

WESTERN SYDNEY PARKLANDS BUNGARRIBEE PRECINCT PROJECT

Concept Plan & Environmental Assessment (Volume 1)

For Landcom

September 2007

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Appendix F – TMAP Comments from Ministry of Transport

Submission of Environmental Assessment (EA) Prepared under Part 3A of the <i>Environmental Planning and Assessment Act (EP&A Act) 1979</i> .	
EA prepared by	
Name	Stephen Hills
Qualifications	BA (Hons.), Dip. TP, MRTPI, FPIA, CPP.
Address	The Planning Group (NSW) Pty Ltd PO Box 1612, North Sydney 2059.
Project to which Part 3A applies	
Proponent name	Landcom
Proponent address	Level 2, 330 Church Street, Parramatta, NSW
Land on which the development is to be carried out: address	Land Area subject of this application is <ul style="list-style-type: none"> • Doonside Residential Parcel; and • The Western Sydney Parklands - Bungarribee Precinct.
Proposed development	The Western Sydney Parklands Bungarribee Precinct Concept Plan is the subject of this Concept Plan Application under Part 3A of the <i>EP&A Act 1979</i> . The Concept Plan contains two elements: <ol style="list-style-type: none"> 1. a conceptual masterplan to guide development of the 300 hectare Bungarribee Precinct of the Western Sydney Parklands; and 2. a residential parcel comprising between 700 and 730 lots and associated recreational spaces known as the <i>"Doonside Residential Parcel"</i>.
Environmental Assessment	An Environmental Assessment (EA) is attached.
Certificate	I certify that I have prepared the contents of this document and to the best of my knowledge: It is in accordance with the requirements of Part 3A, It contains all available information that is relevant to the environmental assessment of the development It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.
Signature / Name / Date	 Stephen Hills / August 2007

EXECUTIVE SUMMARY

The Western Sydney Parklands Bungarribee Precinct project is a demonstration of world class planning and design in Sydney. The Western Sydney Parklands Bungarribee Precinct Concept Plan contains two elements:

1. a conceptual masterplan to guide development of the 300 hectare Bungarribee Precinct of the Western Sydney Parklands; and
2. a residential parcel comprising between 700 and 730 lots and associated recreational spaces known as the "Doonside Residential Parcel".

The Parklands Bungarribee Precinct, located in the Blacktown local government area, will be a vibrant hub of recreational activity, accessible to over two million Western Sydney residents. The adjacent Doonside Residential Parcel has been designed to integrate with the environmental and recreational assets of the Parklands offering residents the opportunity to feel part of one of the largest metropolitan parks in the world.

In announcing the project in 2004, the Hon. Diane Beamer, the then Minister for Western Sydney, gave a commitment that the residential area would integrate with the adjoining Western Sydney Parklands and demonstrate world's best practice in planning, design and water sensitive urban design.

Initiated by an Ideas Competition with entrants from the local and professional communities, a team of urban design, environmental and transport specialists, worked collaboratively towards achieving world's best practice. This is evidenced through the integrated design process that has led to the development of the Concept Plan. The Concept Plan:

- incorporates Water Sensitive Urban Design principles;
- capitalises on the heritage values of the site;
- enhances native vegetation values; and
- provides a range of recreational uses and accommodation for a diverse community.

The Parklands Bungarribee Precinct conceptual master plan identifies seven distinct zones for the Parklands, and allows the Western Sydney Parklands Trust to implement different stages over time. The zones are:

1. The Sports Zone;
2. The Former Airstrip Promenade;
3. The Institutional Zone;
4. The Recreational Hub;
5. The Production Based Landscape Zone;
6. The Wetlands; and
7. The Future Commercial/Recreation Zone.

The residential parcel includes project-specific Development Design Controls to ensure high quality treatments to the private and public domain. A Voluntary Planning Agreement will ensure the provision of services, facilities and treatment of public spaces. Provision has been made for a new community facility on the former Bungarribee House site.

1 INTRODUCTION

1.1 BACKGROUND

The Department of Planning has been acquiring land for the Western Sydney Parklands for 30 years. Since that time certain parcels in the Blacktown local government area have been identified as surplus. The surplus lands are known as the Interface Lands and have presented the opportunity to raise revenue for development of the Western Sydney Parklands.

In 2004, the Minister for Western Sydney, the Hon. Diane Beamer, announced the development of the Interface lands and a Design Competition for the Western Sydney Parklands. The Design Competition sought ideas from professionals and the community to achieve world's best practice development for the Bungarribee Precinct and a proposed new residential area west of Doonside Road. In 2006 the Huntingwood West interface parcel (refer to Figure 2), was approved by the Minister for Planning as a future employment estate.

This report supports an application to the Minister for Planning under Part 3A of the Environmental Planning and Assessment Act 1979. The Part 3A application seeks concept approval for the Western Sydney Parklands Bungarribee Precinct Project. The Project comprises the Parklands Bungarribee Precinct, also referred to in this report as the "Parklands Precinct", and the Doonside Residential Parcel.

The location of the Parklands Bungarribee Precinct is shown in **Figure 1** below. The Department of Planning and Landcom are engaged in a joint effort to plan the Bungarribee Precinct as part of the Western Sydney Parklands, and to develop the Doonside residential parcel. The Doonside residential parcel is part of the Government's ongoing program to provide quality housing and recreational resources as well as a commitment to sustainable communities.

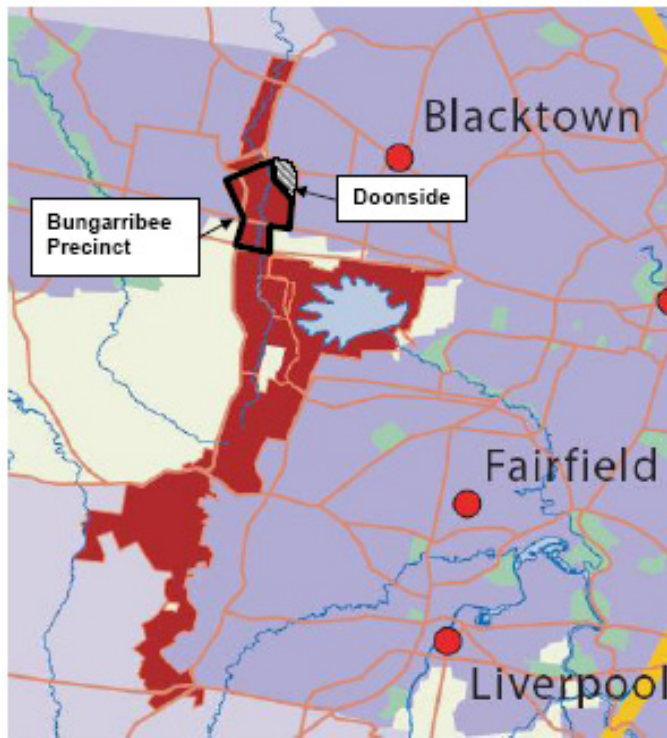


Figure 1: General Location

1.2 THE PROPOSAL

This Concept Plan application seeks approval for:

- the establishment of the first stage of the Western Sydney Parklands – Parklands Bungarribee Precinct; and
- a new 700 to 730 lot residential development on the Doonside residential parcel.

The Concept Plan describes the open space layout, residential subdivision, design guidelines, voluntary planning agreement, landscape character and public domain plan for the residential parcel. Indicative uses, access points and internal infrastructure are described for the Parklands Precinct.

Collectively, the Concept Plan identifies how planning and development can occur in a sustainable manner and achieve the Government's objectives.

An aerial view of the site is shown in Figure 2.



Figure 2: Aerial View of the site

— Area subject to Part 3A Concept Plan

1.3 HOW TO USE THIS DOCUMENT

This Part 3A Concept Plan is comprised of two documents for submission to the Department of Planning. This document, Volume 1, Concept Plan, provides a development description, outlines the vision and provides an environmental assessment of the Concept Plan. Volume 2 provides the supporting technical studies.

2 THE CONCEPT

2.1 PROJECT VISION

The Parklands Bungarribee Precinct will be the main community recreation hub for both active and passive recreation in the northern part of the Western Sydney Parklands.

The Doonside Residential Parcel will be a neighbourhood inspired by the unique flora and fauna of the Western Sydney Parklands. It will be where nature and home come together: comfortable, accessible and harmonious. The vision for the Doonside Residential Parcel is for a neighbourhood that:

- Incorporates sustainability principles;
- Features world class urban design and best practice Water Sensitive Urban Design (WSUD) initiatives;
- Offers a seamless transition from the Western Sydney Parklands to the residential development;
- Is characterised by high quality public domain;
- Capitalises on the heritage values of Bungarribee House; and
- Integrates with the existing urban structure.

2.2 THE CONCEPT – AN OVERVIEW

The concept application relates to the Parklands Bungarribee Precinct and the Doonside Residential Parcel.

The Conceptual Master Plan (the Concept Plan) identifies seven distinct zones for the Parklands Bungarribee Precinct. The zones are described in more detail in Section 2.3 of this report and include:

1. The Sports Zone;
2. The Former Airstrip Promenade;
3. The Institutional Zone;
4. The Recreational Hub;
5. The Production Based Landscape Zone;
6. The Wetlands; and
7. The Future Commercial/Recreation Zone.

The Doonside Residential Parcel comprises a residential subdivision layout and is accompanied by policy documentation to ensure delivery is maintained at a high standard. These policies include:

- a Voluntary Planning Agreement;
- a Development Design Code; and
- an amendment to the State Environmental Planning Policy – Major Projects.

Figure 3 provides a layout of the Concept Plan.



Figure 3: Concept Plan

2.3 THE PARKLANDS BUNGARRIBEE PRECINCT

The Parklands Bungarrabee Precinct covers approximately 300 hectares from Eastern Road in the north to the M4 Motorway in the south. Eastern Creek flows from south to north through the Parklands Precinct.

Access to the different zones of the Parklands Bungarrabee Precinct will be available from:

- Eastern Road;
- Doonside Road; and
- Great Western Highway.

There are seven zones within the Precinct, these are illustrated in **Figure 4** and described in the following sections.



Figure 4: The Parklands Bungarrabee Precinct Zones

A number of pedestrian and cycle paths link the Precinct's zones internally and connect to the Western Sydney Parklands regional track. The regional track will facilitate public access to the Parklands' 27km length.

Internal connectivity is also achieved by the provision of five crossing points over Eastern Creek, and one over Bungarribee Creek (See Concept Plan, **Appendix A**).

2.3.1 The Sports Zone (Zone 1)

The Sports Zone comprises an existing active recreational area at the north western corner of the Parklands Bungarribee Precinct. The Sports Zone is currently accessed from an existing intersection on Eastern Road. A second intersection is proposed to allow for future connectivity with the recently announced Sports Stadium that is to be constructed east of the Blacktown Olympic Centre.

The Concept Plan proposes to retain the existing four soccer fields and amenities building adjacent to Eastern Road and construct five additional soccer fields and parking areas, a grand stand and office space for sport administration. Other proposed facilities include courts for a variety of sports, an indoor sports, cultural/recreation facility with provision for adequate parking, BBQ and picnic facilities, commercial space and food retailing.

The Sports Zone will complement existing world class facilities on the northern side of Eastern Road. **Figure 5** shows an artist's impression of the view towards the Sports Zone from the south east corner.



Figure 5: View towards the Sports Zone

2.3.2 The Former Airstrip Promenade (Zone 2)

The Airstrip Promenade is located south of Bungarribee Creek. It will commemorate the military runway built on the site during the World War II.

The Airstrip Promenade will operate as an access point into the Parklands Bungarribee Precinct from Doonside Road. It will also function as both water feature and water quality device protecting Eastern and Bungarribee Creeks. A café area is proposed along the Promenade for park visitors. **Figure 6** shows an interpretation of the future Airstrip Promenade.



Figure 6: Interpretation of the former World War II airstrip

2.3.3 The Institutional Zone (Zone 3)

The Institutional Zone is located adjacent to, and surrounding the heart of, the Parklands Bungarribee Precinct 'recreational hub'. This area will accommodate future commercial and educational visitor attractions including a tourist information centre and conference facilities, with associated parking and infrastructure.

Two access points are proposed: a new four way signalised intersection constructed on the Great Western Highway (also servicing the Huntingwood West industrial estate); and a second access from the existing Doonside Road / Holbeche Road intersection.

The internal road network has been designed to allow connectivity between the two access points. It will also service the picnic areas within the Recreational Hub (Zone 4) and the Airstrip Promenade. Figure 7 shows an artist's impression of the view from the Institutional Zone.



Figure 7: Parklands view from the Institutional Zone

2.3.4 The Recreational Hub (Zone 4)

The Recreational Hub is in the heart of the Parklands Bungarribee Precinct and will be characterised by a native grassland landscape accommodating a large events space. The Hub will be fringed by BBQ and picnic shelters. A children's playground will be within close proximity to the Institutional Zone.

2.3.5 The Production Based Landscape Zone (Zone 5)

A productive landscape zone is proposed between the M7 Motorway and Eastern Creek extending from the edge of the Sports Zone to the M4 Motorway in the south. The productive lands have potential to accommodate urban forestry, flower production, market gardens, fodder production and may also be suitable for future bio-banking.

Access to the productive areas will be via two existing left-in and left-out access points on the Great Western Highway. The productive landscape area to the north of the Great Western Highway will be connected to the Sports Zone by an internal road. **Figure 8** shows an artist's impression of the proposed productive zone.



Figure 8: Parklands cropping

2.3.6 The Wetlands (Zone 6)

The Wetlands skirt the western side of the Huntingwood West employment land and provide an interface with the proposed adjoining development. The wetland will provide passive recreational opportunities for park visitors while performing key detention and storm water cleaning functions. An artist's impression of the wetlands is shown in **Figure 9**.

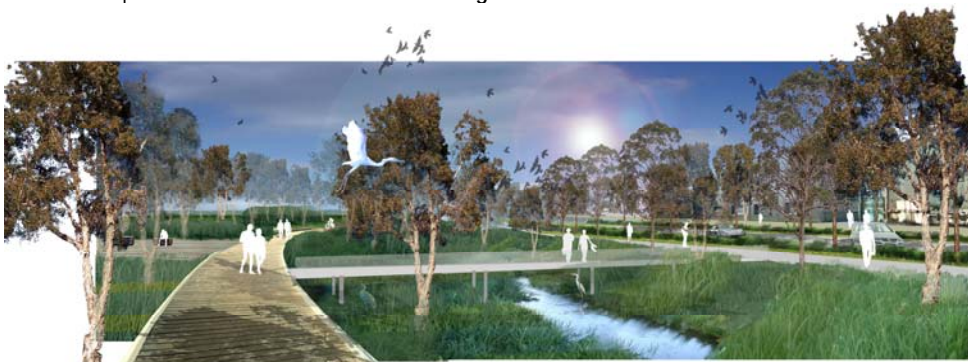


Figure 9: Parklands wetlands

2.3.7 The Future Commercial/Recreation Zone (Zone 7)

The Commercial/Recreation Zone is located adjacent to the Huntingwood West Industrial Precinct (between Eastern Creek and the M7 Motorway). This zone will offer fauna habitat conservation along Eastern Creek, and a variety of interim uses prior to further commercial development proposals.

2.4 DOONSIDE RESIDENTIAL PARCEL

The Doonside Residential Parcel is adjacent to the Parklands Bungarribee Precinct. It has an area of approximately 75 hectares, of which 55 hectares will be developed to provide between 700 to 730 housing lots.

The proposed layout focuses on the need to integrate a new residential community with the character and ecosystems of the adjacent Parklands Bungarribee Precinct. This will be achieved by the creation of development 'fingers' that maximise the Parklands interface and allow the Parklands to 'enter' the development through Eco-medians, two creek lines and a direct physical connection with the Bungarribee Homestead site. The Indicative Landscape Master Plan is shown in Figure 10.



Figure 10: Doonside Landscape Masterplan – Indicative

The key elements of the design for the Doonside Residential Parcel are described below:

Table 1: Doonside Residential Parcel, key design elements.

Element	Description
Built form and design	<ul style="list-style-type: none"> Between 700 and 730 new residential lots varying in lot size from 250m² to 650m²; and A high standard of built form private and public domain through the application of design guidelines within a Development Design Code for the site.
Roads, access and circulation	<ul style="list-style-type: none"> Three vehicular access points to Doonside Road at: <ul style="list-style-type: none"> the intersection with Eastern Road; the intersection with Bungarribee Road; and the intersection with Douglas Road. Four pedestrian crossing points: <ul style="list-style-type: none"> at the existing Doonside/Douglas Road signalised intersection; two new signalised pedestrian intersections across Doonside Road, one at Birdwood Avenue, and a second adjacent to Bowes Place; and a new signalised pedestrian crossing of Eastern Road west of the Doonside roundabout. Access to the residential subdivision via collector roads that link the three Doonside Road intersections with the proposed local access roads; Streetscapes with a strong landscaped setting; and A proposed collector road that has potential to accommodate a bus transport route through the site.
Interface with the Western Sydney Parklands	<ul style="list-style-type: none"> An interface with the Parklands Precinct achieved through the integration of road edges, landscape treatments, built form and native vegetation land; and Pedestrian, bicycle and landscape linkages.
Local Open Space / Play Areas	<ul style="list-style-type: none"> 4.5 hectares of landscaped riparian corridors; Retention and conservation of significant vegetation communities to promote biodiversity and site amenity; and Landscaped setbacks and buffers to Doonside Road and Eastern Road, capturing and retaining the existing stands of nature eucalypts.
Water sensitive urban design	<ul style="list-style-type: none"> Wetland systems to help manage stormwater from upstream. At the Doonside / Bungarribee Road intersection the wetlands are incorporated into the landscape design to create an entry statement; and on the southern creek the wetlands are design to create a series of cascades along the upper reaches of the creek; A series of shallow detention areas adjacent to the Park Edge Road; Eco-medians that incorporate bio-retention features; and Rain-gardens in parking bays within the road design.
Heritage	<ul style="list-style-type: none"> Retention of the built and landscape remnants of the Bungarribee Homestead Archaeological Site, including significant vistas; Retention of a potential indigenous archaeological deposit; and Opportunities for public art to assist in the understanding and interpretation of indigenous, non-indigenous and ecological values of the site.
Utilities	<ul style="list-style-type: none"> Designation of an area of the site for an electrical substation to connect power to the development.

3 THE PLANNING FRAMEWORK

3.1 PART 3A – MAJOR PROJECTS

This concept application is lodged under the provisions of Part 3A of the Environmental Planning and Assessment Act 1979. The Minister has:

- Agreed to the listing of the Bungarribee Precinct of Western Sydney Parklands and Doonside Residential Parcel as a state significant site (SSS) within Schedule 3 of State Environmental Planning Policy (Major Projects) 2005;
- Formed the opinion that the development is a Major Project to which Part 3A of the Act applies; and
- Authorised submission of a concept plan.

3.2 DIRECTOR GENERALS REQUIREMENTS

By letter dated 8 December 2006, the Department of Planning (DoP) advised Landcom of the Director General's Environmental Assessment requirements. These are provided in **Appendix C**.

The "key assessment requirements" of the Director General and where they are assessed in the sections of this document are as follows:

- Part A: Heads of Consideration (Section 5);
- Part B: Relevant Environmental Planning Instruments and Guidelines (see Section 6);
- Part C: Key Issues (Section 7);
- Part D: Statement of Commitments (Section 8); and
- General Environmental Risk Analysis (Section 9).

3.3 SEPP MAJOR PROJECTS

The Bungarribee Precinct is currently covered by the provisions of Sydney Regional Environmental Plan No. 31 (SREP 31) – Regional Parklands. The Doonside Residential Parcel is zoned 5(a) corridor under the Blacktown LEP 1988.

Appendix D includes a draft amendment to the SEPP (Major Projects). The draft amendment when gazetted will permit the proposed residential development of the Doonside Parcel.

3.4 THE VOLUNTARY PLANNING AGREEMENT

This Concept Plan includes a draft Voluntary Planning Agreement to be made between Landcom and the Minister for Planning. The draft document contained in **Appendix E** has been prepared in consultation with Blacktown City Council. The major features of the Voluntary Planning Agreement are outlined in Section 7.11.

3.5 DEVELOPMENT DESIGN CODE

This Concept Plan is accompanied by a Development Design Code, provided in **Appendix B**. The Development Design Code has been prepared following review of the Blacktown Development Control Plan 2006. It provides design controls for built form, road layout and landscape treatments.

4 KEY PRINCIPLES & OBJECTIVES

4.1 THE BUNGARRIBEE PRECINCT IDEAS COMPETITION

In 2005 Landcom held an Ideas Competition to gather innovative ideas on how to develop the Parklands Bungarrabee Precinct, the Doonside Residential Parcel and the employment interface lands (Huntingwood West).

The Competition attracted local and international interest. Entries from three categories (Professional; Students; and Open) were examined in detail and have provided valuable ideas for the Concept Plan. The Competition entries sought to:

- explore broad planning and design opportunities taking into account the context of the site, its cultural significance, and physical features;
- provide an opportunity for delivering world's best practice within the development;
- provide for the integration of land uses and activities within the Parklands; and
- promote environmental, social and economic sustainability.

Key points drawn from the Competition and incorporated into the Concept Plan are described below.

Table 2: Ideas Competition, key points

Element	Detail
Residential development	The housing components in many of the competition schemes successfully integrated the residential and Parkland uses with the heritage significance of the Bungarrabee Homestead. Critical linkages to adjacent communities (across Doonside Road) were evident in many schemes.
Heritage	The creation of view corridors connecting points of significance such as the Bungarrabee Homestead, the peak of Rooty Hill and the Overseas Telecommunication Corporation site. An emphasis of the site's use as an airfield for training during World War II.
Recreational attributes	The distribution of recreational uses, with active uses adjacent to the park boundaries and passive and/or tranquil areas within the centre.
Commercial attributes	Commercial uses were included in several schemes as a means to generate revenue to help establish and maintain the Parklands facilities. Providing sustainable commercial activities, such as the productive lands and market gardens, was central to many of the entries. These were envisaged as ventures that could be run by local community groups adding a social benefit to the economic scheme.
Ecological attributes	Biodiversity and habitat protection was a common denominator amongst all the entries and has been incorporated in the Concept Plan. Tree planting, bush regeneration, and management of riparian corridors and Cumberland Plain Woodland were some of the actions identified as 'required' to ensure the achievement of environmental benefits to the site.
Cultural attributes	A dominant feature of the Open and Student Competition entries was a focus on people, seeking to accommodate interests from ethnic diversity, young and old, sports interests to nature lovers, as well as the love of the arts. The Concept Plan proposes a development that seeks to attract a diverse range of park visitors and interest groups. This is reflected in the creation of park zones proposed in the Concept Plan.

4.2 WORLDS BEST PRACTICE – SUSTAINABILITY INITIATIVES

The Government is committed to achieving world's best practice in the development of the Parklands Bungarribee Precinct and the Doonside Residential Parcel.

Advancing from the Ideas Competition, and with input from leading specialist design and technical consultants, the project has been underpinned by the following Principles:

1. To incorporate the natural environment into the design outcome.
2. To create a high quality interface between the residential development and the Parklands.
3. To respond to the site's history and heritage values.
4. To promote architectural excellence through a set of development design controls that apply to the future residential community.
5. To be accessible.

The sustainability outcomes that are a feature of the proposal include significant heritage, open space, biodiversity, waterways, urban design and social attributes. The consultant team worked collaboratively to develop new concepts through the cross pollination of information and design ideas. Both the Doonside Residential Parcel and the Parklands Bungarribee Precinct achieve best practice through the collaboration of urban landscape and ecological design. New landscape and urban design outcomes integrate with, and are responsive to, the existing environmental conditions of the locality.

The following points illustrate these achievements:

Ecology

- Development and conservation outcomes for the site have been integrated into the planning from the earliest stages of the project. This includes definition of the Parklands envelope and boundary, with the development lands protecting areas of conservation significance at a regional scale;
- Impacts of the development are not just mitigated (i.e. avoided or minimised) but are further off-set through investment to improve or maintain key environmental values within the Precinct;
- There is a direct ecological benefit from the developing residential parcel in terms of delivering environmental outcomes in the Parklands. The proposed Conservation Management Plan (See **Appendix A, Volume 2**) focuses on the ecological management outcomes within the Parklands Precinct, and supports the Western Sydney Regional Parklands Management Vision (Department of Infrastructure, Planning and Natural Resources, November 2004); and
- Landscaping on site is based on an approach that enhances and further secures natural values including the translocation of native grasslands.

Social

- Providing a mix of housing types and sizes to encourage diversity;
- Developing the public domain and open space to encourage walking, cycling and incidental exercise by means of active streets and a network of paths, trails and open space areas, as a means to promote the health and fitness of the population;
- Providing social infrastructure in ways that will enhance social integration with adjacent neighbourhoods; and
- Creating a strong identity and sense of place through a public art strategy, cultural heritage strategy, public domain strategy and links with the Parklands.

Heritage and Conservation

- Conducting a geotechnical survey (Total Field Magnetism) and archaeological test excavations to identify the location of archaeological remains of the former Bungarribee House and its associated outbuildings and gardens; and
- Preparation of a Conservation Management Plan and Heritage Impact Statement.

Water Sensitive Urban Design

- Incorporating best practice stormwater management measures provides an ecological benefit beyond the proposed development. The initiatives of the development will help to mitigate against adverse environmental impacts on the waterways of the locality (particularly in terms of stormwater quality and quantity) attributed to previous developments in the catchments upstream of the Doonside Residential Parcel;
- Potable water conservation measures i.e. water efficient fixtures and appliances, and alternative water supply sources opportunities (e.g. recycled water), will help reduce residential water use beyond the BASIX benchmark of a 40 percent reduction; and
- Innovative integration of the water management with the urban design, landscape design and natural form of the unique Parklands setting.

Transport

- Uptake of sustainable travel, by the provision of a high quality network of cycle and pedestrian routes connecting residents to community and public transport facilities within, and in the vicinity of the Doonside Residential Parcel and the Parklands Precinct;
- Doonside Residential Parcel's collector road will be built to accommodate a bus route so that all residents are within 400 metres of a bus stop or within one kilometre of a train station; and
- Personalised and innovative travel planning as part of the package of measures to meet transport targets for the development.

The concept plan provides sufficient scope and flexibility to potentially undertake additional sustainability investigations at a later stage to further progress the sustainability initiatives and performance of the Doonside Residential Parcel and the Parklands Bungarribee Precinct.

4.3 KEY ELEMENTS

The following are the key elements established to ensure the Project Vision is met:

Table 3: Urban Design and Landscape

	Doonside Residential	Parklands Bungarribee Precinct
Key elements:	<ul style="list-style-type: none"> ▪ Fingers of residential development permeate the Parklands ensuring a gradual integration into the Parklands, while protecting and enhancing views and vistas both to, and from the Parklands; ▪ Clear road structure / alignment that provides an end view over the Parklands or public open space; ▪ A 'park edge road' representing a transition between the urban environment and the natural/contemplative character of the Parklands; ▪ A landscaped edge to Doonside Road that utilises planting and mounding as a design response to noise and other environmental issues. The result is an attractive pedestrian environment that connects the train station with the residential and industrial areas to the south; and ▪ Landscape design that integrates the proposed WSUD strategy and maximises site amenity. 	<ul style="list-style-type: none"> ▪ A range of uses that are sympathetic to the Parklands environment; and ▪ Landscape design that capitalises on the site's natural attributes.

Table 4: Biodiversity

	Doonside Residential	Parklands Bungarribee Precinct
Key elements:	<ul style="list-style-type: none"> ▪ Eco-medians form part of the integrated landscape and WSUD strategy and provide a visual connection with the Parklands. The eco-medians allow for a transitional integration between the proposed landscape and the Parklands vegetation; ▪ Landscape treatment to enhance and protect existing waterways traversing the site; and ▪ Rehabilitation, creek treatments, conservation and protection of areas of high quality vegetation (communities and condition) containing threatened species such as grevillea juniperina. 	<ul style="list-style-type: none"> ▪ Re-vegetation of riparian areas within the Parklands with species indigenous to the Cumberland Plain; ▪ Targeted areas for revegetation whilst counterbalancing vegetation loss from Doonside Residential Parcel; and ▪ Bio retention systems that provide a vegetated transition from the urban development to the parkland areas.

Table 5: Heritage and conservation

	Doonside Residential	Parklands Bungarribee Precinct
Key elements:	<ul style="list-style-type: none"> Identification of a core heritage area where archaeological and landscape elements of heritage significance related to the Bungarribee homestead may be located; Establish a view corridor between Bungarribee and the Parklands; and Conservation of indigenous archaeological sites. 	<ul style="list-style-type: none"> Conservation of significant visual connections by the retention of parklands areas and existing vegetation for recreation and open space; Interpretation of the alignment of the former runway associated with the World War II military airfield; and Conservation of vegetation areas and indigenous archaeological sites within a 200 m biodiversity corridor.

Table 6: Accessibility / Connectivity

	Doonside Residential	Parklands Bungarribee Precinct
Vehicular access		
Vehicular access is provided via:	<ul style="list-style-type: none"> Doonside Road / Eastern Road existing roundabout; Doonside Road / Bungarribee Road existing roundabout; and Doonside Road / Douglas Road existing signalised intersection. 	<ul style="list-style-type: none"> Existing Eastern Road signalised intersection; New Eastern Road intersection; Doonside Road / Holbeche Road existing signalised intersection; New signalised four way intersection on the Great Western Highway; and Left in and out from Great Western Highway onto Pikes Lane and Parklands to the north.
The new access points will facilitate:	<ul style="list-style-type: none"> Integration with the existing urban structure; and Connectivity with the existing road network. 	<ul style="list-style-type: none"> Integration with the existing urban structure; and Connectivity with the existing road network.
Pedestrian access		
Pedestrian access is provided via:	<ul style="list-style-type: none"> The existing Doonside/Douglas Road signalised intersection; Two new signalised pedestrian intersections across Doonside Road, one at Birdwood Avenue, and a second one adjacent to Bowes Place; and A new signalised pedestrian crossing across Eastern Road west of the Doonside roundabout. 	<ul style="list-style-type: none"> Five pedestrian crossings over Eastern Creek; and One pedestrian crossing over Bungarribee Creek.

	Doonside Residential	Parklands Bungaribee Precinct
The new pedestrian crossings will:	<ul style="list-style-type: none"> ▪ Connect with the Parklands and surrounding urban areas; ▪ Facilitate access to shops, schools and public transport; and ▪ Minimise traffic impacts & improve pedestrian safety. 	<ul style="list-style-type: none"> ▪ Connect with surrounding urban areas; ▪ Allow pedestrian movement between the Parklands zones; and ▪ Minimise negative impacts on waterways and riparian vegetation.

Public Transport

Public transport is provided via:	<ul style="list-style-type: none"> ▪ Diversion of an existing bus route/s to service the site; and ▪ Pedestrian and cycle paths that connect to Doonside Railway Station. 	<ul style="list-style-type: none"> ▪ Existing bus route/s servicing the area; and ▪ Pedestrian and cycle paths that connect to Doonside Railway Station.
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5 DIRECTOR GENERAL REQUIREMENTS

PART A – HEADS OF CONSIDERATION

The “*Heads of Consideration*” identified as Part A of the Director General’s Environmental Assessment Requirements (DGEAR) relate to:

- Suitability of the site;
- Likely environmental, social and economic impacts;
- Justification for undertaking the project; and
- The public interest.

These items are addressed below.

5.1 SUITABILITY OF THE SITE

5.1.1 Location

The Bungarribee Precinct and the Doonside Residential Parcel are ideally located for the proposed land uses. The M4 and the M7 Motorways are the major roads bordering the site, with the Great Western Highway crossing the southern sector of the Parklands Bungarribee Precinct. The Parklands Precinct is strategically located at the heart of Western Sydney providing excellent exposure to the Western Sydney community (see **Figure 2**).

5.1.2 Physical conditions

The existing physical conditions of the site are appropriate for its proposed uses. The Doonside Residential Parcel is relatively flat with maximum slopes of 5 degrees. Residential development of the land will require minimal earthworks.

Whilst the majority of the 55 hectares of developable area within the Doonside Residential Parcel has already been cleared of vegetation, 12.35 hectares of existing habitat (floodplain forest, woodlands and native grasslands) is proposed to be removed. The Concept Plan application includes a proposed ‘offset strategy’ contained within the Conservation Strategy (see **Section 7.3.3** and **Appendix A** in **Volume 2**). The offset strategy will counterbalance the removal of existing habitat on the Doonside Parcel by the revegetation and conservation management of 27.41 hectares of new or existing habitat elsewhere in the Parklands Bungarribee Precinct.

5.1.3 Tenure and Zoning

The site is regular in shape and is in single ownership – i.e. the NSW Department of Planning. The Parklands Precinct is covered by the provisions of *Sydney Regional Environmental Plan No 31 (SREP 31) – Regional Parklands* whilst the Doonside Residential Parcel is currently zoned 5(a) corridor under the *Blacktown LEP 1988* (see **Section 6.1**).

The Blacktown LEP 1988 does not apply to land to which Sydney Regional Environmental Plan No 31 – Regional Parklands applies, as stated in Clause 3(2) of the LEP.

5.1.4 Sydney Metropolitan Strategy

The Concept Plan proposal is consistent with the relevant strategies of the Sydney Metropolitan Strategy (See **Section 6.1**).

5.1.5 Economic benefits

Revenue from the development of the Doonside Residential Parcel will facilitate the development of the Western Sydney Parklands – the major recreational area for the residents of Western Sydney. The proposed development will have a wider positive economic “flow-on” effect. The introduction of an additional 700 to 730 lots with a population of some 2,000 people, will benefit local shops. The new recreational facilities within the Parklands Precinct will increase employment opportunities.

5.2 POTENTIAL ENVIRONMENTAL, SOCIAL AND ECONOMIC IMPACTS

5.2.1 *Surrounding land uses and site linkages*

Existing road corridors and other land uses that surround the Doonside Residential Parcel and Parklands Bungarribee Precinct are:

- Eastern Road to the north;
- Doonside Road to the east;
- M4 Western Motorway to the south; and
- M7 Motorway to the west.

Surrounding land uses include:

- The Huntingwood and Arndell Park industrial areas to the east of Brabham Drive and Doonside Road;
- The recently approved Huntingwood West Employment area;
- Existing residential areas of Doonside to the east and north-east of Doonside Road (including the Doonside Railway Station), and local schools;
- Eastern Creek International Raceway to the south of the M4 Motorway; and
- The Rooty Hill residential and recreational areas to the west of the M7 Motorway.

5.2.2 *Access and linkages*

Access to the proposed Doonside Residential Parcel will be provided via three access points from the existing intersections located on Doonside and Eastern Roads.

Traffic modelling of the proposed conceptual layout shows that the three improved access points and the expected traffic to be generated by the development will not adversely impact on the existing road network (see **Appendix B, Volume 2**).

Access to the Institutional Zone and the Recreational Hub of the Parklands Bungarribee Precinct will be primarily from a four-way intersection on the Great Western Highway. The intersection is linked to a second access point at the existing Doonside/Holbeche Road signalised intersection by an internal road. The intersection at the Great Western highway has been approved in association with the West Huntingwood Employment Area development.

5.2.3 *Interface with Parklands*

A Development Design Code has been prepared for the Doonside Residential Parcel and is provided in **Appendix B**. The document provides guidelines to *"ensure a positive visual and environmental relationship with the Western Sydney Parklands"*.

Context and EDAW have prepared a landscape framework and supporting landscape plans for the Parklands Bungarribee Precinct and the Doonside Residential Parcel. The landscape plans are included within **Appendix A**.

The notion of "Living in the Parklands" has informed the overall concept and driven the design for the public realm. The structure of the public realm within the Doonside Residential Parcel seeks to integrate the urban development with the Parklands and existing landscape through consideration of topography, drainage networks, views, vegetation, pedestrian connections and treatment of stormwater.

The public realm is articulated as a series of landscape typologies. The Landscape Masterplan is shown on **Figure 10** and includes:

- The Northern Bushland park;
- The Southern Creek line;
- Eco Parks; and
- The Heritage precinct.

5.2.4 Socio-economic impacts

Landcom's policy on Social Sustainability focuses on achieving relative equity, social integration and cohesion, diversity and wider community benefit, in addition to the more traditional focus on access to facilities, services and community development initiatives. In particular, this policy proposes that the social sustainability of Landcom developments will rest on:

- Avoiding social exclusion, social isolation, and/or the construction of income enclaves;
- Providing for diversity among new residents, workers and visitors;
- Ensuring accessibility between new and existing residential areas;
- Providing facilities which encourage use by both existing and new residents, workers and other users; and
- Making sure that a new development is a benefit to existing residents and users of adjacent areas, as well as to new residents and workers.

A "*Social Sustainability Due Diligence Assessment for Doonside*" was prepared for the site and is included as **Appendix C, Volume 2**. The report highlights social sustainability issues, describing the social context of the site and presenting an analysis of the social risks and opportunities associated with the proposal.

As an outcome of this report a Social Sustainability Plan was prepared for the development, which include strategies for the delivery of social infrastructure and measures to enhance the social sustainability of the project (**Appendix C, Volume 2**). The reports conclude that risks to development from a social sustainability viewpoint are very low, while the opportunities and benefits associated with the proposal have potential to be considerable. These are discussed in detail in **Section 7.9.2**.

5.3 PROJECT JUSTIFICATION

The project is considered to be of State and Regional significance, as declared by the Minister in the Sydney Metropolitan Strategy. The development of the Doonside Residential Parcel will contribute funds to the development of the Western Sydney Parklands, which is a major component of the Metropolitan Strategy.

The Department of Planning has advised¹ that the Minister has:

- Agreed to consider listing the Bungarribee Precinct of the Western Sydney Parklands and the Doonside Residential Parcel as a potential State Significant Site (SSS) within Schedule 3 of State Environmental Planning Policy (State Significant Development) 2005, (Major Projects SEPP);
- Formed the opinion that the development is a Major Project to which Part 3A of the Act applies; and
- Authorised submission of a concept plan for the sites.

5.3.1 Sydney Metropolitan Strategy

The Metropolitan Strategy for Sydney, *City of Cities – A Plan for Sydney's Future* (Metropolitan Strategy), was released by the NSW Government in December 2005. The Metropolitan Strategy is a strategic document which outlines a vision for Sydney's growth over the next 25 years. Strategy F: *Parks and Public Places* identifies the need for the provision of open space throughout the Sydney Region. The Vision for Strategy F identifies the need for residents of the region to have access to open space. The vision is set out below.

Vision

- *Sydney will have fair access to quality parks and public places for leisure, sport and recreation for the local community and visitors. The city will have a range of open spaces that meet the diverse and changing needs of the community.*
- *A network of recreation trails will provide walking and cycling opportunities linking centres and parks.*

The Metropolitan Strategy identifies regional parks, bushland, sports grounds and trails, the harbour, rivers, foreshores and beaches as the main elements of open space within Sydney. The Strategy recognises the importance of these elements to community quality of life, social interaction and community building.

Action F1.1 of the Metropolitan Strategy addresses the need for access to regional open space in Western Sydney, recognising the expected population growth in this area of Sydney. The Western Sydney Parklands has been part of regional planning in Sydney over the last 30 years.

The relevant objectives for regional open space are:

Objectives

F1 Increase access to quality parks and public places.

F1.1 Provide access to regional open space in Western Sydney

F1.2 Improve the quality of regional open space

F1.3 Improve access to waterways and links between bushland, parks and centres

The Parklands Bungarribee Precinct forms a major part of this concept application. The Parklands will provide for an integrated regional open space network that will encompass a variety of recreational activities with pedestrian, bicycle and road linkages to the surrounding community. The proposal for the Parklands Bungarribee Precinct complies with the relevant objectives of Strategy F.

¹ via a letter dated 8 December 2006, (reference 9042482)

5.3.2 Sydney Regional Environmental Plan No. 31 - Regional Parks (SREP 31)

SREP 31 applies to the overall Western Sydney Parklands site which consists of 5,400 hectares of land. The plan provides a consistent management approach while promoting recreation, conservation, biodiversity and landscape protection. The plan was gazetted on 8th June 2001.

This plan aims are set out below.

<p><i>(a) to promote the consistent planning and management of the Regional Parklands by replacing the existing planning controls with a single regional environmental plan, and</i></p> <p><i>(b) to strengthen the perception of the Regional Parklands as a unit that is a focus for the conservation of natural systems and a diverse range of recreational uses in Western Sydney, and</i></p> <p><i>(c) to enhance the ability of the Regional Parklands to meet the needs of the residents of Sydney for:</i></p>
<ul style="list-style-type: none"><i>• high quality open space, and</i><i>• a range of recreational opportunities, and</i><i>• a visual and physical break between areas of urban development, and</i> <p><i>(d) to maintain, enhance and rehabilitate the natural systems of the Regional Parklands, particularly those that include threatened species, populations or ecological communities, or their habitats, and</i></p>
<p><i>(e) to preserve, care for and manage the cultural assets of the Regional Parklands, and</i></p> <p><i>(f) to improve management of the Regional Parklands by all those responsible for land within the Regional Parklands, and</i></p> <p><i>(g) to protect the quality of the water in Prospect Reservoir, its Upper Canal and other bulk water supply infrastructure.</i></p>

The proposed concept for the Parklands Bungaribee Precinct seeks to achieve these objectives. The plan particularly seeks to enhance the ability of the regional Parklands to meet the needs of the residents for high quality open space, a range of recreational opportunities, and to create a visual and physical break between areas of urban development.

The proposed uses within the Parklands Bungaribee Precinct are in accordance with the aims, objectives and special provisions of SREP 31.

5.3.3 Doonside Residential Parcel

The Doonside Residential Parcel has previously been assessed by the Department of Planning as "interface lands" because it is land that adjoins the Western Sydney Parklands and is not required for Parkland purposes. The site has already been described as appropriate for residential use, being relatively flat, close to existing residential areas, community facilities and Doonside Railway Station.

A "Housing Needs Assessment" has been undertaken by Elton Consulting and is included within **Appendix C, Volume 2**. As previously discussed, the provision of a varying lot sizes is aimed at achieving a range in housing types and affordability, whilst appealing to a diverse community.

5.4 PUBLIC INTEREST

The Concept Plan presents a well designed and located residential area together with a significant recreational open space. The proposal protects and encourages public access to the Parklands and to regional links that will be realised with the creation of the entire Western Sydney Parklands corridor.

Development of extensive public resources such as the 5,400 hectares Western Sydney Parkland corridor will be greatly assisted by the revenue generated from the development of the interface lands (as identified and endorsed in the Western Sydney Parklands Structure Plan). Revenue that is not directed to the Parklands Trust will be returned to the Sydney Region Development Fund, administered and used by the Department of Planning to purchase strategic areas of land for public purposes, such as open space and transport corridors.

Furthermore, the careful consideration given to the design and character of the Doonside Residential Parcel has been guided by best practice principles, whilst extensive background studies and detailed opportunities and constraints mapping ensure that future development of the site is undertaken in an ecologically sustainable manner. Consultation with government agencies, the local community and stakeholders has been undertaken as detailed in **Section 7.9.1**.

Landcom's focus on adding value to strategic projects, delivering quality urban developments and demonstrating best practice in social, environmental and economic sustainability are drivers that underpin this proposal.

6 DIRECTOR GENERAL REQUIREMENTS

PART B – ENVIRONMENTAL PLANNING INSTRUMENTS

Part B of the key assessment of the Director General Environmental Assessment Requirements refers to relevant Environmental Planning Instruments (EPIs) and Guidelines. The relevant instruments and guidelines addressed in **Appendix F** and summarised below are:

- The Commonwealth Environmental Protection and Biodiversity Act 1999;
- The Western Sydney Parklands (WSP) Act 2006;
- The Environmental Planning and Assessment Act 1979;
- State Environmental Planning Policy (Major Projects) 2005;
- State Environmental Planning Policy No. 11 – Traffic Generating Development, (SEPP 11);
- Sydney Metropolitan Strategy- “City of Cities - A Plan for Sydney’s Future”;
- Sydney Regional Environmental Plan No 31 – Regional Parklands (SREP 31);
- Sydney Regional Environmental Plan No. 20 - Hawkesbury - Nepean River (No 2 - 1997) – (SREP 20);
- Blacktown Local Environmental Plan 1988 (BLEP 1988);
- Standard Instrument (Principle Local Environmental Plan); and
- Blacktown Development Control Plan 2006.

6.1 SUMMARY OF RELEVANT INSTRUMENTS AND GUIDELINES

An assessment of the instruments and guidelines relevant to this concept application is provided below:

6.1.1 *Commonwealth Environmental Protection and Biodiversity Act 1999*

The Commonwealth Environmental Protection and Biodiversity Act 1999 (EPBC) protects the environment, particularly matters of National Environmental Significance. It streamlines national environmental assessment and approvals process, protects Australian biodiversity and integrates management of important natural and cultural places. The EPBC Act came into force on 16 July 2000. The Commonwealth and NSW Governments signed a Bilateral Agreement in January 2007 which accredits the assessment regime under Part 3A of the EP&A Act 1979 for assessment purposes under the EPBC Act.

A referral to the Commonwealth Department of the Environment and Water Resources in relation to the assessed significant impact on the Cumberland Plan Woodland within the Doonside Residential Parcel is included as **Appendix G**, and discussed further in **Section 7.3**.

6.1.2 *Western Sydney Parklands Act 2006*

The Western Sydney Parklands (WSP) Act 2006 was passed in late 2006 to guide the establishment of Western Sydney Parklands Trust (the Trust) and the Trust’s management of the Parklands. The establishment of the Trust and nominated members is currently being undertaken.

Clause 12 of the Western Sydney Parklands Act 2006 identifies the key functions of the Trust. The principal function of the Trust is to develop the Parklands into a multi-use urban parkland for the region of Western Sydney and to maintain and improve the Parklands on an ongoing basis.

The Trust is also required to prepare a Plan of Management for the Parklands to identify how the Park and its resources will be managed. Clause 23(2) of the Western Sydney Parklands Act 2006 outlines the content of the Plan of Management.

The members of the Trust are currently being nominated; therefore a Plan of Management for the Parklands is yet to be prepared. The proposal for the Parklands and Parklands Bungarribee Precinct has been prepared in accordance with the State Government's broad planning objectives.

6.1.3 The Environmental Planning and Assessment Act 1979

This Concept application is lodged under the provisions of Part 3A of the EP&A Act 1979. The provisions within Section 75O(3)(b) and Section 76B of this new Part 3A of the EP&A Act 1979 now allow approval of projects which are not "wholly prohibited" under an EPI, as is the case with this concept application.

6.1.4 State Environmental Planning Policy (Major Projects) 2005

SEPP (Major Projects) defines certain developments that are major projects under *Part 3A of the Environmental Planning and Assessment Act 1979* and which are determined by the Minister for Planning.

The Department of Planning via the Director General Environmental Assessment Requirements (letter dated 8 December 2006, reference 9042482) has advised that the Minister has:

- Agreed to consider listing the Parklands Bungarribee Precinct and Doonside Residential Parcel as a potential State Significant Site (SSS) within Schedule 3 of *State Environmental Planning Policy (State Significant Development) 2005, (Major Projects SEPP)*;
- Formed the opinion that the development is a Major Project to which Part 3A of the Act applies, and
- Authorised submission of a concept plan for the sites.

A Draft Amendment to Schedule 3 of *State Environmental Planning Policy (Major Projects)* is included within **Appendix D**. This Amendment has been prepared to facilitate the proposed residential use of the Doonside Residential Parcel.

6.1.5 State Environmental Planning Policy No. 11 – Traffic Generating Development, (SEPP 11)

State Environmental Planning Policy No. 11 – Traffic Generating Development (SEPP 11) requires certain types of development be referred to the Roads and Traffic Authority (RTA) for comment. Clause 7 of SEPP 11 refers to applications for development consent to carry out development specified in Schedule 1 or 2 of the instrument.

The concept plan application includes a residential subdivision of more than 200 allotments and improved connections to Doonside Road at Eastern Road, Bungarribee Road and Douglas Road. The application therefore requires referral to the RTA under SEPP 11.

The RTA has been consulted in association with the preparation of a Transport Management and Access Plan (TMAP) for the development (see **Appendix B, Volume 2**).

6.1.6 Sydney Metropolitan Strategy - "City of Cities - A Plan for Sydney's Future"

The Metropolitan Strategy for Sydney, *City of Cities – A Plan for Sydney's Future* (Metro Strategy), was released by the NSW Government in December 2005. The Metropolitan Strategy outlines a vision for Sydney's growth over the next 25 years. The document aims to bring the

State Government, local council's, stakeholders and the community together in discussing the future direction of Sydney's natural, built and economic environments.

The Doonside Residential Parcel and the Parklands Bungarribee Precinct can be categorised under Strategy C: Housing, and Strategy F: Parks and Public Places, respectively. The concept proposal has been assessed in relation to the visions aims and initiatives identified in these relevant strategies.

Strategy C - Housing

The proposed residential development for the Doonside Residential Parcel is assessed to fully comply with the relevant requirements of Strategy C of the Metropolitan Strategy. The area will provide between 700 to 730 lots for residential development. The lots will range in size from 250m² to 650m² and will allow for a variety of housing types. The development is close to Doonside and Rooty Hill Railway Stations and will have direct access to the Parklands Bungarribee Precinct. West Huntingwood industrial area is located to the south and will provide employment opportunities for both Doonside residents and residents within the surrounding area.

Strategy F – Parks and Public Places

Strategy F of the Metropolitan Strategy identifies the need for open space throughout the Sydney Region. The Strategy identifies regional parks, bushland, sports grounds and trails, the harbour, rivers, foreshores and beaches as the main elements of open space within Sydney. The strategy recognises the importance of these elements to community quality of life, social interaction and community building.

Action F1.1 addresses the need for access to regional open space in Western Sydney, recognising the expected population growth in this area of Sydney. The Western Sydney Parklands has been included in the regional planning of Sydney over the last 30 years. Within this Strategy, the Parklands is identified as an open space corridor, which runs along the M4 and M7 motorways and between the North West and South West growth centres.

The relevant objectives for regional open space are:

Objectives

F1 Increase access to quality parks and public places.

F1.1 Provide access to regional open space in Western Sydney

F1.2 Improve the quality of regional open space

F1.3 Improve access to waterways and links between bushland, parks and centres

The Parklands Bungarribee Precinct forms a primary component of this concept application. The Western Sydney Parklands will provide for an integrated regional open space network that will encompass a variety of recreational activities for the community of Western Sydney.

The precincts within the regional Parklands will be linked by walkways, bicycle paths and road networks, which will allow for safe and easy access to the Parklands. Improvements to the open space areas will also allow for improved internal links to various recreational activities, waterways and bushland throughout the Parklands. The proposal for the Parklands Bungarribee Precinct is consistent with the relevant objectives of Strategy F.

6.1.7 Sydney Regional Environmental Plan No 31 – Regional Parklands (SREP 31)

SREP 31 promotes recreation, conservation, biodiversity and landscape protection. The plan was gazetted on 8th June 2001.

SREP 31 is currently supported by a Development Control Plan (*DCP No. 1 – Interim Regional Parklands Management*), which establishes a number of management units. Longer-term management will be guided by detailed precinct-specific development control plans. Within the Parklands Bungarribee Precinct, this application seeks concept approval for the future development of seven zones (sub-precincts) which will encourage the use of the Parklands for a

range of sporting, recreational and cultural leisure opportunities, along with associated access points, internal road network and creek crossing points. The concept approval will provide the basis for a future precinct specific DCP.

The proposed uses within the Bungarribee Precinct of this concept plan application are consistent with the aims, objectives and special provisions of SREP 31.

The Parklands Bungarribee Precinct and its relationship to the Doonside Residential Parcel, as defined in SREP 31 is illustrated in **Figure 11** below. Generally, the Western Sydney Parklands is covered by the provisions of SREP 31, whilst the Doonside Residential Parcel is currently covered by the provisions of the 5(a) corridor zoning of the Blacktown LEP 1988.

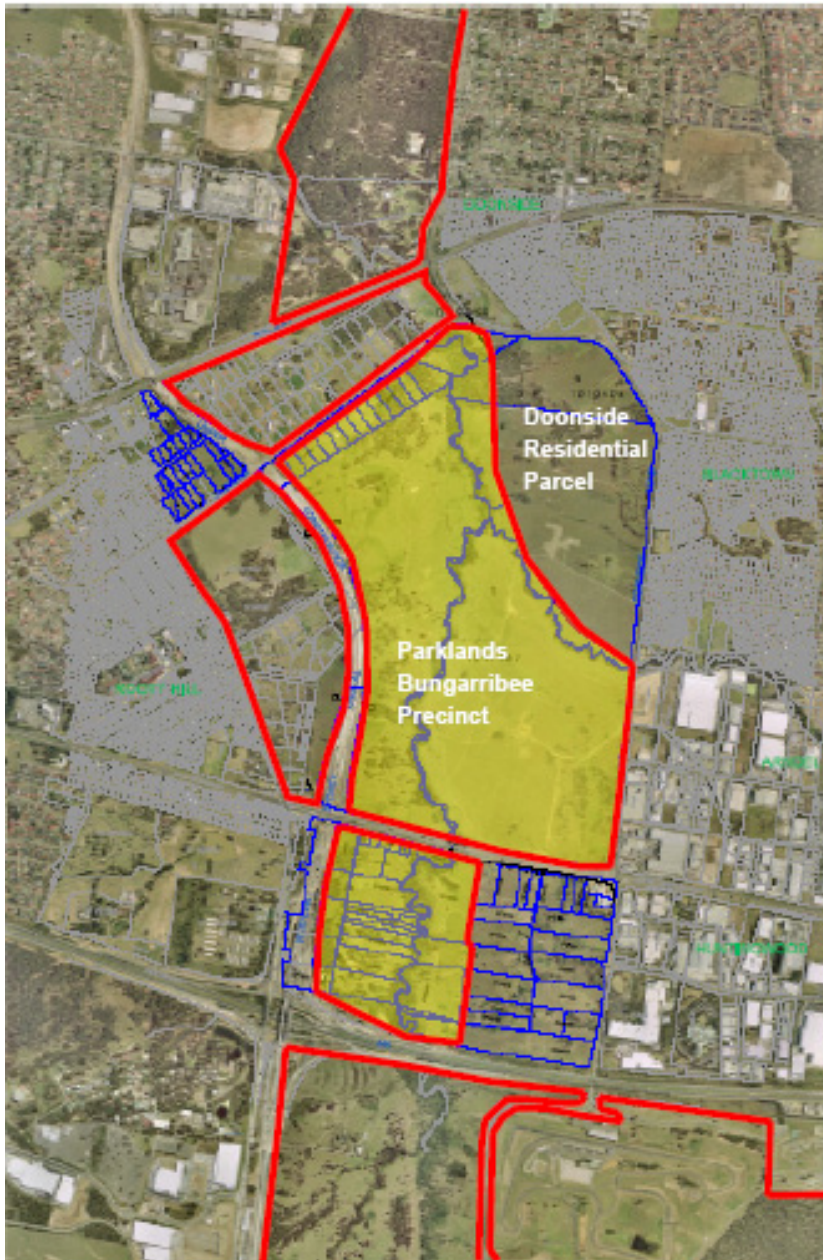


Figure 11: SREP 31 Plan identifying the site boundaries

6.1.8 Sydney Regional Environmental Plan No. 20 - Hawkesbury - Nepean River (No 2 - 1997) – (SREP 20)

The Doonside Residential Parcel and the Parklands Bungarribee Precinct fall within the catchment area described in *Sydney Regional Environmental Plan No. 20 – Hawkesbury – Nepean River (SREP 20)*. SREP 20 relates to the protection of land within the catchment area of the Hawkesbury-Nepean River.

The Doonside Residential Parcel and Parklands Bungarribee Precinct are designed to protect the Hawkesbury-Nepean River system and to minimise impacts from development. The Doonside Residential Parcel comprises adequate setbacks from intermittent creeks, and includes new detention areas to protect Eastern Creek geomorphology by controlling discharges from the development and for the upstream residential catchments. Peak flow discharges are designed to return to pre-development levels. The implementation of a range of Water Sensitive Urban Design measures also help in this regard.

The Parklands Bungarribee Precinct will provide a natural buffer between the urban development and the Hawkesbury-Nepean River system, while uses within the Parklands Bungarribee Precinct will be compatible with the existing environment and located in areas that will have minimal impact on the system. Overall, appropriate storm water management measures have been designed to treat stormwater prior to re-entering the waterways, which will ensure future development of the site will have minimal impact on the Hawkesbury-Nepean River system.

6.1.9 Blacktown Local Environmental Plan 1988 (BLEP 1988)

The relevant local environmental planning instrument relating to the site and its local area is the *Blacktown LEP 1988*. The Doonside Residential Parcel and Parklands Bungarribee Precinct are currently zoned 5(a) corridor under the *Blacktown LEP 1988* (see **Figure 12**).

As previously noted, planning controls over the Parklands are currently exercised through *Sydney Regional Environmental Plan (SREP) 31* and its accompanying Development Control Plan No. 1.

The proposed Doonside Residential Parcel is on land previously occupied by telecommunications facilities. These facilities are no longer required on this site. Under the current 5(a) corridor zoning provisions, residential subdivision is prohibited. However, “drains”, “public utility undertakings”, “recreation areas”, “roads” and/or “utility installations” are permissible with development consent within the 5(a) zone.

New provisions contained within Part 3A of the *EP&A Act 1979* now allow approval of projects which are not “wholly prohibited”² under an EPI (see **Section 6.2**), as is the case with this concept application.

6.1.10 Standard Instrument (Principle Local Environmental Plan)

As the NSW Government plans to make the entire area a *State Significant Site in the Major Projects SEPP*, it is considered appropriate to consider the equivalent “residential area provisions” in the “Template LEP” for the Doonside Residential Parcel. Blacktown City Council, under its new comprehensive LEP, will eventually adopt zones from the standard template.

The possible LEP Template land uses for the area are illustrated in **Figure 13**. This application details the preferred land use zones from the Template LEP that are proposed for the Doonside Residential Parcel. The rezoning procedure will run separately but concurrently to this Part 3A approval, however consideration of future uses and the most appropriate zoning is critical at this initial stage. Four distinct zones from the template have been identified as being suitable for inclusion within the LEP Template for the Doonside Residential Parcel:

² Section 75O(3)(b) and Section 76B of the EP&A Act 1979

- Zone R1 – General residential;
- Zone RE1 – Public recreation;
- Zone E3 – Environmental Management; and
- Zone SP2 – Infrastructure.

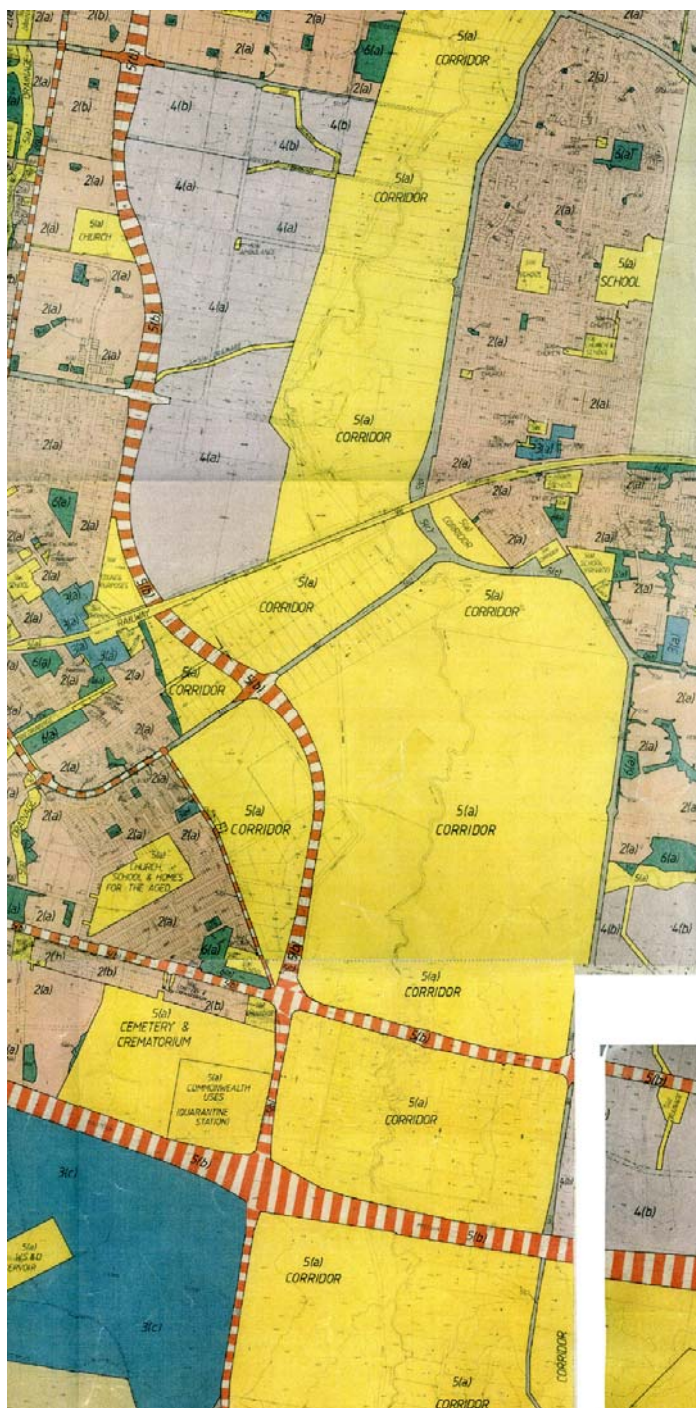


Figure 12: Blacktown LEP 1988

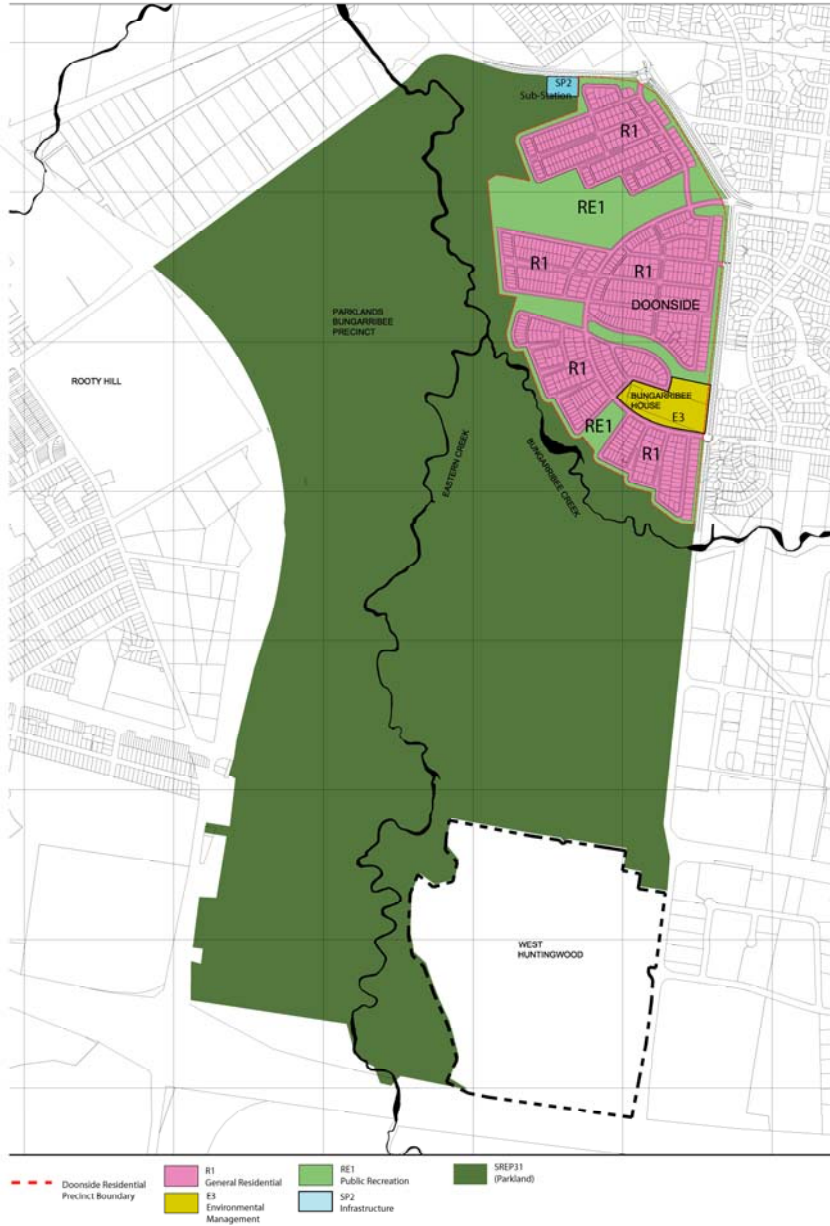


Figure 13: Proposed Zoning

Zone R1: General Residential

Zone R1 General Residential

Direction. The following must be included as either 'Permitted without consent' or 'Permitted with consent' for this zone: Roads

1 Objectives of zone

- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

2 Permitted without consent

3 Permitted with consent

Boarding houses; Child care centres; Community facilities; Dwelling houses; Group homes; Hostels; Multi dwelling housing; Neighbourhood shops; Places of public worship; Residential care facilities; Residential flat buildings; Seniors housing; Shop top housing

4 Prohibited

Zone R1 General Residential is proposed for all residential land in the Doonside Residential Parcel. This zone promotes a range of housing types and densities which mirrors a more 'established' neighbourhood character: developing a range of housing types and sizes appeals to a variety of buyers and also encourages a mix of age, sex and household structures. 'Permitted with consent' are flat buildings, shop top housing and multi dwelling housing as well as traditional detached homes.

The R1 zone also permits supporting services such as child care centres, corner shops and places of worship which add to the vitality and social integration of the neighbourhood.

Zone RE1: Public Recreation

Zone RE1 Public Recreation

Direction. The following must be included as either 'Permitted without consent' or 'Permitted with consent' for this zone:

Environmental facilities

Environmental protection works

Roads

1 Objectives of zone

- To enable land to be used for public open space or recreational purposes.
- To provide a range of recreational settings and activities and compatible land uses.
- To protect and enhance the natural environment for recreational purposes.

2 Permitted without consent

3 Permitted with consent

Kiosks; Recreation areas

4 Prohibited

The Doonside Residential Parcel contains land for public recreation in the form of parks and open space. These parks will be local in character in comparison to the adjoining Parklands Bungarrabee Precinct. It is considered that Zone RE1 – General Recreation is the most suitable recreation zone in the template LEP for the proposed local parks.

The objectives of the zone permit a variety of recreation settings that allows for the design of each park and open space corridor under this zone to be developed in more detail at a later date. Importantly, the objectives of this zone seek to protect and enhance the natural environment. With significant watercourses and vegetation communities identified in these proposed parks, this provision is considered to be of importance.

Zone E3: Environmental Management

Zone E3 Environmental Management is proposed for the heritage precinct located around the former Bungarribee Homestead. The footprint of the former house and its curtilage remain an important feature in the Doonside Residential Parcel and the Parklands Bungarribee Precinct.

With its heritage significance and prime location on a hill overlooking Doonside and the Parklands, the Bungarribee Homestead site is considered as unique, attributing to its identification as the location for a potential community facility of some type such as a community centre, museum or an education facility. This part 3A proposal does not put forward specific land use or design for the site but the E3 zone with its objectives relating to conservation and special characteristics of the site is considered the most appropriate zone.

Zone SP2: Infrastructure

The SP2 Infrastructure is proposed to accommodate an electrical sub-station which will service the Doonside Residential Parcel. The SP2 zone was considered the most appropriate as it allows the provision of public infrastructure.

The SP2 zone objectives aim to set aside land that will be used for infrastructure or similar purposes. The Special Uses zone must be complemented by a zoning map which states the purpose of the land, and allows for development that is considered 'ancillary' to the purpose stated.

6.1.11 Blacktown Development Control Plan 2006

The *Blacktown Development Control Plan 2006 (BDCP 2006)* contains controls, policies and guidelines adopted by Council for development in Blacktown.

The DCP (Part A) is a general document and contains controls for various types of development, whether within a certain zone, specific to a certain site. Part A includes generic controls that are applicable to all types of development across the local government area.

Together with Part A, the following parts of the Blacktown DCP 2006 are relevant and have been considered in the assessment of this concept plan application (see **Appendix F**):

- Part C – Development in the Residential Zones;
- Part O - Site Waste Management and Minimisation; and
- Part R – Soil Erosion and Sediment Control Guidelines.

6.2 NATURE AND EXTENT OF NON-COMPLIANCE

As requested in the Director General Environmental Assessment Requirements, the nature and extent of non-compliance with current relevant environmental planning instruments and controls are included within Table 7 below.

Table 7: Non-compliances with current EPIs and local controls

<i>EPI or Local Control/Clause</i>	<i>Issue</i>	<i>Comment</i>
Western Sydney Parklands (Bungaribee Precinct) SREP 31		
	Land use	<p>Within SREP 31 the identified locations numbered 1 to 14 are itemised as "additional uses" (reference Clause 8 of SREP No 31). The relevant area 14 is included in Table 3.1.</p> <p>The proposed uses of the Bungaribee Precinct are in accordance with the objectives of SREP 31 and the Metropolitan Strategy.</p>
Doonside Residential Parcel Blacktown LEP 1988		
Clause 9 Objectives and table of uses of 5(a) zone	Residential Land Use	<p>The proposed residential subdivision³ of the Doonside Residential Parcel within the concept application is prohibited within the 5(a) (corridor) zone as it is a use not identified within item 3.</p> <p>Notwithstanding the current zoning, Part 3A approval of the proposed concept will facilitate the rezoning of the site to allow residential subdivision (see Appendix D).</p>
Blacktown DCP 2006		
	Section 5 – Integrated Housing (min lot size of 300m ² and min width of 26m)	<p>The proposed concept application includes 250m² lots which are less than the Blacktown DCP 2006 standard of 300 m².</p> <p>Notwithstanding the current DCP 2006 standard, Blacktown Council has allowed similar small lots elsewhere within the City. Additionally, the proposed Doonside Development Design Code contains appropriate design controls to ensure good housing design are achieved for each nominated lot size.</p>

³ LEP Clauses 18 (7) and (8) allow the "interim" use of the site for dwelling houses, but only on land which is greater than 20ha

7 DIRECTOR GENERAL REQUIREMENTS

PART C – KEY ISSUES

The key issues identified within Part C of the DGEAR's are as follows:

- Subdivision
- Traffic
- Natural Resources
- Heritage
- Contamination
- Drainage and Storm water Management
- Utilities Infrastructure
- Community Consultation
- Development Staging
- Planning Agreements and/or Developer Contributions

These key issues are discussed below.

7.1 RESIDENTIAL SUBDIVISION

The Concept Plan application only seeks approval for subdivision in relation to the proposed Doonside Residential Parcel. The Parklands Bungarribee Precinct will remain in public ownership under the control of the Western Sydney Parklands Trust.

A *Doonside Development Design Code* has been prepared as part of this Concept Plan application (see **Appendix B**). A proposed master plan contained within the Development Design Code provides the urban structure for the Doonside Residential Parcel subdivision (see **Figure 14**). The Master Plan establishes and confirms residential development as the principle land use.

The proposed Doonside Residential Parcel allows for a yield of approximately 700 to 730 new residential lots with diverse lot sizes ranging from approximately 250m² to approximately 650m².

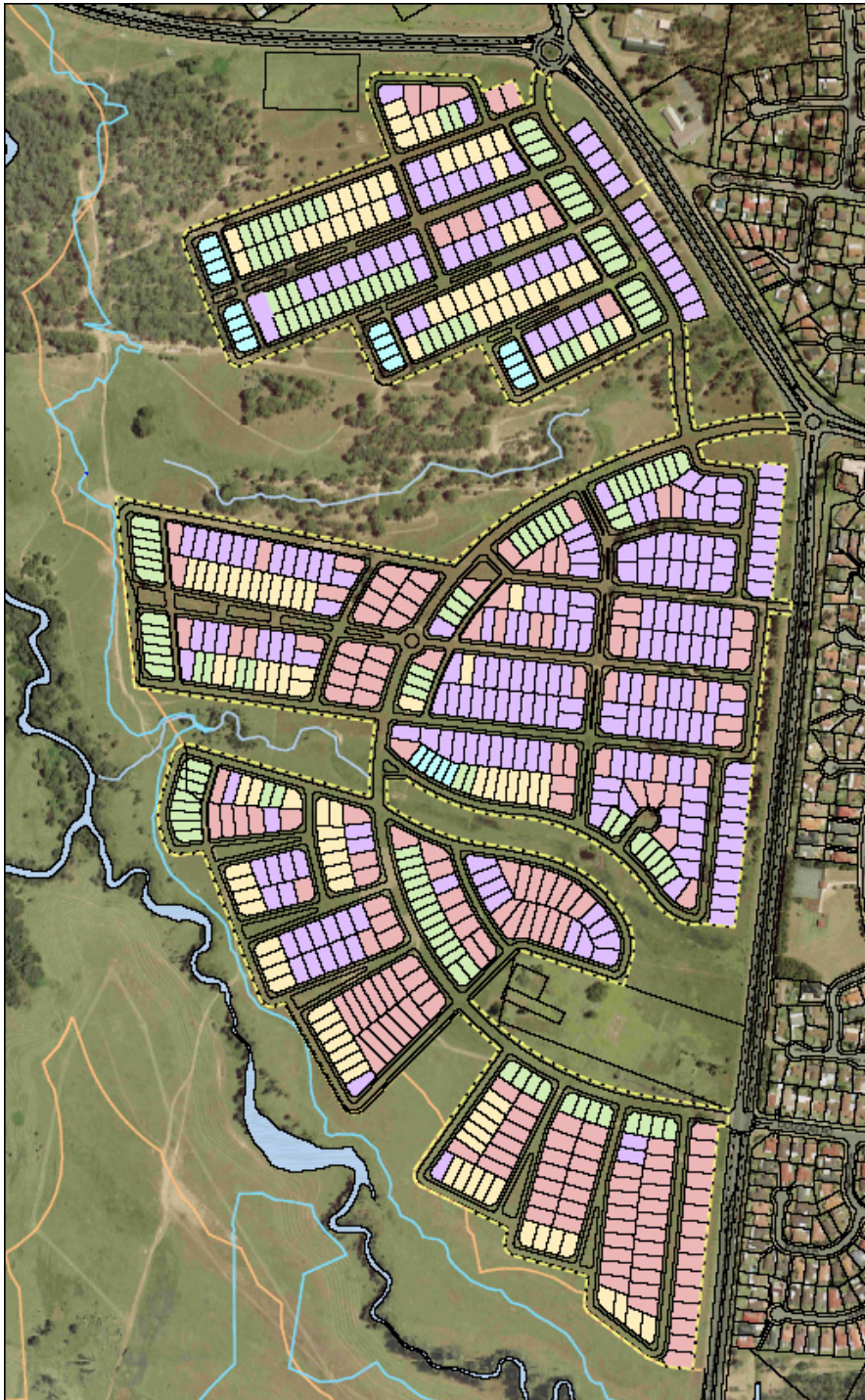


Figure 14: Doonside Residential Parcel, indicative subdivision layout.

7.1.1 Urban Design

The notion of “Living in the parklands” has informed the overall concept and driven the design for the residential area and the public realm. The proposed structure seeks to integrate the urban development with the Parklands and existing landscape through consideration of topography, drainage networks, views, vegetation, pedestrian connections, creek crossings, and treatment of storm water.

The urban design of the Doonside Residential Parcel is predicated on the achievement of an array of urban fingers extending into the adjoining parkland as its sense of place. The design takes full advantage of the terrain, maximising the potential for views over the Parklands, and west to the Blue Mountains. Care has been taken not to create a barrier between the proposed Doonside Residential Parcel and existing neighbouring residential areas, highlighting the site’s importance as “interface” land.

7.1.2 Accessibility

The Doonside Residential Parcel has a good level of accessibility for private vehicle, public transport and pedestrian/cyclist modes. Provision within the road layout design has been made for bus services to operate through the estate (see **Figure 18** Development Design Code **Appendix B**).

Vehicular access to the residential parcel is provided at three points on Doonside Road. Two access points are via existing roundabouts (Doonside Road/Bungarribee Road and Doonside Road/Eastern Road) and the third point of access is via a cross roads configuration at the existing Doonside and Douglas Road intersection. A curvilinear boulevard (collector road) connects the Doonside/Bungarribee Road and Doonside/Douglas Road access points, and provides vehicular circulation within the residential area.

The indicative layout makes an emphasis on connectivity between streets, with linked loop roads (see **Figure 14**).

The northern part of the residential parcel is within walking distance of Doonside Railway Station. A series of footpaths and cycle ways make the site readily accessible to surrounding facilities, such as the Rainbow shops, railway station and the Parklands.

7.1.3 Lot Layout and Mix

The Doonside Residential Parcel provides a range of housing choices in a variety of ‘designed places’.

The layout design has sought to engender connectivity and permeability between precincts and street blocks. The subdivision design utilises both streets and rear laneways as means of vehicular access to the residential lots.

The subdivision seeks to provide a range of lot sizes and house types. Higher densities will be located in areas with greatest amenity (i.e. adjacent to the Parklands, creek lines or eco-medians). Larger lots and lower densities adjoin the Bungarribee Homestead Complex Archaeological Site.

7.1.4 Public Open Space

Whilst the Doonside Residential Parcel takes advantage of the Parklands for functional and visual open space, some 4.6 hectares are provided within the development in the form of creeks and landscape buffers.

A range of open space and conservation areas is provided, as illustrated in the Concept Plans (**Appendix A**) and the Development Design Code (**Appendix B**). Open spaces relate to the natural creek areas, the eco-medians and the Bungarribee Homestead site.

The focus of the Residential Parcel's open space provision is the system of creeks that drain into Bungarribee and Eastern Creek to the west. The majority of the Residential Parcel's open space provision is associated with two riparian corridors within the development.

Eco-parks are located within the medians of some streets to perform a storm water treatment; bio-filtration and detention function, as well as providing biodiversity and landscaped open space amenity to the streetscape.

The Bungarribee Homestead site contains the *Core Heritage Area* and the "Heritage Vista Park" and will provide a mixture of active and contemplative spaces. The detailed design of the site is to be in accordance with the Conservation Management Plan prepared by Godden Mackay Logan.

7.1.5 Heritage

The Bungarribee Conservation Management Plan identified the opportunity for sympathetic new development to occur in the vicinity of the core heritage area of the Bungarribee Homestead site. Subject to further discussions with Blacktown City Council, a designated area has been nominated within the Heritage Precinct for a future building / structure to service the community.

The heritage site has been designed to:

- Retain the built and landscape remnants of the Bungarribee Homestead Complex Archaeological Site and associated significant vistas within public open space; and
- Retain potential indigenous archaeological deposits.

7.2 TRAFFIC AND TRANSPORT

This section assesses the key environmental issues associated with traffic generated by the future development of the site, as listed in the DGEAR's. Maunsell Australia Pty Ltd (Maunsell) was commissioned by Landcom to assess the traffic issues associated with the development and prepare.

- A Transport Management and Accessibility Plan (TMAP) in accordance with RTA Guidelines for the Doonside Residential Parcel; and
- An analysis of the performance of proposed accesses to the Bungarribee Precinct of the WSP, (see **Appendix B, Volume 2**).

7.2.1 The Transport Access and Mobility Plan (TMAP)

The TMAP report forms the second stage of the TMAP process and also supports the development of the Development Design Code for the Doonside Residential Parcel. The recommendations of the TMAP have been included within the package of measures incorporated into the concept plan application. These measures are outlined in **Table 8**.

Table 8: TMAP Package of Measures for Doonside Residential Parcel

Area	Measure	Detail
Travel Behaviour Change		Welcome Pack and free bicycle for every household.
Infrastructure	Road Network	Site access to Doonside Road/ Eastern Road roundabout
		Site access to Doonside Road/ Bungarribee Roundabout
		Site access to Doonside Road/ Douglas Road
	Bus	Bus stops/shelters along the Collector Road.
	Pedestrian/ Cycle	Cycle parking facilities at rail stations, schools, shops and community centres
		Pedestrian/ Cycle Connections
		Pedestrian Crossing on Doonside Road (Birdwood Avenue)
		Pedestrian crossing on Doonside Road (Bowes Place)
		Pedestrian crossing on Eastern Road (west of Doonside Road roundabout)
		Doonside Road shared path
		Doonside Road footpath: Doonside Road: Douglas Road to Bungarribee Road Bungarribee Road: Doonside Road to Rosenthal Street
Services	Bus	Potential to divert Service 725

Source: Doonside TMAP

7.2.2 An analysis of the performance of proposed accesses to the Bungarribee Precinct of the Western Sydney Parklands

This analysis assessed the proposed accesses to the Bungarribee Precinct of the Western Sydney Parklands in the context of the proposed open space and recreational land uses within the seven identified Precinct Zones (see **Figure 4**).

Final uses for zones within the Parklands Bungarribee Precinct have not been confirmed at this point in time. Hence the traffic assessment has considered a broad spectrum of 'likely' uses as a baseline for traffic data e.g. traffic generation estimates.

7.2.3 Strategic Transport Policy Matters

All relevant transport policy matters pertaining to the site and its proposed development have been assessed. Of particular relevance are the strategic transport policy matters included in *Sydney Metropolitan Strategy – City of Cities* (see **Section 6.1**), and the *State of the Environment* report developed by Blacktown City Council (see *Priority Actions* below).

Blacktown Priority Actions

Actions identified in the Priority Action Table that are relevant to this study include:

- Implementation of the Eastern Creek Land Use and Employment Study, which includes industry attraction and developing strategic partnerships with relocating industry;
- Inclusion of transport-related actions in Council's Blacktown Greenhouse Action Plan;
- Working with the Department of Planning to develop a regional plan for Western Sydney;
- Monitoring future development of the Blacktown LGA and align this development with the principles of Ecologically Sustainable Development (ESD);
- Working with the Western Sydney Regional Organisation of Councils (WSROC) to develop a Greater Western Sydney Regional Planning Framework;
- At Stage 1 of the development of an integrated transport plan, review component of Metropolitan Strategy that relates to public transport options such as cycle paths and pedestrian access with traditional transport modes;
- Continue to monitor the impact of construction of the Westlink M7 on the existing transport network and local communities; and
- Continue to monitor the impact of construction of the T-Way Network on the existing transport network and communities.

In line with NSW Government policy, the objectives of the TMAP are as follows:

- Providing an integrated transport network between modes and networks;
- Providing a choice of travel mode by developing a comprehensively accessible transport network;
- Providing a safe and secure transport network;
- Providing a system that is efficient and equitable;
- Providing a system that is sustainable;
- Supporting the local economy; and
- Providing a healthy environment.

The TMAP objectives are compatible with Landcom's Sustainability Policy as well as with the wider planning objective of the Metropolitan Strategy which supports reduced car travel through the encouragement of alternative modes of transport.

Strengths and weaknesses of the existing network

The key strengths of the existing transport networks in the vicinity of the site include:

- The proximity of the motorway network, which removes trips from local roads including Doonside Road;
- The opening of the M7 motorway has decreased traffic flow on certain links within the local network;
- The proposed development will connect to the extensive cycle way network that is adjacent to the site; and
- The site is within walking distance of Doonside railway station.

This review of existing transport conditions has noted a number of weaknesses in the local area, including:

- The proximity of the freeway network to the site means that travel by private car is likely to be a more attractive mode of transport to certain destinations in comparison to travel by more sustainable modes;
- The opening of the M7 motorway has increased traffic flows on certain links within the local network including Rooty Hill Road South and Eastern Road, contributing to certain intersections being close to or at capacity; and
- Bus routes and the location of existing bus stops are beyond a five minute walk for the majority of future residents on the site.

The strengths and weaknesses identified in this process were used to assist in the design of the traffic access arrangements for the Western Sydney Parklands and to identify a package of measures for the Doonside Residential Parcel (see **Table 8**).

7.2.4 Opportunities to minimise traffic on sensitive road frontages

The Parklands Bungarribee Precinct is bounded by the M7 Motorway to the west and the M4 Motorway to the south. No further intersections are proposed with these roads.

Traffic on sensitive road frontages will be avoided by ensuring that all future development will be accessed from other roads. Vehicular access to the recreational areas of the Parklands Bungarribee Precinct will be provided as follows:

- The Sports/Cultural Zone
 - From the existing Eastern Road intersection; and
 - From a second intersection is proposed to the east to allow for future connectivity with the recently announced Sports Stadium, to be constructed east of the Blacktown Olympic Centre.
- The Airstrip Promenade, The Institutional Zone and The Recreational Hub
 - From the existing Doonside Road/Holbeche Road intersection; and
 - From the proposed Great Western Highway intersection.
- The Production Based Landscape Zone and The Commercial/Recreation Zone
 - From the existing left-in and left-out access from the Great Western Highway.

In relation to the Doonside Residential Parcel, no direct access to residential lots is proposed from Eastern Road, Bungarribee Road or Doonside Road. The existing intersections at Doonside/Bungarribee, Doonside/Douglas and Doonside/Eastern will be upgraded to provide access into the development area.

7.2.5 Access, Circulation and Car Parking

Access to the Parklands Bungarribee Precinct will be from the intersections described above. In addition, two existing left-in and left-out accesses to the Parklands will be retained for access to and from the Great Western Highway. Intersection models have been tested with expected Parklands traffic to establish the impact on performance. Only the Eastern Road / Olympic Park Access resulted in an unsatisfactory "level of service" (LOS) F. Improvements to the intersection (left turn lane on Eastern Road East and an extension of the right turn lane on the Sports Precinct approach) will however produce a satisfactory LOS D.

Within the Parklands there is an intentional lack of connectivity between the three main access points which will exclude vehicles from the main body of the park. This concept is important to preserve the integrity of the green space. Car parks are provided for trip ends at the periphery of the park from where users will walk or cycle into the Parklands.

The design provides three vehicular access points to Doonside Road for the Doonside Residential Parcel. A collector road links to the three intersections with Doonside Road and a series of connected local access roads providing internal access to future residential lots. The proposed street network provides good connectivity both internally and externally. The collector road, which connects the new local street grid with existing street networks has been designed to accommodate a bus route through the site.

Four pedestrian crossing points are proposed:

- one at the existing Doonside/Douglas Road signalised intersection;
- a new signalised pedestrian crossing on Doonside Road adjacent to Birdwood Avenue;
- a new signalised pedestrian crossing on Doonside Road adjacent to Bowes Place; and
- a new signalised pedestrian crossing on Eastern Road west of the existing Doonside Road roundabout.

A shared path located on the western side of Doonside Road links all pedestrian access points. This enables pedestrians using Doonside Road to safely travel to the local shops, schools, train station and other destinations. It also allows cyclists to avoid using the roundabout at Bungarribee Road.

The Doonside Residential site integrates with the Western Sydney Parklands via pedestrian, bicycle and landscape linkages.

Car parking

The concept design proposes a range of recreational uses within the Parklands Bungarribee Precinct. The planning assumes that parking will be provided in accordance with relevant standards (Blacktown City Council and/or the RTA). Approximately 1,200 car parking spaces will be available in the Sports/Cultural Zone.

Within the Doonside Residential Parcel, car parking requirements for the various residential types permissible in the development are detailed in the Development Design Code (see **Appendix B**).

- Dwelling Houses (Section 5.3);
- Dual Occupancy (Section 5.4);
- Integrated Housing (Section 5.5);
- Medium Density Housing (Section 5.6); and
- Studios (Section 5.7).

7.2.6 Emergency Vehicle Access/Egress

The proposed road layout has been designed to accommodate emergency vehicles and facilitate access to and from the major Motorways and arterial roads which form the boundaries of the site. Within the Parklands, maintenance, ranger and emergency vehicles will be able to access those areas without public vehicular access by using the shared internal paths.

7.2.7 Alternative Vehicular Access Considerations

The TMAP has established that the peak loading on the road network in the vicinity of the site occurs during the AM peak between 7.30am and 8.30am. Therefore the traffic assessment has focussed on the AM peak and the impact of morning trips to work.

The TMAP concluded that there is no requirement to upgrade local intersections to accommodate the proposed Doonside residential development and its anticipated traffic generation.

Land use options are currently being considered for Parklands Bungarribee Precinct. It is likely that a leisure or educational facility may be developed.

Leisure uses are not likely to experience peak demand at this time and educational visitors are likely to arrive by coaches after the AM Peak. Staff may arrive during the morning peak, but these volumes are not expected to be significant when distributed through the network. Sporting activities tend to peak on Saturdays, the same has been anticipated for uses within the Institutional Zone.

Access to the Doonside Residential Parcel will be provided at the existing intersections of Doonside Road/Eastern Road, Doonside Road/Bungarribee Road and Doonside Road/Douglas Road. The suggested intersection arrangement is illustrated in Figures 8.1 to 8.3 of the TMAP (see **Appendix B, Volume 2**).

7.2.8 Intersection Performance

Access to the Parklands Bungarribee Precinct will be primarily from a four-way intersection on the Great Western Highway, which has already been assessed and approved in association with the West Huntingwood Employment Area development. Other intersections are:

- the existing Eastern Road signalised intersection
- the proposed new Eastern Road intersection east of the existing intersection
- the Doonside/Holbeche Roads existing signalised intersection
- the left in and out from the Great Western Highway onto Pikes Lane and
- the proposed Parklands production based landscape zone to the north Parklands to the north.

These intersections are considered to be adequate for their intended use, (see the Maunsell analysis of the performance of proposed accesses to the Bungarribee Precinct of the WSP, **Appendix B, Volume 2**)

In relation to the Doonside Residential Parcel, a supplementary intersection performance assessment was prepared by Maunsell to test the efficiency and safety of roundabouts, particularly in terms of pedestrian movements. This assessment is also included as **Appendix B, Volume 2**.

The intersections related to the Doonside Residential Parcel are:

- Doonside Road / Bungarribee Road;
- Doonside Road / Douglas Road; and
- Doonside Road / Eastern Road.

On the basis of this assessment, the most appropriate access solution for the Doonside site is considered to be as follows:

- Doonside Road/ Eastern Road: a four arm roundabout with a signalised crossing across Doonside Road to the south;
- Doonside Road/ Bungarribee Road: 4 arm roundabout; and
- Doonside Road/ Douglas Road: 4 arm signalised intersection.

As previously discussed, a shared path on the western side of Doonside Road will link pedestrian access points, directing pedestrians and cyclist to the signalised crossing points.

The findings of the impact assessment conclude that infrastructure works are not required to mitigate traffic impacts of the Doonside residential development. To accommodate and encourage trips by other modes the following measures are proposed:

- Two signalised pedestrian crossings across Doonside Road and one across Eastern Road to provide safe and equitable access to schools, transport and community facilities;
- Connections to the cycle network; and

- A high quality network of footpaths to/from and around the site.

7.2.9 Public Transport

The proposed development seeks to promote public transport usage and mode share. This is more feasible for the residential part of the site which is located closer to existing rail and bus connections.

Rail

Doonside Railway Station is located within close proximity to the Doonside Residential site. Doonside Station is located approximately 500 metres north-east of the Doonside Residential Parcel near the Doonside Road/ Eastern Road intersection. Rooty Hill station is located approximately 400 metres to the north of the Rooty Hill/Eastern Road intersection. Additionally, Blacktown Station can be accessed via a feeder bus services serving the neighbouring residential areas.

The TMAP reports that upon full development, the Doonside site is expected to generate approximately 75 rail trips during the morning peak hour. These trips could be accommodated across the four peak hour train services that call at Doonside station or the eight peak hour services that call at Blacktown station.

Bus Services

Bus services to the Parklands Bungarribee Precinct are currently limited to roads that either run along sections of the Parklands boundary or the surrounding road network servicing existing residential areas.

Once fully developed, the Doonside Residential Parcel is expected to generate approximately 13 bus trips during the morning peak hour. Whilst this level of patronage is not sufficient to support the provision of a new bus service for the site, the opportunity exists to divert the existing route through the site. Accordingly, the proposed internal road network has been designed to cater for a bus service. Such a service would be further justified if a community facility were to be introduced into the development.

7.2.10 Pedestrian and Cycle way linkages

Pedestrian

Although pedestrian facilities within the site are limited due to the rural nature of the area, facilities are provided throughout the surrounding outer areas. The majority of roads bordering the study area have paved footpaths on at least one side of the roadway suitable for all users, including:

- Eastern Road;
- Knox Road;
- Great Western Highway, (no footpath along highway at present);
- Doonside Road, (no footpath in vicinity of new development near Douglas Road or Bungarribee Road);
- Rooty Hill Road; and
- Bungarribee Road.

There are several safe crossing opportunities at signalised intersections, however concerns have been raised at crossing opportunities at:

- Eastern Road/Doonside Road; and
- The Doonside Road/Bungarribee Road roundabout.

As a result, three signalised crossings have been incorporated into the concept application to provide safe pedestrian and cycle crossing points.

Cycleways

The package of measures outlined in **Table 8** includes the provision of a welcome pack for new residents.

There are an increasing number of cycle facilities in the Blacktown area, partly a result of a recent 50/50 funding agreement with the RTA. Blacktown City Council previously commissioned a review of the 1994 bike plan for the City of Blacktown in 2002 to determine cyclist's needs and priorities for action. The Department of Planning are involved with cycle route development in the area, with the planning and construction of a recreational trail within the Western Sydney Parklands.

Cycle paths leading towards the study area include:

- Regional Routes
 - M4 Motorway; and
 - M7 Motorway.
- Existing Recreational Route
 - Nurragingy Recreation Area.
- Long Term Recreational Routes
 - Eastern Creek between Great Western Highway and Richmond Road. (This route links to another cycle route which provides access to the Parklands north-east of Douglas/Doonside Road and Featherdale Wildlife Park); and
 - Western Sydney Parklands recreational trail.
- Other Proposed Routes
 - Blacktown Council plans to implement a shared path running from Doonside rail station to the Huntingwood industrial areas.

There is a high potential to link the existing bike paths with an internal network within the site, even with forecasts of continued low mode share for 'journey to work' trips – likely to be between one and four per cent of trips made by bicycle.

Improvements to the cycle network will accommodate any mode shift to cycling. However, the TMAP report highlights the need for connections from the site to the cycle network, and the need to provide trip end facilities such as sufficient secure cycle parking and lockers, particularly at rail stations. These measures are included within the package of measures (see **Table 8**), which forms part of the concept proposal.

7.2.11 Traffic Summary

This traffic impact assessment of the overall site has been prepared in accordance with RTA guidelines and in conjunction with the principles and methodology of a traffic management plan.

Doonside Residential

The Doonside Residential Parcel is well located in terms of the Doonside Railway Station, existing community facilities such as the primary school, all of which are within reasonable walking distance. The future development also provides the opportunity for innovative promotion of alternatives to the use of cars for personalised travel planning.

Building on the work completed in Stage 1 of the TMAP and an assessment of existing traffic conditions and increased traffic flows a package of measures has been produced to accommodate the new residential development with minimal impact, whilst achieving the NSW Government's sustainability initiatives.

The comprehensive package of measures will meet the needs of future residents of Doonside, while achieving a mode shift towards public transport. Key points of this package for Doonside Residential include:

- Implementation of 'personalised' travel planning as an innovative tool in effecting a mode shift to sustainable modes of transport. It includes measures such as provision of a bicycle to each household, marketing of public transport options, or free travel passes;
- Infrastructure improvements to provide easy pedestrian and cyclist access via pelican crossings, a shared path, a footpath and connections to existing paths such as the M7 cycleway;
- Public transport infrastructure, following consultation with the MoT during region planning;
- Transport service improvements, including potential to divert a bus route through the site; and
- Access to the site via existing intersections at Douglas Road, Bungarribee Road and Eastern Road.

Parklands Bungarribee Precinct

In relation to the Parklands Bungarribee Precinct, the traffic analysis indicates that the nominated access points will be sufficient to cater for the usual activities associated with parkland activities. The absence of vehicular connections and internal linkages across the park is assessed not to create access problems.

In relation to the access road from the Sports Precinct main carpark to the Eastern Road intersection, the recommendation to widen the outbound direction to two lanes to accommodate event traffic has been incorporated into the concept proposal.

To refine the trip generation and distribution assumptions contained in this traffic assessment, a transport impact assessment should be completed once the final land uses are known.

7.3 NATURAL RESOURCES

An Ecological Impact Assessment has been prepared for the Parklands Bungarribee Precinct and the Doonside Residential Parcel by Eco Logical Australia and is included in **Appendix A, Volume 2**.

The report describes the ecological values within the site, assesses the impact of the proposed Concept Plan, and proposes mitigation and offset strategies to ameliorate and counterbalance those impacts. The report also considers the riparian corridors (Eastern Creek and Bungarribee Creeks) in terms of aquatic ecosystems. The Concept Plan has incorporated the recommendations of the Conservation Strategy Report.

7.3.1 Flora and Fauna

The Parklands Bungarribee Precinct and the Doonside Residential Parcel provide a broad range of habitat types that are likely to support a diverse suite of species including *Gervilea juniperina* subsp. *juniperina* and Cumberland Plain Land Snail listed under the Threaten Species Conservation Act.

Four vegetation communities have been identified across the precinct. These are:

- Alluvial Woodland;
- Shale Plain Woodlands;
- Swamp Oak Floodplain Forest; and
- Grasslands (native and exotic the majority of Doonside Residential Parcel is dominated by exotic grassland).

Two of these, Shale Plains Woodland and Swamp Oak Floodplain Forest, are classified as Endangered Ecological Communities under the NSW Threaten Species Conservation Act.

7.3.2 Riparian Corridors

Eastern Creek, Bungarribee Creek and two unnamed creeks, (referred to as "Northern Creek" and "Southern Creek") run through the site. These creeks have been assessed under the Sydney Metropolitan Catchment Management Authority guidelines to determine buffer distances under Department of Environment and Climate Change guidelines pursuant to the River and Foreshores Act. The results are set out in **Table 9**.

Table 9: CMA Creek Buffer Requirements

<i>Creek</i>	<i>CMA Category</i>	<i>Riparian Buffer Requirements</i>
Eastern Creek	1	40m
Bungarribee Creek	2	20m
Northern Creek	3	10m
Southern Creek	3	10m

The riparian corridors and proposed buffers are illustrated in **Figure 15**.

7.3.3 Vegetation Conservation and Offsets

An 'offset strategy' is proposed for the site and is contained within the Ecological Impact Assessment (**Appendix A, Volume 2**). The purpose of the offset strategy is to counterbalance the removal of 12.54 hectares of existing habitat on the Doonside Residential Parcel in the Parklands Bungarribee Precinct by replacing it with or protecting and enhancing 27.88 hectares of habitat elsewhere (see **Table 8**).

The offset strategy will positively contribute to ecological management outcomes within the adjoining Parklands in support of the Western Sydney Regional Parklands Management Vision

(Department of Infrastructure, Planning and Natural Resources, Nov 2004). Ratios and areas for an offset have also been identified and prioritised within the Ecological Impact Assessment.

These areas consolidate and strengthen existing vegetation on site and improve linkages, area to edge ratios, and integrity (see **Appendix A, Volume 2**).

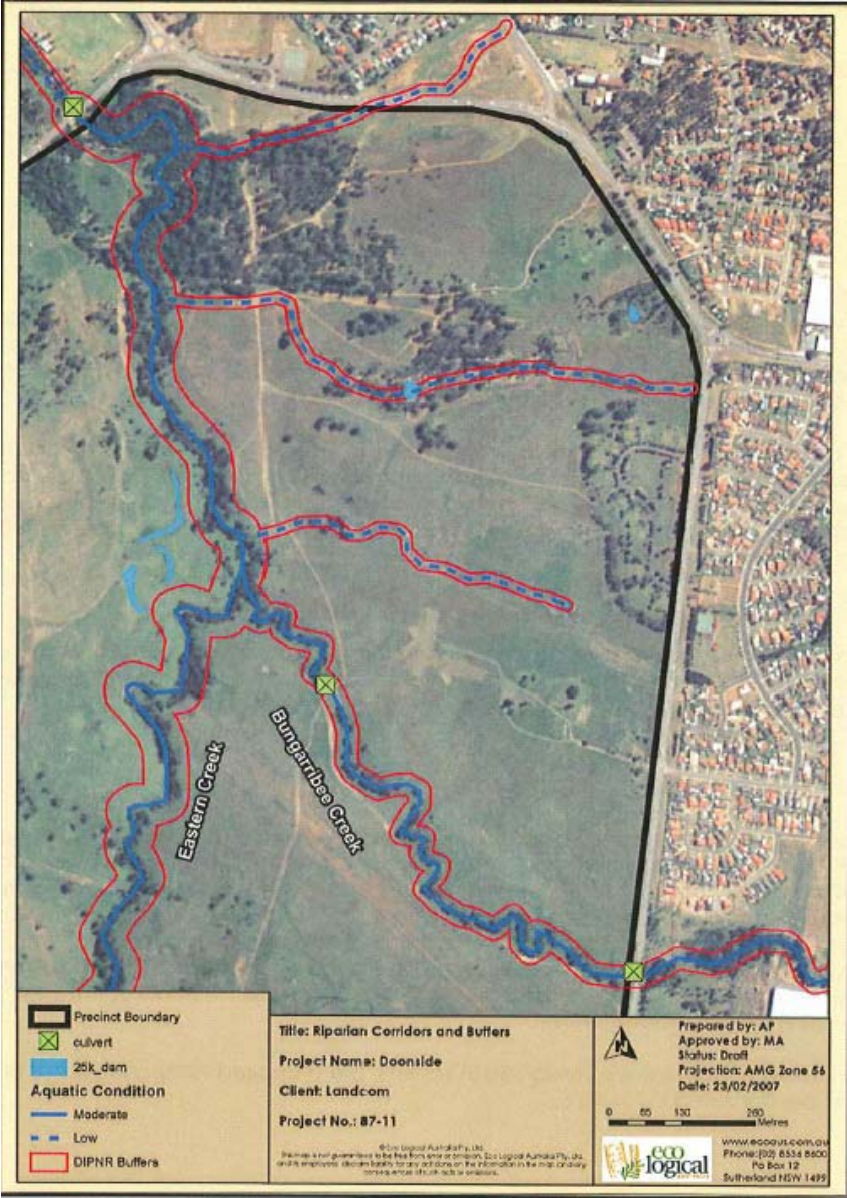


Figure 15: Riparian Corridors and Buffers

Table 10: Extent of Offsets

COMMUNITY	CONDITION	Area Impacted	Offset Ratio	Area Required Ha
Swamp Oak Floodplain Forest	ABC	0.37	3:1	1.11
	TX	0.00	2:1	
		0.37		1.11
Shale Plains Woodland	ABC	2.43	3:1	7.29
	TX	2.14	2:1	4.28
		4.44		11.57
Grassland	Native	7.60	1:1	7.60
	Relocation	(7.60)	1:1	7.60
		7.60		15.20
Total		12.35	(2.1:1)	27.88

7.3.4 Ecological Summary

The Ecological Impact Assessment provides recommendations for ecological outcomes for the proposed development of the Doonside residential parcel and more broadly an approach for the ecological restoration of the Parklands Bungarribee Precinct. The offset strategy is important to maintain the ecological values of the locality, particularly given the impacts on endangered ecological communities and threatened species.

Whilst further investigations will be carried out to verify the Cumberland Plain Land Snail coverage over the boarder precinct in order to quantify and understand the significance of the likely impacts, the ecological advice indicates that the presence of the Cumberland Plain Land Snail will have a wider presence across the precinct.

Further approvals will be required under the *Environmental Protection and Biodiversity Conservation Act*. A referral to the Commonwealth Department of the Environment and Water Resources in relation to the assessed significant impact on the Cumberland Plain Woodland within the Doonside Residential Parcel is included in the Ecological Impact Assessment (see **Appendix A, Volume 2**).

Recommendations are made with regard to the management of impacts between the urban interface, Bushlands and Asset Protection Zones in order to reduce secondary ecological impacts prior, during and after construction. Part of this is a trial of relocation of Themeda grasslands within the development parcel.

The ecological assessment provides, and quantifies, the requirements for offsetting the loss of Shale Plains Woodland, Swamp Oak Floodplain Forest and native grassland as a result of the proposed development. The proposed targeted offset actions include a financial contribution to protect, restore and manage at least approximately 27 hectares within the Parklands Precinct and performance objectives for these offsets. These recommendations are made in the context of the *Management Vision for the Western Sydney Parklands* and under Part 3A of the *EP&A Act*.

7.4 EUROPEAN HERITAGE

7.4.1 Heritage Significance

The European heritage significance of the site has been assessed in the *Conservation Management Plan* (CMP) report prepared by Godden Mackay Logan, which is attached as **Appendix D, Volume 2**.

The CMP has identified that the Doonside Residential Parcel, in particular the former Bungarribee Homestead, its outbuildings and associated cultural plantings is of "*Exceptional significance at a State level*." This is derived from the range of historical values that the site represents, which is reflected in the occupation and use of the site. The site is particularly significant as it demonstrates early European settlement in the area and early attempts to cultivate the area. The site is also linked to early colonial administration in the outskirts of Sydney.

The State Heritage Register (SHR) identifies the Doonside Residential Parcel as a State Significant site. Its significance is directly connected to the Homestead and the role it played in early colonisation of Sydney. The Doonside Parcel also provides a historical resource of the evolving pastoral and economic activities of the homestead and the area in general.

7.4.2 Heritage Conservation Areas

Section 6.2.3 of the CMP report addresses the need for a conservation area. The core heritage area (CHA) is identified around the Bungarribee Homestead Archaeology site. Several recommendations are made in relation to development on or near the core heritage area. These include:

1. Location of New Development/Change: - any buildings within the core heritage area to be limited to an interpretation/community type buildings that are sympathetic to the heritage of the site.
2. Form and Function of New Development: - any development should essentially be sympathetic to the heritage significance of the site. Grading of land, for example, should be limited in order to maintain the topographic character of the core heritage area and the Doonside Parcel as a whole.
3. Protection of Views: - the views from the homestead should be protected, particularly to the south and west of the homestead.
4. Paths and Walking Tracks: - any paths and walking tracks should be placed away from identified archaeological remains on the site.

The Doonside Residential Parcel indicative layout has captured these recommendations. A visual corridor has been established to the south east of Bungarribee Homestead. The visual corridor will maintain views to and from the relics of the home. The road network to the south of the Homestead has also been designed to provide further visual corridors into the site.

This Concept Plan does not include specific plans for a visitor centre. However, if the planned community centre is constructed it should feature space for visitor/interpretive facilities, in accordance with the above recommendations and the CMP. A pedestrian network will be prepared during detailed design phases of the project. It is anticipated that paths will traverse the site, however will be designed to minimise the impact to the heritage significance of the site and the archaeological relics.

7.4.3 Archaeological Assessment

Section 3 of the CMP report outlines the findings of detailed archaeological analysis carried out within the Doonside Residential Parcel, and focusing on the Bungarribee Homestead site. The report assesses previous analyses carried out during the initial planning process, including the archaeological potential of already identified relics.

The Bungarribee Homestead Archaeological Site has State heritage significance and is included on the State Heritage Register (SHR).

The proposed objectives and controls for the management of the non-indigenous heritage items, landscape and relics within the site are incorporated into the proposed application and are outlined in Section 3.4.2 of the Development Design Code (**Appendix B**).

7.4.4 Visual Assessment

Section 4 of the CMP report analyses the visual and landscape values of the Doonside Residential Parcel. The analysis identifies that the visual integrity of the Homestead and the site itself is an important feature. Views from the south through the south west, north east and east are considered important in maintaining the integrity and significance of the site. The CMP's **Figure 4.17** (see **Appendix D, Volume 2**) shows the visual assessment conducted by GML, which indicates important views to and from the site.

The visual and landscape links have been incorporated into the subdivision plan, which provides a visual corridor to the south east of the site. To the north east, a visual corridor has been maintained to the intermittent creek that crosses the site. These areas contribute to the passive open network for the enjoyment of future residents.

7.5 ABORIGINAL HERITAGE

An Indigenous Heritage Investigation (IHI) has been prepared by Jo McDonald Cultural Heritage Management Pty Ltd (JMCHM) and is included as **Appendix E, Volume 2**. The Indigenous Heritage Investigation analysed the potential for Aboriginal heritage throughout the Western Sydney Parklands site.

The site area falls within the boundaries of the Deerubbin Local Aboriginal Land Council (DLALC). The Darug Custodial Aboriginal Corporation (DCAC), the Darug Tribal Aboriginal Corporation (DTAC) and Darug Aboriginal Cultural Heritage Assessments (DASHA) also have an interest in heritage issues within the study area.

All of these groups have been consulted with and had representatives participate in the original survey of the Parklands Bungarribee Precinct and Doonside Residential Parcel. All groups have reviewed the report and are supportive of the proposed recommendations.

A total of 55 surface archaeological sites were recorded within the Parklands Bungarribee Precinct. From the analysis of the entire site, the Indigenous Heritage Investigation identifies a likelihood for an extensive, mostly buried, archaeological landscape.

Land use impact assessment and fieldwork identified five areas of potential archaeological deposits (PAD), the main area being along the Eastern Creek floodplain. The Indigenous Heritage Investigation identified an extensive area of potential archaeological deposits through the centre of the site. Another exists in the south west corner of the Parklands Bungarribee Precinct. Two areas of potential archaeological deposits have also been identified within the Doonside Residential Parcel, along with 14 other sites that have moderate or high archaeological potential.

The Parklands proposal incorporates an *Indigenous Heritage Conservation Strategy (IHCS)*, which identifies a range of representative landscapes with the best conservation potential and area of Aboriginal significance.

The majority of the potential archaeological deposits are located along Eastern Creek, within the Parklands environmental corridor. Potential archaeological deposits in the south west corner of the Parklands Bungarribee Precinct will also be protected as no development is proposed in the designated open space areas within the Western Sydney Parklands.

7.6 CONTAMINATION

A series of reports assessing site contamination have been undertaken. The report by Douglas Partners in January 2006 provides an overall *Land Capability Assessment* and is attached within **Appendix F, Volume 2**. This report includes the Parklands Precinct.

7.6.1 Phase 1 Contamination Assessment Summary

A *Phase 1 Contamination Assessment* of the site was undertaken in accordance with *SEPP 55* and various NSW DECC guidelines including the *Guidelines for the NSW Site Auditor Scheme* (**Appendix F, Volume 2**). This assessment included a detailed review of the site history and developed a list of potential contaminants of concern based on the site history. Individual lots were classified as either high, medium or low risk sites.

The objective of the study was to determine the suitability of the site for urban development, primarily with regard to site stability, soil erosion potential, soil salinity, soil contamination and minerals potential.

Within Section 10.4.3 of the Phase 1 Contamination Assessment the following was concluded:

*"Parklands Precinct and Parcel 3 (Doonside)
This site has been signed off for residential reuse (and less sensitive, ie parks and open space) under a separate audit report. Current assessment examined only contaminating activities since the finalisation of the previous report. Numerous stockpiles of building rubble were noted in the site walkover as documented within. Clean up of the site will therefore be required prior to redevelopment. The amount of dumping on site should not present a constraint to development.
Logged stockpiles and waste dumps will require removal to a suitably licensed waste facility and validation testing prior to site development."*

The site is considered suitable for the proposed use of residential and recreational purposes.

7.6.2 Audit Report Summary

A Site Audit Report was prepared by HLA Envirosciences Pty Ltd in March 2001 and is attached within **Appendix F, Volume 2**. The audit reviewed a series of Phase One, Two and Three Environmental Site Assessment Reports as well as Remediation Action Plans undertaken between 1998 and 2001. The report covered the former Telstra Overseas Telecommunications Centre (OTC) on Eastern Road, Doonside (primarily the proposed Doonside Residential Parcel).

The report concluded that there are no issues in relation to contamination which would prevent future residential land uses. Isolated occurrences of illegal dumping have occurred and these will require removal and possibly remediated during the preparation of the site for development. The report concludes as follows:

*The site is considered appropriate for the proposed uses.
ASA has stated that the testing indicates the site "complies with EPA requirements for residential development".
The Auditor has assessed the data collected from the site against the most conservative criteria for the stated residential and public open space proposed redevelopment. Based on the site investigation and validation data and the NSW EPA (1998) SIL Column 1 (Residential with access to soil), the Auditor is of the opinion that the site has been remediated and validated to a level that renders it suitable for residential landuse with access to soil. The Auditor notes that the soil concentrations are also suitable for less sensitive land uses including:*

- Residential with minimal access to soil including high rise apartments
- Parks and recreational open space
- Commercial/industrial

The Auditor has requested that a Management Plan be prepared for the unlikely event that contamination is encountered during the site earthworks. This is because of the number of samples exceeding the Column 5 phototoxicity criteria and the inherent uncertainty related to the coarse sampling grid used on such a large site, and is to be implemented prior to the commencement of the development works. This Management Plan must be authorised by a NSW EPA Accredited Auditor.

7.7 DRAINAGE AND STORMWATER

The site is situated within the Eastern Creek catchment. Eastern Creek is one of a series of similar drainage lines in Western Sydney that flow south to north and discharges to South Creek and then to the Hawkesbury River. Eastern Creek bisects the Parklands Bungarribee Precinct, while Bungarribee Creek is the major local tributary joining the main channel from the south-east. Two unnamed creeks drain from the Doonside Residential Parcel to Eastern Creek.

A wide range of studies have been undertaken in the assessment of the impacts of the proposed development on ground and surface water. The report by Douglas Partners in January 2006 on *Land Capability* is attached within **Appendix F, Volume 2**, and the report by Ecological Engineering Pty Ltd on the *Western Sydney Parklands – Bungarribee Precinct Doonside Residential Development WSUD Strategy April 2007* is attached within **Appendix G, Volume 2**.

7.7.1 Flood Modelling

Flood modelling was undertaken by Bewsher Consulting Pty Ltd (see **Appendix H, Volume 2**).

The flood modelling has been discussed with Blacktown City Council staff. Arising from those discussions, Council agreed that:

- since there had been no significant flood events since the 1996 modelling there is no recent data which might be used to verify the earlier model results;
- the 1996 RAFTS modelling results were still compatible with current day catchment conditions; and
- subject to the incorporation of additional floodplain cross sections (to more accurately define the flood levels throughout the Parklands frontage to Eastern and Bungarribee Creeks) and information regarding current bridge waterway openings, the DIPNR MIKE-11 model may be used to derive the 1 in 100 year and Probable Maximum Flood (PMF) flood levels.

7.7.2 Hydrology

The Land Capability Assessment included a detailed description of the hydrology of this site. The general hydrogeological framework relevant to Western Sydney, including the subject site, is the shale terrain which is known for saline groundwater and where the salt accumulates by evapo-transpiration. In areas of urban development, this can lead to damage to building foundations, lower course brickwork, road surfaces and underground services, where these impact on the saline zone or where the salts are mobilised by changing groundwater levels.

Seasonal water level changes of 1 to 2 metres can occur in a shallow regolith aquifer or a deeper shale aquifer due to natural causes. Urban development needs to be carried out with a view to maintaining the natural water balance so that long term rises do not occur in the saline groundwater level.

The Department of Planning infers a “*high salinity potential*” in the lower slopes and drainage areas of Eastern Creek, on its map entitled “*Salinity Potential in Western Sydney 2002*”. These Department of Planning inferences are based on soil types, surface levels and general groundwater considerations but cannot be verified.

Whilst a detailed groundwater study was not undertaken recent groundwater investigations undertaken by Department of Planning in the Blacktown area and previous studies of areas underlain by the Wianamatta Group and Quaternary river alluvium provide good evidence of groundwater conditions.

Salinity Risk Areas have been identified and illustrated within **Figure 10** of the Doonside Development Design Code (**Appendix B**). Clause 4.5.4 of the Development Design Code relates to salinity and seeks to manage and mitigate the impact of, and on, salinity. Amongst other controls, each future subdivision application will require a salinity report prepared by a suitably qualified consultant.

7.7.3 *Water Sensitive Urban Design (WSUD)*

The Water Sensitive Urban Design (WSUD) Strategy for the Doonside Residential Parcel was prepared by Ecological Engineering Pty Ltd and is attached as **Appendix G, Volume 2**. The report integrates potable water conservation, pollution control and flow management measures with the unique Parklands setting. This strategy has been developed in collaboration with EDAW and Architectus, the Landscape Architects and Urban Designers for the project, ensuring that the WSUD elements proposed are complementary to the open space and built form.

There are two ephemeral waterways (Southern and Northern Creeks) within the residential site. These waterways receive untreated storm water from catchments external to the site and discharge to Eastern Creek.

The proposed residential development will significantly alter the hydrology of the existing site and if untreated, will generate storm water pollution as a result of increased impervious surface area and urban activities. WSUD elements will be used to reduce pollutants carried in the storm water from the residential development and from the upstream urban catchments. The water treatment will also help to reduce peak flows to protect the geomorphology of the creeks/waterways. Flows will be managed to represent the predevelopment hydrology of the site, with specific attention to limiting the critical peak flows.

The WSUD strategy has been guided by a series of water management principles for the site derived from the provisions within state and local government planning policies, as well as responding to the water management opportunities and constraints that the site presents. The WSUD Strategy is centred on achieving the following outcomes:

- Potable mains water reduction through demand management including water efficient fixtures and fittings, as well as using alternative sources of water based on matching water quality to uses on a “fit-for-purpose” basis;
- Stormwater runoff from the development, as well as from the external catchments to the east of the development which flow through the site, to be treated to current best practice water quality standards;
- Post-development storm discharges to equal pre-development storm discharges for the one and a half year ARI event, so as to minimise the impact of frequent events on the natural waterways and to minimise bed and bank erosion; and
- Post-development storm discharges up to the 1 in 100 year ARI event need to be controlled so as to avoid any increases in the peak discharges in Eastern Creek and Bungarribee Creek.

The elements considered by the WSUD Strategy to meet these outcomes include water conservation, stormwater quality management and waterway protection (see **Appendix G, Volume 2**).

The Strategy takes into consideration the commitment of the Department of Planning and Landcom as the land owners and developers of the site to delivering an innovative and unique development, striving for “world’s best practice”.



Figure 16: Proposed Eco-Park

7.8 UTILITIES INFRASTRUCTURE

The proposed development can be adequately serviced by utilities infrastructure. A detailed assessment can be found in the "*Civil Infrastructure Report and Masterplan*" prepared by YSCO Geomatics and attached as **Appendix I, Volume 2**. The provision of utilities infrastructure can be summarised as follows:

7.8.1 Water

The area will be served from the Minchinbury Reservoir and existing water mains around the site. Amplification works will be undertaken to augment supply. Sydney Water is constructing a second reservoir (completion expected in late 2007) to provide for the significant development in the service area of the Reservoir, of which the Doonside Residential Parcel is a small component.

7.8.2 Sewer

Existing sewer mains to the south and west of the site will serve the new development.

7.8.3 Electricity supply

A zone substation will be constructed to fully service the development. An upgrade of the existing 33kV overhead line along Doonside Road to 132kV is required to supply the proposed Doonside Zone substation. The upgrade will be linked to the zone substation construction.

7.8.4 Gas

Existing gas supply lines adjoining the Doonside Residential Parcel will require upgrading to provide adequate supply. The capacity upgrade is relatively simple and can match development of the project.

7.8.5 Telecommunications

Telecommunication services are available and will be extended to service the site.

7.9 COMMUNITY CONSULTATION & SOCIAL SUSTAINABILITY

7.9.1 Community Consultation

Landcom has undertaken extensive community and stakeholder consultation during the preparation of the Concept Plan (October 2005 to September 2006) in accordance with the Director General's requirements.

The Western Sydney Parklands Ideas Competition

The Concept Plan has incorporated feedback from the Ideas Competition discussed previously.

The Competition Brief sought to encourage ideas from both the general community and professionals to assist Landcom in developing a plan for the Western Sydney Parklands Bungarribee Precinct Project seeking design excellence. In conducting the Competition, Landcom embarked on a Community Awareness and Advertising Campaign to advise the Community of the upcoming project and to seek participation by entering the Competition. The Community Awareness Program used local media, press and the internet to seek involvement. A total of 81 entries were received, including three international submissions.

The Ideas Competition provided a unique opportunity for delivering world's best practice to the development by allowing stakeholders to participate in the planning process. The process:

- Explored broad planning and design opportunities for the site taking into account its context, physical features and the surrounding land uses;
- Advocated for the integration of land uses and activities (interface) between the Parklands and the Doonside Residential Parcel; and
- Promoted environmental, social and economic sustainability. In seeking these ideas Landcom has had dialogue with:
 - Local Government - Blacktown City Council;
 - Government agencies such as NSW Department of Planning, and Department of Education;
 - Professional associations i.e. Australian Institute of Landscape Architects (AILA), and The Royal Australian Institute of Architects (RAIA);
 - Local residents and general public; and
 - Government Agencies.

Relevant authorities and government agencies have been consulted as part of the Concept Plan process between January 2006 and June 2007 (see **Table 11**). A Project Working Group (PWG) was established to discuss aspects of the project with Blacktown City Council. A public information session was held in October 2006 at the grounds of the Blacktown Olympic Centre to allow local residents to comment of the preliminary conceptual design of the concept plan.

Table 11: Consultation Schedule

<i>Stakeholders</i>	<i>Forum</i>	<i>Discussion / Observations</i>
STATE GOVERNMENT & AGENCIES		
Department of Environment and Conservation	Meetings	Flora and Fauna, vegetation offset / see Section 7.3
Department of Natural Resources	Request for comment	Riparian corridors, WSUD / see section 7.7
Ministry of Transport	Request for comment	Traffic and Transport / see Section 7.2 and

<i>Stakeholders</i>	<i>Forum</i>	<i>Discussion / Observations</i>
		Appendix H
NSW Heritage Office	Meetings	Indigenous Heritage / see Section 7.5
NSW Department of Planning	Meetings	Planning framework / see Section 6
NSW Department of Primary Industries	Meetings	Production base landscapes advise
Road and Transport Authority	Meetings	Traffic and Transport / see Section 7.2

LOCAL GOVERNMENT

Blacktown City Council	Workshops, meetings and request for comment.	Planning framework and environmental issues / see Sections 6 and 7 , and Appendix G
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INFRASTRUCTURE / UTILITIES

AGL	Meetings	Utilities infrastructure / See Section 7.8
Integral energy	Meetings	Utilities infrastructure / See Section 7.8
Sydney Water	Meetings	Utilities infrastructure / See Section 7.8
Telstra	Meetings	Utilities infrastructure / See Section 7.8

ENVIRONMENT & HERITAGE GROUPS

Deerubbin Local Aboriginal Land Council	Site Visit, meetings and request for comments	Indigenous Heritage / see Section 7.5
The Darug Custodial Aboriginal Corporation (DCAC)	Site Visit, meetings and request for comments	Indigenous Heritage / see Section 7.5
Darug Tribal Aboriginal Corporation (DTAC)	Site Visit, meetings and request for comments	Indigenous Heritage / see Section 7.5
Greening Australia	Workshops and meetings	Vegetation issues, offset / see Section 7.3

LOCAL COMMUNITY

Local Businesses	Ideas competition and Public Information Session	Urban design, general environmental issues
Local Residents		

7.9.2 Social Sustainability

A Social Sustainability Assessment for the Doonside Residential Parcel was undertaken by Elton Consulting (see **Appendix C, Volume 2**).

The assessment found that the risks to development from a social sustainability viewpoint are very low, while the associated opportunities and benefits of the development are potentially high. The report suggests that the risk of creating enclave development is considered to be low, due to the proposed product and price mix, providing enhanced housing and social diversity within the development.

The risk of the development to create social division with adjoining neighbourhoods has been managed through the conceptual layout design by promoting connectivity, permeability and access through the existing surrounding residential areas. The provision of a community facility within the Heritage Precinct of the Doonside Residential Parcel is considered to provide a mechanism for bringing together the existing residential areas with the proposed new residential area.

The Residential Parcel has been designed so as not to create a social or physical barrier to the Parklands, which provides access to the recreation opportunities within the Parklands. This will be promoted for new and existing residents of the area. Entry and boundary treatments also aim to minimise any sense of segregation or exclusivity.

In terms of potential social risks to the new population, issues addressed include:

- Overcoming potential barriers that surround the site;
- The development of public transport services to reduce isolation especially for youth and the elderly; and
- Designing the public domain to promote passive surveillance over the parklands to reduce the risk of anti-social behaviours.

The size of the new resident population will not be large enough to generate the need for providing new social infrastructure within the locality. A suitable site has been nominated within the heritage site for the provision of a potential new community facility. It is intended that this facility would provide a social benefit to the new and existing community.

The Parklands will provide a positive social impact in both a regional and local context in regards to the creation of additional recreation and sporting facilities.

7.10 DEVELOPMENT STAGING

The indicative development staging will be in accordance with the suggested staging of infrastructure illustrated in **Figure 17**.

An assessment of infrastructure requirements and staging is detailed in the *Civil Infrastructure Masterplan Report* prepared by YSCO Geomatics (see **Volume 2, Appendix I**).

From these investigations it can be concluded that there are no insurmountable infrastructure impediments to the development of the Doonside Residential Parcel. Timing and cost issues are the dominant concerns, particularly as they relate to Electrical Supply.

Electrical Supply

Provision of this service alone appears to be the most critical element in the timely delivery of the residential land to the end user. Notwithstanding that satisfactory electrical supply will not be available for a minimum of 3 years; information provided to date indicates that the dominant portion of necessary major infrastructure works may be completed adequately within a conventional development process.

Potable Water

Connection to Sydney Water's potable water mains can be obtained at the Doonside/Douglas Roads site entry and the Doonside/Bungarribee Roads site entry. Preliminary proposals are for the first stage of the development to be focussed on the Doonside/Bungarribee Road intersection. Potable water will be initially introduced to the site at this location.

Public Road Infrastructure

The necessary upgrades to Public Road Infrastructure are likely to be required progressively and generally will be undertaken in conjunction with adjoining works within the Doonside Residential Parcel. Works that are extraneous to the Doonside Residential Parcel are unlikely to be required up-front and should be programmed to be undertaken when appropriate funds become available.

The Civil Infrastructure Masterplan Report describes the staging of the development as follows:

The Doonside Residential Parcel is proposed to be developed and marketed as sixteen (16) separate "Sales Precincts" ranging in yield from 29 to 57 lots, to provide regular and flexible product supply.

The individual "Sales Precincts" will be combined in six (6) separate infrastructure "Construction" elements, ranging in size from 81 to 154 lots, to allow for the establishment of cost effective construction programmes and efficient management of the interface between "Sales Precincts".

Finally, three (3) independent "Contract" zones will be adopted to ensure the scale of works offered to tender is sufficiently large to provide good economies of scale and to attract larger construction organisations capable of conforming to the "Best Practice" requirements of the project. The "Contract" zones will each feature a major external works element to ensure access and services supply elements are completed without delay.



Figure 17: Indicative development/Infrastructure Staging

7.11 VOLUNTARY PLANNING AGREEMENT / DEVELOPER CONTRIBUTIONS

A Voluntary Developer Planning Agreement has been prepared for the site in accordance with the requirements outlined in the *Environmental Planning and Assessment Amendment (Development Contributions) Act 2005* (see **Appendix E**). The planning agreement provides a contractual agreement between the planning authority (Department of Planning) and the developer (Landcom). The following lists items included within the Voluntary Planning Agreement:

- Land to be dedicated to Council;
- Internal road requirements;
- Proposed intersections;
- Pedestrian crossings and network;
- Heritage conservation;
- Community building;
- Vegetated noise buffer;
- Internal creeks rehabilitation;
- Detention areas;
- Vegetation offset;
- Water Sensitive Urban Design elements;
- Public open space; and
- Public art.

7.12 OTHER ISSUES

Other issues addressed during the environmental assessment that were not specifically referenced in the Director General Environmental Assessment Requirements relate to noise and bushfire.

7.12.1 Noise Assessment

A specialist acoustic assessment was undertaken by Heggies & Associates and is included as **Appendix J, Volume 2**. The assessment relates specifically to the impact of traffic noise on future residents adjoining Doonside Road.

Traffic noise from Eastern Road and Doonside Road affecting the Residential Parcel was assessed under the daytime LAeq(1hour) objective of 60 dBA and night-time LAeq(1hour) objective of 55dBA, in accordance with the NSW Government's Environmental Criteria for Road Traffic Noise (ECRTN) for vehicle-related noise emissions on public roads.

Noise modelling was undertaken using the UK Department of Transport 'Calculation of Road Traffic Noise' (CoRTN 1988) algorithms. The modelling provides for traffic volume and mix; type of road surface; vehicle speed; road gradient; ground absorption; as well as shielding from ground topography and physical noise barriers. Based on the footprint for the proposed Doonside Residential Parcel, target barriers have been defined that result in acoustic compliance along the edge of the development.

The heights of the barriers vary along their length, but are typically in the range of 3 to 5 metres above the existing terrain. In the vicinity of the entry points to the Residential Parcel, the noise contour extends marginally into the residential area. The localised small exceedance's can be easily mitigated at detailed development application stages e.g. using at-dwelling architectural treatments as a means of noise control.

The identified barriers only consider the acoustic requirements. They have not considered a wider range of design issues, such as urban design or engineering considerations that may influence the final design heights. When the barrier design heights and the lot layout is completed, a final review of the situation may show that some properties no longer comply with the noise target levels and depending on the degree of exceedances, the incorporation of at-dwelling noise mitigation may require further consideration. These issues can adequately be addressed at the development stage.

7.12.2 Bushfire

Eco Logical Australia prepared bushfire advice for Landcom and the Department of Planning in relation to the Parklands Bungaribee Precinct. This advice is attached as **Appendix A, Volume 2**. The objectives of the advice were to broadly outline the bushfire risks and provide advice (i.e. Asset Protection Zones) for the site in its present state, as well as potential future land uses.

The bushfire advice for future land uses included the intended Residential land use and the Parklands. The advice also estimated what the fuel loads of the woodland and forest vegetation within conservation areas would be in the asset protection zones and incorporated them into the assessment. Asset Protection Zone Management is an important consideration around the residential estate. Required APZ (setbacks) are shown in **Figure 18**.

The proposed subdivision of the land for residential would ordinarily be assessed under section 100B of the *Rural Fire Act*, and would need to comply with the requirements provided by *Planning for Bushfire Protection Guidelines (Rural Fire Service 2001)*.

Since this initial report was written in February 2006, the *Planning for Bushfire Protection Guidelines (PBP)* have been reviewed. In response to this recent review, Eco Logical Australia prepared a letter noting the implications of the new Planning for Bushfire Protection 2006 Guidelines.

The proposed indicative layout and the Development Design Controls prepared for the Doonside Residential Parcel have been taken into account in the bushfire recommendations.

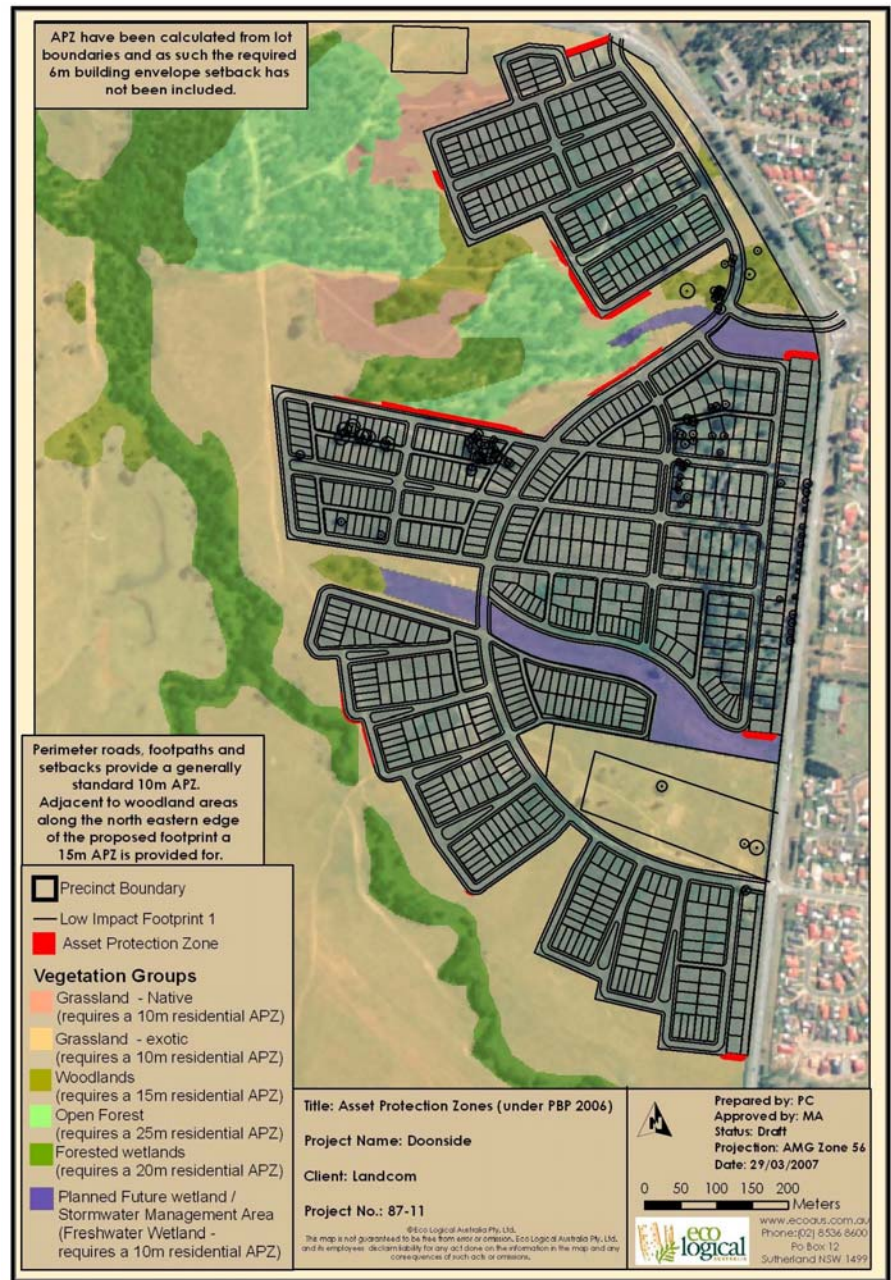


Figure 18: Asset Protection Zones

8 DIRECTOR GENERAL REQUIREMENTS

PART D – DRAFT STATEMENT OF COMMITMENTS

8.1 DOONSIDE RESIDENTIAL

The Concept Plan commits to providing a Development Design Code (DDC) document that will guide future development (see **Appendix B**). Details are set out below:

8.1.1 Relationship to the Western Sydney Parklands

This Concept Plan commits to:

- An ecologically sustainable residential development that integrates with, and builds biodiversity values of the adjoining Western Sydney Parklands;
- A seamless transition through ecological, visual and access linkages from the Parklands and the residential development; and
- Providing an open space network which connects the residential area to the Parklands through the incorporation of verges, eco-medians, and landscape treatments.

8.1.2 Urban Design

This Concept Plan commits to assert Development Design Controls to which future development must adhere. This document has been based on a rigorous and thorough analysis of the site and its context, The Western Sydney Parklands Ideas Competition and a review of high quality residential designs elsewhere.

This Concept Plan commits to the following urban design principles:

- High quality public domain with generous landscaping and well designed buildings addressing the streets and integrating with the Parklands;
- Landscaped building setbacks that allow for view corridors into and out of the Parklands via landscaped ‘fingers’ many of which contain Water Sensitive Urban Design features;
- A layout conducive to the natural environment, which maximizes solar efficiency as well as maintaining existing natural vegetation; and
- Incorporation of innovative Water Sensitive Urban Design principles.

8.1.3 Landscaping

This Concept Plan commits to:

- Generously landscaped public domain that links to the Parklands in accordance with the Landscape Master Plan and specifications in the Development Design Code;
- Promoting biodiversity values within the Parklands, through the enhancement and rehabilitation of Cumberland Woodland as outlined in the Conservation Offset Strategy;
- Ensuring landscape treatments are consistent with and compliment the Water Sensitive Urban Design principles;
- Preserving mature trees and landscape features where practical;
- Provide shade along pedestrian access ways and streets through appropriate street plantings;
- Creating safe and open spaces that are overlooked by active building frontages;
- Minimising water usage and maintenance by selecting hardy, drought tolerant, native species;

- Treating storm water through landscape techniques such as the wetland, eco-medians, bio-retention systems and landscaped swales; and
- The provision of landscaping with easily maintainable qualities.

8.1.4 Utilities Infrastructure

This Concept Plan commits to:

- The provision and funding of all onsite infrastructure necessary to service the site;
- Ensure sufficient land is provided within road reserves for utilities (land dedicated to Council will be provided at no additional cost to Council); and
- Location of site for the future provision of an electrical substation by Integral Energy.

8.1.5 Traffic and Transport

This Concept Plan commits to:

- The construction of an internal road network to service the development in accordance with the Development Design Code and current Blacktown Council requirements;
- The provision of a pedestrian crossing on Eastern Road;
- The construction of three access points which will utilise existing roundabouts and any necessary upgrade works required to deal with the additional loads;
- The provision of a choice of travel mode by developing a comprehensively accessible transport network; and
- The provision of a transport system that is sustainable.

8.1.6 Pedestrian movement and connectivity

This Concept Plan Commits to:

- The provision of an internal open space system and path network to allow pedestrian movement, and connecting the residential area with the Parklands;
- The provision of two pedestrian crossings (mid block) along Doonside Road; and
- The provision of a pedestrian and cycle path along the site's edge to Doonside Road.

8.1.7 Stormwater Management

This Concept Plan commits to:

- Constructing stormwater management controls to ensure that development does not have any net impact on water quality or quantity of any creek system traversing the site;
- Ensuring stormwater management is facilitated by best practice Water Sensitive Urban Design measures;
- Construct a series of eco-medians that manage stormwater and improve water quality; and
- The provision of shallow ephemeral areas within the floodplain to reduce erosion from upstream sections of the Southern and Northern Waterways during period of flows with significant erosive potential.

8.1.8 A Public Consultation Process

This Concept Plan commits to a public consultation process that:

- Builds upon the results of the Western Sydney Parklands Ideas Competition to address interface designs with the Parklands; and
- Provides information updates on a publicly accessible website www.westernsydneyparklands.com.au to keep the community informed with the process.

8.1.9 Design Review Panel

This Concept Plan commits to:

- The establishment of a Design Review Panel including representatives from The Department of Planning, Blacktown City Council and Landcom. The panel will assess future development proposals to ensure they are consistent with the proposed Development Design Controls.

8.1.10 Water Sensitive Urban Design

This Concept Plan commits to:

- The implementation of best practice Water Sensitive Urban Design (WSUD) Measures; and
- Design of WSUD elements (e.g. eco-medians) to comply with Council requirements.

8.1.11 Environmental Management

The Concept Plan commits to:

- The preparation of an Environmental Management Plan to address environmental mitigation measures including: salinity, soil erosion and sediment control, archaeological investigations, air and water quality, noise attenuation and safety.

8.1.12 Vegetation Offset Strategy

This Concept Plan commits to:

- An offset ration of between 1:1 to 3:1, with an average offset ratio of 2:1;
- Identify approximately 27.88 hectares of land within the Parklands suitable for offsetting the removal of 12.54 hectares of Cumberland Plain Woodland within Doonside Residential Parcel;
- Further investigate the conditions of fauna habitat affected by Concept Plan to quantify and understand the significance of the likely impacts at a landscape scale; and
- A monetary contribution to the Parklands Trust for vegetation conservation, enhancement and creation related to the Doonside offset.

8.1.13 Heritage

This Concept Plan commits to:

- Conserve and enhance the heritage values of the Bungarribee House;
- Preserve the proposed Non-Indigenous Heritage Conservation Areas; and
- Within the context of a 'whole of development approach', undertake salvage at the identified locations in areas of high archaeological potential which have been impacted by the proposed development.

8.1.14 Meeting Blacktown Council Specifications

The Concept Plan commits to:

- The design of roads and WSUD features to meet Blacktown Council's Specifications.

8.2 PARKLANDS BUNGARRIBEE PRECINCT

8.2.1 Community Facilities

The Concept Plan commits to:

- The provision of playing fields and associated infrastructure within the Sports Precinct;
- The design of a range of regional sporting, recreation and cultural leisure opportunities which provide community benefit, both locally and regionally;
- The establishment of picnic and play areas;
- The provision of tourism and educational opportunities; and
- The provision of entertainment opportunities and facilities.

8.2.2 Traffic and transport

The Concept Plan commits to:

- The construction of access points which provide safe access to the Parklands;
- The provision of an internal road network through the Parklands which conveniently links to the existing road network;
- The provision of appropriate parking to service the different uses within the site; and
- The provision of necessary creek crossing points with minimal impact to the fragile waterway ecosystem.

8.2.3 Pedestrian and Cycle Access

The Concept Plan commits to:

- The construction of an internal pedestrian/cycle way network which provides a connection throughout the Parklands.

8.2.4 Environmental Management

The Concept Plan commits to:

- The establishment of a bio-diversity corridor along Eastern Creek in accordance with the *Western Sydney Parklands Management Vision (2004)*; and
- The establishment of a network of water retention and filtration systems to ensure the future protection of the Parklands waterways.

8.2.5 Heritage

The Concept Plan commits to:

- Recognise and protect the heritage values identified within the Parklands.

9 DIRECTOR GENERAL REQUIREMENTS

PART E – RISK ANALYSIS

All reasonable risks have been considered and addressed in the development of this Concept Plan application and the various components of this concept.

The key environmental assessment requirements and their associated risks have been addressed in **Section 7** of this report. Proposed mitigation measures and potentially residual environmental impacts after the application of these mitigation measures have similarly been considered.

No additional key environmental impacts have been identified through this environmental risk analysis.

In this assessment however, the importance of social risk and social sustainability have been particularly considered.

10 CONCLUSION

The Concept Plan presents a significant recreational open space (Parklands Bungarribee Precinct) together with a well designed residential parcel (Doonside) located adjacent to the Parklands. Underpinning the Concept is a strong commitment to the delivery of a vision focused on achieving seamless boundaries between residential living and recreation, as well as world's best practice. The green vegetated fingers of the Park extend into the residential areas and conversely the eco-medians allow treated stormwater to flow into the Park's creek system.

The Ecological Impact Assessment provides recommendations for ecological outcomes for the proposed development of the Doonside residential parcel and more broadly an approach for the ecological restoration of the Parklands Bungarribee Precinct. The offset strategy is important to maintain the ecological values of the locality, particularly given the impacts on endangered ecological communities and threatened species. Whilst further investigations will be carried out to verify the Cumberland Plain Land Snail coverage over the boarder precinct, there is consider to be a positive gain in the overall ecological outcomes generated by this concept. The ecological advice indicates that the presence of the Cumberland Plain Land Snail will have a wider presence across the precinct. Approval is also sought under the *Environmental Protection and Biodiversity Conservation Act*.

At a human scale, the residential area has been designed to accommodate a diverse range of residents, accommodating families and single occupant homes. Service needs with respect to schools and public transport are accessible and, in collaboration with Blacktown City Council, the site may accommodate a Community Centre for the site's residents and the broader community.

The State heritage values of the site have been conserved by preservation of views from the former Bungarribee Homestead site into the Parkland area. Additionally, a park formed to commemorate these values has been created within the urban and park design principles.

An assessment of the environmental impacts has been undertaken of the Concept Plan in accordance with the Director General's requirements. This assessment, together with the strong urban design principles reflected throughout the design, allows an overriding conclusion to be drawn. The proposed Concept Plan will create a positive living environment for a new community and one that will integrate well within the Blacktown locality. The Bungarribee Precinct will evolve into a high quality environment and socially sustainable recreational place that will accommodate the needs for visitors seeking all forms of recreation. Importantly, this Concept has been developed from the ideas and aspirations sought from the broad community in the 2005 Ideas Competition.

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APPENDIX A

Concept Plans

APPENDIX B

Development Design Code

APPENDIX C

Draft Director General's Environmental Assessment Requirements

APPENDIX D

Draft State Environmental Planning Policy (Major Projects) Instrument

APPENDIX E

Voluntary Developer Planning Agreement

APPENDIX F

Relevant Environmental Planning Instruments and Guidelines

APPENDIX G

TMAP Comments from Blacktown City Council

APPENDIX H

TMAP Comments from Ministry of Transport