

APPENDIX A DGEAR'S



NSW GOVERNMENT
Department of Planning

Contact: Nicola Hoare
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Our ref: MP08_0014
Your ref:
File: S08/00219

Mr David Humphris
De Witt Consulting
PO Box 850
Charlestown NSW 2290

Dear Mr Humphris,

Subject: MP08_0014 71 lot residential subdivision, at corner of Chifley and Morisset Park Rds, Morisset Park.

The Department has received your application for the proposed 71 lot residential subdivision at the corner of Chifley and Morisset Park Rds, Morisset Park, MP08_0014.

The Director General's Environmental Assessment Requirements (DGRs) for the environmental assessment of the project for a Project Application are attached to this correspondence at **Attachment 1**. These requirements have been prepared in consultation with the relevant government agencies including council.

If the Environmental Assessment is not exhibited within two years from the date of issue of these requirements, you should consult further with the Director-General in relation to the preparation of the Environmental Assessment.

Attachment 2 lists the relevant plans and documents which are likely to be required upon submission of your proposal, however, this should be confirmed with the Department prior to lodgement.

It should be noted that the DGRs have been prepared based on the information provided to date. Under section 75F(3) of the Act, the Director-General may alter or supplement these requirements if necessary and in light of any additional information that may be provided prior to the proponent seeking approval for the project.

It would be appreciated if you would contact the Department at least two weeks before you propose to submit the Environmental Assessment for the project to determine:

- the fees applicable to the application;
- consultation and public exhibition arrangements that will apply; and
- number and format (hard-copy or CD-ROM) of the Environmental Assessment that will be required.

A list of some relevant technical and policy guidelines which may assist in the preparation of this Environmental Assessment are attached at **Attachment 3**.

Prior to exhibiting the Environmental Assessment, the Department will review the document to determine if it adequately addresses the DGRs. The Department may consult with other relevant government agencies in making this decision. If the Director-General considers that the Environmental Assessment does not adequately address the DGRs, the Director-General

may require the proponent to revise the Environmental Assessment to address the matters notified to the proponent.

Following this review period, the Environmental Assessment will be made publicly available for a minimum period of 30 days. The Director-General's requirements will be placed on the Department's website along with other relevant information which becomes available during the assessment of the project. As a result, the Department would appreciate it if all documents that are subsequently submitted to the Department are in a suitable format for the web, and if you would arrange for an electronic version of the EA to be hosted on a suitable website with a link to the Department's website.

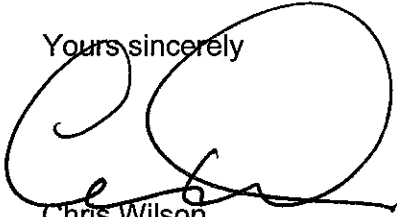
Please note that under 75U of the Act, Part 3A applications do not require certain permits/approvals required under other legislation. These matters are assessed as part of the Part 3A process. For example, Section 87 permits and Section 90 consents under the *National Parks and Wildlife Act 1974* are not required for Part 3A applications. Section 75U applies from the date of issue of the DGRs.

Notwithstanding, the Department still requires an equivalent level of information within the Environmental Assessment as would ordinarily be required for any such permit/approval to enable an assessment of the relevant works. Please notify the Department should any sub-surface testing be required during the preparation of your EA.

Copies of responses from government agencies to the Department's request for key issues and assessment requirements are enclosed at **Attachment 4**. Please note that these responses have been provided to you for information only and do not form part of the DGRs for the EA.

If you have any queries regarding these requirements, please contact Nicola Hoare on 9228 6484 or email necola.hoare@planning.nsw.gov.au.

Yours sincerely



Chris Wilson
**Executive Director,
Major Project Assessments**
as delegate for the Director General

16.5.08

DATE 16TH PLEASE

Attachment 1 Director-General's Environmental Assessment Requirements

Section 75F of the *Environmental Planning and Assessment Act 1979*

Application number
MP08_0014
Project
71 lot residential subdivision
Location
corner of Chifley and Morisset Park Rds, Morisset Park
Proponent
De Witt Consulting Pty Ltd
Date issued
15 May 2008
General requirements
<p>The Environmental Assessment (EA) for the Project Application must include:</p> <ol style="list-style-type: none"> 1. An executive summary; 2. An outline of the scope of the project including: <ul style="list-style-type: none"> • any development options; • justification for the project taking into consideration any environmental impacts of the project, the suitability of the site and whether the project is in the public interest; • outline of the staged implementation of the project if applicable; 3. A thorough site analysis including constraints mapping and description of the existing environment; 4. Consideration of any relevant statutory and non-statutory provisions and identification of any non-compliances with such provisions, in particular relevant provisions arising from environmental planning instruments, Regional Strategies (including draft Regional Strategies) and Development Control Plans. 5. Consideration of the consistency of the project with the objects of the <i>Environmental Planning and Assessment Act 1979</i>. 6. Consideration of impacts, if any, on matters of National Environmental Significance under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>; 7. An assessment of the potential impacts of the project and a draft Statement of Commitments, outlining environmental management, mitigation and monitoring measures to be implemented to minimise any potential impacts of the project; 8. The plans and documents outlined in Attachment 2; 9. A signed statement from the author of the Environmental Assessment certifying that the information contained in the report is neither false nor misleading; 10. A Quantity Surveyor's Certificate of Cost to verify the capital investment value of the project; and 11. An assessment of the key issues specified below and a table outlining how these key issues have been addressed.

Key Issues	
The EA must address the following key issues:	
1. Strategic Planning	
1.1	Justify the proposal with reference to relevant local, regional and State planning strategies. Provide justification for any inconsistencies with these planning strategies.
2. Subdivision Design, Layout and Desired Future Character	
2.1	Demonstrate the consistency of the proposal with the character of existing development in terms of the locality, street frontage, scale, building envelopes and future built form controls, aesthetics, energy and water efficiency and safety.
2.2	Demonstrate the consistency of the proposed subdivision design and layout with the <i>Coastal Design Guidelines for NSW</i> , <i>NSW Coastal Policy 1997</i> and <i>SEPP 71 – Coastal Protection</i> .
2.3	Identify the type of subdivision proposed across the site ie. Community, Torrens, strata.
2.4	Provide details of potential building envelope, built form and design quality controls and the means for implementing them.
2.5	Provide details of any staging that demonstrates the lots will be released in an orderly and coordinated manner.
2.6	Outline the long-term management and maintenance of any areas of open space or conservation including ownership and control, management and maintenance funding, public access, revegetation and rehabilitation works and bushfire management.
3. Visual Impact	
3.1	Address the visual impact of the proposal in the context of surrounding development and relevant mitigation measures. In particular address impacts on the amenity of the overshadowing of public reserves, loss of views from public places and cumulative impacts.
4. Infrastructure Provision	
4.1	Address existing capacity and requirements of the development for sewerage, water, electricity, waste disposal, telecommunications and gas in consultation with relevant agencies. Identify and describe staging, if any, of infrastructure works.
4.2	Address and provide the likely scope of a planning agreement and/or developer contributions with Council/ Government agencies.
5. Traffic and Access	
5.1	Prepare a traffic impact study in accordance with Table 2.1 of the RTA's Guide to Traffic Generating Developments which addresses, but is not limited to the following matters: <ul style="list-style-type: none"> • The capacity of the road network to safely and efficiently cater for the additional traffic generated; • Access to and within the site; • Servicing and parking arrangements; • Intersection site distances; • Connectivity to existing developments; • Impact on public transport (including school bus routes); • Provision of access for pedestrians and cyclists to, through and within the site; and • Identify suitable mitigation measures, if required to ensure the efficient functioning of the road network.
6. Hazard Management and Mitigation	
<i>Contamination</i>	
6.1	Identify any contamination on site and appropriate mitigation measures in accordance with the

	provisions of SEPP 55 – Remediation of Land.
<i>Acid Sulfate Soils</i>	
6.2	Identify the presence and extent of acid sulfate soils on the site and, where relevant, appropriate mitigation measures.
<i>Bushfire</i>	
6.3	Address the requirements of Planning for Bush Fire Protection 2006 (RFS).
<i>Geotechnical</i>	
6.4	Provide an assessment of any geotechnical limitations that may occur on the site and if necessary, appropriate design considerations that address these limitations.
<i>Flooding</i>	
6.5	Provide an assessment of any flood risk on site in consideration of any relevant provisions of the NSW Floodplain Development Manual (2005) including the potential effects of sea level rise and an increase in rainfall intensity.
6.6	Consider the potential impacts of any filling on the flood regime of the site and adjacent lands.
7. Water Cycle Management	
7.1	Address and outline measures for Integrated Water Cycle Management (including stormwater) based on Water Sensitive Urban Design principles which addresses impacts on the surrounding environment, drainage and water quality controls for the catchment, and erosion and sedimentation controls at construction and operational stages.
7.2	Assess the impacts of the proposal on surface and groundwater hydrology and quality during both construction and occupation of the site.
8. Heritage and Archaeology	
8.1	Identify whether the site has significance to Aboriginal cultural heritage and identify appropriate measures to preserve any significance (Aboriginal community consultation should be undertaken in accordance with DEC's <i>Interim Community Consultation Requirements for Applicants</i>).
8.2	Identify any items of European heritage significance and, where relevant, provide measures for the conservation of such items.
9. Flora and Fauna	
9.1	Outline potential impacts on aquatic and terrestrial flora and fauna and their habitats (within the meaning of the <i>Threatened Species Conservation Act 1995</i> and the <i>Fisheries Management Act 1994</i>). Provide measures for their conservation, where relevant.
9.2	Outline measures for the conservation of existing wildlife corridor values and/or connective importance of any vegetation on the subject land.
9.3	Address measures to protect and manage the riparian corridor and adjacent aquatic habitats.
10. Noise	
10.1	Address potential noise impacts, in particular road traffic noise, for future residents and appropriate mitigation measures.
11. Mine Subsidence	
11.1	Any building on the property must comply with AS2870.
11.2	Notification to the Mine Subsidence Board to any changes to the lot numbering and the registered DP number.
Consultation	
You should undertake an appropriate and justified level of consultation with the following agencies during the preparation of the environmental assessment:	

(a) *Agencies or other authorities:*

- Lake Macquarie City Council;
- Department of Environment and Climate Change;
- Department of Primary Industries;
- NSW Rural Fire Service;
- Department of Water and Energy;
- Roads and Traffic Authority;
- Department of Lands;
- NSW Police Service;
- State Emergency Service;
- Local Aboriginal Land Council/s and other Aboriginal community groups; and
- Infrastructure providers.

(b) *Public:*

Document all community consultation undertaken to date or discuss the proposed strategy for undertaking community consultation. This should include any contingencies for addressing any issues arising from the community consultation and an effective communications strategy.

The consultation process and the issues raised should be described in the Environmental Assessment.

Deemed Refusal Period

60 days

Attachment 2

Plans and Documents to accompany the Application

<p>Plans and Documents of the development</p>	<p>The following plans, architectural drawings and diagrams of your proposal as well as the relevant documents will be required to be submitted for your application:</p> <ol style="list-style-type: none"> 1. The existing site survey plan is to be drawn to 1:500 scale (or other appropriate scale) and show: <ul style="list-style-type: none"> • the location of the land, the measurements of the boundaries of the land, the size of the land and north point; • the existing levels of the land in relation to buildings and roads; • location and height of existing structures on the site; and • location and height of adjacent buildings and private open space. 2. An aerial photograph of the subject site with the site boundary superimposed. 3. A Site Analysis Plan must be provided which identifies existing natural elements of the site (including all hazards and constraints), existing vegetation, property dimensions, footpath crossing levels and alignments, existing pedestrian and vehicular access points and other facilities, slope and topography, natural features such as watercourses, rock outcrops, utility services, boundaries, orientation, view corridors and all structures on neighbouring properties where relevant to the application (including windows, driveways etc.). 4. A locality/context plan drawn to 1:500 scale (or other appropriate scale) should be submitted indicating: <ul style="list-style-type: none"> • significant local features such as parks, community facilities and open space, water courses and heritage items; • the location and uses of existing buildings, shopping and employment areas; • traffic and road patterns, pedestrian routes and public transport nodes; and • The existing site plan and locality plan should be supported by a written explanation of the local and site constraints and opportunities revealed through the above documentation. 5. Subdivision plans are to show the following:- <ul style="list-style-type: none"> • The location, boundary dimensions, site area and north point of the land, and names of roads fronting the land; • Title showing the description of the land with lot and DP numbers etc; • Existing and proposed subdivision pattern including all measurements and sites areas of existing and proposed allotments; • Location and details of all proposed roads and footpaths; • Location of all structures proposed and retained on site; • Cross sections of roads, including gradients, widths, road names, footpaths etc. • Existing and proposed finished levels in relation to roads, footpaths and structures; • Location and details of access points to the subdivision; • Existing vegetation on the land and vegetation to be retained; • Location of services and infrastructure, and proposed methods of draining the land; • Any easements, covenants or other restrictions either existing or proposed on the site;
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	<ul style="list-style-type: none"> • Type of subdivision proposed (Torrens, strata and/or community title). <ol style="list-style-type: none"> 6. Stormwater Concept Plan - illustrating the concept for stormwater management from the site and must include details of any major overland flow paths through the site and any discharge points to the street drainage system. Where an on-site detention system is required, the type and location must be shown and must be integrated with the proposed landscape design. Site discharge calculations should be provided; 7. Erosion and Sediment Control Plan – plan or drawing that shows the nature and location of all erosion and sedimentation control measures to be utilised on the site; 8. Landscape Concept Plan – plan or drawing that shows the basic detail of planting design and plant species to be used, listing botanical and common names, mature height and spread, number of plants to be utilised and surface treatments (i.e. pavers, lawn etc); 9. Construction Management Plan – a plan which outlines traffic and pedestrian management during construction and management of impacts on amenity of adjoining properties and appropriate mitigation measures including noise, dust and sediment and erosion controls; 10. View analysis – artist’s impression, photomontages, etc of the proposed development in the context of the surrounding development.
Specialist advice	<p>Specialist advice, where required to support your Environmental Assessment, must be prepared by suitably qualified and practising consultants in relation to issues including, but not limited to, the following:</p> <ul style="list-style-type: none"> • Flora and Fauna; • Bushfire; • Landscaping; • Geotechnical and/or hydro geological (groundwater); • Stormwater/drainage; • Urban Design/Architectural; • Contamination in accordance with the requirements of SEPP 55; and • Acid Sulphate Soil Management Plan.
Documents to be submitted	<ul style="list-style-type: none"> • Hard copies of the Environmental Assessment, number to be advised; • Architectural and landscape plans to scale, including one (1) set at A3 size (to scale) number to be advised; • 1 copy of the Environmental Assessment and plans on CD-ROM (PDF format), not exceeding 5Mb in size (see below); and • If the Environmental Assessment is bulky and lengthy in volume, you will be required to package up each Environmental Assessment ready for distribution by the Department to key agencies.
Electronic Documents	<p>Electronic documents presented to the NSW Department of Planning for publication via the Internet must satisfy the following criteria:-</p> <ul style="list-style-type: none"> ▪ All files must be no bigger than 5 Mb. ▪ Large files of more than 5 Mb will need to be broken down and supplied as different files. <p>Alternatively, these electronic documents may be placed on your own web site with a link to the Department of Planning’s website.</p>

Attachment 3

State Government technical and policy guidelines

The following list provides relevant technical and Policy Guidelines which may assist in the preparation of the Environmental Assessment. It should be noted, however, that this list is not exhaustive as other documents and policies may need to be reviewed. It is also important to note that not of all of these guidelines may be relevant to your proposal.

The majority of these documents can be found on the relevant Departmental Websites, on the NSW Government's on-line bookshop at <http://www.bookshop.nsw.gov.au> or on the Commonwealth Government's publications website at <http://www.publications.gov.au>.

Aspect	Policy /Methodology
Biodiversity	
Flora and Fauna	Draft Guideline for assessment of impacts on Threatened Species under Part 3A (Department of Planning 2005)
Fish and Aquatic Ecosystems	Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries, 2003)
	Threatened Species Management Manual (NPWS, 1998)
Coastal Planning	
	NSW Coastal Policy 1997 - A sustainable Future for the New South Wales Coast, NSW Government, 1997
	Coastal Design Guidelines for NSW, PlanningNSW, February 2003
	NSW Wetlands Management Policy (DLWC, March 1996)
Bushfire	
	Planning for Bushfire Protection 2006 (NSW Rural Fire Service)
Contamination of Land	
	Best Practice in Contaminated Sites (Commonwealth DEH, 1999, ISBN 0 642 546460)
Environmental Management Systems	
	NSW Government Interim Water Quality and River Flow Environmental Objectives (DEC)
	Guidelines for the preparation of Environmental Management Plans (DIPNR, 2004)
Heritage	
Aboriginal	Draft Guideline for assessment of impacts on Aboriginal Heritage under Part 3A (Planning 2005)
	Interim Community Consultation Requirements for Applicants (DEC, 2004)
Non-Indigenous	Assessing Heritage Significance Update for Heritage Manual (Heritage Office, 2000)
	NSW Heritage Manual (NSW Heritage Office, 1996)
Mine Subsidence Board	
	Graduated Guidelines for Residential Construction
Noise	
	Environmental Criteria for Road Traffic Noise (EPA, 1999)
	Acoustics - Road traffic noise intrusion - Building siting and construction (Standards Australia, 1989, AS 3671-1989)
Rehabilitation	

Aspect	Policy /Methodology
	Managing Urban Stormwater: Soils & Construction (NSW Landcom, March 2004) - "The Blue Book"
Safety and Hazards	Electrical Safety Guidelines (Integral Energy)
Soils	Acid Sulfate Soil Manual (ASSMAC) Contaminated Sites: Sampling Design Guidelines (EPA, 1999)
Traffic & Transport	Guide to Traffic Engineering and Guide to Geometric Design of Rural Roads (Austroads, 2003, AP-G1/03) Guide to Traffic Generating Developments (RTA, 2002)
Urban Design: Cycleway/Pathway Design	Guidelines for the Design and Construction of Paths and Cycleways along Watercourses and Riparian Areas (Version 2) (DIPNR/DNR)
Water	Water quality guidelines for the protection of aquatic ecosystems for upland rivers. (ANZECC, 2000)
Floodplain	NSW Government Floodplain Development Manual - the Management of Flood Liable Land (DIPNR, 2005) Practical Consideration of Climate Change – Floodplain Risk Management Guideline (DECC, October 2007)
Groundwater	NSW State Groundwater Quality Protection Policy (DLWC, 1998, 0 7313 0379 2)
Stormwater	Managing Urban Stormwater: Soils & Construction (NSW Landcom, March 2004) - "The Blue Book"
Waterways	Waterways Crossing Design & Construction (Version 4 – DIPNR/DNR Draft Guidelines)

Attachment 4
Agency Responses to Request for Key Issues
- For Information Only

APPENDIX B Flora Species List

The following list includes all species of vascular plants observed on site during fieldwork. It should be noted that such a list cannot be considered comprehensive, but rather indicative of the flora present on the site. It can take many years of flora surveys to record all of the plant species occurring within any area, especially plant species that are only apparent in some seasons such as Orchids.

A number of species cannot always be accurately identified during a brief survey, generally due to a lack of suitable flowering and/or fruiting material. Any such species are identified as accurately as possible, and are indicated in the list thus:

- Specimens which could only be identified to genus level are indicated by the generic name followed by the abbreviation “sp.”, indicating an unidentified species of that genus;
- Specimens for which identification of the genus was uncertain are indicated by a question mark (“?”) placed in front of the generic, which is followed by the abbreviation “sp.” and;
- Specimens which could be accurately identified to genus level, but could be identified to species level with only a degree of certainty are indicated by a (“?”) placed in front of the epithet.

Authorities for the scientific names are not provided in the list. These follow the references outlined below.

Harden, G. (ed) (2000). *Flora of New South Wales, Volume 1*. Revised edition. New South Wales University Press, NSW.

Harden, G. (ed) (2002). *Flora of New South Wales, Volume 2*. Revised edition. New South Wales University Press, NSW.

Harden, G. (ed) (1992). *Flora of New South Wales, Volume 3*. New South Wales University Press, NSW.

Harden, G. (ed) (1993). *Flora of New South Wales, Volume 4*. New South Wales University Press, NSW.

Names of families and higher taxa follow a modified Cronquist System (1981).

Introduced species are indicated by an asterisk “*”.

Native species that are not considered native to the locality and are likely to have been planted deliberately or have escaped into native bushland are indicated by the symbol “♣”.

Threatened species listed under the TSC Act 1995 or the EPBC Act 1999 and / or ROTAP-listed species are indicated in **bold font**.

The following standard abbreviations are used to indicate subspecific taxa:

subsp. -subspecies

var.- variety

× - hybrid between the two indicated species

CLASS FILICOPSIDA (Ferns)	
DENNSTAEDTIACEAE	
<i>Pteridium esculentum</i>	Bracken Fern
PINACEAE	
* <i>Pinus elliottii</i>	Slash Pine
CLASS MAGNOLIOPSIDA (Flowering Plants)	
Sub-class Magnoliidae (Dicotyledons)	
ASTERACEAE	
* <i>Ageratina adenophora</i>	Crofton Weed
* <i>Bidens pilosa</i>	Cobbler's Pegs
<i>Chrysocephalum apiculatum</i>	Yellow Buttons
* <i>Conyza</i> sp.	
* <i>Coreopsis lanceolata</i>	
* <i>Hypochoeris radicata</i>	Cat's Ear
* <i>Hypochoeris glabra</i>	Smooth Cat's Ear
<i>Lagenifera stipitata</i>	
* <i>Senecio madagascariensis</i>	Fireweed
* <i>Soliva sessilis</i>	Bindii
* <i>Taraxacum officinale</i>	Dandelion
PITTOSPORACEAE	
<i>Billardiera scandens sub sp scandens</i>	Apple Berry
CARYOPHYLLACEAE	
* <i>Cerastium holosteoides</i>	Mouse-ear Chickweed
CASUARINACEAE	
<i>Allocasuarina littoralis</i>	Black She Oak
DICHONDRA	
<i>Dichondra repens</i>	Kidney Weed
FABACEAE	
<i>Bossiaea stephensonii</i>	
<i>Daviesia ulicifolia</i>	Gorse Bitter-pea
<i>Desmodium rhytidophyllum</i>	
<i>Glycine</i> sp.	
<i>Glycine microphylla</i>	Love Creeper
<i>Hardenbergia violacea</i>	False Sarsaparillae
<i>Hovea linearis</i>	
<i>Mirbelia rubifolia</i>	
<i>Pultanea</i> sp.	
* <i>Trifolium repens</i>	White Clover
MIMOSACEAE	
<i>Acacia binervata</i>	Two-veined Hickory
<i>Acacia</i> sp.	

MYRTACEAE	
<i>Angophora costata</i>	Smooth-barked Apple
<i>Corymbia gummifera</i>	Red Bloodwood
<i>Eucalyptus haemastoma</i>	Scribbly Gum
<i>Eucalyptus piperata</i>	Sydney Peppermint
<i>Syncarpia glomulifera</i>	Turpentine
OXALIDACEAE	
* <i>Oxalis corniculata</i>	Yellow Wood-sorrel
* <i>Oxalis latifolia</i>	Pink Shamrock
PROTEACEAE	
♣ <i>Grevillea robusta</i>	Silky Oak
<i>Persoonia levis</i>	Smooth Geebung
ROSACEAE	
* <i>Cotoneaster salicifolius</i>	Willow-leaved Cotoneaster
RUBIACEAE	
* <i>Richardia brasiliensis</i>	Mexican Clover
STYLIDIACEAE	
<i>Stylidium graminifolium</i>	Trigger Plant
THYMELAEACEAE	
<i>Pimelea linifolia</i> ssp. <i>linifolia</i>	Slender Rice Flower
VERBENACEAE	
* <i>Lantana camara</i>	Lantana
Sub-class Liliidae (Monocotyledons)	
COMMELINACEAE	
<i>Commelina cyanea</i>	Creeping Christian
* <i>Tradescantia albiflora</i>	Wandering Jew
CYPERACEAE	
<i>Carex appressa</i>	Tall Sedge
<i>Cyperus brevifolius</i>	Mullumbimby Couch
<i>Cyperus</i> sp.	
LOMANDRACEAE	
<i>Lomandra glauca</i>	
<i>Lomandra</i> sp.	
ORCHIDACEAE	
<i>Acianthus fornicatus</i>	Pixie Orchid
<i>Arthrochilus prolixus</i>	Orchid
<i>Cryptostylis erecta</i>	Hooded Orchid
<i>Cryptostylis subulate</i>	large Tongue Orchid

<i>Dipodium variegatum</i>	Hyacinth Orchid
PHORMIACEAE	
<i>Dianella caerulea</i>	Blue Flax Lily
POACEAE	
<i>Axonopus affinis</i>	Narrowleaf Carpet Grass
<i>Cynodon dactylon</i>	Common Couch
<i>Echinopogon caespitosus</i> var. <i>caespitosus</i>	Tufted Hedgehog Grass
<i>Entolasia stricta</i>	Wiry Panic
<i>Eragrostis brownii</i>	Brown's Love Grass
<i>Imperata cylindrica</i> var. <i>major</i>	Blady Grass
<i>Oplismenus aemulus</i>	Basket Grass
<i>Panicum simile</i>	Two Colour Panic
* <i>Paspalum dilatatum</i>	Paspalum
* <i>Pennisetum clandestinum</i>	Kikuyu
<i>Themeda australis</i>	Kangaroo Grass
XANTHORRHOEACEAE	
<i>Xanthorrhoea</i> sp.	Grass Tree

APPENDIX C Flora Plot and Transect Data

The following data were recorded during the initial survey in May 2003. Two vegetation transects (length 150m) and two vegetation plots (20mX20m) were undertaken in the Modified Eucalypt Open Forest to provide additional data on the vegetation associations present. One transect and one plot were conducted in the northern and southern parts of this vegetation community.

Species identified via these methods are indicated in the following tables and lists.

Plot 1 – (P1)

Location	Within the southern section of the site.
Vegetation	Modified Eucalypt Open Forest
Slope	Less than 5-10 degrees
Aspect	North
Soil Type	Sandy Clay Loam
Structural Components	Upper strata – 15-20m, 30-40% cover Understorey – none Shrub Layer – None Ground Cover - <50cm, 70% cover
Dominant Species	Upper Strata: <i>Eucalyptus haemastoma</i> , <i>Angophora costata</i> . Understorey: None Shrub Layer: None Groundcover: <i>Cyperus</i> sp., <i>Dichondra repens</i> , <i>Oplismenus aemulus</i> , <i>Hypochaeris radicata</i> <i>H. glabra</i> and <i>Acacia</i> sp.
Comments	Highly disturbed vegetation, no understorey and shrub cover, generally trees with lawn underneath.

Plot 2 – (P2)

Location	In the western section of the site
Vegetation	Eucalypt Open Forest
Slope	Negligible
Aspect	N/A
Soil Type	Sandy Clay Loams
Structural Components	Upper strata – 10-15m, 40- 50% cover Understorey – Nil Shrub Layer – 2m, <15% cover Ground Cover – 0-100cm, 65% cover
Dominant Species	Upper Strata: <i>Eucalyptus haemastoma</i> , <i>Angophora costata</i> Understorey: N/A Shrub Layer: <i>Allocasuarina littoralis</i> , <i>Acacia</i> sp., <i>Bidens pilosa</i> , <i>Paspalum dilatatum</i> Groundcover: <i>Cyperus</i> sp., <i>Dichondra repens</i> , <i>Oplismenus aemulus</i> , <i>Hypochaeris radicata</i> , <i>H. glabra</i> .
Comments	Highly disturbed remnant forest has been cleared in the past. Regenerating <i>Allocasuarina torulosa</i> .

Transect 1 – (T1)

Length	150m
Location	Within the southern section of the site
Vegetation	Modified Eucalypt Open Forest
Aspect	N/A
Slope	5-10 degrees
Soil Type	Sandy Clay Loams
Species	<i>Angophora costata</i> <i>Lomandra</i> sp. <i>Hypochaeris radicata</i> <i>Acacia</i> sp. <i>Eucalyptus haemastoma</i> <i>Themeda australis</i> <i>Allocasuarina torulosa</i> <i>Corymbia gummifera</i> <i>Pteridium esculentum</i> <i>Hibbertia scandens</i> <i>Dichondra repens</i>

APPENDIX D Expected Fauna Species List

Below is a list of fauna species that could be *reasonably* expected to be found within the site at some occurrence. Such an approach has been taken given the unlikelihood to record *all* potentially occurring species within an area during formal fauna surveys (due to seasonality, climatic limitations, crypticism etc).

Family sequencing and taxonomy follow for each fauna class:

Birds – Christidis and Boles (1994).

Herpetofauna - Cogger (1996).

Mammals - Strahan (ed) (1995) and Churchill (1998).

✓ - Species observed or indicated by scats, tracks etc. on site during this investigation.

* - Indicates an introduced species

Known and Expected Bird List

Appendix Key: ✓ = Species Detected
 * = introduced species
 (C) = listed as CAMBA species
 (J) = listed as JAMBA species
 (E) = listed as Endangered in NSW.
 (V) = listed as Vulnerable in NSW.
 (EV) = Species listed under the Commonwealth EPBC Act as Vulnerable
 (EE) = Species listed under the Commonwealth EPBC Act as Endangered
 (EM) = Species listed under the Commonwealth EPBC Act as Migratory
 (EMa) = Species listed under the Commonwealth EPBC Act as Marine
 Species indicated in **BOLD** font are those threatened species known from within 10km of site (Atlas of NSW Wildlife data)

Data Source: 1 = Species recorded during.

Family Name	Scientific Name	Common Name	1
Phasianidae (True Quails, Pheasants and Fowls)	<i>Coturnix ypsilophora</i>	Brown Quail	
Anatidae (Swans, Geese and Ducks)	<i>Chenonetta jubata</i>	Australian Wood Duck (EM)	✓
	<i>Cygnus atratus</i>	Black Swan	✓
Anhingidae (Darters)	<i>Anhinga melanogaster</i>	Darter	
Phalacrocoracidae (Cormorants)	<i>Phalacrocorax carbo</i>	Great Cormorant	
	<i>Phalacrocorax melanoleucos</i>	Little Pied Cormorant	
	<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant	
	<i>Phalacrocorax varius</i>	Pied Cormorant	
Pelecanide (Pelicans)	<i>Pelecanus conspicillatus</i>	Australian Pelican (EMa)	
Ardeidae (Hérons, Bitterns and Egrets)	<i>Ardea alba</i>	Great Egret (C,J, EM, EMa)	
	<i>Ardea ibis</i>	Cattle Egret (C,J, EM, EMa)	

Family Name	Scientific Name	Common Name	1
	<i>Ardea intermedia</i>	Intermediate Egret (EMa)	
	<i>Ardea pacifica</i>	White-necked Heron	
	<i>Egretta garzetta</i>	Little Egret	
	<i>Egretta novaehollandiae</i>	White-faced Heron	
	<i>Nycticorax caledonicus</i>	Nankeen Night Heron (EMa)	
Threskiornithidae (Ibises and Spoonbills)	<i>Platalea flavipes</i>	Yellow-billed Spoonbill	
	<i>Platalea regia</i>	Royal Spoonbill	
	<i>Threskiornis molucca</i>	Australian White Ibis (EMa)	✓
	<i>Threskiornis spinicollis</i>	Straw-necked Ibis (EMa)	
Accipitridae (Hawks, Kites and Eagles)	<i>Accipiter fasciatus</i>	Brown Goshawk (EM, EMa)	
	<i>Accipiter cirrhocephalus</i>	Collared Sparrowhawk (EM)	
	<i>Accipiter novaehollandiae</i>	Grey Goshawk (EM)	
	<i>Aquila audax</i>	Wedge-tailed Eagle (EM, EMa)	
	<i>Aviceda subcristata</i>	Pacific Baza (EM)	
	<i>Circus approximans</i>	Swamp Harrier (EM, EMa)	
	<i>Elanus axillaris</i>	Black-shouldered Kite (EM)	
	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle (C, EM, EMa)	
	<i>Haliastur sphenurus</i>	Whistling Kite (EM, EMa)	
	<i>Hieraaetus morphnoides</i>	Little Eagle (EM)	
	<i>Pandion haliaetus</i>	Osprey (V, EMa)	
Falconidae (Falcons)	<i>Falco berigora</i>	Brown Falcon (EM)	
	<i>Falco cenchroides</i>	Nankeen Kestrel (EM, EMa)	
	<i>Falco longipennis</i>	Australian Hobby (EM)	
	<i>Falco peregrinus</i>	Peregrine Falcon (EM)	
	<i>Falco subniger</i>	Black Falcon	
Rallidae (Crakes, Rails and Gallinules)	<i>Gallinula philippensis</i>	Buff-banded Rail (EMa)	
Turnicidae (Button-Quails)	<i>Turnix varia</i>	Painted Button-quail	
Rostratulidae (Painted Snipe)	<i>Rostratula benghalensis</i>	Painted Snipe (EM, V, EMa)	
Charadriidae (Lapwings, Plovers, Dotterels)	<i>Vanellus miles</i>	Masked Lapwing (EM)	✓
	<i>Erythronyx cinctus</i>	Red-kneed Dotterel (EM)	
	<i>Elsyornis melanops</i>	Black-fronted Dotterel (EM)	
Laridae (Gulls and Terns)	<i>Chlidonias hybrida</i>	Whiskered Tern (EMa)	
	<i>Sterna bergii</i>	Crested Tern	
	<i>Larus novaehollandiae</i>	Silver Gull (EMa)	
Columbidae (Pigeons and Doves)	<i>Columba livia</i>	Rock Dove #	
	<i>Chalcophaps indica</i>	Emerald Dove	
	<i>Columba leucomela</i>	White-headed Pigeon	
	<i>Geopelia humeralis</i>	Bar-shouldered Dove	
	<i>Geopelia striata</i>	Peaceful Dove	
	<i>Leucosarcia melanoleuca</i>	Wonga Pigeon	
	<i>Macropygia amboinensis</i>	Brown Cuckoo-Dove	
	<i>Ocyphaps lophotes</i>	Crested Pigeon	
	<i>Phaps chalcoptera</i>	Common Bronzewing	

Family Name	Scientific Name	Common Name	1
	<i>Streptopelia chinensis</i>	Spotted Turtle-Dove #	✓
	<i>Lopholaimus antarcticus</i>	Topknot Pigeon	
Cacatuidae (Cockatoos)	<i>Calyptrohynchus funereus</i>	Yellow-tailed Black-Cockatoo	
	<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo (V)	✓
	<i>Cacatua roseicapilla</i>	Galah	✓
	<i>Cacatua tenuirostris</i>	Long-billed Corella	
	<i>Cacatua sanguinea</i>	Little Corella	✓
	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	✓
	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	
Psittacidae (Parrots)	<i>Alisterus scapularis</i>	Australian King Parrot	
	<i>Glossopsitta pusilla</i>	Little Lorikeet	
	<i>Lathamus discolor</i>	Swift Parrot (E, EE, EMa)	
	<i>Platycercus elegans</i>	Crimson Rosella	
	<i>Platycercus eximius</i>	Eastern Rosella	
	<i>Trichoglossus chlorolepidotus</i>	Scaly-breasted Lorikeet	
	<i>Psephotus haematonotus</i>	Red-rumped parrot	✓
	<i>Trichoglossus concina</i>	Musk Lorikeet	
	<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	✓
Cuculidae (Old World Cuckoos)	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo (EMa)	
	<i>Cacomantis variolosus</i>	Brush Cuckoo	
	<i>Chrysococcyx basalis</i>	Horsfield's Bronze-Cuckoo (EMa)	✓
	<i>Chrysococcyx lucidus</i>	Shining Bronze-Cuckoo (EMa)	
	<i>Cuculus pallidus</i>	Pallid Cuckoo (EMa)	
	<i>Eudynamys scolopacea</i>	Common Koel (EMa)	✓
	<i>Scythrops novaehollandiae</i>	Channel-billed Cuckoo (EMa)	✓
Centropodidae (Coucals)	<i>Centropus phasianinus</i>	Pheasant Coucal	
Strigidae (Hawk Owls)	<i>Ninox strenua</i>	Powerful Owl (V)	
	<i>Ninox connivens</i>	Barking Owl (V)	
	<i>Ninox boobook</i>	Southern Boobook (EMa)	
Tytonidae (Barn Owls)	<i>Tyto alba</i>	Barn Owl	
	<i>Tyto novaehollandiae</i>	Masked Owl (V)	
Podargidae (Frogmouths)	<i>Podargus strigoides</i>	Tawny Frogmouth	✓
Caprimulgidae (Nightjars)	<i>Eurostopodus mystacalis</i>	White-throated Nightjar (EMa)	
Aegothelidae (Owlet-nightjars)	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	
Apodidae (Typical Swifts)	<i>Hirundapus caudacutus</i>	White-throated Needletail (C,J, EM)	
	<i>Apus pacificus</i>	Fork-tailed Swift (C,J, EM)	
Alcedinidae (True Kingfishers)	<i>Alcedo azurea</i>	Azure Kingfisher	
Halcyonidae (Kingfishers and Kookaburras)	<i>Dacelo novaeguineae</i>	Laughing Kookaburra	✓
	<i>Todiramphus sanctus</i>	Sacred Kingfisher (EMa)	

Family Name	Scientific Name	Common Name	1
Meropidae (Bee-eaters)	<i>Merops ornatus</i>	Rainbow Bee-eater (J, ,EM, EMa)	
Coraciidae (Typical Rollers)	<i>Eurystomus orientalis</i>	Dollarbird (EMa)	✓
Climacteridae (Australo-Papuan Trecreepers)	<i>Cormobates leucophaeus</i>	White-throated Trecreeper	
Maluridae (Fairy-Wrens and Emu- Wrens)	<i>Malurus cyaneus</i>	Superb Fairy-wren	
	<i>Malurus lamberti</i>	Variiegated Fairy-wren	
	<i>Stipiturus malachurus</i>	Southern Emu-wren	
Pardalotidae (Pardalotes, Scrubwrens, Thornbills)	<i>Pardalotus punctatus</i>	Spotted Pardalote	
	<i>Paradalotus striatus</i>	Striated Pardalote	
	<i>Sericornis frontalis</i>	White-browed Scrubwren	
	<i>Gerygone mouki</i>	Brown Gerygone	
	<i>Gerygone olivacea</i>	White-throated Gerygone	
	<i>Acanthiza pusilla</i>	Brown Thornbill	
	<i>Acanthiza reguloides</i>	Buff-rumped Thornbill	
	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	
	<i>Acanthiza nana</i>	Yellow Thornbill	
	<i>Acanthiza lineata</i>	Striated Thornbill	
	<i>Hylacola pyrrhopygia</i>	Chestnut-rumped Heathwren	
Meliphagidae (Honeyeaters)	<i>Anthochaera carunculata</i>	Red Wattlebird	
	<i>Plectrhynga lanceolata</i>	Striped Honeyeater	
	<i>Anthochaera chrysoptera</i>	Brush Wattlebird	
	<i>Philemon corniculatus</i>	Noisy Friarbird	
	<i>Xanthomyza phrygia</i>	Regent Honeyeater (E, EE, EM)	
	<i>Manorina melanophrys</i>	Bell Miner	
	<i>Manorina melanocephala</i>	Noisy Miner	✓
	<i>Meliphaga lewinii</i>	Lewin's Honeyeater	
	<i>Lichenostomus chrysops</i>	Yellow-faced Honeyeater	
	<i>Lichenostomus fuscus</i>	Fuscous Honeyeater	
	<i>Lichenostomus leucotis</i>	White-eared Honeyeater	
	<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	
	<i>Melithreptus lunatus</i>	White-naped Honeyeater	
	<i>Melithreptus gularis</i>	Black-chinned Honeyeater (V)	
	<i>Entomyzon cyanotis</i>	Blue-faced Honeyeater	
	<i>Lichmera indistincta</i>	Brown Honeyeater	
	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	
	<i>Phylidonyris nigra</i>	White-cheeked Honeyeater	✓
	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	
	<i>Myzomela sanguinolenta</i>	Scarlet Honeyeater	
Eopsaltriidae (Robins)	<i>Microeca fascinans</i>	Jacky Winter	
	<i>Petroica multicolor</i>	Scarlet Robin	
	<i>Petroica rosea</i>	Rose Robin	
	<i>Eopsaltria australis</i>	Eastern Yellow Robin	
Cinclosomidae (Quail-thrushes and allies)	<i>Psophodes olivaceus</i>	Eastern Whipbird	

Family Name	Scientific Name	Common Name	1
	<i>Cinclosoma punctatum</i>	Spotted Quail-thrush	
Neosittidae (Sittellas)	<i>Daphoenositta chrysoptera</i>	Varied Sittella	
Pachycephalidae (Whistlers, Shrike-tit, Shrike-thrushes)	<i>Falcunculus frontatus</i>	Crested Shrike-tit	
	<i>Pachycephala pectoralis</i>	Golden Whistler	
	<i>Pachycephala rufiventris</i>	Rufous Whistler	
	<i>Colluricincla harmonica</i>	Grey Shrike-thrush	
Dicruridae (Monarchs, Fantails and Drongo)	<i>Monarcha melanopsis</i>	Black-faced Monarch	
	<i>Myiagra cyanoleuca</i>	Satin Flycatcher	
	<i>Myiagra rubecula</i>	Leaden Flycatcher	
	<i>Myiagra inquieta</i>	Restless Flycatcher	
	<i>Grallina cyanoleuca</i>	Magpie-lark (EMa)	✓
	<i>Rhipidura rufifrons</i>	Rufous Fantail (EMa)	
	<i>Rhipidura fuliginosa</i>	Grey Fantail	
	<i>Rhipidura leucophrys</i>	Willie Wagtail	✓
	<i>Dicrurus bracteatus</i>	Spangled Drongo (EMa)	
Campephagidae (Cuckoo-shrikes and Trillers)	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike (EMa)	✓
	<i>Coracina papuensis</i>	White-bellied Cuckoo-shrike (EMa)	
	<i>Coracina tenuirostris</i>	Cicadabird (EM, (EMa)	
	<i>Lalage sueurii</i>	White-winged Triller	
Oriolidae (Orioles and Figbird)	<i>Oriolus sagittatus</i>	Olive-backed Oriole	
	<i>Sphecotheres viridis</i>	Figbird	
Artamidae (Woodswallows, Butcherbirds, Currawongs)	<i>Artamus leucorhynchus</i>	White-breasted Woodswallow	
	<i>Artamus cyanopterus</i>	Dusky Woodswallow	
	<i>Artamus personatus</i>	Masked Woodswallow	
	<i>Cracticus torquatus</i>	Grey Butcherbird	
	<i>Cracticus nigrogularis</i>	Pied Butcherbird	✓
	<i>Gymnorhina tibicen</i>	Australian Magpie	✓
	<i>Strepera graculina</i>	Pied Currawong	✓
Corvidae (Crows and allies)	<i>Corvus coronoides</i>	Australian Raven	✓
	<i>Corvus tasmanicus</i>	Forest Raven (EMa)	
Cororacidae (Mud-nesters)	<i>Corcorax melanorhamphos</i>	White-winged Chough	✓
Ptilinorhynchidae (Bowerbirds)	<i>Ptilinorhynchus violaceus</i>	Satin Bowerbird	
	<i>Sericulus chrysocephalus</i>	Regent Bowerbird	
Motacillidae (Old World Wagtails, Pipits)	<i>Anthus novaeseelandiae</i>	Richard's Pipit	
Passeridae (Sparrows, Weaverbirds, Waxbills)	<i>Passer domesticus</i>	House Sparrow #	
	<i>Taeniopygia bichenovii</i>	Double-barred Finch	
	<i>Neochmia temporalis</i>	Red-browed Finch	
	<i>Lonchura castaneothorax</i>	Chestnut-breasted Mannikin	

Family Name	Scientific Name	Common Name	1
Dicaeidae (Flowerpeckers)	<i>Dicaeum hirundinaceum</i>	Mistletoebird	
Hirundinidae (Swallows and Martins)	<i>Hirundo neoxena</i>	Welcome Swallow (EMa)	
	<i>Hirundo nigricans</i>	Tree Martin (EMa)	
	<i>Hirundo ariel</i>	Fairy Martin	
Sylviidae (Old World Warblers)	<i>Acrocephalus stentoreus</i>	Clamorous Reed Warbler	
	<i>Cincloramphus mathewsi</i>	Rufous Songlark	
	<i>Cisticola exilis</i>	Golden-headed Cisticola	
	<i>Megalurus gramineus</i>	Little Grassbird	
	<i>Megalurus timorensis</i>	Tawny Grassbird	
Zosteropidae (White-eyes)	<i>Zosterops lateralis lateralis</i>	Silvereye (EMa)	
	<i>Zosterops lateralis familiaris</i>	Silvereye (EMa)	
Muscicapidae (Thrushes)	<i>Zoothra lunulata</i>	Bassian Thrush	
	<i>Zoothra heinei</i>	Russet-tailed Thrush	
Sturnidae (Starlings and allies)	<i>Sturnus vulgaris</i>	Common Starling #	
	<i>Acridotheres tristis</i>	Common Myna #	✓

Known and Expected Mammal List

Appendix Key:

- ✓ = Species Detected
 - * = introduced species
 - (E) = listed as Endangered in NSW.
 - (V) = listed as Vulnerable in NSW.
 - (EV) = Species listed under the Commonwealth EPBC Act as Vulnerable
 - (EE) = Species listed under the Commonwealth EPBC Act as Endangered
- Species indicated in **BOLD** font are those threatened species known from within 10km of site (NPWS, 2003)

Data Source:

1 = Species recorded during this survey

Family Name	Scientific Name	Common Name	1
Tachyglossidae (Echidnas)	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	
Dasyuridae (Dasyurids)			
	<i>Antechinus stuartii</i>	Brown Antechinus	
	<i>Dasyurus maculatus</i>	Tiger Quoll (V, V*)	
	<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale (V)	
	<i>Planigale maculata</i>	Common Planigale (V)	
Peramelidae (Bandicoots and Bilbies)			
	<i>Isoodon macrourus</i>	Northern Brown Bandicoot	
	<i>Peremeles nasuta</i>	Long-nosed Bandicoot	
Phascolarctidae (Koala)	<i>Phascolarctos cinereus</i>	Koala (V)	
Vombatidae (Wombats)	<i>Vombatus ursinus</i>	Common Wombat	
Petauridae (Wrist-winged Gliders)			
	<i>Petaurus breviceps</i>	Sugar Glider	
	<i>Petaurus norfolcensis</i>	Squirrel Glider (V)	
Pseudocheiridae (Ringtail Possums, Greater Glider)	<i>Pseudocheirus peregrinus</i>	Common Ringtail Possum	✓
Acrobatidae (Feathertail Glider)	<i>Acrobates pygmaeus</i>	Feathertail Glider	
Phalangeridae (Brush-tail Possums and Cuscuses)	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	✓
Potoroidae (Potoroos and Bettongs)	<i>Potorous tridactylus</i>	Long-nosed Potoroo (V, V*)	
Macropodidae (Wallabies and Kangaroos)			✓
	<i>Macropus giganteus</i>	Eastern Grey Kangaroo	
	<i>Macropus rufogriseus</i>	Red-necked Wallaby	
	<i>Wallabia bicolor</i>	Swamp Wallaby	
	<i>Petrogale penicillata</i>	Brush-tailed Rock Wallaby (E, V*)	
Pteropodidae (Flying-foxes, Blossom-bats)	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox (V, EV)	
Rhinolophidae (Horseshoe-bats)	<i>Rhinolophus megaphyllus</i>	Eastern Horseshoe-bat	
Emballonuridae (Sheathtail-bats)	<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheathtail-bat (V)	
Molossidae (Freetail-bats)	<i>Mormopterus norfolkensis</i>	East Coast Freetail-bat (V)	✓

	<i>Mormopterus</i> sp.1	Little Freetail-bat	
	<i>Mormopterus</i> sp.2	Eastern Freetail-bat	✓
	<i>Tadarida australis</i>	White-striped Freetail-bat	
Vespertilionidae (Vespertilionid Bats)	<i>Miniopterus australis</i>	Little Bentwing-bat (V)	
	<i>Miniopterus schreibersii</i>	Common Bentwing-bat (V)	✓
	<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	
	<i>Nyctophilus gouldii</i>	Gould's Long-eared Bat	
	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat (V, EV)	
	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	✓
	<i>Chalinolobus morio</i>	Chocolate Wattled Bat	
	<i>Falsistrellus tasmaniensis</i>	Eastern Falsistrelle (V)	
	<i>Myotis adversus</i>	Large-footed Myotis (V)	
	<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat (V)	
	<i>Scotorepens greyii</i>	Little Broad-nosed Bat	
	<i>Scotorepens orion</i>	Eastern Broad-nosed Bat	
	<i>Vespadelus darlingtoni</i>	Large Forest Bat	
	<i>Vespadelus regulus</i>	Southern Forest Bat	
	<i>Vespadelus pumilus</i>	Eastern Forest Bat	
	<i>Vespadelus vulturinus</i>	Little Forest Bat	
Muridae (Murids)	<i>Mus musculus</i>	House Mouse*	✓
	<i>Rattus fuscipes</i>	Bush Rat	
	<i>Rattus lutreolus</i>	Swamp Rat	
	<i>Rattus norvegicus</i>	Brown Rat*	✓
Canidae (Dogs)	<i>Canis familiaris</i>	Dog *	✓
	<i>Vulpes vulpes</i>	Red Fox*	
Felidae (Cats)	<i>Felis catus</i>	Feral Cat*	
Leporidae (Rabbit and Hare)	<i>Oryctolagus cuniculus</i>	European Rabbit*	
	<i>Lepus capensis</i>	Brown Hare*	

Known and Expected Reptile List

- Appendix Key:** ✓ = Species Detected
 * = introduced species
(E) = listed as Endangered in NSW.
(V) = listed as Vulnerable in NSW.
(EV) = Species listed under the Commonwealth EPBC Act as Vulnerable
(EE) = Species listed under the Commonwealth EPBC Act as Endangered
(EMa) = Species listed under the Commonwealth EPBC Act as Marine
 Species indicated in **BOLD** font are those threatened species known from within 10km of site (NPWS, 2003)
- Data Source:** 1 = Species recorded during this survey

Family Name	Scientific Name	Common Name	1
Cheloniidae (Tortoises)	<i>Chelodina longicollis</i>	Long-necked Tortoise	
Agamidae (Dragons)	<i>Amphibolurus muricatus</i>	Jacky Lizard	
	<i>Pogona barbata</i>	Eastern Bearded Dragon	
Pygopodidae (Legless Lizards)	<i>Lialis burtonis</i>	Burton's Snake Lizard	
	<i>Pygopus lepidopus</i>	Common Scaly-foot	
	<i>Delma plebeia</i>	Leaden Delma	
Varanidae (Monitors)	<i>Varanus varius</i>	Lace Monitor	
Scincidae (Skinks)	<i>Cryptoblepharus virgatus</i>		
	<i>Ctenotus taeniolatus</i>	Copper-tailed Skink	
	<i>Ctenotus robustus</i>	Striped Skink	
	<i>Cyclodomorphus casuarinae</i>	She-oak Skink	
	<i>Egernia cunninghamii</i>	Cunningham's Skink	
	<i>Egernia major</i>	Land Mullet	
	<i>Egernia modesta</i>		
	<i>Egernia striolata</i>	Tree-crevice Skink	
	<i>Egernia saxatilis</i>	Black Rock Skink	
	<i>Egernia whitii</i>	White's Skink	
	<i>Eulamprus quoyii</i>	Eastern Water Skink	
	<i>Eulamprus tenuis</i>		
	<i>Lampropholis delicata</i>	Grass Skink	✓
	<i>Lampropholis guichenoti</i>	Garden Skink	
	<i>Lygisaurus foliorum</i>	Tree-base Litter-skink	
	<i>Morethia boulengeri</i>	South-eastern Morethia	
	<i>Pseudomoia platynota</i>	Red-throated Skink	
	<i>Saiphos equalis</i>		
	<i>Saproscincus mustelinus</i>	Weasel Skink	
	<i>Tiliqua scincoides</i>	Eastern Blue-tongued Lizard	✓
Typhlopidae (Blind Snakes)	<i>Ramphotyphlops bituberculatus</i>	Prong-snouted Blind Snake	
	<i>Ramphotyphlops weidii</i>	Brown-snouted Blind Snake	
	<i>Ramphotyphlops nigrescens</i>	Black Blind Snake	
Boidae (Pythons)	<i>Morelia spilota</i>	Diamond Python	
Colubridae (Tree Snakes)	<i>Boiga irregularis</i>	Brown Tree Snake	
	<i>Dendralaphis punctulata</i>	Green Tree Snake	
Elapidae (Venomous Snakes)	<i>Furina diadema</i>	Red-naped Snake	
	<i>Acanthopis antarcticus</i>	Death Adder	
	<i>Cacophis krefftii</i>	Dwarf Crowned Snake	
	<i>Cacophis squamulosus</i>	Golden Crowned Snake	
	<i>Demansia psammophis</i>	Yellow-faced Whip Snake	
	<i>Furina diadema</i>	Red-naped Snake	
	<i>Notechis scutatus</i>	Eastern Tiger Snake	
	<i>Pseudonaja textilis</i>	Eastern Brown Snake	
	<i>Rhinoplocephalus nigrescens</i>	Eastern Small-eyed Snake	
	<i>Vermicella annulata</i>	Bandy Bandy	
	<i>Hemiaspis signata</i>	Black-bellied Swamp Snake	
	<i>Pseudechis porphyriacus</i>	Red-bellied Black Snake	

Known and Expected Frog List

Appendix Key: ✓ = Species Detected
 * = introduced species
(E) = listed as Endangered in NSW.
(V) = listed as Vulnerable in NSW.
(EV) = Species listed under the Commonwealth EPBC Act as Vulnerable
(EE) = Species listed under the Commonwealth EPBC Act as Endangered
 Species indicated in **BOLD** font are those threatened species known from within 10km of site (NPWS, 2003)

Data Source: 1 = Species recorded during this survey

Family Name	Scientific Name	Common Name	1
Hylidae (Tree Frogs)	<i>Litoria aurea</i>	Green and Golden Bell Frog (E, EV)	
	<i>Litoria brevipalmata</i>	Green-thighed Frog (V)	
	<i>Litoria caerulea</i>	Green Tree Frog	
	<i>Litoria chloris</i>	Red-eyed Green Tree Frog	
	<i>Litoria dentata</i>	Bleating Tree Frog	
	<i>Litoria fallax</i>	Dwarf Green Tree Frog	✓
	<i>Litoria gracilentata</i>	Graceful Tree Frog	
	<i>Litoria latopalmata</i>	Broad-palmed Frog	
	<i>Litoria lesueuri</i>	Lesueur's Frog	
	<i>Litoria littlejohni</i>	Littlejohn's Tree Frog (V, EV)	
	<i>Litoris nasuta</i>	Rocket Frog	
	<i>Litoria peronii</i>	Peron's Tree Frog	✓
	<i>Litoria phyllochroa</i>	Green Leaf Tree Frog	
	<i>Litoria tyleri</i>	Tyler's Tree Frog	✓
	<i>Litoria verreauxii</i>	Verreaux's Frog	
Myobatrachidae (Ground Frogs)	<i>Adelotus brevis</i>	Tusked Frog	
	<i>Crinia signifera</i>	Common Eastern Froglet	✓
	<i>Crinia tinnula</i>	Wallum Froglet (V)	
	<i>Heleioporus australiacus</i>	Giant Burrowing Frog (V, EV)	
	<i>Limnodynastes dumerilli</i>	Eastern Banjo Frog	
	<i>Limnodynastes ornatus</i>	Ornate Burrowing Frog	
	<i>Limnodynastes peronii</i>	Striped Marsh Frog	
	<i>Limnodynastes tasmaniensis</i>	Spotted Grass Frog	
	<i>Mixophyes balbus</i>	Stuttering Frog (E1, EV)	
	<i>Mixophyes fasciolatus</i>	Great Barred Frog	
	<i>Mixophyes iteratus</i>	Giant Barred Frog (E1, EE)	
	<i>Pseudophryne australis</i>	Red-crowned Toadlet (V)	
	<i>Pseudophryne coriacea</i>	Red-backed Toadlet	
	<i>Pseudophryne bibronii</i>	Brown Toadlet	
	<i>Uperoleia fusca</i>	Dusky Toadlet	
<i>Uperoleia laevigata</i>	Smooth Toadlet		

APPENDIX E Site Layout Design

APPENDIX F Personnel Involved in the Project

Curriculum Vitae

Name:	John Whyte
Office:	RPS Harper Somers O'Sullivan
Position in Company:	Ecologist/ Botanist
Qualifications / Awards	B.Bio.Sc (Majors Botany & Zoology) NSW Driver's Licence (Class C) OH&S Induction Training (Green Card) NPWS Scientific Investigation Licence NSW Animal Ethics Research Authority
Memberships:	Frogs Australia Network Australian Reptile Society The Australian Mammalian Society

Areas of Expertise:

- Flora and fauna identification and habitat assessment
- Targeted threatened flora and fauna surveys
- Delineation and mapping of vegetation communities
- Endangered Ecological Community (EEC) assessment
- Threatened Flora Management Plans
- Ecological Monitoring and Reporting
- Vegetation and Bushland Management Plans
- Tree Assessment Reports
- Project Management and quote preparation
- Experience with GPS/GIS for project design and mapping
- Detailed understanding of environmental legislation

Project Experience Includes:

John has a broad range of Ecological Assessment reporting experience and ecological field experience. Experience within the consulting industry has primarily included a wide range of flora assessment disciplines as required by a wide range of public and private clients. John has a strong grounding in threatened flora species, endangered ecological communities and populations throughout NSW. John has designed and undertaken flora and fauna surveys including targeted surveys for threatened flora species within the Sydney, Blue Mountains, Hunter, Central Coast and Tablelands.

Curriculum Vitae

Name:	Toby Lambert
Office:	RPS Harper Somers O'Sullivan
Position in Company:	Senior Ecologist
Qualifications / Memberships:	Bachelor of Environmental Science Ecological Consultants Association of NSW NSW Driver's Licence (Class C) OH&S Induction Training (Green Card) NPWS Scientific Investigation Licence NSW Animal Ethics Research Authority

Areas of Expertise:

- Environmental and ecological impact assessment reporting
- Flora, fauna and habitat survey methodology design and management
- Detailed understanding of threatened species legislation and issues
- Terrestrial fauna surveys
- Renewable energy assessment
- Bushland and vegetation management
- Complex holistic project management
- Local, State and Commonwealth project co-ordination
- Dispute resolution and mediation

Experience Includes:

Toby has over twelve years experience in undertaking and managing a diverse array of ecological and environmental surveys and assessments. Toby has produced ecological and environmental documentation for private and public projects ranging in complexity. These include a number of wind farms throughout Australia and New Zealand, coal mines and a range of infrastructure projects within the Hunter region. Toby has also managed ecological masterplanning for residential projects in Sydney, the Central Coast and the Hunter. Toby is also currently the project manager for the environmental component of the development of the Hunter Economic Zone industrial estate at Kurri Kurri, the largest industrial estate in NSW.

Toby's fields of special competence are Environmental Impact Assessment and mediation, flora, fauna and habitat survey method, design and identification, detailed understanding of legislation and threatened species issues, terrestrial fauna surveys and project management.

Curriculum Vitae

Name: Matthew Doherty

Office: RPS Harper Somers O'Sullivan

Position in Company: Environmental & GIS Manager

Qualifications / Memberships: BLMC (Land & Water Conservation Major)
Bush Regeneration Cert II

Spikeless Tree Climbing Techniques
NSW Driver's Licence (Class C)
OH&S Induction Training (Green Card)
NPWS Scientific Investigation Licence
NSW Animal Ethics Research Authority

Areas of Expertise:

- Project Design & Management
- Environmental Impact Assessment and Reporting
- Liaison and Mediation with Clients, Stakeholders & Governing Bodies
- Archaeological (European/ Aboriginal Heritage) coordination and negotiation
- Expert GIS/ GPS for Project Design and Mapping
- Ecological Flora, Fauna & Habitat Surveys (Terrestrial & Aquatic)
- Tree Climbing to Install, Monitor and Maintain Supplementary Habitat (Nestboxes)

Experience Includes:

Matthew has eight years experience in the ecological consulting industry with key skills in project management, survey design and GIS. In his position as Environmental and GIS Manager, Matthew manages the day to day running of projects, verification of reports and other outputs and ensures clients are well informed of project progress and key findings. Matthew's background in local and state government and private consultancy gives him a high level of appreciation of the development sector and allows him to take a pragmatic approach to providing successful conservation and development outcomes.

Curriculum Vitae

Name:	Sam Bishop
Office:	RPS Harper Somers O'Sullivan
Position in Company:	Ecologist
Qualifications / Memberships:	B. Env. Sc. (EAM) Member of the Fire Protection Association Australia (FPA) Society of Frogs & Reptiles (SOFAR) Hunter Bird Observers Club (HBOC) NSW Driver's Licence (Class C) OH&S Induction Training (Green Card) NPWS Scientific Investigation Licence NSW Animal Ethics Research Authority

Areas of Expertise:

- Conducting Field Surveys for Flora, Fauna and Habitat Identification.
- Flora identification and targeted threatened flora species searches
- Geographical Information Systems project design and mapping
- Report Preparation including Threatened Species Assessment, Endangered Ecological Communities assessment, and Vegetation Management Plans
- Detailed understanding of environmental legislation and threatened flora species issues
- Bushfire Threat Assessment & Management reporting
- Bushfire Risk Management Plans
- Fuel Management Plans
- Tree Clearance Supervision and Fauna Handling
- Nestbox Installation & Maintenance

Experience Includes:

Sam has over 3 years experience as an ecological and bushfire consultant, working on projects across NSW. Sam has designed and undertaken flora and fauna surveys including targeted surveys for threatened flora species within the Hunter, Central Coast and Tablelands regions. Additionally, Sam has undertaken assessments of vegetation to meet Native Vegetation Act requirements. Key experience includes assessment of derelict mines for DPI for rehabilitation purposes.