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URBAN DESIGN & PLANNING REPORT

PART 3A ENVIRONMENTAL ASSESSMENT REPORT & CONCEPT PLAN

VOL 1

NORTH COORANBONG
for
JOHNSON PROPERTY GROUP Pty Ltd

February 2008

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STATE SIGNIFICANT SITE
DRAFT ENVIRONMENTAL ASSESSMENT REPORT & CONCEPT PLAN

For

North Cooranbong Residential Development

Cooranbong

Prepared for

Johnson Property Group Pty Ltd

February 2008

Prepared by:

HDB TownPlanning&Design

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Environmental Assessment

This Environmental Assessment has been prepared in accordance with Part3A of the *Environmental Planning and Assessment Act* 1979 (as amended).

This Document has been prepared by:

Company:	HDB Town Planning and Design
Project Manager	Mr Kerry Nichols MPIA CPP
Position	Principal
Qualifications	Grad Dip URD Cert. Civil Eng. L & ESD M.PIA CPP

Proponent. This Report has been prepared for:

Company	Johnson Property Group Pty Ltd Incorporating Avondale Greens Pty Ltd and ACA
Managing Director	Mr Keith Johnson
Senior Development Manager	Mr Bryan Garland
Contact Details	PO Box A1308 SYDNEY NSW 1235

Declaration

I certify that the following Environmental Assessment Report has been prepared in accordance with the requirements of Part 3A of the Act and that, to the best of my knowledge, the information contained in this report is not false or misleading.

Mr Kerry Nichols
M/PIA, CPP

Contents Vol. 1

Appendices

Volume 2	A – B
Appendix A	Geotechnical – Summary of Site Assessments *Douglas Partners Pty Ltd*
Appendix A(i)	Geotechnical – Triangular Lot *Douglas Partners Pty Ltd*
Appendix A(ii)	Geotechnical – Town Common *Douglas Partners Pty Ltd*
Appendix B	North Cooranbong Flora Assessment & Part Test *Anne Clements & Associates Pty Ltd*
Appendix B(i)	Flora Assessment – Triangular Lot *Anne Clements & Associates Pty Ltd*
Appendix B(ii)	Flora & Fauna Assessment – Town Common *Harper Somers O'Sullivan Pty Ltd*
Appendix B(iii)	Distribution of Threatened Species *Harper Somers O'Sullivan Pty Ltd*
Volume 3	**C – S**
Appendix C	North Cooranbong Fauna Assessment *Austeco Pty Ltd*
Appendix D	Utility Consultation: • *Agility* • *Mine Subsidence x 2* • *Energy Australia*
Appendix E	Correspondence from the Department of Planning *Letter Dated 8/11/2007* Correspondence from the Department of Environment, Water *Letter Dated 17/12/2007*
Appendix F	State Significant Site Study *HDB Town Planning and Design*
Appendix G	Section 117 Directions *HDB Town Planning and Design*
Appendix H	Bushfire Threat Assessment *HDB Town Planning and Design*
Appendix I	North Cooranbong Bulk Water Supply *Patterson Britton and Partners Pty Ltd*
Appendix J	Water Management Principles *Patterson Britton and Partners Pty Ltd*
Appendix J(i)	Water Management Principles – Triangular Lot *Patterson Britton and Partners Pty Ltd*
Appendix J(ii)	Creek Assessment *Patterson Britton and Partners Pty Ltd*

Appendix J(iii)	Draft Stormwater Management Plan – Town Common *Patterson Britton and Partners Pty Ltd*
Appendix K	Heritage Impact Assessment *Graham Brooks & Associates Pty Ltd*
Appendix L	Archaeological Survey (with supporting letter) *Myall Coast Archaeological Pty Ltd*
Appendix L(i)	Aboriginal Heritage Assessment – Triangular Lot *Len Roberts*
Appendix M	Social Impact Assessment *Key Insights Pty Ltd*
Appendix N	Road Traffic Noise Impact Assessment North Cooranbong Residential Estate *Reverb Acoustics Pty Ltd*
Appendix O	Economic Impact Assessment *Hill PDA Consulting*
Appendix P	North Cooranbong Concept Plan *HDB Town Planning and Design*
Appendix Q	Flood and Drainage Report *PPK Pty Ltd*
Appendix R	Proposed north Cooranbong Transport Strategy (TMAP) *Better Transport Futures*
Appendix R(i)	Technical Review of Recommended Traffic Treatments – Joint Statement *GHD Pty Ltd*
Appendix S	Draft North Cooranbong Development Control Plan *HDB Town Planning and Design*

Figures

Tables

Acronyms & Abbreviations	
APZ	Asset Protection Zone
CO_2	Carbon Dioxide
DECC	Department of Environment and Conservation
DEWHA	Department of Environment, Water, Heritage and The Arts
DG	Director General
DGR's	Director Generals Requirements
DoP	Department of Planning
EA	Environmental Assessment
EPA Act (The Act)	Environmental Planning & Assessment Act
EPBC Act	Environmental Protection and Biodiversity Act
EPI	Environmental Planning Instrument
ESD	Ecologically Sustainable Development
HDB	HDB Town Planning & Design
HREP	Hunter Regional Environmental Plan
HWC	Hunter Water Cooperation
IPCC	Intergovernmental Panel on Climate Change
JPG	Johnson Property Group
LEP	Local Environmental Plan
LGA	Local Government Area
LHRS	Lower Hunter Regional Strategy
LMCC	Lake Macquarie City Council
MoT	Ministry of Transport
PBP2006	Planning for Bushfire Protection 2006
REP	Regional Environmental Plan
RFS	Rural Fire Services
SEPP	State Environmental Planning Policy
SSS	State Significant Site

EXECUTIVE SUMMARY

Purpose of this Report

This report seeks to address the Director General's requirements in respect to the preparation of an Environmental Assessment and State Significant Site Study of the North Cooranbong concept plan pursuant to Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act 1979).

Project Outline

The concept plan for North Cooranbong has the following characteristics:

- Total Area 365ha
- 186ha residential land
- 2.15ha commercial support
- 16.8ha public recreation / open space
- 115.03ha environmental conservation land
- Upgrading of local road network to support the concept, and
- Servicing and infrastructure to support the existing and future urban area.

Estimated Capital Investment Value for the project is $587,472,000.00

The Proponent

The proponent of the North Cooranbong Concept is:

- Johnson Property Group Pty Ltd
  PO Box A1308 Sydney South 1235
  338 Kent Street
  Sydney NSW 2000

Planning Context

The North Cooranbong area is identified in the Lower Hunter Regional Strategy as being a future residential development area to accommodate up to 3000 residential lots. Due to constraints, the site has the ability to provide in the order 2300-2500 residential lots which represents up-to 2.1% of all new residential housing identified under the Strategy. For the purposes of this Concept Plan, the Environmental Assessment Report assumes a total yield of 2500 residential allotments.

The site is located wholly within the Local Government Area of Lake Macquarie and is identified in the Lake Macquarie LEP 2004 as predominately an urban investigation area. Prior to the assessment of the site under Part 3A of the EPA Act 1979 the site was subject to a rezoning application (draft Lake Macquarie LEP Amendment 27) to enable residential development consistent with the Lower

Hunter Regional Strategy and the Lake Macquarie Councils Lifestyle 2020 Strategy.

The Environmental Assessment contained in this document has been based on the requirements of the Director General of the NSW Department of Planning, dated 23 November 2007. The specific Director Generals Requirements are reproduced as follows:

Major Project No.	MP07_0147 (Concept Plan)
General Requirements	The Environmental Assessment (EA) must include (1) An executive summary; (2) A detailed description of the project including: (a) strategic justification for the project; (b) the various components and stages of the project in detail (eg land uses, infrastructure and dedications) (3) A consideration of the following with any variations to be justified: (a) all relevant State, Regional and Local (including Draft) Environmental Planning Instruments (b) all applicable Planning Strategies such as the Lower Hunter Regional Strategy and Lake Macquarie City Council's Lifestyle 2020 Strategy (c) all applicable s117 Directions and DoP Circulars (d) Environmental Protection and Biodiversity Conservation Act 1999. (4) An assessment of the social, environmental and economic impact of the proposal with particular focus on the Key Assessment Requirements outlined below. (5) A draft Statement of Commitments, outlining commitments to manage, mitigate and /or monitor the social, environmental and economic impacts of the project with a clear identification of who is responsible for these measures and when the commitments will be fulfilled (6) A report from a quantity surveyor identifying the capital investment value for the works outlined in the concept plan (7) An indication of employment generated by the project. (8) A conclusion justifying the project having regard to the General Requirements above. (9) A signed statement from the author of the EA certifying that the information contained in the report is neither false nor misleading
Key Assessment Requirements	The Environmental Assessment must address the following key issues: **1. Site Analysis** (1) Undertake a site opportunity and constraints analysis that identifies the relevant natural and built environmental features within and adjoining the Site. (2) The site analysis should form the basis for justifying the configuration of the development of the land and the mix of land uses. **2. Urban Design**

	(1) Provide a plan showing the proposed development and conservation footprints, their areas and proposed zonings. (2) Provide an indicative lot, open space and street layout and nominate indicative total lot yield, mix and density. (3) Demonstrate a range of housing will be made available on site (4) Demonstrate compliance with the Urban Design and Neighborhood Planning Principles and density provisions contained in the Lower Hunter Regional Strategy. (5) Develop conceptual design guidelines for housing and open space (both public and private realm) and identify how the design guidelines will be implemented. **3. Visual Impact** (1) Identify any visual impact created by the project and mitigation measures. **4. Open Space and Facilities** (1) Provide details of publicly available open space and facilities to be provided, long term management and maintenance arrangements and proposed ownership. **5. Utilities and Infrastructure** (1) Provide a utility and infrastructure servicing strategy identifying existing capacity and any necessary staged augmentation. (2) The strategy should include means for a recycled water service. **6. Drainage, Stormwater and Groundwater Management** (1) Provide a drainage, stormwater and groundwater management strategy identifying measures to be incorporated on site, including on site stormwater detention and WSUD measures (2) The strategy should demonstrate compliance with the principles of the NSW Groundwater Policy Framework. **7. Flooding** (1) Identify and address any potential flooding risk faced or created by the project. **8. Biodiversity** (1) Address the impact of the development on existing native flora and fauna and their habitats, including identified threatened species, having regard to the Threatened Species Assessment Guidelines and recommend a biodiversity conservation strategy including offset and/or rehabilitation measures to avoid or mitigate impacts on threatened species and their habitat. (2) Consider the development of ecological corridors to link flora and fauna corridors within the site and to adjoining sites. (3) Consider and mitigate any impact upon watercourses and associated riparian buffer / vegetation (4) Identify the intended ownership and long term management (including funding arrangements) for conservation lands. (5) Comprehensively address potential impacts on, and proposed mitigation measure for listed threatened species under the EPBC Act (including *Angophora inopina, grevillea paviflora subsp. Paviflora* and *Tetratheca juncea).* **9. Contamination, Geotechnical and Mine Subsidence** (1) Provide a report detailing the suitability of the site for its proposed uses having regard to matter such as erosion hazard, slope stability, uncontrolled fill, soil reactivity, saturated soils, acid sulphate soils, mine subsidence and site contamination.

	(2) Demonstrate that suitable measures will be made in accordance with SEPP 55 to address any contamination issues. **10. Bushfire** (1) Demonstrate compliance with *Planning for Bush Fire Protection 2006* (2) Identify ownership and ongoing management of any proposed APZs **11. Heritage** (1) Identify and assess any items of European and Indigenous heritage on site and any potential impacts created by the project. (2) Provide an assessment against DECCs draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation.* **12. Traffic and Transport** (1) Prepare a Traffic Study in accordance with RTA's *Guide Traffic Generating Developments* (2) Prepare a TMAP which addresses the requirements covered in the Interim TMAP Guidelines which are available at www.transport.nsw.gov.au **13. Social Infrastructure** (1) Demonstrate there will be sufficient social services and infrastructure to support the population generated by project. (2) Identify positive & negative impacts and the means to mitigate any negative impacts **14. Employment** (1) Identify and address the employment needs of the incoming population. **15. Commercial Development** (1) Justify the amount and type of commercial development proposed by the project both in terms of the ongoing economic viability of existing commercial development and the objectives of the Lower Hunter Regional Strategy. **16. Planning Agreements and /or Developer Contributions** (1) Provide the scope and justification for any planning agreement(s) (should one or more be proposed) between the proponent, Council and other Agencies for matters such as regional and local infrastructure, social infrastructure, public transport, recreational and community facilities and the like. **17. Ecologically Sustainable Development** (1) Demonstrate how the development will commit to ESD principles. **18. State Significant Site (SSS)Study** (1) As outlined in correspondence from DoP to JPG dated 8 November 2007 a SSS study is required to be prepared by the proponent (2) This SSS study should be completed and submitted concurrently with the Environmental Assessment. This will enable joint assessment and concurrent exhibition of the EA and SSS study.

Consultation Requirements	An appropriate and justified level of consultation should be undertaken with the following relevant parties during the preparation of the environmental assessment, having regard to any previous consultation. *a) Agencies and other authorities:* • Lake Macquarie City Council • NSW Department of Water and Energy • Hunter Water Corporation • NSW Ministry of Transport; • NSW Roads and Traffic Authority; • NSW Department of Education and Training; • NSW Department of Conservation and Climate Change; • NSW Rural Fire Service; • Commonwealth Department of Environment and Water Resources and • All relevant utility 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.

The Site

The subject site is based around the former Cooranbong Aerodrome and includes a number of surrounding landholdings. It is located to the north of the existing Cooranbong Village and directly adjoins existing residential areas of the Cooranbong suburb. The closest regional centre is Morisset located approximately 5km to the southeast of the subject site and the closest district centre is Cooranbong village 1km away.

The subject site has close access to the F3 Freeway to travel north to Newcastle and south to Sydney. Local road connections exist to Freeman's Drive (MR220) and provide access to the existing urban areas of Cooranbong and Morisset.

Existing Site Uses & Modifications

The majority of the site is currently degraded resulting from its previous aerodrome land use. Much of the site is undeveloped yet has been subject to various levels of human disturbance. The most significant site use is the Avondale School which is located in the southeast corner. The dominating feature of the site remains the sealed airstrip.

Background to Proposal

Following the closure of the Avondale Aviation Collage the site was foreshadowed as a possible site for future urban development and as such was included in the Lower Hunter Regional Strategy as future residential lands. The site was further identified for future urban development in the Lake Macquarie Lifestyle 2020 Strategy and ultimately Lake Macquarie Local Environmental Plan 2004, before the closure of the airport.

As a result a rezoning application was lodged to alter the zoning of the site to accommodate this proposed use. This application was lodged in March 2005. However, prior to finalising the rezoning, the NSW Government released the Lower Hunter Regional Strategy to guide development in the Hunter over a 25 year time horizon. North Cooranbong was listed as an important site in this strategy (and therefore important to the State), and therefore an application was made to have the sites future assessed by the Minister under Part 3A of the EPA Act 1979. This was due to the size and importance of the site and the need to ensure the timely and efficient delivery of residential land for the community, in line with the strategy. With the proximity of the site to the Morisset Town Centre, it is envisaged that this development will provide the backbone to support Morisset as a future Major Centre (as identified in the Lower Hunter Regional Strategy).

The document provides a Concept Plan and Environmental Assessment for preliminary consideration and feedback by the NSW Department of Planning, and a State Significant Site Study in support of inclusion of the subject site in Schedule 4 of the SEPP (Major Projects) 2005.

Infrastructure Environmental Impacts

Traffic & Transport

The existing road and transport system operations in the area have been investigated and the likely impacts of the proposed development noted. Works in regard to upgrading of various items including the intersections of Freeman's Drive and Avondale Road and extension of the existing local road system to service this area have been identified to offset this impact.

Local bus services and Cycleways are planned to be extended to meet increased demand. These are more fully identified in the report and accompanying T-Map.

Biodiversity

Extensive studies have been undertaken on the site as part of previous and current environmental investigations. The proposed concept plan has taken into consideration the ecological constraints of the site to provide offset areas to preserve important vegetation. Riparian areas have been protected to maintain water quality and provide an internal green .open space linkage.

Additional land at the Town Common site, outside the main site, is also proposed to be conserved.

There are a number of environmental constraints on the site which in the main have been provided for by extending ecological zones. As further justification for development, discussions are underway with relevant Government agencies in regard to monetary contributions for offsets. This is reflected in the commitments given by the developer.

For further discussion on biodiversity, refer to Section 7.3 of this report.

Stormwater Management & Quality

The North Cooranbong site is situated in the Dora Creek Catchment which feeds directly into Lake Macquarie. As such, it is important that the quality of water leaving the site is of a standard acceptable for the receiving catchment. The internal site design has provided riparian buffers along creek lines to prevent human disturbance directly effecting waterways, thereby reducing potential negative effects on these waterways. Additional water quality devices have been provided within the residential area to ensure water quality leaving the site is of an acceptable standard.

As previously mentioned the Town Common site to the south of the main site is to be used for environmental conservation and open space. A site specific Stormwater Management Plan will be prepared to ensure any activity on this site will protect the local waterways and receiving catchments.

Geology

A number of geological investigations have been undertaken on the site as part of part and current planning and design studies. It has been concluded that the site has few constraints which inhibit its ability to safely accept residential development in the future. Furthermore no resources have been identified on or in the site whose recovery would be prevented by the concept plan. A full explanation of the sites' geology is provided in Section 7.5 of this report.

Additional Issues

A number of additional site specific baseline studies were undertaken as part of the planning process for the site. This includes European and Indigenous heritage, bushfire and social impact assessment. The recommendations of these reports were taken into consideration during the development of the concept design

Staging & Implementation

Given the size of the site, a staged implementation of servicing and infrastructure closely associated with the staged release of residential land is required. Due to

the time frame to fully develop the site (20 years) flexibility needs to be incorporated to allow response to changing parameters.

A draft precinct plan has been attached to this concept plan. It is anticipated that approximately 200 residential lots would be released per precinct, with each precinct divided into approximately 4 stages.

Conclusion

The North Cooranbong site provides a sound opportunity to support the Lower Hunter Regional Strategy in providing strategically located, adequate and affordable residential land for the future growth of the region.

The subject site is in close proximity to existing urban infrastructure and transport opportunities. It will provide support to the Emerging Major Centre of Morisset, builds on the existing Avondale School precinct to support its future viability and growth, as well as providing support for Avondale College's quest for university status. Approval of the concept plan under Part 3A of the Act and the SEPP (Major Projects) 2005 will allow this project to proceed and meet the objectives of the Lower Hunter Regional Strategy..

1.0 INTRODUCTION

1.1 Introduction

HDB Town Planning and Design Pty Ltd (HDB) has been engaged by Johnson Property Group Pty Ltd (JPG) to prepare an Environmental Assessment Report (EAR) to be submitted to the Minister for Planning pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This report has been prepared to fulfill the Environmental Assessment Requirements issued by the Director General for a concept plan approval. The development of the subject site comprises approximately 365ha of land in the North Cooranbong area, located on the western side of Lake Macquarie.

This report also includes a State Significant Site Study undertaken to assist the Minister in determining whether the subject site should be classified as a State Significant Site under the Major Projects SEPP. The information contained in this report and its supporting documents has been prepared to seek concept plan approval for:

- 365ha (Approx) of land to be developed for up to 2,500 lots.
- Provision of servicing and infrastructure.
- The provision of up to 115.03ha of land for conservation.

This report provides a description of the site, the proposal and the environmental, social and economic features and implications of the proposal in line with the requirements of the Director General, dated 23 November 2007. The report has been divided into the following sections:

Table 1 – Report Sections

Section 1	Introduction
Section 2	General site description and existing characteristics in relation to both the local and region contexts
Section 3	The planning framework, both statutory and strategic, which apply to the site and the proposal.
Section 4	The State Significance of the site as defined by the Major projects SEPP.
Section 5	A detailed description of the Concept and its design features.
Section 6	Description of Voluntary planning agreements in relation to the proposal.
Section 7	Environmental Assessment in line with the requirements of the Director General.
Section 8	Draft Statement of Commitments
Section 9	Conclusion and project justification
Appendices	Appendices including technical reports referenced in this document.

1.2 Background

The North Cooranbong site involves a significant area of land that once housed a private aerodrome, owned and operated by the nearby Avondale School, Cooranbong.

The aerodrome and associated flying school became an unsustainable financial burden on the School, with only 23 heavily subsidized students enrolled in 2001. The facility drew increasingly on each annual budget in order to meet and maintain increasingly stringent air and ground safety standards and insurances, and to ensure that the aircraft, the site utilities (for fuelling, maintenance etc) and associated buildings are of a required condition. There was increasing reliance on cross subsidisation from the other educational businesses and this was at the expense of the mid term aspiration of becoming a new University.

The private aerodrome was officially decommissioned in December 2005 and the air school was relocated to Cessnock airport. This in turn creates a new environmental, social and economic opportunities for land that is strategically located within the walkable catchment of Avondale College, Avondale School, Cooranbong retail area, existing community buildings and facilities, and major employment associated with the Sanitarium factory and the Avondale College.

As part of the comprehensive review of the Lake Macquarie Local Environmental Plan, Council rezoned the land to investigation purposes in its new citywide Lake Macquarie (LM) LEP 2004. This was in recognition of the new land use opportunities, particularly given the interest in creating a critical mass of population around the existing Cooranbong centre with existing public and private infrastructure and an emerging University.

After 2 years of detailed site assessment, strategic planning and discussions with the Dept. of Planning, Lake Macquarie Council and DECC, Johnson Property Group (for themselves and on behalf of the Seventh-day Adventist Church) lodged a rezoning submission with Lake Macquarie Council on 15th March 2005.

The rezoning submission was jointly prepared by JW Planning Pty Ltd and Architectus Pty Ltd, and the submission constituted a detailed environmental study informed by a multi-disciplinary consultant team

Key dates since the rezoning submission was lodged are listed in **Table 2**:

Table 2 – Rezoning Chronology

Date	Milestone
20 June 2005	Section 54 resolution to prepare and exhibit an amendment (no.27) to LMLEP 2004 to accommodate the proposal
14 July 2005	Council notify Dept of Planning of s54 draft amendment no.27
5 August 2005	Dept of Planning directs Council to prepare a Local Environmental Study (LES)
December 2005	Council appoint 3rd party to prepare LES – URS Pty Ltd
Jul / Sep 2006	Council consult with Government agencies pursuant to s62
December 2006	URS finalise LES
5 February 2007	Council adopt LES, amend dLEP and resolve to seek s65 certificate to publicly exhibit the proposal
May / Aug 2007	Draft LEP and LES publicly exhibited pursuant to section 66
August 2007	2 years after rezoning submission, JPG seek Part 3A recognition
October 2007	Minister for Planning formed the view that the North Cooranbong proposal is a development to which Part 3A applies.

The development now proposed has been reviewed and amended to that previously submitted to Council. The Concept Plan has been developed having regard to the findings of previous and current studies.

1.3 Proponent / Project Team

The proponent for the proposal outlined in this document is Johnson Property Group Pty Ltd.

Over a period of 5 years, a project team was assembled to provide in depth information in their respective specialisations. The baseline studies previously considered on the site (under the previous Councils zoning scheme) remain relevant and have been referred to in this document. The following is a list of consultants whose input was used in the formation of the concept plan, and environmental analysis included in this report.

Table 3 – Project Team

Area of Expertise	Consultant
Project Management	Johnson Property Group Pty Ltd
Urban Design	Architectus and HDB Town Planning & Design
Urban Planning	JW Planning and HDB Town Planning & Design
Social Impact Assessment	Key insights Pty Ltd and HDB Town Planning & Design
Landscaping	HDB Town Planning and Design
Bushfire	HDB Town Planning and Design
Traffic and Transport	GHD and Better Transport Futures Pty Ltd
Community Consultation	Key Insights Pty Ltd
Stormwater	Patterson Britton and Partners Pty Ltd
Water and Wastewater Servicing	Patterson Britton and Partners Pty Ltd
Heritage - Aerodrome	Graham Brooks & Associates Pty Ltd
Cultural Heritage Assessment	Myall Coast Archaeological Services
Flooding and Drainage	PPK Environment and Infrastructure Pty Ltd
Retail Location Analysis	Architectus Pty Ltd
Visual impact Assessment	Architectus Pty Ltd
North Cooranbong Creek Assessment	Patterson Britton and Partners
Water Management Principles	Patterson Britton and Partners
Threatened Flora and Fauna Assessment	Austeco – Environmental Consultants Harper Somers O'Sullivan
Flora and Fauna 8 Part test	Anne Clements and Associates Pty Ltd Harper Somers O'Sullivan
Geotechnical Site Assessment	Douglas Partners Pty Ltd

1.4 Consultation

1.4.1 Stakeholder Consultation

The proposal to rezone the land has been the subject of formal consultation with government agencies, infrastructure authorities and key stakeholders pursuant to section 62 of the EP&A Act, 1979. This consultation occurred under the previous Council rezoning process.

The organisations consulted are presented in **Table 4**. The table is an extract from the Council report which sought a resolution to amend the draft LEP and obtain

authority under s65 to commence public exhibition (Lake Macquarie Council Report No. 07ST006 - 5 February, 2007).

Table 4 – Section 62 Stakeholder Consultation

1	Department of Planning (DoP)
2	Roads and Traffic Authority (RTA)
3	Department of Environment and Conservation (DEC)
4	NSW Rural Fire Service (RFS)
5	Department of Primary Industries (Agriculture & Mineral Resources)
6	Hunter Water Corporation (HWC)
7	Department of Education and Training (DET)
8	Department of Community Services (DOCs)
9	Mine Subsidence Board (MSB)
10	Department of Lands (DoL)
11	Hunter-Central Rivers Catchment Management Authority (CMA)

The proponent has had independent discussions with service providers including Hunter Water, Telstra and Energy Australia, and workshops were held with all relevant Departments within Lake Macquarie Council when Council was processing the rezoning application.

None of the agencies had raised objections during the section 62 consultation process.

In light of the release of the Lower hunter Regional Strategy and the draft Regional Conservation Plan by the NSW State Government, and therefore acknowledging the regional and state significance of the site, the proponent held a number of discussions'. These have occurred, primarily with DECC and DoP, to review the Concept Plan and arrive at an alternate footprint that maximises the development on this site while allowing significant ecological conservation to occur. In addition, consultation has occurred with Department of Environment, Water, Heritage and the Arts in respect to the impact of this development on federally listed species. Advice has been received that the project is considered a Controlled Action under the Environmental Protection and Biodiversity Conservation Act 1999. Refer ***Appendix E***.

1.4.2 Public Consultation

The previous proposal for development of the site was exhibited by Council for public comment for three months between May to August 2007. Councils records indicated, a total of 26 separate submissions were received (plus a number of petitions). A breakdown of the nature of the submissions by Council is provided in **Table 5**.

Table 5 – Nature of Public Submissions

Nature of Submission	No. of Submissions	Nature of Concerns
Specific objection to the proposal	2	Loss of airfield, inadequate infrastructure, environmental impact
Objection to elements of the proposal	15	Size and existence of commercial and open space zones, exclusion of adjoining property
Request further consideration and/or adjustment of the proposal	9	Neighbourhood character, affordable housing, transport and access, environmental management

During the public exhibition process Johnson Property Group voluntarily gave presentations to the Central Coast Community Environment Network (CCEN) and the Cooranbong Chamber of Commerce (CCC). Over 200 people attended the MCC presentation. The event was advertised on the radio and in local and regional print media.

The current concept plan was developed having regard to the comments received during exhibition of the previous rezoning process, the objectives pf the Lower Hunter Regional Strategy and draft Regional Conservation Plan and subsequent discussions with DoP, DECC and LMCC. In this regard while the concepts are similar, there have been some reorganisation of proposed land uses.

2.0 THE SITE

2.1 The Locality

The proposed development is located on the western side of Lake Macquarie and directly joins the existing urban area of Cooranbong Village(to the north). The site is approximately 1.2km to the west of the F3 (Sydney-Newcastle) Freeway and approximately 5km from the nearby centre of Morisset. Importantly Morisset represents an Emerging Major Regional Centre in the Lower Hunter Regional Strategy. Cooranbong is the largest urban release area in the Morisset Planning District (and the largest in southern Lake Macquarie) and will therefore be the backbone to its emerging Major Regional Centre status. The location is approximately 40km southwest of Newcastle and approximately 100km north of Sydney.

The site is made up primarily of land which once comprised the Avondale Aerodrome. Surrounding land uses include the existing urban areas of Cooranbong Village to the south, and various rural parcels surrounding the remainder of the site. Varying levels of vegetation cover exist, ranging from pasture to bushland, which can also be found on surrounding lands.

Reference is made to ***Figure 1*** – Location Plan and ***Figure 2*** – Site Plan.

2.2 Land Ownership & Legal Description

The parcel of land being the subject of this Concept Plan / State Significant Site Study, sits in four general areas:

A) Is land controlled by JPG and owned by Australasian Conference Association Ltd.(as trustee for the Seventh-Day Adventist Church)
B) Is land owned and controlled by JPG (through Avondale Greens P/L.
C) Is land is land purchased by JPG for Environmental Offset
D) Is town common land owned by Australasian Conference Association Ltd and proposed to be dedicated to Council.

Reference is made to ***Figure 3*** –Ownership Plan.

Table 1 Lot Ownerships and legal description

Lot	DP	Ownership/Proponent	Area
Area A			
1	595941	Australasian Conference Association Ltd (trustee for the Seventh-day Adventist Church)/Avondale Greens Developments P/L	5.895
11	129156	*As Above*	8.12
12	129157	*As Above*	3.62
20	129159	*As Above*	15.3
1 - 13	7352	*As Above*	17.8

1	3353	*As Above*	28.42
2	3353	*As Above*	27.41
3	3353	*Free Stone-Barks*	20.53
4	3353	*As Above*	19.54
5	3353	*As Above*	8.576
6	3353	*As Above*	18.14
7	3353	*As Above*	18.34
8	3353	*As Above*	19.66
10	3353	*As above*	18.34
1	825266	H. Pocock	27.03
1	170378	Avondale Greens Developments P/L	10.77
2	825266	Dabson	5.056
1	182756	I. & L. Mears/ Avondale Greens Developments P/L	1.383
1	348173	Avondale Greens Pty Ltd.	0.807
212	1037011	Avondale Greens Pty Ltd. (prev. 21//865588)	3.508
A	375386		2.50914
Land Subject to Owner's Consent			
1	329367	S. & P. Dodson	1.214
14	129157	J. & I. Dabson and M. & A. Dabson	0.809
1	301305	P. & R. Hitchcock	0.809
B	306673	Hunt	0.809
A	306673	D. Sheedy	0.809
13	129157	I. & C. Iselin	1.52
1	346776	L. & D. Volkl	0.722
2	346776	G. Ferguson	0.694
21	129159	D. & M. Batey	0.553
1	360725	J. Vosper	0.15
1	363639	A. & D. Roy	0.354
22	129159	K. Dixon	0.354
3	1029952	I. & G. Wheatley	1.021
2	663728	A. Doncevic	1.234
219	755218	Avondale Greens Pty Ltd.	58.38
Sub-Total Area (ha)			**350.186**
+ Inclusion of the Town Common / Park area			14.58
2	517245	Australasian Conference Association Ltd (trustee for the Seventh-day Adventist Church)/Avondale Greens Developments P/L	
34	736908	Australasian Conference Association Ltd (trustee for the Seventh-day Adventist Church)/Avondale Greens Developments P/L.	
Total Area (Ha)			**364.766**

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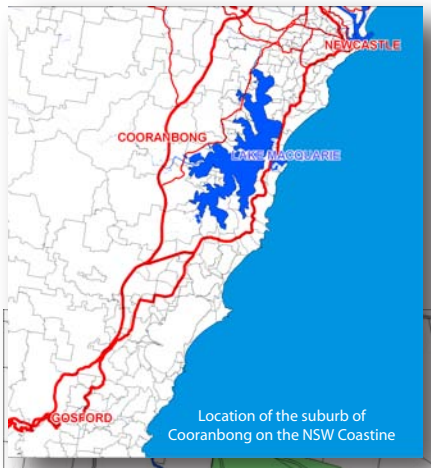

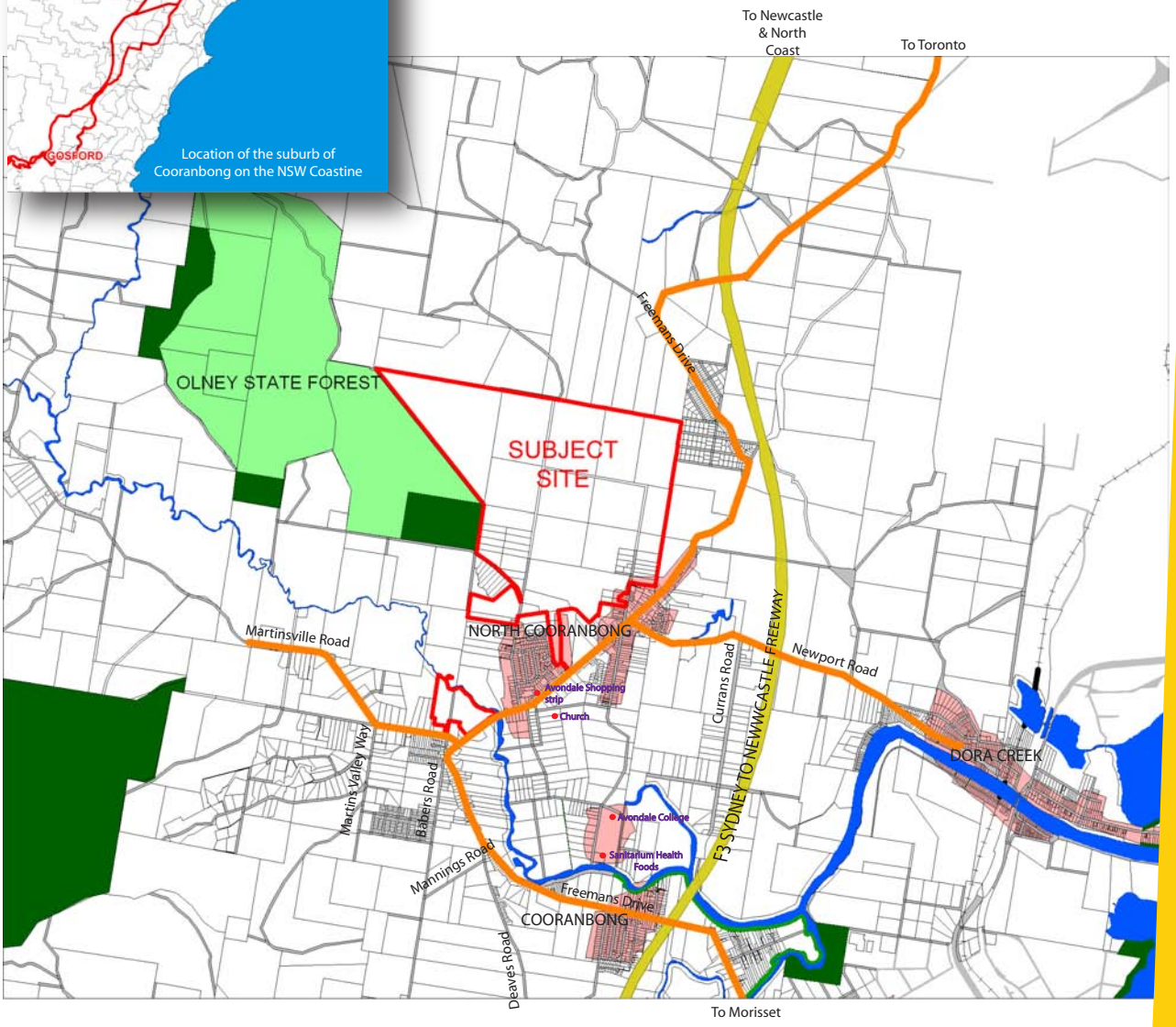

Not to Scale

LOCATION MAP

FIGURE 1

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SITE PLAN

FIGURE 2

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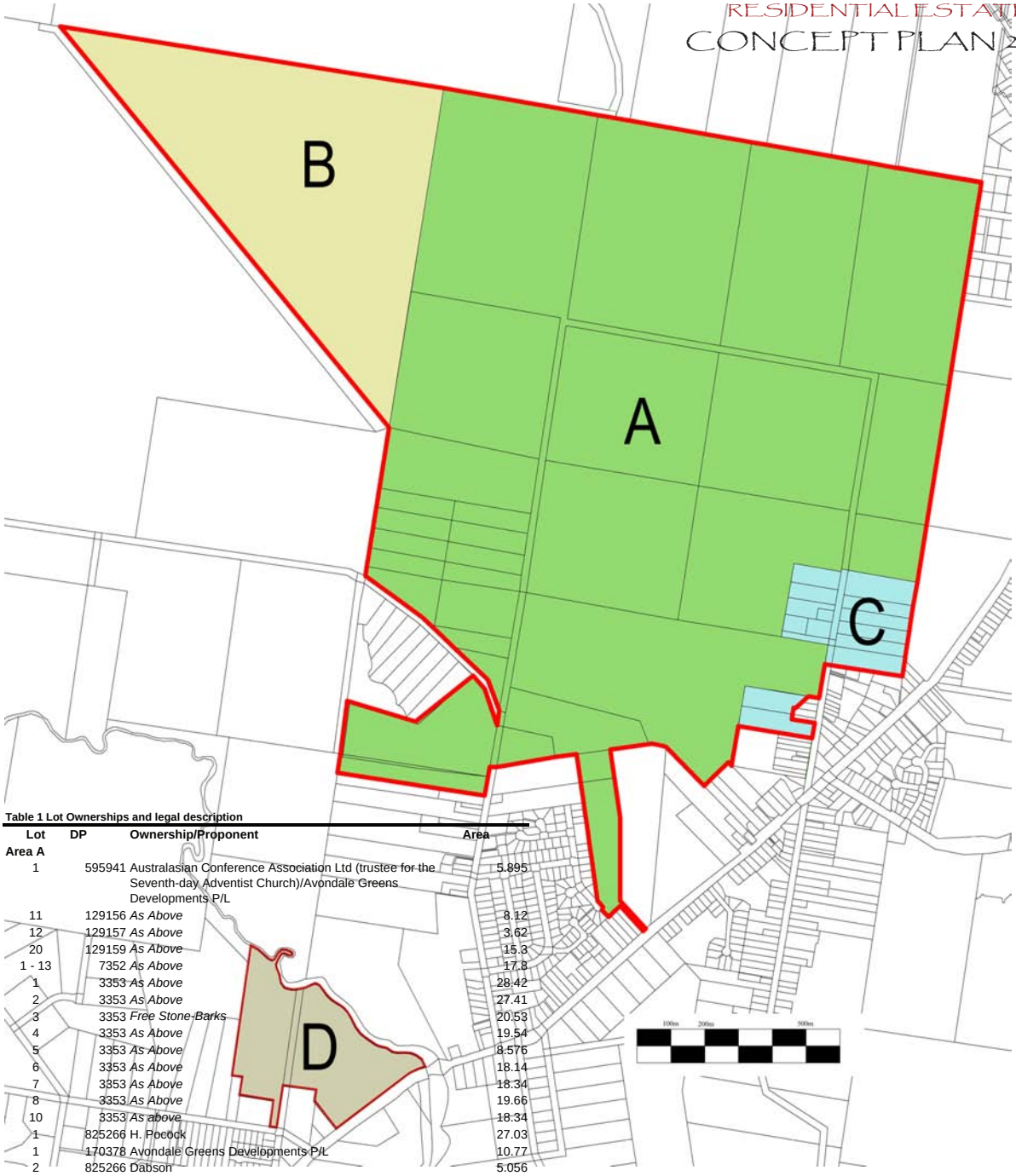
CONCEPT PLAN 2008



OWNERSHIP PLAN

FIGURE 3

LEGEND

Development Boundary

A - JPG Primary Lands

B - JPG Triangle Lot

C - JWP Lands

D - Town Common (Owned by Avondale College)

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B	306673	Hunt	0.809
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+ Inclusion of the Town Common / Park area			14.58
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34	736908	(trustee for the Seventh-day Adventist Church) / Avondale Greens Developments P/L	
Total Area (Ha)			**364.766**

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2.3 Existing Development on Site

The site is predominantly vacant, with the former Avondale Air Strip occupying the centre of the site. (Refer ***Figure 2***) To the east, the site includes Avondale School and large lot rural residential development. The large lot rural residential development wraps around the south and south-west portions of the site. The airport was decommissioned and ceased operation on 31 December 2005 and since this time has been vacant. There are a number of hangars and buildings located adjacent to Avondale School which are currently unoccupied.

Northern sections of the site are wooded with a light understorey occupying the highest portions of the site with commanding views of surrounding escarpments.

Existing runway areas have been cleared. There are a number of drainage corridors and drainage ditches in this area, both natural and man made.

The east of the site and near the end of the main runway has previously been cleared to create an area of east facing sloping land with distant views. The land within the school site has been modified to create level sporting fields and large detention ponds. The school buildings sit on level pads occupying the southern sections of the site. The site generally rises to the north.

South-east portions of the site adjoin Avondale Road and the existing village of Cooranbong. This area is predominantly cleared and used for rural residential purposes.

Areas to the north and south of Alton Road has been cleared and used for rural activities.

The majority of the site is currently vacant.

Reference is made to ***Figure 4*** – Aerial Site Photograph.

AERIAL SITE
PHOTOGRAPHS

FIGURE 4

2.4 Surrounding Development

The site is adjoined to the south by the existing residential areas of Cooranbong and the Avondale Shopping Village. This area reflects conventional single dwelling housing with a scattering of larger lots. The western boundary of the site adjoins the Olney State Forest with the Watagan State Forest located to the north-west of the site. (Refer ***Figure 1***)

Small rural land holdings adjoin on the south-west corner of the site and are predominantly used for rural residential activities. The Avondale School forms part of the site to the north-east, together with rural residential and large lot rural along the eastern boundary.

The density of development generally increases south along Avondale Road towards the Avondale Shopping Village.

Cooranbong is the centre for the Australasian Conference of the Seventh Day Adventist Church. The Avondale School caters for children from pre-school age through to year 12. The Avondale College is located south of the Cooranbong Avondale Shopping Village, which adjoins the Sanitarium Health Foods Complex together with the Seventh Day Adventist Churches.

It is important to note that the Avondale College is currently attempting to achieve university status. An application is currently being considered by the relevant authorities. The proposed concept plan would assist the college in attaining this status by providing an increase in local population, housing and services to support a university campus.

The Seventh Day Adventist complex includes a College; Sanitarium facilities, including student accommodation; a nursing home; hostels and retirement village. It also includes a small operating dairy, some agricultural lands and educational support facilities of the College, including the infrastructure and administrative requirements for the Sanitarium Health Foods operation all in the Cooranbong locality.

2.5 Site History

“Cooranbong”, the name of the settlement, comes from the Aboriginal word Kour-an-bong meaning rocky bottom creek or water over rocks. Cooranbong was the place where a number of clashes occured between Aboriginal groups as groups outside of the area tried to access the lake.

In 1826 Lieutenant Percy Simpson selected 2,000 acres at Cooranbong and took up residence in the Kourunbung Homestead located near the Roman Catholic Church. In August 1861, seven lots were sold adjoining the western boundary of Simpson's grant. This started the village centre and the town of Cooranbong developed from this day. The town itself came into existence at this time (1861).

The first Catholic Church was erected in 1861 and in 1866 a bridge was erected over Dora Creek. By 1865 the town had a population of 150 residents, which was primarily related to the timber industry.

The location of the town was predicated by the existence of Dora Creek, which gave access to the lake, the existence of a fiord, which enabled crossing of the creek and the surrounding good timber supplies.

In 1874 the Robert King's sawmill exported its first cargo of timber, which lead to the establishment of two more sawmills in 1877.

In 1884 the population had grown to 700 with fishing and ship building being the early supporting industries.

In 1890 due to national economic depression and the end of the railway contract, the population dropped to 206 people. The Cooranbong area was bypassed by the Newcastle to Sydney rail line, with the construction of a rail station at Morisset, Morisset grew to be the regional centre. Further to this Cooranbong lost its port status due to the construction of the rail bridge over Dora Creek, which was too low to allow access to the Lake.

In the late 1890's the Seventh Day Adventist established the Sanitarium Health Food Company and the Avondale College. As timber declined as an employment base, the growth of the Avondale College took over as a focus for the Cooranbong area.

By the 1900's the college had developed to include large two and three storey buildings and a number of smaller cottages.

The Sanitarium Health Food Company began in 1898 in an old sawmill building at Cooranbong. The Sanitarium Health Food Company has developed into a major company and now employs some 1,700 people across Australia and New Zealand with an annual turnover of $300 million. The Cooranbong site is one of the largest cereal production plants in the southern hemisphere.

The Avondale College currently offers undergraduate courses in arts, education, nursing, business, science and theology and postgraduate courses in education,

leadership and management, nursing, theology and ministry and vocational education and training courses in business and outdoor recreation and English language courses for oversees students. In 2003 the college had 930 students with supporting recreational, health and fitness centres, including auditoriums, heated outdoor swimming pools, tennis courts and playing fields.

2.6 Site Analysis

2.6.1 Topography, Slope & Aspect

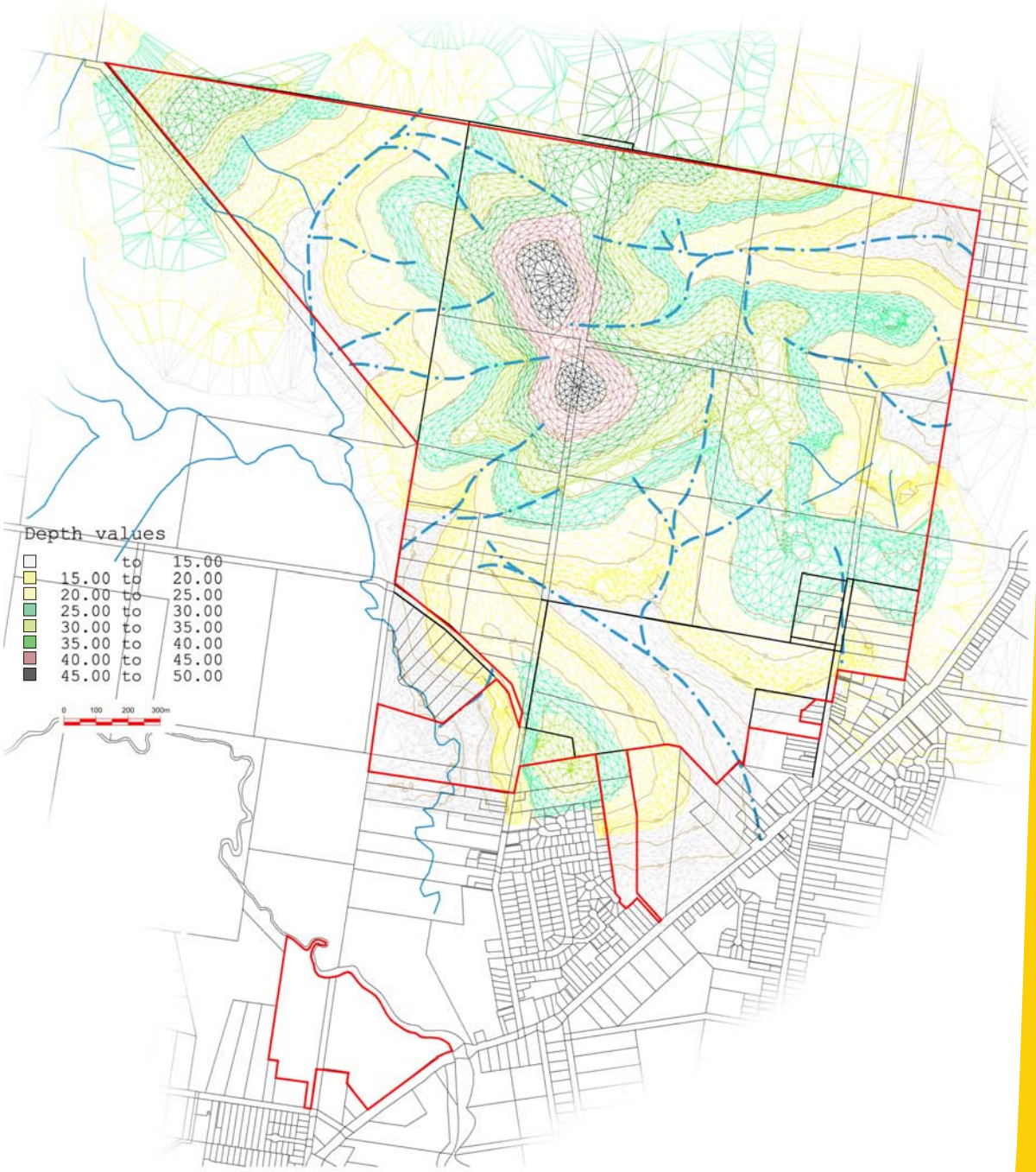
The Cooranbong area is generally low lying with the exception of the subject site, which is dominated by a ridgeline running south to north towards the adjoining Mt Cooranbong. The subject site is relatively gently undulating, ranging in elevation from 5m to 45m AHD. ***Figure 5*** – Topography Plan shows the topography of the site at 1m contour intervals. Ridgelines are defined on the plan and are dominated by three distinctive knolls, one on the southern section of the site and two within the centre of the site, each occupying prominent view points in the topography. A number of spurs run east and west of the main ridgeline.

Figure 6 relates to Slope Analysis of the site and shows that the site predominantly has between 0 - 5º slope with some minor areas at 5 – 10º. There are no areas above 15º and areas relating to 10 - 15º slope are generally sites of disturbance, dams walls, etc, on the site.

2.6.2 Hydrology

A number of first order streams in the form of depressions with no defined banks sitting in between the ridgelines running east and south on the site. These drain predominantly to two drainage systems on the west and east of the main ridgeline, ultimately feeding into Dora Creek. Existing hydrology and drainage patterns are shown on ***Figure 7*** – Hydrology Plan.

Flooding in respect to the 1% AEP is generally confined to the existing defined creek systems as shown in ***Figures 5 and 7***. This is further examined in the flood and drainage report ***Appendix Q***.



TOPOGRAPHY PLAN

FIGURE 5

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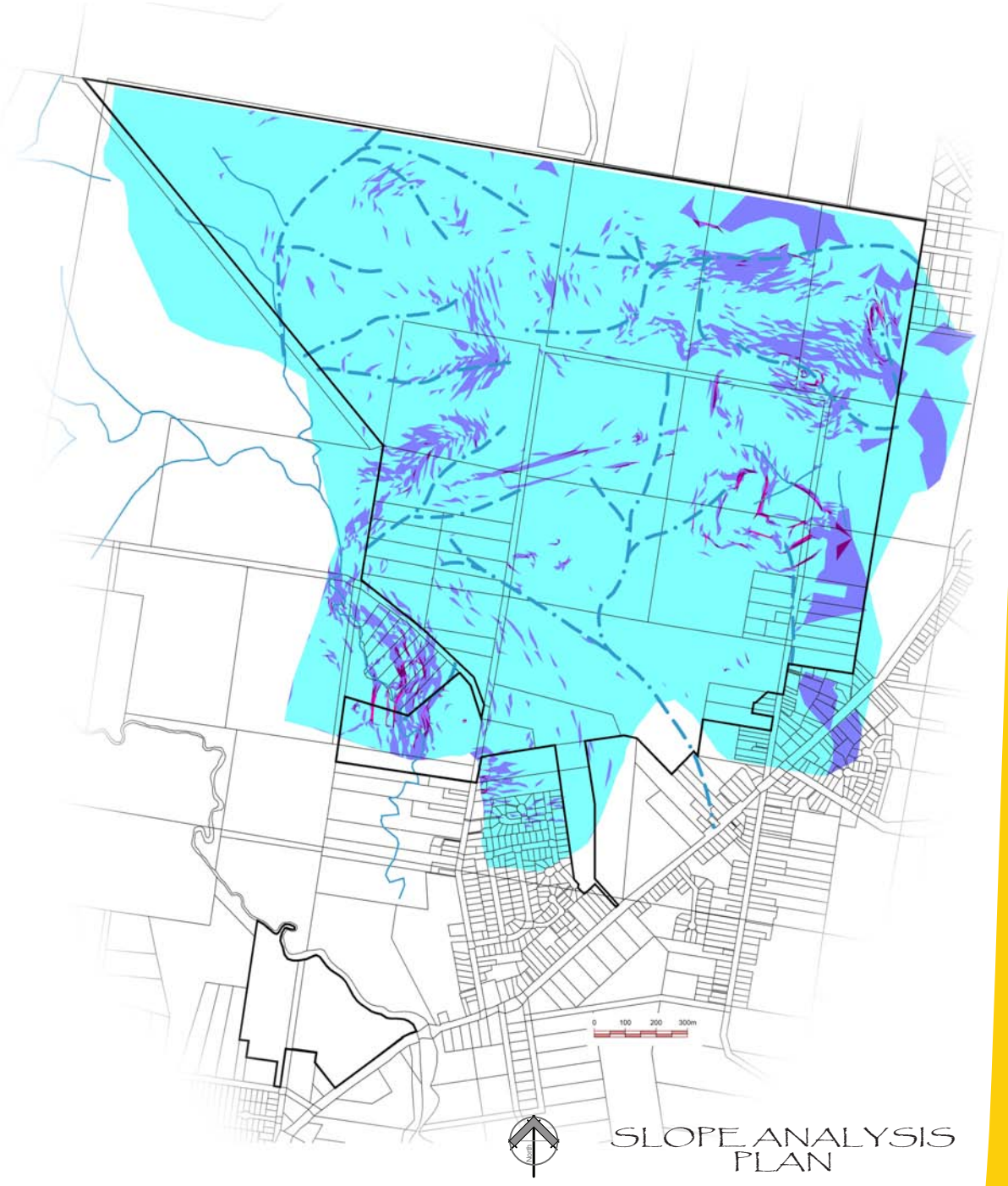

SLOPE ANALYSIS PLAN

FIGURE 6

- 0 - 5 Degrees Slope
- 5 - 10 Degrees Slope
- 10 - 15 Degrees Slope
- 15 - 20 Degrees Slope
- 20 < Degrees Slope

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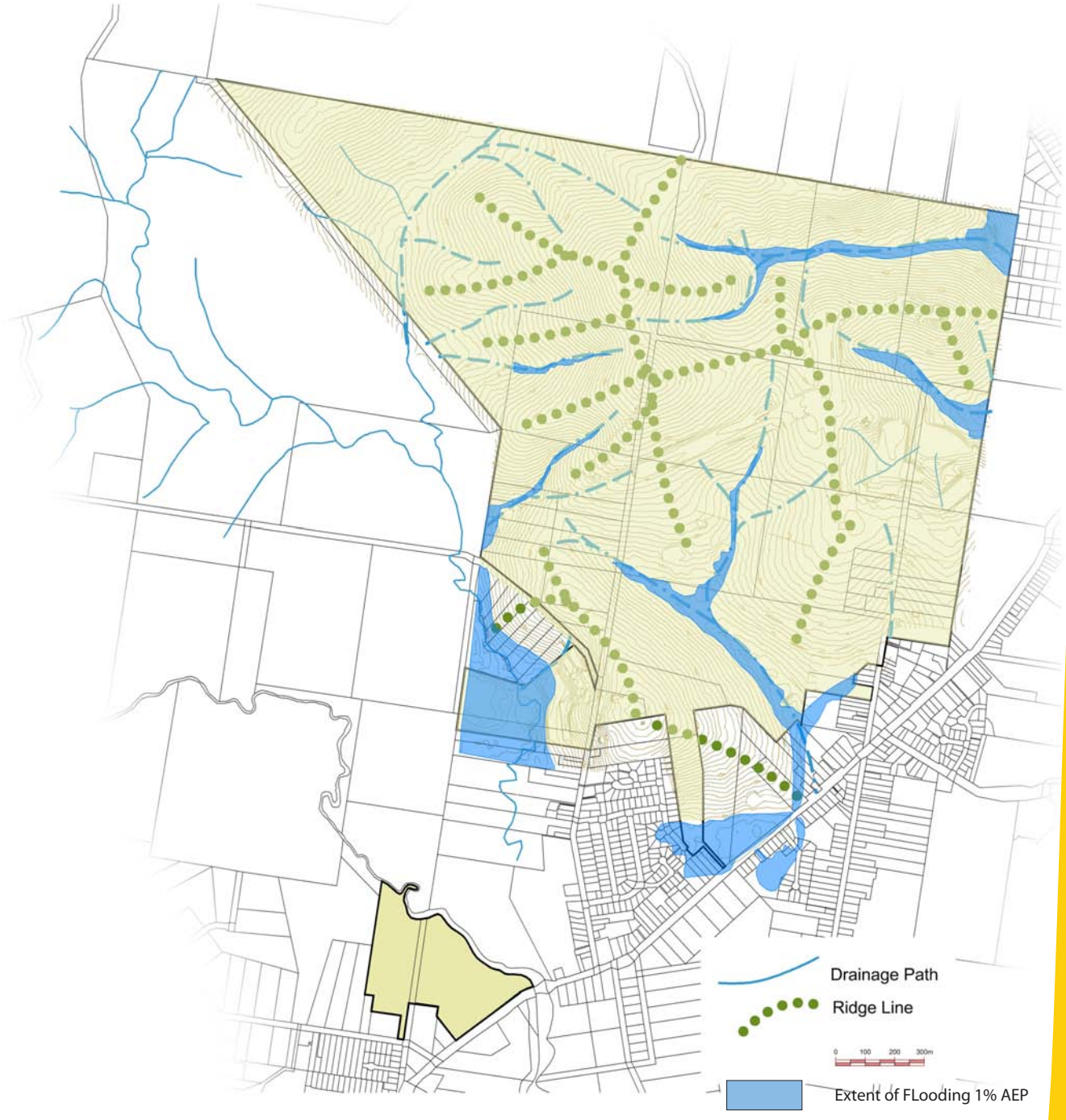

HYDROLOGY PLAN

FIGURE 7

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2.6.3 Geology

Douglas Partners Pty Ltd prepared a Geotechnical Assessment of the subject site, refer ***Appendix A***. In relation to geology, the site is underlain by the Triassic aged Narrabeen Group, generally comprising chert sandstone, quartzose sandstone, conglomerate, shale and claystone. A shallow soil profile was generally observed with silty topsoil overlying sandy clay and silty clay soils. Sandstone outcrops were observed at the base of some erosion scours.

The implications for the proposal as a result of the geology of the site are as follows:

- soils should be able to be readily excavated by conventional earthmoving equipment
- detailed investigations should be made prior to development to confirm specific excavation conditions in each area
- geology does not constrain development.

2.6.4 Vegetation

Vegetation studies have been conducted on this site since JPG first became involved in the development in 2000. Studies previously conducted, and which forms part of this submission, have analyzed the existing vegetation communities with respect to the relevant legislative framework. Detailed flora assessments are attached as appendices.

In summary, flora assessments found the following vegetation on the site:

- A total of 312 species (263 native and 49 exotic) were recorded as part of the site flora assessment.
- Four (4) vegetation communities were identified on the site:
    - Coastal Plains Smoothbarked Apple Woodland,
    - Coastal Plains Scribbly Gum Woodland,
    - Riparian Melaleuca Swamp Sclerophyll Woodland, and
    - Alluvial Tall Moist Forest.
- One endangered community listed under the TSC Act was recorded on the site:
    - Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions.
- Three species listed on the EPBC Act and the TSA Act were recorded on the site:
    - *Angophora inopina* - Charmhaven Apple,
    - *Grevillea paviflora* subsp. *Paviflora* – Small Flower Grevillea, and
    - *Tetratheca juncea* – Tetratheca.
- Three species of regional conservation significance were recorded on the site:

- *Blandfordia grnadiflora,*
- *Hakea bakeriana,* and
- *Tetratheca juncea*

- One noxious weed as classified for the Lake Macquarie LGA was recorded on site as being *Ageratina adenophora.*

Reference is made to ***Figure 8*** Vegetation Plan, which was referred to in the flora report and is an extract from the LHCCREMS(2003).

A further study was undertaken on adjacent land at that time (refer Area B on ***Figure 3***) which was proposed for compensatory habitat. The land suitable for this purpose was defined and incorporated into the Concept Plan, refer ***Appendix B(ii)***

Following further discussions with the DEWHA, a further targeted study was carried out in February 2008 in respect to *Angophora inopina*, *Grevillea paviflora*, and
Tetratheca juncea. The findings of these studies are represented in ***Appendix B(iii).*** Further review was requested by local environmental consultancy *Harper Somers O'Sullivan (HSO)* as to the distribution of these plants in the region. The HSO report investigated the distribution of these plants on a regional base.

In addition to fauna in respect to the main site, HSO was engaged to examine the ecological state of the Town Common Site. Again the results of this study is included as an appendix, ***Appendix B(ii).*** While no threatened species were found on this site vegetation quality was generally good adding value to the conservation of part of this site under the Concept Plan.

2.6.5 Fauna

Baseline fauna studies have been conducted on this site since JPG first became involved in the development in 2000. Studies previously conducted, and which forms part of this submission, have analyzed the existing fauna communities with respect to the relevant legislative framework.

Austeco Pty Ltd undertook a site specific fauna assessment of the subject site to provide baseline data on the fauna of the site. The report concluded that 15 threatened species were either on the site, likely to be on the site (due to potential habitat) or possible to frequent the site. **Table 5** lists these species, their presence or likelihood of being present, and micro and macro habitats.

Table 5 – Threatened Fauna *Source: Austeco 2004*

Threatened Species	Macrohabitats*	Microhabitats	Present
Glossy Black Cockatoo Calyptorhynchus lathami	DSF, WSF,SF	Large hollows Casuarinas	present
Swift Parrot Lathamus discolor	SF	Swamp Mahogany	likely
Regent Honeyeater Xanthomyza phyrigia	SF	Swamp Mahogany	likely
Powerful Owl Ninox strenua	WSF, SF, DSF,	Large tree hollows	likely
Masked Owl Tyto novaehollandiae	WSF, SF, DSF,	Large tree hollows	likely
Spotted-tailed Quoll Dasyurus maculatus	WSF, DSF, SF		likely
Koala Phascolarctos cinereus	WSF, DSF, SF	Food Trees Mature forest	possible
Squirrel Glider Petaurus norfolcensis	SF, DSF	Medium hollows Banksia spp. Swamp Mahogany Red Bloodwood	possible
Grey-headed Flying Fox Pteropus poliocephalus	SF	Swamp Mahogany	present
East-coast Free-tailed Bat Mormopterus norfolkensis	WSF, DSF, SF	Small hollows	present
Little Bent-wing Bat Miniopterus australis	WSF, DSF, SF	Small hollows	present
Eastern Bent-wing Bat Miniopterus schreibersii oceanensis	WSF, DSF, SF	All hollows	present
Large-footed Myotis Myotis adversus	WSF SF	All hollows	present
Greater Broad-nosed Bat Scoteanax rueppellii	WSF, DSF, SF	Small hollows	present
Green-thighed Frog Litoria brevipalmata	WSF,SF	Riparian Forest Swamp Forest	likely

**WSF – Wet Sclerophyll Forest*
DSF – Dry Sclerophyll Forest
SF – Sclerophyll Forest

The HSO report relating to the fauna of the Town Common site potential habitat for potentially significant fauna. The Concept Plan maximises the conservation of quality habitat on this site as can be seen by the dedication of part of the site under ecological zonings.

2.6.6 Access and Transport

The local transport system is dominated by the F3 Freeway (Sydney to Newcastle Freeway) which runs in a north south direction approximately 800m from the eastern boundary of the subject site (refer ***Figure 9***). In addition to this the major arterial road for local traffic is Freeman's Drive which runs parallel with the F3, between the subject site and the F3. Freeman's Drive connects to the subject site via Avondale Road. Traveling south, Freeman's Drive connects the subject site to the existing area of Cooranbong and further to Morisset.

The nearest rail station to the subject site is the Dora Creek station closely followed by Morisset station which are both located on the Sydney-Newcastle line. Multiple services arrive and depart the stations daily traveling both north towards Newcastle, and south towards the Central Coast and Sydney. Services which may pass through Dora Creek Station will usually stop at Morisset due to its higher station hierarchy status.

Morisset Buses runs a regular service between Cooranbong and Morisset, route 280, refer ***Figure 9***.

Appendix R(i) is a technical document prepared by GHD and Better Transport Futures. The existing access and transport facilities servicing the subject site are briefly outlined as follows. In addition a T-Map has been completed in negotiations with the Ministry of Transport and is attached ***Appendix R(ii)***.

Road Access

The following describes the existing road network within Cooranbong and surrounding areas. This network is shown on ***Figure 9***. The existing road network within the study area comprises the following traffic management features:

Stop-sign control

- Alton Road onto Freeman's Drive
- Central Road onto Freeman's Drive
- Other intersections generally operate under give-way sign control

Freeman's Drive

Freeman's Drive was previously designed as a main road under the Roads and Traffic Authority hierarchy classification prior to the construction of the Sydney – Newcastle Freeway. After the Freeway was constructed, Freeman's Drive was re-classified as a local road under the care and control of LMCC. Freeman's Drive performs the function of a sub-arterial road providing secondary inter-regional links between Cooranbong and Morisset. Freeman's Drive also provides access to the Mandalong Road interchange on the F3 Freeway.

Through, this Cooranbong typically has a 14.8m wide sealed carriageway, which incorporates two travel lanes, one in either direction and has available area to accommodate on-street parking on either side of the road. The speed environment along Freeman's Drive is 80km/hr in areas that are rural in character and reduces to 60km/hr through urban centres such as Cooranbong.

Alton Road

This road is classified as a local road under the care and control of LMCC. This road link is connected to Freeman's Drive at its southern end and terminates to the north at Olney State Forest. Alton Road performs the function of a local/collector road providing access to urban and rural type residential and commercial properties. The sign posted speed limit along Alton Road is 50km/hr.

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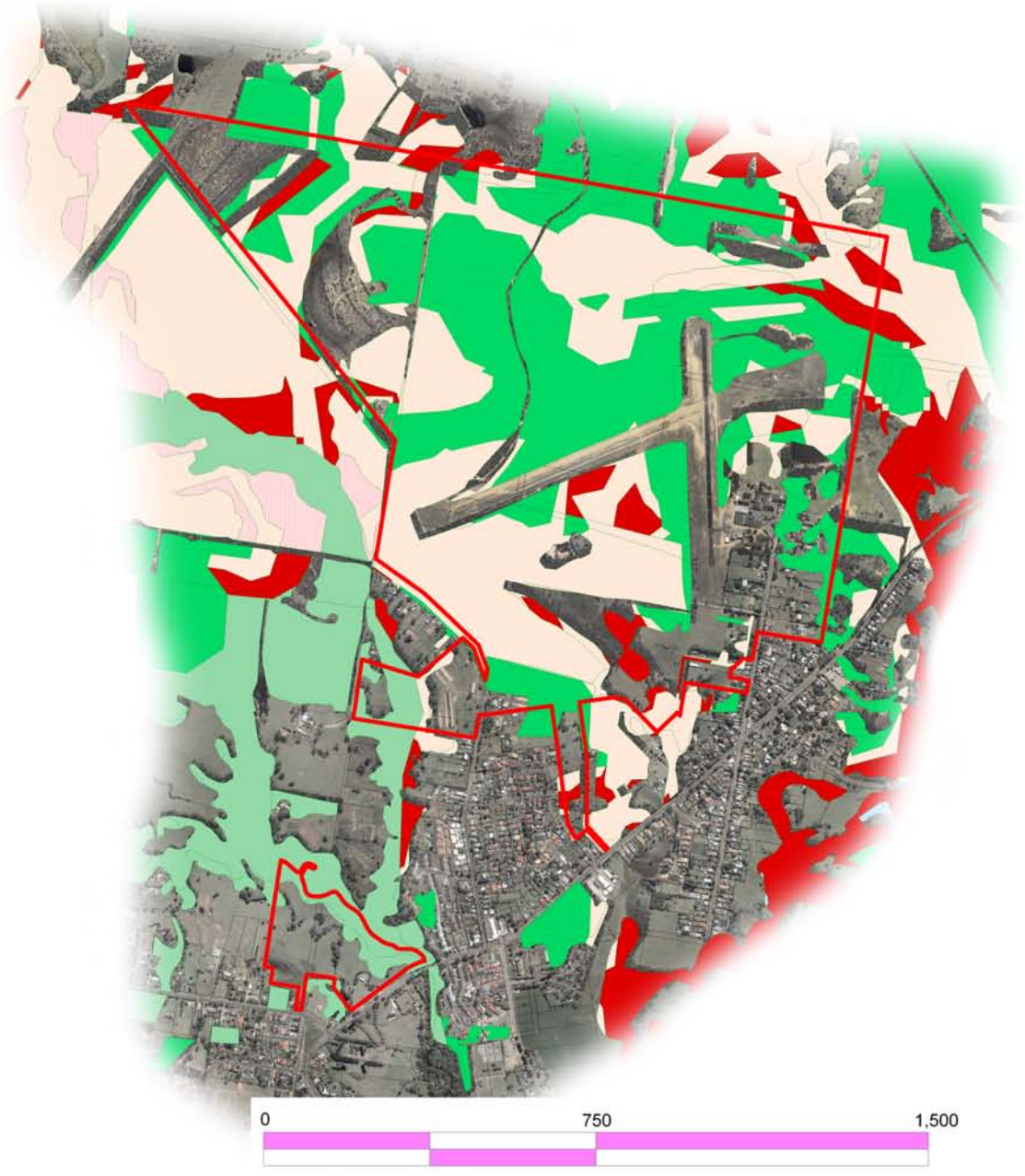

LEGEND

- Coastal Plains Scribbly Gum Woodland
- Coastal Plains Smooth-barked Apple Woodland
- Riparian Melaleuca Swamp Woodland
- Redgum Rough Barked Apple Forest
- Swamp Oak Rushland Forest
- Mangrove-Estuarine Complex
- Water
- Swamp Oak Sedge Forest
- Swamp Mahogany - Paperbark Forest
- Rushland
- Melaleuca Scrub
- Coastal Foothills Spotted Gum - Ironbark Forest
- Coastal Ranges Open Forest
- Coastal Sand Apple - Blackbutt orest
- Coastal Wet Gully Forest
- Coastal Narrabeen Moist Forest
- Coastal Warm Temperate- Subtropical Rainforest
- Alluvial Tall Moist Forest

FLORA & FAUNA CONSTRAINTS PLAN

FIGURE 8

LHCCREMS (2003) Vegetation Mappping

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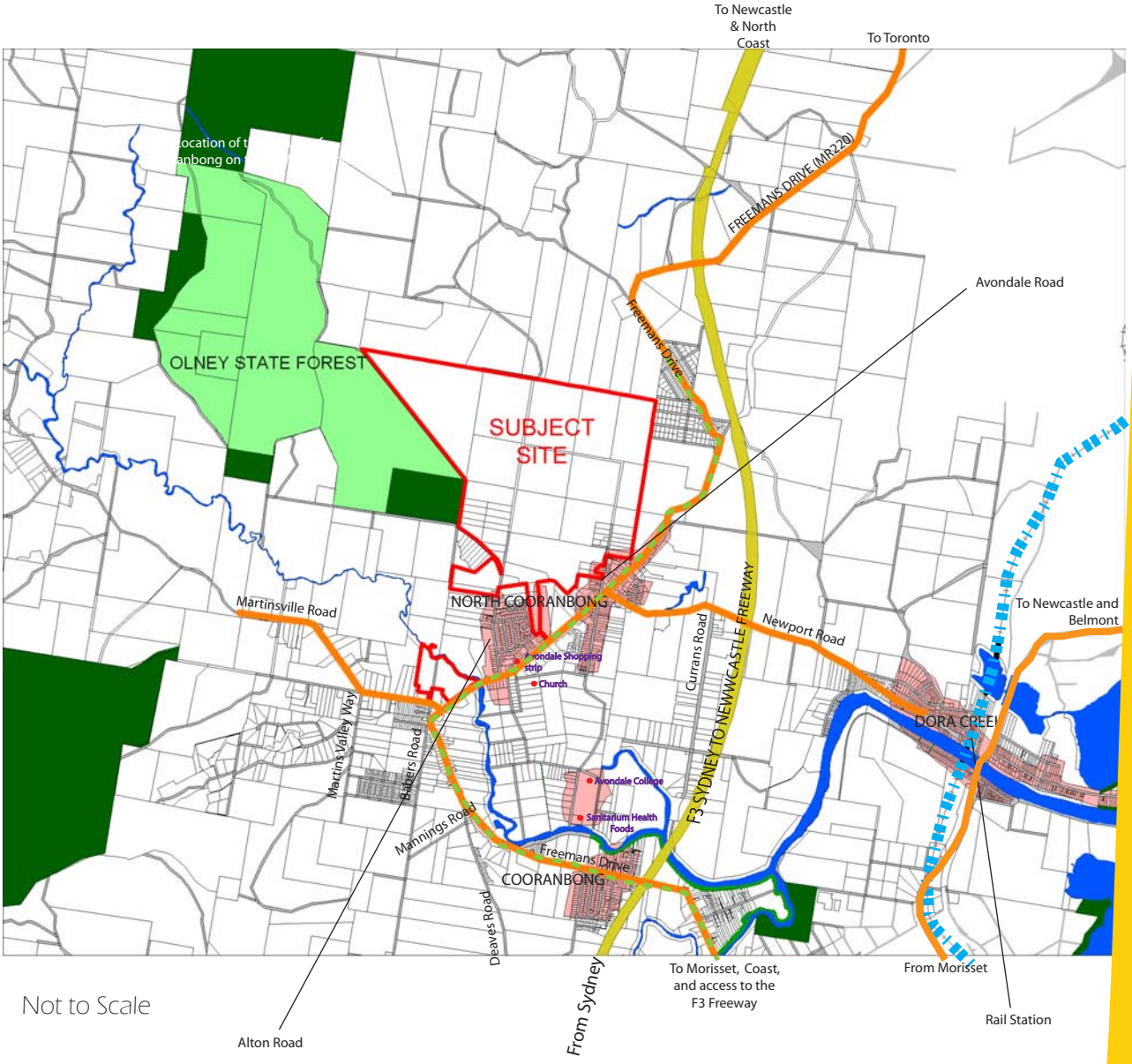


Not to Scale

Subject Site Boundary

Bus Route 280 (Morisset - Cooranbong - Avondale

Main Northern Railway Sydney to Newcastle

Roads

F3 Sydney - Newcastle Freeway

EXISTING TRANSPORT PLAN

FIGURE 9

HDB Town Planning & Design

Avondale Road

Avondale Road is classified as a local road under the care and control of LMCC and is sign posted at 50km/hr (40km/hr during school hours). The road has a north south alignment and forms an irregular four way intersection with Freeman's Drive, approximately 1.2km north-west of the centre of Cooranbong.

Newport Road

Newport Road performs the function of a collector road, providing connection to both the urban centres of Dora Creek and Cooranbong. The road intersects with Freeman's Drive in the west and Macquarie Road in the east and services a number of local residential roads in Dora Creek.

Rail Services

Cooranbong is located near two railway stations (Morisset and Dora Creek) which are serviced by regional type rail services. Dora Creek is situated approximately 4km east of the site and currently has the capacity to offer a park and ride opportunity with rail. Morisset is located approximately 6km south east of the site and offers and higher frequency train service, district facilities and bus connections. Morisset Station has disabled access and a large commuter carpark.

Bus Services

Cooranbong is currently serviced by Morisset Bus Company which operates along the Freeman's Drive Corridor, linking Cooranbong with Morisset (Route No. 280). The 280 Timetable currently offers approximately 10 services in each direction per day. This service does not operate on weekends and is designed to connect with the train timetable at Morisset Train Station.

Bicycle and Pedestrian Networks

Currently Cooranbong and the surrounding areas are rural / residential in character and as such there is little in the form of pedestrian and cycling infrastructure to support or encourage these forms of travel. The general layout of Cooranbong is scattered along three road links covering an approximate distance of between 2km and 3km. The majority of the population travel to work by car.

A number of sealed footpaths have been provided around Cooranbong shopping area, which is situated at the intersection of Freeman's Drive and Alton Road. Pedestrian access across Freeman's Drive is facilitated by a pedestrian refuge which is situated between the Cooranbong shops located on the north-western side of Freeman's Drive and Central Road. Central Road is located to the south of Freeman's Drive and services Avondale School and one of three retirement villages situated in the Cooranbong area.

There are no apparent cycling routes in the area. However, the area presents a good opportunity to provide on and off-road cycle routes, given the available road and reservations, local attractions and relatively flat terrain. Networks show in the ***Appendix R,*** have been agreed to with LMCC and are outlined in a voluntary planning agreement.

2.6.7 Existing Services

Appendix D contains letters from Utility Service providers and ***Appendix I*** contains the North Cooranbong Bulk Water and Wastewater Servicing Study, prepared by *Patterson Britton & Partners*. The existing services to the subject site are briefly outlined as follows.

Water

The North Cooranbong area is situated within the Hunter Water Corporation's Water Supply Developer Servicing Plan area for Wangi and is serviced by the Morisset – Wyee Water Supply System. This water supply system is located entirely within the Lake Macquarie Council LGA and provides water to several townships in south-western Lake Macquarie including Wyee, Morisset, Cooranbong, Avondale, Dora Creek, Mirrabooka, Eraring and Wangi.

The Morisset – Wyee Water Supply System is supplied by the Wangi Reservoir which is filled from the South Wallsend Reservoir by the Wallsend Water Pumping Station. From the Wangi Reservoir, water flows south under gravity to Dora Creek via two trunk water mains.

At the Dora Creek Bridge the trunk mains divert water west along Newport Road to the Dora Creek Reservoir. This reservoir serves to provide water to the western areas of Dora Creek, Cooranbong and surrounds. Refer ***Figure 10*** – Water Supply Schematic.

Wastewater

The North Cooranbong area is situated within the Hunter Water Corporation's wastewater Developer Servicing Plan for Dora Creek. The wastewater transportation system is located entirely within the LMCC LGA and services the townships of Wyee Point, Morisset, Cooranbong, Dora Creek, Bonnells Bay, Yarrawonga Park, Silverwater, Sunshine and Brightwaters.

The Dora Creek wastewater transportation system is a conventional gravity system consisting of gravity trunk mains, WWPS's and rising mains. Wastewater produced from the catchment is ultimately transported to the Dora Creek WWTW, which is located approximately 5km to the south-east of the subject site.

Wastewater from the North Cooranbong area currently drains in a southerly direction along Freeman's Drive via a series of WWPS's and rising mains to

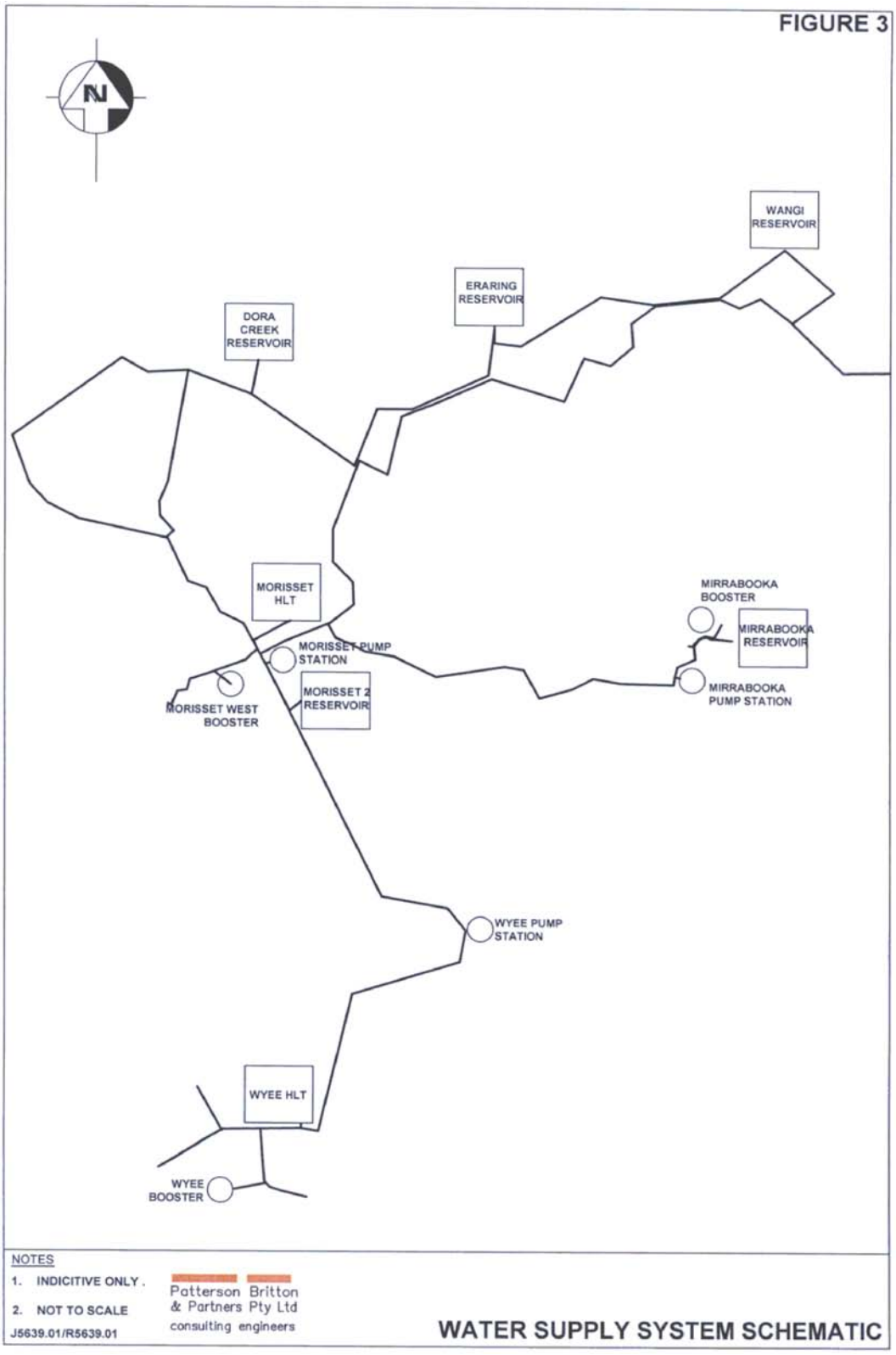
western Morisset. The wastewater is then directed through additional WWPS's and rising mains in Morisset, before being delivered to the Dora Creek WWTW.

Refer ***Figure 11*** – Wastewater Servicing

Electricity
Correspondence was received from *Energy Australia* dated 24th September, 2004 notes that there is sufficient supply for the North Cooranbong proposal. There is three phase high voltage 11kv supply available in Freeman's Drive, Alton Road and Avondale Road Cooranbong, which surrounds the subject site. (Refer ***Appendix B***)

Communications
The site is located in close proximity to the existing village of Cooranbong and it is considered that the site will have access to a suitable telecommunications network.

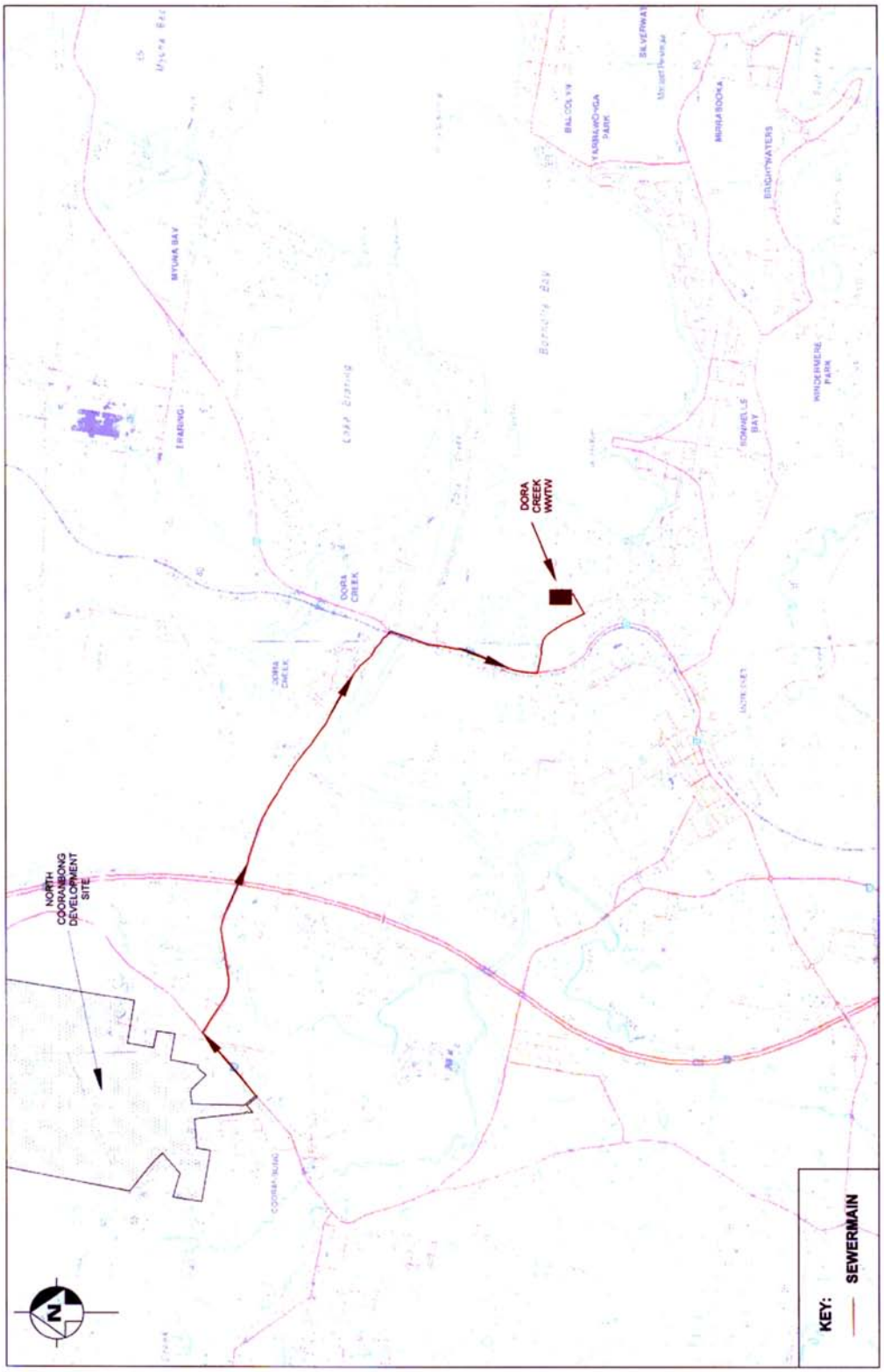
Natural Gas
Correspondence was received from Agility Energy dated 7th September, 2004 which notes that natural gas is available in the vicinity and can be extended to supply the North Cooranbong proposal.



WATER SUPPLY SCHEMATIC

FIGURE 10

FIGURE 9



WASTE WATER SERVICING

FIGURE 11

3.0 PLANNING FRAMEWORK & CONTEXT

This Concept Plan for the North Cooranbong site is submitted under Part 3A of the EP&A Act 1979.

To demonstrate the ability of the proposal to meet the requirements of environmental legislation, regulations, policies and controls the following section will address relevant planning legislation as it applies to the subject site.

3.1 Commonwealth Legislation EPBC Act 1999

The EPBC Act 1999 requires Federal Government approval for developments (actions) which are classified as 'controlled actions' under this Act. Controlled Actions are those which, under the auspices of the EPBC Act will have a significant impact on a 'matter of national environmental significance'. In relation to the subject proposal such significant impact would occur if the site were to contain, or the proposal were to affect, threatened species, ecological communities or migratory species listed under the Act.

As a result of previous site investigations in relation to flora and fauna, a significant body of information has been accumulated for the site. The ecology reports conducted over these years found a number of species to be listed as endangered or vulnerable under the EPBC Act 1999. These species include the:

Fauna

- *Lthamus phygia* - Swift Parrot,
- *Xanthomyza phrygia* - Regent Honeyeater, and
- *Pteropus poliocephalus* - Grey-headed Flying Fox.

All of these species fall within the Swamp Mahogany (winter nectar feeding) Guild. The following flora found on site are listed as endangered or vulnerable under the EPBC Act 1999.

Flora

- *Grevillea. parviflora* R. Br. Subspecies *parviflora* – Small Flower Grevillea
- *Tetratheca juncea* – Tetratheca
- *Angophora inopina* – Charmhaven Apple

Two listed migratory species have been reported to occur on the site or have been spotted while traversing the site:

- *Aredea ibis* - Cattle Egret; and
- *Scythrops novaehollandiae* - Channel Billed Cuckoo

(Harper Somers 2002a.b, Harper Somers O'Sullivan 2002,2003).

Reference is made to ***Appendix B*** – Flora Vegetation Study and ***Appendix C*** – Cooranbong Fauna Constraints Assessment – Refer ***Figure 8***.

These species may be considered transient or vagrant as no suitable, long term seasonal foraging habitat for either species is present on the Site.

In May of 2007 the Commonwealth and NSW Governments signed a bilateral agreement which certified the NSW planning process under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act). This meant actions that have been deemed 'controlled' under the EPBC Act by the Federal Minister for Environment, Water, Heritage and the Arts can be assessed under the Environmental Planning and Assessment Act 1979 without the need for concurrent environmental assessments by both State and Commonwealth Governments.

As the concept design will impact on federally listed threatened species, a preliminary assessment application was made to the Commonwealth Department of Environment and Water Resources to determine if the proposal can be considered a controlled action. In a letter dated the 17th December 2007 **(*Appendix E)***, from the Department of Environment, Water, Heritage and the Arts, the project was deemed a 'Controlled Action'. As such the project will be assessed under the NSW Bilateral Agreement with a requirement for project approval from the Australian Government.

3.2 Strategic Framework

3.2.1 Lower Hunter Regional Strategy

In October 2006 the NSW Department of Planning released the Lower Hunter Regional Strategy 2006 (LHRS). This strategy provides region wide direction to ensure the adequate provision of land for various uses over the next 25 years. This plan aims to sustainable provide for the predicted demand for residential and employment land over this period.

Residential capacity of the region forms a major component of the LHRS with provision for residential land to accommodate approximately 115,000 new dwelling houses for an estimated 160,000 increase in population.

Among future urban areas identified by the LHRS is the North Cooranbong area. Specifically the LHRS identifies the North Cooranbong future urban area as accommodating up to 3000 new dwellings. Due to the regional and state significance of this project, this proposal seeks the Minister's concept plan and rezoning approval to allow a new community to be developed catering for 2500

residential lots of varying size and associated supporting infrastructure. This represents approximately 2.2% of the proposed new residential lots/dwelling proposed under the strategy. This equates to approximately 3.9% of the anticipated population growth in the region. Importantly the site represents the major urban (residential) release in the West Lake Macquarie area with the ability to meet demand for residential land in the area highly dependent on the timely, efficient and sustainable release of this site.

The subject site is an important part of the LHRS and the proposal can therefore be seen as consistent with the regional objectives of this plan in ensuring there is sufficient residential land to accommodate expected growth.

Reference is made to ***Figure 12*** – Lower Hunter Regional Strategy

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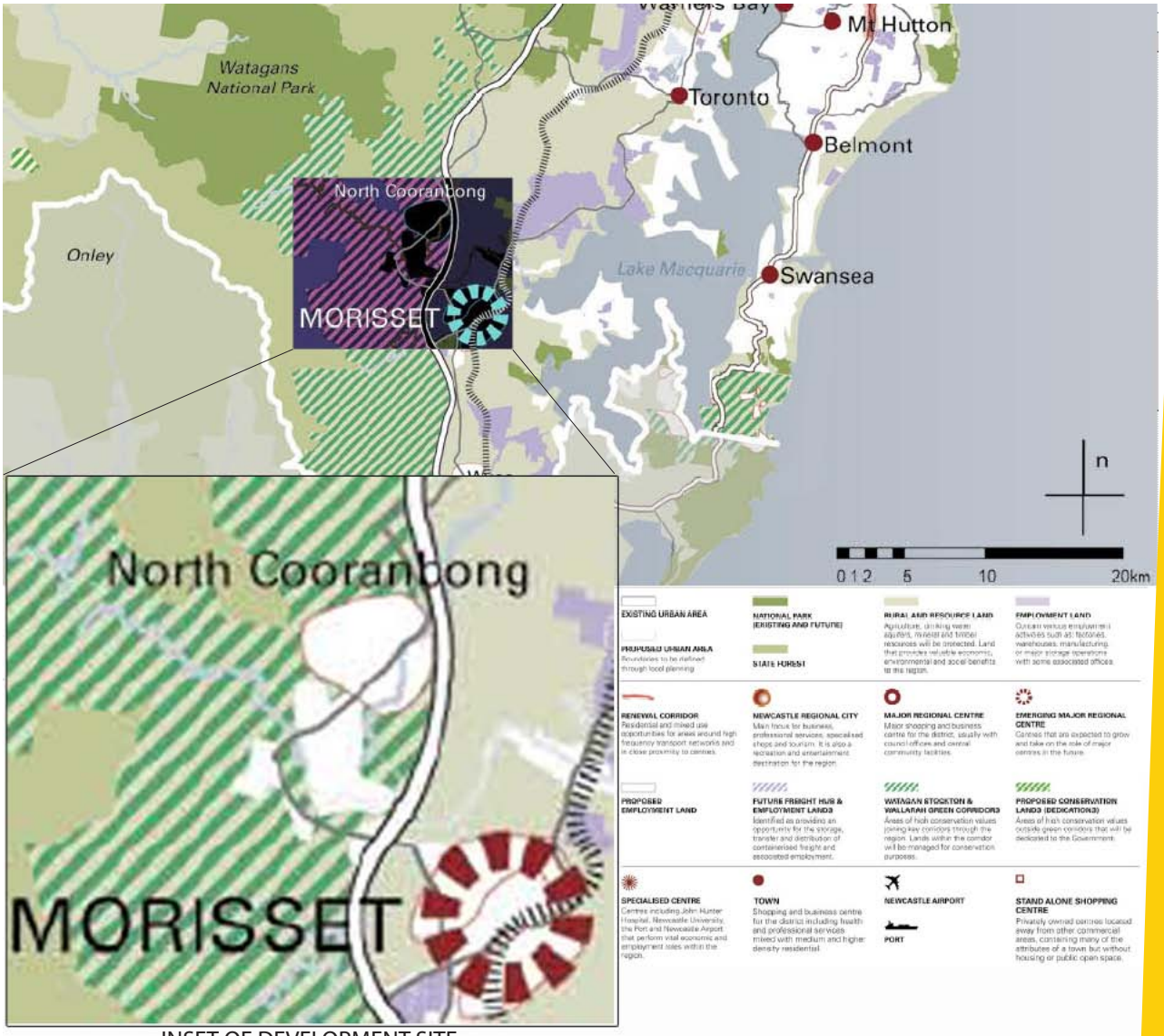

INSET OF DEVELOPMENT SITE

Source: © NSW Department of Planning

Not to Scale

LOWER HUNTER REGIONAL STRATEGY PLAN

FIGURE 12

HDB TownPlanning&Design

3.2.2 Draft Lower Hunter Regional Conservation Plan

The Draft Lower Hunter Regional Conservation Plan (DLHRCP) was prepared in unison with the LHRS and outlines the conservation objectives for the region over the next 25 years. Having been identified as future residential land in the LHRS, the subject site is not identified for conservation under this plan and therefore the proposal is not contrary to the Plan. Furthermore site specific environmental objectives have been designed into the concept plan to ensure waterways and 'green corridors' link to off site vegetation which further connects to conservation areas identified under this plan, reinforcing its objectives.

Negotiations are currently underway with the DECC and DoP to maximise development of the site in line with the density targets set by the LHRS. This will occur with the aim of preventing the underutilisation of land identified in the strategy therefore preventing deficiencies in residential land in the future. Enabling the LHRS targets to be met for the subject site will prevent pressure of additional environmentally constrained land. Therefore in order to achieve the desired development density on the site the DECC will nominate environmental offset land for purchase/maintenance. This will be fully covered in the regional voluntary planning agreement.

3.2.3 Lake Macquarie City Council – Lifestyle 2020

The *Lake Macquarie Lifestyle 2020 Strategy* (Lifestyle 2020) was adopted by Council on 27 March 2000, to underpin the land use provisions of LEP 2004 and DCP's 1 and 2. Lifestyle 2020 provides broad strategies to manage population and employment growth expected to occur in Lake Macquarie over the next 20 years. The strategy acknowledges that land use planning, environmental management and socio-economic development are intrinsically interrelated. The strategy states:
"The vision for the City, held by Council and the community, is that it is:

- *A place where the environment is protected and enhanced.*
- *A place where the scenic, ecological, recreation and commercial values and opportunities of the Lake and coastline are promoted and protected.*
- *A place that recognises encourages and develops its diverse cultural life and talents and protects and promotes its heritage.*
- *A place that encourages community spirit, promotes a fulfilling lifestyle, enhances health and social well being, encourages lifestyle choices and has opportunities to encourage participation in sport and recreation.*
- *A place that promotes equal access to all services and facilities and enables all citizens to contribute to and participate in the City's economic and social development.*

In terms of managing population growth, Lifestyle 2020 states that not only will there need to be new homes for natural population growth, but also new homes to compensate for existing households becoming smaller. To address this, the LEP

2004 identifies land that is considered strategically suitable for future urban and conservation purposes by application of the 'Investigation' land use zone. The onus is then upon the landowner to confirm, via site-specific environmental assessment, that the site is also capable of sustaining the urban use intended.

The subject site has been identified as strategically suitable for development. The environmental assessment carried out as part of this submission, and as part of the previous Council process, demonstrates that the site is capable of sustaining development in the manner proposed.

The following 'core values' under Lifestyle 2020 demonstrate the proposal is consistent with the adopted strategy.

- *Sustainability* – By developing an area which adjoins existing urban areas the proposal seeks to optimise the use of existing infrastructure, services, retail facilities and employment opportunities.
- *Equity* – The proposal seeks to provide housing choice in a well resourced attractive area.
- *Efficiency* – Residential development on the site would help to provide sufficient critical mass to justify upgrading of existing infrastructure.
- *Liveability* – The proposal seeks to ensure that development on the site will reflect the history and ecology of the site and create a safe attractive well designed community.

Development in accordance with the 'core values' ensures that future development in the City is consistently managed, and promotes a sustainable and shared vision for the City.

The goals and objectives associated with each of the 'core values' that are particularly relevant to this proposal include:

- to provide urban communities with a good balance and range of housing – the proposal will provide a range of development types and increase housing choice in the region. Housing affordability is a must.
- encourage a mixture of housing types to serve a range of income levels – the proposal will provide for a mix of housing types and land sizes on the site, based on the hierarchy of centers principle (i.e. higher density surrounding the hub area, radiating out to larger residential lots along the periphery).
- to use land efficiently – the proposal identifies land which can be developed and ensures that land is developed effectively.
- to minimise clearance of bushland – the proposal limits the clearance of bushland with large areas retained along riparian corridors and adjoining areas of surrounding bushland. Bushlandd cleared will be offset as agreed with DECC and DoP.

- maintain the highest and best use of land – the proposal provides an efficient use of land outside the flood plain and close to facilities and services.

Implications for the proposal
Future development applications must be generally consistent with LEP 2004, DCP 1 and DCP 2, and North Cooranbong Concept Plan as proposed by this submission.

3.3 Statutory Framework

The following section provides a summary of relevant State, Regional and Local Environmental Planning Instruments (EPI's) that are applicable to the subject site

3.3.1 Major Project SEPP

The Minister for Planning is the approval authority in respect to Part 3A of the Major Project SEPP. This SEPP lists categories of development that, with Minister's consent, are subject to assessment and determination under Part 3A of the EP & A Act.

On the 19th October 2007 the DoP confirmed that the proposal was a development to which Part 3A of the EPA Act 1979 applies. The Minister, in a letter dated 8th November 2007 (***Appendix E***) advised that he agreed to consider the above site as a potential state significant site under the provisions of State Environmental Planning Policy (Major Projects 2005) and further authorise the submission of a concept plan for the site.

The Minister advised that in considering whether to include the site in Schedule 3 or 4 he required the preparation of a study pursuant to Clause 8 of the Major Project's SEPP.

Schedule 3 of the Major Project's SEPP affectively rezones the site and determines appropriate development control to guide future development of the site. Schedule 4 allows an existing environmental instrument, in this case the Lake Macquarie LEP 2004, to be amended in line with the proposal. A State Significant Site Study seeking the Minister to decide whether the North Cooranbong site is a state significant site is attached ***Appendix F***.

3.3.2 SEPP 11

Developments with certain characteristics can be classified as Traffic Generating Developments under this EPI and as such require referral to the relevant Traffic Authority for assessment as part of the 3A Major Projects Assessment process.

The relevant traffic authority for the proposal is the Roads and Traffic Authority (RTA). The RTA have been consulted over 3 years on this project and referral to the RTA will again occur under the Part 3A assessment. Traffic management studies and the traffic implications of the development are fully discussed in **Section 7** of this report.

3.3.3 SEPP 55

SEPP 55 aims to promote the rehabilitation of contaminated lands so they can be further utilised without the threat of health risks to the population or the environment. Consideration of this SEPP is required during the assessment of applications on contaminated lands. As the subject site contains a number of contamination issues (however small), consideration of this SEPP is required.

Section 7 of this document provides a discussion of the preliminary contamination assessment undertaken as part of the environmental assessment for this concept application.

In summary it was shown that the site contained a number of minor contamination issues which can be ameliorated as part of site preparation to safely permit future development as shown in the concept plan.

Please note that the proponent has received Development Application and Construction Certificate Approval from Lake Macquarie Council to remediate a biosolids storage area on the subject site. Council's reference numbers are DA 175/2007 and SCC 90/2007.

3.3.4 Draft SEPP 66

This draft SEPP aims to better integrate land use and transport planning at the local level, by putting in place provisions to guide:

- the preparation of draft local environmental plans
- the adoption of development control plans and master plans
- the consideration of development applications.

In relation to new residential development, the draft SEPP 66 states:

(1) In preparing an environmental planning instrument that will allow residential development on land that is not being used for residential purposes, and before approving a development control plan, master plan or precinct plan relating to such a plan, the person who prepares or approves the instrument or plan should include provisions that:

(a) ensure an average gross residential density of development within the neighbourhood of at least 15 dwellings per hectare, and support the achievement of viable public transport thresholds, and

(b) that development of the land will result in building forms and subdivision designs and layouts that encourage and are supportive of walking, cycling and the use of public transport.

(2) Despite subclause (1), the Minister may make a local environmental plan, with provisions that will allow an average gross residential density of development, within the neighbourhood of less than 15 dwellings per hectare, if the council for the area concerned can justify a lower density by reasons that specifically address any departure

(3) From the planning objectives of this Policy.

In relation to the concept proposal the following points need to be considered:

- It is desirable that any proposed residential development endeavour to achieve the state government's target minimum density of 12 dwellings per hectare for new residential release areas in the lower Hunter.
- The concept plan is accompanied by a traffic and transport report which assesses the impact of the proposed uses on the surrounding street network and includes recommendations for new roads and new public transport routes.
- To encourage use of alternative modes of transport to the car, building forms and subdivision designs and layouts should encourage walking, cycling and the use of public transport, and bus services should be introduced early in the development process. The Concept Plan is conducive to these objectives. A TMAP has also been prepared to address alternative forms of transport ***(AppendixR)***
- There will be consultation with transport operators (i.e. Toronto and Morisset Bus Companies) as a precursor to the initial development applications for subdivision. A subsidy to Ministry of Transport for the provision of bus services is likely to form part of a regional planning agreement for this development.

Draft SEPP 66 has been taken into consideration during the preparation of the Concept Plan and expanded further in the document.

3.3.5 HREP 1989

The aims of this plan are:

(a) to promote the balanced development of the region, the improvement of its urban and rural environments and the orderly and economic development and optimum use of its land and other resources, consistent with conservation of natural and man made features and so as to meet the needs and aspirations of the community,

(b) to co-ordinate activities related to development in the region so there is optimum social and economic benefit to the community, and

(c) to continue a regional planning process that will serve as a framework for identifying priorities for further investigations to be carried out by the Department and other agencies.

In relation to the provision of housing, Division 1 of the HREP 1989 has the following aims:
The objectives of this plan in relation to planning strategies concerning housing are:

(a) to provide opportunities for adequate provision of secure, appropriate and affordable housing in a variety of types and tenures for all income groups throughout the region, and

(b) to ensure that the design and siting of residential development meets community needs, minimises impact on the natural environment and involves the quality of the region's built environment.

While the aims and objectives of the HREP 1989 deal primarily with the creation of Local Planning Instruments, the proposed concept can be considered to promote the aims and objectives of the plan through the provision of sustainable and serviced residential land to accommodate the future growth of the region, in line with the Lower hunter Regional Strategy.

3.3.6 HREP (Heritage) 1989

The general aims and objectives of this plan are:

(a) to conserve the environmental heritage (including the historic, scientific, cultural, social, archaeological, architectural, natural and aesthetic heritage) of the Hunter Region,

(b) to promote the appreciation and understanding of the Hunter Region's distinctive variety of cultural heritage items and areas including significant buildings, structures, works, relics, towns, precincts and landscapes, and

(c) to encourage the conservation of the Region's historic townscapes which contain one or more buildings or places of heritage significance or which have a character and appearance that is desirable to conserve.

No items on the subject site have been identified as being listed in this instrument therefore it is not considered to apply to the proposal. Due diligence has been undertaken to ensure items of heritage significance have been accommodated in the concept design. While a number of items of local heritage significance (as listed in the Lake Macquarie LEP 2004) have been identified onsite, no regionally listed items have been identified.

3.3.7 Existing Land Use Zonings

The objective of the Lake Macquarie LEP 2004 is to achieve development of land to which this plan applies that is in accordance with the principles of ecologically sustainable development by:

(a) Promoting balanced development of that land, and

(b) Implementing the Lifestyle 2020 Strategy adopted by the Council on 27 March 2000.

The following existing zones appy to the subject site, as detailed in the Lake Macquarie LEP 2004. (Refer ***Figure 13***)

Table 7 –Existing zonings within subject site boundary. *Source: Lake Macquarie LEP Maps 2004*

Zone 1 (1) Rural (Production) Zone	**1 Objectives of zone** (a) provide for economic and employment-generating agricultural activities, and (b) provide for a range of compatible land uses that maintain and enhance the rural environment of the locality, and (c) ensure development is carried out in a manner that improves the quality of the environment, including quality of design, and is within the servicing capacity of the locality, and (d) encourage development and management practices that are sustainable, and (e) encourage the development of good quality agricultural land for agriculture (other than intensive agriculture) to the greatest extent possible, and (f) encourage the development of low quality agricultural land for intensive agriculture, and (g) provide for sustainable forestry practices, and (h) avoid land use conflict by restricting or prohibiting development that has the potential to negatively affect the sustainability of existing agriculture, and (i) provide for sustainable water cycle management.
Zone 2 (1) Residential Zone	**1 Objectives of zone** (a) permit development of neighbourhoods of low-density housing, and (b) provide for general stores, community service activities or development that includes home businesses whilst

	maintaining and enhancing the residential amenity of the surrounding area, and (c) ensure that housing development respects the character of surrounding development and is of good quality design, and (d) provide for sustainable water cycle management.
Zone 7 (2) Conservation (Secondary) Zone	**1 Objectives of zone** (a) protect, conserve and enhance land that is environmentally important, and (b) protect, manage and enhance corridors to facilitate species movement, dispersal and interchange of genetic material, and (c) enable development where it can be demonstrated that the development will not compromise the ecological, hydrological, scenic or scientific attributes of the land or adjacent land in Zone 7 (1), and (d) ensure that development proposals result in rehabilitation and conservation of environmentally important land, and (e) provide for sustainable water cycle management.
Zone 10 Investigation Zone	**1 Objectives of zone** (a) provide land for future development and/or conservation, and (b) ensure that land in this zone is thoroughly assessed to identify and substantiate future uses, and (c) provide for limited development of the land and allow that development only where it can be proven not to prejudice or have the potential to prejudice future protection or use of the land, and (d) ensure that land is released in a strategic and efficient manner consistent with the *Lifestyle 2020 Strategy*, and (e) require comprehensive local environmental studies to substantiate the capability and suitability of land in this zone proposed for rezoning, and (f) provide for sustainable water cycle management.

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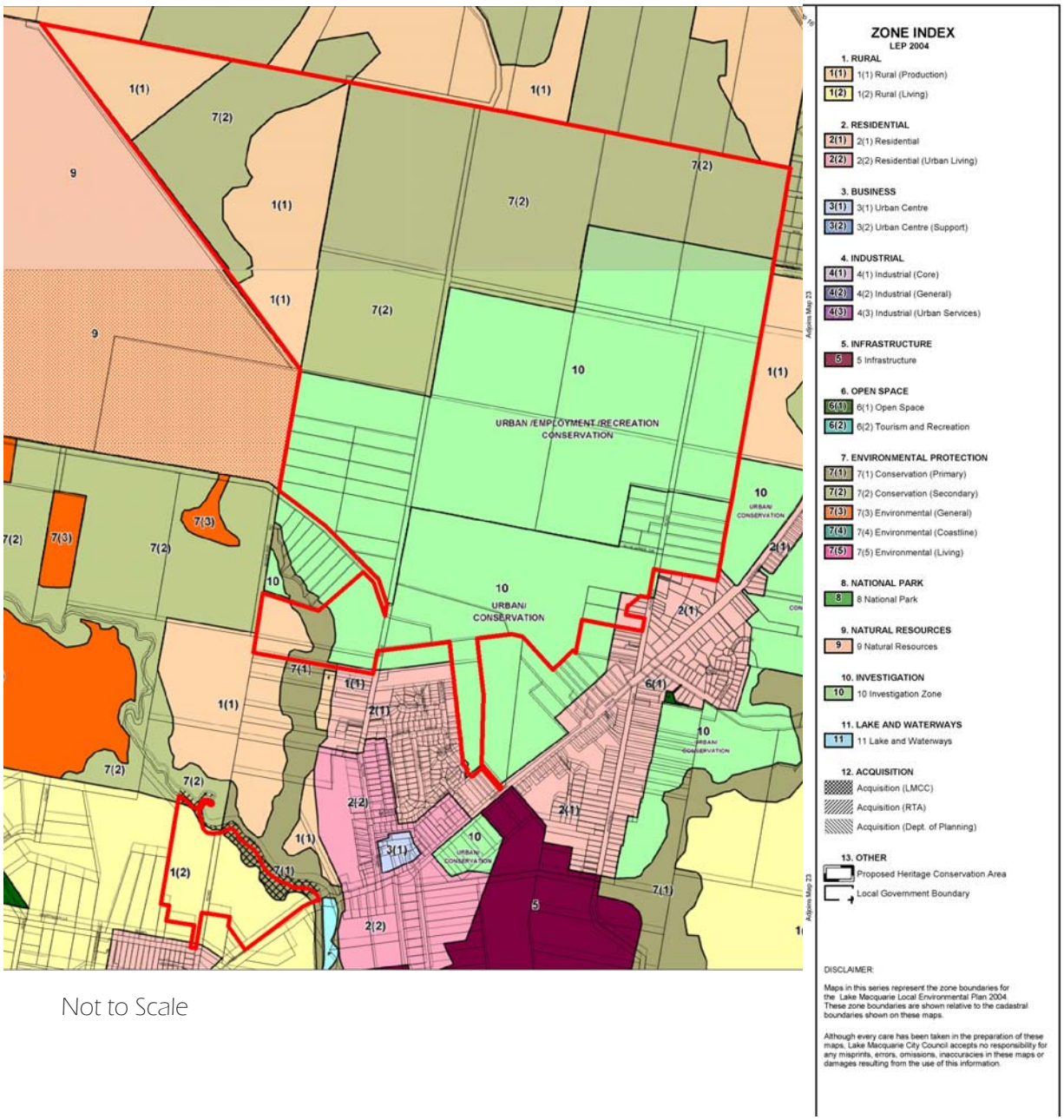

Not to Scale

EXISTING LEP ZONING MAP

FIGURE 13

HDB TownPlanning&Design

3.3.8 Section 117 Directions

The section 117 Ministerial Directions listed in the following table are of key relevance to the proposed development. Relevant Section 117 Directions include:

- Direction No. 9 – Conservation and Management of Environmental and Indigenous Heritage;
- Direction No. 10 – Designated Development;
- Direction No. 11 – Development in a Mine Subsidence District or on Unstable Land;
- Direction No. 13 – Environmental Protection Zones;
- Direction No. 15 – Flood Prone Land;
- Direction No. 17 – Integrated Land Use and Transport;
- Direction No. 19 – Planning for Bushfire Protection;
- Direction No. 21 – Residential Zones;
- Direction No. 22 – Rural Zones; and
- Direction No. 25 – Site Specific Zoning.

Consideration of the relevant provisions within these Directions is provided in ***Appendix G***.

3.4 Integrated Development

Section 75U of the EPA Act 1979 relates to the application of additional NSW legislation to projects which are being assessed under Part 3A of the Act. Specifically, projects being assessed under Part 3A are not subject to the same integrated development assessment as projects being assessed under Part 4 of the Act, however consultation with the same government departments can occur to obtain comments in relation to the Part 3A concept proposal.

The following therefore provides a preliminary assessment of the concept plan in relation to integrated development to demonstrate how integrated development considerations have been incorporated into the concept plan and how government departments' concerns have been anticipated and addressed as part of the concept plan.

Table 8 below outlines where integrated development approvals would otherwise be required under integrated development (Part 4 assessments) and how any resulting issues have been addressed in the concept plan.

Table 8 – Consideration of Integrated Development Legislation

Act and Section	Comment
Fisheries Management Act 1994	
s 144 aquaculture permit	No aquaculture permit has been or will be sought therefore this does not apply
s 201 permit to carry out dredging or reclamation work	No dredging or reclamation work is proposed therefore this does not apply
s 205 permit to cut, remove, damage or destroy marine vegetation on public water land or an aquaculture lease, or on the foreshore of any such land or lease	No marine vegetation will be damaged or destroyed under the concept plan therefore no permits would be sought or required.
s 219 permit to: (a) set a net, netting or other material, or (b) construct or alter a dam, floodgate, causeway or weir, or (c) otherwise create an obstruction, across or within a bay, inlet, river or creek, or across or around a flat	No permits to collect under this section are required therefore this does not apply.
Heritage Act 1977	
s 58 approval in respect of the doing or carrying out of an act, matter or thing referred to in s 57 (1)	No items as listed on the State Heritage Register were found on the site. Despite this an assessment of the heritage features of the site was undertaken as part of the background studies to the site.
Mine Subsidence Compensation Act 1961	
s 15 approval to alter or erect improvements within a mine subsidence district or to subdivide land therein	Correspondence has been received from the mine subsidence board indicating that part of the subject site is located within a proclaimed mine subsidence district. This is addressed in Section 7.5.3.
Mining Act 1992	
ss 63, 64 grant of mining lease	No mining lease is being sought or has been sought for the subject site by the proponent or any known third party.
National Parks and Wildlife Act 1974	
s 90	An assessment of the Indigenous

consent to knowingly destroy, deface or damage or knowingly cause or permit the destruction or defacement of or damage to, a relic or Aboriginal place	heritage of the site has been undertaken. It was concluded that there was no known items or relics on the site proposed to be disturbed in the concept plan. However, due diligence should be undertaken during site preparation if any relics are located. Appropriate authorities and the Local Aboriginal Land Council would be informed if such a find occurred.
Petroleum (Onshore) Act 1991	
s 9 grant of production lease	NA
Protection of the Environment Operations Act 1997	
ss 43 (a), 47 and 55 Environment protection licence to authorise carrying out of scheduled development work at any premises.	NA
ss 43 (b), 48 and 55 Environment protection licence to authorise carrying out of scheduled activities at any premises (excluding any activity described as a "waste activity" but including any activity described as a "waste facility")	NA
ss 43 (d), 55 and 122 Environment protection licences to control carrying out of non-scheduled activities for the purposes of regulating water pollution resulting from the activity.	NA
Roads Act 1993	
s 138 consent to: (a) erect a structure or carry out a work in, on or over a public road, or (b) dig up or disturb the surface of a public road, or (c) remove or interfere with a structure, work or tree on a public road, or	The concept plan identifies a number of road improvements which will be required to accommodate the increased traffic created by the increase in population. Connection of roads has taken into consideration the design requirements of the RTA Council. Continuing communications will be entered into with the RTA as is required in respect to upgrading works proposed on roads under the control of

(d) pump water into a public road from any land adjoining the road, or (e) connect a road (whether public or private) to a classified road	RTA.
Rural Fires Act 1997	
s 100B authorisation under section 100B in respect of bush fire safety of subdivision of land that could lawfully be used for residential or rural residential purposes or development of land for special fire protection purposes	A bushfire threat assessment has been prepare for the site which determined appropriate setbacks required to provide an adequate level of bushfire protection as required by the RFS's document *Planning for Bushfire Protection 2006.* These buffer areas have been built into the concept design to ensure an adequate level of bushfire protection can be achieved.
Water Management Act 2000	
ss 89, 90, 91 water use approval, water management work approval or activity approval under Part 3 of Chapter 3	N/A

Again it is noted that integrated development does not apply to concept applications under Part 3A of the Act, however consultation with the respective agencies who enforce the above Acts may take place as part of the 3A assessment process. As outlined above the general consideration of these issues has taken place as part of the concept plan design process and no outstanding issues have been identified. We understand that future applications for subdivision under Part 4 will not need to be referred to integrated approval bodies as the matters have been addressed under this Part 3A application.

4.0 STATE SIGNIFICANCE OF THE SITE

Under the Major Projects SEPP, specific projects can be classified as being State Significant Sites (SSS) where they are viewed as having characteristics which represent a considerable asset or project for the State of NSW. The ability to classify sites as State Significant allows the NSW State Government to accomplish development outcomes which are of state importance.

The subject site was identified as being an area of significant future residential growth under the Lower Hunter Regional Strategy with a target of up to 3000 lots being set on the site. After significant baseline studies were undertaken on the site to support its rezoning (under a previous zoning scheme prior to the release of the LHRS) it was evident that the site would have the capacity to accommodate much, but not all, of the anticipated residential growth for which it was identified in the Lower Hunter Regional Strategy.

Correspondence from the Department of Planning dated 8th November 2007 (***Appendix E***), to the proponent indicated that the Minister has formed the opinion that the subject site is a site to which the Major Projects SEPP may apply. In forming the opinion as to whether the site would be classified as State Significant the Minister requested an analysis to be undertaken to provide information on a draft concept plan for the site which would be then used to determine whether the site would be included in Schedule 3 or Schedule 4 of the Major Projects SEPP. Correspondence between the DoP and the proponent is included in ***Appendix F.***

This report constitutes an Environmental Assessment Report for the North Cooranbong site. It has been prepared to fulfill the Director General's Requirements and support the listing of the subject site as State Significant. A separate report outlining the State Significance of the site is included in ***Appendix F***.

5.0 CONCEPT PLAN

5.1 Background

The North Cooranbong project covers an area of some 365ha located within the Local Government Area of Lake Macquarie, approximately 100km north of Sydney.

It sits adjacent to the existing township of Cooranbong adjoined by state forest and rural residential properties. Part of the area includes the existing Avondale School.

Part of the land was first identified by Council as an investigation area for future urban conservation, employment and recreational purposes, subject to the findings of an environmental assessment.

JPG first became involved in the site in the year 2000 and after years of environmental analysis and urban design analysis, JPG (who by then controlled approximately 96% of the site) submitted a rezoning application to LMCC in March 2005.

In July 2005 Lake Macquarie City Council resolved to commence the rezoning process and subsequently forward Section 54(4) advice to DoP for approval. In granting their approval to commence the rezoning process, DoP ordered an independent Local Environmental Study be prepared. LMCC appointed URS Environmental Consultants to prepare the required LES, which was ultimately finalised in December 2006. Council and DoP subsequently agreed to place this LES and supporting draft LEP on exhibition for 3 months between May and August 2007.

As a result of the NSW Government releasing the final Lower Hunter Regional Strategy and draft Regional Conservation Plan, (and as these important strategic planning documents were not properly considered during the independent LES process), the proponent commenced further discussions with the relevant Government bodies which lead to a need to review the previous planning scheme. The proponent lodged a Preliminary Assessment Report to the Department of Planning in September 2007 asking that this project be considered a Major Project pursuant to Part 3A of the EP&A Act. On the 19th October 2007 the Minister formed the opinion that the proposal is a development to which Part 3A applies. Then on the 8th of November 2007, the Minister indicated that the site could be potentially a State Significant Site.

A revised concept plan has been prepared for the site in reference to past studies, the implementation of the Lower Hunter Regional Strategy (and its supporting Regional Conservation Plan document) and outcomes of negotiations with Government bodies.

This concept plan examines the considerations and findings of those studies to develop a maximum site responsive design. It should therefore be read together with the study document which examines the issues in more depth. The concept plan draws on these conclusions and responds to the site's natural features.

5.2 Introduction

HDB Town Planning and Design has been engaged to review the previous studies and urban design work carried out on the site by Architectus, JW Planning Pty Ltd URS Environmental Consultants and LMCC, together with other specialised base studies; and from that, develop a new, site-responsive concept plan.

The plan provides for up to 2,500 lots and supporting infrastructure on an area of 365ha. Refer ***Figure 14*** – Concept Plan

The concept plan outlines development objectives for the site and proposes a layout which underpins future zoning controls on the site. It interacts with the existing developments on the site, particularly the Avondale School and surrounding rural residential development, to provide a permeable, liveable and environmentally responsive residential environment. This is further examined as follows.

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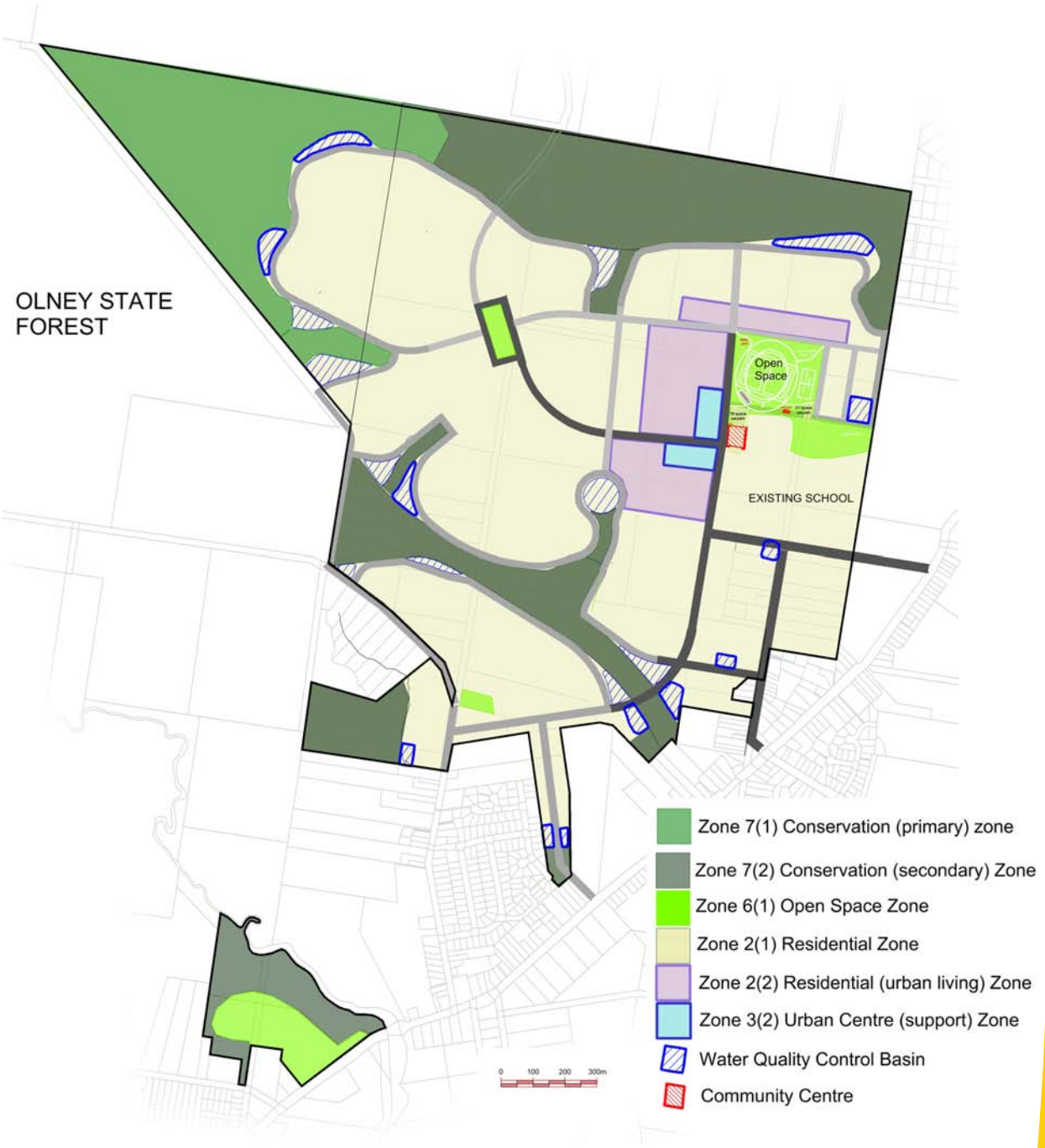

CONCEPT PLAN

FIGURE 14

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5.3 Ownership Details

Table 9 – Site Ownership details

Lot	DP	Ownership/Proponent	Area
1	595941	Australasian Conference Association Ltd (trustee for the Seventh-day Adventist Church)/Avondale Greens Developments P/L	5.895
11	129156	*As Above*	8.12
12	129157	*As Above*	3.62
20	129159	*As Above*	15.3
1 - 13	7352	*As Above*	17.8
1	3353	*As Above*	28.42
2	3353	*As Above*	27.41
3	3353	*As Above*	20.53
4	3353	*As Above*	19.54
5	3353	*As Above*	8.57
6	3353	*As Above*	18.14
7	3353	*As Above*	18.34
8	3353	*As Above*	19.65
10	3353	*As above*	18.34
1	825266	H. Pocock/Avondale Greens Developments P/L	27.03
1	170378	A. & P. Jacksons/ Avondale Greens Developments P/L	10.77
2	825266	M.Dabson/ Avondale Greens Developments P/L	5.051
Pt15	182756	I. & L. Mears/ Avondale Greens Developments P/L	1.383
1	348173	Avondale Greens Pty Ltd.	0.81
21	865588	Avondale Greens Pty Ltd.	3.568
Adjoining Land subject to JPG receiving landowner's consent			
1	329367	S. & P. Dodson	0.75
14	129157	J. & I. Dabson and M. & A. Dabson	0.8
1	301305	P. & R. Hitchcock	0.5
B	306673	F. Bryen	0.5
A	306673	D. Sheedy	0.5
13	129157	I. & C. Iselin	1.52
1	346776	L. & D. Volkl	0.43
2	346776	G. Ferguson	0.43
21	129159	D. & M. Batey	0.55
1	360725	J. Vosper	0.15
1	363639	A. & D. Roy	0.35
22	129159	K. Dixon	0.35
3	1029952	I. & G. Wheatley	1
2	663728	A. Doncevic	1.2
219	755218	J. & J. Mason and J. Mason & R. Cawthorne	58.3
Total Area (ha)			**365.00**

Refer **Plan 3** – Land Ownership Plan

5.4 Design Objectives and Land Use Principles

5.4.1 Vision

The vision and development philosophy for the site is addressed by the five key objectives below. These objectives have been based on the Lake Macquarie Lifestyle 2020 strategy in order to direct future detailed design and development of the site and will be implemented on site through draft Lake Macquarie Development Control Plan No. XX North Cooranbong (refer ***Appendix S***).

1 Respond to the environment

- Development should retain ecological corridors along main riparian corridors.
- Ecological corridors should link into the surrounding conservation areas.
- The pattern of development should respond to the natural topography.
- Contaminated land should be remediated if it is unsuitable for a proposed use before the land is developed.
- Development should encourage sustainable development principles.

2 Provide a diverse and well serviced community

- Development should create a legible, diverse community with a variety of house types.
- Development should provide a permeable road structure within the site which links the different residential areas and connects these areas with retained bushland, open space and community facilities.
- Development should balance residential land with appropriate provisions for local community and recreation facilities.
- Development should provide additional community facilities but avoid duplicating or weakening existing community facilities.

3 Provide a well designed, liveable neighbourhood

- Development should consider views from the surrounding area.
- The design of the neighbourhood should have a clear structure and a strong sense of place.
- Development should consider the urban form of the existing environment and build on the local character.
- Development should carefully consider features that could become local landmarks including high points, creek lines and where bridges cross the creeks.
- Stormwater detention should be located where it can become a positive feature of the landscape.
- Development should minimise risk from bushfires and flooding.

4 Encourage progress and prosperity

- Development should encourage home based businesses.

5 Create an integrated accessible development

- Development should define a compact and walkable neighbourhood with the majority of residents located within 5-10 minutes walking distance to a bus stop.
- Development should ensure that it can be approached from a variety of directions and is connected with existing roads, pedestrian routes and bicycles routes.
- Development should encourage walking/cycling to facilities within a reasonable distance including shops, schools and the Avondale School.
- Development should provide opportunities for future access connections through adjoining land.

5.5 Land Use

The urban design principles below have been based on the vision for the site and set out the goals and expectations for future development of the North Cooranbong site.

5.5.1 Sustainability

- Ensure areas of retained woodland do not become isolated from the surrounding area and remain viable communities.
- Ecological corridors have been determined in discussions with fauna and flora consultants and DECC and DoP, including consideration of biodiversity offsets.
- Retain major creeks and their tributaries were shown in the concept.
- Water sensitive urban design principles are to be applied at detailed design stage, for potable water demand and run-of water quality.
- Water quality measures could include a mix if bio detention swales and detention basins along roads and in areas of open space. These measures are to be located outside riparian and ecological corridors.
- Maximise the number of residential lots with a northerly aspect by designing roads to run east west where the topography allows for this alignment.
- Provision of non-potable water supply (3rd pipe).

Refer ***Figure 15*** – Sustainability Plan

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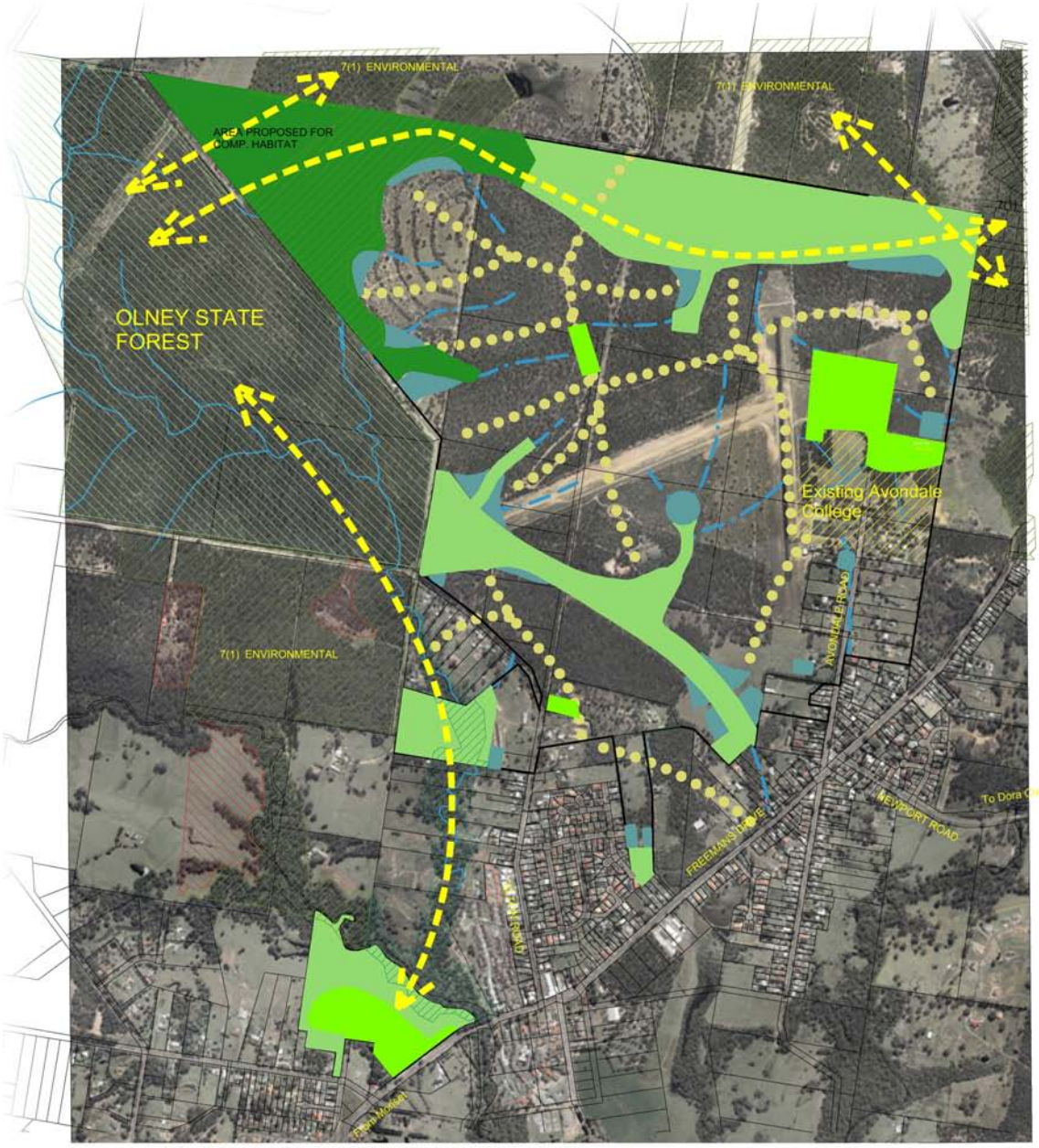

Not to Scale

- Zone 7(1) Conservation (primary) zone
- Zone 7(2) Conservation (secondary) Zone
- Zone 6(1) Open Space Zone
- Ridge Lines
- Linkages
- Water Quality Control Basin

0 100 200 300m

SUSTAINABILITY PLAN

FIGURE 15

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5.5.2 Built Form

- Provide a variety of residential types in the neighbourhoods to foster a diverse community, provide for wide marketability and respond to local character.
- Locate low density development on constrained sites and increase density of development where it can take the best advantage of local facilities, public transport and open space.
- Conventional housing
    - These areas would have an approximate density of between 10dw/ha and 12dw/ha. Large areas of the site will be conventional housing densities within precinct themes. Lots should be designed to maximise solar access and energy efficiency.
- Medium density
    - Areas of land facing open space, along collector roads and in close proximity to schools and community facilities will be available for well designed dual occupancy and small lot housing. Density tragets set at 20-25 dwellings/ha.

5.5.3 Landscape

- Provide ecological corridors of retained landscape which create a bushland setting for the development.
- The ecological corridors are to provide an appropriate environment for the protection of threatened species through habitat retention.
- Ecological corridors are to incorporate the main riparian corridors within the site.
- Whilst access through the ecological corridors and across riparian corridors will be restricted, provide for a range of passive recreation by the provision of bicycle paths and walkways next to the ecological corridors and riparian corridors.
- Prepare a landscape plan showing a footpath system through open space and retain landscape to local facilities.
- Reinforce road hierarchy with landscaping to define the main street.
- Provide quality landscape features in public open space areas to reinforce passive and active uses.
- Interconnect open space networks with environmental land.

5.5.4 Topography

- While the site has no areas of steep slope (>25 degrees) which are unsuitable for development, where there is steeper land locate dwelling forms that can be sensitively designed to respect the landform. (Refer ***Figure 6***)

- Roads are to follow contours to provide for easy walking and cycling to community facilities, open space or bushland where possible. Roads perpendicular to contours should be minimised.

5.5.5 Site Character

- Encourage the visual integration of new development with existing development in Cooranbong by locating proposed development around street entry locations where possible.
- Locate collector roads where possible to run beside or across areas of retained woodland, riparian corridors and open space to encourage local awareness of these areas and to visually integrate the bushland with the neighbourhoods.
- Reinforce the significance of the retained woodland, riparian corridors and open space by fronting significant development onto these areas.
- Design landscape features including drainage swales, open space, and street design to reflect the woodland character.

5.5.6 Views

- Views from surrounding area into the site are restricted as land generally rises away from perimeter roads, with limited views into the site. Where views into the site occur along Alton Road due to the land falling away from the road, provide lower density development adjoining the road to retain a woodland character.
- Align roads to capture views of the surrounding escarpment. Retain the north south runway alignment for the collector road as it terminates in a view of Mount Nellinda. East west roads on the western edge of the site will have views that terminate in the escarpment.
- Terminate roads with views of open space and bushland where possible. This will aid legibility by allowing visitors to orient themselves in the wider landscape and maximise the value of bushland views.

5.5.7 Employment

- Development should encourage home business. Encourage the design of dwellings that can accommodate home offices and home studios.
- Access to employment via road links and proximity to Morisset and Dora Creek rail stations and therefore easy access to employment locally and further a field.

5.5.8 Services and facilities

- The existing settlement of Cooranbong is well serviced by schools, local facilities and employment opportunities. The proposed development will reinforce the expansion of the existing Town Centre, local facilities, bus services and schools.

- Provide community facilities and improve the general amenities of the area.

5.5.9 Religion

- Cooranbong is an existing village with a strong Seventh-day Adventist community and Seventh-day Adventist services (ie Avondale School, Avondale College etc).

5.6 Access & Transport

- Integrate the proposed development with the Cooranbong area by providing high quality transport links to the existing road network and community facilities.
- Provide through site connections that improve the permeability of the wider Cooranbong area.
- Provide a minimum of two principal entries into the site. These access points will provide a route to the following areas of the site:
    - To the east of the site from Avondale Road
    - To the south west of the site from both sides of Alton Road
- Provide a link to the south of the site from the intersection of Avondale Road with Newport Road. If this link can not be provided directly across land outside the site boundary then provide a link through the site from Avondale Road. This link should be located as close as possible to the Newport Road and Avondale Road intersection.
- Allow for a link to the south of the site off Freeman Drive.
- Only designated roads in the structure plan may cross bushland.
- Identify existing bus routes which could be altered to travel through the site. The planning of land use and bus routes should provide catchments that allow 90% of users to be within 400m walking distance of a bus stop.
- Roads are to front areas of open space and retained landscape where possible. This will maximise views of the bushland, allow good access for fire protection, ensure that the open space and retained landscape is overlooked and reinforce the established character of new development.
- Provide a network of connections for both vehicular and pedestrian movement within the internal street layout. The layout creates a clear hierarchy of streets where collector streets are designed to appear of higher status than secondary streets.
- Roads are to generally follow land contours to provide comfortable walking and cycling connections between houses and open space and bushland.

Refer ***Figure 16*** – Transport Plan.

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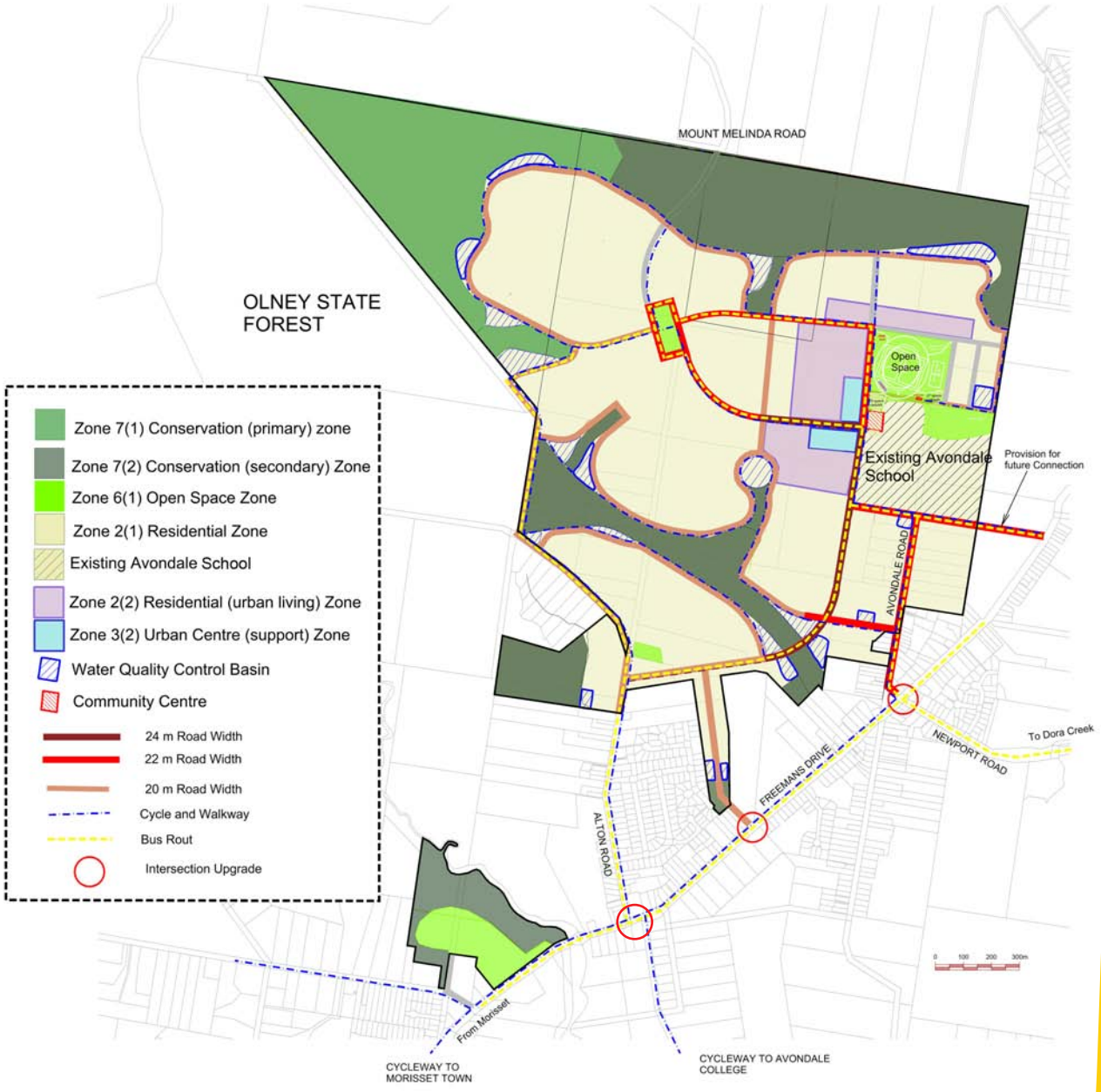

TRANSPORT PLAN

FIGURE 16

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5.7 Land Use Plan

Refer ***Figure 17*** – Land Use Plan.

Table 10 – Concept land uses

Land Use	Ha	% (approx. of 364.76Ha)
Environmental Conservation Area	106.35ha	29.1%
Open Space	10.8ha	3.0%
Residential (Urban Living)	18.83ha	5.12%
Urban Centre (Support)	2.15ha	0.6%
Water Quality Control Basins	10.4ha	2.85%
School Site (existing)	15.1ha	4.2%
Community Facilities	0.55ha	0.10%
Residential	186ha	51%
Sub Total	**350.186ha**	**95.97**
Town Common		
Environmental Conservation Public	8.68ha	2.38%
Recreation	6.0ha	1.65%
Sub Total	**14.78ha**	100%

5.8 Community Centre

5.8.1 School (private)

The needs of Avondale School has been accommodated in this Concept Plan. The school has been identified in the concept plan however it has not been subdivided from the larger site.

The proposed Structure Plan will have the following interaction with the school:

Character

The school currently is in a rural/bush setting with undeveloped land to the north, east and west of the site. To the south along Avondale Road, there's a more urban character, although the large blocks of land create a suburban edge or semi rural quality.

The Structure Plan would change the character of the school to become more integrated with an urban/suburban environment. The Structure Plan locates developable land to the north west and west of the school. The visual impact of urban development would be reduced from within the school due to the slope of the land which focuses views to the north of the site.

The location of the sporting fields adjoining to the north, maintains an open view and provides a synergy with the school.

Access

The school is located at the end of Avondale Road, along a cul-de-sac. There is only one access point into the school from this road. The one entry location creates a number of difficulties as all access to the school including buses and parent drop off/pick up area and staff movements occur at this one location and all vehicles are required to turn within the site.

The Structure Plan provides additional access routes into the school site, which would allow greater flexibility and allow future development of separate campuses with different access routes.

The network of roads within the structure plan will allow buses to drop off and pick up in a designated location. This will avoid the need to provide a bus turning bay within the school site and make land available within the school that is currently used for this purpose.

Bicycle routes to and through the site would also link to the school providing an alternate mode of transport for students and staff.

Frontage

As noted above the school currently has no long boundary along a public road. This reduces visibility of the school in the wider community and limits flexibility for access to the school. The Structure Plan establishes a new frontage for the school along the western boundary of the site.

Community facilities

A number of community facilities have been recommended as part of the development of this site. The indicative development locates these facilities between the school and sporting fields, centrally within the site. This would allow a synergy between the school and the community facilities and give the school direct and easy access to the facilities.

Future growth

School sites may need to incorporate incremental growth in the future. This can be difficult to achieve when a road crossing is required. The alignment of the road to the west of the school follows the north south runway. This provides a developable area along the western boundary of the site where future incremental growth could occur.

Sporting fields

Schools are one of the major users of sporting facilities and it is proposed in the Concept Plan to locate the major sporting field adjacent to the northern edge of the school. In addition, the existing dam currently to the rear of the school will transfer to be part of the sporting facility so it can be utilised for new potable water supply.

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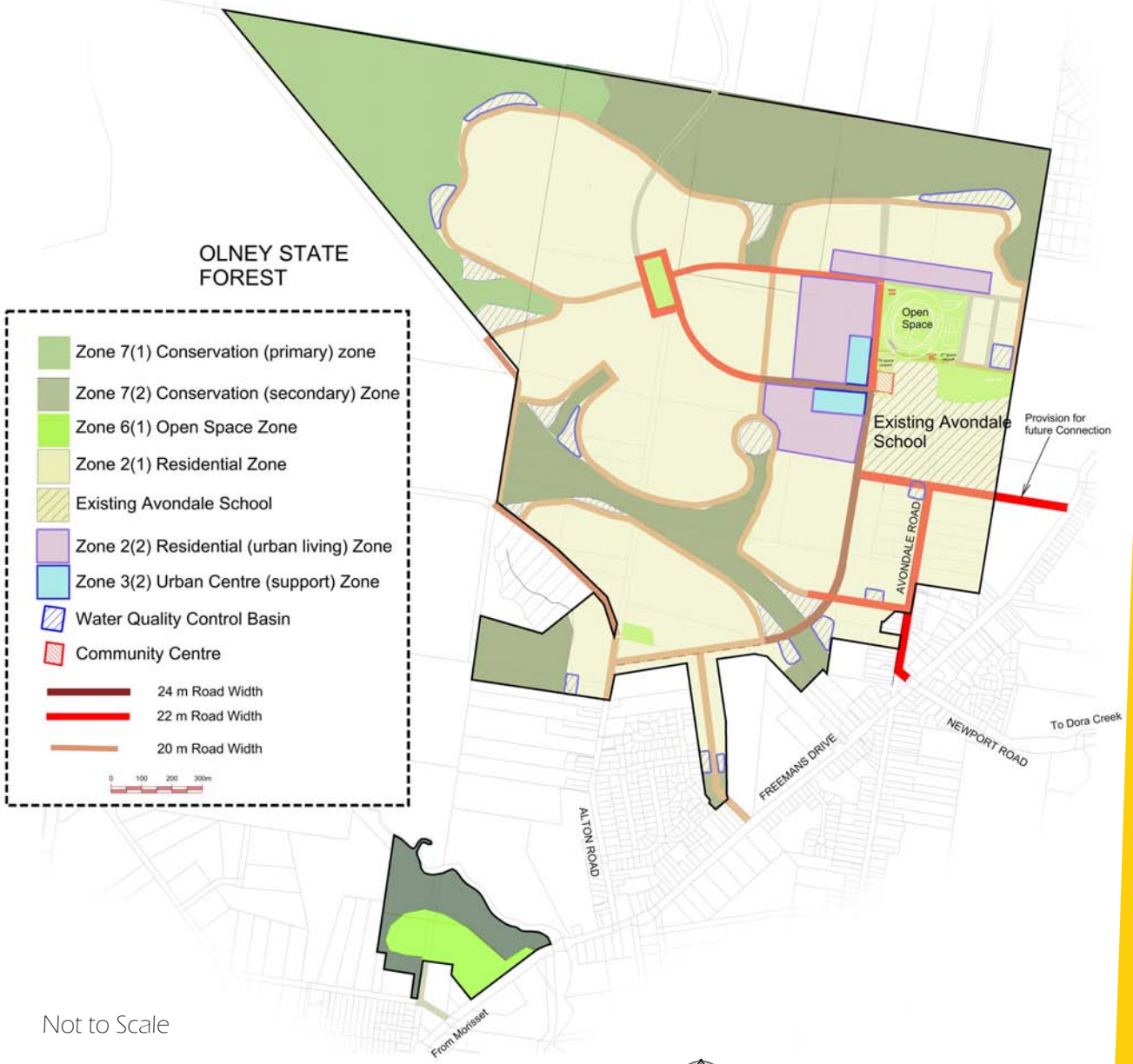

Not to Scale

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Open Space	10.8ha	3.0%
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School Site (existing)	15.1ha	4.2%
Community Facilities	0.55ha	0.10%
Residential	186ha	51%
Sub Total	**350.18ha**	
Town Common		
Environmental Conservation	8.68ha	2.38%
Open Space	6.0ha	1.65%
Sub Total	**14.78ha**	100%
Total:	364.86Ha	

LANDUSE PLAN

FIGURE 17

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5.8.2 Schools (public)

It is not proposed to provide land for a public school on the site. The Social Impact Assessment prepared by Key Insights identified that existing schools have capacity to increase their numbers. A growth in numbers for a small public school like Cooranbong Primary means the ability to attract more teachers and enhance local choices available to students. It is prudent to support the sustainability of local schools.

The trend in NSW at the moment, and in the Morisset area, is towards private education (ABS 2006). Students from this development will take up high school places at the local Avondale High, St Paul's Catholic High School at Toronto and at a variety of independent schools in both Newcastle and Lake Macquarie LGAs. Some of course will attend Morisset High School which will feel the cumulative impact of development throughout the Morisset planning district. However it cannot be assumed that all high school students in North Cooranbong will attend Morisset High.

5.8.3 Community Facilities

The community facilities proposed in the Structure Plan area:

- Construct a multipurpose centre to provide meeting space of 914m²
- Youth centre with an area of 136.5m² will be incorporated in the multipurpose centre.

Upon completion, maintenance of the above facilities will be undertaken by the proponent for a period of 5 years from practical completion of each facility. The management of the above facilities will be transferred to Council upon completion.

Land will also be provided in the development for construction of child care centres. However, it must be pointed out that existing child care centres in Cooranbong are not at capacity and full occupancy of these centres is supported in preference to providing child care centres upfront on the site.

Refer ***Figure 18*** – Community Centre Plan

5.8.4 Open Space / Conservation

Retained landscape, open space and community facilities will provide for recreation and conservation needs.

Recreation facilities would possibly include:

- 2 x cricket wickets / Sports Ovals

- Multi purpose courts
- Skate park
- Day exercise area
- Playgrounds

Upon completion, maintenance of these facilities will be undertaken by the proponent for a period of 5 years from practical completion of each facility. The management of the above facilities will be transferred to Council upon completion.

Subject to any agreement made within a regional planning agreement, it is expected that land zoned 7(1) Conservation (primary) will be progressively transferred to the NSW Department of Environment and Conservation who will be responsible for future management and maintenance. This primarily relates to part of the triangular parcel of land in the north-west corner of the site and abuts Olney State Forest, commonly referred to as “Masons” land.

Land zoned 7(2) Conservation (secondary) zone will remain owned by the proponent, who will have the responsibility for its maintenance until its ultimate ownership is determined..

As previously outlined, roads will only be able to cross conservation land where shown on the Concept Plan. As shown on the Concept Plan, a services easement is also required to connect to the site from Mt Nellinda Road.

Refer ***Figure 19*** – Open Space Plan

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0 100 200 300m

COMMUNITY CENTRE PLAN

FIGURE 18

- Youth & Community Facilities
- Urban Centre (Support)
- Open Space
- Residential
- Existing School
- Residential (Urban Living)

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Not to Scale

- Zone 7(1) Conservation (primary) zone
- Zone 7(2) Conservation (secondary) Zone
- Zone 6(1) Open Space Zone
- Zone 2(1) Residential Zone
- Existing Avondale School
- Zone 2(2) Residential (urban living) Zone
- Zone 3(2) Urban Centre (support) Zone
- Water Quality Control Basin
- Community Centre

OPEN SPACE PLAN

FIGURE 19

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5.8.5 Employment Land

The proposed residential development on the site is located in relatively close proximity to employment opportunities within Cooranbong, Morisset and the Morisset Industrial Estate which is located adjacent to the F3 freeway. The existing range of employment opportunities offered within Cooranbong include the existing retail centre, the primary and secondary schools, the Avondale School, employment related to aged care facilities in the area and the Sanitarium Health Foods factory. The proposal will have the effect of allowing people to locate in close proximity to these existing employment opportunities.

The proposal also provides opportunities for employment on the site in the form of non-employment centre based employment such as home based businesses and home based industries. The proposal is consistent with the Lake Macquarie Non-Centre Employment Strategy, which recommends that 2.15ha employment land on site has been defined on site to cater for the needs of the community. It is expected that future businesses within the zone will not compete with existing businesses in the Cooranbong retail Village.

5.9 Indicative Project Staging

The staging of the proposal is likely to be undertaken in 11-12 precincts of 200 lots each. This is subject to market forces and is outlined in ***Figure 20*** – Staging Plan.

5.10 Site Analysis

Following from the site constraints study ***Figure 21*** shows general site constraints that have been considered in the formation of the concept plan.

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INDICATIVE PRECINCT PLAN

FIGURE 20

Not to Scale

Development Precincts

The North Cooranbong Indicative Precinct Plan shown is indicative of the likely Precincts to be developed throughout the course of the project. Development of each Precinct may not occur in the numbered order as shown above and whilst adjoining properties are shown as Precinct 11 there is no limitations in the North Cooranbong proposed development that would prevent the Precinct 11 lands from development at any given point for the duration of the project.

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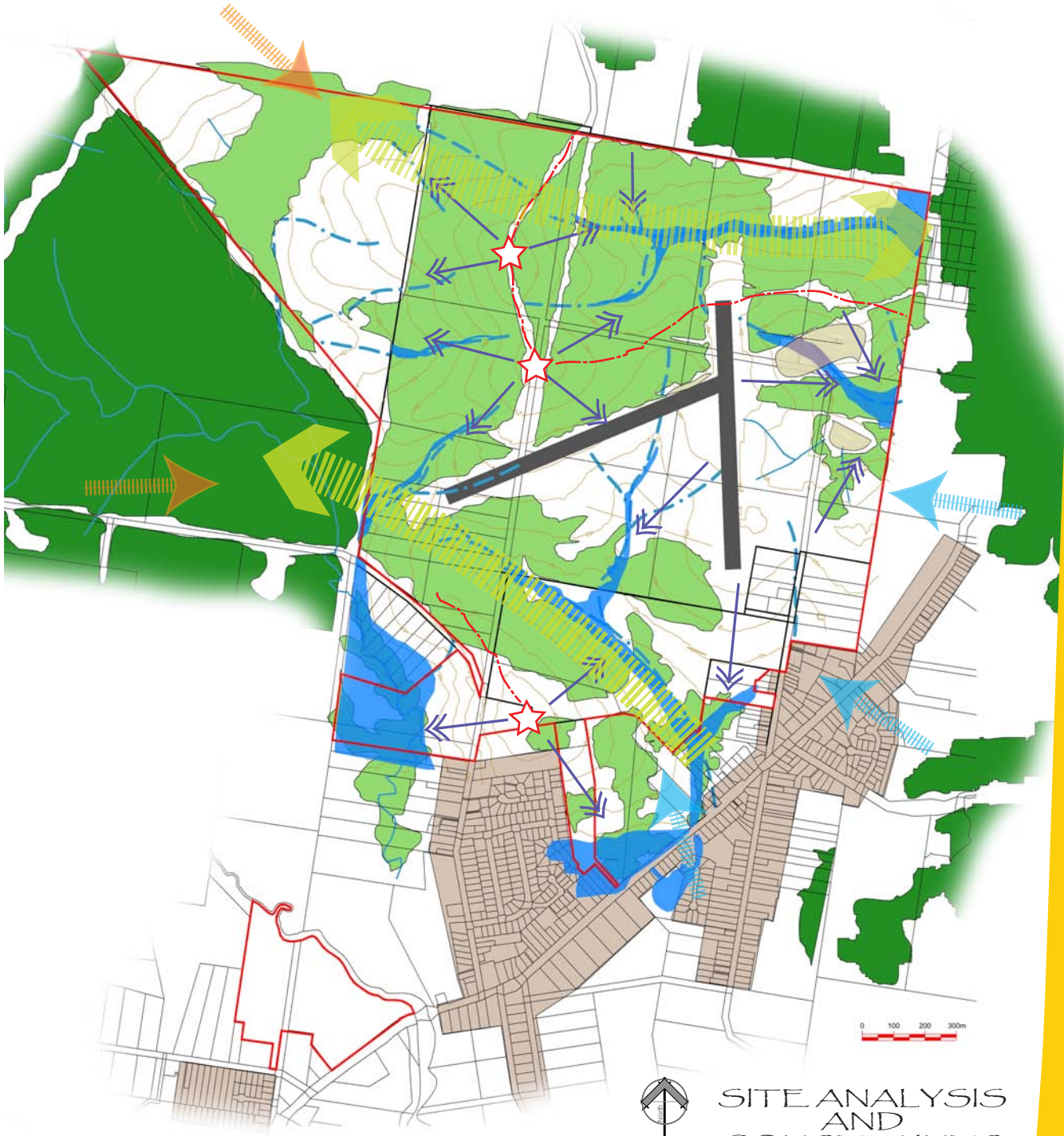

Not to Scale

SITE ANALYSIS AND CONSTRAINTS PLAN

FIGURE 21

- SITE BOUNDARY
- SITE WOODLAND
- ADJOINING WOODLAND
- CONTAMINATION
- 1:100yr FLOODING
- EXISTING RESIDENTIAL LAND
- EXISTING RUNWAYS
- HIGH POINT
- RIDGELINES
- DRAINAGE LINES
- SLOPE
- VEGETATION CORRIDOR
- WINTER WINDS
- SUMMER WINDS

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6.0 GOVERNANCE AGREEMENTS & VOLUNTARY PLANNING AGREEMENTS

6.1 Introduction

The North Cooranbong project will create approximately 2500 residential lots in varying sizes together with community facilities and environmental areas. Clearly this project represents a major land release in the locality in accordance with the Lower Hunter Regional Strategy and acts as the backbone to the Emerging Major Centre of Morisset.

The current developer contributions plan for Lake Macquarie City Council (Citywide No. 1) had not anticipated such a significant development occurring in this area. Therefore levying contributions for a new development in accordance with the Citywide Plan would not provide the facilities to meet the needs of the new residents.

Council officers have been in discussions with Johnson Property Group (JPG) since late 2006 regarding developer contributions in relation to this development. As a result of these discussions, JPG has offered to enter into a Voluntary Planning Agreement (VPA) with Council, in lieu of Section 94 (s94) contributions.

The provision of local infrastructure is a shared responsibility between Local Government, in this case Lake Macquarie City Council and the Developer. The development where practical, should not create additional pressure on existing infrastructure or resources. Council and JPG have an in-principle agreement on the services to be provided as a result of this development. To ensure that the services are delivered in a timely fashion, and to meet the demands of the growing community, JPG will construct most of the infrastructure as works in kind.

6.1.1 Draft Voluntary Planning Agreement

A draft Local Voluntary Planning Agreement is currently being prepared in relation to the proposed development. This document will examine the provision of local infrastructure and provides an outline as to how each item will be delivered. Note that this document is a draft version and has not been exhibited for public comment. It is subject to exhibition and final approval of Council and JPG.

It is envisaged that the North Cooranbong project will be developed in precincts over a 20 year period. Market forces will determine the pace of development and some flexibility will be required in the timing of the contributions.

Overall, and in broad terms, the project will provide the following infrastructure:

- Onsite Neighbourhood Park, Dog Exercise Area and Sporting Complex;
- 2 x Local Parks;
- Offsite Neighbourhood Park and Sporting Complex (referred to as Cooranbong Town Common);
- Cycleways;
- Contribution toward district jetties;
- Contribution toward regional Open Space;
- Onsite Multi-purpose Centre;
- Contribution to existing Libraries;
- Community Bus and Community Worker;
- Roads and Traffic Management upgrades.

This calculates to an average of $25,000 / lot, based on a maximum of 2500 lots.

These works have the support of Lake Macquarie Council per a Council resolution on Monday 10 December 2007.

This does not include contributions to regional infrastructure.

7.0 ENVIRONMENTAL ASSESSMENT

7.1 Director Generals Environmental Assessment Requirements

The following table, **Table 11,** outlines the Director Generals Requirements for the Environmental Assessment on the concept plan. These requirements have been addressed in this document. The right-hand column indicates the section/s of this document where responses to the Director Generals Requirements may be found.

Table 11 – Director Generals Environmental Assessment Requirements

Major Project No.	MP07_0147 (Concept Plan)	**Relevant Section**
General Requirements	The Environmental Assessment (EA) must include (1) An executive summary; (2) A detailed description of the project including: (a) strategic justification for the project; (b) the various components and stages of the project in detail (eg land uses, infrastructure and dedications) (3) A consideration of the following with any variations to be justified: (a) all relevant State, Regional and Local (including Draft) Environmental Planning Instruments (b) all applicable Planning Strategies such as the Lower Hunter Regional Strategy and Lake Macquarie City Council's Lifestyle 2020 Strategy (c) all applicable s117 Directions and DoP Circulars (d) Environmental Protection and Biodiversity Conservation Act 1999. (4) An assessment of the social, environmental and economic impact of the proposal with particular focus on the Key Assessment Requirements outlined below. (5) A draft Statement of Commitments, outlining commitments to manage, mitigate and /or monitor the social, environmental and economic impacts of the project with a clear identification of who is responsible for these measures and when the commitments will be fulfilled (6) A report from a quantity surveyor identifying the capital investment value for the works outlined in the concept plan (7) An indication of employment generated by the project. (8) A conclusion justifying the project having regard to the General Requirements above. (9) A signed statement from the author of the EA certifying that the information contained in the report is neither false nor misleading	2.0 3.0 7.0

Key Assessment Requirements	The Environmental Assessment must address the following key issues:	
	1. Site Analysis	
	(1) Undertake a site opportunity and constraints analysis that identifies the relevant natural and built environmental features within and adjoining the Site.	3.0
	(2) The site analysis should form the basis for justifying the configuration of the development of the land and the mix of land uses.	
	2. Urban Design	5.0
	(1) Provide a plan showing the proposed development and conservation footprints, their areas and proposed zonings.	
	(2) Provide an indicative lot, open space and street layout and nominate indicative total lot yield, mix and density.	
	(3) Demonstrate a range of housing will be made available on site	
	(4) Demonstrate compliance with the Urban Design and Neighbourhood Planning Principles and density provisions contained in the Lower Hunter Regional Strategy.	
	(5) Develop conceptual design guidelines for housing and open space (both public and private realm) and identify how the design guidelines will be implemented.	7.12
	3. Visual Impact	
	(1) Identify any visual impact created by the project and mitigation measures.	
	4. Open Space and Facilities	5.8
	(1) Provide details of publicly available open space and facilities to be provided, long term management and maintenance arrangements and proposed ownership.	7.7
	5. Utilities and Infrastructure	
	(1) Provide a utility and infrastructure servicing strategy identifying existing capacity and any necessary staged augmentation.	
	(2) The strategy should include means for a recycled water service.	
	6. Drainage, Stormwater and Groundwater Management	7.4
	(1) Provide a drainage, stormwater and groundwater management strategy identifying measures to be incorporated on site, including on site stormwater detention and WSUD measures	
	(2) The strategy should demonstrate compliance with the principles of the NSW Groundwater Policy Framework.	
	7. Flooding	7.4
	(1) Identify and address any potential flooding risk faced or created by the project.	7.3
	8. Biodiversity	
	(1) Address the impact of the development on existing native flora and fauna and their habitats, including identified threatened species, having regard to the Threatened Species Assessment Guidelines and recommend a biodiversity conservation strategy	

	including offset and/or rehabilitation measures to avoid or mitigate impacts on threatened species and their habitat.	
	(2) Consider the development of ecological corridors to link flora and fauna corridors within the site and to adjoining sites.	
	(3) Consider and mitigate any impact upon watercourses and associated riparian buffer / vegetation	
	(4) Identify the intended ownership and long term management (including funding arrangements) for conservation lands.	
	(5) Comprehensively address potential impacts on, and proposed mitigation measure for listed threatened species under the EPBC Act (including *Angophora inopina, grevillea paviflora subsp. Paviflora and Tetratheca juncea).*	7.5
	9. Contamination, Geotechnical and Mine Subsidence	
	(1) Provide a report detailing the suitability of the site for its proposed uses having regard to matter such as erosion hazard, slope stability, uncontrolled fill, soil reactivity, saturated soils, acid sulphate soils, mine subsidence and site contamination.	
	(2) Demonstrate that suitable measures will be made in accordance with SEPP 55 to address any contamination issues.	7.6
	10. Bushfire	
	(1) Demonstrate compliance with *Planning for Bush Fire Protection 2006*	
	(2) Identify ownership and ongoing management of any proposed APZs	7.8
	11. Heritage	
	(1) Identify and assess any items of European and Indigenous heritage on site and any potential impacts created by the project.	
	(2) Provide an assessment against DECCs draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation.*	7.2
	12. Traffic and Transport	
	(1) Prepare a Traffic Study in accordance with RTA's *Guide Traffic Generating Developments*	
	(2) Prepare a TMAP which addresses the requirements covered in the Interim TMAP Guidelines which are available at www.transport.nsw.gov.au	7.9
	13. Social Infrastructure	
	(1) Demonstrate there will be sufficient social services and infrastructure to support the population generated by project.	
	(2) Identify positive & negative impacts and the means to mitigate any negative impacts	7.10
	14. Employment	
	(1) Identify and address the employment needs of the incoming population.	5.8
	15. Commercial Development	
	(1) Justify the amount and type of commercial development	

	proposed by the project both in terms of the ongoing economic viability of existing commercial development and the objectives of the Lower Hunter Regional Strategy. **16. Planning Agreements and /or Developer Contributions** (1) Provide the scope and justification for any planning agreement(s) (should one or more be proposed) between the proponent, Council and other Agencies for matters such as regional and local infrastructure, social infrastructure, public transport, recreational and community facilities and the like. **17. Ecologically Sustainable Development** (1) Demonstrate how the development will commit to ESD principles. **18. State Significant Site (SSS)Study** (1) As outlined in correspondence from DoP to JPG dated 8 November 2007 a SSS study is required to be prepared by the proponent (2) This SSS study should be completed and submitted concurrently with the Environmental Assessment. This will enable joint assessment and concurrent exhibition of the EA and SSS study.	6.0 7.11 4.0
Consultation Requirements	An appropriate and justified level of consultation should be undertaken with the following relevant parties during the preparation of the environmental assessment, having regard to any previous consultation. *a) Agencies and other authorities:* • Lake Macquarie City Council • NSW Department of Water and Energy • Hunter Water Corporation • NSW Ministry of Transport; • NSW Roads and Traffic Authority; • NSW Department of Education and Training; • NSW Department of Conservation and Climate Change; • NSW Rural Fire Service; • Commonwealth Department of Environment and Water Resources and • All relevant utility 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.	1.4

7.2 Traffic & Transport

Traffic Investigations for the North Cooranbong Development have been initially completed by *GHD* and peer reviewed by *Better Transport Futures*. This work covered a comprehensive investigation of the road based traffic implications of the development and included recommendations on the most appropriate level of road and intersection upgrades to support the development.

The upgrading of local road infrastructure has been agreed to between JPG and Lake Macquarie Council as per the recommendations of the Traffic Investigations, which have also been the subject of review by the NSW RTA.

In addition to the road based investigations, and as required by the Director Generals Requirments, *Better Transport Futures* have prepared a draft Transport Management and Accessibility Plan (TMAP) for the Morisset area with reference to the specific initiatives that can be developed as part of the North Cooranbong Development. This work has been conducted in consultation with the NSW Ministry of Transport (MoT) and Railcorp. The TMAP investigations have considered the wider transport implications of the Morisset area in relation to the Lower Hunter Strategy.

The traffic and transport implications of the proposal as investigated by *Better Transport Futures – Mark Waugh Pty Ltd,* are attached as ***Appendix R & R(i).***

The existing access and transport facilities servicing the subject site are briefly outlined as follows.

7.2.1 Existing Traffic Data

An indication of the existing traffic conditions on the road system in the vicinity of the site is available in terms of Annual Daily Traffic Volumes (AADT) compiled by the Roads and Traffic Authority, as detailed in the following table.

Table 12 – Existing Average Daily Traffic Volumes (AADT)

Location	Freeman's Drive at Stockton Creek Bridge	Freeman's Drive north of Mandalong Road
Survey Station	05.629	05.628
1988 (AADT)	12,572	8,682
1990 (AADT)	-	-
1992 (AADT)	-	-
1995 (AADT)	-	1,941
1998 (AADT)	-	2,233
2001 (AADT)	-	2,573

Source: Roads and Traffic Authority of NSW "Traffic Volume Data for Northern Region" - 2001

The above information demonstrates that traffic volumes along Freeman's Drive has dramatically reduced since the opening of the F3 Freeway and the removal of through regional bound traffic movement.

7.2.2 Traffic Generation

The following information in relation to trip generation has been based on the total development yielding 2,500 lots. The use of the RTA Guide to Traffic Generating Developments is considered to provide a reasonable base for assessment of traffic implications of development.

The RTA Guide states that the weekday peak hour vehicle trip generation rate for dwelling houses is 0.85 per dwelling. It also states that for residential subdivision about 25% of these trips could be internal to the subdivision area, representing local shopping, school and social trips. The proposed concept plan provides a mixture of land uses, including commercial and a school, which may assist in the containment of trips within the subject development. It is therefore considered appropriate that this discount be applied. The TMAP investigations completed by Better Transport Futures have considered this reduction in trip generation in the context of the wider transport initiatives that are being considered for the Morisset area as they relate to the North Cooranbong site. This can lead to a further reduction in car based trip generation from the development.

With the application of the 25% reduction, the applicable discounted weekly traffic generation rate for use in the assessment is therefore calculated to be 0.64 trips per dwelling.

The application of this traffic generation rate to the anticipated development yield of 2,500 dwellings and assuming a 90% / 10% outbound / inbound split during the morning peak hour (reversed during the evening peak hour) provides the following estimate of vehicle movements:

- AM peak hour: 1,440 outbound 160 inbound
- PM peak hour: 160 outbound 1,440 inbound

It was noted in the traffic investigations that as a comparison LMCC DCP No. 1 states a trip generation rate of 8.0 trips per dwelling for residential dwellings, which is lower than the RTA rate. Applying this rate for the subject development and using a similar proportion of peak hour trips as the RTA (9.0 / 0.85) would give a trip generation of 0.75 trips. Applying the same internal trip confinement factor of 25% would give external trips of 1406 two-way vehicle trips. This is then potentially over 12% less than the rate applied within the BTF analysis.

For a development of the size and scale planned at North Cooranbong the level and variety of activities available on site will result in a significant level of trip containment. This will include trips to facilities such as local shops, education facilities, recreation activities and some locally based employment. The net result of this mix of land use is to achieve a trip containment level that could be even more favourable than the applied rates from the RTA's Guide to Traffic Generating Developments. This factor and other transport initiatives are discussed in detail in the BTF TMAP report.

7.2.3 Potential Traffic Impacts

Morisset was highlighted in the Lower Hunter Regional Strategy as an emerging major growth centre, both in terms of population but also as one of 6 important regional centres across the region. This factor alone is likely to result in shorter travel patterns, with more local jobs and activities containing movements to the Morisset area, rather than further a field. For example, travel to the nearest centres of Toronto, Warnervale and Wyong will most likely be replaced by more local activities.

There is also likely to be a shift in travel patterns, both car based and public transport based, as a result of this shift in development patterns in the Lower Hunter Region.

The Lower Hunter Regional Strategy sets the framework for development over the next 25 years. The strategy identifies a series of key centres across the region. Growth in these centres, coupled with the continuing growth of centres such as Wyong and Warnervale on the Central Coast will alter the distribution of travel across the region, from current (historic) tends.

Centres that are likely to develop stronger attractions for the North Cooranbong area include Morisset, Glendale and Warnervale. The role of Morisset is planned to change significantly and it is likely to see a shift in travel patterns to these growing centres away from traditional centres such as Toronto. It is therefore considered that there will be a tendency for trip distribution and assignment to have a stronger connection with Morisset.

Another factor is the State Government Transport Strategy – Action for Transport 2010 and its objective for achieving moderation in traffic growth, coupled with encouragement of alternate travel to the private car.

The assessment of the traffic implications of the proposal imply that there will be a more efficient use of existing assets, rather than the provision of unnecessary infrastructure that continues to reinforce the car based travel choice.

More details on the relationship of the North Cooranbong Concept Plan to these regional factors from a transport perspective are contained in the BTF TMAP report.

7.2.4 Public Transport

Rail Services

Cooranbong is located near two railway stations (Morisset and Dora Creek) which are serviced by regional and intercity type rail services. Dora Creek, providing local services, is situated approximately 4km east of the site and currently has the capacity to offer a park and ride opportunity with rail. Morisset Station provides access to local and regional services on the Newcastle to Sydney line. It is located approximately 6km south east of the site and offers and higher frequency train service, district facilities and bus connections. Morisset Station has disabled access and a large commuter carpark.

Bus Services

Cooranbong is currently serviced by Morisset Bus Company which operates along the Freeman's Drive Corridor, linking Cooranbong with Morisset (Route No. 280). The 280 Timetable currently offers approximately 10 services in each direction per day. This service does not operate on weekends and is designed to connect with the train timetable at Morisset Train Station.

TMAP Initiatives

The TMAP investigations for the Morisset area have been based on the following key initiatives:

1. TMAP coverage of Morisset Regional Area covers Morisset Peninsula, Dora Creek, North Cooranbong, Morisset
2. Development of Morisset Railway Station by Railcorp as a regional transport interchange, supporting bus/rail interchange
3. Transport Corridor – North Cooranbong to Morisset via Freemans Drive
4. Transport Corridor – North Cooranbong to Dora Creek via Newport Drive
5. Transport Corridor – Morisset Peninsula to Morisset via Fishery Point Road
6. Localised Intersection Improvements are focussed on providing Bus Priority (proposed Traffic Signal upgrades will allow this priority to be achieved)
7. Consistent Bus Stop Furniture along all routes
8. Contribution to promotion and education of public transport services in the early stages of development

Details of the contribution of the North Cooranbong development to these regional transport initiatives, which focuses on the North Cooranbong to Morisset corridor, are contained in the BTF TMAP report.

The following table summarises the initial recommendations for TMAP works, and the relationship to the previously recommended local road improvements associated with the development.

Table 13 – Transport Improvements.

LOCATION	Existing Control	Road Proposal	Comments	Proposed Delivery Method	COSTS
A. LOCAL ROADWORKS					
1. Freemans Dr / Avondale / Newport Rd	Priority	Priority	▪ Interim upgrade to priority control	Works in Kind	·
2. Freemans Dr / Avondale / Newport Rd	Priority	Signals	▪ Ultimate upgrade to signal control	Works in Kind	·
3. Freemans Dr / New Site Access (Central)	-	Priority	▪ New Priority Control junction	Works in Kind	·
4. Freemans Dr / Alton Rd	Priority	Signals	▪ Upgrade to signal control LHT Slip Lane into Alton from Freemans Dr	Works in Kind	·
5. Freemans Dr / New Site Access (North)	-	Priority	▪ New Priority Control junction	Works in Kind	·
6. Freemans Dr / Deaves Rd	Priority	Signals	▪ Upgrade to signal control ▪ LHT Slip Lane into Deaves from Freemans Dr ▪ B Phase both direction in Freemans Dr	Works in Kind	·
7. Freemans Dr / Stockton St	Priority	Rbt	▪ Roundabout control ▪ Traffic Signals are a possible alternate control ▪ LHT Slip Lane Freemans Dr to Stockton St	Works in Kind	·
TOTAL AGREED LOCAL ROADWORKS				**$18 Million**	**$18 M**
B. RTA ROADWORKS					
8. Mandalong Rd/ Wyee Rd/ Freemans Drive	Roundabout	Signals	Ultimate upgrade to signal control	Works in Kind	·
9. Mandalong Road Upgrade	2 lanes	4 lanes	Upgrade road capacity	Works in Kind	·
10. Wangi Rd / Wamsley St / Dora St	Priority	Signals	Upgrade of junction control at Dora Ck	Works in Kind	·
TOTAL RTA ROADWORKS					**$28 M**

C. CYCLING FACILITIES	Funding Basis	Proposed Delivery	
1. West side of development to Town Common	s94 Contribution	Works in Kind	
2. West side of development to Town Common	s94 Contribution	Works in Kind	
3. Town Common to Primary School	s94 Contribution	Works in Kind	
4. Town Common to Town Centre	s94 Contribution	Works in Kind	
5. Town Centre to Town Common	s94 Contribution	Works in Kind	
6. Town Centre to Avondale College	s94 Contribution	Works in Kind	
7. Town Centre to Central Drive	s94 Contribution	Works in Kind	
8. Central Drive to Morisset	s94 Contribution	Works in Kind	
TOTAL CYCLE WAYS	s94 Contribution	Works in Kind	**$ 7.4 M**
D. PUBLIC TRANSPORT			
1. Bus Services to North Cooranbong		Operating Subsidy	$ 1 M

2. Bus Stop Furniture – Internal	Works In kind	**(100% to Developer)**
TOTAL PUBLIC TRANSPORT		**$ 1 M**
TOTAL TRANSPORT CONTRIBUTIONS		**$ 54.4 M**

7.2.5 Traffic Conclusions & Recommendations

The proposed Site Access Plan – ***Figure 16***, illustrates the access arrangements for the proposed North Cooranbong proposal.

- Alton Road will provide a local street connection into the south west corner of the subject development. It is considered that the internal road network is orientated to downplay the function of this link and make it less attractive as a route due to the longer travel distance between the development cells and Freemans Drive via alternative routes. This should reinforce the local road function. The retention of the existing intersection layout of Freeman's Drive / Alton Road stop line controlled arrangement should not encourage excessive levels of vehicular usage through this intersection. This approach is considered more suitable to balance traffic demands across alternative access points rather than build in potentially unpopular and high maintenance traffic control devices into new development.

- It is proposed to provide a new access to the north east of the Alton Road intersection, as shown in ***Plan 22***, which will provide a new access into the proposed development from Freemans Drive in a northerly direction. This will function as a lower category local road within the internal road network. Residents with a frontage to this new road, will be able to have direct access and as such this will limit through traffic flows.

- It is proposed to utilise a realigned Avondale Road to connect the subject development site to Freemans Drive and Newport Road, as shown in ***Plan 23***. This link constitutes one of two main access points to the subject development site and provides a higher order collector road function. The orientation of the concept plan and the internal road network would ensure that this link is one of the main corridors of movement between the subject development and Freemans Drive and Newport Road. It is considered that the ultimate layout of the realigned Avondale Road with Freemans Drive and Newport Road will provide sufficient capacity to provide minimal delays to reinforce the main role of this link.

- It is also proposed to provide a potential new connection to the north of Newport Road which will provide the second main access point to the development. The orientation of the road network reinforces this link, particularly for traffic movements to and from the north.

- Local road and intersection upgrades will include contributions to the development of improved infrastructure for local bus services along the nominated corridors between Morisset and Dora Creek.

In conclusion, it is considered that the elements of the site concept plan and the orientation of the internal road network will be sufficient to reinforce the intended role of each of the four access points in terms of their functional classification within the concept plan area and to minimise the amenity impacts on surrounding residential properties to satisfactory levels. These together with the North Cooranbong transport improvements contributing to the Morisset TMAP will provide a positive contribution to transport movements for the site and within the Morisset area.

Not to Scale

- 1.00 INFRASTRUCTURE - ROAD NETWORK
- 1.02 Freemans Drive - New Access

The North Cooranbong development proposed by the Johnson Property Group will require a new access point off Freemans Drive. Preliminary studies by GHD indicate that several roadway upgrades will be required.

GHD have prepared the above preliminary Freemans Drive new access intersection design including signalisation.

INTERSECTION PLAN 02

FREEMANS DRIVE NEW ACCESS INTERSECTION PRELIMINARY DESIGN

FIGURE 22

Not to Scale

- 1.00 INFRASTRUCTURE - ROAD NETWORK
- 1.01 Avondale Road ~ Freemans Drive

Preliminary studies into the North Cooranbong road network by GHD for the Johnson Property Group indicate that several roadway upgrades will be required.

GHD have prepared the above preliminary Avondale Road ~ Freemans Drive intersection design including signalisation.

INTERSECTION PLAN 01

AVONDALE ROAD ~ FREEMANS DRIVE INTERSECTION PRELIMINARY DESIGN

FIGURE 23

7.3 Biodiversity, Flora & Fauna

With the closure of the Avondale Aerodrome imminent in the years prior to 2004 the subject site was identified by Lake Macquarie City Council for potential future urban use as evident by the rezoning of the site to an Investigation Zone, under the LMCC LEP in 2004. This rezoning was based on several characteristics of the site which made it suitable for future urban development despite the need for additional ecological information. As part of the rezoning process a number of ecological studies were undertaken by *Anne Clements & Associates Pty Ltd, Harper Somers O'Sullivan (HSO) & . Austeco Pty Ltd.* This included flora and fauna assessments undertaken over various parts of the site twice in 2002 and again in 2003. These reports provided background information relating to the ecology of the site.

In December of 2004, and as part of a previous zoning scheme outcome, *Anne Clements & Associates Pty Ltd* prepared a site wide flora assessment which included a review of that information previously collected on the site, and supplementary information resulting from additional site specific studies. The need for flora and fauna assessment focused on a concept plan model and not the rezoning model was apparent. Anne Clements & Associates prepared subsequent assessments of the flora of the triangular lot, and HSO, a flora and fauna assessment of the Town Common Site (which is sited separately to the main area of the concept plan). In relation to fauna on the main site, *Austeco Pty Ltd* where engaged to provide an in depth assessment of the North Cooranbong Concept Plan area. As the bulk of the triangular and town common sites are to be set aside for conservation and open spaces respectfully, this assessment of the biodiversity will focus on the concept urban areas and the potential impact of the concept plan.

As previously discussed in previous sections of this report, the directions of DoP and DECC are more clearly defined for the Lower Hunter now as a result of the release of the Lower Hunter Regional Strategy and the draft Regional Conservation Plan. As a result of the objectives of these two state planning documents, the previous zoning scheme needed to be revisited and discussions between the proponent, DECC and DoP commenced to see how the site could be developed to maximize its potential whilst still achieving an environmental outcome.

In a letter from the DECC to the proponent (27th Nov 2007), the DECC indicated that an adequate and in-depth level of ecological data would be required to properly inform the decision making process as such a depth of knowledge had not been gathered to date. An extract of this letter relevant to the North Cooranbong site is shown below. To demonstrate that such a bank of knowledge exists the following is a chronology of ecological investigations including those discussed above and investigations undertaken after the aforementioned letter was received by the proponent:

DECC to JPG – 27th Nov 2007

North Cooranbong –From the information currently available, it is clear that this site is highly constrained by biodiversity. The site contains endangered ecological communities and threatened species listed under the *Threatened Species Conservation Act 1995* and the *EPBC Act 1999*. It is therefore imperative that an appropriate level of in-situ protection is provided for these biodiversity values.

Given the significant values exhibited on the site, it is important that adequate site scale data is available to inform any decision on final development footprints. In this regard, we note that the surveys which have been conducted to date provide sufficient detail to inform final negotiations on development areas.

We are therefore seeking further information, particularly with regard to distribution of *Angophora inopina*, which can be used to refine final development footprints. In this regard, we note that the north western corner and northern boundary of the site appears to contain areas of significant biodiversity value, which should be the focus of conservation efforts.

Nonetheless, DECC acknowledges that additional areas can be developed, as shown in the attached map. Specifically, the proposals around the open space/existing school in the eastern part6 of the land are supported. It is recognised that there are some threatened species in these areas, and again, any biodiversity values that may be lost or impacted will have to be offset.

DECC

2004

- Anne Clements and Associates Pty Ltd, North Cooranbong Flora Assessment – 29th Dec ***(Appendix B)***

2005

- Anne Clements and Associates Pty Ltd, North Cooranbong Supplementary Flora Assessment (triangular lot) – 9th Dec. ***(Appendix B(i))***
- Austeco Environmental Consultants, Cooranbong Aerodrome Fauna Constraints Assessment – 30th January. ***(Appendix C)***
- Forest Fauna Surveys, North Cooranbong Extension Area, 2005

2006

- URS Environmental Consultants, Local Environmental Study – North Cooranbong, Dec 2006 (incorporating additional information contained by Anne Clements & Associates and Austeco P/L).

2007

- RPS Harper Somers O'Sullivan Pty Ltd, Flora and Fauna Assessment "Cooranboong Town Common" – June. ***(Appendix B(ii))***

2008

- RPS Harper Somers O'Sullivan Pty Ltd, Distribution of Three Threatened Species – January 2008. ***(Appendix B(iii))***
    - o Incorperating - Anne Clements and Associates Pty Ltd, Targeted Ecological Survey of three Threatened Species – January 2008.

Note: Additional ecological constraints studies were prepared as part of a previous rezoning application for the site. While the rezoning process was not completed in light of the site being assessed under Part 3A of the EPA Act 1979, these studies were referenced in several of the above studies.

The resulting reports provide a significant body of information with which to assess the Concept Plan. The following is a discussion of the significant ecological features of the subject site and how the Concept Plan will impact significant ecology and how such impacts can be mitigated and managed to a level acceptable to the DECC.

7.3.1 Flora & Fauna

Flora

The Flora report for the Cooranbong Aerodrome site (Clements 2004) identified 5 vegetation assemblages within the boundaries of the site. This report is consistent with previous ecological reports for the same site (as discussed above) in that the following vegetation assemblages where identified as being present:

- Coastal plains Smoothbarked apple woodland,
- Coastal plains Scribbly Gum woodland,
- Riparian Meleluca Swamp Woodland,
- Alluvial Tall moist Forest, and
- Disturbed/cleared areas of extended human influence.

49 exotic species were identified on the subject site primarily in, and adjacent to, the disturbed areas but also to a lesser extent, within areas of the above listed vegetation assemblages. The existence and spread of these exotic species is consistent with the history of human influence on the subject site. Significant recorded communities are primarily related to the occurrence of three species which are discussed below.

In reviewing species of significance relating to the North Cooranbong Concept Plan, Clements Report (2004) identified that three (3) species of plant recorded on the site are listed as 'Vulnerable' under the Environmental Protection and Biodiversity Conservation Act (EP&BC Act, 1999) and Threatened Species Conservation Act (TSC Act, 1995):

- *Angophora inopina*; (vulnerable)
- *Grevillea paviflora*; (vulnerable) and
- *Tetratheca juncea* (vulnerable)

As the implications of the species listing under the EPBC Act is discussed in greater detail in Section 3.1 of this report, this discussion will focus on the listed species in an ecological and regional development context. Maps showing the surveyed locations of the three listed species are listed in the attached HSO report ***(Appendix B(iii))***.

In terms of soils the subject site is underlain by the *Doyalson* and *Wyong* soil landscapes (Murphy & Tille 1993) and as such contains vegetation assemblages which prefer the characteristics of these soil landscapes. These soil types are common in the region and this site has no specific differentiating qualities to other sites in the region.

Angophora inopina

Specimens of the *A inopina*, common name Charmhaven Apple, where detected during the flora surveys conducted by Clements during the 2004 and 2005 surveys. While initial recordings indicated the existence of the species additional targeted surveys were conducted in early 2008 to determine the full extent of the species. This species is endemic to the NSW Central Coast with a northern limit near Karuah, on the boundary of the Port Stephens and Great Lakes Local Government Areas. Figures (2-1 & 2-2) showing the full extent of *A inopina*'s range, including recorded specimens and potential habitat is included in the HSO 2008 report attached as ***Appendix B(iii).*** Interestingly these figures show a number of recordings of the species outside the preferred habitat indicating that potential range outside the preferred habitat may be wider still. The wide range over which potential habitat was governed was based on recordings from ecologists, preferred soil types and preferred vegetation assemblages.

The population on the subject site can be defined into three separate subpopulations based on their grouping across the site, the largest of which is located in the northwestern corner of the site (the triangular lot) which has been set aside as a conservation area under the Concept Plan. The second grouping is located in the northeastern corner over a mix of riparian, open space and proposed urban land uses. The third is located in the central-southern portion of the site. 2952 specimens were recorded on the site (Clements 2008), up to 30% of which will be protected in riparian and conservation areas.

Within the Concept Plan area a number of specimens will be displaced by the proposal although opportunities will exist within the riparian and vegetated corridors to preserve specimens and promote the growth of the species. To compensate for those specimens that will be lost as a result of the proposal, DECC have indicated a compensatory package will be required (which will be detailed in the regional voluntary planning agreement) to sufficiently demonstrate the

'maintain or improve' principle such that this concept plan provides a maintain or improve biodiversity solution.

Grevillea paviflora

This species in known to occur more centrally within the Sydney basin and has been identified as preferring the Lucus Heights and Faulconbridge soil landscapes. Within the Lower Hunter *G paviflora* is known to have a wide distribution with over 1,000,000 specimens known. Of these approximately 660,000 are found within the Hunter Economic Zone (HEZ) conservation reserve. The subject site is known to contain approximately 200 specimens (approximately 60% being in proposed conservation areas), the majority of these located within riparian areas in the south eastern section of the site. This area containing the majority of the species on the site has been dedicated a riparian corridor which will be unaffected by development allowing the majority of the species in this area to be preserved. The number of specimens effected by the concept plan represents approximately 0.3% of the known population, in this region.

Again, those areas of the concept plan which have been dedicated for conservation purposes will provide secure habitat for the species indefinably in addition to the compensatory package nominated by DECC to protect and manage the species on conservation land within the region such that this concept plan provides a maintain or improve biodiversity solution.

Tetratheca juncea

The third species of significance which was identified on the subject site in *Tetratheca juncea*, commonly known as Black-Eyed Susan. This species is listed in State and Commonwealth legislation as a vulnerable species. This species has a recognised habitat range from the Central Coast in the south to the Great Lakes in the North and has been found as far west as the Cessnock Local Government Area in the west. The species is known to be associated with the Awaba soils landscape of the northern Sydney Basin region. 32,164 specimens of *T juncea* are known to exist regionally with 31,336 of these preserved in existing or proposed conservation areas.

The subject site is known to contain approximately 139 specimens, around 37 located areas to be affected by the concept plan. This represents approximately 0.12% of the known population that will be affected by the concept plan. Again these figures are based on known populations and as there is a limited body of information pertaining to the actual population and spread of the species there is in all likelihood large unknown populations of this species located throughout its range.

Similarly to the other two species, the compensatory package nominated by DECC is aimed to protect and manage the species on conservation land within the region such that this concept plan provides a maintain or improve biodiversity solution..

The Precautionary Principle

The precautionary principle provides that if a significant amount of information does not exist in relation to a certain actions that a decisions on that action should be delayed until further information can be gathered and used to come to an informative decision. In relation to the subject site significant ecological studies have been undertaken since 2000 to determine the full extent of ecological characteristics and as such the precautionary principle cannot be seen as a preventative to the proposals determination.

On a regional scale populations of the three listed species have been documented primarily within conservation areas with the true extent of regional populations being unknown. The preceding assessment of the three species based partly on known regional populations therefore represents a very conservative estimate of the populations of these species and as such discount the need for the precautionary principle to be applied in this instance. Indeed, as more information is collected in relation to these species (including the extensive information collected as part of this environmental assessment) the compensatory package provided by the proponent can be put to use on a regional scale to fund the ongoing protection of these species.

Recommendations

Among the recommendations of the Clements report and as adopted by the North Cooranbong concept plan are:

- The inclusion of a vegetated corridor running in an east west fashion through the northern portion of the site linking the proposed conservation area(the triangular lot) with existing vegetation located to the north of the Avondale School site, and
- The clean up of the areas identified in the flora report which currently holds specimens of *Ageratine adenophora*, a noxious weed.

Despite the location of the listed species which could lead to their removal as a result of the concept plan, provision can be considered for appropriate ongiong protection to demonstrate that the maintain or improve principle has been adhered to in this instance. Additionally the conservation area offsets provided and dedicated to the DECC as part of the concept plan will ensure these species will be preserved in the locality for perpetuity.

Fauna

Dr Andrew Smith of *Austeco Pty Ltd* undertook a site specific and sub regional fauna assessment of the subject site in 2004 ('***Austeco Report'***). The subject site was divided into 4 areas for the purpose of the investigation. These areas are shown in *Figure 6* of ***Appendix C.*** Listed species found within these areas are as follows:

Area 1 – Encompassing the majority of the site:

- *Mormopterus norfolkensis* (East-coast Free-tailed Bat)
- *Calyptorhynchus lathami* (Glossy Black Cockatoo (within 100m of site boundary)

Area 2 – Including a smaller souther portion of the site:

None recorded

Area 3 – The south-western corner:

- *Miniopterus schreibersii oceanensis* (Eastern Bent-wing Bat)
- *Mormopterus norfolkensis* (East-coast free-tailed bat)

Area 4 – A small section including the southern access to the subject site:

- *Myotis adversus* (Large-footed Myotis)
- *Miniopterus schreibersii oceanensis* (Eastern Bent-wing Bat)
- *Miniopterus australis* (Little Bent-wing Bat)
- *Scoteanax rueppellii* (Greater Broad-nosed Bat)
- *Pteropus poliocephalus* (Grey-headed Flying Fox) (observed flying over the site but not on the subject site)

Interestingly all listed species recorded on the site are capable of flying and are largely colony species. As such recordings of small numbers of these species, as occurred, would indicate that although present on the subject site during fauna surveys, these species would be generally dispersed across the locality and the region, especially during times of feeding. The recording of these species on the subject site would not be unexpected due to the location of higher quality vegetation located adjacent to the subject site in the Olney State Forest. As such the recordings on the subject site could be considered background recordings (for example the recording of a species which was in flight over the subject site) and not unusual given the capacity for such species to be widely dispersed.

Despite recording potentially being background recordings (i.e recording resulting from individuals traversing the site), there is a need to accommodate species movement through the subject site. This is demonstrated through the dedication of the entire northern boundary of the site for conservation purposes, thus preserving

for perpetuity this important connection between vegetation on the ranges to the west, with the vegetated areas to the east, and Lake Macquarie.

In addition, DECC and the proponent are negotiating a compensatory package (which will be detailed in the regional voluntary planning agreement) to improve and maintain dedicated land on the subject site, and to secure conservation use within the region. While this shall be at the discretion of DECC it is envisaged that these funds will go toward the protection, maintenance and conservation of high quality habitat, as such demonstrating that the maintain or improve principle is met by the Concept Plan.

The long term conservation of these species can be achieved by:

- Protecting riparian habitat (using buffers of retained vegetation), Swamp Mahogany habitat, Alluvial Tall Moist forest, potential Masked Owl nest trees, and tree hollows in proportion with the area of habitat protected;
- Providing a vegetation corridor in both the north and the south of the site along the creek lines; and
- Providing a north south vegetation linkage either internal to the site or externally, provided the linkage is secured by zoning.

Town Common Site

In relation to the town common site additional ecological reporting was undertaken as included in ***Appendix B.*** This reporting concluded that the proposal would not result in a significant impact on the integrity of the local ecology. Furthermore the land was identified as being suitable for the mix of conservation and open space zonings.

Given the limited nature of the proposed development and area to be dedicated for conservation purposed on the town common site, negligible impact is anticipated.

Triangular Lot

As previously mentioned the triangular lot (located in the northwestern corner of the main Concept Plan site has been largely reserved for conservation purposes. This will improve the integrity of the northern vegetation corridor by providing a significant conservation area linking the subject site to the Olney State Forest and beyond. The area also includes a large number of *A inopina,* and its preferred habitat to aid in the preservation of this species.

7.3.2 Conservation Offsets

It is clear from the above that the regional and sub regional assessments provided by the HSO, Clements Report and the Austeco Report hold a common view, that it is important to maintain linkages between remnant vegetation communities to the

east of the site, within the site, to the Olney State Forest and ultimately, the Watagan Mountain Range to the west and north of the site.

In 2004 it was observed that the boundaries of the site (at that time) did not alone contain sufficient linkage between the vegetation east of the site and the Olney State Forest in the west. It appeared that the prospect of establishing a strong link of contiguous vegetation had been eroded by former rural activity surrounding the site, and that the subject site did not provide the requisite qualities.

However, the assessments observed an area of higher quality vegetation within land that adjoined to the west of the site that would best ensure a long term sustainable linkage was created. The vegetation was and still is zoned 1(a) Rural and remained under threat from rural activities in the mid to long term.

Based on this advice and at significant expense, the proponent (JPG) subsequently purchased the adjoining property with the aim of securing the linkage by rezoning a significant part of the land as 7(1) Conservation (Primary).

The land, reffered to as “Masons Land”, become part of the North Cooranbong site in 2005 and was studied in full detail accordingly. The proposal to rezone the linkage for conservation purposes remains part of this concept application. This area is known as the triangular parcel and the bulk of this area is to be dedicated as primary conservation zone.

Negotiations between JPG and the DECC have concluded that land along the northern boundary of the site as conservation (secondary) zone. This area will remain as an important vegetated link through the north of the site to adjoining areas of off-site ecological significance.

The combination of these conservation offsets and the compensatory package negotiated between DECC, DoP and JPG are considered to allow the ‘improve or maintain’ principle to be demonstrated in relation to the Concept Plan.

7.3.3 Regional Ecological Importance

Despite the aforementioned listed species existing on the subject site, consideration of the concept plans ecological footprint requires an assessment on a regional scale. Of the three species located on the subject site *Grevillea paviflora*; and *Tetratheca juncea* are located primarily in areas which will result in their preservation within the Concept Plan. Limited numbers of these plants will be affected directly by the purposed concept plan. The remaining species, *Angophora inopina*, is located across the site in larger numbers. On a regional scale this species has been recorded in significant stands within the Coal and Allied Gwandalan Conservation Lands where approximately 3000 specimens have been

recorded alone. It is known that the species exists in additional Conservation areas although due to a lack of targeted species surveys the true status of the species is likely to be much higher on a regional scale.

While the regional importance of the three species cannot be understated the preservation of existing population in areas of higher conservation value is required. Therefore, and as previously mentioned, it is expected that the compensatory package required by DECC will enable DECC to preserve the population which are currently not protected. In terms of the Concept Plan this is especially important for *Angophora inopina.* The compensatory package will provide funding to secure the population in the region and ensure the species longevity.

7.3.4 Regional Development Importance

While it is acknowledged that three vulnerable flora species will be affected by the concept plan the importance of the site in providing urban growth opportunities for the Lower Hunter cannot be understated. The subject site has been identified as being a significant area for accepting future residential growth in the Lower Hunter Regional Strategy. The subject site was chosen for inclusion in this Strategy due to the significant areas of disturbance and its location within a major growth area with significant population to accept growth and underpin the existing population. That is to say that although the subject site contains listed species, it does so at levels which, when compared to alternative urban growth areas in the Lower Hunter, are relatively low and therefore represent a site which will have significant benefits if developed for housing,

The need to provide housing to the growing population of the Lower Hunter cannot be understated. Specifically, the subject site is located on the boundary of the Central Coast and Lower Hunter regional areas, both of which are anticipated to face continual growth pressure originating from congested Sydney residential growth areas. Urban growth on the subject site will in turn provide economies of scale to encourage much needed services to the south lakes area.

Without the development of the proposed Concept Plan alternative sites within the Lower Hunter would be required. Despite the occurrence of three vulnerable species the subject site has experienced significant disturbance in the past, is located close to existing infrastructure and importantly, close to employment lands as proposed in the Lower Hunter Strategy. For these reasons the provision of an agreed compensatory package DECC will demonstrate that this site provides a maintain or improve biodiversity outcome and is considered to preserve the ecology of the locality and the region.

7.3.5 Conclusions & Recommendations

The above has provided an in-depth discussion of the Concept Plan in relation to ecological matters on both local and regional scales. It has been shown that through the provision of land for conservation, the inclusion of an important vegetated corridor and riparian zones, combined with an agreed compensatory package to DECC for offsite conservation, there is ample evidence that the improve or maintain principle has been met. Importantly the recommendation of the Austeco Report (2004) that a minimum of 30% of the Concept Plan is to be reserved for conservation has been met.

7.4 Water Quality Management

Patterson Britton and Partners Pty Ltd was engaged to identify and address the various water management issues associated with the proposed North Cooranbong residential development, refer ***Appendix J.***

This report outlines the water management principles that are to be adopted in the formation of a sustainable water management strategy for the North Cooranbong proposal. The water management strategy would be developed with respect to water sensitive urban design, run-off quality and quality control, potable water re-use reduction and retention / rehabilitation of creek line riparian corridors.

In particular, the report places particular emphasis on the implementation of a water-sensitive urban design approach in order to contribute to the long term sustainability of the site and its surrounding environment.

For the Town Common site, *Patterson Britton Partners Pty Ltd* have prepared a Draft Stormwater Management Plan which is attached as ***Appendix J.*** The implementation of such a plan will ensure that the quality of water leaving the site will not have a detrimental effect on the receiving catchment due to any onsite activity.

7.4.1 Current Position

The site is located on undulating terrain and as such, there are several subcatchments draining in various directions, several of which contain watercourses. Approximately half of the site drains via the main creekline to the southeast towards Freemans Drive. The remainder of the site is divided into smaller subcatchments which drain generally to the north and west.

In addition to the riparian corridors associated with the aforementioned creeklines, there are ecological corridors throughout the site.

The Environmental Protection Authority's (EPA) specific goals regarding reduction of annual pollutant loads in run-off under developed conditions are listed below.

- Total suspended sediments 80% of average annual load;
- Total phosphorus 45% of average annual load; and
- Total nitrogen 45% of average annual load

These targets represent the BASIX requirements and generally in accordance with those listed in Lake Macquarie Council's Stormwater Guidelines.

7.4.2 Implications of Concept

In order to achieve these objectives, a treatment-train (systematic treatment) approach would be implemented into the development where the stormwater treatment flow path for run-off would generally be:

1. run-off from roofed areas would be collected and detained in rainwater tanks with an overflow by-pass to the street (*bioretention*) drainage system
2. large impervious areas such as roads would be directed to bioretention swales where they would be filtered and treated biologically
3. excess flows from the bioretention swales and basins would flow into the pipe drainage system designed to cater for the 10 year ARI event
4. stormwater exiting the pipe drainage system would pass through a gross pollutant trap to remove remaining coarse sediment, litter, debris, oils and grease, and
5. stormwater would drain from the gross pollutant trap to either a wetland or a dry infiltration / bioretention basin for final treatment before discharge to the downstream system.

This site represents the opportunity to implement a water management system which would not only ensure sustainability of the development, but also contribute to an improvement in the overall environmental quality of the North Cooranbong site, the receiving waters and the surrounding areas.

The principle objectives which will be achieved through the implementation of this integrated water management plan are:

- the demand for potable water will be reduced by at least 40% compared to that of a traditional household with the introduction of water saving measures and rainwater tanks;
- the export of suspended solids, total nitrogen and total phosphorus would be significantly reduced;
- the peak flow rates of stormwater discharge from the site will be maintained at or below existing levels;
- the riparian (and ecological) corridors will be maintained; and
- the visual and passive recreational amenity of the development will be enhanced with these features.

7.5 Geotechnical & Contamination

Douglas Partners Pty Ltd were engaged to undertake an assessment of site specific geotechnical opportunities and constraints for the North Cooranbong investigation area. The subsequent report which formed the basis for the geotechnical assessment in this document, comprises information from previous geotechnical reports, and additional primary information. Previous reports used are shown in **Table 14.**

Table 14 – Geotechnical reporting history of the subject site *Source: Douglas Partners Pty Ltd.*

Report No	Date	Investigation Title	Description
31393	11/12/01	Preliminary Site Assessment	Lots 1 to 4, Part Lots 5 & 6, Lots 7 to 10 and Part Lot 11, DP 3533, Avondale Rd, Cooranbong
31393-1	24/1/02	Effluent Sludge Dam Assessment	Lot 10, DP 3533, Avondale Rd, Cooranbong
31498	24/7/02	Preliminary Site Assessment	Lot 1, DP 170378, Lot 2, DP 825266, Lot Pt 15, DP 182756, Lot 1, DP 348173 & Lot 21, DP 865588, Alton Rd & Freemans Dr, Cooranbong
31498A -01	1/4/03	Additional Contamination Assessment	Lot 2, DP 825266, Lot 21, DP 865588 & Lot 1, DP 348173, Alton Rd & Freemans Drive, Cooranbong
31498A -02	9/4/03	Additional Contamination Assessment	Lot 1, DP 170378, Alton Rd, Cooranbong
31498A -03	8/4/03	Additional Contamination Assessment	Lot Pt 15, DP 182756, Alton Rd, Cooranbong
31720	20/10/03	Preliminary Site Assessment	Lot 1, DP 825266
31720-1	13/11/03	Additional Geotechnical & Contamination Assessment	Lot 1, DP 170378, Lot 2, DP 825266, Lot Pt 15, DP 182756, Lot 1, DP 348173, Lot 21, DP 865588, & Lots 1 to 11, DP 3533,
39229	July 05	Preliminary Site Analysis	Lot 219, DP 755218

The primary report which forms the basis of the following discussions may be found in ***Appendix A.*** The following geotechnical aspects offer further discussion on the respective geotechnical characteristics of the site and the proposal.

7.5.1 Landform & Geotechnical Capacity

The site is underlain by Triassic aged Narrabeen Group, generally comprising chert sandstone, quartzoee sandstone, conglomerate, shale and claystone. A shallow soil profile was generally observed with silty topsoil overlaying clay and silty clay soils. Sandstone outcrops where observed at the base of some erosion scours.

Generally speaking the geology of the site means it can be readily excavated by conventional earthmoving equipment and the geology of the site does not constrain future development. Prior to future development specific site investigations should be made to quantify the exact geology of the particular area to be developed.

7.5.2 Contamination

The Douglas Partners report indicates that bird burial pits have been located on part of the site associated with previous chicken sheds. Specifically these pits are located in the southwestern corner of the subject site adjoining existing chicken sheds. To prevent any conflicting land uses in this location the concept master plan has identified this area for environmental area / open space.

Further possible contamination issues exist where a former effluent sludge disposal dam is located on the site. This area will be remediated prior to any future development in accordance with Council standards to be detailed in the development application. LMCC's development application and construction certificate reference numbers for this remediation are as follows: DA 175/2007 and SCC 90/2007

A number of car bodies of various ages have been located on the subject site. These car bodies will be removed from the site as part of the site preparation, at which time an assessment of any additional contamination, for example hydrocarbon leakages, will be assessed.

Contamination present on site is located in a smaller number of isolated locations and not strewn across the site. These can be easily targeted and remediated as development of the area occurs.

As well as these relatively minor contamination issues a number of areas have been subjected to localised filling in the past with fill appearing to be placed in an uncontrolled manner.

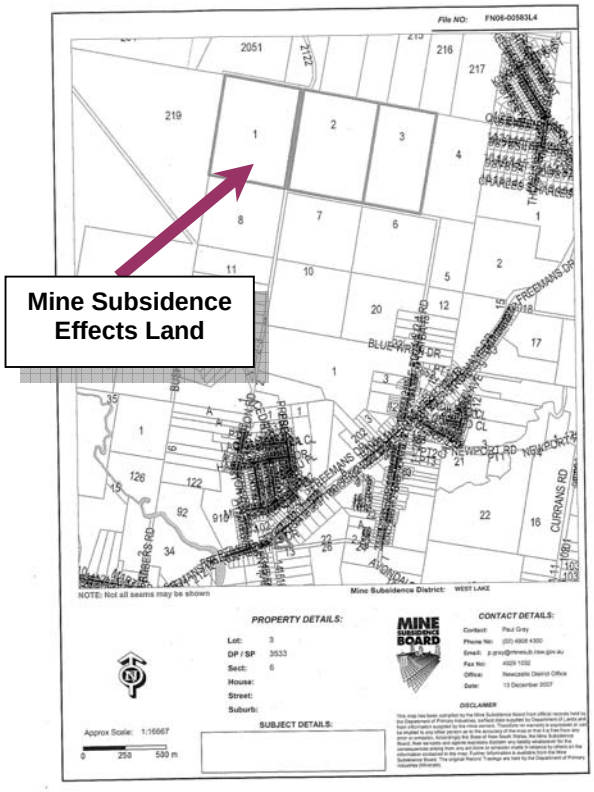
The geotechnical investigations attached as ***Appendix A*** includes a list of all possible and existing sources of contamination on the site (Table 3 of Appendix A). It is recommended that an additional contamination assessment be undertaken specifically relating to these issues and addressing methods to mitigate any effects

these will have on the future development of the site at the DA stage for each application.

7.5.3 Subsidence

The NSW Mine Subsidence Board was contacted to provide comment on the proposal for use of the subject site for future urban development, primarily residential land use.

The Mine Subsidence Board offered the response shown in ***Appendix D.*** In summary the majority of the site is free of any mine subsidence constraints with the exception of three (3) lots shown on the following plan.



Provision has been made for these lots in the site specific DCP which requires consultation with the Mine Subsidence Board prior to the issuing of development consent.

7.5.4 Soil Erosion

As part of the geotechnical investigations undertaken in ***Appendix A***, an assessment of the erosive quality of the site was undertaken. The dominant soils of the site were identified as clays and appropriate laboratory testing was undertaken to determine the erosive potential of these soil types.

It was found that the dominant soil types on site are generally non-dispersive and therefore are not prone to erosion, however it is noted that soil exposure as a result of earthworks would make any exposed soils prone to erosion. The report notes that the soil types encountered on the site are readily amenable to erosion control techniques which will reduce the likelihood of unwanted soil movement and protect receiving waters from suspended soil sediments.

Such erosion and sediment control plans shall be furbished by the proponent prior to future works to demonstrate mitigation and control techniques to prevent unwanted soil movement, through and of the subject site.

7.5.5 Salinity

Specific investigations into the existence of soil salinity were not undertaken. However, no signs of salinity were identified on the subject site. It is recommended that further investigations take place in the future to determine the potential for soil salinity.

7.5.6 Acid Sulphate Soils

An initial assessment of the potential for Acid Sulphate Soils on was undertaken and it was determined that there is little likelihood of these soils occurring across the site. The report notes, however, that the exception to this is the extreme southeast corner of the site which has the potential to be affected by Acid Sulphate Soils according to the *Acid Sulphate Soils Risk Map* for Morisset. Specific investigations are recommended for any proposed works in these areas however unlikely the existence of Acid Sulphate Soils may be. This area has been excluded from development under the proposed concept plan and will remain environmental.

In relation to the Town Common site, geotechnical investigations undertaken by Douglas Partners Pty Ltd, ***Appendix A,*** indicated that there was the potential for ASS to be exposed during any future works on site. As such, any future works on this site will require an Acid Sulphate Soils Management Plan. The timings for such a plan are outlined in the Statement of Commitments in Section 8.0 of this report.

7.5.7 Resource Implications

The subject site is not known to hold any significant resources which the proposed development may prevent from being extracted or utilised. Test pits failed to encounter any significant quantities of gravel which would represent the most likely resource to be found within the site boundaries.

The future development of the site for urban uses would not jeopardise the ability to utilise any significant resources, now or in the future.

7.5.8 Groundwater

The existence of groundwater was limited across the site. Soaked soils, where encountered, were limited to gully lines and natural watercourses. The concept urban design aims has taken this into consideration the provision of water detention and quality control devices within the urban area and not in the environmental corridors.

In the north western corner, groundwater is some 6m below ground level and is not considered an issue. Refer ***Appendix A(ii).***

The nearest recorded bore to the site is located 150m to the south of the subject site.

7.5.9 Geotechnical Conclusions & Recommendations

From the site specific assessment undertaken to document the geological conditions of the site, it can be concluded that the site is suitable for the proposed development. No geotechnical constraints adversely affect the site as a whole and the concept plan is responsive to any limitations. Those areas with contamination issues can be suitably addressed by future specific reporting to determine the extent of the constraint and mitigation methods at DA stage.

7.6 Bushfire Risk Assessment

Given the site's location in close proximity to large areas of vegetation, the site has been identified as being bushfire prone. The proximity of bushfire prone land in and around the subject site is shown on ***Figure 12*****.** In order to demonstrated the ability of the site to accommodate future urban development (in particular residential development) as assessment of the bushfire threat must be made and appropriate protective measure put in place.

The basis for a bushfire threat assessment is outlined in the Rural Fire Services (RFS) document, *Planning for Bushfire Protection 2006*. This document requires an assessment of the subject site in relation to the topography of the site and the type of vegetation, and how these combined will affect local fire behaviour. The predicted fire behaviour / intensity are then used to determine appropriate setbacks, known as Asset Protection Zones or APZ's.

An assessment of the site in line with *Planning for Bushfire Protection,* is attached ***Appendix H***. This report provides a full assessment of the site in relation to bushfire and bushfire mitigation, including recommended Asset Protection Zones. A summary of the recommendations of this report is provided below.

The outcomes of the assessment have been incorporated in the concept plan, in particular the provision of private roads and setbacks. The recommendations incorporated into the concept plan include:

As well as providing adequate asset protection zones between potential bushfire threats and dwellings, a number of additional recommendations have been made to ensure adequate bushfire protection measure have been provided.

- Access design needs to meet the requirements of the RFS as outlined in *Planning for Bushfire Protection 2006.*
- A designated water supply for fire fighting needs to be provided and must comply with Australian Standard 2419.1 for fire hydrant provision. Where hydrant systems cannot be provided to the service, all areas specific firefighting water supplies must be provided in line with the RFS criteria.
- Reticulated or bottled gas shall be installed and maintained in accordance with AS/NZS 1596-2002: *Storage and Handling of LP Gas* and the requirements of the relevant authorities.
- Where possible electricity lines are to be placed underground to prevent damage to infrastructure or loss of service during a fire event, and additionally to prevent the danger associated with damaged or exposed lines.
- Ongoing maintenance of vegetation with particular emphasis on Asset Protection Zones is required to ensure appropriate setbacks are maintained
    - If any trees are to be located within the envisaged APZs, this is considered acceptable, providing the following conditions are met:
    - Vegetation is not to touch or overhang dwellings;
    - Vegetation is well spread out and does not form a continuous canopy (separated by a minimum of 2 metres), especially within the IPA;
    - Vegetation is not a species that retains dead material or deposits excessive quantities of ground fuel in a short period or in a danger period; and
    - Vegetation is located far enough away from dwellings so that it will not ignite the dwelling by direct flame contact or radiant heat emission (minimum of 5 metres).
- The implementation of appropriate Asset Protection Zones as specified within Table 3.1 of that report;
- Woodpiles, combustible material storage sheds, large areas/quantities of garden mulch and stacked flammable building materials should not be located within IPA of dwellings;
- All public roads proposed within the development should be designed in accordance with the criteria of the RFS and Councils engineering standards;

It is considered that if the above recommendations are incorporated into the site and its ongoing maintenance then an acceptable level of bushfire risk can be attained for the proposal.

7.6.1 APZ Ownership & Management

All Asset Protection Zones are to be fully located within the boundaries of the concept plan area. For residential areas APZ's are to be fully contained within the boundaries of respective residential lots or road reserves. The maintenance of the APZ's within residential lots is the responsibility of the individual landowners. The use of a road as an APZ ensures its continued maintenance. Specific APZ size and maintenance requirements will receive further review when individual Development Applications are submitted to Lake Macquarie Council.

7.6.2 Bushfire Conclusions & Recommendations

Adequate protection can be provided in the concept design to enable the development to proceed in the manner proposed in the concept plan and in accordance with Planning for Bushfire Protection 2006, subject to the adoption of the above recommendations. Refer ***Figure 24*** – Bushfire Plan.

7.7 Infrastructure & Utilities

New infrastructure and, where appropriate, the augmentation of existing infrastructure will enable the proposal for North Cooranbong to be adequately serviced for water, sewerage treatment and re-use, energy and telecommunications in accordance with the requirements of the service agencies.

7.7.1 Water Supply

In June 2006, *Patterson Britton and Partners Pty Ltd* produced the North Cooranbong Bulk Water and Wastewater Servicing Study, refer ***Appendix I***. This study was prepared to examine feasible options for servicing the proposed development with bulk water supply and wastewater transportation infrastructure. All proposed bulk servicing options investigated in this study involve the connection of the proposed development to the existing Hunter Water Corporation water supply network and wastewater transportation systems and as such there have been ongoing discussions with Hunter Water Corporation.

Hunter Water Corporation has recently commissioned a Water Supply Servicing Master-Plan for the Morisset area. This strategy includes some consideration of the proposed North Cooranbong development. However, the development is only considered with regard to the ultimate (*post 2028*) development scenario within the supply system. Hunter Water Corporation has advised that the subject site can be serviced by the provision of either a high level supply tank, or an on-site reservoir to service the expected water demands from the proposed development. It has

also been indicated that the connection to the existing supply system should be made at either the Dora Creek Reservoir or the junction of two Nominal Diameter, 375mm Cast Iron- Cement Lined water mains near the Dora Creek Bridge.

Water Demand

Hunter Water Corporation requested that the bulk servicing options formulated in the *Paterson Britton* Study included consideration of the neighbouring additional land areas, which is zoned for urban investigation and may have the potential for further development.

Ultimately the proposed development and the adjoining land areas are expected to produce an estimated average daily demand for water of 1800kL/day, with a peak hourly flow of approximately 100L/s.

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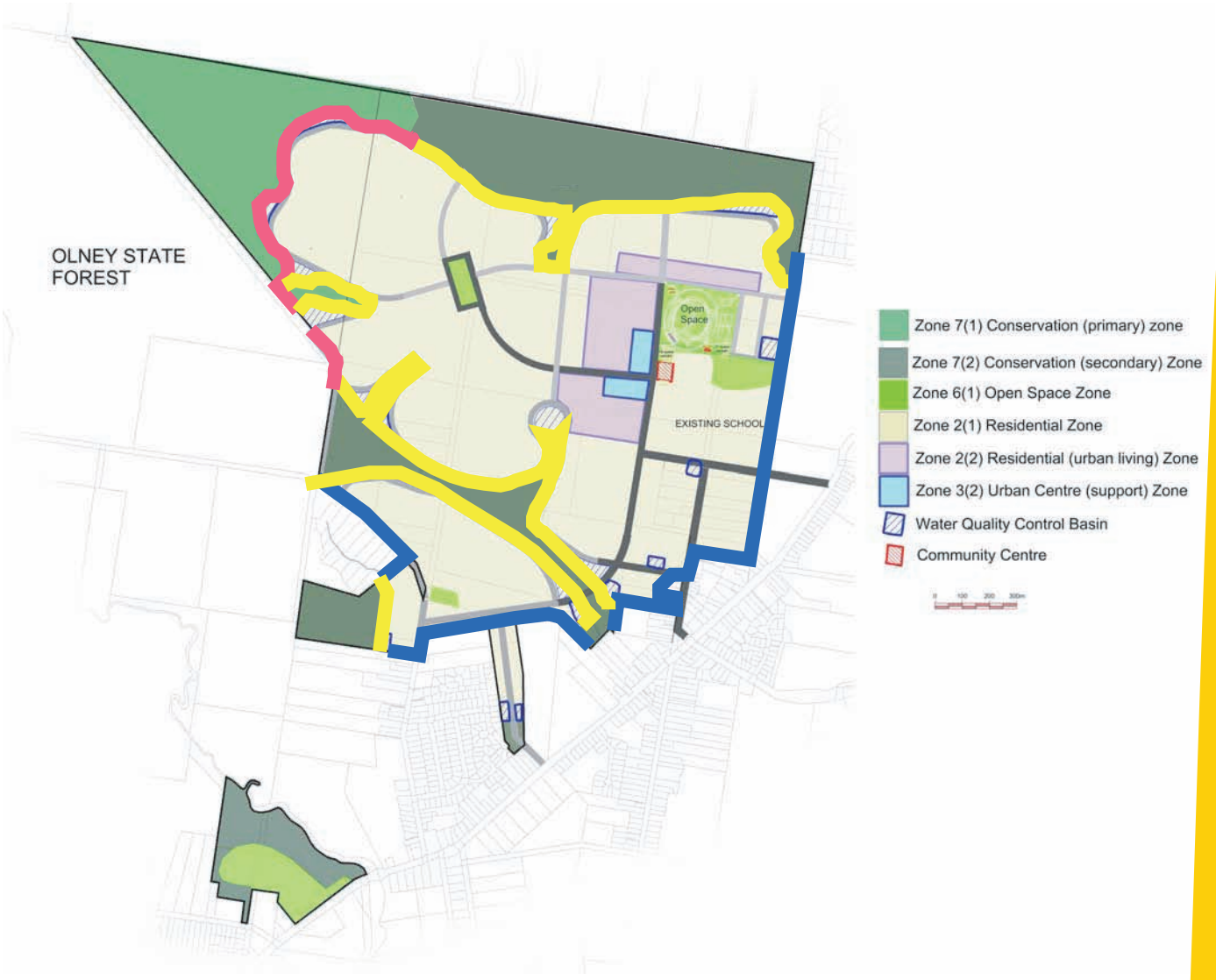


Not to Scale

ASSET PROTECTION ZONES

FIGURE 24

APZ Calculation

APZ's calculated on specific combination and slope effecting each subdivision boundary where residential land adjoins vegetation.

- 20 m APZ
- 15 m APZ
- 10 m APZ

HDB TownPlanning&Design

Water Supply Trunk Servicing Options

Modelling has indicated that the local reticulation system surrounding the proposal is at capacity and unable to service any additional lots. However, the existing Hunter Water Corporation's bulk supply mains and reservoirs is currently able to supply a maximum of 600 ET from the nominated Hunter Water Corporation connection points. The capacity of the system to allow for further development past this limit will be dependent on the nature and timing of works proposed in Hunter Water Corproation's adopted upgrade strategy.

It is recommended that the initial 600ET of the proposed development be serviced via a staged construction of a DN 300mm DICL pipeline. The first stage would involve the construction of the trunk main from the development to the Dora Creek Reservoir, which would allow for the initial 365 ET from the development to be serviced. Development up to 600ET could be provided through the extension of this water main from the Dora Creek Reservoir to the junction of the dual DN 375mm water mains at the Dora Creek Bridge. One pipeline route to the two connection points has been analysed, as this route represents the obvious feasible option for connection.

Several on-site servicing options (on-site reservoirs and high level systems) which would connect to the proposed DN 300mm trunk mains are available. All of these options have the capacity to service the water supply demands from the ultimate development of the site.

7.7.2 Wastewater & Water Recycling

Hunter Water Corporation is also currently undertaking a capacity review of the Dora Creek Wastewater Treatment Works (WWTW) to determine required augmentation works to cater for the expected growth within its catchment area. The design phase of the WWTW was due to commence in 2005, with the additional capacity (*sufficient for the proposed development*) likely to become available in 2008/2009.

In the short term, Hunter Water Corporation has advised that the existing spare capacity of the WWTW (*approximately 200 ETs*) may cater for the initial stages of the development. However, this capacity will erode with time due to other smaller developments within the catchment area of the WWTW. Hunter Water Corporation has also indicated that future upgrades to the Dora Creek WWTW will be funded by Developer Servicing Charges and will be managed by Hunter Water Corporation.

Sewer loads

Hunter Water Corporation requested that in relation to wastewater, the *Paterson Britton* Study also consider neighbouring additional land areas that may have the

potential for further development. Estimated wastewater loads will average 25L/s in dry weather and peak at approximately 200L/s in wet weather.

Wastewater Truck Servicing Options

Wastewater transportation options are limited to two possible alternatives, the construction of a new WWPS and rising main to connect the subject site directly to the Dora Creek WWTW (*Option S1*), or a connection to the Cooranbong No. 7 WasteWater Pumping Station (WWPS) with significant downstream upgrade works (*Option S2*).

Hunter Water Corporation has indicated that the development may be able to utilise the current spare capacity (*approximately 120 ET*) of the Cooranbong No. 7 WWPS during the initial stages of the construction without the need for upgrades. A cursory examination of Option S2 suggest that the significantly greater costs likely to be associated with the downstream upgrade works, required for connection to the Cooranbong No. 7 WWPS (*Option S2*), leaves the construction of a new on-site transfer WWPS and rising main (*Option S1*) as the most attractive option.

Option S1 would most likely be constructed along the same route as the proposed trunk water supply pipeline, which would bring cost benefits during the construction of the water and a wastewater pipeline sections, built simultaneously.

Water Recycling

The NSW State Government has legislated that all new residential dwellings shall receive a 40% reduction in potable water use when compared to traditional households. In June 2004, *Patterson Britton and Partners* produced the North Cooranbong Residential Development Water Management Principles, refer ***Appendix J***. This document addresses and provides advice in relation to the implementation of a water-sensitive urban design approach in order to contribute to the long term sustainability of the site and its surrounding environment.

To achieve these targets Johnson Property Group propose a number of water saving measures to be incorporated into various stages of the development, including the adoption of water saving devices, rainwater re-use and the use of recycled water across the site to achieve a minimum 40 % reduction. Recycled water could be used for watering playing fields, topping up artificial water features and other forms of irrigation.

Importantly an agreement between JPG and Hunter Water Corporation was signed in mid 2007 outlining JPG's commitment to introduce a 'third pipe' into the subdivision design to allow circulation of treated recycled water for reuse in landscaping irrigation and toilet flushing. The 'third pipe' system will provide a second water meter to dwellings which connects homes to the recycled water

system. Although exact figures are not yet available, the use of recycled water will result in large reductions in the use of potable water within the proposed community.

7.7.3 Electricity

Correspondence was received from *Energy Australia* dated 24th September, 2004 (***Appendix D***) which notes that there is sufficient supply for the North Cooranbong proposal. There is three phase high voltage 11kv supply available in Freeman's Drive, Alton Road and Avondale Road Cooranbong, which surrounds the subject site.

7.7.4 Communications

The site is located in close proximity to the existing village of Cooranbong and it is considered that the site will have access to a suitable telecommunications network.

7.7.5 Natural Gas

Correspondence was received from Agility Energy dated 7th September, 2004 (***Appendix D***) which notes that natural gas is available in the vicinity and can be extended to supply the North Cooranbong proposal.

7.7.6 Infrastructure Conclusions & Recommendations

From the investigations undertaken, it is considered that with the provision of appropriate infrastructure at the developer's cost, the project can be adequately serviced without adversely impacting on surrounding facilities and the level of service already existing in the area.

Development of this area will have a positive impact in that the level of services are likely to increase with an expanded population.

7.8 Heritage

In January 2005, an assessment of the European heritage and archaeology within the site was undertaken by *Graham Brooks and Associates Pty Ltd*. This report is attached as ***Appendix K.*** *Myall Coast Archaeological Services* prepared an Archaeological Survey and Constraints Study of the subject site in July 2003. This report is attached as ***Appendix L***.

7.8.1 Indigenous

Myall Coast Archaeological Services prepared an Archaeological Survey and Constraints Study of the subject site in July 2003. This report is attached as ***Appendix L***. Although this report was completed to meet the planning requirements of a previous rezoning application, its contents are still relevant to the

concept plan as outlined in a letter from the archaeological consultant also attached in ***Appendix L.***

Urban development of the land is not affected by matters of Aboriginal archaeological significance. The Koompahtoo Local Aboriginal Land Council has been consulted and the report notes the following:

- Potential archaeological sites within the subject land include isolated finds and open campsites;
- It is not likely that burial sites or ceremonial features will be found;
- Trees are either too recent or of inappropriate type for scare trees;
- There is no exposed rock on the site and the possibility of the area containing axe-grinding grooves is negligible. Accordingly, the possibility of art work is non-existent;
- The site was probably used in the past as an occasional food source and for fostering animal life; and
- The presence of wetlands/drainage areas also implies a likely Aboriginal occupation, but given the close proximity of a greater food/water source to the east, this site was possibly a less frequented source.

While it is probable that Aboriginals utilised the resources of the study area, it is unlikely that their activities would have left much lasting evidence of their visit than perhaps the odd isolated artefact, particularly as there has been significant disturbance to the top soil. Archaeological evidence was not discovered through the field study. However, undetected sites and artefacts may remain in the study area as subsurface artefacts.

The report also concludes that that there is no significance of the site with regard to social, historic, scientific or aesthetic values.

Although it is highly probable that no artefactual material will be found, even if present, it is important, in order to demonstrate due diligence, that preliminary earthworks are carefully observed to ensure that if objects are unearthed, that any opportunity there may be to add to the archaeological record is not accidentally destroyed.

Recommendation

The following recommendations are made in consultation with the Local Aboriginal Land Council and under the legal requirements of the NPW Act 1974:

- The Myall Coast report has identified an area along the creek line and to the west of the chicken sheds at the extreme southern boundary of

the site as an area that may require further assessment, should this specific area be considered for future development. This area is however proposed to be Environmental, and as such there will be no development in this area;

- There is no impact on Aboriginal Places or Objects or Potential Aboriginal Deposits and there is no impediment to the proposed development for Aboriginal Cultural reasons;
- The development is not an integrated development and referral to NPWS is not required and neither is a permit under Section 90 of the NPW Act for the development to proceed; and
- That the proponent inform all workers to be diligent when undertaking land preparation and if however, in the process of land preparation, artefacts are found, then work must cease and the LALC and NPWS be informed. To remove or destroy artefacts without a permit is an offence under Section 90 of the NPW Act, 1974.

7.8.2 European

In January 2005, an assessment of the European heritage and archaeology within the site was undertaken by *Graham Brooks and Associates Pty Ltd*. This report is attached as ***Appendix K.*** This report focuses specifically on the Cooranbong Aerodrome, located on Avondale Road.

"Cooranbong" is from the Aboriginal word meaning rocky bottom creek or water over rocks. The name was officially adopted with the opening of the Cooranbong Post office in 1866. The early land grant for the area was 2,000 acres, in 1826 and was mostly left under the care of an overseer. A second adjoining grant was finally issued in 1837. In 1861, seven lots ranging from 10 – 272 acres, mostly adjoining the western boundary of the early grant were sold and later became the area of the village centre. At this time families moved into the area and settlement slowly began.

Cattle and dairy farms were operating prior to settlement and from the 1860's timber products were exported. The timber market slowed in the 1890's with the end of the railway contracts and the national economic depression. Fishing and shipbuilding were other early industries. Cooranbong was bypassed by the Waratah to Homebush railway. This adversely affected the town's development, as Cooranbong began to rely on Morisset to fulfil transport needs.

In 1885 the Australian Seventh Day Adventist community was sparked with the coming of seven missionaries from USA, lead by Clarence White, with the desire to establish a missionary training centre. The desirable attributes for a permanent site included a rural setting enabling a balanced program of mental, physical and spiritual development that was otherwise too distracting in a city environment. The

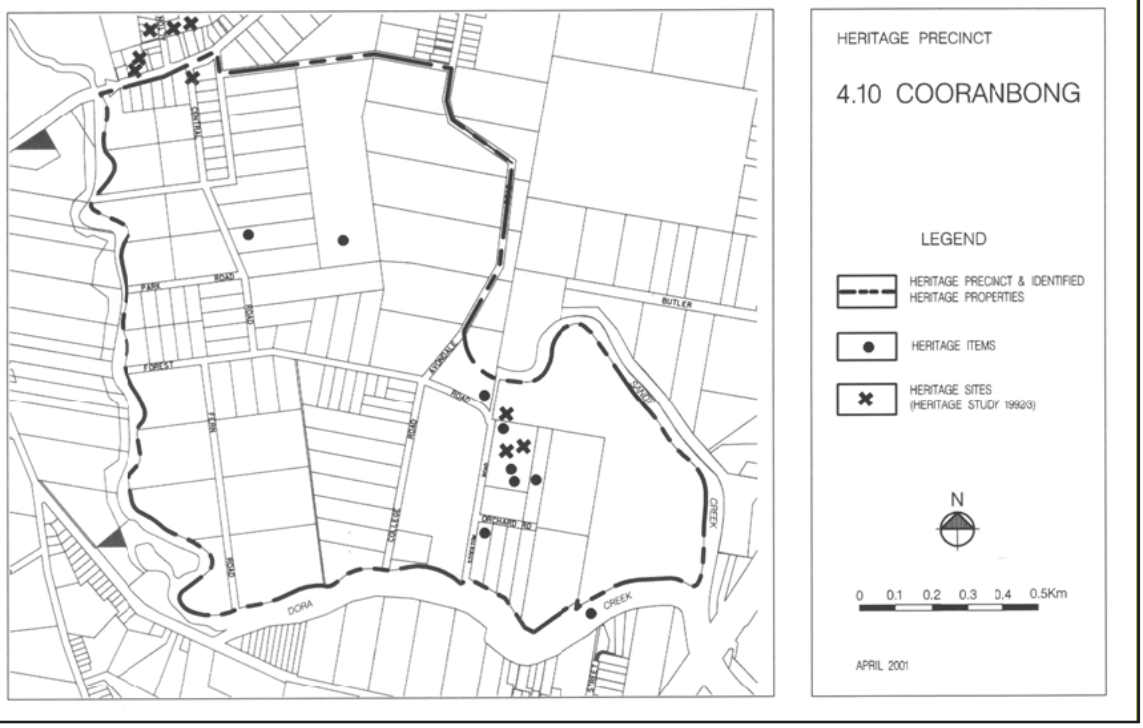
school came to be the Avondale School for Christian Workers at Cooranbong, NSW. Its name changed to Australasian Missionary College in 1911 and again to Avondale School in 1964.

Clarence White reasoned that parents would like to be near their children when they studies and planned an Adventist community around the school. The selling of real estate property to do this would mean income for the college. In ensuing years the college increased its lands to the south and the richer soils and borders of the creeks and the total area to 1600 acres. The Seventh Day Adventist School and associated community was established in Cooranbong and grew to become synonymous with the town. Refer ***Figure 25*** – Heritage Plan.

Conclusion

With specific regard to the Cooranbong Aerodrome, the *Graham Brooks* report details the history of the establishment of the facility and its significance to the community. The site does not contain heritage items and is not within a heritage conservation zone. The existing aerodrome is considered to have some social significance to the local community and the Seventh Day Adventists organisation. Accordingly there are opportunities for interpretation of the airstrips through the alignment of roads, naming of streets and appropriate, commemorative signage.

Map 1 – *Cooranbong Heritage Precinct*



March 1954 aerial photograph
(NSW Dept. of Lands)

April 1984 aerial photograph
(NSW Dept. of Lands)

HERITAGE PLAN

FIGURE 25

Sunnyside Adventist Museum,
Avondale Road. Note: Andrew Stewart
mounted to right of building.

Source:
Cooranbong Aerodrome,
Avondale Road, Cooranbong
GRAHAM BROOKS AND ASSOCIATES PTY LTD

7.9 Social Community Infrastructure

7.9.1 Community Needs

Key Insights Pty Ltd prepared a Social Impact Assessment (SIA) for the North Cooranbong project in February, 2005. A supplementary study to the original SIA was prepared in July 2006. These studies are attached as ***Appendix M.***

It is envisaged that the North Cooranbong concept plan will develop in stages over a twenty year period. Market forces will determine the pace of development and some flexibility will be required in relation to the actual timing of the provision of facilities. This is due to the fact that it is the population base and not the time period that determines the provision of infrastructure.

At completion, the North Cooranbong concept plan will provide a new residential community with an expected population of some 6,500 people. Significant investment input will be required for the social and community infrastructure essential to meet the needs of this new community. While it is recognised that some of these services are currently available directly within the Cooranbong community and surrounding areas such as Morisset and Dora Creek, it is considered that specific areas will require the provision of additional capacity to accommodate the needs of the new population.

The *Key Insights* report provides an analysis of the existing and future demographic trends, as well as an audit of the existing community facilities in the locality. Clearly this project represents a major land release in the locality in accordance with the Lower Hunter Regional Strategy. JPG is committed to providing contributions in accordance with an agreed VPA, towards the provision of this social infrastructure having regard to Council's existing requirements.

The outline of the VPA is addressed in Section 6.1.1.

7.9.2 Social and Community Infrastructure Conclusions & Recommendations

The *Key Insights* report concludes that Cooranbong, in conjunction with the commercial and community facilities associated with the project, as well as the resources of the wider Morisset Planning District, will have access to sufficient services and infrastructure to support this level of development. With careful attention to issues of community coherence and integration at the planning and development stages, it has the potential to contribute to the realisation of the objectives of the Lake Macquarie's 2020 Strategy and Social Plan as well as meeting the objectives of the Lower Hunter Regional Strategy.

Cooranbong is a unique community which is closely linked to the Avondale Adventist Church. The *Key Insight's* report recognises that the injection of a large new population group with markedly different social characteristics and histories will be the most significant social impact of the development for Cooranbong. This injection of diversity will offer many benefits to the local community, however, it is expected that the Seventh-day Adventist Church should maintain its significant role within the community.

It is recognised that the key component for the success of the development of this new community will be the timely provision of high standard social infrastructure. This will ensure that links will be developed between the established residential community and the new residents coming into the area. It will also reinforce the objective of maximising self containment within the community.

JPG is committed to providing contributions in accordance with an agreed VPA, towards the provision of this social infrastructure having regard to Council's existing requirements.

It is however important that given the long timeframe associated with the development of the area, all planned community infrastructure, as well as the provision of land area, retains an element of flexibility and that there is a need for all proposed community infrastructure to remain relevant to the changing demographic and social needs of the growing community.

7.10 Economic Development

7.10.1 Multiplier Effects

In July, 2006, an assessment of the economic and employment impacts of the proposal was prepared by *Hill PDA* (for URS, and on behalf of Lake Macquarie City Council). This report is attached as ***Appendix O***. The following information relating to the anticipated multiplier effects of the North Cooranbong proposal have been taken from the *Hill PDA* report.

Construction Phase

The construction industry is a significant component of the economy accounting for 6.6% of Gross Domestic Profit and employing almost 14% of the workforce at March 2003. The industry has strong linkages with other sectors, so its impacts on the economy go further than the direct contribution to construction. Multipliers refer to the level of additional economic activity generated by an industry source.

There are two types of multipliers:

- Production induced: which is made up of:

  - First round effect: which is all outputs and employment required to produce the inputs for construction; and
  - An industrial support effect which is the induced extra output and employment from all industries to support the production of the first round effect, and
- Consumption induced: which relates to the demand for additional goods and services due to increased spending by wage and salary earners across all industries arising from employment.

The source of the multipliers adopted in the *Hill PDA* report is ABS and Australian National Accounts: Input – Output Tables 1996 – 97 (ABS Catalogue 5209.0). These tables identify first round effects, industrial support effects and consumption induced multiplier effects at rates of $0.466, $0.438 and $0.962 respectively to every dollar of construction.

The *Hill PDA* report calculations are based on a total of 2500 lots and associated dwellings, with a construction cost of $671m. This construction cost has been then used to calculate a further $607m activity in production induced effects and $646m in consumption induced effects. Total economic activity generated is equivalent to $1,924m.

Employment Generated

With regard to employment generated from construction, the *Hill PDA* report estimates that one full time construction position for 12 months is created for every $148,827 of construction work undertaken. With an estimated construction cost of $655m, it is estimated that construction of the subject site will therefore generate 4,154 job years directly in construction over the project timeframe. This equates to 244 job years per annum.

The Hill PDA report also calculates the expected employment multipliers. The 1996 – 1997 Input – Output Tables identified employment multipliers for first round, industrial support and consumption induced effect of 0.33, 0.45 and 2.33 respectively for every job year in direct construction. These multipliers were adjusted to March 2004 using the building price index. For every $1m of construction cost, a total of 26 job years could be generated in the economy and the proposed development as a whole has the capacity to generate some 17,304 job years.

These multiplier effects are national and not necessarily local however, it is considered that these calculations illustrate the high flow-on effects of construction activity to the rest of the economy.

The *Hill PDA* report also investigates how the needs of the people living in the new community will generate employment. Resident generated employment refers to employment required to service the resident population in retail, education, personal and community services.

Based on the most recent ABS Retail Survey there was approximately 2m² of retail space per capita in 1998 – 99. The report assumes that 6,650 people will generate a demand for 13,300m² retail space. In addition to this, there are commercial space users that generally locate in shop front retail space, such as real estate agents, travel agents, banks etc.

Based on the ABS Retail Survey 1998 – 99, with regard to retail employment, an average of one employee per 21.5m² for anchor tenants and one employee per 30m² of specialty floor space would be generated. In addition to this, there will also be additional employment created off-site, but still within the Local Government Area, at a rate of 40m² per employee. These numbers can be confirmed once defined retail spaces have been deduced for the subject site.

In addition to the retail employment generated on site, jobs will also be created in Education and Community Services areas. Given the size of the subject site, it is most likely that employment generation in these areas will be off-site, but still within the Local Government Area. However, some proportion of this will escape to Newcastle and Sydney. The Hill PDA report estimates a requirement for some 206 persons to be employed within the vicinity of the site, with the majority of employment within the Morisset regional area. With regard to Health and Community Services, it is estimated that there will be a requirement for some 270 persons to be employed in this sector, with approximately 50% of the jobs located off-site, but within the Lake Macquarie Local Government Area (approximately 135 jobs) and the remaining 50% located on-site or outside of the Lake Macquarie Local Government Area.

7.10.2 Market Demand Analysis

In October 2006 the NSW Department of Planning released Lower Hunter Regional Strategy 2006 (LHRS). This strategy provides region wide direction to ensure the adequate provision of land for various uses over the next 25 years. This plan aims to sustainably provide for the predicted demand for residential and employment land over this period.

Residential capacity of the region forms a major component of the LHRS with provision for residential land to accommodate approximately 115,000 new dwelling houses for an estimated increase in population of 160,000 people.

Among future urban areas identified by the LHRS is the North Cooranbong area. Specifically the LHRS identifies the North Cooranbong future urban area as accommodating up to 3000 new dwellings. The proposal as outlined in the report, seeks the Minister's permission for 2500 lots for residential use. This represents approximately 2.2% of the proposed new residential lots/dwellings proposed under the strategy. This equates to approximately 3.9% of the anticipated population growth in the region. Importantly the site represents the major urban (residential) release in the Westlake's area with the ability to meet demand for residential land in the area highly dependent on the timely, efficient and sustainable release of this site.

Although the Social Impact Assessment undertaken by *Key Insights Pty Ltd* (attached as ***Appendix M***), was finalised prior to the adoption of the LHRS, it discussed the future market demand for residential housing in the Cooranbong area. The following summarises the key findings of the report.

Existing Housing Supply

The Cooranbong are has been largely quarantined from population pressures by its "collective" ownership and planning decisions have not related directly to demands placed on other areas. Cooranbong's housing supply is influenced by deliberate choices to accommodate older people within a unique community. Housing is also affected by the Avondale School and its planned residential form. It is therefore not surprising that the predominant housing type in North Cooranbong, Cooranbong and Morisset is singlet detached housing. North Cooranbong has more townhouses and villas, Cooranbong has a higher proportion of flats and Morisset dominates in terms of detached housing. These forms of housing however make up a very small proportion of the total housing type when compared to single detached housing.

Existing Household Structure

With regard to existing household structures, Cooranbong displays similar characteristics to those of Lake Macquarie LGA and NSW (based on BCP Table B 14, Census 2001). A majority of the residents are either a partner in a marriage, or a child under 15. Cooranbong's main departure from Lake Macquarie LGA is the proportion of child under 15 households, which is higher in Cooranbong, and in partner in de facto registered marriage, of which there are a fewer number in Cooranbong. This suggests that the "typical" household unit within Cooranbong is a married couple with children. This is true of most Australian domestic situations where 72% still live in family households.

Due to the older nature of Cooranbong's population, it is considered that there is a higher proportion of "empty nesters", couples whose children have grown up and moved out. The proportion of couple families without children is expected to increase across Australia over coming years as the population ages and fertility

rates fall. This will presumably increase the demand for alternatives to large, traditional family orientated housing.

The proportion of lone households in the Cooranbong area at the Census 2007 reflects the overall age of the population, somewhat lower than the figures for Lake Macquarie and NSW. While there are lone households of all ages, most are men aged 35 to 44, or men and women over 55.

Projected Populations

The initial SIA prepared by *Key Insights Pty Ltd* found that any development proposal for north of Cooranbong would be likely to accommodate residents markedly different from those who currently live in Cooranbong, with new housing on any scale likely to be taken up by a market closer to the city and state averages. This would mean a younger population, with a large proportion of couples with children under 15. Commuters to Sydney and first home buyers were also projected to be attracted to the development.

Further to this, Section 5.7 of the supplementary information prepared by *Key Insights* has undertaken some aged-focus population profiling in relation to potential makeup of the anticipated community. This is outlined in the table below.

Table 15 – Potential Community Demographic

Age Bracket	Percentage Estimate	Projected yield @ 6,500 residents
0 – 19	35%	2275
20 – 59	55%	3575
60+	10%	650

The *Key Insights* report also pointed to the fact that the type of family in which people live has an impact on household size and therefore the demand for accommodation. The population projections suggest the likelihood of an incoming community comprising large numbers of children (and their parents) and a low number of retirees or those approaching retirement.

In terms of optimum population, this may appear skewed towards young families. However, in the context of the wider, older demographic (and the potential co-current development of additional Cooranbong aged housing), a high proportion of young families will aid optimum diversity in the larger community mix. Diversity is also desirable in terms of income levels, family styles, cultural backgrounds and lifestyles.

Housing Targets

The North Cooranbong development proposal provides the opportunity to expand and diversify housing options in an area traditionally dominated by large rural

residential housing. The provision of mixed housing stock also caters for all stages of the lifecycle and will help build Cooranbong as a diverse, multigenerational and increasingly self-sustaining community.

The Key Insights report suggests the following housing targets:

Table 16 – Housing Targets

Housing Need	Proportion of Housing Stock
Detached dwellings	80%
Attached / multi-unit	20%
Adaptable	10% of above
Lower cost housing scheme	10% of above
Rental	10% of above

Existing Residential Market

The Economic Impact Assessment prepared by *Hill PDA* (***Appendix O***), states that whilst numerous residential lots are currently for sale and whilst projects in the pipeline may be released onto the market at the same time, it is desirable to have multiple fronts. This results in multiple developments being on the market at one time, illustrating differences in affordability and product range.

Research by Hill PDA, has indicated that Lake Macquarie is growing at a rate of 900 dwellings per annum. From this data it has been established that there is need for more residential dwellings in the immediate area as currently only 16.7% of new residential dwellings coming from the catchment area of Morisset, Dora Creek, Toronto, Cooranbong and Bonnells Bay,

The *Hills PDA* report shows a relatively strong correlation between house price movements in the suburb of Cooranbong and the wider Lake Macquarie LGA over the past 10 years and illustrates strong growth from 2001 to 2004 when the median price increased from approximately $150,000 to $320,000. This however, dropped off to around $275,000 as the residential market generally declined across most regional and metropolitan markets.

Residential Take-Up Rates

In respect to residential take up rates, the Hill PDA report suggests that the current sluggish residential lot sales rate will need to increase in the medium to longer term in order to maintain the viability of the larger estates. The ultimate sales rate will depend on the timing of the residential land releases. Sales rates are slow at present, with many estate and land releases indicating negligible or very few sales per month. This is forecast to continue into the immediate future.

However, at some point a recovery is likely to improve these rates more in tune with the longer term averages. This is likely to be attributed to current supply being met, as well as other areas like Bonnells Bay and Dora Creek being built out, with no new and available land capable of residential subdivision.

At this point, it is likely that take-up rates for the subject site at North Cooranbong will increase as a result, and maintain higher sales into the future until such point as the site is fully sold. The research indicates that rates for residential estates are in the order of 30 – 50 lots per annum.

Recommendation
It is suggested that 50 – 200 lots be released per annum over the life of the project, dependent on demand levels and the rate of absorption of lots. Lots should cover a wide market sector and include smaller lots.

7.10.3 Housing Affordability

The SIA prepared by *Key Insights Pty Ltd* investigated the need for diverse, affordable and adaptable housing. The positive link between diversity of housing options with diversity and sustainability within the local population is a theme that informs the SIA, as well as contemporary community development research and strategies. The intention is to provide mixed housing underscores major planning documents such as the Lower Hunter Regional Strategy and much of Australian urban planning.

A diverse population is one that includes a range of residents (and workers) from across a range of ages, cultural backgrounds, belief systems, income levels and family structures. Supply side strategies with positive implications for diversity included within the North Cooranbong proposal include:

- Provision of a range of lot sizes and housing styles;
- Development of a private housing market entry scheme to increase access for eligible purchasers; and
- Provision of adaptable and universal housing to cater to people with a disability and those who choose to “age in place”.

7.11 Principles of Ecologically Sustainable Development and Greenhouse Gas Emissions

The sustainability of the proposal will require a number of areas to be considered and an assessment of each with a view to setting achievable targets with which to improve the sustainability of the proposal. In particular, areas which need to be assessed in relation to sustainability include:

- Energy

- Water
- Materials and waste
- Transportation
- Biodiversity
- Emissions, and
- Social impact

The 1987 World Commission on Environment and Development report produced what is known as the 'Brundtland Report' in which the principle definition of sustainable development was given.

> ***"Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs."***

This definition sets the basis for sustainable development today. A primary indicator of the sustainability of a project, in addition to an examination of those items listed above, is an assessment of the Carbon Dioxide (CO_2) emissions. As such these also need to be addressed by this report.

Before providing an analysis of the sustainability of the proposal an initial breakdown of the proposed land uses is required to determine possible rates of energy and recourse use, and therefore greenhouse gas production (both direct and indirect) and therefore sustainability.

7.11.1 Predicted Carbon Dioxide Emissions & Global Warming

Using the known characteristics of the proposed urban design an assessment of the estimated CO_2 emissions can be made. Emissions for a development such as that proposed, can be derived from the expected size of the development as demonstrated in **Table 16.**

Table 17 – Predicted $C0_2$ emissions over 50year period

Component	Amount	Predicted Emission
• Number of Dwellings • Average Dwelling Size 215m² • Average household energy use	• 2500 • 215m • 8 tonnes	Emissions are calculated at a rate of 8t CO2/m2/year. Therefore estimated emissions equal **Annual** 2500x215x8 = 43 00 000 **50 year Period** 43 00 000 x 50 = 215 000 000
Total Estimated CO_2 Emissions		Total estimated CO_2 emissions over a 50 year period equates to 215 000 000t

Table 17 provides an indicative quantity of CO_2 emissions for the residential component of the future suburb over a 50 year lifetime.

The following table, **Table 18**, illustrates the greenhouse gas emissions the commercial, town centre area of the North Cooranbong concept plan.

Table 18 – Estimated Carbon Dioxide Emissions from Commercial / Retail/Mixed Use Space i.e. Town Centre

Mode of Generation	Rate Of Calculation	Estimated CO_2 Emissions
Energy and greenhouse gases embodied in construction materials	Moderate - approx 0.5 to 2 tonnes CO_2 /$m^2$of construction (with high rise office buildings towards the upper end). Over a 50 year building life, this equates to 0.01 to 0.05 tonnes CO_2/m^2 per year	1.25t / m² 1.25 X 2500m² = 3125 tonnes
On-site construction energy	Low. Although some energy-intensive practices occur, they occur over a short time compared with building life. Equates to about 10% of embodied energy. Construction energy use is about 0.3% of Australian energy-related greenhouse gases.	10% X 3125 t = 312.5 t
Operational energy	Moderate to large - 0.1 to 0.9 tonnes CO_2/m^2 per year. Average office building 0.3 tonnes CO_2/m^2 (of which 20-70% is space HVAC) - see below.	0.3t CO_2 /m2 / yr= 750t/ yr Over 50yr's 750 x 50 = 37500 tonnes CO_2.
Total $C0_2$ Emissions associated with non-residential part of site		40,937.5 tonnes CO_2

These figures give a general indication of the potential CO_2 emissions from the concept. More specific emission data can be calculated when exact figures are known.

Sea Level Change

The primary direct effect of a rise is average global temperatures resulting from increases in greenhouse gases, (apart from climatic abnormalities) is a predicted rise in mean sea levels. Much uncertainty exists around what the effects on the mean sea levels of the world will be due to climate change. While a number of models exist and a number of predictions have been made the Findings of the Intergovernmental Panel on Climate Change (IPCC) are generally accepted to be the most accurate scientific based predictions currently available. The significance of the IPCC's work has recently been reinforced by the awarding of the Nobel

Peace Price to the Panel and its public face Al Gore. While the significance of the potential effects of a rise in sea level are widely accepted the ability to accurately predict changes is even disputed within the IPCC.

The IPCC, in its most recent publication, indicate that over the previous decade sea levels *may* rise by approximately 3mm per year. In order to demonstrate the capacity of the subject site to accommodate the proposed development in the long term, its susceptibility to the effects of climate change and in particular rising sea levels are required. Using the above figure for annual sea level rise as a guide, and noting that the lowest point within the subject site sites is RL 10m, would mean the subject site has several hundred years before rising sea levels effect its lowest points, remembering the majority of the site sits on higher ground.

Despite the number of assumptions that surround the rising sea level predictions and the uncertainty surrounding the effects of climate change, it can be generally considered that the subject site will not be adversely affected by rising sea levels during the foreseeable long term. The effect beyond several hundred years cannot be reasonably assessed as part of this document due to the aforementioned uncertainty surrounding climate change predictions.

7.11.2 Sustainability Targets

Given that the proposed urban development of the North Cooranbong site is currently at a concept stage, specific figures in relation to environmental impact cannot yet be finalised. Despite this, it is important to provide guiding sustainability targets which will form a basis of the future development of the site. Specifically for each of the following areas the suggested aims should be used to set and achieve future targets with a view to ensuring the environmental sustainability of the proposal.

Energy

While energy targets and aims are closely related to greenhouse gasses (as will be fully discussed in the following section) the following aims are given in relation to the proposed urban development:

- All dwellings to meet or exceed NSW Governments BASIX requirements for dwellings;
- All dwellings to be installed with solar or solar assist hot water systems; and
- An as yet to be determined percentage of the sites entire energy use is to be sourced from renewable generation methods.

Water

- All dwellings to meet or exceed NSW Governments BASIX requirements for dwellings;

- Water sensitive design to be incorporated into urban development. Best practice standards to be used;
- Non-potable water to be used for landscaping and toilet flushing, via connection to the recycled water system; and
- Such use of non-potable/recycled water to meet Government health requirements.

The ability to provide connection to a recycled water reticulation systems is a major aim of the concept plan. A partnership between JPG (the proponent) and HWC, will provide recycled water via a third pipe the future dwellings ultimately reducing the total volume of water used on the site. An agreement has been signed by both of the parties with specific design details yet to be finalised.

Materials and waste

- Where possible, materials to be sourced from certified green providers;
- Reuse and recycling on site to be maximised to reduce waste going to landfill and the need for new materials (and the additional inherent energy they contain); and
- Residential disposal of compostable waste will be encouraged to reduce total waste going to landfill.

Transportation

- Urban design to maximise the walkability and cycling opportunities for residents and reduce reliance on the motor vehicle.
    - Achieve walkability connections to public transport opportunities; and
    - Achieve walkability to local services and facilities.
- Provide additional public transport opportunities for future residents.

Biodiversity

- To improve the future urban environment through landscaping with locally sourced native plant species
    - Drought tolerant species to be provided to reduce demands on water
- To protect and enhance those aspects of the site's unique biodiversity; and
- Dedication of sensitive habitat areas to offset the effects of the proposal.

Emissions, and

- To reduce all possible emission to land, air and water as a result of future development.

Social Impact

- The incorporation of crime prevention through urban design (for example improving passive surveillance); and

- The provision of affordable housing within the future urban footprint.

7.11.3 Principles of Ecologically Sustainable Development and Greenhouse Gas Emissions Conclusions & Recommendations

The aims given in the preceding sections in relation to sustainable development and climate change have been made to provide guidance for the future development of the North Cooranbong precinct. As the proposal is currently at the planning stage specific quantitative targets cannot be realistically made at this point in time.

In order to build on these initial objectives, a sustainability strategy can be formulated prior to any development being undertaken to provide specific aims and objectives and to ensure that sustainability principles are incorporated into the new suburb. It is considered that if the objectives outlined in this document are used as a basis for the ongoing sustainable development of North Cooranbong then the suburb's development will be undertaken in a fully sustainable manner.

7.12 Visual Impact Assessment

Given the scope of the concept plan, adequate consideration of the visual effects of the proposal need to be taken into consideration. The site's characteristics and the visual impacts of the concept plan, on surrounding land uses can demonstrate that the proposal will have minimal visual impact on the locality.

The subject site is located on relatively flat land to the north of the existing urban area of Cooranbong. The lack of extreme topographical features on and around the site was a major reason the site was formally used as an aerodrome. As a result of this topography the site has no areas of high or extreme visual importance as no major view corridors traverse the site.

The proposed concept plan will see a reduction in the total amount of site vegetation however significant areas of vegetation will be maintained, particularly along water courses. Importantly, the highest part of the site in the northwestern corner has been designed to be a road junction area centered on a small open space. This will have the effect of preventing any building or development on this part of the site which could potentially impact on the visual amenity of the locality.

The major transport corridor in relation to the subject site is the F3 (Newcastle – Sydney) Freeway. The Freeway runs in a north – south manner, some 800m – 1km to the east of the site. The F3 generally runs in an undulating manner and in the locality is predominantly at the same level or slightly lower in height when

compared to the subject site. The combination of vegetation, topography and distance from the site prevents any major visibility of the subject site from the F3.

In addition to the visual impact to the Freeway additional visual corridors where assessed for the visual effects of the proposal. It was concluded that, as mentioned above, the lack of topographical features in close proximity to the subject site limits possible visual intrusion caused by the concept plan. Where visibility can occur it is usually at some distance, limiting any negative effects of the proposal.

The following recommendations have been used to reduce the overall visual impact of the proposal:

- Retain, where possible, vegetated links through and around the site to prevent broadscale clearing, create views framed by vegetation and improve a sense of community for future residents;
- Locate higher densities in areas of low visual importance;
- Restrict development size and materials to prevent construction of visually intrusive development. This includes limiting the use of non-natural and/or bright colours;
- Use low spillage street lighting to reduce the visual impact during non-daylight hours; and
- Locate services underground where possible.

The concept design has been prepared to provide an urban design which best suites the environmental features of the site. Given the relative flatness of the site and surrounding land coupled with those mitigating features listed above, the concept plan will have minimal impact on the visual amenity of the surrounding suburb.

7.13 Noise Impact Assessment – F3 Freeway

As part of the preliminary impact assessment for the concept plan ***Reverb Acoustic Pty Ltd*** was engaged to assess the potential noise impacts of the F3 Freeway on the residential areas of the concept plan. The noise study was undertaken to assess noise values for the residential areas in line with the requirements of the RTA, DECC and LMCC. The Noise Impact Assessment is attached as ***Appendix N.***

To determine noise levels for the subject site an environmental noise logger was placed on the subject site at a location closest to the F3 Freeway so the results would show maximum noise levels for the entire site. Noise levels were continuously monitored for a period of seven days, from 14th December to 21st December 2007.

The noise level criteria for the proposed residential area was taken from the DECC's Environmental Criteria for Road Traffic Noise (ECRTN) and is shown in **Table 19**.

Table 19 – Extract from Table 1 of ECRTN Relevant Traffic Noise Criteria

Development Type	Day	Night	Where Criteria are Already Exceeded
2 New development affected by freeway / arterial road traffic	55 LAeq,15hr	50 LAeq,9hr	Where feasible measures should be implemented to reduce noise.

The results shown in **Table 20**, below were collected

Table 20 – Noise Level Results – North East Corner North Cooranbong Residential Estate

Descriptor	Noise Level dB(A)	Time Interval
Leq,1hr	54.6	07:00 to 22:00
Leq,8hr	47.9	22:00 to 06:00
Leq,9hr	**48.2**	**22:00 to 07:00**
Leq,15hr	**53.1**	**07:00 to 22:00**
Leq,16hr	52.8	06:00 to 22:00
Leq,24hr	51.8	06:00 to 06:00

As can be seen by the results in Table 1, traffic noise levels are compliant with DECC's criteria of 55 LAeq,15hr (day) and 50 LAeq,9hr (night) at worst-affected locations within the residential estate. Therefore, no special acoustic modifications will need to be incorporated into the design of the development. The proximity of the site to the F3 Freeway will not effect the successful realisation of the Concept Plan.

8.0 DRAFT STATEMENT OF COMMITMENTS

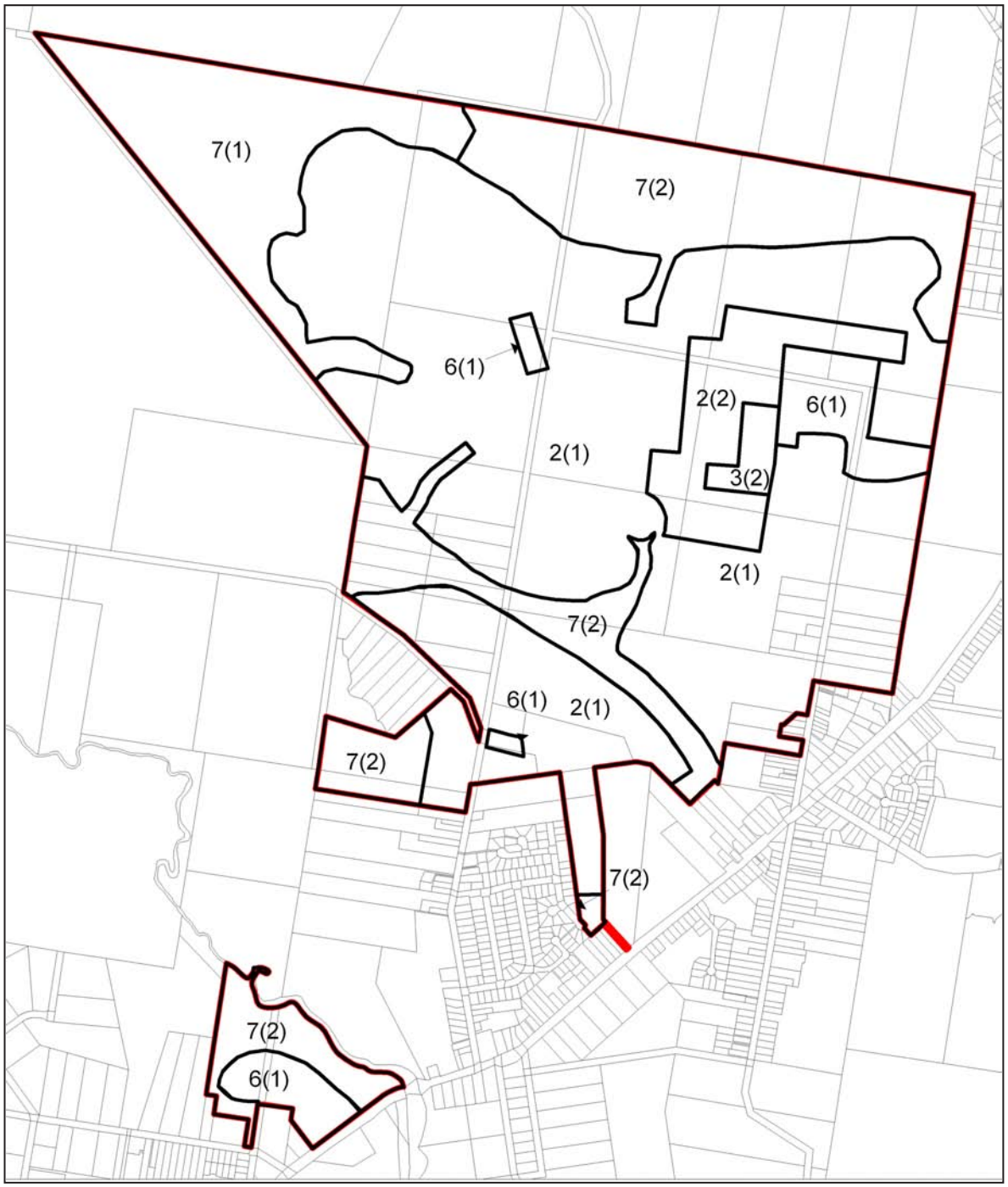
The following commitments have been compiled based on the environmental assessment undertaken in the preparation of this report.

Table 21 – Draft Table of Commitments

Subject	Commitments	Approved by Whom	Timing
Regional Planning Agreement	A Voluntary Planning Agreement will be executed between Johnson Property Group and the Minister for Planning to provide for the timely delivery of regional infrastructure.	Minister of Planning	Prior to Concept Plan approval.
Local Planning Agreement	A Voluntary Planning Agreement will be executed between Johnson Property Group and Lake Macquarie City Council to provide for the timely delivery of local infrastructure and community services. The following summarises local infrastructure and community services to be provided under this commitment: ▪ Onsite Neighbourhood Park, Dog Exercise Area and Sporting Complex; ▪ 2 x Local Parks; ▪ Offsite Neighbourhood Park and Sporting Complex (referred to as Cooranbong Town Common); ▪ Cycleways; ▪ Contribution toward district jetties; ▪ Contribution toward regional Open Space; ▪ Onsite Multi-purpose Centre; ▪ Contribution to existing Libraries; ▪ Community Bus and Community Worker; ▪ Roads and Traffic Management upgrades.	Lake Macquarie City Council	Prior to Development Application being approved for Stage 1.

Development Staging Plan	A development Staging Plan will be submitted. The staging plan will address: ▪ Total lots approved ▪ Lots proposed for each subsequent stage and any minor revisions for the concept plan approval or previous staging plan ▪ Average lots sizes and areas	Lake Macquarie City Council	With the Development Application for each stage, for subdivision and infrastructure works.
Stormwater Management Plan	A Water Sensitive Urban Design (WSUD) Strategy will be prepared. The WSUD Strategy will conform to statutory, Council and DECC guidelines. This will provide detailed strategies for the management of stormwater, water detention and retention within urban area and included on-going monitoring of water quality.	Consent Authority	To accompany the development application for Stage 1
Flooding	A more detailed flood modelling assessment will be undertaken on all drainage lines within that Stage as part of the submission of future applications for subdivision and works to determine the full extent of flooding.	Consent Authority	To accompany development application for Stage 1.
Soil Erosion	For Construction Certificate for residential development detailed erosion and sediment control plans will be submitted during each major stage of development.	Consent Authority	To accompany Construction Certificate for each stage.
Environmental Offset Contribution	Johnson Property Group to negotiate a contribution, in the form of a monetary contribution, for the upkeep of existing land or acquisition of environmentally important land (as defined by DECC) to offset impacts of the proposed development as part of the Regional Voluntary Planning Agreement.	Minister for Planning	Prior to Concept Plan approval
Infrastructure Provision	Provide: ▪ Non-potable water supply ▪ Trunk infrastructure o Sewer o Water o Electricity o Telecommunications	Consent Authority	At Linen Plan Approval

	o Natural Gas		
Child Care Centre	To provide a child care centre to meet the needs of the locality in line with the level of demand for places in Cooranbong.	Consent Authority	When local capacity requires
Bushfire	To provide adequate bushfire planning, management and mitigation for future residential areas	Consent Authority	Prior to Concept Plan approval
Acid Sulphate Management Plan	To sufficiently mitigate and manage potential impact on Acid Sulphate Soils resulting from future site works.	Consent Authority	To accompany development application at the time the application seeks approval of the Cooranbong Town Common sporting facility / neighbourhood park
Management Plan for Reserves	To provide management plans for reserve areas as shown on the Concept Plan for a period of 5 years	Consent Authority	To accompany development application for Stage 1.
Management Plans for Parks and Community Facilities	To manage parks and community facilities which form part of the Concept Plan for a period of 5years	Consent Authority	To accompany development application at the time the application seeks approval of the applicable park or community facility.



Not to Scale

PROPOSED ZONE PLAN

FIGURE 26

5.6 ZONING PLAN

5.6.1 Zone Table

The North Cooranbong development has the following zones proposed for the site which are represented in the above plan.

2(1) - Residential Zone
2(2) - Residential (Urban Living) Zone
3(2) - Urban Centre (Support) Zone
6(1) - Open Space Zone
7(1) - Conservation (Primary) Zone
7(2) - Conservation (Secondary) Zone

9.0 SUMMARY & JUSTIFICATION

This report has addressed the requirements of the Director General by providing an assessment of the site in statutory, strategic and environmental contexts as outlined in the DGR's. In addition justification for the project will now be demonstrated as well as discussion on possible alternatives to the project including the 'do nothing' alternative.

9.1 Statutory Planning

A full review of the legislation relevant to the proposed project is provided in Section 3 of this report. In Section 3 it is shown that the objectives of the EPI's relevant to the subject site and project are all consistent with the concept plans.

The site represents an important asset in providing adequate land supply for the growth of the region. This is evident in the site's identification in the Lower Hunter Regional Strategy as a significant growth qre to underpin the Morrisett area., For this reason the site is considered State Significant under the Act. A full description of the State Significance is given in Section 4 and ***Appendix F*** of this report. In line with SEPP (Major Projects) 2005, the State Significant Site Study shows the importance of the site at State and Regional scales.

Ultimately the provision of approximately 2500 residential lots and associated infrastructure and community facilities will fulfill the objectives of the relevant planning policy and legislation.

9.2 Site Suitability & Implications of Proposed Land Uses

A full review of the existing site in relation to the environmental and past human impacts is provided in Section 2 of this report. Section 5 then provides a full explanation of the concept plan for the subject site. The Concept Plan is also attached in ***Appendix P*** for reference. The creation of the concept plan has taken into careful consideration the implications of Section 2 of this document to develope a concept that is both sensitive to the existing environmental features of the site, while providing good development outcomes for the wider community.

The concept plan has been created to accommodate the environmental feature of the site and significant investigation was undertaken to ensure the environmental constraints and opportunities were fully documented prior to the completion of the concept plan. Among studies undertaken were:

- Biodiversity, Flora and Fauna Assessment,
- Water Quality and Management reporting,
- Bushfire Management, Aboriginal and European Heritage Assessments,

- Economic Impact Assessment,
- Social / Community Impact Assessment,
- Geological Investigations, and
- Traffic and Transport Studies.

The Draft Statement of Commitments (Section 8.0) outlines how the details of theses various reports will be incorporated into future site planning to ensure the ongoing development of the site will be done in a manner which is sympathetic to the site, the wider environment and the needs of the community.

9.3 Public Interest

As identified in the Lower Hunter Regional Strategy, the region will experience considerable population growth in the future increasing demand when supplies of existing residential stocks are already under pressure. Housing affordability has become a national issue.

While the concept plan will be able to assist in reducing the housing pressure in the region the proposal will have additional benefits. Additional planning for the needs of the future community of the site has identified the need for open space and community facilities which will be provided for the wider public benefit.

9.4 Ecologically Sustainable Development & Climate Change

As a result of the initial baseline studies, undertaken as part of the Environmental Assessment of the site, a close understanding of the environmental principles of the site has been obtained. In addition the increasing need for developments to be ecologically sensitive has resulted in the concept plan being planned around the existing environmental characteristics of the site. As detailed in Section 7.12 of this report, the environmental characteristics of the site, while unique and important, support the capacity of the site to house future development.

In terms of climate change, Section 7.12 also addresses the impacts of the proposal. An assessment of the potential future carbon emissions has enabled a number of targets to be set. At this stage of the development process, these are broad figures and can provide initial guidance in the future planning and development of the suburb. Continuing reviews of these targets at staging and subdivision stages will ensure continual consideration of climate change issues.

Additional sustainability and climate change scrutiny will take place through the application of the BASIX SEPP to ensure that the sustainability and energy targets of the Government are met.

9.5 Consideration of Alternatives

As part of the ongoing development of the site, the concept plan has been evolving as a greater understanding of the environmental and social constraints and opportunities of the site has been obtained. In order to fully appreciate the concept and consider all possible outcomes, alternatives must also be considered.

9.5.1 The 'Do Nothing' Alternative

As the site represents a major part of the future residential land supply in the Lower Hunter, the 'do nothing' alternative would have regional implications for the regional housing market. Without any development of the subject site there would be an immediate loss of approximately 2500 residential lots from the LHRS. Importantly the site represents the major source of future residential land in the west lakes area. Without the proposed development there would be an increased demand for housing within the area which could not be otherwise met.

It is also important to note that the growth of the area has seen community facilities and services coming under pressure as they are increasingly unable to meet the demands of the community. The swell in population and the proposed community facilities and development contributions will provide much needed increase in these services.

Importantly the subject site represents a partially disturbed area relatively free of environmental constraints. If the development of the subject site was to be delayed or prevented, it may put pressure on land which cannot provide the sustainability and ecological outcomes of the subject site. It would also not secure environmental corridors in the area if the land were left as is.

The subject site represents an excellent opportunity to advance the objectives of the LHRS for the benefit of the environment and the community. To do nothing would put increased pressure on alternative land stocks which would be unable to match the ability of the subject site to accommodate the expected growth in the region.

9.5.2 Alternative Land Use Configurations

As previously mentioned the development of the current concept plan is the result of carefully examining the site, its constraints and opportunities. Given the environmental values and opportunities of the site, the concept layout has been designed to enable protection of key riparian corridors and places of high environmental and visual importance. With the areas defined the concept layout was then formulated to provide efficient movement through the site giving future residents access to facilities and open space.

Alternatives can therefore be considered limited as any layout would have to be sensitive to those features of the site mentioned above. The proposed layout will allow the residential yield to maximise the benefit to the community without significantly compromising the environmental values of the site.

9.6 Consequences of not Proceeding

The subject site and concept plan have been shown to be complimentary to the benefit of the community and the environment. The consequences of the proposal not proceeding may include the following:

- Increased housing pressure within the locality and wider region;
- Increased pressure on the residential land stock, possibly resulting in the development of land which is not as well suited to residential development as the subject site;
- Uncertainty for existing residents of Cooranbong as to whether they will continue to suffer as a result of inadequate community facilities;
- If the proposal did not proceed, the aims and objectives of the Lower Hunter Regional Strategy would be compromised and the continued growth of the region would be subject to increasing uncertainty in a housing climate which cannot afford further setbacks.

The future residential development of the north Cooranbong suburb will provide the regional community with a valuable residential land resource to ease the current housing pressure. The site represents an ecologically and social sound opportunity to promote and achieve the objectives of the Lower Hunter Regional Strategy for the benefit of the region. To not proceed would be to the detriment of the community and delay the provision of an important land stock.

9.7 Conclusion

It can be demonstrated that the development of the proposed North Cooranbong development is a sound opportunity to provide the community with a new land resource that will meet the needs of the community and reinforce the sustainability of this area as a residential precinct.. The proposal will assist in achieving the objectives of the Lower Hunter Regional Strategy by enabling the timely release of serviced land.

While the site has constraints it is contended that the concept plan as proposed represents a balanced position in conserving the important environmental attributes of the site while providing a viable role out of residential land in line with the objectives of the Lower Hunter Regional Strategy. This is further reinforced by contributions to regional and local infrastructure outlined in the VPA's.

The development of this site is critical in providing the residential base needed on the western side of the Lake to underpin the potential of Morisset to develop as a Regional Centre. It is ideally situated to contribute and integrate into the existing community. For these reasons the proposed development is submitted for consideration.

It is recommended that the supporting Concept Plan and State Significant Site Study be approved