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Department of Planning

NSW Department of Planning

Williamtown Defence and Airport Related Employment Zone (DAREZ)

Land Use Development Strategy

December 2007

Volume 1 of 3

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

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Background reports

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- Wal Mills – Port Stephens Council;
- Greg Bone – Hunter Water Corporation; and
- Malcolm St Hill – Department of State and Regional Development.

Executive Summary

Introduction

This Land Use and Development Strategy is the culmination of three (3) stages of study. The Department of Planning engaged GHD Pty Ltd on 22 May 2006 to undertake:

Stage 1 *Site Selection* process (completed in July 2006) identified an initial area of land for further investigation as to its suitability for development purposes.

Stage 2 *Land Capability and Suitability Assessment* (initially completed February 2007 and subsequently revised in October 2007) examined in more detail, the social, cultural and economic issues as well as the natural environmental and man-made constraints applying to the selected site that influence, to varying degrees, the development potential of the land.

The Additional Investigations resulted in response to the need to reassess the Selected Site due to significant geotechnical, flooding and associated financial constraints identified by the detailed investigations.

This analysis produced a range of development options before recommending a preferred option in the form of a conceptual layout for discussion purposes.

Stage 3 *Structure Plan and Development Control Framework* (completed in November 2007) drew together the findings and recommendations contained in the two previous reports, and provided a planning and development framework to implement and guide the future development of a Defence and Airport Related Employment Zone (DAREZ).

Based on the findings and recommendations of the above stages, and in consultation with the Project Control Group a detailed structure plan and development control framework for the DAREZ at Williamtown resulted.

This Land Use and Development Strategy:

- Consolidates the detailed investigations and analysis undertaken;
- Presents the outcomes for a preferred land use scenario and staged development of the subject land over the next 10-25 years;
- Provides the justification for its future rezoning;
- Is prepared in the format of a Local Environmental Study in anticipation of Port Stephens Council initiating the rezoning process, and
- Aims to progress the development of the land as an important regionally significant employment generating initiative.

This report highlights the significance of the strategic planning context that identified the potential for a DAREZ and the regional role such a specialised centre could fulfil. This is a determining factor in the assessment of the various competing economic, social and environmental values.

Strategic Importance and Regional Context

Under the Environmental Planning and Assessment Act 1979 the range of state, regional and local environmental planning instruments considered highlighted strongly the strategic importance of the DAREZ in terms of:

- The strategic significance of the DAREZ and the important and critical dimension it could potentially add to economic activity and industry in the region in the commercial, industrial and technological fields;
- The importance of protection and support to operations of RAAF Base Williamtown, a significant element in the Australian Defence Force capability;
- The importance of protection and support to Newcastle Airport (NAL);
- A critical need for employment lands in close proximity and having strong supportive synergies to these existing Base and Airport facilities;
- Its strategic location at the junction of road links to Newcastle and the F3 Highway; and
- Having regard to the environmental management needs of the site including flooding, soils and habitat management.

Infrastructure

Development of the subject site is reliant on the provision of infrastructure, and subject to further detailed design and costing of the options identified, there are no fundamental constraints to the provision of water and sewerage, and other basic infrastructure services.

Land Suitability and Capability

The land capability and suitability analysis demonstrated that with further detailed assessment and careful design responses to the constraints identified, development of the subject site can proceed. Of the constraints identified the occurrence of vegetation communities and habitats of significant ecological value within the area of investigation is one that requires a careful balancing of the competing values.

The DAREZ is an area identified as a special area for defence and airport related employment in the Lower Hunter Regional Strategy. The partner document to this is the Draft Lower Hunter Regional Conservation Plan, and together these documents aim to take a holistic and balanced approach to the economic and development needs for the support of the projected population for the Region whilst simultaneously recognising and planning for the conservation values of the Region. A number of opportunities for offsetting potential biodiversity impacts are discussed.

The Structure Plan

The Structure Plan prepared in response to the various assessments is based on a philosophy that offers a balance between viable development and the resolution of the most critical environmental planning issues applying to the site. It acknowledges the importance of the employment centre as defined in the Lower Hunter Regional Strategy, the primacy of the RAAF Base, the crucial role the NAL plays and the value of the ecology of the site.

The Planning and Development Control Framework

The planning and development control framework prepared in support of the Structure Plan will be an integral component to the successful implementation of the DAREZ. These specific planning and development controls, will supplement the generic planning controls once they are incorporated into Port Stephens Local Environmental Plan 2000 (LEP 2000) and the Port Stephens Development Control Plan 2007 (DCP 2007). The specific development controls recommended deal with the land management, operational and infrastructure requirements of the new zone. These include:

A New Special Land Use Zone

A new zone is to be created called *Zone No. SP1 Special Activities – Defence and Airport Related Employment Development*. It is in a format consistent with the proposed Standard Instrument, and is prepared to be able to be incorporated into the existing local environmental Planning instrument, LEP 2000.

Recommended Land Use Types

The recommended land use types are categorised and spatially located in relation to linkage characteristics and synergies to the operational requirements of Newcastle Airport and the Williamtown RAAF Base.

A Development Control Framework

The recommended development control framework aims to provide specific controls that can work alongside the existing generic controls of DCP 2007. These relate to the following:

- RAAF Base and Airport Operational Requirements;
- Infrastructure;
- Geotechnical;
- Acid Sulphate Soils;
- Water Quality Management;
- Flooding and Hydrology;
- Stormwater Management;
- Bushfire Protection;
- Subdivision, Road Layouts and Lot Sizes;
- Design, Scale, Bulk and Height of Buildings;
- Scenic Quality and Streetscapes;
- Cultural Heritage Protection; and
- Staging.

The controls identified provide a framework only for the formulation of detailed development controls, with specific compliance standards and procedures expected to be prepared during drafting of the required amendments to the consolidated Council Development Control Plan.

In summary, the selected area investigated as the “Defence and Airport Related Employment Zone - Investigation Area” has been found to be appropriate for development in accordance with the recommendations of this Report.

Abbreviations

ADFP	Australian Defence Force Publication
AEW&C	Airborne Early Warning and Control
AOS	Airport Opportunity Study
ASS	Acid Sulphate Soils
CBD	Central Business District
CKPoM	Port Stephens Council Comprehensive Koala Plan of Management
DAREZ	Defence and Airport Related Employment Zone
DCP	Development Control Plan
DECC	Department of Environment and Climate Change
DEWR	Department of Environment, Water, Heritage and the Arts
DoD	Department of Defence
DoP	Department of Planning
EECs	Endangered Ecological Communities
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999
GPS	Global Positioning System
Ha	Hectare
HWC	Hunter Water Corporation
Km	Kilometre
LEP	Local Environmental Plan
LGA	Local Government Area
LHCCREMS	Lower Hunter & Central Coast Regional Environmental Management Strategy
LHRS	Lower Hunter Regional Strategy
M	Metre
MOS	Manual of Standards
NAL	Newcastle Airport Limited
NES	National Environmental Significance

NSW	New South Wales
NPWS	National Parks and Wildlife Service
OLAs	Ordinance Loading Aprons
PCG	Project Control Group
PSC	Port Stephens Council
RAAF	Royal Australian Air Force
SEPP	State Environmental Planning Policy
SEPP 44	State Environmental Planning Policy No. 44 – Koala Habitat
Sp	Species (singular)
Spp	Species (plural)
TSC Act	Threatened Species Conservation Act 1995
WWTW	Waste Water Treatment Works

1. Introduction

1.1 Background

The NSW Department of Planning released the Lower Hunter Regional Strategy (LHRS) in October 2006. The LHRS is a land use planning document outlining the provision of sufficient, appropriately placed housing and employment land to cater for the Region's predicted growth over the next 25 years. The Regional Strategy is based on population growth projections which forecast that there will be an additional 160,000 people in the Region by 2031.

The LHRS identifies where future employment lands are to be focussed to meet the demands of the expected population growth for the Region. Logically the land in the vicinity of the RAAF Base Williamtown and Newcastle Airport has been earmarked as having potential for employment generating development. The LHRS operates in conjunction with the Draft Regional Conservation Plan, to provide a framework for the more detailed planning and development of the Lower Hunter Region.

GHD Pty Ltd was engaged by the Department of Planning on 22 May 2006 to prepare a Land Use and Development Strategy for the proposed Defence and Airport Related Employment Zone (DAREZ) at Williamtown.

"The principle objective of this project is to develop a land use strategy, which provides practical direction to guide the establishment and development of a regional defence and airport related employment hub focussed around the RAAF Base Williamtown and Newcastle Airport Facility at Williamtown." (DoP).

To date, the project has progressed in three (3) stages as follows:

Stage 1 *Site Selection* process (completed in July 2006) identified an initial area of land for further investigation as to its suitability for development purposes.

Stage 2 *Land Capability and Suitability Assessment* (initially completed February 2007 and subsequently revised in October 2007) examined in more detail, the social, cultural and economic issues as well as the natural environmental and man-made constraints applying to the selected site that are influencing, to varying degrees, the development potential of the land. It then analysed a range of development options before recommending a preferred option in the form of a conceptual layout for discussion purposes.

Stage 3 *Structure Plan and Development Control Framework* (completed in November 2007) drew together the findings and recommendations contained in the two previous reports, and provided further detail as to the necessary controls to guide the future development of the DAREZ.

This Land Use and Development Strategy then consolidates the findings and recommendations of the previous documents into a preferred land use strategy for the staged development of the DAREZ over the next 10-25 years.

1.2 Purpose of the Strategy

The purpose of this Strategy is to consolidate the detailed investigations and analysis undertaken for the subject site and to present the outcomes for a preferred land use scenario for the staged development of the subject area over the next 10-25 years. This Strategy provides justification to rezone that land suitable for defence and airport related employment generating development.

The strategy provides a development control framework to guide the future use of the land within the proposed employment hub. It has been deliberately prepared in the format of a Local Environmental Study so that it may be used by Port Stephens Council to initiate the rezoning process and to progress the development of the land as an important regionally significant employment generating initiative.

1.3 Project Management

The Land Use Development Strategy has been prepared in consultation with the Project Control Group (PCG), which included representatives from Port Stephens Council (PSC), the Department of Planning, the Department of Defence, Hunter Water Corporation, Newcastle Airport Limited, NSW Premiers Department and the Department of State and Regional Development.

Each stage of the project has been reviewed and endorsed by the PCG to ensure that the needs of the relevant stakeholders have been considered. This has been done with the conscious intent of streamlining the rezoning and subsequent development of the land.

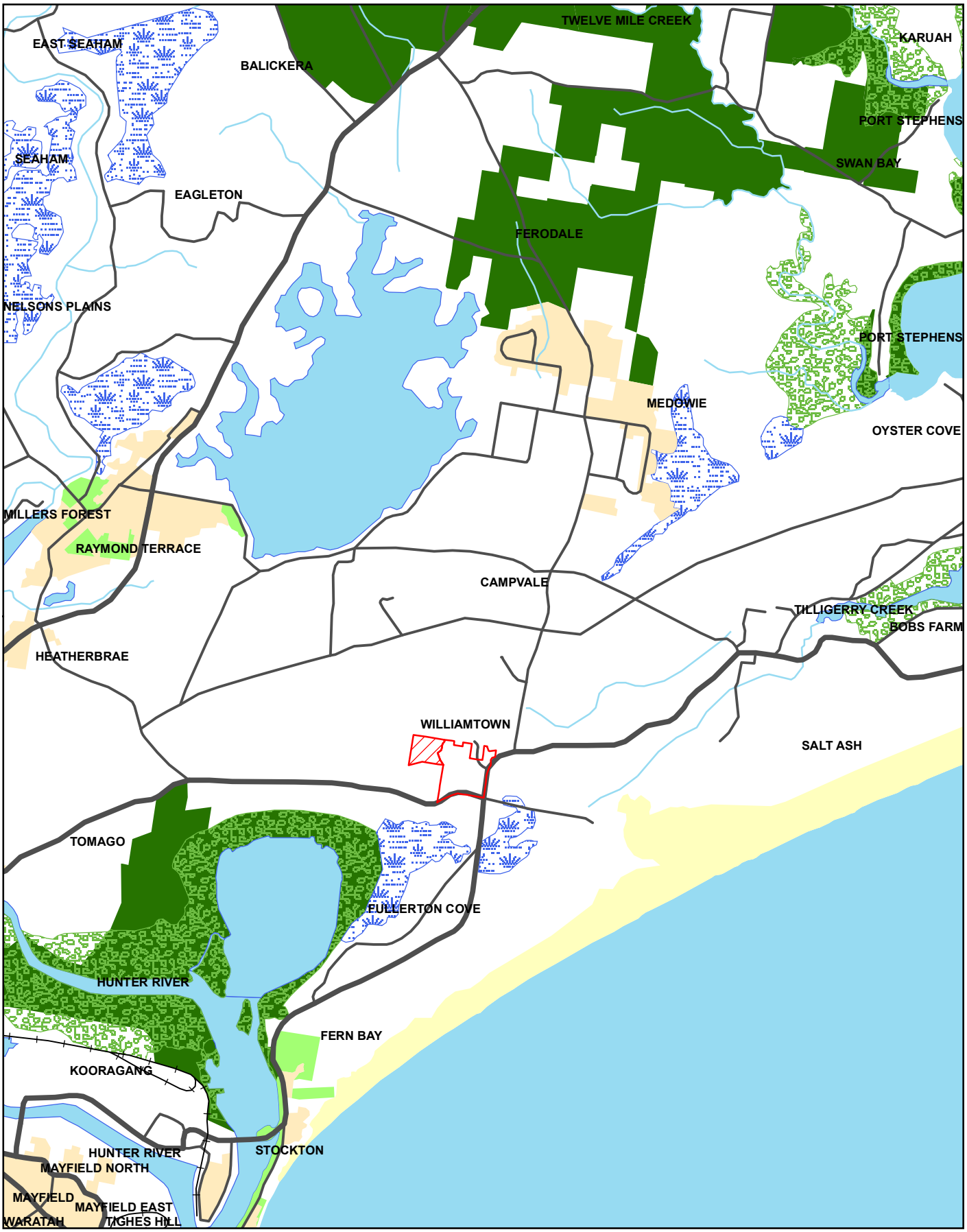
1.4 Site Selection Process

The land generally comprising the 'medium growth scenario' as identified in the "Newcastle Airport Economic Opportunities Study" (by Halliburton KBR P/L for PSC), February 2003 was investigated for an appropriate site of approximately 100ha. Preliminary investigations lead to a Selected Site for the focus of the more detailed investigations and analysis. Those further investigations however, identified constraints to development in the southern more low lying land along Cabbage Tree Road.

Subsequent analysis of the impacts of development on flood levels and the economic implications of the presence of compressible soils in this area, resulted in a decision by the PCG to include some additional land for investigation. This additional land is approximately 40 ha to the north west of the previously selected site. As a consequence of this decision, further technical investigations were required and several of the technical reports have had to be revised.

1.5 The Subject Site

The land the subject of investigation for this Strategy is approximately 150 ha of land immediately south of the RAAF Base and Airport at Williamtown. This subject site is approximately 15 km north of Newcastle. It is situated on the north western corner of the intersection of Nelson Bay Road (running roughly north-south) and Cabbage Tree Road (running roughly east-west) in Williamtown as illustrated in Figure 1 and Figure 2.



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N

LEGEND

- Additional Land for Investigation
- Study Area
- Rail
- Main Road
- Road
- Drainage
- Built area
- Park
- Water
- Mangrove
- Wetland
- Reserves
- Sand dunes, beach

1:115,000 for A4

0 500 1,000 2,000 3,000 4,000

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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NSW Department of Planning
Airport Related Employment Zone (Williamtown)

job no. 22-128008
rev no. A

Locality Plan

4th December 2007

Figure 01

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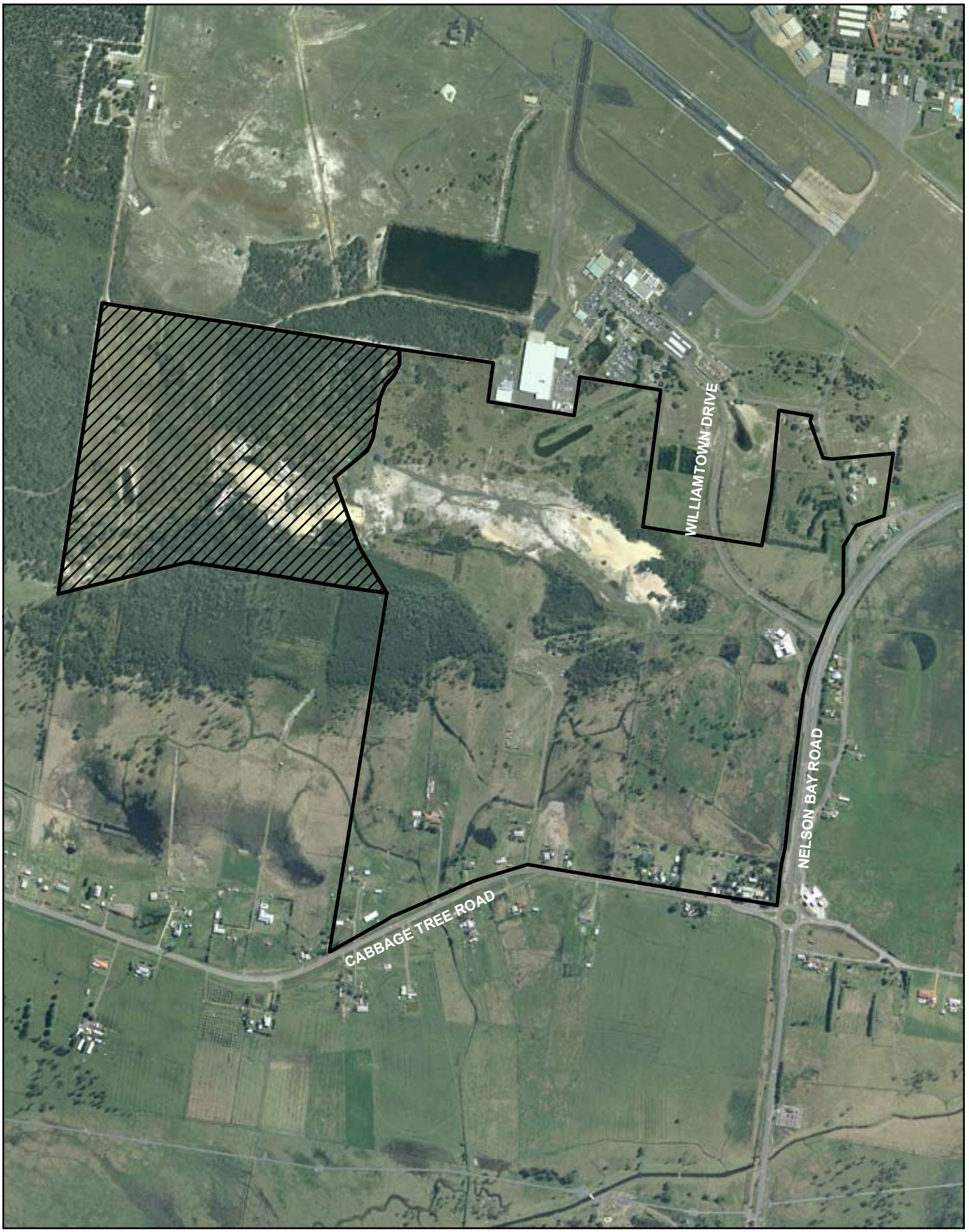

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N

LEGEND

- Study Area
- Additional Land for Investigation

1:11,935 for A4

0 45 90 180 270 360

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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NSW Department of Planning
Airport Related Employment Zone (Williamtown)

job no. 22-12808
rev no. A

Site Plan

Figure 02

4th December 2007

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The subject land, is generally low lying (flood prone), partly cleared of vegetation and includes the following land uses:

- Rural residential properties with frontages to Nelson Bay Road and Cabbage Tree Road (including a primary school and two service stations); and
- Rural land used for grazing purposes generally south and in the vicinity of the civil airport and RAAF Base Williamtown facilities.

The subject site is within the Port Stephens Local Government Area and the relevant local environmental planning instrument is the Port Stephens Local Environmental Plan 2000. Any amendment to this plan to enable the DAREZ would need to recognise the existing character of the area and ensure that the development of the area was undertaken in a manner that has regard to current and future uses of the surrounding land.

1.5.1 Description of the Site

The site is generally flat with significant areas of lower lying wetlands and a smaller area of coastal sand dune rising and falling sharply over short distances within the flatter landscape. The landscape surrounding the site is of similar character. The Site falls on estuarine landscapes with deep, poorly drained Humic Clay soils and the area is defined as having limitations relating to permanently high water tables with seasonal waterlogging, foundation hazard, flooding hazard and potential acid sulphate soils (Matthei 1995).

Vegetation has been cleared in areas, particularly in the southeast of the subject land. Remnant vegetation has the understorey removed in sections, generally those areas not inundated by water. The larger patches of remnant vegetation have a denser more intact understorey and tend to coincide with the 'Blind Harry Swamp Soil Landscape', detailed further in the following section.

The land to the west of the subject site (see Figure 2) is generally more densely vegetated with a range of vegetation types including a tall eucalypt forest with dense undergrowth of long grasses, reeds, bracken and low shrubs. To the south of this western area, on the southern side of the dune formation is an uncleared swamp forest, defining the northern margin of the Blind Harry Swamp soil landscape group. Further west is denser undergrowth comprising long grasses, bracken and low shrubs, with extensive areas of small to medium sized paperbark trees and scattered tall eucalypts.

1.5.2 Existing and Previous Land Use

The site is predominantly rural in character with some grazing and rural dwellings. The area immediately south and in the vicinity of the civil airport and RAAF Base facilities is used for grazing purposes on an intermittent basis. Residential and rural residential properties and the local primary school have frontages to Cabbage Tree Road along the southern extremity of the site and two services stations gain access to the Main Road (Nelson Bay Road) via side roads (Lavis Lane and Williamtown Drive).

1.5.3 Surrounding Land Uses

The site is generally surrounded by land zoned for rural purposes to the east, west and south of the site. Immediately north of the subject site the land is occupied by the RAAF Base Williamtown, a significant generator of noise, particularly when considered in association with the Salt Ash Air Weapons Range, located 10 kilometres to the northeast of the RAAF Base Williamtown. Further to the west and north and just outside of the study area there is a large tract of vegetated land, which is used as a water catchment area on protected lands. This land will form part of the Watagans to Port Stephens 'green corridor' outlined in the Draft Regional Conservation Plan.

The land in the vicinity of the study area is generally used for rural purposes and has a rural, agricultural character. Grazing lands dominate the landscape with patches of vegetation and sand dunes. In the vicinity of the Newcastle Airport (NAL) and RAAF Base Williamtown (the RAAF Base) there is a school, a church, numerous rural dwellings, farms, two service stations, a car hire business and other home businesses. The airport and RAAF Base Williamtown have a strong presence in this small community.

2. Statutory Planning Framework

This section of the Land Use and Development Strategy examines the strategic planning context for the subject site and the future development of a DAREZ on this site. Under the Environmental Planning and Assessment Act 1979 a range of state, regional and local environmental planning instruments were considered in the preparation of the draft planning instrument for the DAREZ. These instruments along with various other policies encompass this strategic context outlined below. The broad directions established in this Strategy for the development of the DAREZ that came from these planning policies are:

- The strategic significance of the DAREZ must be recognised as it adds an important and critical dimension to economic activity and industry to the region in the commercial, industrial and technological fields;
- The importance of protection and support to the operations of RAAF Base Williamtown, a permanent fighter base since it's construction in 1941 and a significant element in the ADF capability;
- The importance of protection and support to the Newcastle Airport (NAL), formed in 1990 when the original owner, the Commonwealth Government signed a 30 year lease with Newcastle City Council and Port Stephens Council agreeing to take full responsibility for the operation, maintenance and development of the civilian airport;
- A critical need for employment lands in close proximity and having strong supportive synergies to these existing Base and Airport facilities;
- A strategic location at the junction of road links to Newcastle and the F3; and
- Environmental management needs including flooding, soils and habitat management.

2.1 Regional Environmental Plans and Strategies

The regional planning context is set by the Hunter Regional Environmental Plan 1989 (HREP 1989), the Lower Hunter Regional Strategy 2006 (the Regional Strategy) and the associated background and support documents. The significance of these documents for the DAREZ is outlined below:

2.1.1 Lower Hunter Regional Strategy

The subject site is one of six specialised employment centres identified in the Lower Hunter Regional Strategy (LHRS). This particular centre was identified as land potentially suitable for an airport related employment role. As such, the DAREZ is seen as being of regional importance to the economy of the area. The LHRS operates at a regional level alongside the Draft Lower Hunter Conservation Plan (Draft RCP) (DEC 2006). The Draft RCP identifies a potential Conservation Reserve referred to as the 'Watagan Ranges to Port Stephens Corridor'. The proposed corridor passes to the north and west of the Williamtown RAAF Base and the proposed DAREZ. It incorporates large expanses of moderate to heavily vegetated land currently owned by State agencies (in this location primarily the Hunter Water Corporation). At this stage, areas of vegetation on privately owned land to the south of the corridor are not identified as being included in the proposed Conservation Reserve.

The Lower Hunter Economic Centres Study, 2005 emphasised that the strategic significance of the DAREZ must be recognised as it adds an important and critical dimension to economic activity and industry to the region in the commercial, industrial and technological fields. This Report considered expansion of the landside capability necessary to ensure the long-term sustainability of a specialised centre at this location. The Lower Hunter Regional Strategy suggests that the the planning framework will need to recognise the strategic significance of this centre to achieve the vision of a specialised centre outlined in that Strategy.

2.1.2 Hunter Regional Environmental Plan 1989 (HREP)

The Hunter Regional Environmental Plan (HREP) 1989 is the applicable regional environmental planning instrument for the Port Stephens local government area. The DAREZ is considered to be consistent with the provisions of the HREP, in particular the principles in relation to industrial development. Clause 15 (a) of the HREP states that Councils should:

- Ensure that an adequate supply of zoned and serviced industrial land is available in appropriate locations to meet needs, taking into account the extensive nature of modern industrial and quasi-industrial development.

The DAREZ is considered to be consistent with this Plan and the above objective as the proposal will prepare the subject site for future industrial development in an area set aside for that purpose. The subdivision offers a range of lot sizes to meet the varying needs of industry and is located close to a primary transport route.

2.2 State Environmental Planning Policies

There are no State Environmental Planning Policies (SEPPs) that apply specifically to this site. The following SEPPs and Draft SEPP are considered applicable to the DAREZ.

2.2.1 State Environmental Planning Policy 44- Koala Habitat (SEPP 44)

The Port Stephens Comprehensive Koala Plan of Management (CKPoM) supersedes State Environmental Planning Policy No 44 – Koala Habitat Protection. Justification of any inconsistency with this Plan will need to be resolved with the relevant authorities. The Site contains Preferred Koala Habitat. It also includes buffer and linking habitats and the Port Stephens CKPoM considers these habitats as essential and deserving of the highest level of protection. The ecological value mapping of the Site took this into consideration and this is detailed in Appendix G.

2.2.2 Draft SEPP 66 – Integrating Land Use and Transport

Draft SEPP 66 encourages developments to provide more effective integration of planning for transport with planning for future development of urban land. High quality public transport and pedestrian linkages are proposed for the new development to ensure that it is consistent with the draft SEPP.

2.3 Ministerial Directions

2.3.1 Direction No. 1.1 Business and Industrial Zones

This Direction aims to encourage employment growth in suitable locations. The proposal aims to provide a specialized employment zone adjacent to Williamtown Airport. This will build on existing activity and capitalize on the strategic advantages of the development of further industry and employment in close proximity to the airport. The proposal is therefore consistent with this direction.

2.3.2 Direction No. 1.2 Rural Zones

This Direction aims to protect the agricultural production value of rural land. While the proposal aims to rezone rural land for employment purposes, it is not considered that there will be a significant impact on existing or future agricultural activity. Impacts on adjoining rural areas, including traffic impacts, will be fully considered as part of the development phase of this proposal.

This proposal is also consistent with the Lower Hunter Regional Strategy.

2.3.3 Direction No 2.1 Environmental Protection Zones

This Direction aims to protect and conserve environmentally sensitive areas. The proposal has considered the impact on environmentally sensitive areas and is consistent with the Lower Hunter Regional Strategy and the Lower Hunter Conservation Strategy.

2.3.4 Direction No 2.2 Coastal Protection

The Direction aims to implement the principles of the NSW Coastal Policy. As the proposal falls outside the coastal zone, it is considered that this direction will not apply.

2.3.5 Direction No 2.3 Heritage Conservation

This Direction aims to protect and conserve items, areas, objects and places of environmental and indigenous heritage significance. The proposal has considered the impact on these items and areas, and is therefore found to be consistent with this Direction.

2.3.6 Direction No 3.4 Integrating Land Use and Transport

Direction No 3.4 requires that before rezoning land, councils need to consider the policy provisions contained in:

- Improving Transport Choice – Guidelines for Planning and Development (DUAP 2001);
- The Right Place for Business and Services – Planning Policy (DUAP 2001); and
- The Right Place for Business and Services – Planning Policy aims to encourage a network of vibrant and accessible mixed–use centres, which are closely reliant upon and accessible by public transport, walking and cycling.

The policy also requires direct and safe pedestrian and cycle connections to be provided to public transport destinations, such as bus stops, through interconnected street networks or pedestrian and cycle links. The subject site is identified as a specialised employment centre in the Lower Hunter Regional Strategy.

There is an existing bus service which services the airport and nearby areas. Future additional employment land will also encourage the expansion of existing public transport links in the area and to centres in Port Stephens and Newcastle.

Bicycle and pedestrian pathways will also be a requirement for the future development of the DAREZ. The proposal also opens up the potential for further freight movements through the Newcastle Airport.

The proposal is therefore consistent with this direction.

2.3.7 Direction No 3.5 Development Near Licensed Aerodromes

The direction aims to ensure the effective and safe operation of aerodromes and to ensure that appropriate noise mitigation measures are implemented for development in the vicinity of the aerodrome.

The proposal affects land in the vicinity of a licensed aerodrome, being the Williamtown RAAF Base and Newcastle Airport. Obstacle Limitation Surface and Australian Noise Exposure Forecast studies have already been undertaken for the airport. Appropriate noise mitigation measures will be applied for all future development in the employment zone. Both the Commonwealth Government and Newcastle Airport will be consulted further regarding their requirements for the development of the zone.

The proposal is therefore consistent with this direction.

2.3.8 Direction No. 4.1 – Acid Sulphate Soils

The requirements of Section 117 of the Environmental Planning and Assessment Act 1979, Ministerial Direction No. 4.1 relate to ASSs and have been addressed by this assessment. In accordance with Port Stephens LEP 2000, Port Stephens Council's ASS Policy and the ASS Model LEP, development consent will be required for works undertaken more than 1 m below the natural ground surface, and works likely to lower the water table to a depth of more than 1 m below the natural ground surface within the High Probability ASS Map Class area. These works will require an ASS Assessment and/or an Acid Sulphate Soils Management Plan (ASSMP) to be lodged with the development application. It is advisable that the land uses permitted within the High Probability ASS Map Class area of the site have well managed temporary or minimal to no disturbances to the soil or groundwater.

2.3.9 Direction No. 4.3 – Flood Prone Land

Section 117 Direction No 4.3 seeks to ensure that any draft LEP is consistent with the NSW Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005 (including the Guideline on Development Controls on Low Flood Risk Areas). This Ministerial Direction also requires that any provisions of an LEP be commensurate with requirements relating to flood hazards and potential impacts both on and off the subject land. In relation to the proposed rezoning of flood prone land for development purposes, the Directive states that a draft LEP may be inconsistent only if Council can satisfy the Director-General (or an officer of the Department nominated by the Director-General) that:

(a) The draft LEP is in accordance with a floodplain risk management plan prepared in accordance with the principles and guidelines of the Floodplain Development Manual 2005, or

(b) The provisions of the draft LEP that are inconsistent are of minor significance.

The hydrological assessment is to ascertained that the likely impacts arising from the filling and development of the land were found to be of minor significance providing stormwater management of the development ensures each lot retains stormwater on site for water quality and quantity management. The judgement by the Director-General (or an officer of the Department) is expected to be argued on the basis of the rezoning being of minor significance in terms of the resulting impacts.

2.3.10 Direction No 4.4 Planning for Bushfire

The direction aims to protect life, property and the environment from bushfire hazards, by discouraging the establishment of incompatible land uses in bushfire prone areas; and to encourage sound management of bushfire prone areas. This Direction requires the Commissioner of the NSW Rural Fire Service to be consulted under s62 of the EP&A Act, 1979 to ensure that the draft LEP has regard to the document Planning for Bushfire protection, 2001.

The Bushfire Constraints Assessment carried out during the investigative stage of this project aims to address the requirements of this ministerial direction. Initial discussions with the NSW Rural Fire Service have been undertaken regarding their requirements. Appropriate asset protection zones and mitigation measures will be incorporated into future development of employment land in accordance with this Direction.

2.4 Other Relevant Legislation

2.4.1 Roads Act, 1993

The Roads and Traffic Authority (RTA) has powers under the Roads Act, 1993 in relation to road works, traffic control facilities, connections to roads and other works on the classified road network. RTA concurrence is required for connections to both Nelson Bay and Cabbage Tree Roads under Section 138 of the Act, with Council consent. The RTA is the consent authority for all traffic control signals under Section 87 of the Act that may be required, preliminary consultation was undertaken as a part of this Strategy.

2.4.2 National Parks and Wildlife Act, 1974

The Department of Environment and Climate Change has the responsibility for the protection and care of native flora, fauna and cultural heritage. Depending on the final location and form of the proposed development, further ecological investigations may be required to deal with ecological impacts of development, including any offset issues.

It may also be necessary to seek consent to destroy in accordance with Section 90 of the National Parks and Wildlife Act, 1974 for the Aboriginal heritage site that has been identified on the land.

2.4.3 Native Vegetation Act, 2003

The Native Vegetation Act, 2003 regulates vegetation removal on non-urban zoned land. This Act requires either a Property Vegetation Plan or a development approval to be obtained for most forms of native vegetation removal, which occur on non-urban zoned land. The Catchment Management Authority undertakes this role.

Once the employment area is rezoned, no approval will be required from the CMA for any vegetation removal undertaken in the employment zones. However, there might still be a requirement for any vegetation removal, which is associated with drainage works outside the employment zones.

2.5 Local Environmental Planning Instrument and Policy

2.5.1 Port Stephens Community Settlement and Infrastructure Strategy

The DAREZ is considered to be consistent with the Port Stephens Community Settlement and Infrastructure Strategy through ensuring that the future community has adequate employment land suitably located close to existing development and infrastructure.

2.5.2 The Port Stephens Urban Settlement Strategy

The Port Stephens Urban Settlement Strategy looks at the long term settlement pattern for the LGA and defines the guiding principles for the growth of the area. The Settlement Strategy recognises the RAAF Base Williamtown is both a significant employer and a strategically significant Commonwealth asset. This long-term strategy (currently under review) plans for the continued operation and development of the RAAF Base Williamtown and it's activities.

2.5.3 Port Stephens Local Environmental Plan 2000

The study area is wholly within the Port Stephens Council LGA and is thus subject to Port Stephens Local Environmental Plan 2000. The subject site is within Zone No. 1(a) (Rural Agriculture "A" Zone). Figure 3 shows the current land use zones for the study area.

The Rural 1(a) Zone identifies land of agricultural value, this land is not set aside for rural residential development. The objective of this zone is to protect the rural character of the area and to promote the efficient and sustainable utilisation of rural land and resources by:

(a) Regulating the development of this land for purposes other than agriculture by ensuring development is compatible with rural land uses and does not adversely affect the environment or amenity of the locality;

(b) Ensuring development will not have a detrimental effect on established agricultural operations or rural activities in the locality;

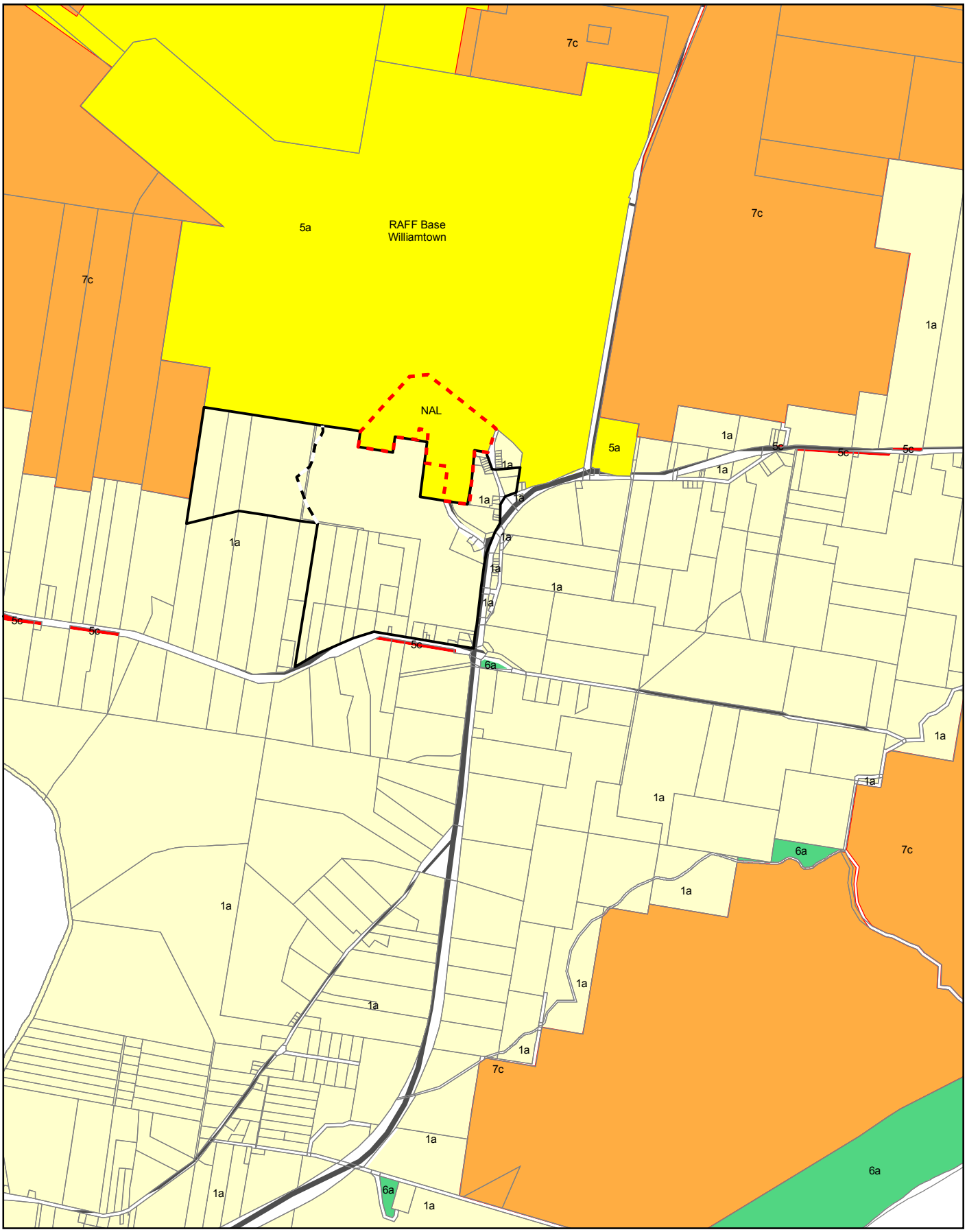
(c) Preventing the fragmentation of grazing or prime agricultural lands, protecting the agricultural potential of rural land not identified for alternative land uses and minimising the cost to the community of isolating and fragmenting such land and of providing public facilities and services to that community;

(d) Protecting or conserving soil stability, vegetation, water resources, water quality, valuable resource deposits; and

(e) Reducing the loss of life and damage of property caused by flooding.

2.5.4 Permissible Land Uses

Land uses permissible without development consent include agriculture and flood mitigation works. There is a range of prohibited land uses including commercial premises, industrial development, service stations, shops, urban housing, road transport terminals. Subdivision is generally not permissible with a few exceptions. Land uses not listed as either permissible or prohibited by the planning instrument (LEP 2000) are permissible land uses with development consent (provided the land is not exempt under state or federal legislation). Further discussion in relation to the proposed land uses for the DAREZ is given in Section 7.1.2



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LEGEND

Port Stephens LEP 2000

- (1a) Rural Agriculture
- (1c1; 1c2; 1c3; 1c4; 1c5) Rural Small Holdings
- (2a) Residential
- (2c) Residential
- (3a) Business - General
- (4a) Industrial - General
- (5a) Special Uses - Defence
- (5c) Special Uses - Proposed Road
- (5g) Special Uses - Flood Effected
- (6a) General Recreation
- (6c) Special recreation
- (7a) Environmental Protection
- (7c; 7f1; 7f3) Enviro Protection (water catchment, coastal lands, urban conservation)
- (7w) Enviro protection - Waterways
- NAL Boundary
- Subject Land

1:30,000 for A4

0 140 280 560 840 1,120

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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NSW Department of Planning
Airport Related Employment Zone (Williamtown)

job no. 22-12808
rev no. A

Land Use Zoning

Figure 03

4th December 2007

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2.5.5 Development Control Plans

The site is subject to Port Stephens Development Control Plan No.1 (DCP). Table 2-1 summarises the relevant sections of the Plan and identifies those issues of relevance addressed for future development of the site.

The DAREZ is to take these plans into consideration and whilst these do not pose any particular concerns for the future development of a specialised employment zone in this location, specific development controls are considered necessary to supplement the existing controls. Section 7.3 addresses the specific development control options for the site.

Table 2-1 Port Stephens Development Control Plan 2007

ISSUE	COMMENTS
B1 - Subdivision and Streets	
B1.3 Site Analysis	Refer to Section 7.2 of this report
B1.8 Lot Layout	Refer to Section 7.3.8 of this report
B1.10 Infrastructure	Refer to Section 7.5 of this report
B2 - Environmental and Construction Management	
B2.7 Vegetation Management	Refer to Section 5 of this report
B2.8 Koala Management	Refer to Section 5 of this report
B2.11 Tree Management	Refer to Section 5 of this report
B2.14 Erosion and Sediment Control	Refer to Section 7.3.1 of this report
B2.15 Construction Waste	Refer to Section 7.2 of this report
B3 – Parking, Traffic and Transport	
B3.4 Access Requirements	Refer to Section 7.5.1 of this report
B3.6 Design Requirements	Refer to Section 7.5 of this report
B5 – Industrial Development	
B5.2 Site Analysis	Refer to Section 7.3 of this report
Other Issues	
Existing Drainage	Refer to Section 7.2 and 7.3 of this report
Bushfire Assessment	Refer to Section 7.3.6 of this report

2.6 Defence and Airport Operational Requirements

RAAF Base Williamtown, located approximately 15km northeast of the Newcastle CBD, is shown in Figure 4. The Base occupies 800 hectares of land within a perimeter of approximately 14.5km. Defence has leased 28 hectares of land on the southern side of the runway until 2045 to Newcastle Airport Limited (NAL), which operates a civil terminal. The lease defines the sharing of the runway, taxiways and associated facilities.

The following sections describe the operations of the RAAF Base Williamtown and the Newcastle Airport, the operational requirements of these facilities and a summary of the findings of the investigations into future runway planning.

2.6.1 RAAF Base Williamtown Operations

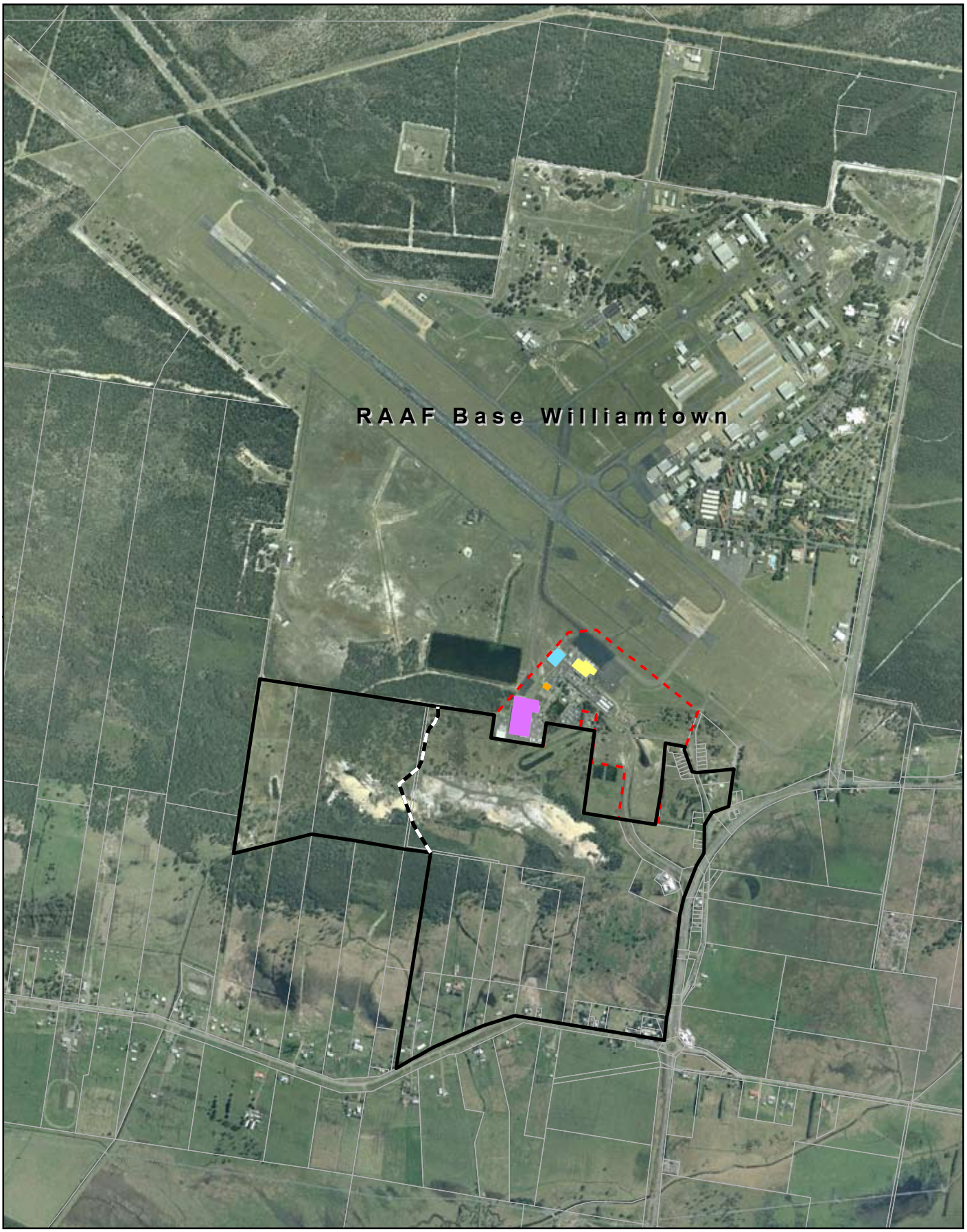
The RAAF Base is a major employment generator and economic stimulus in the Lower Hunter Region. It has a Base workforce of over 3600. It injects over $130 million annually in services and wages into the regional economy. The Australian Government continues to build on this investment with over $180 million earmarked for future capital works. The infrastructure of RAAF Base Williamtown represents a long-term investment by the Australian Government, which cannot be easily relocated or rebuilt elsewhere.

The RAAF Base is a significant element in Australian Defence Force capability and is to be retained by Defence as the long-term home of the fighter/strike and Airborne Early Warning and Control (AEW&C) forces. It is Australia's primary fast jet training Base and is periodically used by all three services. From the mid next decade, Defence expects to introduce into service new air combat capability, which will replace both the F/A-18 and the F-111 Combat Aircraft.

Currently, RAAF Base Williamtown accommodates the command, operational and support elements to sustain the major training and operational flying activities of Air Combat Group's tactical fighter force component operating F/A-18 and Hawk aircraft. The base also accommodates the Surveillance Control Group and Combat Support Group, which will in the near future include the AEW&C aircraft. The Base also accommodates the Australian Defence Force (ADF) Warfare Centre and the Air Defence Eastern Regional Operations Centre.

The Base has an inextricable link with Salt Ash Air Weapons Range, which is the Base's major training support facility for aircraft air-to-ground bombing and gunnery training. A major air-to-air training area is located off the nearby coast.

Core activities undertaken at the Base comprise aircraft operations (including training), aircraft maintenance, air defence and control, operational support and the provision of infrastructure support services. A range of ground units and civilian support services provide logistical support to the operational squadrons. In addition to the core operational capabilities, the Base contains various facilities for Defence and civilian personnel including sporting and recreational, childcare, medical and dental and living accommodation.



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N

LEGEND

- Investigation Area (Including Additional Land)
- Newcastle Airport Limited (NAL)
- BAE Systems
- JetStar Engineering
- Newcastle Airport Terminal
- Newcastle Helicopters
- Cadastre

1:20,000 for A4

0 75 150 300 450 600

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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NSW Department of Planning
Airport Related Employment Zone (Williamtown)

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rev no. A

Location of NAL and RAAF Base Williamtown

Figure 04

4th December 2007

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2.6.2 Operational Requirements of RAAF Base Williamtown

The land use planning of the new employment zone must consider both the operational requirements of the RAAF Base and the objectives of the proposed land use zone. The following list identifies such requirements that influence the land use:

- Aircraft Noise- The Australian Noise Exposure Forecast (ANEF) system measures noise exposure levels and provides a measure to evaluate the impact of aircraft noise on communities and any proposed development in the vicinity of Australian airports. The *Australian Standard AS2021-2000 Acoustics- Aircraft Noise Intrusion- Building Siting and Construction* will be used for guidance on the siting and construction of new buildings against aircraft noise intrusion;
- The Port Stephens Council policy on Aircraft Noise Exposure is currently under review however, it is currently in line with the Australian Standards in relation to appropriate land uses for each of the ANEF contours. The Site is almost completely within the 20- 25 ANEF Contour with the balance more highly affected. This has bearing on both the appropriate land uses for the site and the building requirements for noise attenuation;
- Extraneous Lighting and Reflective Surfaces– Lighting from new developments must not cause confusion, distraction or glare to pilots. The areas of maximum intensity of light source extend out from the runway in rectilinear shapes. The four zones setting maximum light source requirements follow the shape of the runway and range from 0cd in Zone 'A' to 450cd in Zone 'D'. In addition there is a 6 km radius centred on the runway that demarks a controlled light installation area. These areas are illustrated in Fig. 7 of the State and Local Govt Auth Info Package. These zones indicate the intensity of certain lighting within the vicinity of the Base. Reflective surfaces such as glass, granite and metallic paints are not feasible due to their propensity to cause glare and distraction to the pilot;
- Protection of Operational airspace from transient intrusion - Obstacle Clearance Surfaces and Defence (Areas Control) Regulations protect airspace on the airfield and in the immediate vicinity of the Base to ensure the safe operation of aircraft and navigational aids. These regulations aim to exclude inappropriate obstacles that pose a hazard to aircraft in flight. The clearance surfaces range from ground level to requirements as mapped that relate to take –off, approach and operational requirements. It is understood that the regulations are currently under review;
- The D (Areas Control) Rs for RAAF Base Williamtown are supported by the Obstacle Clearance Surfaces thus ensuring a limit to height of new structures, additions to existing structures or ground level (i.e. no structures permitted) or to heights of 7.5, 15, 45, or 90m, potentially limiting development to 7 storeys and 9 storeys;
- Public Safety –There are public safety areas at the ends of the runway to minimise risk to life from an aircraft accident. Development considered incompatible in these areas include any use that attracts a large number of people such as an institutional use, also uses that involve the manufacture of hazardous materials. These areas are 450m wide and extend for 1500m at each end of the runway. The more eastern end public safety area crosses the intersection of Nelson Bay Road and Medowie Road and passes just north of Slades Road. This area thus effects the most north eastern corner of the subject site;

- Bird/wildlife Hazards –Particular land use types that increase the likelihood of bird or wildlife hazard are to be avoided including developments clearly incompatible such as bird sanctuaries, fruit tree farming, game reserve, and picnic grounds. Development that generates putrescible waste, particularly large amounts of waste, not wholly contained/dealt with indoors such as drive-in restaurants, food processing plants and food garbage disposal will be excluded;
- Plumes– Development types that create exhaust plume typically include chimneys or elevated stacks at power generating stations, smelters or similar combustion sources. Restrictions on such uses are necessary, including those that may pose a risk by expelling gaseous emissions;
- Navigational Aids– The location of new development must consider existing navigational markers which are located within Defence land;
- Security– the development control framework must be compatible/complement base security by complying with RAAF requirements and aviation security requirements specified by DOTARS. Defence is concerned to maintain Base security. Multiple points of access to the Base would be unacceptable, as this would pose additional security risks;
- Stormwater runoff at the RAAF Base is of major concern and must meet obligations to the Public Works Committee for no net increase in storm water runoff from RAAF Base. Any development on the Base, including the NAL site, must not increase net storm water run off. Any additional hard surfaces introduced may exceed the capacity of Lake Cochran;
- Constraints on the western side of the RAAF Base and west of the retention pond on the Base severely limit any potential for airside access at this point. Buffers that maintain operational integrity protect a number of Defence uses in this area. These buffers restrict the siting of new structures. Defence uses include:
  - Antennae Farm & Navigation Aids;
  - Air Traffic Control Transceivers/Airfield Radar;
  - Banner Drop Zone;
  - Demolition Range;
  - Fire Training Ground;
  - Forward Firing Weapon Safety Templates;
  - Lake Cochran – stormwater retention;
  - Military Working Dog Compound; and
  - Operational Facilities.

- Airside Access - Defence does not support any increase in direct airside access, except in very limited circumstances. The only circumstance where Defence would consider permitting direct airside access is where such access is granted to a specified contractor, in respect of land abutting the RAAF Base (on the southern boundary only) and where such access is specifically required in order to fulfil core obligations in Defence contract(s). It is intended that once the contract(s) expires or is otherwise terminated, airside access would be revoked. Separate written approval from Defence would be required for each contractor to Defence, seeking airside access. It is intended that the access requirements would be dealt with within the terms of the contract. Note: It is envisaged that security arrangements for access will be by way of a secured gate that is controlled by Defence. Further detailed requirements and arrangements will be negotiated between the contractor and the Department of Defence.

In summary, the only place airside access could be sought (with the permission of NAL) is via a link to the British Aerospace (BAe) taxiway located in the western portion of the NAL lease area. This land is subject to a recent hangar extension approval, which could impact on access availability.

An alternate may be to make a minor expansion to the western portion of the NAL lease. This would require further detailed consideration and approval by both Defence and NAL. This option may require a section of Lake Cochran to be filled in and any lost stormwater detention capacity to be replaced elsewhere.

2.6.3 Newcastle Airport Limited (NAL) Operations

Newcastle Airport (NAL) is similarly located approximately 15km as shown in Figure 4. It occupies 28ha of Commonwealth land, adjacent to RAAF Base Williamtown. Managed by NAL (joint partners Newcastle City Council and Port Stephens Council), the land is leased from the Department of Defence for the purposes of civilian air travel. The 40 year lease began in June 2005 and defines the sharing of the runway, taxiways and associated facilities. NAL has flights operated by Jetstar, Virgin Blue, QantasLink, Brindabella Airlines and Tiger Airways from 2008.

The number of passengers at Newcastle Airport in 2005 was 757, 000 passengers and in 2006 there were 892,000 passengers. October 2007 was a record month with 93,000 passengers passing through the terminal. It is now estimated that the annual figure for 2007 will be likely to be just under 1 million passengers. Jetstar has also announced an additional 18 flights in 2008 commencing from June. This will be introduced on an annual basis with an additional 266,000 passengers.

Further, Tiger Airways, a new low cost domestic carrier, will be commencing flights from Newcastle to Melbourne twice daily from 18 January 2008. The impact of this is estimated to be an additional 210,000 passengers per annum. In addition to this, interest has been expressed by AirAsia X to commence international flights direct from Newcastle to Kuala Lumpur, however this is unlikely to be realised before 2009. In all likelihood Newcastle passenger numbers will grow to 1.5 million per annum for the 2008/09 financial year.

These figures need to be considered in the context of traffic flows particularly in regard to the use of Williamtown Drive and the intersection of Nelson Bay Road and NAL's investment in the intersection upgrade for future growth. Any road infrastructure upgrades required for the proposed employment zone, will need to include careful consideration of the projected growth in passenger numbers and associated traffic movements to and from the airport and the timing for providing an alternative access to the employment zone, notably from Cabbage Tree Road.

In order to plan for the future growth and continued operations of the airport, the NAL have recently completed a Master Plan for the airport. The Master Plan has a 20 year horizon and aims to optimise the available land with careful planning to ensure compatibility between operational and commercial demands. The Master Plan brings together the demand modelling for aviation and commercial growth with the means of ensuring the protection of the primacy of RAAF Base Williamtown assets and operations. NAL promotes additional commercial development associated with and in support of the Defence and airport operations.

2.6.4 Operational Requirements of Newcastle Airport Limited

When making land use planning decisions the operational requirements of the NAL also need to be considered along side the objectives of the land use zone. The following list identifies the issues influencing land use:

- Operating Agreement – The relationship between the growth of commercial aircraft movements and the movement cap set in the Operating Agreement on civilian aircraft movements. Present growth is expected to slow and remain well under the total number of annual movements currently allowed under the Agreement;
- Air Freight Hub – Potential has been identified for some dedicated freighter services to cater for the needs of aerospace industries in the vicinity, to capture a portion of the overflow from Sydney Airport and to cater for livestock and fresh produce movement. This is seen most likely to occur in the medium to long term with approx. 6-10 movements per day (3-5 arrivals; 3-5 departures). Freight activity is preferred on a "back of clock" arrangement which conflicts with the current Newcastle Airport Operating Agreement with the Department of Defence that prohibits flights between the hours of 10pm and 6am;
- Aircraft Size – Current aircraft design used is the Code C envelope (eg. A320 47m x 36m). The NAL Masterplan found it would be conceivable that future design aircraft may be appropriate to plan for the Code E envelope eg B787-900, having implications for requirements such as runway length, width, shoulders, taxiway dimensions etc. The current aircraft parking apron expansion is designed to handle code E aircraft such as the Boeing 787-900;
- Checked Bag Screening (CBS) for Regional Jet Airports - From 01 December 07 the government mandated CBS for Regional Jet Airports. This is another step towards introduction of international flights. CBS was seen originally as an impediment if it was only required for international flights and not domestic; and
- Indirect access through the NAL land would be controlled by NAL in accordance with the operating agreement with Defence.

2.7 Future Runway Planning Investigations

As part of the scope of works brief for the land use study DoP requested GHD to ensure that the area chosen for the economic exclusion zone did not preclude any future developments or extensions to runways. This plan examined options for runway extensions or duplication; it focussed on the validation of the chosen area, not impacts or future requirements.

Any future considerations for increased runway space would require the full support of Defence.

The purpose of this assessment is to ensure that the selected site for the DAREZ does not preclude options for a second runway or extended runway and that all decisions incorporate the long term needs and opportunities for both RAAF Base Williamtown and NAL.

A feasibility study for a second runway at the RAAF Base was commissioned by the Department of Defence in 1998 (Kinhill, June 1998). This report noted, inter alia, that the existing runway orientation meets the 95% wind useability criteria and that a cross-runway or realignment of the main runway is not required.

Discussions with the Department of Defence staff, including RAAF Williamtown (as represented by the Base Commander) raised further matters. Representatives from these areas of Defence have positions on the Project Control Group (PCG). Defence have consequently made the following important points:

- The existing runway is part of RAAF Base and is owned by the Department of Defence;
- Defence activities and operations take primacy over civil airspace use. This will remain the case indefinitely;
- Defence does not require a second runway nor an extension to the existing runway. The length of the existing runway is adequate for current or future Defence capabilities. In the past, Defence had preliminary investigations undertaken as part of the RAAF Base Williamtown Masterplan 2002 with regard to extending the 12/30 runway or installing a cross runway. This found no cross-runway or realignment of the main runway was required;
- Defence identified that the width of the existing runway pavement may be increased to accommodate future capability;
- The issue for Defence is the impact a second runway/extension to the existing runway will have on operational capability due to an expectation that this will permit an increase in civil airspace usage. An increase in civil airspace usage is unlikely to be supported by Defence due to impacts on capability;
- Duplication of the existing runway would increase airspace usage to such an extent as to provide likely operational difficulties for the RAAF;
- The continued use of the Salt Ash Air Weapons Range for existing purposes is intended;
- Opportunities to reduce security risks to the RAAF Base tenancy usage are favourable; and
- The RAAF considers its future operational requirements to be contained within the currently defined parcel of Defence owned land.

Other considerations relevant to this study were derived from direct discussions with Newcastle Airport Limited (NAL). NAL also has a position on the PCG. A meeting between the consultants (GHD) and NAL, held at Newcastle Airport on 21 June 2006 made the following relevant points:

- The basis for design of future airport master planning options was the Boeing 787 design; and
- The NAL Master Plan essentially considers a three-tiered approach when examining its Master Planning Options. These being:
  - **Primary usage** - those operations requiring direct access to taxiways or aprons (air side access);
  - **Secondary usage** – those operations that do not require air side access however are directly supportive in nature to air side activities; and
  - **Tertiary usage** – those activities that are supportive to the general airport precinct however their location directly adjacent to the airport is not imperative.

It is essential that the employment zone does not adversely effect future options for the expansion of runway capacity at RAAF Base Williamtown/ NAL. To ensure this, an analysis was undertaken of likely expansion options and governing regulations in order to provide assurance that the selected area did not impact on future expansion. The following summarises the options considered and the findings of that report.

2.7.1 Future Runway Dimensions

Future runway dimensions have been considered taking into account the regulations, publications and guidance of the Runway Future Planning Allowance Assessment Report. The site selection process for the DAREZ ensured future runway expansion options are not precluded. To this end the following dimensions have been used for planning purposes:

Length

- Runway 3500m;
- Stopway 305m at each end;
- Public Safety Area 1500m at each end of Stopway; and
- Length Total = 7110m for the purposes of restrictions on any built environment.

Width

- 1035m minimum between parallel runways, and
- A cleared 300m buffer area around the total length of runway 7110m.

2.7.2 Runway Master Planning Options

Investigations contained in the report identified five runway master planning options for a second runway or runway extension at RAAF Base Williamtown (RAAF Base). This desktop assessment excludes detailed consideration of environmental issues, site conditions and detailed design/ layout for these options. The five identified options are listed below:

- Extension of Runway 12/30;
- Construction of a second runway to the north of the existing Runway 12/30;

- Construction of a second runway to the south of the existing Runway 12/30;
- Construction of a parallel runway to the south-west of the existing Runway 12/30; and
- Construction of a cross runway.

2.7.3 Extension of Runway 12/30

This option would involve lengthening the existing runway. The length of existing Runway 12/30 is 2,438m; it is 45m wide and capable of accepting operations by A320/B737/B707 without restrictions. Larger civil aircraft such as the B747/B767/A380 and future B787 require a longer runway for maximum all-up-weight operations.

A number of runway extensions were investigated in preparing the 2002 RAAF Base Williamtown Master Plan,. These investigations showed that an extension to the northwest (NW) was not possible due to the proximity of Raymond Terrace. For this reason, any extension of the runway to the NW has not been considered in this study. Any extension of the runway to the south-east would require the relocation of Medowie Road and Nelson Bay Road.

Further analysis work would need to be undertaken as to the operation feasibility of any extension to runway 12. This may include the impacts of the threshold of runway 30 moving relatively closer to the higher ground associated with the barchan dunes of the nearby coastal fringe impacting with runway 30 approaches by military aircraft in emergency configurations.

Analysis of the operational requirements for large aircraft identified that the needs could be accommodated from the existing runway length and significant cost of a runway extension to the southeast could not be justified. The 2002 RAAF Base Williamtown Master Plan therefore retains the existing runway orientation and length.

In keeping with the requirements of the consultancy brief to not preclude future options, any consideration of a DAREZ should ensure that an extension to Runway 12 is not precluded.

2.7.4 Construction of a Second Runway to the North of existing Runway 12/30

This option considers a second runway to the north of the RAAF Base. Construction of a second runway to the north of the existing Runway 12/30 would impact the Hunter Water Corporation (Hunter Water) land and the operation of the Hunter Water bores that are located on the land. Additionally, the land to the north of RAAF Base Williamtown is environmentally sensitive, includes areas of native bushland, koala habitat and contains endangered species. Additionally there may be a need to realign Richardson Road. Construction of a second runway to the north of RAAF Base Williamtown would result in significantly longer taxiing for civil aircraft using the second runway if the civilian terminal remains in its current location. Similarly, the operation of RAAF Base Williamtown and Salt Ash Air Weapons Range may be impeded by this option.

Any requirement for a second runway is not in the Master Plans being considered by either Defence or NAL. Any drivers for such an expansion would be come from civil usage rather than military operations and would be far in excess of planned future requirements. Any considerations of such an expansion would most likely be in the realms of a national or international discussion rather than a regional planning consideration over the subsequent 20-30 year time frame.

Due to the above issues, a second runway to the north of RAAF Base Williamtown, whilst technically feasible, is deemed to be a non-viable option, based on economic, environmental and operational constraints. In either case, whether it be viable or otherwise, the location of the currently considered portion of land for the DAREZ, as detailed in the Site Selection report, does not preclude future runway usage options to the north of RAAF Base Williamtown.

2.7.5 Construction of Second Runway to the South of the Existing Runway 12/30

As distinct from a closely placed parallel runway, this option considers placement of a new runway in the southern portion of the study area.

Construction of a second runway to the south of the existing Runway 12/30 would require the relocation of Medowie Road and Nelson Bay Road, as a minimum. Any consideration of a southern runway option in the study area would likely require a complete relocation and redevelopment of the NAL facility and precinct due to the distances that the runway displacement would be from the existing terminal facilities. Such an option would also need to ensure no impact on Hunter Water land.

Any requirement for a second runway is not in the Master Plans being considered by either Defence or NAL. Any drivers for such an expansion would be come from civil usage rather than military operations and would be far in excess of planned future requirements. Any considerations of such an expansion would most likely be in the realms of a national or international discussion rather than a regional planning consideration over the subsequent 20-30 year time frame.

These considerations, when combined with the magnitude of the economic cost of a new runway and associated relocation of the complete NAL facilities and the increased airspace requirements impact on the RAAF, would most likely mean a broad based comparative site analysis would be undertaken on a state wide level, rather than restrict options to within the 5-10 km of the RAAF Base/NAL. Such broad based analysis means that the location of the currently considered area for the DAREZ, as detailed in the Site Selection report, would not affect likely future options for a second runway.

2.7.6 Construction of a Parallel Runway Southwest of Existing Runway 12/30

This option considers a parallel runway located next to the existing runway 12/30.

Construction of a parallel runway to the southwest of the existing Runway 12/30 would require the second runway to be built with a minimum separation distance between the second runway and the existing Runway 12/30. The distance of offset could vary between 760 and 1,035 m, depending on the scenarios, as discussed in the accompanying report. Such a parallel runway, would result in a second runway alignment that requires the infilling of Lake Cochran, demolition of the existing civilian Newcastle Airport precinct (including the civilian terminal), the BAE Systems hangar, the sewage treatment plant and other facilities. Additionally, due to the operational need to de-conflict arriving and departing aircraft, such a runway configuration would result in aircraft tracks that directly overfly Raymond Terrace, resulting in significant aircraft noise impacts on the residents of Raymond Terrace.

Any requirement for a second runway is not in the Master Plans being considered by either Defence or NAL. Any drivers for such an expansion would be come from civil usage rather than military operations and would be far in excess of planned future requirements. Any considerations of such an expansion would most likely be in the realms of a national or international discussion rather than a regional planning consideration over the subsequent 20-30 year time frame.

Due to the cost of relocation of the NAL facilities and the cost of any second runway, this option involves the same discussion points as raised in the above option for a new runway in the south of the study area. Thus, a parallel runway is not considered a viable option due to economic and operational grounds and thus will not be considered further in the DAREZ investigations.

2.7.7 Construction of a Cross Runway on RAAF Base Williamtown

Construction of a cross north south runway is not considered to be viable, due to its impact on RAAF Base Williamtown and the civilian Newcastle Airport precinct, as a cross runway would require the relocation of a significant number of facilities, which Defence have indicated is out of the question. Additionally, as noted earlier, the existing runway orientation meets the 95% wind useability criteria and that a cross-runway or realignment of the main runway is not required. Similarly, a cross runway would not add significantly to the movements capacity at the airfield. This option will not be considered further in this report.

2.7.8 Impacts of a Second Runway or Runway Extension

Extension of Runway 12/30

Analysis of the operational requirements for large aircraft indicates that the existing runway can accommodate these requirements. As such, a runway extension to the southeast is not currently required. However, to ensure future options for the extension of Runway 12/30 are not excluded, the proposed RAAF Base Williamtown/NAL Employment Zone should exclude the existing threshold of runway 30 in a direction of 120 degrees (existing runway alignment), for an aggregate distance of 7110m and width of 300 m. This distance takes into account future runway length consideration of 3500m plus public safety distances along the extended centreline of the runway.

2.7.9 Conclusion in Relation to Runway Options

All duplications (constructions of new runways) were considered of such magnitude, cost and possible impact to both RAAF Base Williamtown operations and increased local noise impact as to necessitate wider consideration of available airport relocation options. For these reasons, the current site under consideration as part of the DAREZ study does not preclude future second runway options. Development of the DAREZ would have to take into account the various limitations and design criteria relating Defence and Airport operations (detailed in Section 2.6.2).

2.8 Economic and Land Use Considerations

The Lower Hunter Economic Centres Study and the Lower Hunter Regional Strategy have identified the Williamtown RAAF Base and NAL as a specialised centre with potential to provide additional resource for defence and airport related development. The draft Strategy considers such specialised centres perform vital economic and employment roles within the region.

2.8.1 The Demand for Defence and Airport Related Employment Land

The Newcastle Airport Economic Opportunities Study, 2003 (the Opportunities Study), observed that Newcastle Airport was "land poor" compared to other Australian and overseas examples of similar facilities. This applied to both on and off airport provisions. The report asserted the "lack of land for ancillary development would constrain the diversified growth of the facility".

It scoped opportunity and land use demand across weak, normal, medium and strong demand scenarios, recommending further investigation of the medium and strong scenarios. These scenarios respectively encompassed 100 hectares (medium) and 832 hectares (strong) of land exclusive of the 28 hectares currently leased to Newcastle Airport (NAL).

The 100 hectares nominated under the medium scenario was linked for foreshadowed core demand characteristics as well as "opportunistic" outcomes. The demand analysis indicated the new "Airport Business and Technology Park" would lever off opportunity stemming from airport activity, existing business and commerce within the region and national and international interest attracted by a "near airport" project.

With the benefit of more contemporary studies and input in the land economics sphere and experience in the marketplace since 2003, it is considered that the circumstances outlined in the Opportunities Study have changed slightly, particularly in the realm of land take up and demand. The rate of change in the industrial land sector has accelerated over the last 3 years. Most change was experienced on larger, planned estates such as Thornton, Holmwood, Cameron Park, Morisset and more lately, Rutherford and Steel River. These present a different opportunity to an estate adjacent to or in immediate proximity of Newcastle Airport/RAAF Base Williamtown.

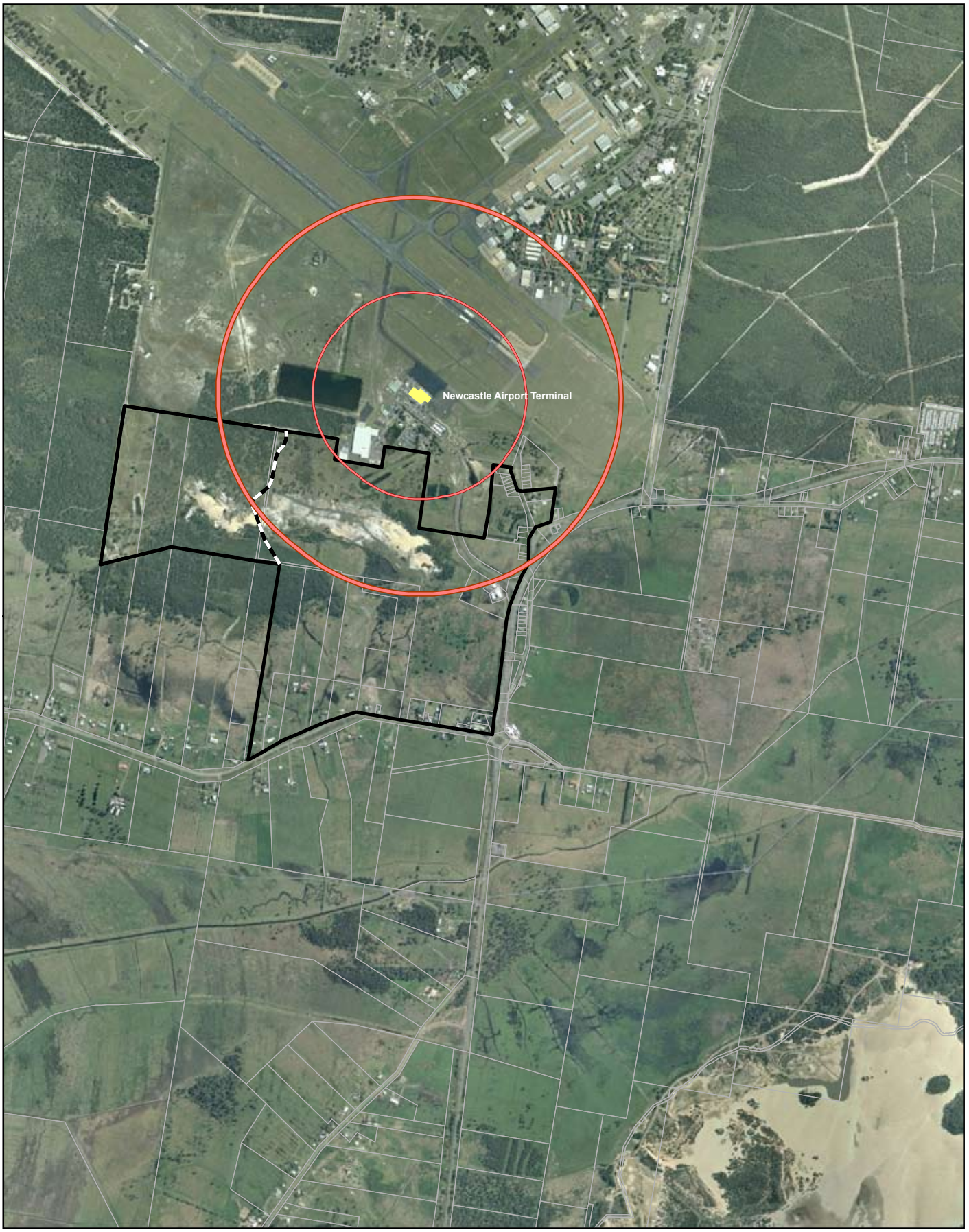
2.8.2 Proximity and Synergy Factors

It is considered that the scope of opportunity at Newcastle Airport is more dimensional than other industrial estates. This facet is dependant on a tight locational nexus with the current RAAF and civil airport activity. Land areas isolated or dislocated from airport functions will be more likely to evolve into a "general industry" areas, weakening the scope to benefit from the strictly Defence and airport related businesses referred to in the Opportunities Study.

The most optimal and appropriate approach is considered to be the "designation" of at least 100 hectares in immediate proximity or adjacent to the airport. If constraints dictate the land cannot be contiguous, the allocation next to airport to support uses more reliant on direct airport proximity is consistent with the Opportunities Study findings of between 40 and 60 hectares in the medium scenario. The allocation of nearby but linked yet truncated employment land of at least 50 hectares is considered justifiable. Figure 5 indicates walkable/cycleable catchments within a 400m radius and an 800m radius. This illustrates the proximity required to maintain operative synergies between Defence/airport facilities and the DAREZ. It is important that the connections between these facilities and the DAREZ be maintained. These catchments aim to demonstrate the proximity necessary for the two operations to ensure they are not dissected.

2.8.3 Conclusion in Relation to the Preliminary Economic Investigations

Contemporary demand factors indicate that 100 hectares in the context of long term outcomes is modest. This is evident given the scope for civil and Defence aviation industry services activity that demand immediate proximity, as is shown with recent demand and development for car parking at the civil facility. The extension of this characteristic into broader airport services such as car hire, aircraft services (fuel, catering, cleaning) and transport is likely to pressure the NAL landholding and scope for merging this activity into new employment land. Likewise, RAAF Base support services often have specialised characteristics and scope to permit "special use areas" close to the base that may, for example, encapsulate additional security, access and proximity requirements that must be accommodated. Every opportunity to realise the synergies between these facilities and the DAREZ should be capitalized. It is considered that whilst the market circumstances have been extremely buoyant in recent times, the "non real estate" based motives and drivers identified in previous reports and other studies have underlying strength and basis to underwrite the 100 hectares allocation as a minimum target outcome.



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LEGEND

- Investigation Area (Including Additional Land)
- Cadastre
- Newcastle Airport Terminal
- 800m Radius - 10min walk
- 400m Radius - 5min walk

1:22,000 for A4

0 100 200 400 600 800

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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Economic Issues
Locational Factors

Figure 05

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3. Social and Cultural Considerations

3.1 Social Impact

The civil airport and Defence Base are distinctive land marks in Williamtown. The Williamtown district is currently typified by low density non urban and rural development. Nodes of urban and industrial development occur at Medowie and Tomago with other major urban development located at Raymond Terrace, Newcastle (Stockton) and along the Tilligerry and Tomaree Peninsulas. The main social impacts arising from the development of the DAREZ relate to the change of character in the locality and the economic advantages resulting from the development of the land. These impacts will be felt at both a local and regional level.

The social impacts arising from the development of the land will be somewhat mitigated due to the RAAF Base's size and the fact that it has existed and operated for a considerable time. The DAREZ will however change the appearance of the urban and developed environment, from non urban and rural to employment land. The change will occur over a long period of time (up to 25 years) and it is therefore anticipated that the community will have ample opportunity to adjust in these circumstances.

Potential benefits for the local community would include the development of other social infrastructure provided it achieves a critical mass of support in terms of development and jobs. Currently, transport services are relatively poor in this area and further development at the airport may encourage public and private transport operators to be more prevalent.

The DAREZ development will create employment opportunities locally and it is likely that both Medowie and Raymond Terrace will provide labour to meet some of these employment opportunities. The DAREZ is also expected to broaden the range of employment and the current skill base required to service industry demand.

3.2 Landscape Character and Quality

The subject site is predominantly of a rural character with a mix of vegetation, rural housing and grazing dominating the site as viewed from Cabbage Tree Road and Williamtown Road. Future industrial development will require the removal of vegetation and a change to the landscape character along Cabbage Tree Road and parts of Nelson Bay Road. Protecting landscape views is important, affecting the existing and adjoining occupants of the land, through traffic, and visitors arriving at the airport and passing through. Much of the Site is visible from both Nelson Bay Road and Cabbage Tree Road. Passing vehicles would see glimpses of bushland, expanses of rural and cleared areas, including some rural activity. The main local visual features are the vegetated ridgeline, rural character and the existing airport and RAAF Base activities. This includes the landing, training and taking off of jets and regional domestic aircraft.

A visual screen between the proposed Defence and Airport Related Employment Zone (DAREZ) and both the major roads and the existing rural properties are advised as a mandatory ameliorative measure. It is recommended that the development control framework include guidance for:

- Building heights and setbacks;
- Desirable type and colour of construction and materials used;

- Location of advertising structures;
- Placing, species and purpose of landscaping; and
- Tree cover should be retained on higher portions of land within the study area where possible.

Key landscape management will also depend on the staging of the DAREZ. The landscape management zones are outlined below:

- Cabbage Tree Road North – The properties most effected will be those in the Site that do not pursue development and those adjacent to the DAREZ;
- Cabbage Tree Road South- The DAREZ will be visible from the rural properties on the southern side of Cabbage Tree Road;
- Properties in Slades Road - the rural residential properties in Slades Road are generally less affected as they are not screened from the existing RAAF Base and would be likely to be included in the early stages of the DAREZ;
- Nelson Bay Road – Nelson Bay Road is the most direct route from the Airport to Newcastle, the most direct route from Newcastle to Nelson Bay and as such is a major visual corridor in Port Stephens. Views into the DAREZ from Nelson Bay Road should be screened having regard to the Obstruction Clearance Surfaces for RAAF Base Williamtown/NAL; and
- The additional land investigated, located at the western end of the subject site is at a distance of approximately 900m north of Cabbage Tree Road. This land is relatively higher than the land to the south fronting Cabbage Tree Road. In terms of visual impacts and the existing rural character of the area, particular attention should be given to screen planting at the boundaries of developed area particularly for those views from Cabbage Tree Road, Nelson Bay Road and surrounding residences.

3.3 Aboriginal Heritage

All Aboriginal places and Aboriginal objects are protected under the National Parks and Wildlife Act 1974 and it is an offence to destroy, damage or deface them without permit to do so from DECC. An Aboriginal object is considered to be known if it is registered on AHIMS, or if the Aboriginal community is aware of it, or if it is located during an investigation of the area conducted for a development application.

A search of the Department of Environment and Climate Change (DECC) Aboriginal Heritage Information Management System was undertaken for this Report. The search identified two Aboriginal objects and Aboriginal places recorded in or near the Site (this is not public information and is to be used for the purposes of this report and related investigations only).

Any draft LEP would need to be referred to DECC for comment and the Cultural Heritage Division of the Department have advised that they will require an Aboriginal Heritage Assessment be undertaken. Consent from the Director General of DECC would also be required for the development approval.

The sites are both located south of the Airport with Site 'Williamtown' recorded as a Burial/s and Open Camp Site and Site 'Williamtown 1' recorded as an Open Camp Site. A brief description of these site types follows:

Campsite: where everyday activities such as habitation, maintenance of stone or wooden tools, manufacturing of stone or wooden tools, management of raw materials, preparation and consumption of food and storage of tools has occurred.

Burials: Human remains tended to be placed in hollow trees, caves or sand deposits. Usually burials are only identified when eroding out of sand dunes or creek banks, or when disturbed by development. Aboriginal communities are strongly opposed to the disturbance of burial sites.

3.4 Non- Indigenous Heritage

There are no items of non- indigenous heritage significance listed in the Port Stephens LEP 2000 within the Site investigated for the DAREZ.

3.5 Supplementary Cultural Heritage Assessment

The investigative stage of this project identified two known Aboriginal objects and Aboriginal places recorded in or near the Selected Site. This early identification suggested a necessity for further assessment at the earliest possible stage to enable any findings to be incorporated into the design of a concept plan for future development. A Cultural Heritage Assessment, August 2007 by Harper Somers has been completed (refer to Appendix J to this report). The Assessment applies to Lots 10 and 11 DP 1036501, and Part Lots 131 and 132 DP 609165.

The assessment identified the pre-recorded burial site and associated campsite as listed on the AHIMS database. The probable location of the burial site was collectively agreed by all present at the site survey based on scientific, cultural and landform analysis (see Figure 6). A conservation area/keeping place is required to protect this location, the extent of which was determined in consultation with the relevant indigenous stakeholders.

This assessment also found no significant non-indigenous cultural heritage material during the survey of the subject area.

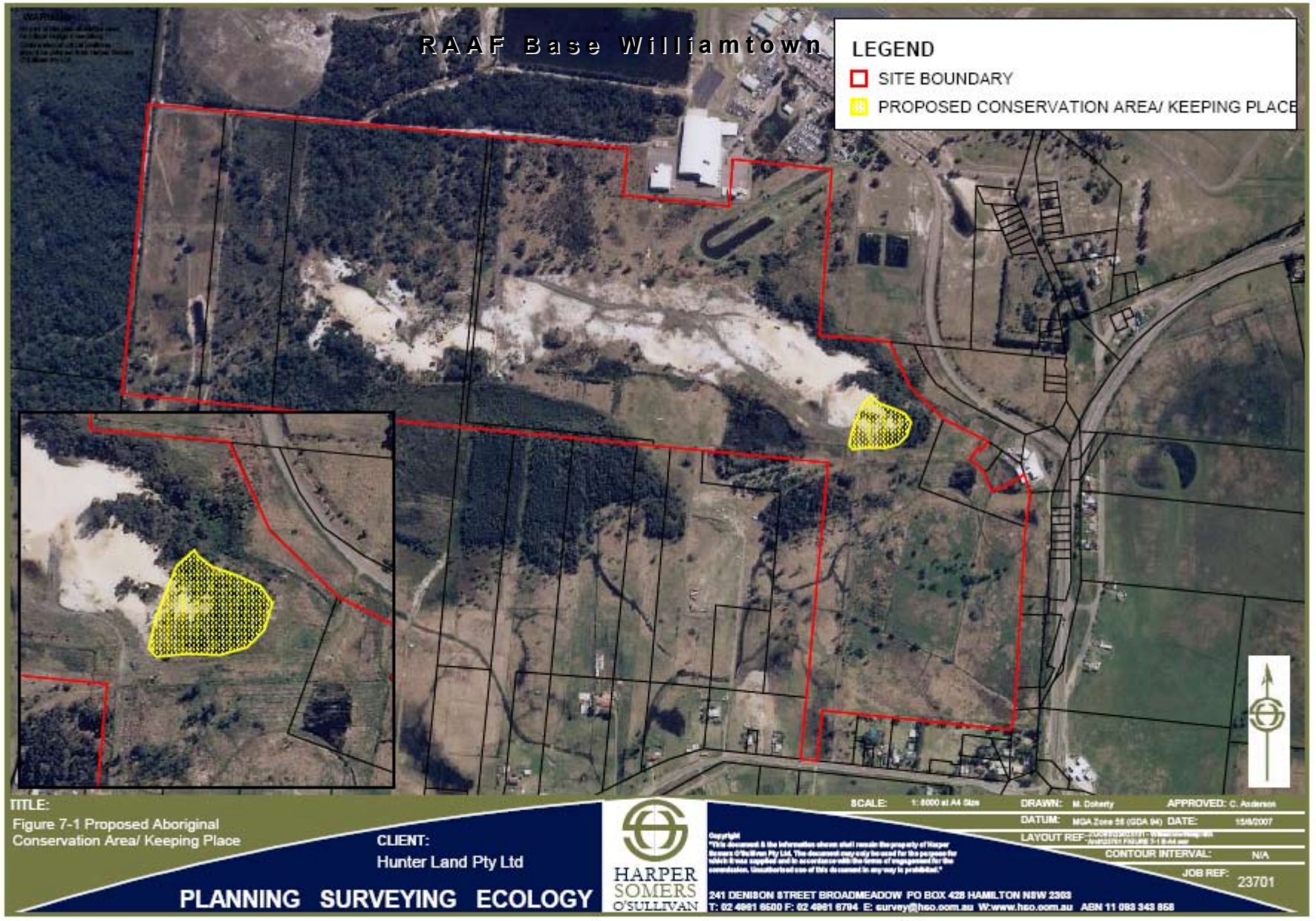

Figure not to scale

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Proposed Aboriginal Conservation Area / Keeping Place

Figure 06

4th December 2007

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4. Infrastructure Considerations

This strategy reviews the existing capacity and service requirements for the proposed DAREZ. It investigates and presents findings in relation to water and sewerage, roads and traffic, electricity, gas, telephone and information technology needs for such an employment zone.

4.1 Water and Sewerage

At the time of this Report, the Williamtown area was not serviced with wastewater services from Hunter Water. Investigations into the water supply and wastewater servicing for the proposed employment zone were carried out and advice sought from the Hunter Water regarding the indicative sizing and costing for these services. The calculations relate to a net area of approximately 100ha of developed land. They include consideration of the estimated associated wastewater loadings, which include services for the RAAF Base, NAL and the proposed DAREZ.

Costings can only be indicative at this stage, conclusive sizing and costing would require an adjustment of these figures once the full development potential of the Site is determined. It should be noted that costings are variable and do not necessarily function proportionately to the area developed. Further investigation and assessment will be required to determine the needs and funding of new capital works.

4.1.1 Wastewater Transportation

Wastewater reticulation requirements for the proposed DAREZ would be determined and funded by the developer and designed in accordance with Hunter Water's design standards. The indicative wastewater reticulation estimation assumes a 100 ha development area.

Due to the relatively flat nature of the Site, two local pump stations (in addition to a transfer pump station) have been assumed. Actual requirements and cost require further investigation, to be confirmed by the developer once the development configuration is better defined. This report has not attempted to quantify any potential additional internal wastewater reticulation/lead in works required by NAL for future expansion of their site.

4.1.2 Transfer Options to Raymond Terrace Wastewater Treatment Plant

The closest wastewater treatment plant to the subject site that is operated by Hunter Water is at Raymond Terrace. Three transfer options were investigated to pump flows to the Raymond Terrace Waste Water Treatment Works (WWTW) along the route (illustrated in Figure 7) from a series Transfer Pump Station at Williamtown with the following variations:

- **Option 1:** Construct a 13.5km long 450mm diameter rising main;
- **Option 2:** Construct a 13.5km long 375mm diameter rising main and a series booster pump station approximately mid way along the rising main route once flows exceed 157L/s. A pump upgrade will also be required at the Transfer Pump Station at this time; and

- **Option 3:** Construct a a 13.5km long 375mm diameter rising main and a parallel 13.5km 300mm diameter rising main once flows exceed 157LIs. A pump upgrade will also be required at the Transfer Pump Station at this time.

The economic analysis undertaken compared the three options, taking into account capital and ongoing costs. Option I was identified as having the lowest present value life cycle cost and is the preferred Transfer System. Option 1 also provides the greatest flexibility to cope with higher flows should the employment zone be potentially expanded beyond 100 ha in the future (after 2026). Option 1 can be increased in capacity with an additional series booster pump station constructed half way along the transfer main. For both Options 2 and 3 a parallel rising main in addition to pump station upgrades would be required to achieve the equivalent capacity increase at a much higher capital cost.

4.1.3 Water Supply

Williamtown (including the RAAF base and NAL) and Medowie are currently supplied with potable water from Hunter Water. Trunk water distribution infrastructure extends from Hunter Water's Tomago pump station along Cabbage Tree Road through Williamtown to Medowie.

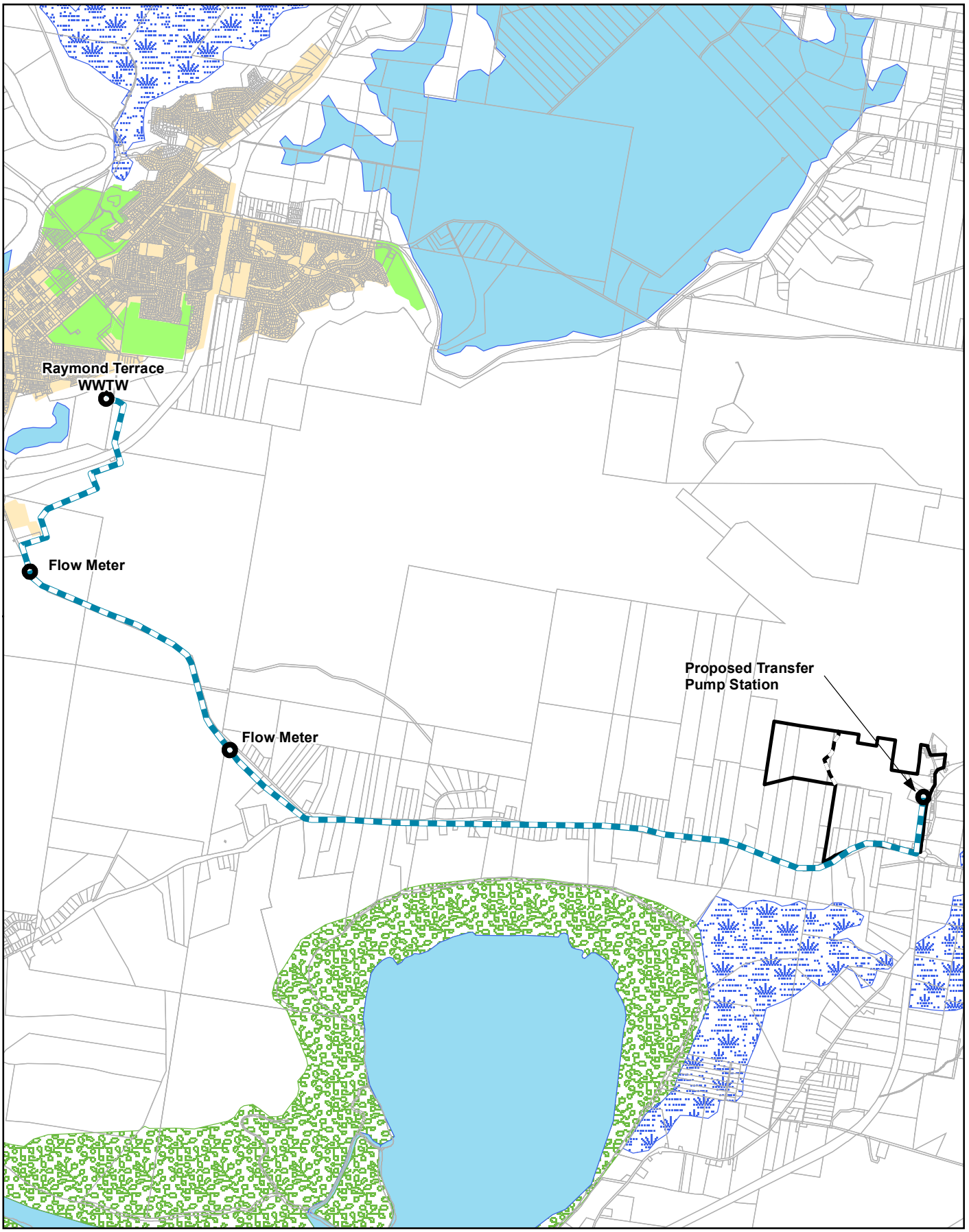
4.1.4 Trunk System Augmentation

Hunter Water has planned augmentation requirements for the trunk system to cater for future growth. The growth includes potential increased demand from the RAAF base, NAL, the employment zone development at Williamtown, and further residential development at Medowie. Approximately $3.1 m of system augmentation works are planned over the next 20 years to cater for this growth. These works would be funded and constructed by Hunter Water, and the cost recovered over time from development through the Medowie Water System Developer Charge (discussed further below).

4.1.5 Employment Zone Reticulation

Water reticulation requirements for the proposed employment zone development are to be determined, designed and funded by the developer of the Site in accordance with Hunter Water's design standards. For the purposes of this report, indicative water reticulation for the employment zone was estimated comprising approximately 1 km of 150 mm diameter mains and 2.3 km of 200 mm diameter mains. Actual requirements and capital cost need further investigation and confirmation by the developer further down the track once the development configuration is better defined.

NB. This report does not quantify potential additional internal water reticulation/ lead in works that may be required and funded by NAL for future expansion of their site.



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LEGEND

Rising Main

Investigation Area
(Including Additional Land)

1:55,000 for A4

0 250 500 1,000 1,500 2,000

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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Wastewater Rising Main Route

Figure 07

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4.2 Electricity, Gas and Telecommunications

4.2.1 Power Supply

Overview of Electrical Infrastructure

Power is supplied via 11kV feeders run from Energy Australia's Williamtown Zone Substation located approximately 2km south of the proposed employment zone. Energy Australia has advised that plans are in place to augment the capacity of Williamtown Zone Substation in 2009 or 2010. This work will be entirely funded by Energy Australia; it will provide much greater capacity and enhanced reliability of supply. There may be sufficient available capacity to supply the demand of proposed development. The meeting of the required demand can be reviewed accurately when proposed demand information will be available and which will require additional capacity of the augmented Williamtown Zone Substation.

Obligations of the Developer

The Developer will be required to reticulate high and low voltage services throughout the site, provide distribution substations and provide street lighting.

Electrical distributor cables are normally run in the road reserve, however easements will be required for distribution substations and for electrical distributor cables that run on private land.

The Developer must make contribution to the capital costs for the electrical infrastructure of the Development. This includes street lighting, and high and low voltage reticulation throughout the development with the exception of infrastructure required for the future convenience of Energy Australia (eg spare conduit for future installation of cables). The contribution to the capital cost will be dependent on the lease and sub-lease arrangement in relation to developer obligations and staging of the development.

Obligations of the Supply Authority

Energy Australia will free-issue specific equipment for Distribution Substations. They also assume ownership and maintenance responsibilities for the electrical infrastructure after it has been constructed. Energy Australia approves designs and inspects and approves final construction prior to commissioning.

Energy Australia is constrained to follow the guidelines of their regulator, the Independent Pricing and Regulatory Tribunal (IPART). IPART guidelines include apportionment of costs between the Supply Authority and the Developer.

4.2.2 Gas

Natural gas line to Nelson bay runs parallel to the Nelson Bay road. This gas usage is provided via the gas main pipeline located approximately 200m from the Newcastle airport main access road. This line is fed from 5000 kPa main distributor at Hexham and in its full potential. AGL will make gas available for future users from this line. Hot tapping is permitted on this line and Natural gas will be reticulated to the proposed zone on request by the developer.

4.2.3 Communications

Telstra supplies the existing communications infrastructure to this area including BAE Systems and Newcastle Airport.

The Universal Service Obligation (**USO**) requires Telstra to ensure that standard telephone services (**STS**) are reasonably accessible to all people in Australia on an equitable basis wherever they reside or carry on business. Telstra is obliged to take *all reasonable steps* to fulfil the USO and will ensure the USO is fulfilled for the purposes of the proposed development.

The communication backbones are from fibre optic cables and copper cables networks in both Nelson bay and Medowie roads. Both of these have spare capacity, which can be utilised for the development of proposed employment zone. The nearest telephone exchange is near the Newcastle airport access road.

4.3 Traffic and Transport Strategies

The capabilities of the transport network surrounding the Site selected for the DAREZ and the potential access requirements have been investigated. The Site is situated on two main road links and next to Newcastle Airport and RAAF Base.

4.3.1 Draft Lower Hunter Integrated Transport Strategy

The Draft Lower Hunter Integrated Transport Strategy was not complete at the time of compiling this report. However a summarised section of the proposed report relating to Newcastle Airport made available to GHD for this report emphasised the strategic importance of the specialised centre at this location to the region and the necessity for adequate transportation connections to the key transport corridor in the region. The document also mentioned the importance of the Pacific Highway and a connection to the Site via the Cabbage Tree / Tomago Road corridor.

4.3.2 Port Stephens Community Settlement and Infrastructure Strategy

The Port Stephens Community Settlement and Infrastructure Strategy was adopted by Council on 24th April 2007. This Strategy refers the benefits to be gained from improved accessibility as a result of the proposed extension to the Sydney-Newcastle F3 Freeway to connect to Heatherbrae south of Raymond Terrace. The Strategy also references the potential for increased rail transport accessibility for the entire Port Stephens LGA should there be improvements to the Sydney-Brisbane rail corridor.

4.3.3 Newcastle Airport Master Plan 2025

The recently adopted Newcastle Airport Master Plan has a 20 year horizon and aims to optimise the available land with careful planning to ensure compatibility between operation and commercial demands. The Plan details an improved road network, which will need to be integrated with the overall master planning for the adjoining employment zone.

4.4 Transport Connections – Rail

There has been speculation of the possible rail line through Hexham running north to Medowie. This is not part of any works plan at this stage and such a line is only conceptual at this stage. A connection to rail is likely to see the area become more dimensional, adding to the industry possibilities in relation to freight movement. It would also have the potential of increasing demand for flights by reducing issues relating to parking and accessibility.

4.5 Transport Connections – Road

4.5.1 Pacific Highway Upgrade– F3

In August 2006, the RTA publicly announced the preferred route for the Pacific Highway upgrade from the F3 freeway to Raymond Terrace. This route includes an option to provide a grade separated intersection (GSI), where the Pacific Highway intersects Tomago Road. This potential new interchange would provide a high quality road connection between the Pacific Highway and destinations beyond such as the Hunter Valley or Sydney and the RAAF Base and Newcastle Airport. The development of this new interchange would significantly benefit access to the proposed DAREZ and other land uses along Tomago Road and Cabbage Tree Road.

4.5.2 Consultation with the RTA

The RTA indicated the existing road network is currently considered to operate satisfactorily and that there are no immediate plans to upgrade the road network other than a long term goal to upgrade the entire length of Nelson Bay Road to a dual carriageway. The RTA also indicated there is potential for the delivery of other future development along Tomago Road that may result in a need to upgrade Tomago Road and/or Cabbage Tree Road and associated intersections. Details of these potential developments are not currently available.

The RTA (at a meeting on 22 November 2007) acknowledged the findings and recommendations of the GHD Traffic Analysis and made the following preliminary comments:

(a) The signalisation of the intersection of Williamtown Drive and Nelson Bay Road (recent condition of consent on NAL expansion) will assist in managing the additional traffic movements generated by the initial stages of the rezoning;

(b) Consideration will need to be given to the duplication of Williamtown Drive in the medium term to better accommodate the anticipated increases in traffic from the airport and the employment zone (particularly increased truck movements);

(c) It is likely that the connection of an additional access road off Cabbage Tree Road will be needed earlier rather than later in the progressive development of the land. This is likely to include an upgrading of Cabbage Tree Road from the new intersection back to the intersection with Nelson Bay Road;

(d) Council should be looking to obtain contributions (or works) by developers for the upgrading of all intersections and for the upgrading/widening of Cabbage Tree Road commensurate with the additional demand created; and

(e) The RTA will await the receipt of the Section 62 Consultation phase to make formal comment.

4.5.3 Existing Road Network Characteristics

The regional road network provides an important function in the Port Stephens area servicing commercial, industrial, residential and tourist activities. The road network is crucial as it supplies the only current transport link to Newcastle Airport and RAAF Base Williamtown (there are currently no other transport links to this hub). Figure 8 illustrates the major roads serving the airport related employment zone, RAAF Base Williamtown and NAL in the regional context.

The existing road network servicing the Site is summarised below (see Figure 8):

The local road network servicing the hub consists of the following:

- Cabbage Tree Road / Tomago Road (MR 302):
  - The entire length of road is a single carriageway of two traffic lanes known as Cabbage Tree Road to the east of the intersection with Masonite Road; Tomago Road to the west;
  - Is an important road link running east west, connecting Nelson Bay Road at Williamtown to the Pacific Highway at Hexham;
  - The signposted speed limit adjacent to the Site is 60 km/h with a 40 km/h school zone outside the Williamtown School. This speed limit changes to 90 km/h approximately 900m west of the intersection with Nelson Bay Road;
  - The intersection with Nelson Bay Road is a two lane roundabout with an inscribed diameter of approximately 60m;
  - Tomago Road insects the Pacific Highway at a seagull type intersection; and
  - There is potential in the future to upgrade the above intersection to form a grade separated intersection with the proposed Pacific Highway, F3 Freeway to Raymond Terrace section (Preferred Route Announcement, August 2004).
- Nelson Bay Road (MR 108):
  - The major traffic corridor running north south, connecting Newcastle (to the south) and Nelson Bay or Port Stephens (to the north) via Newcastle Airport and RAAF Base; and
  - The majority of Nelson Bay Road is a two way, two lane undivided road with intermediary overtaking lanes. Between the intersections of Cabbage Tree Road and Medowie Road, Nelson Bay Road is a four lane dual carriageway road.

4.5.4 Average Annual Daily Traffic Volumes (AADT)

Table 4-1 provides an understanding of current daily traffic volumes on key roads on the road network servicing the DAREZ. All roads identified below could potentially be impacted by traffic generated by the proposed location of the DAREZ.

Table 4-1 Average Annual Daily Traffic Volumes (AADT) from RTA

Station	Location	1995[1]	1998[1]	2001[1]	2004[1]	2005[2]
05.191	Nelson Bay Road (MR 108) 0.2km North of Cabbage Tree Road	13364	14893	15401	17174	19665
05.592	Cabbage Tree Road (MR 302), West of Nelson Bay Road	4004	4547	4591	5612	5279
05.590	Tomago Road (MR 302), East of Pacific Highway	7360	8147	8323	9343	9524
05.650	Medowie Road (MR 518), North of Nelson Bay Road	5407	5669	6123	6929	6998
05.648	Richardson Road (MR 104), West of Medowie Road	5965	5456	7160	8475	8252

1. Source: Roads and Traffic Authority, Traffic Volume Data for Hunter and Northern Regions (2004)
2. Source: Port Stephens Council, Draft Port Stephens Community Settlement and Infrastructure Strategy (2006)

AADT Volumes from the Roads and Traffic Authority Publication *Traffic Volume Data for Hunter and Northern Regions (2004)* was used to calculate the historical growth of the network. The average annual historical traffic growth for each road surrounding the preferred site for the DAREZ is shown in the table below.

Table 4-2 Assumed Traffic Growth along the Surrounding Road Network

Road	Historical Period Analysed	Annual Growth (linear)
Nelson Bay Road	18 years	3.3% per annum
Cabbage Tree Road	16 years	6.1% per annum
Tomago Road	16 years	4.7% per annum
Medowie Road	12 years	1.7% per annum
Richardson Road	12 years	2.2% per annum

4.6 Trip Generation Rates

Future traffic volumes resulting from the establishment of the DAREZ gave estimated peak hour vehicle trips (comprise of 10% of Daily Vehicle trips). The estimated traffic generation rates for the staged development of the DAREZ inform the assumed future characteristics and the potential infrastructure upgrades that will be required for the development of the proposed employment zone at the DAREZ Site.

4.7 Assumed Future Traffic Characteristics

- AADT heavy vehicle factor is assumed to be 10% of the total traffic flow along all roads impacted by the site (Source – RTA traffic survey on Nelson Bay Road, sited in "Newcastle Airport Limited, Traffic and Parking Study, Better Transport Futures (2006);
- Future traffic growth along the road network will be linear; and
- The traffic split is assumed to be 80/20 during the morning peak period, i.e. 80% incoming traffic and 20% outgoing traffic.

4.8 Assumed Site Traffic Distribution

The assumed traffic distribution during operation of the preferred site is as follows:

- 70% of vehicles would travel south to or from the site. This traffic would be distributed onto the network as follows:
  - 55% would travel along Nelson Bay Road to or from destinations around Newcastle; and
  - 15% would travel along Cabbage Tree/Tomago Road to and from destinations in the Hunter Valley, Central Coast or Sydney.
- 30% of Vehicles would travel north to or from the site. This traffic would be distributed onto the network as follows:
  - 10% would travel via Medowie Road to destinations around Medowie, the NSW North Coast or Raymond Terrace; and
  - 20% would travel via Nelson Bay Road to destinations in Port Stephens.

The above traffic distribution assumptions are based on the likely future worker profile for the proposed employment zone, and weighted towards the key catchments being situated in Newcastle and Lake Macquarie. The above assumptions have been used to calculate the performance of the network in the AM peak period.

N

LEGEND

Investigation Area (Including Additional Land)

Main Road

Road

1:40,000 for A4

0 185 370 740 1,110 1,480

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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Surrounding Road Network

Figure 08

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4.9 Potential Site Access

The following alternatives were identified as site access options for the reasons outlined.

4.9.1 Preferred Access Option - Williamtown Drive

An access to the site from Williamtown Drive would provide the following benefits:

- No new intersection would be required onto the external road network; and
- Defence and Airport related companies would be able to access the Newcastle Airport facility (with Defence and/or NAL agreement) without having to access the external road network.

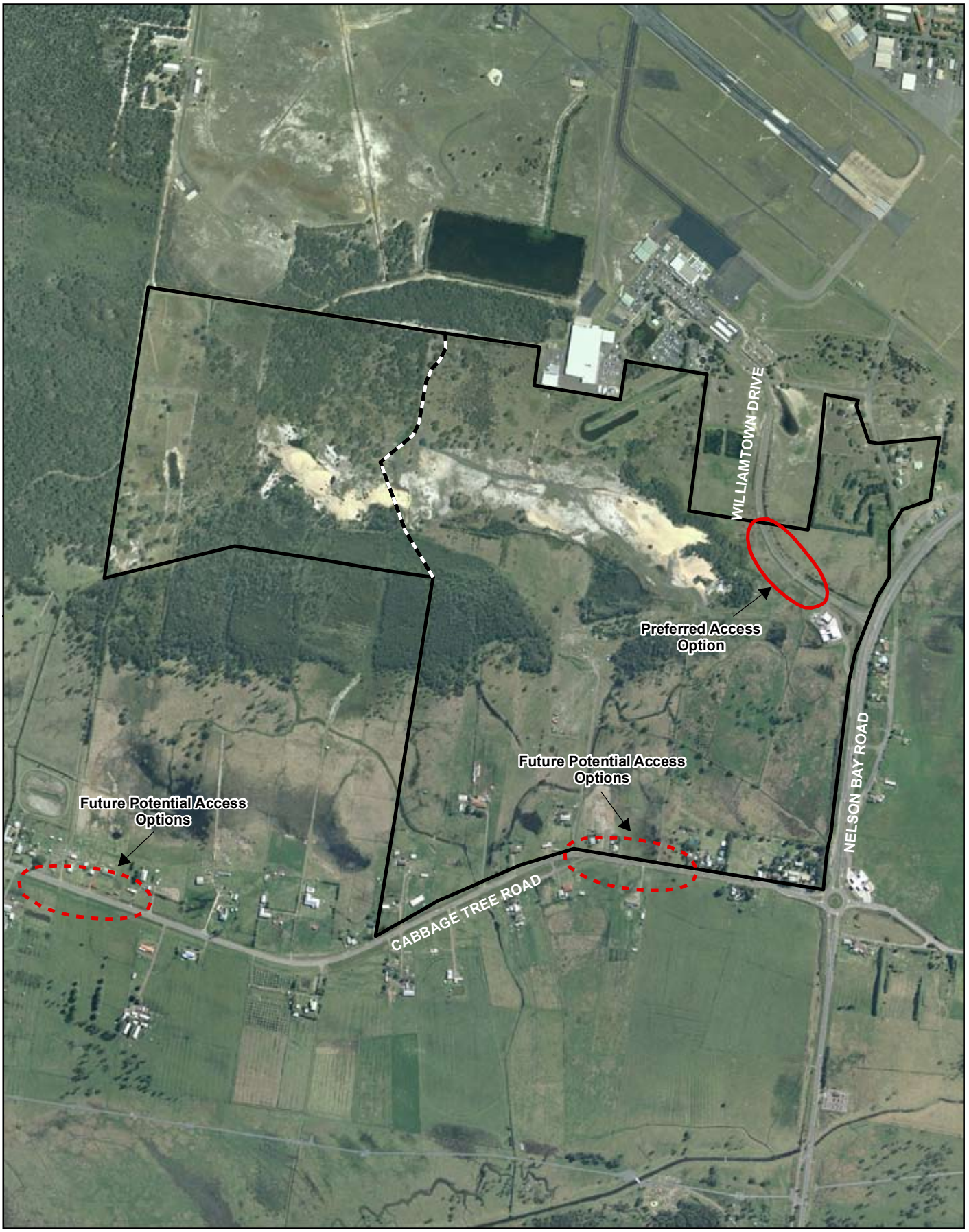
The intersection of Williamtown Drive and Nelson Bay Road was previously identified to be upgraded to a signalised intersection as part of identified improvements to the Airport. This upgrade should take into account the potential additional traffic generation from the new employment zone. The Development Application phase of the DAREZ should assess the capacity needs and staging requirements associated with the proposed development.

4.9.2 Potential Access Options - Cabbage Tree Road

Future access off Cabbage Tree Road is also considered appropriate. The construction of one or two new intersections on Cabbage Tree Road approximately 500m and/or 1,500m west of the intersection of Cabbage Tree Road and Nelson Bay Road would have a number of benefits as follows:

- Increases in traffic volumes along Nelson Bay Road as a result of the proposed development would be reduced, as vehicles travelling to and from the site via Tomago Road could enter and leave from a southern access;
- Potential to reduce the volume of traffic travelling through the intersection of Nelson Bay Road and Cabbage Tree Road, noting that the anticipated increase in traffic flows on Nelson Bay Road and Cabbage Tree Road will necessitate an upgrading and possible signalisation of this intersection; and
- A Cabbage Tree Road access would provide an alternative entry/exit should Williamtown Drive become blocked and vice versa.

The projected growth in passenger numbers and associated traffic movements to and from the airport along Nelson Bay Road and Williamtown Drive may require the provision of an alternative access to the employment zone from Cabbage Tree Road being considered at an earlier stage than anticipated.



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N

LEGEND

Future Potential Access Options

Preferred Access Option

Investigation Area (Including Additional Land)

1:11,935 for A4

0 50 100 200 300 400

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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Site Access Options

Figure 09

4th December 2007

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4.10 Traffic Implications as a Result of the Additional Lands

The lower lying land fronting Cabbage Tree Road was investigated for its suitability for development. Due to the constraints applying, its economic feasibility in the short term remains questionable. Less physically constrained land to the north-west has been included for investigation to assist in achieving the threshold yields of developable land in the short to medium term. This has lead to the necessity to reconsider the potential access options.

Figure 9 shows the site access options from Williamtown Drive and the two future potential access options on Cabbage Tree Road. These two additional access points could both be made available in the long term. However, it is likely that in the short to medium term the option located further to the west is most likely to be constructed first due to the existing lot configuration and land tenure in this location (Lot 131 is a long narrow lot owned by Port Stephens Council with frontage to Cabbage Tree Road and a common northern boundary with the RAAF Base land making the additional investigation area directly accessible). Traffic calming measures and other appropriate infrastructure (eg. signage) will be required on this road access to facilitate safe koala movements within the identified east-west vegetation corridor.

Construction of the access option located further to the east will need to overcome soil constraints in relation to the soft soil issues identified in the lower lying parts of the site.

4.11 Intersection Capacity

The capacity of intersection was not modeled for this assessment, however the likely performance of the intersection of Cabbage Tree Road and Nelson Bay Road and Nelson Bay Road and Williamtown Drive were reviewed.

4.11.1 Intersection of Nelson Bay Road and Williamtown Drive

This intersection currently performs at a level of service of F for traffic turning right onto Nelson Bay Road from Williamtown Drive in the PM peak period. The projected traffic from the development would further increase the need for a signalized intersection. The number of turning lanes at the intersection, and phasing details would need to be determined in the development application phase of the project.

4.11.2 Intersection of Nelson Bay Road and Cabbage Tree Road

A review of the peak traffic forecast for Nelson Bay Road in the 100% development scenario would indicate that the existing 2 lane roundabout treatment at this intersection would not perform satisfactorily. The Austroads publication *Guide to Traffic Engineering Practice – Part 6 Roundabouts (1993)*, indicates that the maximum entry flow for a three lane roundabout is 2500 vehicles per hour. The calculated peak flow of close to 5000 vehicles per hour would require a signalized intersection treatment.

The number of turning lanes at the intersection, and phasing details would need to be determined in the development application phase of the project when more detailed information about the land uses and traffic generation at the site are known.

4.11.3 Other Key Intersections on the Road Network

Other notable intersections to be affected by the development include the roundabout intersection of Medowie Road and Nelson Bay Road and the seagull intersection of Tomago Road and the Pacific Highway. An option to develop a grade separated intersection at Tomago Road announced, as part of the Preferred Route Phase of the F3 to Raymond Terrace Pacific Highway Upgrade project would benefit the DAREZ and proposed developments on Tomago Road.

4.12 Summary of Potential Road Infrastructure Upgrades

The potential Infrastructure upgrades summarised below are based on the traffic generation (50% and 100%), combined with the background traffic shown in Table 4-1and the assumptions for traffic distribution presented in Section 4.8. The potential infrastructure upgrades are:

- Upgrading Nelson Bay Road south of Cabbage Tree Road to a four lane dual carriage way road and provision of a four lane dual carriage way road from Newcastle to the DAREZ for the 50% upgrade scenario;
- Inclusion of a new intersection on Cabbage Tree Road to service the DAREZ;
- Upgrade of Nelson Bay Road and Williamtown Drive intersection to a signalised intersection;
- Upgrading of Tomago Road for the 100% upgrade scenario; and
- Upgrading of the intersection of Tomago Road and the Pacific Highway.

The degree of upgrading necessary to the above road corridors and intersections would need to be determined in the development application phase of the project.

5. Land Capability and Suitability Analysis

A detailed land capability and suitability analysis was undertaken as Stage 2 of this project, the report produced was the Land Capability and Suitability Assessment (Revised November 2007). The site analysis involved detailed investigations into the following areas:

- Geotechnical;
- Acid Sulphate Soils;
- Hydrology, Flooding and Drainage;
- Water and Wastewater;
- Bushfire Constraints;
- Ecology;
- Cultural Heritage;
- Traffic and Transport; and
- Economic Analysis and Proposed Land Uses.

These investigations, are addressed in Appendices A- J and are summarised below with the exception of Traffic and Transport (discussed in Section 4.3):

5.1 Geotechnical Assessment

The initial geotechnical assessment found soft soils evident for a large proportion of the Site with moderate, high or severe limitations on urban / industrial development. Issues due to the softer soils identified include the effects of fill that is required to achieve flood planning levels.

Limited testing identified that these softer soils are generally within the lower lying land to the south. However, the preliminary geotechnical investigations were limited in their scope and the findings suggest that soft soils may also occur within the proposed area for development. Preferably additional geotechnical investigations would be undertaken prior to the rezoning of the land. These additional investigations should at least be undertaken prior to the preparation of a development application for the subdivision of the land.

5.2 Acid Sulphate Soils (ASS)

The Acid Sulphate Soil Assessment was carried out in accordance with the relevant sections of the NSW ASS Manual, the ASS Planning Guidelines, ASS Assessment Guidelines and ASS Management Guidelines. Based on the results of this investigation, it is considered that the soils in the northern portion of the site (Low Probability ASS Map Class area) are unlikely to present a major ASS risk if disturbed. Soils located within the High Probability ASS Map Class are however, likely to present an ASS risk if excavated, drained or dewatered, thus triggering the need for a treatment regime and management plan if these soils are to be disturbed. Any such disturbances are unlikely to impact Tomago Drinking Water resources as water from this area is expected to discharge to the low-lying Tilligerry Valley. Water from soil disturbed in this area could impact upon run-off surface water quality, which is of concern given the presence of major drainage systems within the site that discharge into Tilligerry Creek and Fullerton Cove.

The additional land area includes an extension of soils with a low Probability ASS Map Class. The ASS Risk Map for Williamtown indicates that there is a low probably of occurrence of ASS at a depth of greater than 3m below the existing surface in this slightly elevated area (above RL 4m AHD). This elevated area is described by the Risk Map as a Pleistocene Aeolian Sandplain/Dune and, if present, ASS within this area are expected to be sporadic and buried by alluvium and/ or Aeolian sediments.

5.3 Hydrology, Flooding and Drainage Management

Council's consolidated DCP requires that developments comply with Council's Urban Stormwater and Rural Water Quality Management Plan. In addition, the drainage and hydrology plan that form part of this DCP must apply conceptually in relation to water quality management in Part B2 Environmental and Construction Management.

Flood Management – As part of the State Governments Flood Policy there will be a requirement to demonstrate that the intended use will not exacerbate local flooding and that the proposed development will be designed in expectation of flooding.

Groundwater Management – The proposal should provide the following details with respect to groundwater management:

- A description of the existing groundwater system and include geologic details and aquifer systems;
- Identification of any potential changes to the existing groundwater source and any dependant users including the environment;
- Management of potential impacts and preparation of contingency measures. Management may include remediation, reduction and management of the groundwater resource with respect to all the users of the resource;
- Identification of any potential groundwater works including bores, geotechnical testing or monitoring; and
- Addressing the principals outlined in the NSW State Groundwater Policy Framework.

Where there is a lack of scientific certainty on the impacts of development on the groundwater regime, Department of Water and Energy (DWE) will adopt a precautionary approach.

The Hunter Water requires stormwater and surface runoff from any proposed development be managed in such a way as to ensure it does not impact on the quality of the groundwater. This would include the appropriate interception and treatment of stormwater, including the first flush containment. Hunter Water advise that they would like an opportunity to comment on the Stormwater Management Plan for the proposed employment zone. On-site disposal of effluent within the gazetted Special Areas is prohibited.

5.4 Stormwater Quantity Requirements

To minimise impacts of the proposed development on adjacent lands, it is important that the:

- Annual stormwater volume discharged from the site is comparable to the equivalent existing values; and
- Peak flow rate for all peak ARI storm events is comparable to the equivalent existing flows from the site.

On this basis, the allotment strategy should involve two separate components; one to maintain the volume of stormwater and one to reduce the peak flows from the site. Hunter Water expects that appropriate stormwater planning measures will be undertaken to ensure any runoff into the surrounding sandbeds does not impact upon the quality of the groundwater. This would include appropriate interception and treatment of stormwater, including first flush containment.

Any release of stormwater into the sandbeds should be treated to meet the protected waters criteria identified in clause 8 of the *NSW Clean Waters Regulation 1972.* In the event that these regulations are repealed the appropriate water quality criteria shall be identified in the ANZECC water quality guidelines for fresh and marine waters.

5.5 Ecology

The DAREZ is an area identified as a special area for defence and airport related employment in the LHRS. The partner document to this is the Draft Lower Hunter Regional Conservation Plan. Together these documents aim to take a realistic approach to the economic and development needs for the support of the projected population for the Region whilst simultaneously recognising and planning for the conservation values of the Region. This regional approach assists in gaining an understanding of the 'bigger picture' and allows for a more strategic approach to the planning process.

5.5.1 Opportunities for Offsetting Potential Biodiversity Impacts

The DAREZ site contains vegetation communities and habitats of significant ecological value. However, it is noted that the Site is not identified as being part of any regional conservation investment priority in the Draft Regional Conservation Strategy. There are opportunities to retain and protect some areas of value within the site while seeking to negotiate offsets for the loss of vegetation and habitat in other locations in accordance with the guidelines provided within the Draft Conservation Plan.

The aim is to ensure that there is a net improvement of biodiversity assets in the area generally. These opportunities need to be explored by the developer and landowners in consultation with the Department of Environment and Climate Change (DECC).

A future developer/proponent will need to consult with DECC for advice on any additional ecological survey work that may be required. The developer will be responsible for the commissioning of any additional surveys required.

The following matters should be addressed to allow the Draft LEP for the DAREZ to progress:

- Accurately delineate boundaries between areas to be developed and areas to be protected;
- Accurately establish the extent and quality of habitat to be lost due to the development (Note: It has been estimated that the loss of vegetation of high and medium ecological value would be approximately 63 hectares in area);
- Establish the criteria to be used in the assessment of off-sets; and
- Identify and secure appropriate offsets.

5.5.2 Biodiversity Certification

Consideration of the Draft Lower Hunter Regional Conservation Plan is the important first step in the path to securing biodiversity certification for new Local Environmental Plans (LEPs). The intent of this Draft Conservation Plan is that the biodiversity certification is to largely 'switch off' the need for consideration of the test of significance, otherwise known as a Section 5A assessment or seven-part test at individual sites.

This has important implications for the development of this employment zone and for the subsequent process and requirements for the consent and determination by authorities in relation to removal of vegetation from the site. The certified LEP is intended to create a high degree of certainty with respect to biodiversity management on a site-by-site basis.

Legislative reforms are also underway to amend the Threatened Species Conservation Act 1995 to implement a Biobanking Scheme in NSW, providing a structure for offsetting biodiversity losses using a market-based mechanism.

The Ecology Report (dated January 2007) and Supplementary Ecology Investigations October 2007 are provided in Appendix G.

5.6 Aboriginal Heritage

A Cultural Heritage Assessment (Aug 2007) was completed by Harper Somers O'Sullivan. The assessment has identified a location to be preserved as a Conservation Area/Keeping Place. A person must not knowingly destroy, deface or damage, or cause or permit the defacement of or damage to, an object or Aboriginal place without first obtaining consent of the NSW National Parks and Wildlife Service. It is the responsibility of the developer to ensure all staff, workers and contractors are aware of this statutory responsibility. If any cultural materials are uncovered, all work in the immediate area should stop, NSW NPWS or an archaeologist should be informed for identification of the object and appropriate measures taken including consultation with the local Aboriginal community.

5.7 Bushfire Risk

The Site is predominantly classified as bushfire prone land. To protect people, property and the environment from bushfire hazards, the risk of damage and/or injury from bushfire is to be mitigated against within the estate.

The NSW guideline *Planning for Bushfire Protection 2006* does not specify a standard of building construction for commercial or industrial buildings within bushfire prone lands. The standards established within the guidelines for residential developments incorporate a building standard equivalent to Level 3 construction (AS 3959) which is linked to the Building Code of Australia (BCA). It is likely that a commercial building will equate to or exceed a Level 3 construction standard for residential buildings. It is possible that the NSW Rural Fire Service will stipulate a Level 3 construction standard for a commercial building at this Site.

5.8 Aircraft Operational Requirements

The primacy of the airport and Defence operations is of the utmost importance. Only compatible land uses should be considered in the vicinity of the airfield. The developer is to ensure that any development proposal does not adversely affect the operational integrity of RAAF Base and NAL by taking into account the following issues:

- Aircraft noise;
- Extraneous Lighting and Reflective Surfaces;
- Protection of Airspace, Navigational Aids and Radars (structure heights, plumes, temporary structures and transient intrusions) – refer to the Department of Defence for guidance on the Obstruction Clearance Surfaces for RAAF Base Williamtown and the Defence (Area Control) Regulations;
- Public Safety and Security;
- Wildlife Hazards; and
- Interference with Communications Facilities.

Refer also to section 2.6 for more detail.

5.9 Design, Scenic Quality and Streetscape

Newcastle Airport is a gateway for residents and visitors arriving and leaving the region. It is important to ensure development is well designed and makes a positive contribution to the amenity of the area. Loading docks and bays should be located at the rear of buildings or suitably screened with quality landscaping and/or design elements. Proposed landscape treatment, using local indigenous species wherever possible, is to be appropriate to the nature and scale of the development proposed. All landscaping is to be consistent with the requirements of the approved Landscape Master Plan.

Setbacks for industrial development are addressed in Council's consolidated DCP, Section B5.7. The front boundary setback is generally 6m with certain structures encouraged within the setback to provide articulation and interest where the development can still meet requirements for adequate sightlines for pedestrian and vehicle movement and any streetscape controls.

In addition to these requirements, new development will have to consider existing development and the rural character and nature of that development where it is applicable.

Council's consolidated DCP Section B5.5 addresses Floor Space Ratio setting a maximum ratio of the gross floor area of the building to the area of the site at 1:1 for industrial development. Given the constraints of the site such as setbacks, height restrictions, geotechnical and flooding issues it may not be possible to achieve the maximum ratio on a particular site.

5.10 Subdivision, Lot Size and Road Layout

The Structure Plan together with the findings of the economic demand analysis provide an indication of an acceptable road layout (refer to Chapter 3) and distribution of lot sizes anticipated to meet demand (discussed in Section 2.8). While this information is indicative only, any substantial variation from that originally indicated will need to be fully justified to the satisfaction of Port Stephens.

5.11 Summary of the Constraints and Opportunities for the Site

The detailed investigations assessed the constraints and opportunities that the site presents for the future development of a specialised employment zone. These are summarised below:

5.11.1 Summary of the Opportunities

- The operational requirements for both the RAAF Base and Newcastle Airport must not be compromised. This includes security issues for the base, lighting and height restrictions;
- There are significant areas of threatened species habitat including that for koalas, the Wallum Froglet and the potential for others;
- To retain vegetation of both moderate and high ecological significance would reduce the land for development by greater than 50%;
- The presence of bushfire prone land will influence the design of any subdivision for development purposes;
- The entire site is low lying and flood prone with drainage paths not well defined. Water pools after rain and takes some time to clear;
- Approximately half of the site has a high potential for acid sulphate soils;
- The site is affected by unstable soils with severe and high limitations to development;
- The Site is remote from connection to sewage works;
- The presence of an aboriginal burial site and associated camp site to be preserved by way of a “keeping site”;
- Land closer to the base and about a quarter of the site, is within the 30-35 ANEF contour;
- Approximately 70% of the site is within the 25-30 ANEF contour; and
- Aircraft movements and any direct and indirect airside access must accord with the requirements specified by the Department of Defence (for direct access) and/or the NAL operating agreement (for indirect access).

The constraints applying to the site are presented diagrammatically in Figure 10.

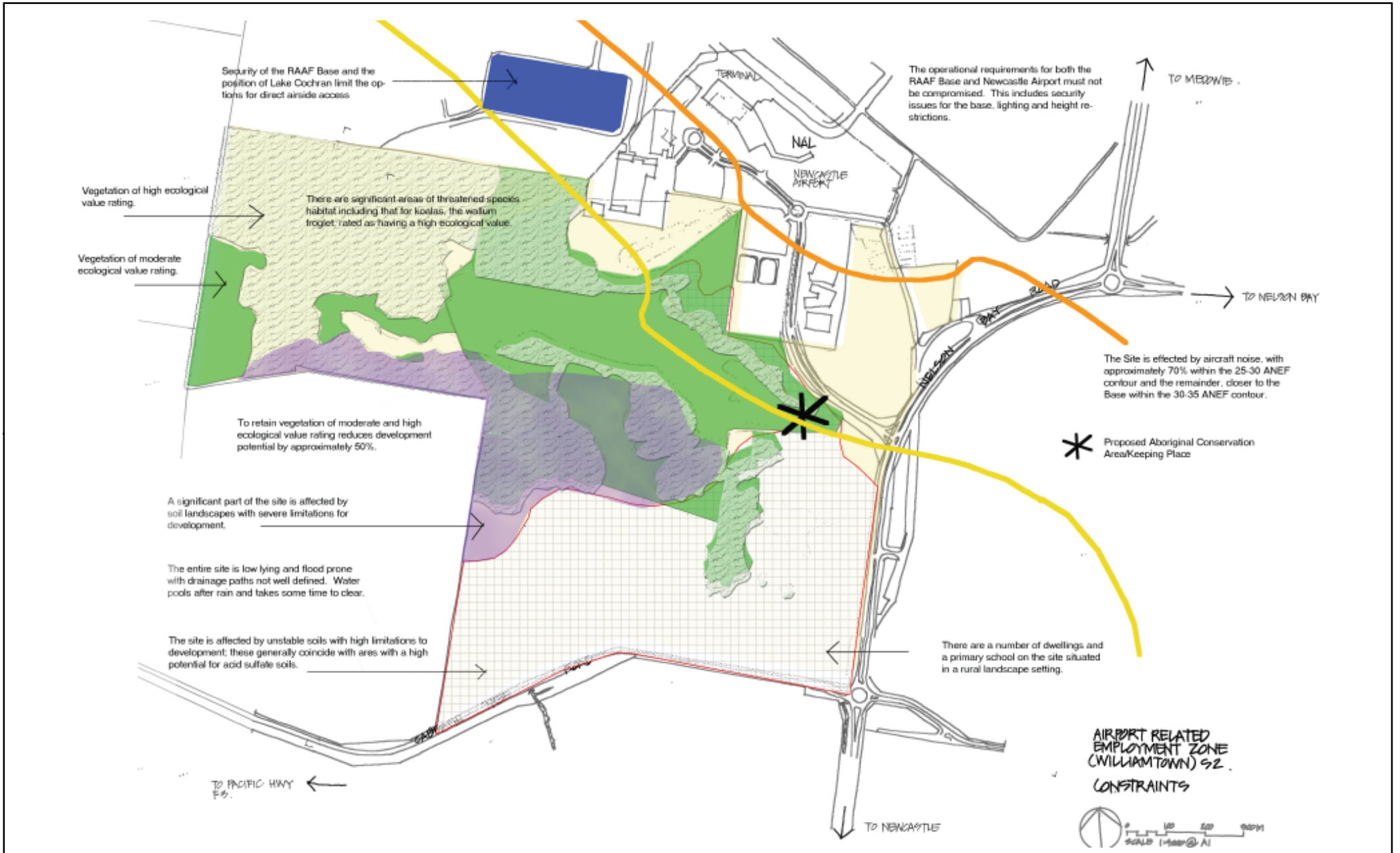
5.11.2 Summary of the Opportunities

A summary of the opportunities that the site presents for the future development of a specialised employment zone are listed below:

- The State Government recognises the unique opportunity for a specialised defence and airport related employment centre close to the RAAF Base and Newcastle Airport (NAL);

- Existing vegetation with a high ecological value presents opportunity to connect to a larger expanse of vegetation that is part of the Draft Hunter Regional Conservation Plan and the Stockton to Watagans Wildlife Corridor;
- Land owners to the West and south of the selected site are interested in the expansion of the area should that be feasible and/or desirable;
- The lack of a defined drainage pattern in the area offers opportunity to better channel drainage paths and alleviate inundation effects;
- The land is generally low lying without any steep slopes, thus presenting opportunities for effective screening of development from public view using landscape planting;
- The landowner immediately south of the NAL area is cooperating and interested in developing, offering opportunities for the first stage of development to be linked closely to the existing airport operations;
- Large lot sizes present better opportunity for coordination in the development of the area;
- Williamtown Drive provides opportunity for direct access to the employment land; and
- The absence of a large settlement on the site that could complicate and cause greater upheaval of existing land holders.

The opportunities available to the site are presented diagrammatically in Figure 11.



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Constraints Map

Figure 10

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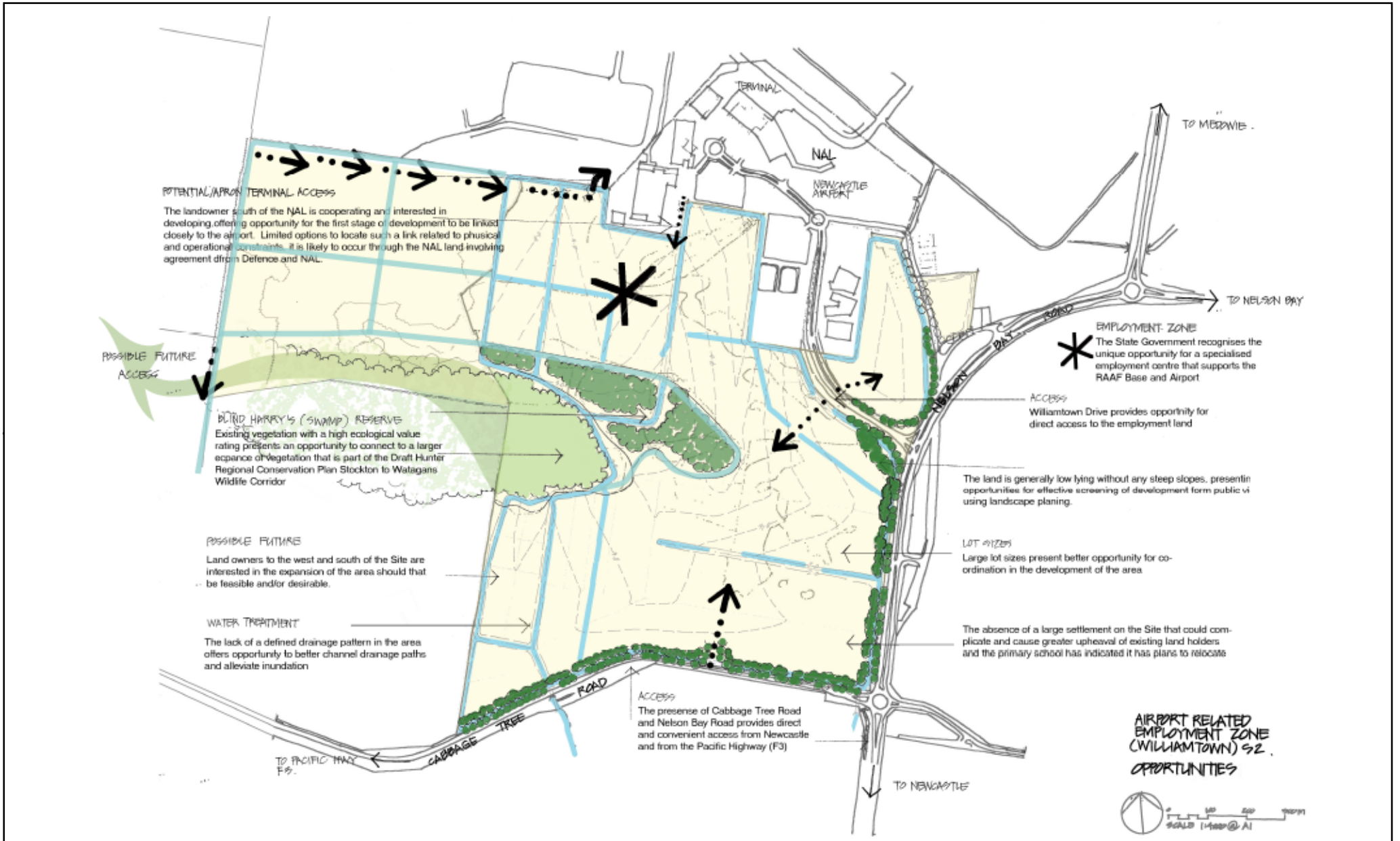

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Opportunities Map

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Figure 11

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5.12 Land Use Options Investigated

The opportunities and constraints were evaluated for the future land use of the site, in the light of the importance of the regional role such a specialised employment centre would have for the Hunter. The summaries of the constraints and opportunities offered above are aggregated in Figure 10 and Figure 11. The subject site has been analysed in detail and the associated technical reports are produced in Appendices A-J. Five potential development scenarios were considered in the detailed investigations, these ranged as follows:

1. No Development;
2. Preserve All Areas of Medium and High Ecological Value;
3. Preserve All Areas of High Ecological Value;
4. Optimum Development with Selected Exclusions; and
5. Full Development.

The analysis found the feasible options for further examination were 1) No Development, 3) Preserve All Areas of High Ecological Value, and 4) Optimum Development (With Selected Exclusions). Option 4 - Optimum Development with Selected Exclusions was considered the most appropriate option given the regional role, necessary synergies between the site and the airport and Base facilities and the land area required.

This development scenario includes future links that would enable the adjoining low lying land to the south along Cabbage Tree Road to be developed in the medium to long term. Given the priority for development placed on a specialised employment centre in this vicinity by the LHRS, a optimum development scenario with selected exclusions was considered most appropriate to achieve viable thresholds in the short to medium term, with future expansion possibilities. Thus, the preferred option was reviewed in light of the physical constraints identified and the additional land investigated and Option 4 was identified as outlined below.

5.12.1 Option 4: Concept for the Structure Plan

Subsequent geotechnical and hydrological investigations of the originally Selected Site identified potentially significant and costly constraints to development in the southern more low lying land along Cabbage Tree Road. Subsequent analysis of the impacts of development on flood levels and the economic implications of the presence of compressible soils in this area, resulted in a decision by the Project Control Group (PCG) to include additional land for investigation to the north-west of the previously selected site.

The preferred concept for the structure plan is based on the philosophy of a Balanced Development: Option 4, being, “optimum development with selected exclusions”. The more constrained low lying area to the south, which has a similar area, has been excluded from the currently preferred Concept Plan (although it is acknowledged that this land may become viable for development at some time in the future).

6. Structure Plan

The Structure Plan was prepared in consultation with the Project Control Group (PCG), which included representatives from Port Stephens Council, the Department of Planning, the Department of Defence, Hunter Water Corporation, Newcastle Airport Limited, NSW Premiers Department and the Department of State and Regional Development. Following on from the constraints and opportunities analysis a preferred concept plan was prepared as a basis for further discussion. The Structure Plan (refer to Figure 5) was based on the philosophy of "optimum development with selected exclusions".

The lower lying area to the south was deferred due to the reported cost implications associated with the presence of compressible soils and the impacts of filling on flood levels on properties to the west. This land is similar in area to the land added to the investigation area in the north-west (approx. 40ha), although it is acknowledged that this land may become viable for development at some time in the future.

The concept plan presented in the Stage 2 report seeks to achieve optimum of the Site with selected exclusions. This conceptual development scenario offers a balance between viable development and the resolution of the most critical environmental planning issues applying to the site. It acknowledges the importance of the employment centre as defined in the Lower Hunter Regional Strategy, the primacy of the RAAF Base, the crucial role the NAL plays and the value of the ecology of the Site. It aims to contribute to an adequate supply of employment land within the identified centre that together with other specialised / industrial lands are to accommodate 66,000 new jobs projected for the Lower Hunter Region.

6.1 Key Elements of the Structure Plan

The main elements of the structure plan illustrated in Figure 12 are outlined below:

- No new, direct access points onto Nelson Bay Road;
- Good internal connectivity, including a possible secure controlled link for airside/terminal access;
- Three precincts that present a hierarchy of links to the Airport. These are of high, medium and low level links that reflect the Economic Investigation Analysis and anticipated locational needs;
- Boulevard treatment of the main access points to the airport recognise the gateway position of the Site;
- Landscape buffers screen development and soften the effect on the rural character of surrounding land from main roads and from Williamtown Drive (the access point to the airport);
- Swales on main thoroughfares to improve water quality from runoff though retardation and infiltration, particularly of road water;
- On site drainage detention ensures water quality is not compromised and flow is not increased;

- Provision for a potential link to the adjoining land to the south and west of the site should it be considered appropriate to expand the specialised centre in that direction in the future;
- Provision of a good variety of proposed lot sizes;
- Perimeter roads around retained vegetation that will act as both a bushfire protection measure and a buffer to protect the ecological value of the area;
- There are two options for additional controlled access to the DAREZ from Cabbage Tree Road in the future;
- A range of proposed lot sizes which reflect the findings of the economic investigations; and
- Extensive use of open drains to control runoff will improve the current issues of inundation and ponding in an area that does not have clearly defined water courses and is flood prone.

6.1.1 Comments on the Structure Plan

The Structure Plan has the same positive implications in relation to:

- Consistency with the applicable regional planning policies;
- It offers the most effective solution in terms of addressing flooding and drainage issues (higher land requiring less fill and leaving options for stormwater management initiatives both within and to the south of the development area);
- Sharing of servicing costs and reduced development costs per square metre;
- The more stable soil landscapes are likely to offer fewer implications for construction of future development on the lots created;
- The majority of the land is owned by one landholder that has indicated an immediate interest in the defence and airport employment centre. This is likely to reduce the complexities of staging and development compared to a number of land holders (as illustrated in Figure 7);
- An area of approximately 90 hectares gross (57 hectares net) generating employment opportunities for up to 5,500 people (excludes the area to the south which may be feasible for development at a later time);
- The area identified to the south has potential for possible future expansion subject to the satisfactory resolution of flooding and geotechnical constraints; and
- Provides for greater synergies with the RAAF Base and NAL operations due to the developable land being in closer proximity. It offers land with a common boundary with the RAAF Base and thus potential opportunity for runway apron access should it be justified.

The negative implications primarily relate to:

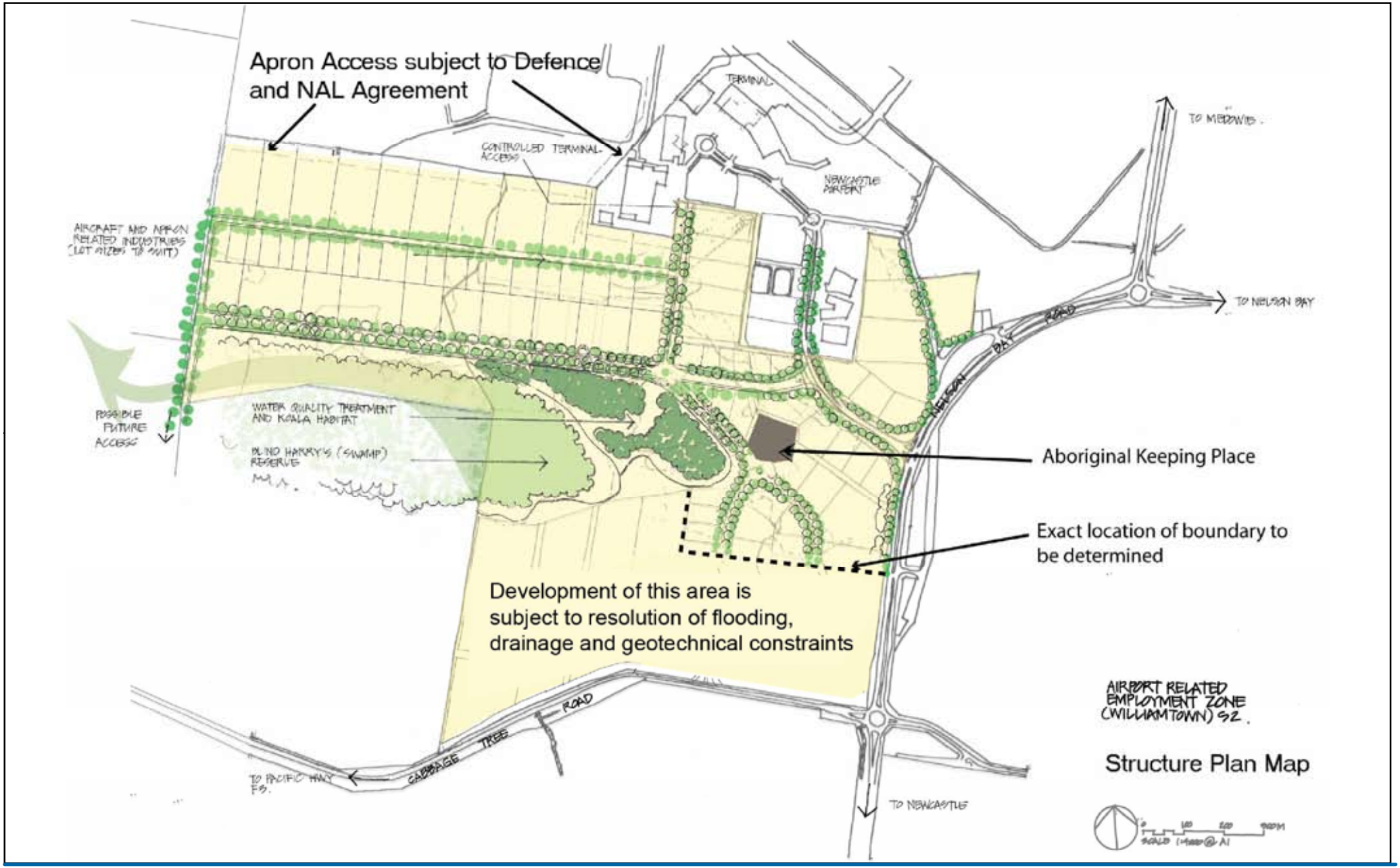
- The loss of vegetation identified as being of high conservation value. Loss of vegetation of high and medium ecological value would be approximately 63 hectares in area; and
- The upfront infrastructure costs will remain high. However, the more stable soils will reduce construction costs.

6.2 Land Use Planning

The appropriate land use zone and the permitted land uses proposed for the Defence and Airport related employment area follow consultation and discussions between the Department of Planning, Port Stephens Council and the Department of Defence. Consequently, a zone table in the format of the proposed Standard Instrument was considered the most appropriate option. A locality specific clause is proposed, given provisions requiring:

- Consideration of appropriate acoustic treatment for all buildings;
- Ensuring that the continued operation of aircraft is not compromised; and
- Limiting the location and type of development to those that will support Defence and airport related activities.

The importance of proximity to the airport and surrounding facilities has influenced the proposed location and type of land uses and activities encouraged in the employment centre, which are to support and not compromise the airport and RAAF Base operations. The proposed amendments to Port Stephens LEP 2000 are detailed in the Section 7.1.



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NSW Department of Planning
Airport Related Employment Zone (Williamtown)

job no. 22-12808
rev no. A

Structure Plan Map

4th December 2007

Figure 12

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6.3 Precinct Planning

Precincts have been devised on the basis of the strength of the synergies between the anticipated land uses and the centres of activity (the domestic airport terminal, airside access and the Defence facilities). The area allocated and lot sizes are deliberately presented as a range to allow flexibility in response to the findings of further market analysis and to accommodate particular developments with specific land-take requirements. The precincts outlined below are illustrated in Figure 13.

Table 6-1 Land Allocation and Lot Sizes

Linkage to Airport/Base	Precinct Area (ha) Typical Lot Sizes	Estimated Development Yield (m^2 of floorspace)
High (requiring direct access to the apron or requiring runway proximity and direct access to the terminal)	10-20 ha. Typically lots of 1 to 5 ha in size.	50,000 to 100,000
Medium (indirect) Direct and indirect uses servicing both direct (high correlated business) and airport/defence demands. Uses do not insist on immediate apron, terminal or Defence Base proximity.	20-30 ha Typically lots vary from 3- 5 ha in size.	80,000 to 120,000
Low (incidental)	40-50 ha. Typically lots 5000m^2 to 2 ha for industrial and 3,000-5,000 m^2 for other.	160,000 to 200,000
Total	70-100 ha gross.	290,000 to 420,000

A description of each Precinct is as follows:

High Proximity Precinct 1 – All lots created (for highly correlated businesses) with a common property boundary with either Defence land or NAL land configured to accommodate specific development requiring direct access to the apron, runway proximity and/or direct access to the terminal – (10 to 20 hectares of land typically subdivided into lots ranging in size from 1 to 5 hectares in area).

Note Regarding Airside Access

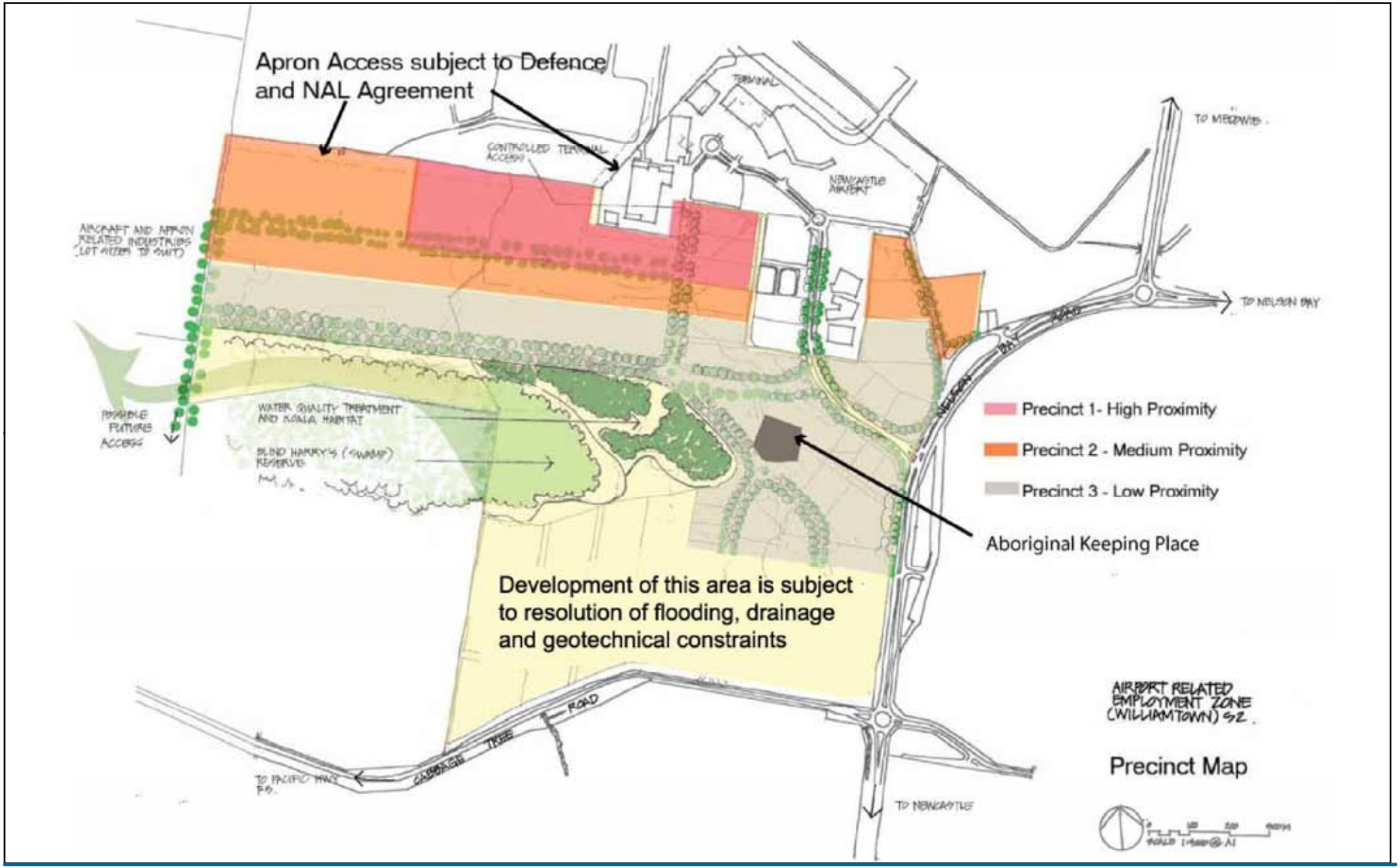
Defence does not support any increase in direct airside access, except in very limited circumstances. The only circumstance where Defence would consider permitting direct airside access is where such access is granted to a specified contractor, in respect of land abutting RAAF Base Williamtown (on the southern boundary only) and where such access is specifically required in order to fulfil core obligations in Defence contract(s). It is intended that once the contract(s) expires or is otherwise terminated, airside access would be revoked. Separate written approval from Defence would be required for each contractor to Defence, seeking airside access. It is intended that the access requirements would be dealt with within the terms of the contract. Note: It is envisaged that security arrangements for access will be by way of a secured gate that is controlled by Defence. Further detailed requirements and arrangements will be negotiated between the contractor and the Department of Defence.

Indirect access through NAL will be in accordance with NAL's operating agreement with Defence and controlled by NAL.

Medium Proximity Precinct 2 – All lots created for land uses (for moderately correlated businesses) requiring some proximity to be able to directly or indirectly service airport/defence demands. Uses do not insist on immediate apron, terminal or Defence Base proximity – (20 to 30 hectares of land typically subdivided into lots ranging in size from 3 to 5 hectares in area).

Low Proximity Precinct 3 – All remaining land within the estate (available for incidental development) – (40 to 50 hectares of land typically subdivided into lots ranging in size from 5,000 square metres to 2 hectares in area for Defence and airport related industrial development and smaller lots of 3,000 to 5,000 square metres for other land uses).

The proposed staging of the land release has considered the need for proportioning of land use types for various linkage requirements. For this reason, each stage aims to release some land from each precinct to meet the anticipated range of demand.



NSW Department of Planning
Airport Related Employment Zone (Williamtown)
Precinct Map

job no. 22-12808
rev no. A

Figure 13

4th December 2007

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7. Implementation

The implementation of the Defence and Airport related employment zone would begin with the initiation of the rezoning process by Port Stephens Council. This Strategy aims to fulfil the planning requirements to justify this preferred land use for the subject site, and to detail the necessary land use management issues and processes to ensure the development of the land in an orderly and effective way. The following sections summarise the recommended changes to the local environmental planning instrument and development controls for Port Stephens Council to implement the DAREZ.

7.1 Proposed Amendments to Port Stephens LEP 2000 (LEP 2000)

It is understood that the revision and conversion of LEP 2000 to the Standard Instrument format is scheduled for 2011. A new zone consistent with the Standard Instrument is proposed that can operate within the existing instrument subject to appropriate notations stating that the definitions, terms and expressions used are taken from that Instrument. The proposed "Zone No SP1 - Special Activities - Defence and Airport Related Employment Development", would be inserted into Clause 26 of LEP 2000, as reproduced below in Table 7-1.

Table 7-1 Proposed Zoning Table for Clause 26 LEP 2000

Zone SP1	**Special Activities – Defence and Airport Related Employment Development**
1	**Definitions**
A word or expression used in this division has the same meaning as it has in the standard instrument prescribed by the *Standard Instrument (Local Environmental Plans) Order 2006* unless it is otherwise defined in this division.	
2	**Description of Zone**
The Williamtown Defence and Airport Related Development area identifies land in close proximity to the RAAF Base Williamtown and Newcastle Airport that will cater for a range of employment activities associated with these employment nodes. Priority will be given to land uses requiring direct access to the Base, proximity and direct access to the Airport Terminal and direct and indirect uses servicing defence and airport demands. Port Stephens Development Control Plan 2007 provides further detail on the relationship of land uses near the RAAF Base and Newcastle Airport.	

Zone SP1 Special Activities – Defence and Airport Related Employment Development

3 Objectives of the Zone

- To provide for special land uses that are not provided for in other zones;
- To facilitate development in keeping with the special characteristics of the site or its existing or intended special use, and which minimises any adverse impacts on surrounding land;
- To provide opportunities for the establishment of employment generating activities supporting the ongoing operation of RAAF Base Williamtown and Newcastle Airport;
- To permit development that is appropriate and supportive to the continued operation of RAAF Base Williamtown and Newcastle Airport in terms of its land use type and location within the employment zone;
- To prevent development that is not compatible with or that may compromise the continued operation of RAAF Base Williamtown or Newcastle Airport;
- To minimise any adverse impacts on the surrounding land while protecting the inherent natural qualities and ground water recharge areas;
- To minimise the impact of the particular characteristics of the site including flooding constraints, ground water quality and surface drainage; and
- To prevent urban encroachment to airfield operations.

4 Permitted without Consent

Environmental protection works.

5 Permitted with Consent

Airport; Business premises; Educational establishment; Freight transport facility; Heliport; Hotel accommodation; Industry; Neighbourhood shop; Office premises; Public administration building; Recreational facility (indoor); Recreational facility (outdoor); Service station; Vehicle repair station; Warehouse or distribution centre.

Note: These terms have the same meaning as those defined by the Standard Instrument – Principal Local Environmental Plan.

6 Prohibited

Any other development not otherwise specified in Item 3 or 4.

7.1.1 Additional Locality Specific Clause

It is recommended that the following special provision be inserted into Port Stephens LEP 2000 and carried over to the revised principal planning instrument when introduced:

Development in the vicinity of RAAF Base Williamtown / Newcastle Airport

1. *This clause applies to land shown within SP1 Special Activities and marked "Defence and airport related employment development" on the Land Zoning Map;*
2. *Notwithstanding any other provisions of this plan consent to any development on land to which this clause applies must not be granted unless the consent authority is satisfied that:*
   - *It complies with the relevant provisions of Australian Standard 2021-2000, Acoustics – Aircraft noise intrusion – Building siting and construction as applicable;*
   - *It will not compromise the continued operation of RAAF Base Williamtown and/or Newcastle Airport; and*
   - *The location and type of development supports a focussed Defence and airport related employment area.*

The land use table for the SP1 - Special Activities – Defence and Airport Related Development zone contains the following permitted uses with the consent of Council:

Airport; Business premises; Educational establishment; Freight transport facility; Heliport; Hotel accommodation; Industry; Neighbourhood shop; Office premises; Public administration building; Recreational facility (indoor); Recreational facility (outdoor); Service station; Vehicle repair station; Warehouse or distribution centre.

These terms are taken from the Standard Instrument – Local Environmental Plan provided by the NSW Department of Planning as the model for all future LEP's. Definitions for these terms are contained in the standard instrument and where these new definitions are not already incorporated it is recommended they be inserted into LEP 2000.

Some of the definitions are broad enough to enable both appropriate and inappropriate applications to be lodged and considered that, for one reason or another, are not desirable as part of the DAREZ. The examples below illustrate this:

Example 1: Where an "educational establishment" such as a TAFE or university campus teaching aeronautical engineering or aircraft engine maintenance would be considered quite appropriate, other teaching facilities such as a school would not be appropriate due to the noise impacts; and

Example 2: Where a "vehicle repair station" associated with a car rental business would be acceptable, a car sales yard or farm machinery repair business, which also fall within that definition, would be an inappropriate activity as it would be an under-utilisation of the land in this locality.

The objectives of the zone and additional locality clause must be relied upon in these instances to deter inappropriate development. However, it would be prudent to include a statement within the DCP to reinforce the intent of the objectives of the zone.

NB Infrastructure and services

Consideration may need to be given to inserting a satisfactory arrangements clause into the LEP. This clause would require assistance towards or the provision of State public infrastructure to satisfy needs that arise from development on the employment zone, prior to consent to subdivision of the land.

7.1.2 Proposed Land Use Types

The land use objectives defined the employment zone as a specialised centre providing employment opportunities for defence airport related development. Land uses are categorised in relation to their linkage characteristics reflecting the precincts described in Section 6.3, the resultant hierarchy of uses is proposed to inform the land use planning strategy.

The land uses proposed ensure the appropriate and successful development of the DAREZ for defence and airport related employment, at the location selected. The recommended uses have regard for the detailed investigations carried out. Table 7-2 below categorises the hierarchy of land uses in relation to linkage requirements and lists the land uses likely to be attracted to an employment zone close to, or at the airport. This table also takes into consideration the objectives of the DAREZ and the demand expected for the various land use types.

To reinforce the LEP provisions, it is recommended that a statement be included to the effect that Council will only consider favourably those uses that are directly related to defence and airport related activities. The following table provides an indication of the types and location of uses considered appropriate to the employment zone.

Table 7-2 Preferred Land Use Hierarchy

Linkage to Airport/Base	Use	Characteristics/Types
High (requiring direct access to the apron)	Airport and Department of Defence related activities requiring runway apron access including: ◗ Aircraft refuelling, maintenance, manufacture and assembly; and ◗ Freight handling and forwarding.	◗ Requirement for runway and apron access; and ◗ Defence and civil related.

Linkage to Airport/Base	Use	Characteristics/Types
High (requiring runway proximity and direct access to the terminal)	Airport and Department of Defence related activities requiring proximity to the runway apron and/or terminal access including: ◗ Aircraft refuelling, maintenance, manufacture and assembly; ◗ Freight handling and forwarding; ◗ Aerospace industry; ◗ Defence support (non-secure); ◗ Fixed base operations; ◗ Airport terminal related services; and ◗ Customs and other regulatory services.	◗ Goods in bond and storage; ◗ Catering, baggage; ◗ Possible links to education/government institutions; ◗ Defence and civil related; ◗ Off base services in supply, repair and maintenance equipment support; ◗ Facilities management, car hire, transport services and logistics, passenger services (including convenience retail); and ◗ Airport services and administration.
Medium (indirect) Direct and indirect uses servicing both direct (high correlated business) and air force/defence demands. Uses do not insist on immediate apron, terminal or Defence Base proximity.	Any of the above and including: ◗ Aero training (precludes training flights); ◗ Transport and Storage; ◗ Motor vehicle services; ◗ Defence and Airport related Commercial/Offices and Support Services; ◗ Manufacturing; and ◗ Education/training.	◗ Warehousing, goods in bond; ◗ Mechanical, fuel and supplies, tyres, detailing; ◗ National HQ's desirous of airport nexus; ◗ Technical equipment components and assembly; ◗ Primary product handling/Rural industry (excluding putrescible waste generating activities); ◗ Service providers and agencies; and ◗ Convention and meeting.
Low (incidental)	Any of the above and including: ◗ Defence and Airport related Convenience Retail/General Store; ◗ Defence and Airport related Industrial Facilities; ◗ Hotel/Motel; and ◗ Fitness and health.	◗ Cafés (excluding fast-food/take-away food stores on large scale-floor space cap to be considered for retail); ◗ Petrol and mechanical service; and ◗ Business equipment, supply and servicing.

7.2 Generic Provisions Applicable to Development in the SP1 Zone

Port Stephens Development Control Plan 2007 contains generic planning controls that will be applicable to the types of development likely to be constructed within the SP1 Zone. Those generic provisions from DCP 2007 applicable to development of the DAREZ, their relevant clause references and whether there are additional locality specific provisions to be applied are listed in the table below:

Applicable Sections of DCP 2007	Relevant Clauses and Issues	Additional Specific Controls
B1 – Subdivision and Streets	B1.2 – Types of Subdivision	Yes
	B1.3 – Site Analysis	No
	B1.4 – Topography and Views	No
	B1.6 – Footpaths and Cycle ways	No
	B1.8 – Lot Layout	No
	B1.9 – Street Trees	No
	B1.10 – Infrastructure	Yes
B2 – Environmental and Construction Management	B2.2 – General Standards	No
	B2.3 – Water Quality Management	Yes
	B2.4 – Acid Sulphate Soils	Yes
	B2.5 – Landfill	Yes
	B2.7 – Vegetation Management	No
	B2.8 – Koala Management	No
	B2.9 – Mosquito Management	No
	B2.10 – Weed Control	No
	B2.11 – Tree Management	No
	B2.13 – Aircraft Noise	No
	B2.14 – Erosion and Sediment Control	No
	B2.15 – Construction Waste	No
B3 – Parking and Traffic Management	B3.2 – Public Transport	No
	B3.3 – Parking Requirements	No
	B3.4 – Access Requirements	No
	B3.5 – Site Distance at Driveway Exits	No
	B3.6 – Design Requirements	Yes
	B3.7 – Construction Requirements	No
	B3.8 – Schedule of Parking Requirements	No

Applicable Sections of DCP 2007	Relevant Clauses and Issues	Additional Specific Controls
B4 – Commercial and Mixed Use Development	B4.3 – Uses	Yes
	B4.4 – Street Character and Front Setback	Yes
	B4.5 – Scale and Bulk	Yes
	B4.6 – Building Height	Yes
	B4.7 – Side and Rear Setback	No
	B4.8 – Building Design Elements	Yes
	B4.9 – External Lighting	Yes
	B4.10 – Energy Efficiency	No
	B4.11 – Landscape	Yes
	B4.12 – Public Domain Improvements	Yes
	B4.13 – Access, Parking and Servicing	No
B5 – Industrial Development	B5.3 – Street Character	Yes
	B5.5 – Floor Space Ratio	No
	B5.6 – Building Height	Yes
	B5.7 – Side and Rear Setback	No
	B5.8 – Building Design Elements	Yes
	B5.9 – Vehicle Parking and Access	No
	B5.10 – Landscape	No
B12 – Advertising Signs	B12.3 – SEPP 64 Advertising and Signage	No
	B12.4 – Business Identification Signs	No
	B12.5 to B12.19 – Sign Types	No

As can be seen from the above table, a significant number of issues relevant to development of the DAREZ are addressed by the generic clauses of DCP 2007. The Williamtown DCP Chapter will need to cross-reference applicable generic provisions elsewhere in DCP 2007 and provide guidance for developers and Council assessors in relation to those locality specific issues.

It is envisaged that the Williamtown specific controls will be inserted as a separate Section of DCP 2007 in *Part C- Locality Controls*. The site specific issues relevant to the DAREZ were described in Section 5. These are addressed below by proposed development controls.

NB. It is important to note however, that these controls provide a framework only for the formulation of detailed development controls. During the drafting of the required amendments to the consolidated DCP Council will add details such as compliance standards and procedures.

7.3 Site Specific Development Control Framework for the SP1 Zone

7.3.1 Proposed Development Controls for Geotechnical Issues

To progress the proposed rezoning and development of the land, the following would be necessary:

- Detailed geotechnical investigations across the area to determine the nature of the subsurface conditions at greater depths and spread of locations to assess the method of treatment for the different soil profiles across the Site. This will assist in determining the appropriate methodology for site filling and stormwater management initiatives; and
- Preparation of a detailed geotechnical risk register to advise of the likelihood and severity of each hazard, and to determine the necessary controls to reduce risks and associated constraints that may apply to certain developments.

While it is preferable to require the additional geotechnical investigations to be undertaken prior to the rezoning of the land, the additional investigations should at least be undertaken prior to the preparation of a development application for the subdivision of the land.

The geotechnical risk register should be prepared by the developer and submitted with the development application for the subdivision of the land.

7.3.2 Proposed Development Controls For Acid Sulphate Soils

- Notwithstanding the low likelihood of occurrence of ASS, appropriate pre-testing and management plans will be required for those locations where disturbance of the existing sub-strata is proposed (eg. provision of services, trunk drainage, pile supported footings); and
- Pre-testing and preparation of management plans should be undertaken prior to commencement of any substantial earthworks involving disturbance of locations containing potential ASS's.

7.3.3 Proposed Development Controls for Water Quality Management

Council's consolidated DCP requires that developments comply with Council's Urban Stormwater and Rural Water Quality Management Plan. In addition, the drainage and hydrology plan that form part of this DCP must apply conceptually in relation to water quality management in Part B2 Environmental and Construction Management.

- Groundwater Management – The proposal should provide the following details with respect to groundwater management:
  - A description of the existing groundwater system and include geologic details and aquifer systems;
  - Identification of any potential changes to the existing groundwater source and any dependant users including the environment;
  - Management of potential impacts and preparation of contingency measures. Management may include remediation, reduction and management of the groundwater resource with respect to all the users of the resource;

- Identification of any potential groundwater works including bores, geotechnical testing or monitoring; and
- Addressing the principals outlined in the NSW State Groundwater Policy Framework.

Where there is a lack of scientific certainty on the impacts of development on the groundwater regime, Department of Water and Energy (DWE) will adopt a precautionary approach.

The Hunter Water requires stormwater and surface runoff from any proposed development be managed to ensure it does not impact on the quality of the groundwater. This includes the appropriate interception and treatment of stormwater, including the first flush containment. Hunter Water advise they would like an opportunity to comment on the Stormwater Management Plan for the proposed employment zone:

- Develop a Stormwater Management Plan that complies with PSC's stormwater code and addresses the requirements of the Department of Water and Energy (DWE) as defined under its jurisdiction;
- Allotment stormwater is to be treated on site to achieve discharge criteria set by DWE and Hunter Water. Each lot is to provide structures to remove and collect litter, sediments, nutrients and hydrocarbons. Road reserve stormwater quality measures to treat road pollutants to be provided eg. gross pollutant traps, swales, bio-retention and sand filters;
- A Contingency Response Plan (CRP) is to be prepared and approved for the storage and handling of chemical spills during the construction and operational phases of any development. The CRP is to identify any construction or operational activities that involve the potential interference or polluting of the ground water aquifer. Appropriate mitigative and regulatory initiatives are to be detailed for consideration (NB. Approval from DWE would be required under the Water Management Act 2000);
- Storage and handling of chemicals is to be in accordance with AS 1940-1993 Flammable and Combustible Liquids and AS/NZ 4452-1997 – Toxic Substances; and
- All developments are to be connected to sewer mains of the Hunter Water and on-site disposal of effluent of any kind within the gazetted Special Area is prohibited.

7.3.4 Proposed Development Controls for Flooding and Hydrology

Flood Management – As part of the State Governments Flood Policy there will be a requirement to demonstrate that the intended use will not exacerbate local flooding and that the proposed development will be designed in expectation of flooding.

- Undertake a site specific flood investigation that augments the regional flood study performed by WBM. It would be expected that this flood investigation should address:
  - The existing flood conditions for the site and adjacent properties;
  - The proposed flood conditions for the developed site and the potential impacts to the adjacent properties; and
  - The required pad levels and finished floor levels for the development based on PSC's development requirements and the flood study.

7.3.5 Proposed Development Controls for Stormwater Management

- Increased impervious areas reduce the infiltration capacity of the area, increasing the amount of rainfall that would run off the site. To prevent this increase in volume, allotment strategies shall be introduced to control runoff from each site. This should include capture and on-site reuse in accordance with the Department of Environment and Climate Change (DECC) stormwater reuse guidelines or infiltration back into the groundwater after suitable treatment. The sizing of such structures will be strongly dependant on the type of development and the area of imperviousness for each site and would be subject to individual allotment assessments;
- The development of each lot will be required to maintain the effective 10 to 100 year ARI peak flow rates on the site. This should be achieved through an underground or aboveground detention system that limits flow off the site. The configuration of this system would be subject to the lot size and the percentage of imperviousness of each lot; and
- The road reserve stormwater quantity should be attenuated through roadside infiltration tanks and end of line structures where the waterways discharge from the estate. These structures should act as both an infiltration area and a means for peak flow detention. This would treat both the annual quantity and peak flow rates from the road reserve. The general size of these devices could be minimised and located within the road reserve reducing land take, as it would be treating only a minor portion of the catchment.

7.3.6 Proposed Development Controls for Ecology

The following aspects need to be considered to ensure a net improvement of biodiversity assets in the area:

- Accurately delineate boundaries between areas to be developed and areas to be protected;
- Accurately establish the extent and quality of habitat to be lost due to the development;
- Establish the criteria to be used in the assessment of off-sets;
- Identify and secure appropriate offsets; and
- Prepare and have adopted detailed management plans to ensure the long-term survival of retained habitat.

7.3.7 Proposed Development Controls for Bushfire Protection

- Development within 100 metres of any substantial vegetation may require an assessment of bushfire risk in accordance with the Rural Fire Service guidelines;
- When planning building envelopes, parking, roads and open spaces at the site, consideration should be given to placing buildings away from the retained vegetation, bushfire hazard, as far as practicable or minimising the perimeter of the development exposed on the bushfire hazard sides of the site. This can be achieved through steps including planning open space adjacent to the vegetation, car parks between the vegetation and buildings and perimeter road design;
- The Inner Protection Area should be kept free of fuel through regular mowing with less than three tonnes per hectare of fine fuel present at any time;

- The access surrounding and between the buildings should be developed as two way and accessible for heavy vehicle use and be connected to form a circular or through road route leading to and from public roads; and
- A perimeter fire trail or suitable vehicle access around the building envelopes or site boundary should be established and maintained. This would need to be located entirely within the Site and include the following attributes:
  - A minimum trafficable width of 4m with an additional 1m wide strip on each side of the road kept clear of bushes and long grass;
  - The road should have a passing bay about every 200m where possible, which should be 20m long by 3m wide, making a minimum trafficable width of 7m at the passing bay;
  - The capacity of the roads should be sufficient to carry fully loaded fire fighting vehicles (approximately 28 tonnes or 9 tonnes per axle);
  - A minimum vertical clearance of 6 m to overhanging obstructions, including tree branches;
  - Curves should have a minimum inner radius of 6 m and be minimal in number to allow for rapid access and escape;
  - The minimum distance between inner and outer curves should be 6m;
  - Maximum grades should not exceed 15º and preferably not more than 10º; and
  - Roads should provide sufficient width to allow fire fighting vehicle crews to work with fire fighting equipment around the vehicle.
- The proposed development is to have access to mains water supply. Fire hydrant and water supply should be included in accordance with AS 2419.1 – 1994; and
- Any fire trail will need to be constructed in accordance with design criteria outlined in the *Planning for Bushfire Protection 2006 guidelines*.

7.3.8 Proposed Development Controls for Subdivision, Road Layout and Lot Sizes

Include in the DCP a Development Control Plan Map for the subdivision of the land within the Williamtown DAREZ estate and a lot distribution table together with appropriate clauses related to the need to provide written justification for any substantial variation to the indicative layout and mix of lots.

7.3.9 Proposed Development Controls Scale, Bulk and Height of Buildings

As a guide, a maximum height of 4 storeys or 12 metres from natural ground level to the upper floor ceiling height should apply to all buildings and structures. Variations to this height may be considered where it can be demonstrated that an increase in height has a minimal effect on the view shed and visual amenity of the area viewed from the Airport, Williamtown Drive and Slades Road and providing that the building or structure complies with Defence requirements such as the Obstruction Clearance Surfaces (OCS) for RAAF Base Williamtown. Approval from the Department of Defence will be required for any building or structure (natural or man-made, temporary or permanent) that exceeds the OCS.

7.3.10 Proposed Development Design Controls

Buildings design elements; façade treatments, landscaped areas, feature colour treatments and materials should be used to create interesting built form outcomes. To maintain aircraft safety, building materials should minimise glare and reflective surfaces.

7.3.11 Proposed Development Controls for Aircraft Operational Requirements

Development within the area will need to take into account the limitations and design criteria associated with the operational needs of military and civil aircraft. Development Applications for land within the DAREZ that are outside the proposed DCP requirements and that will potentially impact on the Williamtown RAAF Base or NAL Airport operational requirements are to be referred to the Department of Defence for consideration prior to Council approval. In the interim until the DCP provisions are in place, any DAs within the DAREZ that could potentially impact on the operational requirements of the Base/ Airport will be referred to Defence. The developer is to ensure that any development proposal does not adversely affect the operational integrity of RAAF Base and NAL by taking into account the following issues:

- Aircraft noise;
- Extraneous Lighting and Reflective Surfaces;
- Protection of Airspace, Navigational Aids and Radars (structure heights, plumes, temporary structures and transient intrusions) – refer to the Department of Defence for guidance on the Obstruction Clearance Surfaces for RAAF Base Williamtown and the Defence (Area Control) Regulations;
- Public Safety and Security;
- Wildlife Hazards including land uses that have the potential to attract wildlife; and
- Interference with Communications Facilities.

Refer also to section 2.6 for more detail.

7.3.12 Proposed Development Controls for Cultural Heritage Protection

- A Conservation Area / Keeping Place is to be established on the identified site (refer to DCP Map) to accommodate the burial site, the recorded associated artifact scatter, and the landform setting within which these important features lie;
- A Conservation Plan of Management (CPOM) is to be developed in partnership with Worimi Local Aboriginal Land Council (WLALC) and Mur-roo-ma Incorporated (MI) for the establishment of the Conservation Area / Keeping Place within the subject area. Such a CPOM will define the boundaries of the Conservation Area / Keeping Place, and outline the procedures to follow with regards to the removal and relocation of any Indigenous Cultural Heritage Material recovered within the remainder of the subject area throughout the development;
- Such a CPOM would delineate the following:
  - Objectives and purpose of the Conservation Area / Keeping Place;
  - Legal Obligations;
  - Community Consultation and Partnership with WLALC and MI;

- Boundaries of the Conservation Area / Keeping Place;
- Pre, Present & Post (Ongoing Protection) Land Management;
- Measures to Protect Aboriginal Cultural Heritage;
- Artifact Identification and Relocation Protocols; and
- Aboriginal Community Access Protocols.

- The area of the proposed Conservation Area / Keeping Place is to be excluded from development. Vegetation and sand dunes in this area are not to be disturbed. During primary earthworks in the proposed development area, this section should be cordoned off and sites officers from WLALC and MI, as well as an archaeologist, be present at all times to appropriately log and deal with any cultural material uncovered;
- A Cultural Heritage site induction for all workers that will be operating within the subject area is to be conducted prior to any work commencing. Such an induction will outline the nature of the archaeology of the subject area, as well as outlining the procedures to follow in the event of any additional cultural heritage material being recovered. Local indigenous representatives should be involved in this induction process; and
- Prior to any work taking place, an application is to be made to DECC under Section 90 of the *National Parks and Wildlife Act 1974* for the proposed development. The Section 90 is required for the salvage of any Aboriginal cultural heritage material in the proposed development area, and subsequent relocation into the Conservation Area / Keeping Place by the nominated Indigenous Stakeholders from WLALC and MI. Salvage work should be conducted by the Aboriginal community during earthworks as material is encountered. Aboriginal burial, open camp sites, artifact scatters and middens have previously been uncovered in dune areas. Adequate notification of the proposed work should be provided to WLALC and MI.

7.3.13 Proposed Development Controls for Scenic Quality and Streetscape

- A landscape Master Plan, utilizing local indigenous species, is to be submitted with any application for the subdivision of the land;
- New development within the DAREZ area should be designed to complement rather than detract from the quality of the estate; and
- The impact of any development on the rural character of the area should be minimized by choosing appropriate materials and colours and through the use of appropriate landscape treatments.

7.4 Other Policy Provisions for Local Employment Generation

To assist in the support of employment generating development in the DAREZ, it may be appropriate for Port Stephens Council to adopt a Council Policy and procedure for the expedition of proposals defined as “Employment Generating Development” as follows. These could be defined as:

Employment Generating Development *means development that after construction stage, would employ 10 or more persons on a full time or equivalent basis, or has a capital investment value of $5 million or more.*

(NOTE: Council will seek to give priority to the processing of employment generating development applications. A streamlined approach would depend upon the applicant's submission being accompanied by the information required by Council and that all issues outlined in pre-application consultation are properly addressed).

7.5 Infrastructure

7.5.1 Transport and Traffic Infrastructure

Development of the site as a specialised employment centre is likely to require potential infrastructure upgrades in the future. The potential infrastructure upgrades are as follows:

- Upgrading Nelson Bay Road south of Cabbage Tree Road to a four lane dual carriage way road and provision of a four lane dual carriage way road from Newcastle to the DAREZ for the 50% upgrade scenario;
- Inclusion of a new intersection on Cabbage Tree Road to service the DAREZ;
- Upgrade of the intersection of Nelson Bay Road and Williamtown Drive to a signalised intersection;
- Upgrading of Tomago Road for the 100% upgrade scenario; and
- Upgrading of the intersection of Tomago Road and the Pacific Highway.

The degree of upgrading necessary to the above road corridors and intersections would need to be determined in the development application phase of the project when more detailed information about the land uses and traffic generation at the site are known.

7.5.2 Water Supply

The developer of the employment centre site will determine, fund and design reticulated water in accordance with Hunter Water's design standards. For the purposes of this report, indicative water reticulation for the employment zone development (discussed in Section 4.1.4 was estimated to have a capital cost of $850,000. Actual requirements and capital cost need further investigation and confirmation by the developer further down the track once the development configuration is better defined.

7.5.3 Wastewater Services

The three options considered for the wastewater transfer to Hunter Water's Raymond Terrace WWTW for the employment centre were discussed in Section 4.1 of this report. Funding and procurement arrangements of the Transfer System would need to be the subject of further consultation between Hunter Water and the main parties serviced including the landowners and developers of the employment centre, the Department of Defence and the NAL. A summary of the capital costs for the preferred Transfer System (Option 1 above) and including the costs to meet the reticulation requirements in the employment zone site are presented in Table 7-3.

Table 7-3 Capital Cost Estimates - Transfer System & Employment Zone Reticulation

	Capital Costs
1 Transfer System to Raymond Terrace WWTW	$15m
2 Employment Zone Development Reticulation	$9.4m
TOTAL	**$24.4m**

1. Costs to be shared on a user pays basis; and

2. Costs to be met by the Developer(s) of the Employment Zone.

Actual requirements and capital costs will need to be further investigated and confirmed by the developer once the development configuration becomes better defined.

7.5.4 Water and Wastewater Developer Charges

Hunter Water levies Developer Charges on new development to recover the cost of capacity that Hunter Water provides to service growth. The charges are indexed annually for inflation and revised by Hunter Water every 5 years. Hunter Water updated its Developer Charges on 1 July 2006. These charges would apply to the employment zone, the RAAF Base and NAL. As an indication, the current Developer Charges are as follows:

Raymond Terrace Wastewater Treatment Plant $3,137 per ET [1] (Commercial/Industrial)

Medowie Water System (including water headworks) $136 per ET (Commercial/Industrial)

This would equate to the approximate costs in Table 7-4 below:

Table 7-4 Indicative Water and Wastewater Charges

	Approximate Costs
Employment Zone Development	$3.27 million
NAL	$0.9 million
RAAF Base	$3.45 million

ET relates to the equivalent residential tenancies

7.6 Infrastructure Funding Options

The funding of infrastructure was not established at the time of this report. However, it is known that the development of the site will necessitate augmentation of the water supply system to increase capacity, and the provision of reticulated wastewater services.

(Note: There are three options to transfer wastewater from the site to Hunter Water's wastewater treatment plant at Raymond Terrace. All follow Cabbage Tree Road to the intersection with Masonite Road and then follow Masonite Road to Raymond Terrace.)

- Connection of power, gas and communications as required;
- Intersection upgrades; and
- Trunk drainage construction.

Funding options will be largely influenced by the potential roles that the private landowner, developers, service providers and government may take.

Infrastructure needs could be funded through planning agreements. This might include monies spent upfront by the developer or possibly by government funding (reimbursed by the developer). These options may effect the staging options of the proposal. This will include further liaison with Hunter Water regarding the timing and costing options to provide a reticulated sewerage system to the study area.

Section 94 of the Environmental Planning and Assessment Act 1979 enables Councils to require a contribution from developers towards the provision, extension or augmentation of public amenities and services that will, or are likely to be required as a consequence of development in an area, or that have been provided in anticipation of or to facilitate such development.

A site specific plan for Section 94 contributions is likely to be a requirement of PSC due to the need for the establishment of new and significantly improved infrastructure.

7.7 Staging and Timing of Development

The DAREZ will be staged affecting the timing and supply of infrastructure such as roads, traffic devices, waste water capacity and treatment, drainage, utilities, opens space and communications. Significant areas of land within the defence and airport related employment zone are physically constrained by flooding, geotechnical issues and ecologically significant environment. A significant area of land is excluded and protected from the impacts of development and environmental enhancement implemented in accordance with the principles of environmental sustainability.

An indicative staging plan is shown in Figure 14. The staging strategy aims to firstly utilise and then build upon the existing road network. Thus the early stages of development (Stages 1 and 2) would include the land to the north of Slades Road and that land that will be a core area of airport related employment with strong synergies with the airport facilities. Future stages (3 to 6) would extend progressively west at a rate dictated by demand. All stages offer a range of lot sizes and varying degrees of proximity to the Base and airport.

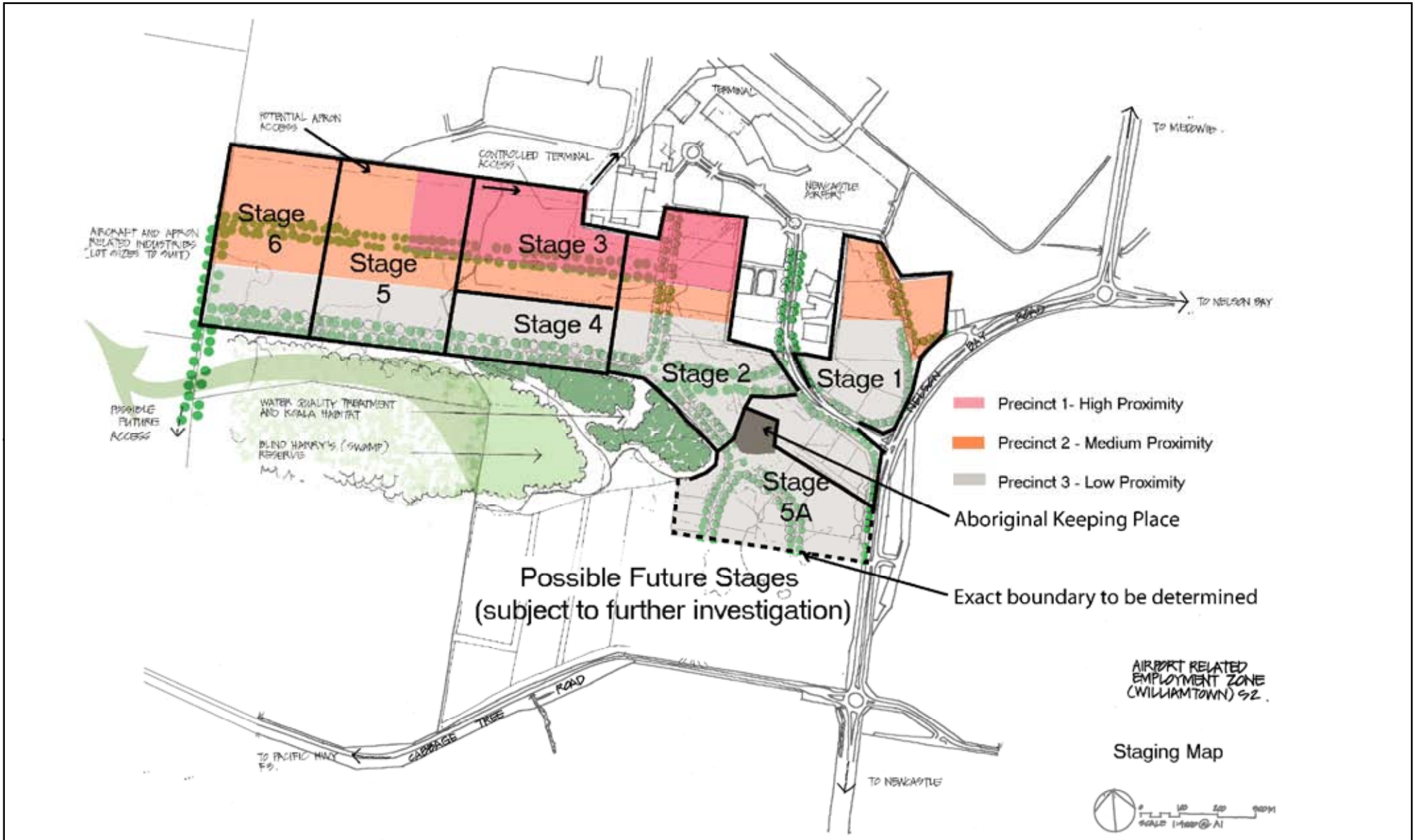
Stage 5A includes the land in the south-eastern part of the site that is likely to require preloading of land to address the presence of compressible soils and greater depth of filling.

It should be noted that the Staging Plan is indicative only. A more detailed staging plan will be formulated once the conservation outcomes have been finalised, further geotechnical investigations have been completed and staging costs more closely analysed.

7.8 The Way Forward

The Project Control Group (PCG) endorsed the Land Use and Development Strategy in December 2007 and supports the rezoning of the land identified in the staging and structure plans; figures 12 and 14. To take the project through to completion (ie. to gain a resolution of Port Stephens Council to commence the rezoning process), the next part of the process is anticipated to be as follows:

1. Port Stephens Council takes the endorsed Strategy and prepares to initiate the rezoning process of the land endorsed by the PCG. The land endorsed is the shaded area, excluding the land identified as “Development of this area is subject to resolution of flooding, drainage and geotechnical constraints” shown in the Structure Plan Map, Figure 12;
2. Pursuant to Section 54(1) of the Environmental Planning and Assessment Act 1979; the rezoning is initiated; and
3. Further consultation with Government Authorities is carried out under Section 62 of the Environmental Planning and Assessment Act 1979 (in particular NSW Department of Environment and Climate Change) prior to the exhibition of the Draft LEP.



NSW Department of Planning
Airport Related Employment Zone (Williamtown)

Indicative Staging Plan

4th December 2007

job no. 22-12808
rev no. A

Figure 14

GIS Filename: G:\22\12808\GIS\Maps\Report Figures\Stage 4 Report Figures\Fig4_Indicative_Staging_041207.mxd

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Appendix A

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Appendix B

Preliminary Geotechnical Assessment November 2006

See Appendices under separate cover in Volume 2

Appendix C

Acid Sulphate Soil Study

See Appendices under separate cover in Volume 2

Appendix D

Hydrology, Flooding and Drainage Assessment

See Appendices under separate cover in Volume 2

Appendix E

Waste Water Strategy

See Appendices under separate cover in Volume 2

Appendix F

Bushfire Constraints Assessment November 2006

See Appendices under separate cover in Volume 2

Appendix G

Ecology Report January 2007 and Report for Supplementary Ecology Investigations October 2007

See Appendices under separate cover in Volume 2

Appendix H

Traffic and Transport Report

See Appendices under separate cover in Volume 2

Appendix I

Economic Analysis

See Appendices under separate cover in Volume 2

Appendix J

Cultural Heritage Assessment

See Appendices under separate cover in Volume 2

Background Reports

See Background Reports under separate cover in Volume 3

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