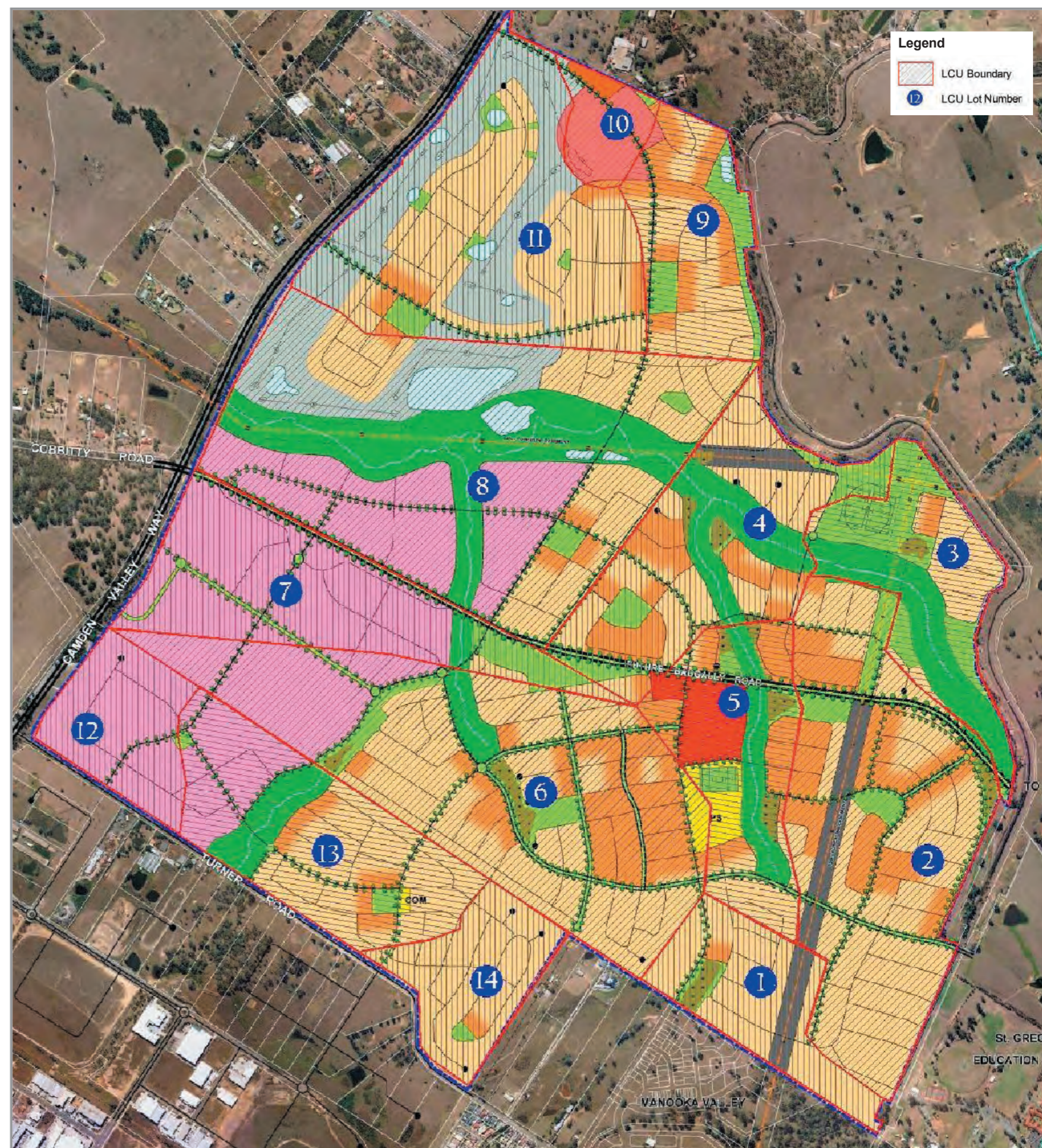


Figure 11 – Overlay of Landscape Character Units over the draft ILP

Source: Distinctive Landscape Planning

5.1.2 Impacts and assessment

External and internal landscape view sheds provide the best guide in establishing the capabilities of Landscape Character Units (LCU). They also indicate what impact development could have on surrounding LCUs and externally in the broader context of the Camden LGA.

Fourteen LCUs (see **Figure 11**) were defined based on landform, vegetation and access routes around the site. Primary ridgelines, drainage lines and roads defined boundaries. The draft ILP was overlaid on the LCUs to show the interrelationship between the existing landforms and the design of the draft ILP.

The analysis of the draft ILP (shown in **Figure 11** and summarised in **Table 4**), shows that the majority of the draft ILP would conform with the landscape visual assessment of the Precinct and would be suitable for development. There were, however, a few areas where mitigation measures would minimise visual impact, in particular:

- The proposed employment land along Camden Valley Way between Cobbitty Road and Turner Road (see LCU 12). The LCU here is a distinct ridge that can be viewed from most surrounding suburbs. The future development of Harrington Park 2 will be directly adjacent on the western side of Camden Valley Way.
- The Turner Road ridgeline as viewed from the Smeaton Grange industrial area.
- The hill at the south-eastern end of Turner Road (see LCU 14) which is very prominent and can be seen from most surrounding suburbs.

5.1.3 Management response

Provided the mitigation measures discussed below are implemented, the draft ILP will have minimal visual impact on significant view lines and will enhance the quality and quantity of vegetation throughout the Precinct.

Vegetation

The following principles will be incorporated in the DCP to ensure development in the Turner Road Precinct is harmonious and sympathetic to the current landform.

- The landscape treatment and development layout should be designed to preserve all existing pockets of vegetation. This will serve to reflect the Cumberland Plain Woodland character of the South Creek area, provide a visual link to the Scenic Hills and create visual buffers between different land uses within the Precinct.
- Pockets of remnant trees should be retained to provide ‘stepping stones’ between larger areas of vegetation and be used as the basis for public open spaces and natural reserves.
- The visual impact of development in residential areas is to be mitigated through the creation of a significant tree canopy via the planting of large canopy species on prominent hilltops and ridges, and on all street footpaths and in public spaces.

Roads

The landscape treatments of each road type are to reflect the scale of the road and the potential size and types of buildings along that road. These will provide both visual amenity and an appropriate flora and fauna link to the vegetation stepping stones throughout the Precinct.

The following guidelines for the landscape treatment of different road types will be incorporated into the DCP where appropriate:

- **Badgally Road:** Create a wide streetscape and island median, with planting to both the internal median and external road verges; semi-advanced trees to be used to provide instant scale prior to any construction of buildings; lower storey planting mix to be intensive and similar in format to a riparian corridor.
- **North Spine Road:** Create a wide streetscape with large scale trees and wide planted verges; lower storey planting mix to be intensive and similar in format to a riparian corridor.
- **Southern Boulevard:** Create a wide streetscape with medium scale trees planted in uniformly spaced clusters; understorey planting beneath the trees only.
- **Residential Roads:** Create a wide streetscape planted with evenly spaced medium scale trees.

Opportunities to landscape the road frontage along Camden Valley Way between Cobbitty Road and Turner Road, as identified in the assessment, will be limited due to the intended use for bulky goods retail which requires high visibility from the road. Design controls in the DCP will address this matter. It is noted that the rest of the eastern frontage of Camden Valley Way within the Precinct is almost entirely golf course and will have extensive landscaping.

Built form

Building and landscape controls will be included in the DCP as appropriate to ensure that a strong sense of unity and harmony is achieved between the built and natural environment. Development controls proposed include the following:

- Maximum building heights to ensure that the built form and scale should relate to the locality.
- Setbacks to be vegetated to minimise impact of buildings.
- Controls to manage signage within the employment zone.

Table 4 – Suitability of development within LCUs

LCU	Comment
Unit 1	Proposed low density on higher sections; medium density around park/retained trees. Suitable for development that integrates with the natural landscape
Unit 2	Proposed residential mix in harmony with topography. Proposed development suitable.
Unit 3	Suitable for proposed low density residential development. The significant stand of woodland to the east of the unit should be retained.
Unit 4	View shed across South Creek to the Scenic Hills is retained. Proposed residential development suitable.
Unit 5	Suitable for proposed development mix and riparian corridor.
Unit 6	Suitable for proposed residential development
Unit 7	Proposed employment use. Suitable for development with amelioration measures such as trees/landscaping to minimise impact of change in land uses.
Unit 8	Suitable for proposed employment uses with amelioration measures to minimise the effects of development on internal and external views.
Unit 9	Suitable for proposed residential development. Amelioration measures to minimise the effects of internal views
Unit 10	Proposed clubhouse, leisure activities, golf course etc. Suitable for development that is low scale and incorporated into landscape
Unit 11	Suitable for proposed residential and golf course development
Unit 12	Suitable for proposed employment uses with amelioration measures to minimise the effects of development on important view sheds into the Precinct.
Unit 13	Suitable for proposed residential development
Unit 14	The southern side of the hill appears a dominant feature to surrounding suburbs and is a visual link to the Scenic Hills. Suitable for low density residential with the exception of the southern side of the hill which should be conserved and vegetated.

5.2 Land capability

The Development Code requires the upfront investigation of land capability to determine whether the land is suitable for, and capable of, urban development. Accordingly a land capability and contamination assessment was prepared (**Appendix B**). In particular the following potential constraints on urban development were investigated:

- slope instability;
- soil erosion risks;
- soil salinity hazard;
- geotechnical factors; and
- site contamination.

Overall the Precinct is not considered to be significantly constrained by landslip, erosion, salinity or contamination, provided that the management recommendations made within this section are implemented.

5.2.1 Regional soil landscape, geology and hydrology

The majority of the Precinct is included within the Blacktown Soil Landscape, although significant areas are included within the Luddenham, Picton, South Creek and Richmond Soil Landscapes. Typically, the Blacktown Soil Landscape has low fertility, is moderately reactive and generally has low wet-bearing strength.

Bringelly Shale of the Wianamatta Group of the Triassic Age underlies the Precinct. This typically comprises shale, carbonaceous claystone, laminate and some minor coaly bands. Two faults extending through the site are also indicated on published mapping.

The shale terrain of much of Western Sydney is known for its saline groundwater, resulting either from the release of connate salt in shales of marine origin or from the accumulation of windblown sea salt. Previous groundwater investigations in the Camden area indicate that the shales have very low intrinsic permeability, hence groundwater flow is likely to be dominated by fracture flow with resultant low yields in bores. The water within the Wianamatta Group is typically brackish to saline and thus unsuitable for livestock or irrigation.

The Precinct generally comprises undulating hills with the exception of prominent hill tops in the north and south east corners and the highest point rises to 140m AHD.

5.2.2 Geotechnical conditions

Existing conditions

Landslip

The thick residual soil profiles of the Blacktown, Luddenham and Picton Soil Landscapes can be prone to slope instability due to erosion or seepage triggered by slumping and soil creep, particularly on steep south-facing slopes underlain by shale. The high clay content of these soils results in poor drainage and therefore reduced cohesion during periods of high rainfall or where natural drainage has been disturbed by development. Instability due to slumping is typically associated with thick soils and slopes of 11% - 20%.

No evidence of deep-seated hillslope instability (landslip) was noted on the site. Observed or inferred slope instability is restricted to surficial soil creep and possible shallow ancient slumping of residual soils developed in over steepened gully head or steeper ridge slope locations in the south-east corner of the Precinct as shown in **Figure 12**.

Erosion

The soils found within the Turner Road Precinct (i.e. Blacktown, Luddenham and South Creek) are typically of moderate erodibility, although soils which are more sodic or saline tend to have a greater level of erodability, thereby increasing erosion hazard. Laboratory test results showed that the soils tested are moderately to highly susceptible to dispersion. Within the Precinct, gully erosion locally entrenches the colluvial, residual or alluvial soils within the bases of creeklines as shown in **Figure 12**. Minor volumes of building rubble have been used to backfill erosion channels.

Impacts and assessment

Landslip

No evidence of hillslope instability was observed within the Precinct and as such does not pose any constraint on development.

The presence of soil creep and possible shallow ancient slumping of residual soils is likely to impose only a minor constraint as this issue can be addressed by good engineering practices for hill side development including site specific investigation and engineering of structures.

Other than erosion-triggered slumping of material from the low banks of the gullies within the site, there does not appear to be a significant risk of stream bank instability.

Erosion

The presence of erosive soils within the Precinct should not present significant constraints to development. The erosion hazard is within usually acceptable limits and can be managed by good engineering and land management practices that will also be required to address flood hazard and localised waterlogging limitations of soils along the course of South Creek.

Management Response

The key geotechnical recommendations include:

- Restricting development in soil creep areas unless site specific investigation is able to ensure that appropriate engineering works (e.g. retaining walls and drainage measures) can provide acceptable levels of risk for the development.
- Restricting development adjacent to creek and gully banks where erosion and/or soil creep may be present, unless appropriate engineering works (e.g. recontouring or bank support) can provide acceptable levels of risk for development.
- Revegetation of the areas affected by soil creep.

In order to reduce potential impacts on development by way of erosion, the treatment of existing gullies should include:

- filling using select materials (i.e. non-dispersive or erodible) placed under controlled conditions;
- provision of temporary surface cover (e.g. pegged matting) during valley floor revegetation;
- channel lining in sections of rapid change in gully floor grade;
- piping of flow where appropriate; and
- the re-establishment of trees along gully banks.

Provisions relating to soil erosion will be included with the Precinct DCP.

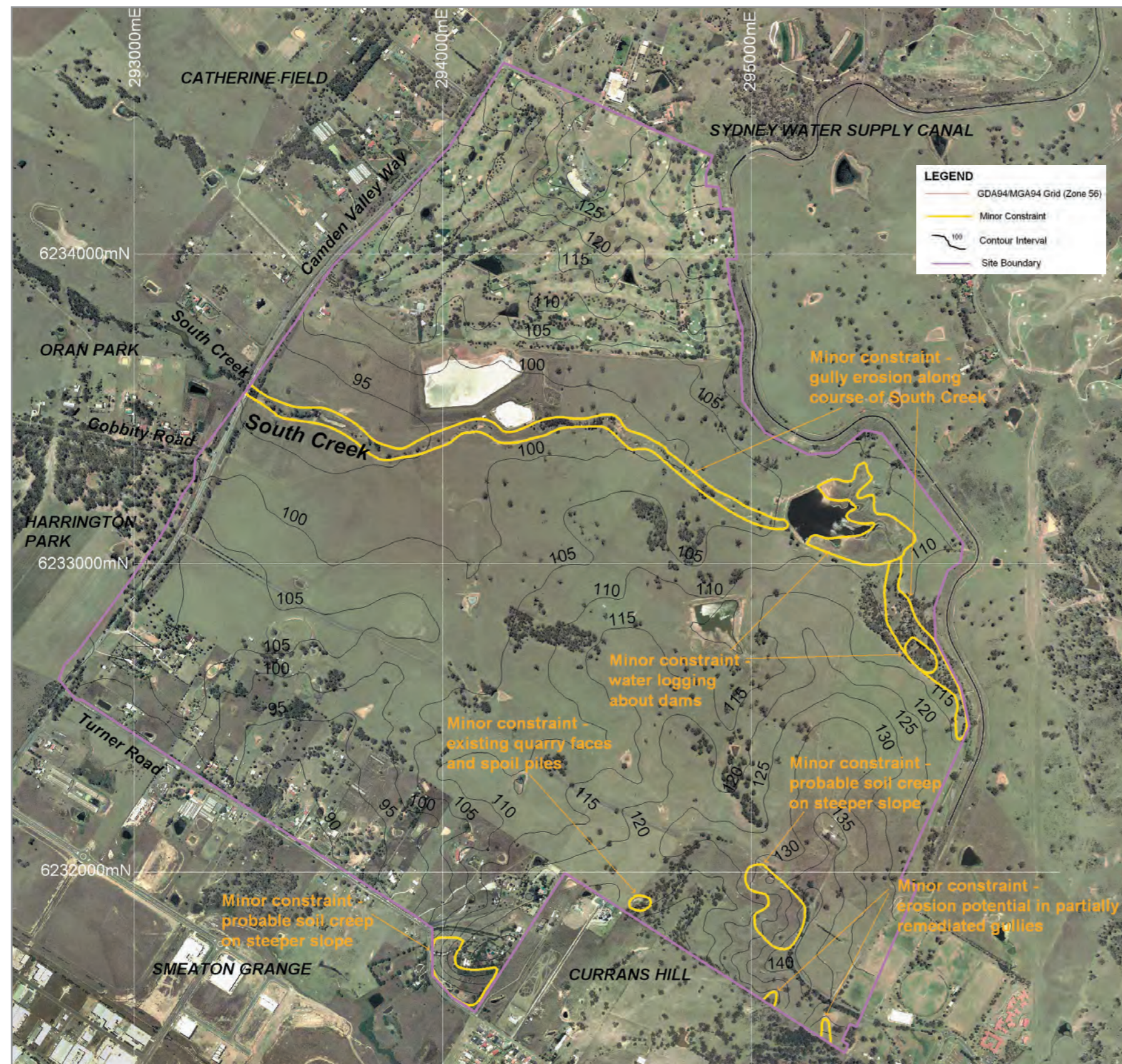


Figure 12 – Geotechnical constraints

Source: Douglas Partners

5.2.3 Soil salinity, aggressivity and sodicity

Existing conditions

Salinity

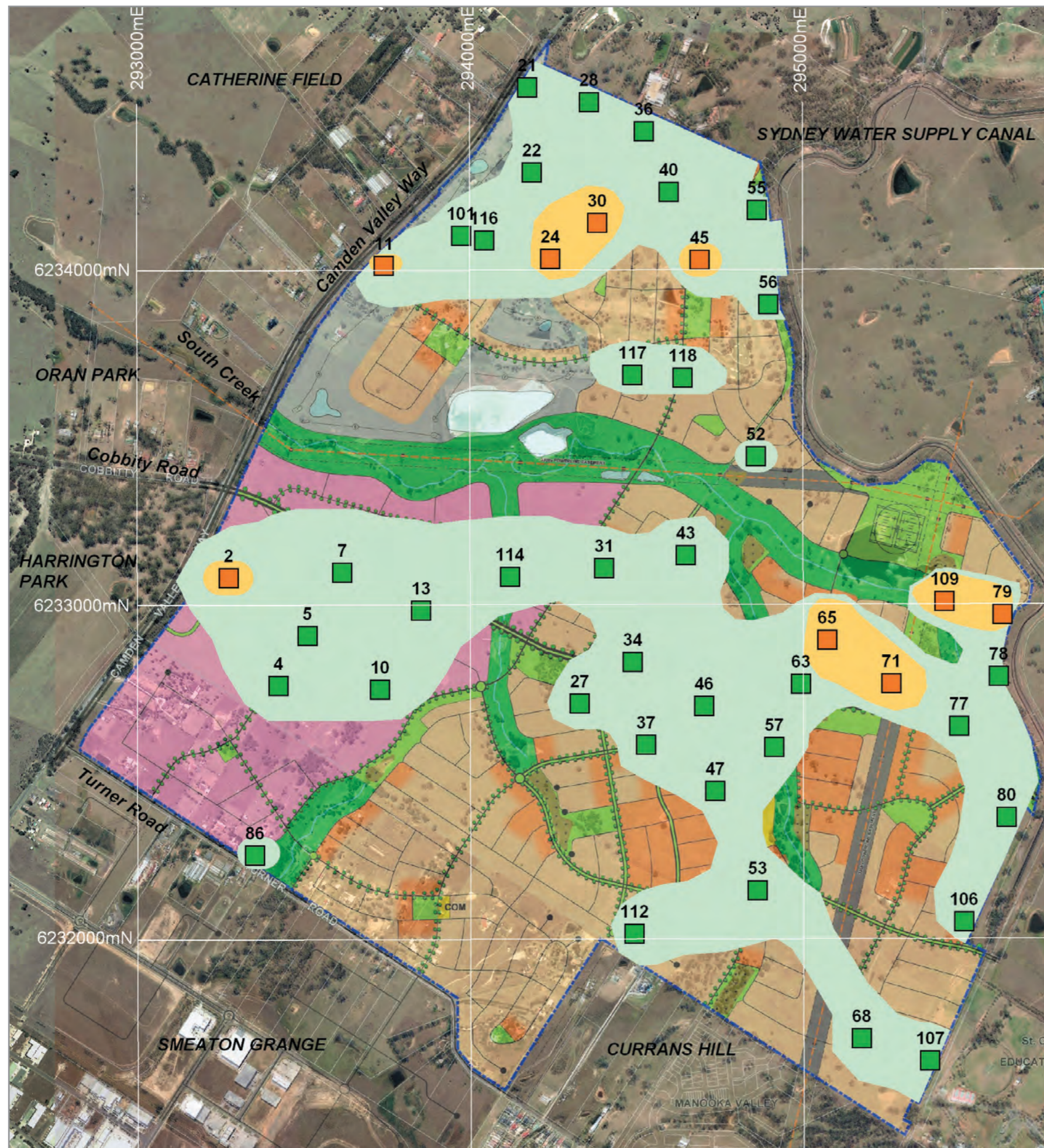
Of the 101 test pits drilled, two reveal areas of highly saline soil, one within the South Creek riparian corridor and the other on the western edge of the golf course. **Table 5** shows the different proportions of non-saline soils through to high saline soils measured in the test pits across the site. Moderately saline and very saline soils were also identified in the Precinct as shown in **Figure 13**.

Overall, the tests revealed that salinity does not place a major constraint on development within the Turner Road Precinct.

Table 5 – Distribution of Test Pit Salinities

Class	ECe (dS/m)	% of Measurements
Non Saline	< 2	26
Slightly Saline	2 – 4	23
Moderately Saline	4 – 8	34
Very Saline	8 – 16	15
Highly Saline	> 16	2

Source: Douglas Partners



Aggressivity

Although mildly and moderately aggressive soils are identified as being widespread in the far north and central section of the Precinct, these can be managed using standard practices, such as those detailed in the Piling Code of Australia.

Sodicity

Highly sodic soils appear widespread and will require management to reduce dispersion and erosion, and improve drainage.

Management Response

In order to ensure that all new development addresses the issues of salinity, aggressivity and sodicity all development applications for subdivision will be required to be accompanied by a Soil Management Plan. A control reflecting this will be incorporated in the DCP.

In general, the provisions to be included within the DCP will be directed at:

- additional investigation in development areas which are to be excavated deeper than 3 metres or into rock at shallower depths where direct testing of salinity has not been carried out;
- maintaining the natural water balance;
- maintaining good drainage;
- avoiding disturbance or exposure of sensitive soils;
- retaining or increasing appropriate native vegetation in strategic areas; and
- implementing building controls and engineering responses where appropriate.

Legend

- 71 Test Pit where pH of soil at 1m depth was 4 - 4.5 (moderately aggressive to concrete)
- Test Pit where pH of soil at 1m depth was 4.5 - 5 (mildly aggressive to concrete)
- Approximate region where development may be constrained by moderate aggressivity of soil to concrete at depths of the order of 1m
- Approximate region where development may be constrained by mild aggressivity of soil to concrete at depths of the order of 1m

Figure 14 – Aggressivity constraints – 1.5m

Source: Douglas Partners

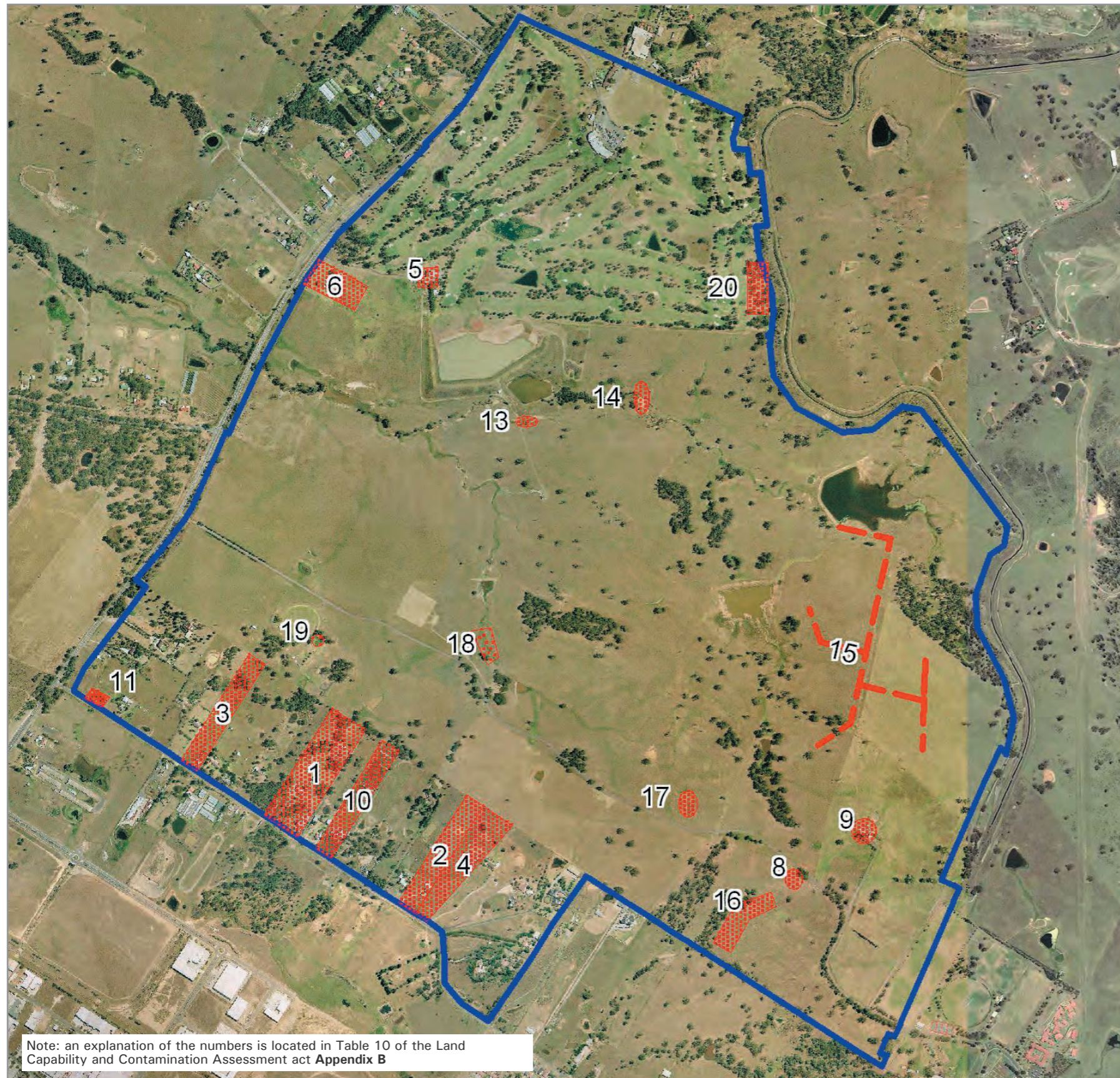


Figure 15 – Areas of environmental concern

Source: Douglas Partners

5.2.4 Land contamination

Existing conditions

As a result of a Phase 1 Environmental Site Assessment of the Precinct, Areas of Environmental Concern (AEC) were identified (shown in Figure 15).

Five groundwater bores were installed at selected locations to test overall catchment contaminant levels. All analyses returned results below the practical quantitation limit of the laboratory, except for some heavy metals which exceed the ANZECC 2000 Guidelines – Trigger Values for freshwater with 95% level of protection.

Impacts and assessment

The overall potential for contamination within the Precinct is low but notes that fifteen AECs were identified across the site that will require further investigation at the development application stage to determine whether or not contamination is present and, if so, what remediation measures will be required to make the land suitable for the proposed use.

Chemical contaminants within water samples obtained from the Precinct were generally within the relevant guideline criteria. High levels of copper and zinc were detected within the samples, however this is to be expected for waters from the Western Sydney Region with a dominant shale geology. In general, no indication of contamination was found and the results supported the low potential findings of the Phase 1 Environmental Site Assessment.

Management Response

Areas with potential for contamination have been mapped and requirements for Stage 2 investigations in these areas will be incorporated in the Precinct DCP.

5.2.5 Mine Subsidence

The Precinct is not underlain by any registered mines and is not within BHP's current 30 year mining plan. However, there are significant coal resources underlying the site that could be mined at some point in the future. Mining operations could lead to mine subsidence and related damage to buildings and infrastructure.

Accordingly, further investigation and correspondence with the relevant authorities will need to be undertaken by the GCC prior to gazettal of the SEPP Amendment.

5.3 Biodiversity

The South West Growth Centre contains a number of areas that have biodiversity values, including endangered vegetation, threatened species habitats, and wildlife and riparian corridors. The Camden Natural Assets Policy (Camden Council, 2003) further clarifies where ecologically significant and environmentally sensitive land is located in relation to the Turner Road Precinct.

The GCDC articulates a number of objectives in relation to the management of biodiversity in the Growth Centres, including ensuring protection of biodiversity values within areas identified in the Growth Centres SEPP, and retaining and enhancing as much existing vegetation as practicable within development precincts.

To meet the above objectives in the Turner Road Precinct an Ecological Assessment (located in **Appendix D**) was undertaken to identify terrestrial biodiversity, groundwater dependent ecosystems, riparian corridors and aquatic habitats within the Precinct.

Once the areas of biodiversity value were identified, the draft ILP was assessed in relation to the requirements of Commonwealth, State and local legislation/policy. Recommendations were then made in order to ensure that precinct planning would comply with these requirements and protect the biodiversity values of the site. The main applicable legislation is the TSC Act and the EPBC Act.

It is intended that the Growth Centres SEPP 2006 will be granted Biodiversity Certification. This will substantially alter the approach to impact assessment at the development application stage and could exempt developments entirely from assessment under the TSC Act.

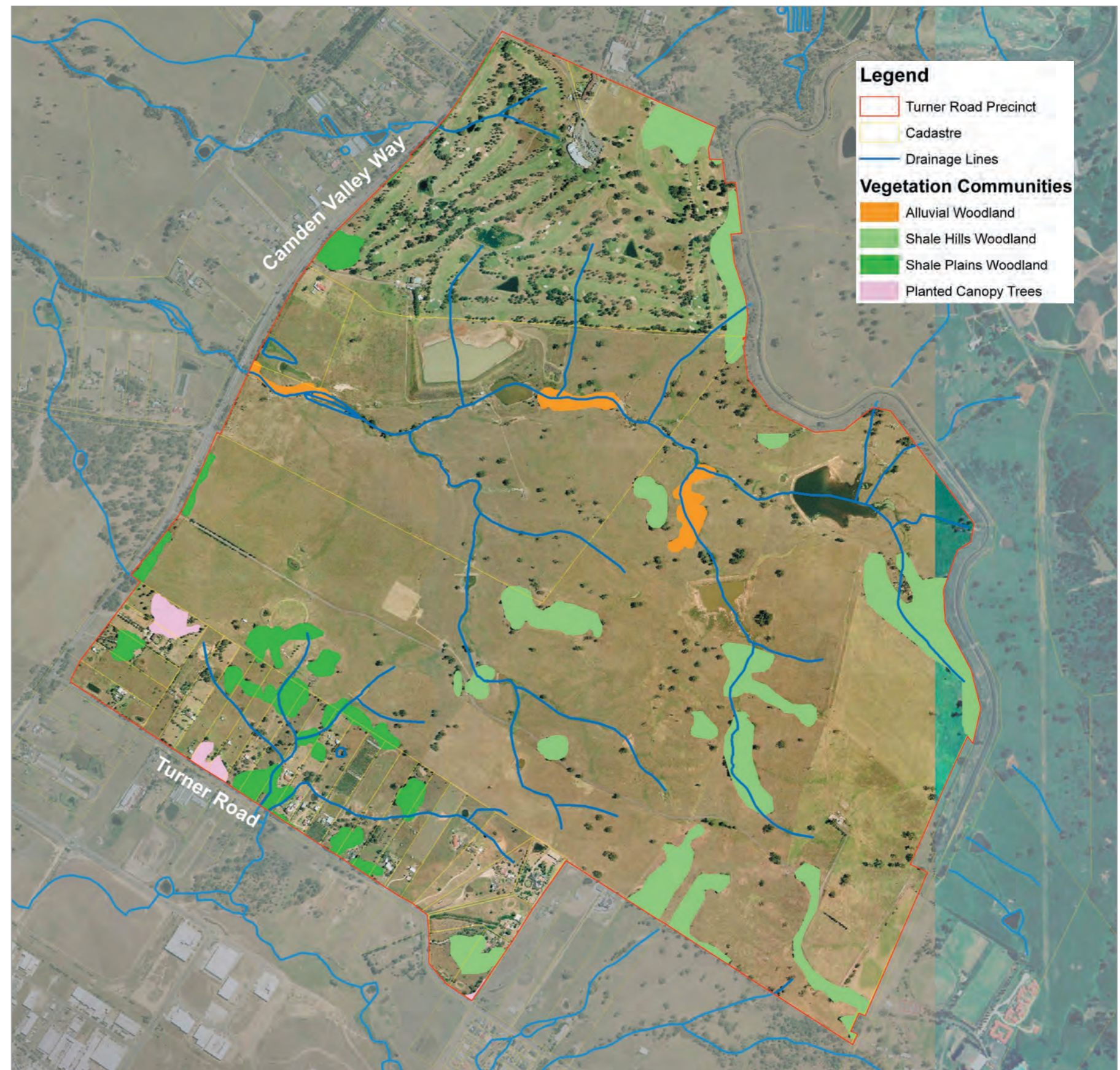


Figure 16 - Location of vegetation

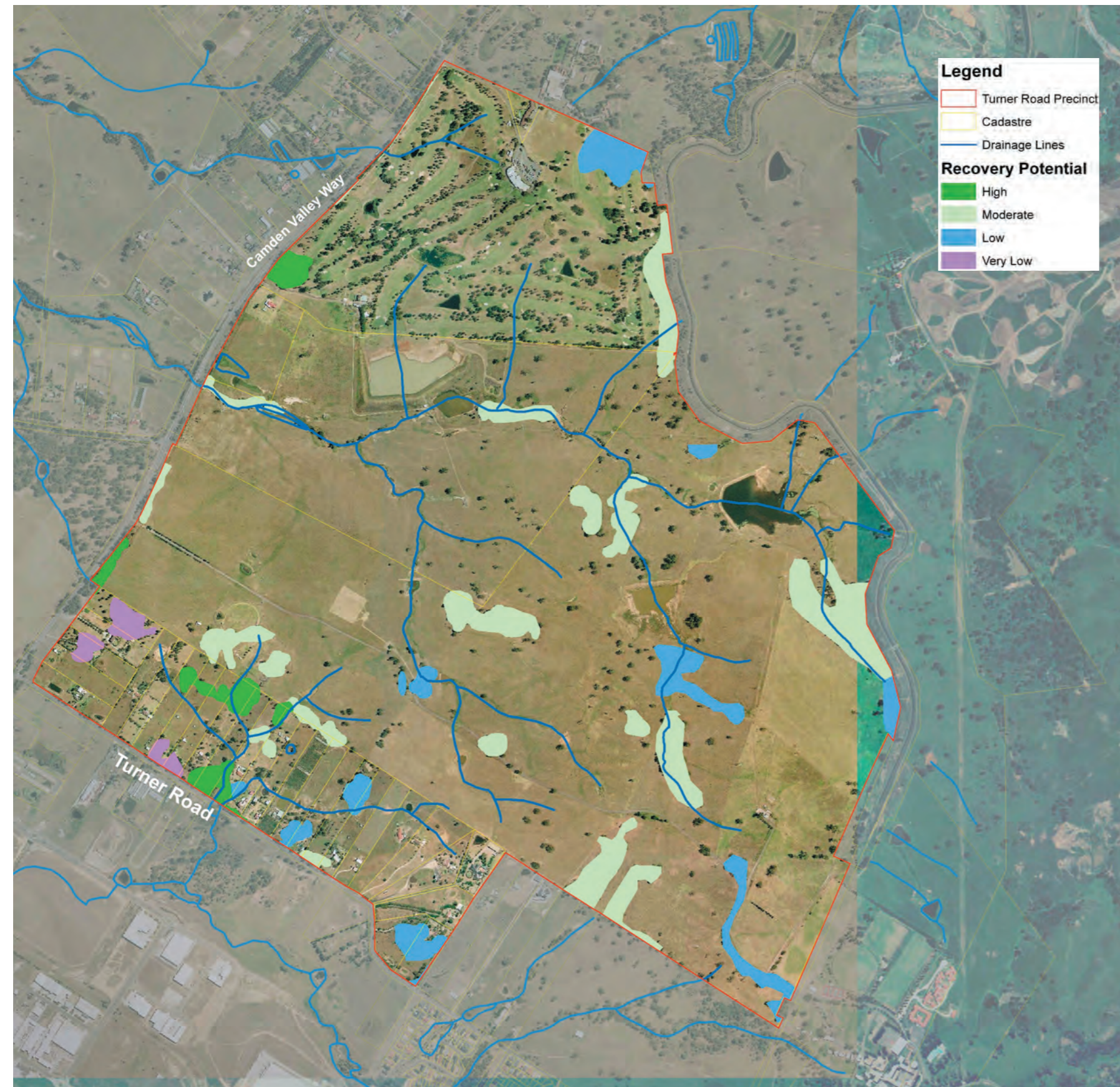


Figure 17 - Areas of recovery potential

Source: Eco Logical Australia

5.3.1 Terrestrial biodiversity

Existing Conditions

Flora

The site contains two woodland communities listed as Endangered Ecological Communities (EEC) under the TSC Act - Cumberland Plain Woodland (CPW) and Alluvial Woodland. CPW is also a Matter of National Environmental Significance (NES) under the EPBC Act. These communities are typically isolated and degraded, existing as patches of young trees or remnant canopy trees over grazed pasture. Small patches of good quality woodland vegetation occur in the south of the site within the small landholdings. The vegetation in the small landholdings is structurally and floristically diverse.

With regard to floral species, the EPBC Act lists one endangered plant species and one vulnerable plant species that could potentially occur within the Precinct. Of the 40 species of flora identified during the field survey, none were endangered or vulnerable. **Figure 16** shows the location of vegetation across the Precinct.

The Precinct has been largely cleared for agricultural purposes and for use as a golf course. Of the remaining native vegetation, the majority was ranked as having either a moderate or high recovery potential (as shown in **Figure 17**). Generally, the areas of high potential have not been grazed and cleared for some time and therefore have had time to regenerate, or native understorey has remained. The areas with the highest level of recovery potential are located along the western boundary of the Precinct and within the small landholdings in the south of the Precinct.

Fauna

Threatened and migratory fauna listed under the EPBC and TSC Acts have the potential to occur within the Precinct. During the field inspection, 28 species of fauna were identified, however none of these were listed as threatened or migratory.

Approximately half of the vegetation assessed was considered to have the potential to support threatened species and was classified as being of moderate habitat significance. No habitats of high significance were identified as shown in **Figure 18**.

Impacts and assessment

Endangered Ecological Communities

Due to the isolated and degraded nature of the vegetation and the very small area to be removed the proposal is unlikely to impact significantly on the EECs at the site. The retention and conservation of larger and better quality areas of vegetation within the Precinct within a comprehensive system of parks and reserves will help to minimise the biodiversity losses.

The land contained within Category 1 and 2 riparian corridors that will be revegetated across the Precinct is approximately 45 hectares, and additional patches of vegetation are to be preserved within pocket parks. The proposed revegetation of the riparian corridors is likely to compensate for the loss of vegetation that will occur and will result in an overall increase in the quality of vegetation within the Precinct compared with the current status.

Threatened species

Habitat for the majority of threatened species with the potential to occur within the Precinct is marginal (see **Figure 18**) and its removal as a result of development is unlikely to lead to significant adverse impacts for the threatened populations in the area. Wherever possible, large hollow bearing trees are to be retained on site so as to minimise impacts on dependent bats and birds.

Management Response

The retention and conservation of the larger and better quality areas of vegetation within a comprehensive system of parks and reserves, as shown in the draft ILP, will help to minimise biodiversity losses at the site. **Figure 19** shows the priority areas for conservation across the Precinct.

In response to the foregoing assessment, the following management measures will be addressed in the DCP:

- A detailed tree survey is to be undertaken at the subdivision development application stage to identify the location of specific trees within the Precinct which should be retained. Where existing trees are found to be of some value and may provide suitable habitat for roosting they should be incorporated into the landscape where possible. This is to be achieved through Tree Preservation Orders, pocket parks and incorporating the Eucalypts into the urban landscape or within large lots.
- A Conservation Management Plan (CMP) is to be prepared for the Precinct providing a detailed framework for the restoration and ongoing management of the conservation areas identified. The CMP will need to be agreed with the Council and DEC and provide the necessary detail on annual maintenance costs and initial restoration costs.
- Potential stepping stone biodiversity corridors incorporating the riparian corridors and containing remnant vegetation, public reserves and stormwater detention and/or treatments ponds should be identified, established and maintained.

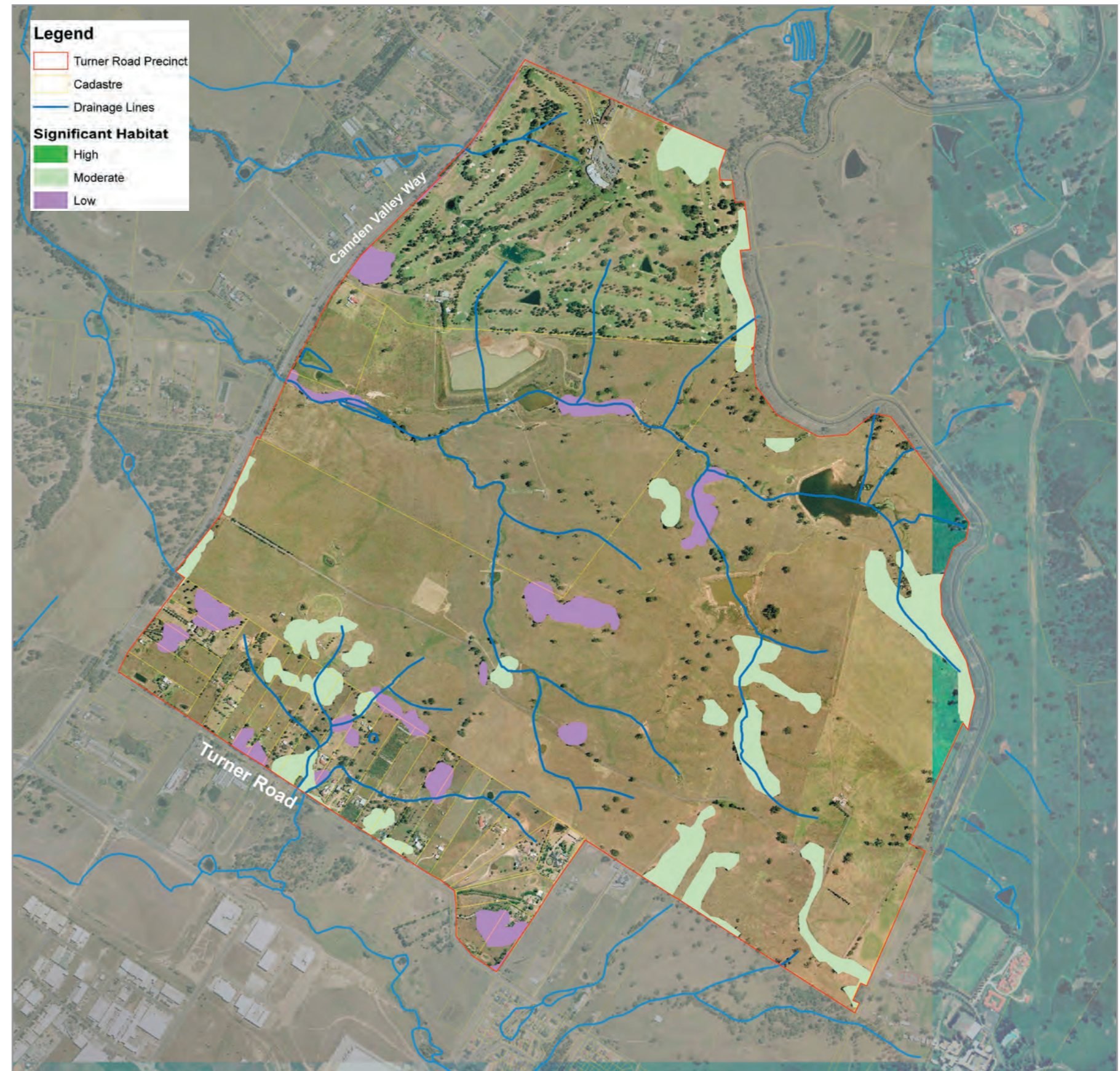


Figure 18 - Habitat locations

Source: Eco Logical Australia