CONACHER TRAVERS

environmental consultants

conservation & land use management plan

BEVIAN ROAD CONCEPT APPLICATION
BEVIAN ROAD, ROSEDALE

SEPTEMBER 2007

CONSERVATION & LAND USE MANAGEMENT PLAN (CLUMP)

BEVIAN ROAD CONCEPT APPLICATION
BEVIAN ROAD, ROSEDALE

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EXECUTIVE SUMMARY

This Conservation Land Use Management Plan (CLUMP) has been prepared by *Conacher Travers Pty Ltd* on behalf of *Marsim (*trading as *Nature Coast Developments Pty Ltd*) for the land contained within Lot 2 DP 627034, Lot 2 DP 623340, Lots 11, 29, 32, 72, 102, 118, 119 and 213 DP 755902 Bevian Road, Rosedale, hereafter referred to as 'the subject site' or 'the site'. The subject site occupies an area of 173.59 hectares and is situated within the Eurobodalla Local Government Area (LGA) (refer Figure 1). An aerial appraisal of the property and surrounding location is provided in Figure 2.

The Bevian Road Concept Application seeks the approval of two specific plans referred to collectively as 'The Concept Approval Plans'. Specifically these are:

- 'The Constraints Map' (Figure 3 attached) – a plan of the net developable area
- 'The Plan of Subdivision' (Figure 4 attached) – an 806 lot residential subdivision and 15 community lots. *NB: this is a concept layout only, a detailed DA will be lodged once the concept has been approved.*

A comprehensive conservation and development strategy has been undertaken for the subject site. In the pursuit of an appropriate development strategy, the site has undergone significant assessment in the areas of environment, ecology, open space, landscape design, water sensitive urban design and bushfire protection management.

In line with the need to ensure the effective sustainability of this landscape and development infrastructure, the requirements of all relevant statutory planning documents have been adhered to. These planning criteria will provide a significant level of certainty for the community, in that this land will be protected to maintain the inherent environmental and visual values. Relevant planning documentation has included:

- Eurobodalla Rural Local Environment Plan (1987)
- Eurobodalla Urban Settlement Strategy
- Eurobodalla Shire Council Development Control Plan No. 157-Rural Subdivision, and
- Eurobodalla Shire Council Development Control Plan No. 160-Rosedale.

Conservation and Land Use Management Plan (CLUMP

The Conservation and Land Use Management Plan (CLUMP) forms a component part of the Development Control Plan to be prepared for proposed Masterplan and is the most important dynamic of the planning documents that integrates conservation and land use matters. Once embodied within the DCP, the Council is to assess future proposed development applications against the "considerations" (Section 7) when granting consent to a development application on the land. Of significance to the planning scheme proposed is the comprehensive nature of the CLUMP in the way it integrates with the LEP, for example:

- The identification of detailed conservation strategies to manage the land in perpetuity, and
- The identification of clear precinct character statements.

The CLUMP specifically deals with the following matters;

- The conservation values of the site including vegetation communities, threatened species, natural wildlife corridors, and other natural features of the site,
- The scale of any development and its integration with the existing landscape,
- The implementation of the development together with the various obligations for conservation, maintenance and protection of the environment,
- The environmental validation of any development proposals given the significance of the natural attributes of the site, and
- The verification that requirements, obligations and environmental targets and outcomes are achieved and maintained during the life of the development.

The CLUMP principally relates to ecological, conservation and bushfire values relevant to the proposed development and the local environs. Other performance indicators, of an engineering nature (such as the Stormwater Management Strategy) are contained within relevant engineering and construction management plans. The combination of all these obligations is assembled within the proponents draft Statement of Commitments.

Zoning

Surrounding land comprises a mix of zonings and uses including uncleared rural zoned land (to the north and north-west), rural – residential subdivision (south east and south west), residential (environmental constraints) to the east over Bevian Road and a caravan park to the south that has been approved for residential development (Refshauge *et al* 2006).

Existing zonings within the subject site and the surrounding lands are depicted in Diagram 1 below.

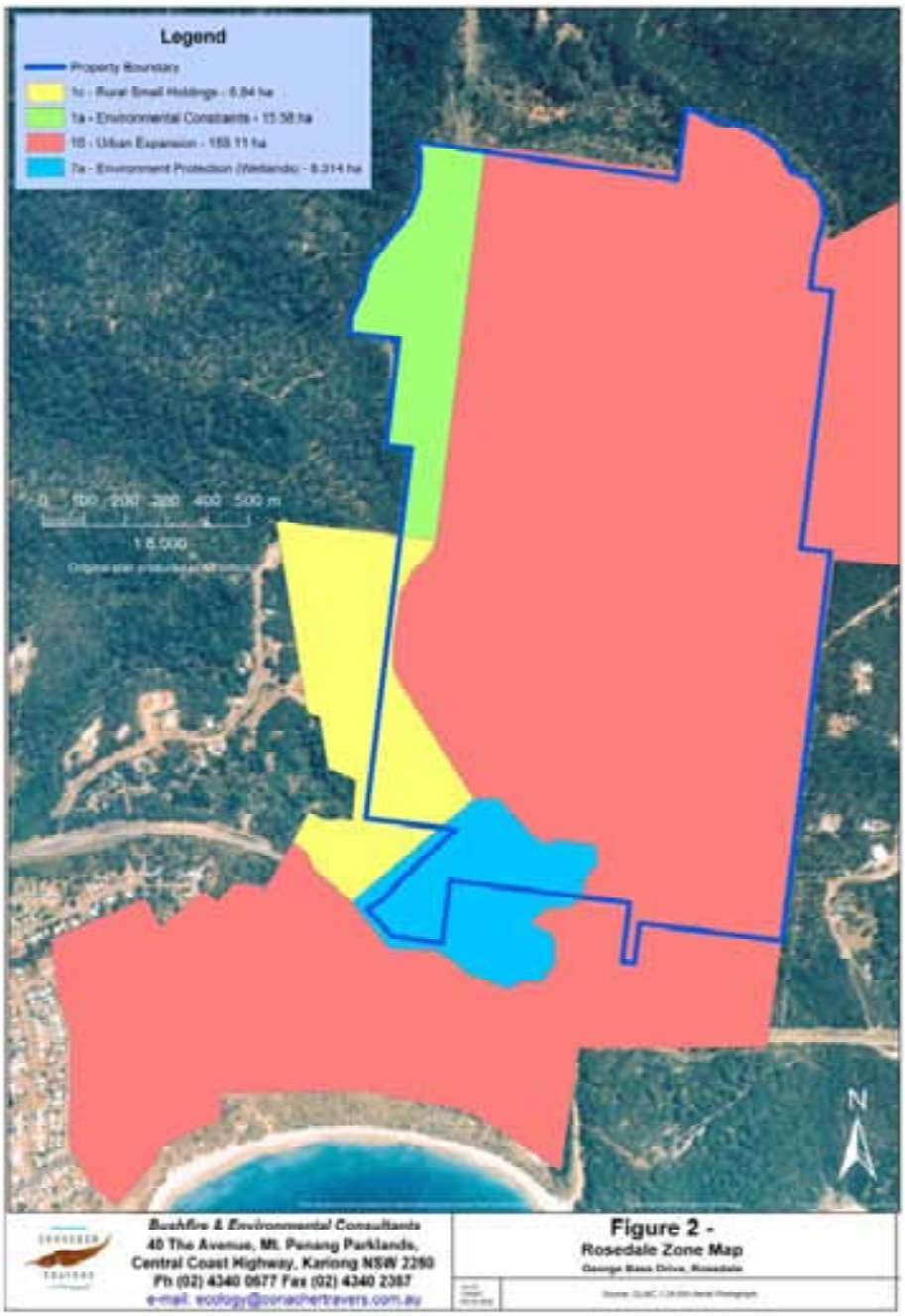


Diagram 1: Zoning map

TABLE OF CONTENTS

FIGURES

SCHEDULES

SECTION 1.0 - INTRODUCTION

1.1 CONTEXT

This Conservation Land Use Management Plan (CLUMP) has been prepared to be used as a planning document for the subject site. The primary role of the CLUMP is to assist Council, the community, the developer, and the community association in the conservation, sensitive development and ongoing management of the Rosedale development area.

The Conservation and Land Use Management Plan (CLUMP) forms a component part of the Development Control Plan to be prepared for proposed Masterplan and is the most important dynamic of the planning documents that integrates conservation and land use matters. Once embodied within the DCP, the Council is to assess future proposed development applications against the "considerations" (Section 7) when granting consent to a development application on the land.

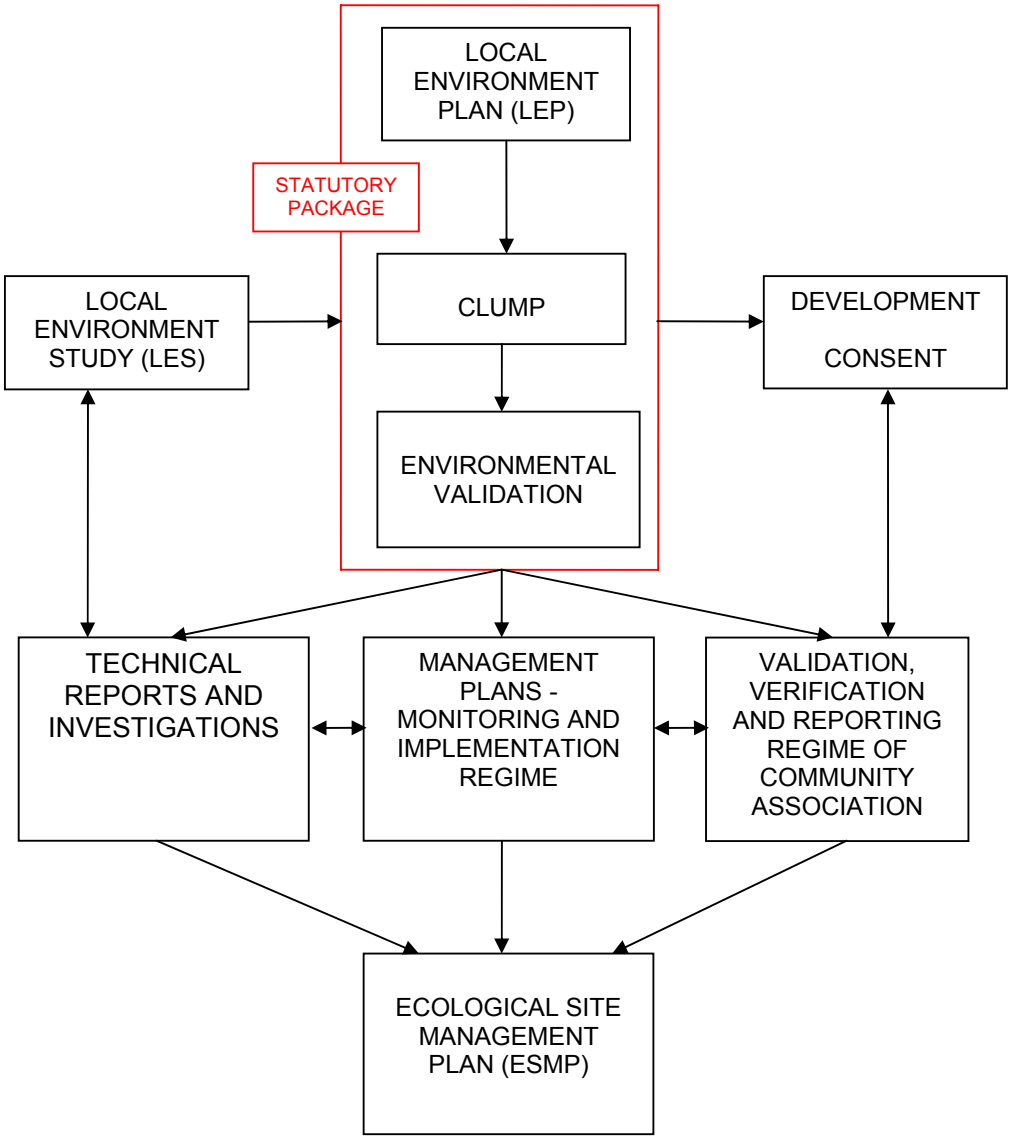
This CLUMP embodies the principles of the Eurobodalla Rural Local Environment Plan (1987), SEPP 71 Coastal Protection Policy and is proposed to be given statutory backing in the Eurobodalla Rural Local Environment Plan (1987), as amended for Rosedale. It sets up a flexible framework that reflects a vision for the planning and implementation of the highest quality of community title development that respects the ecological and cultural given values of the site.

Key features of the CLUMP include:

- A Conservation and Land Use Plan delineating the large-scale conservation and mixed-use development areas.
- Descriptions and precinct character statements to assist Council and the developer to determine appropriate land uses and built forms for particular portions of the site.
- Flexibility in the planning process to ensure that a diverse range of development types can be designed in response to the particular ecological, visual and geophysical characteristics of the site as well as changing social, demographic and market circumstances.

1.2 STRATEGIC PLANNING FRAMEWORK

The statutory relationship and status of the LEP, CLUMP, Environmental Validation and subsequent studies are set out below.



The three part statutory package of LEP, CLUMP and Environmental Validation is supported by technical reports and investigations produced by various specialists. These reports have identified desired outcomes which may need to be converted to a series of considerations such that a validation and verification regime can be formulated for the whole development. This CLUMP addresses specific environmental and bushfire considerations which will not include all considerations relevant to this Development Control Plan.

Of importance to the implementation of development concepts is the introduction of the validation, verification and reporting regime. “Validation” is defined as:-

The development planning process in which the sites management issues and recommended outcomes are identified. Where appropriate, these issues and outcomes are addressed within specific management plans. The

management plans specify a monitoring and implementation regime to be undertaken by the developer and the community association.

"Verification" is defined as:-

The procedure confirming that outcomes and recommendations of the supporting technical documents and management plans have been implemented. The verification procedure may consist of "verification reports" produced by specialist consultants and submitted according to the development consent conditions.

The planning documents encapsulate conservation planning and community title management as primary drivers for this project. The explanation of the way this is handled in planning terms is provided below.

1.3 CLUMP STRUCTURE

The CLUMP has been divided into 7 sections.

- Section One responds to the planning framework which applies to the statutory package of the LEP, DCP and CLUMP.
- Section Two provides a description of the development area.
- Section Three outlines the environmental management principles and suitability analysis.
- Section Four outlines the management strategies used to address the conservation and land use issues specific to the development area.
- Section Five details the precinct guidelines included in the DCP.
- Section Six outlines the desired outcomes of the DCP as a result of implementation of the conservation and land use management strategies.
- Section Seven outlines the ecological, bushfire and environmental management considerations which will be taken into account during the environmental validation process and discussed in greater depth in an Environmental Validation Report.

The conservation management issues have been identified by a multidisciplinary team as part of the planning process. The main environmental management issues have been comprehensively addressed in the following supporting technical documents and management plans.

- Flora and Fauna Assessment (*Conacher Travers Pty Ltd* 2006),
- MUSIC Modelling: Bevian Road, Rosedale (*Patterson Britton Pty Ltd* 2006),
- Infiltration/Permeability testing: Bevian Road, Rosedale (*Douglas Partners Pty Ltd* 2006)

- Geotechnical Investigation: Bevian Road, Rosedale (*Douglas Partners Pty Ltd* 2002),
- Statement of Environmental Effects (Rosedale Urban Expansion Area – Masterplan development application) (*Urbis* 2002),
- Odour Impact Assessment (*Holmes Air Sciences* 2003),
- Flood Study,
- Traffic Study,
- Visual Impact Study, and
- Noise Impact Assessment (*Richard Heggie Associates* 2003).

The conservation management issues have been addressed in Section 4 of this report in terms of relevant strategies and considerations for validation of the identified requirements of the CLUMP.

1.4 STATUTORY REQUIREMENTS

1.4.1 National Legislation

(i) Environment Protection and Biodiversity Conservation Act (1999)

This Act requires that Commonwealth approval be obtained for certain actions. The Act provides an assessment and approvals system for actions that have a possible significant impact on matters of national environmental significance (NES). These may include:

- Wetlands protected by international treaty (the Ramsar Convention)
- Nationally listed threatened species and ecological communities
- Nationally listed migratory species

Actions are projects, developments, undertakings, activities, and series of activities or alteration of any of these. An action that needs Commonwealth approval is known as a controlled action. A controlled action needs approval where the Commonwealth decides the action would have a significant effect on a NES matter.

Where a proposed activity is located in an area identified to be of NES, or such that it is likely to significantly affect threatened species, ecological communities, migratory species or their habitats, the matter needs to be referred to Department of the Environment and Water Resources.

1.4.2 State Legislation

(i) *Threatened Species Conservation* Act (1995)

The specific requirements of the *TSC Act* (1995) are required to be addressed in the assessment of flora and fauna matters. This requires the consideration of potential impacts on threatened species, populations and or ecological communities.

The factors to be taken into account in deciding whether there is a significant effect are set out in Section 5A of the *EP&A Act* (1979) and are based on a 7 part test of significance.

Where a proposed activity is located in an area identified as critical habitat, or such that it is likely to significantly affect threatened species, populations, ecological communities, or their habitats, a Species Impact Statement (SIS) is required to be prepared.

Two (2) Endangered Ecological Communities (EEC's), Swamp Oak Floodplain Forest and Freshwater Wetlands on Coastal Floodplains, listed under the NSW *TSC Act* occur within the site.

No threatened flora species listed under the *TSC Act* or the *EPBC Act* have been identified within the site.

Six (6) threatened fauna species, Yellow-bellied Glider, Eastern Bentwing-bat, Powerful Owl, Glossy Black-Cockatoo, Greater Broad-nosed Bat, Eastern Freetail-bat, listed under the *TSC Act* occur within the site. None of these species are listed under the *EPBC Act.*

(ii) Fisheries Management Act *(1994)*

The *Fisheries Management Act* (1994) provides a list of threatened aquatic species which require consideration when addressing the potential impacts of a proposed development.

(iii) National Parks and Wildlife Act (1974)

The Act consolidates and amends the law relating to the establishment, preservation and management of national parks and historic sites and the protection of native flora and fauna and Aboriginal relics throughout NSW.

(iv) Native Vegetation Act (2003) and Regulations

In accordance with the principles of Ecologically Sustainable Development (ESD), the *Native Vegetation* Act (2003) and Regulations controls the clearing of native vegetation throughout NSW.

Under Schedule 1 of the *Native Vegetation Act* (2003) lands that are excluded from application of the Act include;

- National Parks estate and other conservation areas;
- State Forest Land;
- Specific Local Government Areas (LGA's) listed below:

Ashfield, Auburn, Bankstown, Baulkham Hills, Blacktown, Botany Bay, Burwood, Camden, Campbelltown, Canterbury, Concord, Drummoyne, Fairfield, Hawkesbury, Holroyd, Hornsby, Hunters Hill, Hurstville, Kogarah, Ku-ring-gai, Lane Cove, Leichhardt, Liverpool, Manly, Marrickville, Mosman, Newcastle, North Sydney, Parramatta, Penrith, Pittwater, Randwick, Rockdale, Ryde, South Sydney, Strathfield, Sutherland Shire, Sydney City, Warringah, Waverley, Willoughby, Woollahra,

The CMA referral process under the *Native Vegetation Act* (2003) is a parallel referral process to the Development Application (DA) process. A written application is made to the relevant Catchment Management Authority (CMA) for assessment, utilising the 'Biometric Test'. Key factors assessed under the Biometric Test include; water quality, salinity, biodiversity and land degradation. Any fail results under the Biometric Test trigger the preparation of a Property Vegetation Plan (PVP).

(v) NSW Biodiversity Strategy (1996)

Conservation of biological diversity is one of three core objectives of the National Strategy for Ecologically Sustainable Development (NSESD). This strategy aims to bridge the gap between current activities and the effective identification, conservation and management of Australia's biological diversity.

The following principles have been adopted as a basis for the strategy's objectives and actions and should be used as a guide for implementation:

1. Biological diversity is best conserved in-situ.
2. Although all levels of government have clear responsibility, the cooperation of conservation groups, resource users, indigenous peoples, and the community in general is critical to the conservation of biological diversity.
3. It is vital to anticipate, prevent and attack at source the causes of significant reduction or loss of biological diversity.
4. Processes for and decisions about the allocation and use of Australia's resources should be efficient, equitable and transparent.
5. Lack of full knowledge should not be an excuse for postponing action to conserve biological diversity.
6. The conservation of Australia's biological diversity is affected by international activities and requires actions extending beyond Australia's national jurisdiction.
7. Australians operating beyond our national jurisdiction should respect the principles of conservation and ecologically sustainable use of biological diversity and act in accordance with any relevant national or international laws.
8. Central to the conservation of Australia's biological diversity is the establishment of a comprehensive, representative and adequate system of ecologically viable protected areas integrated with the sympathetic management of all other areas, including agricultural and other resource production systems.
9. The close, traditional association of Australia's indigenous peoples with components of biological diversity should be recognised, as should the desirability of sharing equitably benefits arising from the innovative use of traditional knowledge of biological diversity.

(vi) Environmental Planning and Assessment Act (1979)

This Act enables the proper assessment of all development proposals by the consideration of any impact upon environmental, economic and social values. The Act provides heads of consideration in Section 79C as primary consideration in the assessment process. This Act also causes primary consideration to Ecological Sustainable development.

(vii) Environmental Planning & Assessment Act 1979 – Part 3A Environmental Assessment Requirements

Major projects under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) require the Director-General of the NSW Department of Planning to prepare a list of requirements for the Environmental Assessment. These requirements outline the key issues to be addressed and the level of assessment needed. Director-General Requirements (DGR's) are identified by consultation between the Director General and other relevant government agencies. The requirements are then issued to the proponent. Appendix 1 of this report refers to the full list of DGR's issued by the NSW DoP in December 2006.

(ix) South Coast Sensitive Urban Lands Review

The conservation precincts (Figure 5) identified within the subject site may be zoned into the new E2 – Environmental Conservation Zone as recommended within the South Coast Sensitive Urban Lands Review (Refshauge et al 2006). This zone is part of the Standard Instrument (LEP) Order 2006, which states the following objectives for the zone:

- To protect manage and restore areas of high ecological, scientific, cultural or aesthetic values
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

The following types of development are prohibited in Zone E2 – Business premises, Hotel accommodation, Industries, Multi dwelling housing, Recreation facilities (major), Residential flat buildings, Retail premises, Seniors housing, Service Stations, Warehouse or distribution centres.

Application of the E2 zone within the site would require an amendment to the existing Eurobodalla Rural Local Environment Plan (1987).

(ix) Eurobodalla Rural Local Environmental Plan (1987)

The overall aim of this plan is to further the objectives of the Environmental Planning and Assessment Act 1979, that is -

(a) to encourage -

- the proper management, development and conservation of natural and man-made resources, including agricultural land, natural areas, forests, minerals, water, cities, towns, and villages, for the purpose of promoting the social and economic welfare of the community and a better environment;

- the promotion and co-ordination of the orderly and economic use and development of land;
- the protection, provision and co-ordination of communication and utility services;
- the provision of land for public purposes;
- the provision and co-ordination of community services and facilities; and
- the protection of the environment;

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State; and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

(x) Eurobodalla Urban Local Environment Plan (1999)

The overall aim of this plan is to further the objectives of the *Environmental Planning and Assessment Act 1979*. The general objectives of this plan are:

- to encourage orderly and proper development within the area of Eurobodalla, and
- to identify zones in which particular classes of development are most likely to be appropriate, having regard to the environmental characteristics of the locality, servicing and access requirements and constraints, and the characteristics of the development, and
- to optimise the use of existing services and infrastructure and promote the efficient provision of any services and infrastructure in the future in accordance with the intensity and type of development proposed for the locality, and
- to ensure that provision is made for public amenities, public services and community facilities early in the process of development, and
- to ensure that no development on any land is likely to jeopardise the future orderly and economic development of the land or of the land in its vicinity, and
- to provide a broad, long-term framework of planning controls based on a strong emphasis on general, particular and zone-specific objectives and strategies in concert with development control plans giving expression to detailed planning provisions, and
- to enhance individual and community wellbeing and welfare by following a path of economic development that safeguards the welfare of future generations, and
- to accommodate population growth and facilitate expansion and diversification in the area's economy.

(xi) State Environmental Planning Policies (SEPP's)

The following SEPP's are pertinent to this proposal and are to be taken into consideration in the preparation of all Development Control Planning documentation:

- ***SEPP No. 14 – Coastal Wetlands***

  This planning policy identifies and maps important coastal wetlands throughout New South Wales, which require consideration when addressing the potential impacts of a proposed development.

  Where a proposed development may have an impact on a defined SEPP 14 wetland, guidelines of this policy are followed to minimise the impact on water quality and quantity, native flora and fauna and provisions of safeguards and rehabilitation where necessary to protect the environment.

- ***SEPP No. 44 – Koala Habitat Protection***

  This policy aims to encourage the conservation and appropriate management of areas of natural vegetation with potential to provide habitat for Koalas. It outlines the procedures for the identification potential and core Koala habitat and provides for appropriate management.

- ***SEPP No. 71 – Coastal Protection***

  This planning policy aims to protect and manage the coastal zone in accordance with the principles of ecologically sustainable development. The matters for consideration include public access, suitability of the land for development, scenic qualities, wildlife corridors, significant loss of views, coastal hazards, cultural places and heritage. Issues that are required by SEPP 71 to be addressed include:-

- Design principles drawn from analysis of site and context.
- Desired future locality character.
- Location of any development, natural features including coastal processes and hazards.
- Scale of development and integration with existing landscape.
- Phasing of development.
- Public access to and from coastal foreshore.
- Pedestrian, cycle and road access and circulation networks.
- Subdivision pattern.
- Infrastructure provision.
- Building envelopes and built form controls.
- Heritage conservation.
- Site remediation.
- Provision of public facilities and services.
- Provision of open space, its function and landscaping.
- Conservation of water quality and use.
- Conservation of animals, plants and their habitats.
- Conservation of fish and marine vegetation and their habitats.

These issues have been addressed within the multitude of supporting technical reports to the Environmental Assessment (EA) and subsequent management plans.

(xii) Eurobodalla Shire Council Development Control Plans (DCP's)

Eurobodalla Shire Council currently has two (2) DCP's of relevance to the subject site.

- **DCP No. 156 – Rural Subdivision,**

The objectives of DCP No. 156 generally are:

- Highlight the need for comprehensive consideration of environmental constraints and servicing requirements in the preparation of any application to Council for development consent,
- To create a framework for design of any subdivision application,
- Establish principles to determine density in areas zoned 1(c),
- Identify development constraints applying to the land,
- Provide protection for environmentally sensitive areas such as wetlands, rainforest, closed canopy forest and other significant areas of native vegetation, step land, watercourses, drainage lines, areas prone to flooding or erosion and aboriginal archaeological relics,
- Encourage retention of trees generally and preserve ridgelines and other scenic areas in their natural state to protect visual amenity,
- Promote replanting with indigenous species on currently cleared ridges and other scenically significant areas,
- Determine access and service requirements, and
- Further the aims of the Rural LEP.

- **DCP No. 160 – Rosedale Urban Expansion Zone**

The objectives of DCP No. 160 generally are:

- To encourage the orderly and economic development of the land, taking into account all relevant physical, social and economic considerations,
- To provide the basis for integrated land use patterns, both between individual precincts of the site and adjoining lands, and
- To provide guidelines to developers as to the features to be embodied in any development of the site.

(xiii) Eurobodalla Shire Council Policies

- ***Yellow bellied Glider Policy (specific to Broulee area),***

The purpose of this policy, developed in conjunction with the National Parks and Wildlife Service, is to; (i) define development or activities that will not significantly impact on the Yellow-bellied Glider or its habitat, (ii) to ensure the long-term persistence of Yellow-bellied Gliders within the Broulee Area through retention of suitable habitat and other development controls and (iii) to provide a platform for a similar approach to the entire Coastal Plains of Eurobodalla Shire.

The policy does not substitute the need for a 7 part test for significant impact on threatened species, populations or ecological communities, or their habitats to be carried out under the Environmental Planning and Assessment

Act 1979. However, if development or activities in the Broulee area take place according to the policy, application of the 7 part test for the Yellow-bellied Glider will conclude that a significant impact will be unlikely and therefore a Species Impact Statement will not be required. When other areas of the Coastal Plains are assessed, a similar process will apply.

The policy does not consider the impact of development or activities on other listed Threatened Species.

The objectives of the policy are to:

- Ensure the long-term persistence of Yellow-bellied Gliders within the Broulee Area, through retention of suitable habitat and other development controls, as appropriate;
- Make landowners aware of the existence of Yellow-bellied Gliders and their habitat;
- Provide certainty with regard to future development proposals within the Broulee Area in relation to potential conflict with the ongoing conservation of the Yellow-bellied Glider;
- Allow consent and concurrence authorities to make a more informed decision with regard to developments and activities that impact upon the habitat of the Yellow-bellied Glider; and
- Reduce cost to the landholders and the development industry within the Broulee Area by reducing the frequency that Species Impact Statements are produced in those instances where the development potentially impacts upon the habitat of the Yellow-bellied Glider.

- ***Acid Sulphate Soils Policy***

The purpose of this policy is to prevent and minimise the environmental consequences caused by the exposure of potentially acid sulphate soils.

This policy applies to all land within the Eurobodalla Shire Council local government area classified as Class 1 to Class 5 on the maps marked “Acid Sulphate Soil Planning Map” deposited in the office of Eurobodalla Shire Council .

The objectives of this policy are to:

- Manage the disturbance of potential and/or actual acid sulphate soils in the Eurobodalla Shire Council local government area to minimise impacts on natural water bodies and wetlands and on agricultural, fishing, aquaculture, urban and infrastructure activities;
- Require special assessment of certain development requiring consent on land identified as being subject to risks associated with the disturbance of potential and/or actual acid sulphate soils.

(xiv) Eurobodalla Shire Council Planning Strategies

- ***Eurobodalla Rural Lands Strategy (2005),***

  This strategy covers the rural areas of the Eurobodalla LGA and forms a companion document for the Draft Eurobodalla Urban Settlement Strategy (2005).

Key points outlined within the strategy include:

- Where lands adjoin a built up urban area, is currently zoned for rural residential development and can make use of existing infrastructure or planned infrastructure augmentation such as arterial road development and sewer upgrades, then it may be appropriate to rezone that land for urban use,
- Land identified for future urban development should be along major transport corridors, adjacent to and adjoining existing zoned urban land and be unconstrained,
- A series of maps contained within the strategy indicate the following areas recommended for investigation for further potential 'urban residential development', north Batemans Bay, west of Batehaven, south and south-east of Moruya, north of Bodalla and south of Dalmeny.

The strategy also outlines opportunities for Tradeable Development Rights (TDRs) – exchanging development rights on unsuitable land for development rights on more suitable land, to achieve better conservation outcomes.

- ***Draft Eurobodalla Urban Settlement Strategy (2005)***

The overall objective of this strategy is to provide a framework for achieving a sustainable urban settlement pattern for Eurobodalla, by guiding the location and form of future growth.

Key objectives of the strategy include:

- Protect and enhance cultural, social, ecological and environmental characteristics,
- Enable separation between settlements,
- Limit coastal sprawl,
- Protect local character,
- Efficient use of land,
- Greater range of housing to meet demographic change, and
- Create a hierarchy of settlements.

(xv) Direction G20 - Planning for Bush Fire Protection

Objectives

- To protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas.
- To encourage sound management of bush fire prone areas.

Where this direction applies

This direction will apply to the local government areas listed in Schedule 1, when preparing a local environmental plan for land that is identified as bush fire prone on a bush fire prone land map.

A ***bush fire prone land map*** is a map with the same meaning as in section 146 of the Act, or, until such a map has been certified by the Commissioner of the NSW Rural Fire Service, a map referred to in Schedule 6 of the Act.

What a council must do if this direction applies

A Council must, in the preparation of a local environmental plan:

1) consult with the Commissioner of the NSW Rural Fire Service under section 62 of the Act, and take into account any comments so made.
2) have regard to *Planning for Bushfire Protection 2001.*
3) where development is proposed, comply with the following provisions, as appropriate:
   (a) provide an Asset Protection Zone (APZ) incorporating at a minimum:

      i. an Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property.

      ii. an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road.

   (b) For infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the local environmental plan permit Special Fire Protection Purposes (as defined under section 100B of the Rural Fires Act 1997), the APZ provisions must be complied with.

   (c) contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks.

   (d) contain provisions for adequate water supply for fire fighting purposes.

   (e) minimise the perimeter of the area of land interfacing the hazard which may be developed.

   (f) introduce controls which avoid placing inappropriate developments in hazardous areas.

   (g) introduce controls on the placement of combustible materials in the Inner Protection Area.

   (h) ensure that bushfire hazard reduction is not prohibited within the APZ.

If the local plan does not comply with the provisions listed in paragraph 3, the Council must obtain written advice from the Commissioner of the NSW Rural Fire Service, to the effect that, notwithstanding the non-compliance, the NSW Rural Fire Service does not object to the progression of the local environmental plan.

SECTION 2.0 - SITE DESCRIPTION

2.1 LOCATION

The subject site is opposite Barlings Beach and situated on the northern side of George Bass Drive, approximately 1.5 km to the west of Rosedale and 1.5 km to the north-east of Tomakin. Approximate Australian Map Grid (AMG) coordinates for the site are 247500E and 6033000N. The subject site comprises fragmented patches of remnant bushland with expansive areas of cleared land used for agricultural purposes making up the majority of the site. The site encompasses an area of approximately 173.59 hectares.

2.2 REGIONAL CONTEXT

The property is bound by Mogo Stage Forest to the west and George Bass Drive to the south. The property occurs south of Batemans Bay and north of the Tomaga River within the Eurobodalla Local Government area (LGA).

The Eurobodalla LGA occupies an area of approximately 340,000 hectares of land abundant with complex and diverse native vegetation communities. These communities provide a range of habitats for a rich variety of species. Within this LGA National Parks, Public Reserves, rivers and estuaries comprise approximately 50% of the Shire. State Forest comprises a further 30% of the Shire with the final 20% made up of private freehold land (Refshauge *et al* 2006).

The remnant native vegetation within the Shire holds immense importance for the maintenance of landscape biodiversity, fauna populations, water quality and catchment health. The Eurobodalla LGA contains marine, estuarine and freshwater environments. Distributed along the coast are various significant wetlands listed as SEPP 14 – Coastal Wetlands. Connectivity of the surrounding bushland is strongest along north-south alignments to the west of Bodalla, Moruya and Batemans Bay. East-west habitat linkages are discontinuous along the coast (Refshauge *et al* 2006).

The Eurobodalla LGA is rich in Aboriginal and European cultural heritage. Within the area there are many Aboriginal sites recorded in the form of symbolic / sacred sites, art sites, habitation sites and axe grinding grooves (Refshauge *et al* 2006).

2.3 CLIMATE

The South East Coast of NSW experiences a temperate climate which is characterised by cool winters, warm to hot summers and precipitation, generally, in all seasons (Griffith *et al.* 2000). Summer temperatures range from 15 to 24°C and winter temperatures from 5 to 17°C (Australian Bureau of

Meteorology 2006). There are usually one or two frosts each year. The area's highest recorded temperature is 43.3°C. Its lowest recorded temperature is 0°C.

Average, annual rainfall is 907mm, whilst the highest recorded rainfall over 1 day is 275mm (Australian Bureau of Meteorology 2006).

2.4 GEOLOGY AND SOILS

The geology of the floodplains surrounding the Bevian Wetland within the southern section of the subject site is characterised by alluvial soils which are derived from quaternary sediments. The soils consist of gravel, sands and silts and are moderately deep and clayey with no rock outcrops.

The upper slopes of the subject site are underlain by the Wagona and Bogolo formations (NSW Geological Survey, 1971) of the Ordovician Period. The Wagona formation consists of cherts, slate and volcanics whilst the Bogolo formation consists of slate, phyllite, quartz arenite, cherts and conglomerates. The soils are coalluvial and are derived from both of these formations.

2.5 ACID SULPHATE SOILS

Douglas Partners Pty Ltd has undertaken a Geotechnical Report (2002) of the site and broader Tomakin / Barlings area. The report contains soil profiles from three test pits located on the site, which found no evidence to suggest potential acid sulphate soils. Reference to the Mogo 1:25 000 Acid Sulphate Soil Risk Map indicates that the Bevian Wetland is assessed as having a low probability of acid sulphate materials at or near the surface. The site is shown as having no known occurrence of potential acid sulphate soils (*Douglas Partners Pty Ltd* 2002).

Douglas Partners Pty Ltd (2002) recommend that following selection of services routes and excavation depths, further assessment of acid sulphate soil conditions should be carried out in accordance with the recommendations of the Acid Sulphate Soil Management Advisory Committee (ASSMAC 1998).

JCL Development Solutions undertook additional soil testing in May 2007. The aim of the testing was to determine the risk of sulphate oxidation due to excavation works being undertaken on the site. Test sites were restricted to future areas of road and OSD construction with the closest relationship to existing wetlands. Core hole testing logs from six (6) test pits confirm that no evidence of potential sulphate oxidation exist within the test site zones.

Management Guideline information for advice on dealing with encountered acid sulphate risk is to be retained on site during sub-division works and is attached to the Ecological Site Management Plan. This information is to be made available to all contractors during every site induction.

2.6 TOPOGRAPHY AND DRAINAGE

The subject site is situated on gently undulating to steep land and contains a network of drainage lines. The site is divided into two catchments. The northern half of the site is referred to as ‘Salt Water Creek Catchment’, whilst the southern half of the site is referred to as the ‘Bevian Wetland Catchment’.

A ridge passing through the centre of the study site is presumed to form the boundary between the two catchments, which also applies to subsurface flows.

The Salt Water Creek catchment forming the northern section of the site contains the upper tributaries of Saltwater Creek ICOLL, which discharge over Barling's Beach into the South Pacific Ocean. The catchment drains from several small drainage lines, which flow generally to the south east to Saltwater Creek ICOLL. There are two farm dams located on this drainage line in the north of the site. To the south of the old nursery there is another tributary of Saltwater Creek ICOLL which initially flows in a southerly direction and contains one farm dam in the upper reaches of this tributary. The creek then turns to the east in which two more farm dams have been constructed. To the south another tributary of Saltwater Creek ICOLL flows in an easterly direction from Bevian Road into a small farm dam. From this farm dam two smaller drainage lines, which were dry at the time of the survey, flow in different directions one to the north east and one to the south east into Saltwater Creek ICOLL.

The Bevian Wetland Catchment which forms the southern section of the site flows into the Bevian Wetland. One drainage corridor is located to the north west of the Bevian Wetland and contains a small farm dam after which the drainage line is not defined. From here the topography flattens out and becomes a floodplain. The south eastern section of the subject site contains a floodplain of the Bevian Wetland with no defined drainage corridor located in this area.

Gradients of the subject site range from steep 20^{o} in the upper drainage lines to less than 5^{o} within the floodplain of the Bevian Wetland. The approximate elevation ranges from less than 10m AHD within the Bevian Wetland to 100m (AHD) on the ridge within the north-western section of the subject site.

2.7 ENVIRONMENTAL VALUES

The environmental values associated with the subject site have been confirmed through a series of local environmental studies carried out over a number of years. The ensuing values include:-

- Threatened fauna species habitat for Powerful Owl, Glossy Black-Cockatoo, Eastern Freetail-bat, Greater Broad-nosed Bat, Eastern Bentwing-bat and Yellow-bellied Glider,
- Spotted Gum/Ironbark vegetation, which provides refuge and a foraging resource,
- Banksia Scrub vegetation , which is considered to be regionally significant,
- EEC's listed under the *TSC Act,* Swamp Oak Floodplain Forest, Riverflat Eucalypt Forest on Coastal Floodplains and Freshwater Wetlands on Coastal Floodplains,
- Preliminary EEC listed under the *EPBC Act,* Dry Rainforest of the South East Forests,
- Protection of groundwater resources and regulation of existing water tables,
- Groundwater dependent ecosystems,

- Intermittent Closing and Opening Lake or Lagoon (ICOLL) - Salt Water Creek,
- Bevian Wetland – SEPP 14 wetland no 197,
- Aboriginal heritage sites, and
- Reestablishment of 'healthy' riparian zones.

Key issues raised by the then Department of Environment and Conservation (now the Department of Environment and Climate Change, DECC) based on the previously submitted subdivision proposal which was refused include:

- Environmental impacts on the SEPP 14 Wetland – Bevian Wetland, notably due to stormwater and road construction,
- Environmental impacts on the foraging habitat of threatened species including the Yellow-bellied Glider and Eastern Bentwing-bat,
- Environmental impacts of pets and increased human presence on wildlife and shorebirds at Barling's Beach, and
- Protection of Endangered Ecological Communities (EEC's).

Further consultation undertaken with the DECC raised no further issues. The above key issues have been adequately addressed in the current Bevian Road Concept Application.

2.8 FLORA AND FAUNA

A Flora and Fauna Assessment (*Conacher Travers* 2007a) has been prepared for the Site. A summary of the results from this report are as follows:

2.8.1 Flora

A total of two hundred and eighty nine (289) flora species were observed within the subject site. Of these, two hundred and twenty six (226) species were native and sixty three (63) species were exotic. The native species observed consisted of twenty nine (29) trees, forty six (46) shrubs, one hundred and one (101) groundcovers, twenty six (26) vines, twenty two (22) waterplants and two (2) epiphytes. The plants observed are listed in Tables A1.1 of Appendix 1 of the Flora and Fauna Assessment.

In addition to those species, a number of unidentified exotic species were observed in the gardens of the two residences located within the north-eastern section of the subject site.

Nine (9) vegetation communities and three (3) vegetation community variants have been identified within the subject site. These vegetation communities are listed in Table 1 below and depicted in Figure 6.

Table 1 - Vegetation communities within the subject site

Vegetation community No.	Vegetation Community Title	Existing extent (ha)
1	Spotted Gum/Ironbark Open Forest	15.76
2	Blackbutt Woodland	2.92
3	Dry Gully Rainforest (Preliminary EEC under the *EPBC Act* 1999)	0.52
4	Banksia Scrub	1.28
5	Swamp Oak Open Forest (Core Quality Swamp Oak Floodplain Forest EEC - *TSC Act* 1995)	4.48
*5a	Disturbed Swamp Oak Open Heath (Low Quality Swamp Oak Floodplain Forest EEC - *TSC Act* 1995)	1.62
6	Aquatic Herbfield	1.24
*6a	Natural Freshwater Wetland (Core Quality Freshwater Wetlands on Coastal Floodplains EEC - *TSC Act* 1995)	5.94
7	Grassland with Scattered Trees	146.68
8	Disturbed Redgum Open Woodland (Low Quality Riverflat Eucalypt Forest on Coastal Floodplains EEC - *TSC Act* 1995)	2.05
9	Closed Swamp Paperbark Scrub (Core Quality Swamp Oak Floodplain Forest EEC - *TSC Act* 1995)	0.09
*9a	Disturbed Swamp Paperbark Open Heath (Low Quality Swamp Oak Floodplain Forest EEC - *TSC Act* 1995)	5.04

* Denotes vegetation community variation

2.8.2 Fauna

A total of one hundred and twenty one (121) species were observed within or adjacent to the subject site during the survey. This number comprised eighty (86) bird, five (5) reptile, seven (7) amphibian, twenty two (22) mammal species and one (1) fish species.

Of these *Conacher Travers* (2006) recorded five (5) threatened species, Powerful Owl (*Ninox strenua*), Glossy Black-Cockatoo (*Calyptorhynchus lathami*), Eastern Freetail-bat (*Mormopterus norfolkensis*), Eastern Bentwing-bat (*Miniopterus schreibersii oceansis*), and Greater Broad-nosed Bat (*Scoteanax rueppellii*) within the site (Figure 7). In addition, the Yellow-bellied Glider (*Petaurus australis*) was recorded within the site by *Gunninah Environmental Consultants* (2002).

Eighty six (86) birds were identified within the subject site. This included two (2) threatened species, Glossy Black-Cockatoo and Powerful Owl. All other species are considered to be common within the local area. Sixteen (16) threatened bird species are considered to have potential to utilise the subject site.

Twenty two (22) species of mammal were recorded to be utilising the subject site. This included eight (8) terrestrial species, five (5) common arboreal species and nine (9) bats. Three (3) bats species identified within the subject

site are listed as threatened species. Fourteen (14) threatened mammal species are considered to have potential habitat within the subject site.

Five (5) common species of reptile were recorded within the subject site. No threatened species of reptile are considered to have potential to utilise the subject site.

Seven (7) amphibians were heard calling within the wetland, creeklines and dams throughout the site. Two (2) threatened species of amphibian are considered to have potential to utilise the subject site.

One (1) fish, Marbled Eel, was identified in the dam in the north-eastern portion of the site.

2.8.3 Threatened Flora and Fauna Species

No threatened flora listed under the *TSC Act* (1995) or the *EPBC Act* (1995) were recorded within the subject site.

A total of six (6) threatened fauna species, listed under the *TSC Act* (1995), have been recorded within the subject site. *Conacher Travers* (2006) recorded Powerful Owl (*Ninox strenua*), Glossy Black-Cockatoo (*Calyptorhynchus lathami*), Eastern Freetail-bat (*Mormopterus norfolkensis*) and Greater Broad-nosed Bat (*Scoteanax rueppellii)* and Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis* within the subject site (Figure 7). Yellow-bellied Glider (*Petaurus australis)* was recorded within the subject site during previous ecological survey work (*Gunninah Environmental Consultants 2*002).

No threatened fauna listed under the *EPBC Act* (1995) were recorded within the subject site.

Three (3) endangered ecological communities listed under the *TSC Act* were identified within the site including Swamp Oak Floodplain Forest (SOFF), River Flat Eucalypt Forest on Coastal Floodplains (RFEFCF) and Freshwater Wetlands on Coastal Floodplains (FWCF (Figure 6). These vegetation communities are associated with the Bevian Wetland in the southern portion of the site.

In addition one (1) preliminary endangered ecological community listed under the *EPBC Act* was identified within the site, Dry Rainforest of the South East Forests (Figure 6). This preliminary EEC is located along the north-western boundary of the site.

2.9 VEGETATION CONDITION

The site landscape is characterised by extensive clearing with fragmented areas of natural and disturbed vegetation. Fragmented remnants form the eastern, north eastern and north western boundaries of the property. The remaining areas comprise cleared land with scattered trees, currently being subjected to grazing by cattle.

Overall the vegetation within the site is considerably disturbed. Within each of the seven (7) identified vegetation communities and one (1) vegetation community variant, varying levels of disturbance have occurred.

Vegetation Community 1, Spotted Gum Ironbark Open Forest/Woodland, has been disturbed by partial clearing and underscrubbing.

Vegetation Community 2, Blackbutt Woodland, has been disturbed by underscrubbing and cattle grazing.

Vegetation Community 3, Dry Gully Rainforest, is generally undisturbed.

Vegetation Community 4, Banksia Scrub, has been disturbed by the construction of an informal vehicular track through its centre. This track is currently unused and regrowth of the vegetation is occurring.

Vegetation Community 5, Swamp Oak Open Forest, is highly disturbed with no shrub layer and a sparse groundcover due to cattle grazing. This vegetation, surrounding the Bevian Wetland, has been disturbed by the construction of Bevian Road along its western and along part of its northern boundary. Regrowth of this community is occurring within a disused road along the northern boundary of the subject site.

Vegetation Community 5a, Disturbed Swamp Oak Open Heath, highly disturbed through weed incursions and trampling by cattle.

Vegetation Community 6, Aquatic Herbfield, is being partially trampled by cattle along the edge of the dams.

Vegetation Community Variation 6a, Natural Freshwater Wetland, is contained within the Bevian Wetland and is in relatively good health.

Vegetation Community 7, Grassland with Scattered Trees, contains many pasture weeds, with the road sides having the most significant incursions. The area surrounding the nursery contains a number of planted exotics and natives. The drainage lines and dams within the subject site contain incursions of exotic weeds.

Vegetation Community 8, Disturbed Redgum Open Woodland, has been disturbed through previous clearing and contains a number of exotic pasture species.

Vegetation Community 9, Closed Swamp Paperbark Scrub, is relatively undisturbed and contains only minor incursions of weeds.

Vegetation Community 9a, Disturbed Swamp Paperbark Open Heath, has been heavily disturbed by clearance and grazing. Along with native regrowth is a high proportion of exotic herbs and pasture grasses.

2.10 CANOPY TREES

Canopy trees form the north-western corner, north-eastern corner and eastern boundary of the site. These areas are predominately made up of the Spotted Gum/Ironbark Open Forest and Blackbutt Woodland Vegetation communities. The canopy species that make up these vegetation communities will be retained within conservation zones across the site.

In addition, the scattered trees across the majority of the site will be retained, where possible, to maintain the arboreal linkages within the site and to areas off site.

Locally occurring native canopy species will be used in landscaping works within streetscapes and open space areas, which will also enhance the arboreal connectivity within the site.

A canopy Tree Plan is included within the Ecological Site Management Plan (*Conacher Travers* 2007b).

2.11 HABITAT & FORAGE TREES

Habitat trees

A number of hollow bearing trees have been observed within the site. The Spotted Gum/Ironbark Open Forest/Woodland vegetation community contains a number of tree hollow types and sizes. These hollows provide suitable roosting and nesting habitat for a range of small birds, large forest owls, arboreal mammals and arboreal reptile species.

A number of hollow bearing trees were also observed within the Grassland with Scattered Trees community. These contained small (<10cm), medium (10 - 30cm) and large (>30cm) sized hollows. These provide potential roosting and nesting habitat for birds, micro-chiropteran bats, small arboreal mammals and some arboreal reptile species.

A low number of small hollows (<10cm) were located within the Blackbutt Woodland and Swamp Oak Open Forest (Swamp Oak Floodplain Forest EEC) communities.

Foraging trees

The nine (9) vegetation communities and three (3) vegetation community variants present within the subject site provide foraging trees for a variety of species.

The Spotted Gum/Ironbark Open Forest/Woodland community is dominated by the winter flowering *Corymbia maculata* (Spotted Gum). This community provides suitable foraging habitat for birds, bats and arboreal mammals. Winter flowering species provide foraging resources for threatened migratory bird species such as Swift Parrots and Regent Honeyeaters. A moderate to sparse shrublayer provides refuge and foraging habitat for birds, arboreal mammals and terrestrial mammal species.

The Blackbutt Woodland community is dominated by the early January flowering *Eucalyptus pilularis* (Blackbutt). This provides foraging habitat for birds, bats and arboreal mammals. The vegetation community provides little den habitat, with only a low number of small hollows (<10cm) detected. A sparse shrublayer provides limited protective and foraging habitat for birds, arboreal mammals and terrestrial mammal species.

The Dry Gully Rainforest community provides suitable foraging habitat for birds, bats and arboreal mammals. This community provides little den habitat.

The dense shrublayer provides suitable foraging and shelter habitat for a number of species including birds, arboreal mammals and terrestrial mammal species. This community provides suitable foraging resources for the Superb Fruit-dove.

The Banksia Scrub community is dominated by the January to June flowering *Banksia integrifolia* (Coastal Banksia). These provide foraging habitat for birds, bats and small arboreal mammals. No hollow trees were observed within this community. A moderate to dense shrub layer provides suitable protective and foraging habitat for birds, arboreal mammals and terrestrial mammal species.

The Swamp Oak Open Forest (Swamp Oak Floodplain Forest EEC) is dominated by *Casuarina glauca* with a low number of *Eucalyptus botryoides* (Bangalow). This community provides foraging habitat for birds, bats and arboreal mammals. This community provides little den habitat, with only a low number of small hollows (<10cm) detected. The sparse shrub layer provides limited protective and foraging habitat for birds, arboreal mammals and terrestrial mammal species.

The Disturbed Swamp Oak Open Heath generally consists of no canopy, scattered samplings of *Casuarina glauca* and an understorey generally dominated by a mixture of exotic herbs and pasture grasses with minor patches of native understorey. This community provides foraging habitat for birds, bats and arboreal mammals. The sparse shrub layer provides limited protective and foraging habitat for birds, arboreal mammals and terrestrial mammal species.

The Aquatic Herbfield community provides a foraging and watering resource for birds, bats, terrestrial mammals, reptiles and amphibians. The majority of farm dams were surrounded by *Eleocharis sp*, which provides suitable refuge for birds, reptile, amphibian and small mammal species. Fallen timber and building debris around water bodies also provides refuge for amphibian, reptile and small mammal species.

The Natural Freshwater Wetland vegetation community variant provides temporary habitat within the Bevian Wetland for fish species and water birds during periods of inundation.

The Grassland with Scattered Trees community contains the winter flowering *Corymbia maculata* (Spotted Gum) and *Eucalyptus tereticornis* (Forest Red Gum) species. These species provide a winter foraging resource for threatened migratory bird species (Swift Parrot and Regent Honeyeater). This community provides sparse foraging habitat for birds, bats and arboreal mammals.

The Disturbed Redgum Open Woodland contains a small number of the winter flowering *Eucalyptus tereticornis* (Forest Red Gum) species. This species provide a winter foraging resource for threatened migratory bird species (Swift Parrot and Regent Honeyeater). This community provides sparse foraging habitat for birds, bats and arboreal mammals. A small number of hollow bearing trees were observed within this vegetation community. These contained small (<10cm) and medium (10 - 30cm) sized hollows. These provide potential roosting and nesting habitat for birds, micro-chiropteran bats,

small arboreal mammals and some arboreal reptile species. This community has a long grazing history and contains a dense groundcover of herbs and grasses which provide limited habitat for small terrestrial mammals, reptiles and amphibians.

The Swamp Paperbark Closed Scrub occurs as a small isolated patch on the floodplain, along the edge of the Bevian Swamp Wetland in the south eastern section of the subject site. This vegetation is dominated by *Melaleuca ericifolia*. This community provides foraging habitat for birds, bats and arboreal mammals. This community provides no den habitat for birds, arboreal mammals and terrestrial mammal species. This community has a dense groundcover of herbs and grasses which provide habitat for small terrestrial mammals, reptiles and amphibians.

The Disturbed Swamp Paperbark Open Heath occurs within the highly disturbed previously cleared floodplains in the southern section of the subject site. This community is dominated by scattered samplings of *Melaleuca ericifolia* which provide only limited feed resources. This community provides no den habitat for birds, arboreal mammals and terrestrial mammal species. This community has a long grazing history and contains a dense groundcover of herbs and grasses which provide limited habitat for small terrestrial mammals, reptiles and amphibians.

2.12 BUSHFIRE RISK

The majority of the subject site has a low to medium level of threat from bushfires impacting from outside the property boundaries. Predominant vegetation cover across the development property consists of cleared and managed grassland which was formerly grazed for agricultural endeavours.

Remnant vegetation along the eastern and western boundaries will be retained within the post development landscape along with revegetated riparian zones and areas of open space. These areas may pose a minor threat during the event of bushfire and as such appropriate Asset Protection Zones (APZ's) have been applied.

The topography of the surrounding area has a southern aspect with localised ridge-tops achieving highest elevations approximately 300 metres to the north of the northern property boundary. This ridgeline extends down the north-western boundary and influences the topography and drainage within the remainder of the site.

Consequently, forested riparian corridors within Mogo State Forest to the west present a threat to the western boundary, especially from north-westerly winds. However, cleared and managed grassland within the subject site and adjacent to any proposed lots, provides effective separation from potential fire events.

Rural residential development to the north provides disturbed vegetation connectivity to remnant vegetation further to the north which includes extensive riparian communities. Similarly to the east, rural residential development contains remnant forested areas which could potentially transfer the passage of bushfires threatening the development from unmanaged vegetation to the east of Bevian Road.

Evidence of bushfires on fire scorched tree-trunks indicates that bushfires have not impacted the site for 10-15 years.

2.13 PREVIOUS LANDUSE

The subject site landscape has been affected by the following impacts:

- *Improvements:* Two existing residences are located in the north east of the subject site adjoining Bevian Road. A nursery which is no longer operational is located to the north west of the residences. Cattle yards and sheds have been erected to the south west of the nursery. A pump station is located in a drainage line to the south of the nursery.

- *Clearing:* The subject site has been subjected to extensive clearing, with most of the natural vegetation being removed. The majority of the subject site consists of pasture with fragmented areas of natural and disturbed vegetation throughout the subject site.

- *Bushfire:* There are no signs of recent bushfire.

- *Agriculture:* The cleared areas of the subject site are currently being used for cattle grazing. The remaining areas of natural vegetation within the subject site are currently being subjected to grazing by cattle.

- *Earthworks:* Ten (10) dams have been constructed throughout the subject site. Four dams are located in the northern drainage line which flows to the east. Three dams are located in the drainage line to the south of the nursery. One dam is located to the east below the Banksia Scrub vegetation ("The Knoll"). One dam is located within the Swamp Oak Open Forest to the west of Bevian Road. The remaining dam is located to the west of the Blackbutt Woodland vegetation community.

- *Introduced weeds:* The Grassland with Scattered Trees vegetation community contains many pasture weeds, with the road sides having the most significant incursions. The area surrounding the nursery contains a number of planted exotics and natives. The drainage lines and dams within the subject site contain incursions of exotic weeds.

2.14 ABORIGINAL AND CULTURAL HERITAGE

The original inhabitants of the study locality belonged to the Yuin tribe. This tribe occupied the territory stretching south from Cape Howe to the Shoalhaven River, and inland to the Great Dividing Range.

Previous archaeological assessment undertaken by *Navin Officer Heritage Consultants* (2002 & 2005) identified the presence of three types of Aboriginal heritage recordings within the subject site. These recordings include sites with surface artefacts, potential archaeological deposits and test areas.

A recent review of the proposed subdivision for Rosedale Urban Expansion Zone relative to known cultural heritage constraints was undertaken by *Navin Officer Heritage Consultants* (2006). When compared to the previous scheme

(2005), it was concluded that the current subdivision proposal provides 'substantially better potential to avoid direct impact to known Aboriginal and European site heritage recordings, and to establish more effective management regimes for their conservation management' (*Navin Officer Heritage Consultants* 2006).

Recommendations from *Navin Officer Heritage Consultants* are as follows:

1. If the current subdivision proposal is approved and further pursued, preparation of a formal statement on the cultural heritage impacts of the plan should be considered (Heritage Impact Statement).
2. In addition to a Heritage Impact Statement a cultural heritage management strategy should be prepared which defines the sites that will be conserved and how they will be managed.

2.15 PREVIOUS DEVELOPMENT CONSENT

A concept plan and development application for a 900-1100 lot subdivision on the site had been previously considered by the Department of Planning. This concept plan, however, was rejected on a number of planning and environmental grounds. A revised concept plan has been prepared reducing the development to approximately 800 lots and addressing the previous concerns raised by the Department as reasons for refusal. The features of the revised proposal area as follows:

- The proposal includes a range of housing styles and types. Smaller lots are concentrated in a hamlet on the southern half of the site with larger lots to the north,
- . Road access through the site provides greater connectivity to adjacent settlements,
- The proposal will include a stormwater treatment train, which will maintain or improve water quality and maintain water flows in to all watercourses and bodies such as Bevian Wetland,
- Access from Bevian Road is located to minimise impacts on the Bevian Wetland,
- Bio-retention swales and rain gardens are located throughout the site to manage stormwater,
- The proposal excludes development in riparian areas; land with slope greater than 33%, as well as within 400m of the sewage treatment plant, and
- To reduce the visual impact of development, lower densities are proposed in the northern areas of the site and vegetated areas in the north-eastern and north-western portions of the site are retained.

The applicant's revised concept plan was accepted by the Department in January 2006 as a major project to which Part 3A of the *EP&A* Act applies.

SECTION 3.0 - ENVIRONMENTAL MANAGEMENT

3.1 ENVIRONMENTAL MANAGEMENT PRINCIPLES

Eurobodalla Shire Council is committed to the application of Ecologically Sustainable Development (ESD) principles to the full range of activities for which it is responsible. The basic elements of sustainability that have been adopted include:

- **Biodiversity and Ecological Integrity** as fundamental components of sustainability. Without maintenance of ecological integrity, which is the good functioning of material processes upon which all life depends, it is not possible to ensure long-term social, economic and environmental benefits for current and future generations.

- **Economic Vitality** acknowledges the need to build a healthy economy that creates meaningful jobs, reduces poverty, and provides the opportunity for a high quality of life both now and into the future.

- **Social Equity** embraces to the principal that all people should have the opportunity to achieve economic, environmental and social well being.

It should be acknowledged that sustainability is a guiding concept rather than an end state in itself. In addition to applying ESD Principles to the development process it is also essential that they be applied to the protection, restoration and management of the 'Ecological Values' throughout the Rosedale area. In particular the conservation of biodiversity and maintenance of ecological integrity should be major objectives for future use and management of the site. Careful planning and management will be required to successfully achieve these objectives.

The ongoing protection and management of Aboriginal heritage values identified on the site has also been included as a consideration of the Conservation Land Use Management Strategy (Section 4).

3.2 THE CONSERVATION AND LAND USE ASSESSMENT

The Rosedale development area presents an opportunity for urban expansion in a manner which is sensitive to the physical, ecological and cultural values inherent within the site. Protection of these values requires special land use planning and management considerations at a master planning stage.

Previous suitability assessments for the Eurobodalla Shire have resulted in the site being identified for future urban development (Refshauge *et al* 2006). Rosedale in particular is considered to have the capacity for a possible yield of 1,100 lots, based on development at a similar density to its surrounds (averaging 1,200m^2 per lot).

The majority of the land with the site is currently zoned 10 – Urban Expansion. The land along the north-western portion of the site is zoned 1(a) – Environmental Constraints, whilst the land along the south-western boundary is zoned 1(c) Rural Small Holdings. The area comprising the Bevian Wetland and immediate surroundings at the southern end of the site is currently zoned 7(a), Environmental Protection – Wetlands.

An accompanying land zone suggested in the '*South Coast Sensitive Urban Lands Review*' (Refshauge *et al* 2006), is the new E2 zone – Environmental Conservation, suitable for riparian corridors, remnant vegetation, wetlands and areas containing EEC's.

The visual, geophysical, ecological, natural hazard and cultural constraints within the site have been used to determine the boundaries of conservation and development areas on the Conservation and Land Use Plan (Figure 3).

These constraints have been taken into consideration during the preparation of the current concept plan.

3.3 BIODIVERSITY CONSERVATION

While extensive disturbance has occurred over a large majority of the site, ecological values exist within portions of remnant vegetation and the Bevian Wetland.

The key biodiversity conservation values within the site are the protection of Bevian Wetland (SEPP 14 wetland), Saltwater Creek ICOLL threatened fauna species habitat, endangered ecological communities, Spotted Gum/Ironbark vegetation, Banksia Scrub vegetation, rehabilitation of riparian corridors and the connectivity of vegetation within the site and adjoining lands (Schedule 1 – Restoration Management Plan).

In order to conserve the ecologically sensitive areas such as riparian corridors, endangered ecological communities and Bevian Wetland within the site there is a need to comply with the best practice stormwater management measures to minimise the export of urban pollutants. Provided that there is no net change in the quantity or quality of stormwater runoff, it is unlikely that there would be any significant changes in the composition and extent of the endangered ecological communities or water quality within the Bevian Wetland.

The retention of native vegetation within the site is of particular importance to threatened species such as the Yellow-bellied Glider and Eastern Bentwing Bat, both of which have been identified within the subject site. Retention of suitable habitat for these species within the subject would assist in offsetting the cumulative impacts of the proposed development within the Rosedale area. In addition, revegetation of the drainage lines

within the subject site will improve, in the long-term, the connectivity of vegetation within the site to remnant vegetation within the adjacent Mogo State Forest (Schedule 1 – Restoration Management Plan). It is highly likely that Yellow Bellied Gliders identified within the site are using the habitat within the adjacent Mogo State Forest due to their large home range of 35 hectares.

The biological diversity at Rosedale has been conserved by implementing the following measures:-

- Excluding development from ecologically sensitive areas,
- Development within the flood affected lands be managed to mitigate stormwater impacts on Bevian Wetland and associated endangered ecological communities,
- Adoption of best practice stormwater management measures such as the installation of bioswales, filter strips, sediment basins, polishing ponds and aerating riffle zones,
- Ensuring that bushfire protection measures do not extend into the planned conservation lands,
- A network of wildlife corridors, protected foraging habitat and riparian zones are to be integrated into the development design to enhance connectivity and habitat value of the site in the post development landscape,
- Retention of the existing canopy layer and habitat links,
- All landscape works to utilise locally occurring native species to enhance foraging habitat within the development,
- Control and eradication of noxious and environmental weed species,
- Control and eradication of pests (feral cats, dogs, foxes, rabbits, goats) that compete with fauna and damage native vegetation,
- Water sensitive urban design,
- Conservation of indigenous native plants within the developable area minimising significant impacts on any one species, with preference given to key habitat and foraging resources,
- Restoration of degraded areas for habitat purposes, and
- Domestic pets such as dogs, with the exception of ‘companion dogs’ and cats should be prohibited within the development to reduce predation on native fauna including shorebirds at the nearby Barling Beach.

3.3.1 Priority Ecological Values

The priority ecological values associated with Rosedale have been confirmed through a number of local environmental studies. These values include:-

- Foraging habitat of threatened species including the Yellow Bellied Glider and Eastern Bentwing Bat,

- Endangered Ecological Communities (EEC's) – Swamp Oak Floodplain Forest and Freshwater wetlands on Coastal Floodplains,
- Dry Rainforest of the South East Forests (Preliminary EEC),
- SEPP 14 Wetland – Bevian Wetland,
- Regional significance of Banksia Scrub vegetation,
- Importance of habitat and food resources provided by the Spotted Gum/Ironbark Forest and Blackbutt Woodland,
- Ecological functioning of all the existing vegetation communities and habitats,
- Connectivity within the site and to bushland within the adjacent Mogo State Forest,
- Protection of groundwater resources and regulation of existing water tables to enable groundwater dependent ecosystems,
- Water quality of coastal water bodies, and
- A variety of remnant native vegetation providing roosting habitat and variable seasonally foraging resources,

3.3.2 Conservation Zones

A conservation network will be integrated within the site to offset the impacts of development (Figure 5 and Schedule 1). Protection is ensured through the retention of remnant vegetation, protection to Bevian Wetland and the revegetation of riparian areas, which will in turn create wildlife corridors to remnant vegetation offsite. These areas may be rezoned to the new E2 zone – Environmental Conservation (Standard Instrument Order 2006), as recommended in the *South Coast Sensitive Urban Lands Review* (Refshauge *et al* 2006)

Riparian Zones

The more prominent riparian zone running through the centre of the site is an important conservation zone that acts as a critical corridor between the northern and southern catchments. This riparian zone creates an additional East to West habitat link across the site (Schedule 1).

The riparian zones will be maintained and enhanced with appropriate buffer zones. Buffer zones will ensure adequate vegetation is present to maintain the water quality of the site. The objective of the buffer zones are to stabilise the drainage lines, protect water quality and create a protective corridor for ecological functions.

Remnant vegetation

The following vegetation remnants will be protected within conservation zones across the site.

The Banksia Scrub vegetation community is considered to be vulnerable by *EcoGIS* (2001). Whilst the vegetation community within the subject site varies slightly from Map Unit 28 – Coastal Sands Blackbutt – Old Man Banksia Shrub – Fern Forest, it is still considered to be representative of the vegetation community described by *NPWS* (2000). *EcoGIS* (2001) considers this vegetation community to be a moderately functional ecosystem under threat from processes such as clearing and urban

development, therefore this vegetation community is considered to be regionally significant.

The Aquatic Herbfield and Grassland with Scattered Trees vegetation communities are highly disturbed and as such do not correspond to any vegetation community described by NPWS (2000) and are not considered to be of regional significance. However, this community will be conserved within the dams across the site enhancing the biodiversity of the site

The Spotted Gum/Ironbark vegetation community provides important habitat by way of shelter and denning sites for arboreal animals. This is also the case for the Blackbutt Woodland vegetation community.

Endangered Ecological Communities

Swamp Oak Open Forest, Disturbed Redgum Open Woodland and Natural Freshwater Wetland vegetation correspond with the *TSC Act* listed endangered ecological communities, Swamp Oak Floodplain Forest, River Flat Eucalypt Forest on Coastal Floodplains and Freshwater Wetlands on Coastal Floodplains respectively. These vegetation communities are associated with Bevian Wetland and will be conserved within the same conservation zone.

Dry Gully Rainforest corresponds to the *EPBC Act* preliminary listed endangered ecological community, Dry Rainforest of the South East Forests. This vegetation community occurs as a small fragment in the north western corner of the site and will be conserved within a conservation zone.

Bevian Wetland

The Bevian Wetland is a freshwater wetland and is identified under State Environmental Planning Policy 14 – Coastal Wetlands (SEPP 14) as Wetland No. 197. The Bevian Wetland is of high regional significance due to the diversity of habitat for flora and fauna present within this wetland.

Nearby Conservation Reserves

The nearest conservation reserves are Illawong and Broulee Island Nature Reserves located approximately 5 km to the south. Murramarang National Park is located approximately 15 km to the north of the subject site.

Mogo State Forest is located adjoining the subject site in the north-west and covers an area of approximately 15,500 ha.

3.3.3 Threatened Species

Flora

No threatened flora listed under the *TSC Act* (1995) of the *EPBC Act* (1995) were recorded within the subject site.

Aldrovanda vesiculosa and *Correa baeuerlenii* have been identified as having potential habitat within the site. *Aldrovanda vesiculosa* has potential habitat within the Bevian Wetland. A vegetation management plan is to be

prepared which is to outline the weed removal methods to be employed within the Bevian Wetland. This may increase the quality of the habitat for *Aldovanda vesiculosa. Correa baeuerlenii* has potential habitat within the Spotted Gum/Ironbark Open Forest and Blackbutt Woodland. Whilst these species have not been recorded within the site, their habitat will be conserved with conservation zones of the site.

Fauna

A total of six (6) threatened fauna species, listed under the *TSC Act* (1995), have been recorded within the subject site. *Conacher Travers* (2006) recorded Powerful Owl (*Ninox strenua*), Glossy Black-Cockatoo (*Calyptorhynchus lathami*), Eastern Freetail-bat (*Mormopterus norfolkensis*), Greater Broad-nosed Bat (*Scoteanax rueppellii)* and Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis* within the subject site (Figure 7). Yellow-bellied Glider (*Petaurus australis)* was recorded within the subject site during previous ecological survey work (*Gunninah Environmental Consultants* 2002).

Habitat for the Yellow-belied Glider (*Petaurus australis*) exists within the Spotted Gum/Ironbark Forest and the Blackbutt Woodland. Given the large home range of this species it is likely that it utilises habitat within the surrounding areas and not the subject site exclusively. Habitat for Yellow-bellied Glider will be conserved within the site and connectivity maintained and enhanced to provide linkages to habitat within the adjacent Mogo State Forest.

Habitat for the Powerful Owl (*Ninox strenua*) exists within the Spotted Gum/Ironbark Forest and the Blackbutt Woodland. Given the large home range of this species it is likely that this species utilises habitat within the surrounding areas and not the subject site exclusively. Habitat for Powerful Owl will be conserved within the site and connectivity maintained and enhanced to provide linkages to habitat within the adjacent Mogo State Forest.

Habitat for the Glossy Black-Cockatoo (*Calyptorhynchus lathami*) exists within the Spotted Gum/Ironbark Forest and the Blackbutt Woodland. This species also has foraging habitat within the Swamp Oak vegetation surrounding the Bevian Wetland. Habitat for this species will be conserved within the site and connectivity maintained and enhanced to provide linkages to habitat within the adjacent Mogo State Forest.

Foraging habitat for the microbats, Eastern Freetail-bat (*Mormopterus norfolkensis*), Eastern Bentwing-bat (*Miniopterus schreibersii oceansis*) and Greater Broad-nosed Bat (*Scoteanax rueppellii*), exists across the site in areas of remnant vegetation, in particular the Spotted Gum/Ironbark Open Forest and dams within the site. Given the high mobility of these species it is likely that that they utilise habitat within the surrounding areas and not the subject site exclusively. However, habitat for these bats will be conserved within remnant vegetation and riparian zones to be retained and enhanced in the site.

3.3.4 Habitat Corridors and Linkages

The proposed development will not remove any areas of vegetation which have connectivity to surrounding areas of native vegetation.

At present, the majority of the vegetation within the site has been cleared for agricultural purposes. Isolated remnants occur along the eastern boundary, north-western and north-eastern corners of the site.

The development will increase the connectivity within the site by linking these remnants through revegetation works along riparian zones and through areas of open space (Schedule 1).

Revegetation works will enhance the linkages from vegetation in the north western and north eastern corners of the site to the vegetation within the adjacent Mogo State Forest. The Mogo State Forest extends to the north and west of the site and encompasses an area of approximately 15,500 ha.

Revegetation of the major riparian zone traversing the site in an east-west direction will create connectivity from the remnants along the eastern boundary of the site to the western boundary of the site extending into Mogo State Forest (Schedule 1).

Vegetation to the east of the site is partially fragmented by rural and urban development. The Tomakin sewerage treatment plant adjoins the south eastern boundary of the site amongst fragmented vegetation. Beyond the sewage treatment plant, extending further to the south east, is the caravan park, which extends to Long Nose Point.

Habitat linkages should be provided by the habitat corridor, public parks and landscaped beds between and within lots. These beds must contain locally occurring indigenous native species that provide foraging resources and on ground refugia.

3.3.5 Habitat and Forage Trees

A significant proportion of hollow bearing trees and foraging resources will be retained within the post development landscape as part of the Conservation and Open Space Precincts within the site. These areas will create connectivity across the site to habitat within the adjacent Mogo State Forest. This connectivity will maintain the ecological functioning of the post development landscape.

Habitat trees

All habitat trees found onsite will be retained in order of priority in accordance with the quality, quantity and size of hollows found in each tree. Given that the current Masterplan is a “concept only” specific survey and assessment for the presence or absence of hollow trees will be undertaken at the DA stage. Habitat Tree survey has been undertaken to date only within the main access drive off George Bass Drive.

Foraging trees

Seasonal foraging resources within the site provide year round food sources for native fauna. The Spotted Gum/Ironbark Open Forest vegetation community provides an important winter foraging resource, whilst the Blackbutt Woodland vegetation community provides an important summer foraging resource.

These foraging resources will be protected within the conservation zones throughout the site. In addition, all landscaping works will utilise locally occurring native species to further enhance foraging habitat for wildlife within the site.

3.3.6 Canopy Trees

The aim should be to retain as much of the canopy as possible including the hollows and roosting sites within the site. Trees within the site of significant floral character and contributing to a sustainable canopy, such as Spotted Gum and Blackbutt, should be identified and surveyed in an Environmental Validation Report. The positioning of buildings, landscaping, civil works and utilities in the vicinity of these trees must be sited according to the value of the tree as defined by the category of tree protection zones.

3.3.7 Noxious and Environmental Weed Control

The common noxious and environmental weeds of the site are Bitou Bush, Kikuyu, White Clover, Pennywort, Sharp Rush, Blackberry, Purple Top and Lantana. Major weed incursions occur within the Grassland with Scattered Trees vegetation community which occupies the majority of the site.

An Ecological Site Management Plan (ESMP) is to be prepared which specifically addresses the bushland management issues, one of which includes noxious and environmental weed control.

Landscaping is to predominantly use locally occurring indigenous species, garden weeds are to be minimized and managed as part of the landscape maintenance works.

3.3.8 Pest Management

A rabbit, fox and cat control program is to be implemented through a Pest Species Management Plan. In combination with restrictions on cat and dog ownership, the existing fauna is to be protected from predation providing a fauna friendly environment.

3.3.9 Mitigating Impacts of Bushfire Protection works

A Fuel Management Plan is to be prepared which stipulates a burning and hazard reduction program that minimises potential impacts on native flora and fauna. This is to be achieved by defining the boundary of asset protection works, retaining or regenerating clumps of under storey vegetation in strategic locations and defining a hazard management regime that avoids a gradual loss of flora and/or fauna species.

The asset protection zones established around development areas may form all or part of the buffer zone between the development areas and conservation areas to manage the edge effects of urban development on remnant vegetation and their habitats.

SECTION 4.0 - CONSERVATION AND LAND USE MANAGEMENT STRATEGY

The Conservation and Land Use Management Strategy is intended as a guide for assessing proposed development applications. It provides a list of issues and generic strategies that need to be assessed and addressed within any such application.

The strategy also identifies criteria, known as considerations, against which any development application is assessed to meet the requirements and guidelines of the CLUMP. This is the subject of the Environmental Validation Report.

The main environmental management issues relevant to any development application have been categorised into the following generic headings:-

- Groundwater & Surface Water interactions
- Soil Erosion and Sedimentation
- Bushland Management
- Bushfire Protection
- Conservation Management
- Pest Species Management
- Management of Visual Values
- Urban Infrastructure Management
- Management of Odour
- Reducing Human Induced Climate Change
- Community Association Framework

4.1 GROUNDWATER AND SURFACE WATER INTERACTIONS

The hydrological processes within the subject site cover two catchments. The northern half of the site is referred to as ‘Saltwater Creek Catchment’, whilst the southern half of the site is referred to as the ‘Bevian Wetland Catchment’. A ridge passing through the centre of the site forms a catchment boundary between the two catchments, which also applies to subsurface flows.

Issues to be considered

- Impact of the proposed development on water quality and quantity at all stages of development,

- Impact of the proposed development on the interactions between groundwater and surface water within the 'Bevian Wetland Catchment' and the 'Saltwater Creek Catchment',
- Impact of increased stormwater runoff from the proposed development due to increased impervious surfaces,
- Protection of Bevian Wetland (SEPP 14 wetland) from pollutants within groundwater and stormwater runoff and changes in hydrological flows,
- Protection of Saltwater Creek ICOLL from pollutants within groundwater and stormwater runoff and changes in hydrological flows,
- Protection of the three (3) endangered ecological communities associated with Bevian Wetland, Swamp Oak Floodplain Forest, River Flat Eucalypt Forest on Coastal Floodplains and Freshwater Wetlands on Coastal Floodplains, from pollutants within groundwater and stormwater runoff and changes in hydrological flows,
- Changes in surface drainage from the present minimal riparian zone vegetation cover versus the post landscape revegetated riparian zone cover.

Objectives

- Minimise changes to surface drainage patterns,
- Maintain or improve water quality within and discharging from the site,
- Retention of excess stormwater runoff on site,
- Manage water tables through a combination of groundwater extraction, drainage and irrigation,
- Maintain and enhance the habitat and water quality within the Bevian Wetland and associated endangered ecological communities within the site.

Strategies

- Preparation and implementation of a stormwater and groundwater management plan,
- Implementation of a stormwater treatment train, which may include, Gross Pollutant Traps, bio-retention swales, vegetated buffer zones and rainwater tanks,
- Use of short term silt barriers to trap sediment during the construction phase,
- Use of locally occurring native vegetation with a moderate to high requirement for phosphorous to reduce the risk of eutrophication in water bodies.

Indicators

- Maintained or improved hydrological functioning of the landscape,
- Maintained or improved biodiversity across the site.

4.2 SOIL EROSION AND SEDIMENTATION

Construction works associated with the proposed development will result in the disturbance of soils. Erosion and sedimentation of soils from the proposed development into sensitive environments within the site is an undesirable result from earthworks and should be mitigated to reduce impacts.

Cut and filling of the landscape to raise or lower the ground level for construction or access has implications for the retention of trees, ecological functioning of habitats and drainage patterns. Restoration works will also be required to restore the vegetation communities and ecological functions of the affected areas.

Issues to be considered

- Soil disturbance during construction works and the risk of erosion,
- Loss of top soil,
- Sedimentation of natural waterways and water bodies such as Bevian Wetland and associated endangered ecological communities,
- Stream bank stability,
- Promotion of exotic species migration, habitat and germination success, and
- Impacts of cut and fill works on habitat, drainage patterns and vegetation.

Objectives

- Protection of ecologically sensitive habitats from erosion and sedimentation,
- Stabilising newly formed soil surfaces,
- Restoration of degraded or affected habitats, particularly around riparian zones.

Strategies

- Preparation and implementation of an Ecological Site Management Plan and Construction Management Plan,
- Installation of sediment control devices such as fencing and efficient revegetation processes.

Indicators

- Maintained or improved biodiversity across the site,
- Maintained or improved water quality within the site.

4.3 BUSHLAND MANAGEMENT

Rural & residential environments provide many opportunities for exotic species to establish and grow. The main source of weed species arises from garden refuse green waste being dumped into native bushland.

The main areas susceptible to weed invasion are riparian zones, drainage lines, retained bushland areas and other sensitive environments. Those areas adjacent to lot boundaries where exotic plants have been planted within garden beds are particularly vulnerable. Many woody weed species are introduced via bird droppings and need to be targeted on a regular basis to maintain the condition of remnant vegetation.

Use of native landscaping within a development area provides an ideal opportunity to minimise the introduction of weed species and to compensate for loss of under-storey habitat that may have been removed for any works.

Issues to be considered

- Impacts of noxious weeds on biodiversity,
- Impacts of noxious weeds on remnant vegetation,
- Impacts of noxious weeds on environmentally sensitive areas, such as Bevian Wetland, endangered ecological communities and remnant Spotted Gum/Ironbark and Banksia Scrub vegetation communities,
- Management of urban pressures adjacent to and within remnant bushland.

Objectives

- The fostering of natural processes to promote regeneration of vegetation in preference to the introduction of plant material through planting regimes,
- Enhancement of sensitive environments such as; Bevian Wetland and associated endangered ecological communities and important remnant vegetation such as Spotted Gum/Ironbark Forest and Banksia Scrub,
- Enhanced vegetation connectivity through the creation of habitat corridors within the site,
- Eradication of noxious and environmental weeds, and
- Restoration of degraded habitats.

Strategies

- Preparation and implementation of an Ecological Site Management Plan (ESMP),
- Bush regeneration works and revegetation works throughout the site,
- Establishment of buffer zones around ecologically sensitive areas, and
- Landscaping works across the site should utilise locally occurring native species.

Indicators

- Ecological functioning of Spotted Gum/Ironbark Open Forest,
- Ecological functioning of Banksia Scrub,
- Ecological functioning of Blackbutt Woodland,
- Ecological functioning of Dry Gully Rainforest (Dry Rainforest of the South East Forests preliminary – EEC),
- Ecological functioning of Swamp Oak Open Forest (Swamp Oak Floodplain Forest - EEC),
- Ecological functioning of Disturbed Redgum Open Woodland (River Flat Eucalypt Forest on Coastal Floodplains – EEC)
- Ecological functioning of Freshwater Wetland Vegetation (Freshwater Wetlands on Coastal Floodplains - EEC),
- Ecological functioning of Saltwater Creek ICOLL
- Connectivity between remnant vegetation within the site and to vegetation off-site.

4.4 BUSHFIRE PROTECTION

When preparing Local Environmental Plans (LEP's) for land identified as Bush Fire Prone Land, the Minister for Planning requests Councils, under Section 117 Direction, G20 – Planning for Bushfire Protection (Environmental Planning and Assessment Act), to consult the Commissioner of the NSW Rural Fire Service.

Where, under Section 117(2), direction number G20 applies a Council must, in the preparation of a local environmental plan:

1) Consult with the Commissioner of the NSW Rural Fire Service under Section 62 of the Act, and take into account any comments so made,
2) Have regard to *Planning for Bushfire Protection* 2006,
3) Where development is proposed, comply with the following provisions, as appropriate:

   (a) Provide an asset protection zone (APZ) incorporating at a minimum:

i. An inner protection area (IPA) bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property; and
ii. An outer protection area (OPA) managed for hazard reduction and located on the bushland side of the perimeter road.

(b) Contain provisions for two-way access roads which links to perimeter roads and / or fire trail networks;

(c) Contain provisions for adequate water supply for fire fighting purposes;

(d) Minimise the perimeter of the area of land interfacing the hazard which may be developed;

(e) Introduce controls which avoid placing inappropriate developments in hazardous areas;

(f) Introduce controls on the placement of combustible materials in the Inner Protection Area; and

(g) Ensure that bushfire hazard reduction is not prohibited within the APZ.

Planning for Bushfire Protection, 2006 (NSW Rural Fire Service / Planning NSW) provides guidance on the planning and development control processes for bushfire planning in relation to protection measures for developments in NSW bushfire prone areas.

It also provides requirements for Class 1, 2 & 3 buildings in bushfire prone areas and guidance on planning and development control processes in relation to bushfire protection measures. In addition Planning for Bushfire Protection - 2006 provides a methodology for determining setback distances (asset protection zones) and Bushfire Attack/Construction Standards required for habitable buildings in development for residential purposes that are designated as bushfire-prone.

Issues to be considered

- Bushfire threat from the adjacent Mogo State Forest to the north-west of the site,
- Increased bushfire risk in areas of significant slope towards the central and northern end of the site,
- Manage bushfire risks associate with the riparian corridors throughout the site,
- Manage bushfire risk associated with remnant vegetation, namely Spotted Gum/Ironbark Open Forest and Banksia Scrub, throughout the site,
- Provision of adequate emergency access and egress from the site,

- Provide adequate access for fire fighting vehicles,
- Clear delineation of APZ's and other measures and management requirements of ecologically sensitive areas within or adjacent to Asset Protection Zone's,
- Identification of Construction Standards for buildings requiring additional protection measures,
- Coordinate fuel load management with adjacent fuel management zones managed by adjacent landholders,
- Minimise impacts on the site's biodiversity due to bushfire hazard reduction measures.

Objectives

- Minimise the bushfire threat to residents, visitors and property,
- Identify opportunities to reduce bushfire hazard through the design of buildings and therefore minimise the extent of vegetation clearance required, and
- Manage the bushfire hazard to minimise impacts on ecological values.

Strategies

- Prepare a bushfire contingency plan to define bushfire planning requirements,
- Create bushfire buffer zones along the boundaries,
- Provide for perimeter roads and reserves,
- Provide appropriate and ongoing fuel management within APZ's,
- Developing and maintaining community awareness,
- Maintaining liaison with the NSW Rural Fire Service,
- Reduce bushfire hazard through the design of buildings and therefore minimise the extent of vegetation clearance required, and
- Prepare a Fuel Management Plan to assist future land holders and the Community Association to manage the hazardous fuels within the subject site landscape.

Indicators

- Prevention of bushfire incidence,
- Bushfire suppression capabilities,
- Community awareness of bushfire threats,
- Adequate access, egress and evacuation capabilities, and
- Managing hazard without compromising ecological and scenic values.

4.5 ECOLOGICAL & CULTURAL MANAGEMENT

Ecological and cultural management focuses on the protection of significant ecological, cultural or landscape features and maintaining the ecological functioning of habitats and drainage lines. Mitigating impacts on threatened species is a focal point however; management extends into restoring riparian zones and remnant vegetation, mitigating impacts of weed incursions, controlling pest or feral animals and the retention of ground refugia within and outside lots.

The impacts on threatened species vary depending on their preferred habitat. There is a need to address specific issues related to the ecology of the individual species, and to assess the issues concerning the management of individual threatened species.

Issues to be considered:

- Conservation of identified Aboriginal sites and culturally significant landscape features,
- Conservation of endemic species throughout the development,
- Conservation of threatened communities, flora and fauna species and their habitats,
  - Powerful Owl (*Ninox strenua*)
  - Glossy Black-Cockatoo (*Calyptorhynchus lathami*)
  - Eastern Freetail-bat (*Mormopterus norfolkensis*)
  - Greater Broad-nosed Bat (*Scoteanax rueppellii)*
  - Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*)
  - Yellow-bellied Glider (*Petaurus australis)*
  - Swamp Oak Floodplain Forest EEC (*TSC Act)*
  - River Flat Eucalypt Forest on Coastal Floodplains EEC (*TSC Act*)
  - Freshwater Wetlands on Coastal Floodplains EEC (*TSC Act*)
  - Dry Rainforest of the South East Forests Preliminary EEC (*EPBC Act*)
- Provision of movement corridors within the site and to areas of vegetation off-site,
- Protection of the Spotted Gum/Ironbark Open Forest and Banksia Scrub remnant vegetation communities, which provide important habitat to threatened species.

Objectives:

- The provision of habitat connectivity, through the dedication of wildlife corridors and retention of refugia,
- Conservation of threatened species habitat,
- Commitment to an integrated plan that balances ecological, cultural and heritage values with site sensitive development,
- Application of Ecologically Sustainable Development (ESD) principles.

Strategies:

- Appropriate buffers to be provided for identified places and objects of aboriginal heritage,
- Appropriate development setbacks from remnant vegetation and sensitive ecological features, such as EEC's and the Bevian Wetland,
- Subdivision pattern and streetscape to be dictated by the natural site features and the desire to provide diversity of housing lots,
- Identified canopy trees and mature trees with floristic character to be retained where possible for visual screening purposes and conservation of the existing natural character in harmony with the proposed urbanisation,
- Habitat trees within open space areas to provide links with adjoining fauna habitat areas, creating connectivity across the site,
- The provision of refugia within habitat corridors, watercourses and open space,
- Access network and services to permeate around natural site features including water features, visually and ecologically significant trees, generally in accordance with the landscape concepts,
- A Community Management Plan to be prepared to coordinate and fund the maintenance of vegetation, ecology, landscaping, bushfire protection, tree protection, archaeology and infrastructure,
- Provide principles and detailed strategy for the management of wildlife habitat corridors, protection of high value conservation related ecological systems, Aboriginal archaeological sites and public use of areas,
- Integration of ecological, heritage and cultural management with future plans of management,

- Identify disturbed areas and restore areas to enhance the sites biological diversity and ecological functions,

- Conservation of the full range of biodiversity of plant and animal species on the site.

- Conservation areas may be rezoned to the new E2 Zone – Environmental Conservation (Standard Instrument Order 2006), as recommended in the South Coast Sensitive Urban Lands Review (Refshauge *et al* 2006).

Indicators:

- A subdivision pattern and streetscape that is dictated by the natural site features and the desire to provide diversity of housing lots,

- Vegetation connectivity within the site and to areas off-site,

- Maintained or improved biodiversity within the site,

- Integration of ecological, heritage and cultural features within the subdivision pattern,

- Integrity of buffer zones surrounding threatened flora, fauna or vegetation communities,

- Ecological functioning of wildlife corridors/riparian zones,

- Amended LEP, including the new E2 Zone – Environmental Conservation applied to conservation areas within the site.

4.6 TREE PROTECTION & HOLLOW BEARING TREE REMOVAL

Trees to be retained within the post development landscape require protection from compaction and harm during the construction phase. The following issues should be considered to ensure the protection of retained trees within the site.

Issues to be considered

- General protection of retained trees,

- Identification and protection of hollow bearing trees,

- Protection of hollow dependent tree fauna,

- Canopy separation within asset protection zones,

- Maintenance of arboreal connectivity,

- Trimming of unsafe limbs and protection of infrastructure,

- Compaction of the root zone,

- Visual screening of the development,
- Impact of cut and fill operations.

Objectives

- Protection of infrastructure and residents from unsafe trees,
- Maintenance of arboreal connectivity,
- Visual screening of the development,
- Protection of hollow dependent tree fauna.

Strategies

- Implementation of an adequate Tree Protection Zone (TPZ**)** will be required surrounding any retained tree or group of trees. This tree protection zone can generally be provided by preserving an area around the tree/s immediately outside of the drip-line,
- Tree protection zones should be adequately marked using star pickets and high visibility tape or plastic net fencing,
- Provide canopy breaks of between two and ten metres within asset protection zones immediately adjacent to conservation zones,
- Clump planting of canopy species,
- Ensure canopy breaks are no greater than 10 metres,
- In the event of a significant canopy break, arboreal fauna bridges are to be installed and replacement plantings established to restore lost trees,
- Dead limbs are to be retained on the trees unless they are of a size, weight and location that would cause injury or damage to property or persons,
- Any hollows that are contained within dead limbs are to be relocated into adjacent trees and secured,
- Retained trees are to be protected from compaction through the installation of protective fencing,
- Machinery is to avoid tree protection zones during all operations,
- Approved tree removal operations in the vicinity of retained trees are to be undertaken in a manner that avoids canopy damage and soil

compaction. Such works are to be supervised by a qualified arborist or ecologist,

- Stockpiling materials and soils within tree protection zones is to be avoided,
- Retained trees are to be protected from cut and fill operations through the installation of protective fencing,
- Filling around the base of trees is to be undertaken in a manner that prevents root compaction, maintain soil aeration and avoids the rotting of the trunk,
- In the event of tree loss, sufficient replacement trees are to be established in the same locality to replace the loss of canopy habitat,
- Any trenching or construction works undertaken within tree protection zones should be supervised and recorded (photographed) by a qualified Arborist,
- Stumps are to be ground - not dozed or dug out,
- All trenches, footings and major earth movement should avoid TPZ's,
- Hollow bearing trees are to be identified and protected through the installation of protective fencing,
- One (1) weeks notice is to be given for the planned removal of trees,
- A fauna ecologist will inspect all trees to be removed for use by fauna. This may include inspection of trees at sunset (stag watching) which allows for the detection of diurnal fauna returning to hollows or nocturnal fauna leaving for the night,
- Where fauna is identified within a hollow and the risk of death or injury as a result of machine felling of the tree is high, the tree may need to be felled in sections. This will involve the removal of sections by chainsaw with the hollow limb lowered to the ground for removal/relocation of fauna and the relocation of the hollow sections to suitable nearby trees. These works are to be carried out by a suitably qualified arborist under the direction of the fauna ecologist,
- Where young fauna are identified within a hollow, clearing will not be carried out until those young are old enough to leave the hollow and the care of the parents. Alternatively the fauna are to be removed by a fauna ecologist, allowed to recover from shock and relocated into adjacent protected bushland areas,
- Clearing is to be avoided during breeding times when young are likely to be present within hollows (Spring to early Summer),
- Any fauna injured during clearing will be handed to WIRES for care and rehabilitation. Council's flora and fauna development planner is to be notified of any threatened fauna species listed in the TSC Act (1995) found to inhabit hollows.

Indicators

- Maintained improved habitat for threatened fauna species, in particular hollow dependent species,
- Ecological functioning of Spotted Gum Ironbark Open Forest vegetation community,
- Connectivity with surrounding remnant vegetation,
- Visual screening of the development through the retention of trees.

4.7 PEST FAUNA SPECIES MANAGEMENT

Pest fauna species cause problems in natural landscapes such as:

- Soil erosion,
- Degrading habitats for native flora and fauna,
- Replacing important native species through competition for food and shelter,
- Preying on native fauna species,
- Spreading disease and weeds,
- Increasing management costs by requiring removal / remedial action to avoid further infestations,
- Impacting on the health of humans and other animals.

Key fauna species targeted for control within the subject site should include fox, cats, dogs, rabbits, goats and chickens.

Issues to be considered

- Competition with native fauna and in particular threatened fauna species,
- Preying on native fauna and in particular threatened fauna species,
- Damage to landscaping and restoration works,
- Mobilization of animal diseases,
- Domestic animals kept by residents.

Objectives

- Protection of all native fauna, in particular threatened fauna, from pest species,

- Protection of ecologically sensitive vegetation from grazing by pest species,

- Education of residents with regard to responsible pet ownership.

Strategies

- Preparation and implementation of a pest fauna species management plan, targeting feral animals including foxes, rabbits, cats, dogs, goats and chickens,

- Prohibition of cat and dog ownership with exemptions for companion dogs (as defined under the *Companion Animals Act* 1998),

- Protective fencing around ecologically sensitive areas to prevent feral pests from grazing,

- Provision of buffer zones between the development area and ecologically sensitive areas.

Indicators

- Integrity of buffer zones adjacent to ecologically sensitive habitats,

- Reduction and effective control of pest species,

- Protection of all native fauna, in particular threatened fauna species.

4.8 MANAGEMENT OF VISUAL VALUES

Rosedale is located on the coast approximately 12km south-east of Batemans Bay and 2km south of Malua Bay. The proximity of the ocean, large areas of native vegetation and large rural lots, gives the area an apparent natural appearance and character.

In order to keep with the character of the existing landscape a variety of lot sizes are proposed and the retention of remnant vegetation, as well as the replanting of riparian zones will assist in creating a visual screen for the development. The north western side of the site is adjoined by Mogo State Forest, which acts as a buffer preventing observation of the site from any major vantage points. The northern portion of the site is buffered from Bevian Road to the south by a ridgeline that runs east to west across the centre of the site. The southern half of the site can be observed from the south western corner of the site from Bevian Road. Visual buffers may be implemented along the, which require visual buffers.

Retention of the existing canopy is considered important in minimising the visual impact of the development from surrounding vantage points. The existing trees also form a major part of the sites visual characteristics, providing a variety of visually appealing vistas.

Issues to be considered

- Impact of the development on the areas natural features,
- Aboriginal cultural sites and significant landscape features,
- Character of post development landscape,
- Maintenance of natural coastal vistas.

Objectives

- Protection of canopy and ridgeline vegetation,
- Protection of sensitive areas and remnant vegetation to maintain the visual character of the area whilst also maintaining the biodiversity within the site, and
- Creation of a development layout, design and construction that is sympathetic with the natural surroundings.

Strategies

- No development is proposed to be undertaken above RL56,
- Retain and protect in perpetuity, remnant vegetation and ecologically sensitive areas across the site through the establishment of buffer areas,
- Provide community open space areas,
- Re-establish the vegetation along riparian zones, to create a natural screen to development,
- Retention of ridgeline vegetation,
- Building design controls,
- Ecologically sensitive road and lot layout.

Indicators

- Visual absorption capacity and enrichment of sites visual significance.

4.9 URBAN INFRASTRUCTURE

The provision of urban infrastructure for the proposed development has implications for the conservation of ecological, cultural and landscape features of the Rosedale landscape. Not only does the required infrastructure need to meet expected urban demands in the future, but must

also be integrated within the existing environment. The following principles have been adopted to guide the integration of urban infrastructure within the Rosedale development area.

Issues to be considered

- Integration with existing urban infrastructure,
- Provision of safe, convenient access between the development and surrounding landscape features and activity roads,
- Impacts on local traffic,
- Access to public transport facilities,
- Passive access facilities – walking and cycling,
- Integration of stormwater management systems within the landscape,
- Disturbance and rehabilitation of natural areas,
- Impacts on the environment due to cut and fill work, water pollution and odour generation,
- Impacts on vegetation connectivity and associated wildlife movement,
- Integration of sewerage treatment facilities.

Objectives

- Provision of adequate urban infrastructure, which is viable in a local, ecological, social and economic context,
- Maximise use of existing infrastructure and integrate with urban design,
- Provide safe, convenient and accessible access for vehicles, pedestrians and cyclists,
- Minimisation of the disturbance to natural areas in providing sewage, roads, electricity and other elements of physical infrastructure to the defined development areas.

Strategies

- Adopt environmentally sensitive engineering design solutions that minimise potential impacts while meeting functional requirements of the infrastructure,
- Maximise use of existing infrastructure and integrate with urban design,

- Upgrade of the existing access roads to the proposed development from Bevian Road,

- Preparation of a local traffic study,

- Provision of public transport networks at an early stage in the planning and development process, including the promotion of a local bus network,

- Creation of pathways to provide walking and cycling links throughout the development,

- Provision of flexible road widths and alignments, both vertical and horizontal, to minimise cut and fill and to retain the maximum number of trees possible,

- Development of stormwater drainage links that aim to minimise changes to natural flow regimes,

- Integration of stormwater drainage design into natural streetscape and landscape design,

Indicators

- Integration of urban infrastructure within the local social, ecological and economic context,

- Environmental impacts of proposed urban infrastructure,

- Environmental Impacts of cut and fill operations,

- Public access to community resources and public lands.

4.10 MANAGEMENT OF ODOUR

There is potential for odour to arise due to the close proximity of the development to the Tomakin Sewage Treatment Plant (TSTP) located at the south eastern boundary of the site.

Prevailing winds across the development vary between the seasons however are predominantly from the west in winter and from the north-east in summer. An Odour Modelling Assessment was undertaken by *Holmes Air Sciences* (2003). This involved extensive odour sampling, meteorological modelling and odour dispersion modelling. The *Holmes Air Sciences* (2003) report concluded that odour levels from the Tomakin Sewage Treatment Plant (TSTP) reaching the subject site were well within the most stringent of the DECC's goal of 2 odour units (ou) 'nose-response' 99% level. Odour levels under current operation ranged from 0.07ou to 1.24ou, whilst potential future operations, doubling the plants capacity ranged from, 0.08ou to 1.39ou.

Issues to be considered

- Generation of odour from TSTP.
- Effective buffer zones,
- Delivery and adequacy of sewage treatment.

Objectives

- Effective delivery and adequacy of sewage treatment,
- Buffering of odours from the TSTP.

Strategies

- Retention of vegetation to form a buffer zone between the development area and the TSTP,
- Maintenance of vegetation within the buffer zone to increase the absorption capacity of the buffer,
- Locate breather and overflows to minimise the effects of odour leaks,
- Locate and provide sufficient treatment of discharges from sewage pumping stations.

Indicators

- Development setback from the TSTP,
- Adequacy of buffer zones and other odour abatement measures,
- Location of overflows and breathers.

4.11 REDUCING HUMAN INDUCED CLIMATE CHANGE

Of all parts of Australia, the coastal zone is likely to be particularly affected by climatic change because, in addition to direct effects, it will experience a range of effects derived from changes to vegetation, runoff and land use in non-coastal areas (Pearman *et al* 1988).

Issues to be considered

- Accelerated climatic change due to and increase in energy consumption resulting from development,
- Loss of public access to shoreline,
- Increased flooding due to increased runoff,
- Higher water tables,
- Reduced drainage heads,
- Intrusion of saltwater into groundwater supplies,
- Changes in climatic comfort indices, such as air temperature and rainfall,
- Access to public transport facilities,

- Provision of walk ways and cycle ways,

Objectives

- Reduce the overall contribution from the Rosedale development to accelerated climate change,
- Minimise the risks associated with sea level rise to the development.

Strategies

- Installation of water re-use and recycling systems, eg: rainwater and treated grey water,
- Installation of alternative energy systems such as solar,
- Energy efficient appliances within all households,
- Protection of low lying areas against inundation,
- Sustainable building design (aspect, prevailing winds, construction style, lot size and materials),
- Provision of walking, bicycle and public transport facilities to minimise private vehicle use,
- Incorporation of public open space and conservation zones within the development layout to allow for the retention of trees,

Indicators

- Alternative energy systems such as solar,
- Energy efficient appliances within households,
- Availability and adequacy of alternative human movement options such as walkways, cycle ways and public transport facilities,
- Proximity to commercial facilities to reduce private vehicle dependency,
- Adequacy of open space and conservation areas allowing for tree retention.

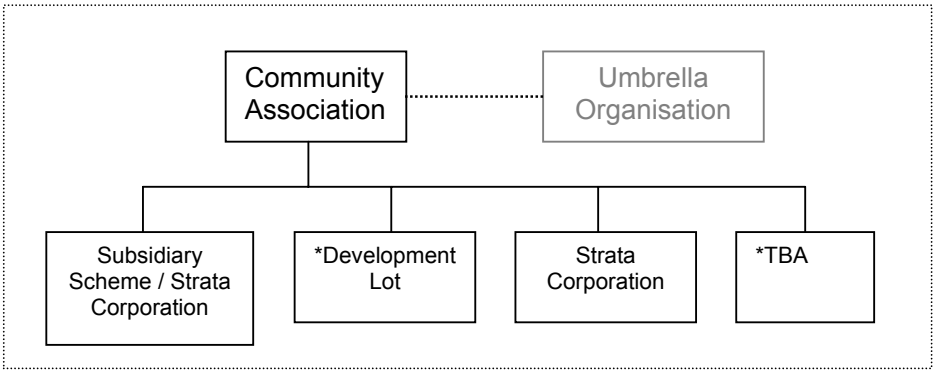
4.12 COMMUNITY ASSOCIATION FRAMEWORK

It is proposed that the site be developed under a staged basis and is to be held in common ownership under Community Title.

The vision for this site is the creation of an environmentally sensitive development which minimises the impact on existing flora and fauna. The development aims to produce outcomes that reflect the shared responsibility of inter-generational equity holders by providing for economic opportunity, employment and public access to areas of natural amenity.

4.12.1 Community Management Structure

This site may have a multi level management structure as follows:



* The depiction does not limit the number or type of *Subsidiary Schemes* registrable in the development.

4.12.2 Community Title Management

The proposed development is to be administered under the provisions of Community Title. This approach allows for ongoing regulation of activities, including maintenance within the entire development area, within individual allotments, within bushfire protection areas, conservation areas and within common community association areas. This approach also provides substantial benefits in terms of regulating the impact of the development on the natural environment.

Land retained in shared ownership by the members of the Community Title Scheme is known as Association Property. It is commonly called a Community Lot and will be identified as Lot 1 on the registered Community Plan of Subdivision.

The Community Management Statement binds the Community Associations with any subsidiary schemes and each owner/occupier, mortgagee in possession and/or lessee of a Lot.

The Community Association may, on its behalf or on behalf of each subsidiary scheme contract with third parties to:

(a) Provide management, operational, maintenance and other services in connection with Community Property,

(b) Provide transport services inside and outside the community scheme (to the owners or occupiers of lots),

(c) Provide a letting service to owners of Lots,

(d) Provide other services or amenities to community Property, Common Property and/or the owners and occupiers of Lots,

SECTION 5.0 - GUIDELINES FOR PRECINCTS

The Rosedale development area has been divided into 3 core precincts, Development, Open Space and Conservation. These can be further divided into eighteen precincts (Figure 5). They are:

- Development Precincts

  - Development Precinct 1A (D.1A) – north
  - Development Precinct 1B (D.1B) – north-east
  - Development Precinct 1C (D.1C) – existing residence, north-east
  - Development Precinct 2 (D.2) – central
  - Development Precinct 3 (D.3) – south

- Conservation Precincts

  - Conservation Precinct 1 (C.1) – Spotted Gum/Ironbark Forest, north-east
  - Conservation Precinct 2 (C.2) – Ecological Corridor 1
  - Conservation Precinct 3 (C.3) – Ecological Corridor 2 - Banksia Scrub ('The Knoll')
  - Conservation Precinct 4 (C.4) – Ecological Corridor 2 - Blackbutt Woodland and Spotted Gum/Ironbark Forest, south-east
  - Conservation Precinct 5 (C.5) – Bevian Wetland and surrounds, south

- Open Space Precincts

  - Open Space Precinct 1A (OS.1A) – 'The Knoll' (Ecological Corridor 2)
  - Open Space Precinct 1B (OS.1B) – Extension between C.3 and C.4 (Ecological Corridor 2)
  - Open Space Precinct 1C (OS.1C) – Area surrounding existing dwelling (Ecological Corridor 1)
  - Open Space Precinct 2A (OS.2A) – Western retention basin
  - Open Space Precinct 2B (OS.2B) – Community facilities, south
  - Open Space Precinct 2C (OS.2C) – Eastern retention basin
  - Open Space Precinct 2D (OS.2D) – South – eastern remnant (Ecological Corridor 2)
  - Open Space Precinct 2E (OS.2E) – STP setback, south-east

The character, building design, visual, conservation and landscaping characteristics of each precinct is provided below as guidelines for preparation of any development application.

5.1 DEVELOPMENT PRECINCTS

5.1.1 Development Precincts 1A (D.1A) and 1B (D.1B)

FUNCTION – DEVELOPMENT (RESIDENTIAL) – Medium to low density

5.1.1.1 The Objectives

- To provide a residential environment that provides larger lots with ocean views and a rural character, which harmonises with the surrounding, existing natural character of the landscape
- Single dwellings on lots
- To provide pockets of natural vegetation within lots assisting in the movement of fauna and genetic plant material within the post development landscape

5.1.1.2 Precinct guidelines

(a) Character

The character of Development Precincts 1A and 1B shall convey village living that brings the natural environment into the living domain. The village setting will comprise streetscapes of native trees and plants, which will form corridors to remnant bushland areas, replanted creeklines and within areas of open space.

Natural screens for privacy and visual aesthetics will be formed through the retention of remnant bushland and the replanting of creeklines.

(b) Building Design

These Precincts will contain a mixture of styles, which convey a variety of architectural designs. Development will be predominately low density and will be designed around the steeper topography of the land.

(c) Visual Impact

This northern portion of the site is visually obvious from George Bass Drive in the south and as such the larger lots proposed for this area will assist in the retention of vegetation and hence screening of the development. Pockets of remnant vegetation will be retained and creeklines and areas of open space revegetated using native species to act as a natural screen to the development.

(d) Landscaping

Planting of indigenous species together with the retention of established vegetation will be used to separate building masses. Streets are to be lined with native trees and various other native plantings. This will allow the existing landscape to be maintained, providing continuity and coherence of vegetation linkages to surrounding bushland.

(e) Conservation

This development precinct will be integrated with Conservation Precincts C1 and C2. These areas will retain pockets of remnant Spotted Gum/Ironbark vegetation and will also allow for the replanting of vegetation along watercourses. In addition, the larger lots within Development Precincts 1A and 1B will allow for the retention of natural vegetation, acting as stepping stones to the surrounding Conservation Precincts C1 and C2.

5.1.2 Development Precinct 1C (D.1C)

FUNCTION – DEVELOPMENT (RESIDENTIAL) - Existing

5.1.2.1 The Objectives

- To maintain the existing residence and rural feel of this area

5.1.2.2 Precinct guidelines

(a) Character

The character of this precinct is an existing rural residence and associated agricultural sheds.

(b) Building Design

The existing fibro, rural style dwelling will be maintained along with the associated agricultural working sheds.

(c) Visual Impact

The existing dwelling will be screened by the nearby Conservation Precinct C2 and Open Space Precinct OS.1C. This precinct contains a natural watercourse, which will be revegetated. In addition, the retention of remnant native vegetation to the north and south of this dwelling will assist in maintaining the rural character of this area.

(d) Landscaping

Any landscaping undertaken around the existing dwelling will comprise of locally occurring native species. Landscaping will aim to maintain the ecological function of the existing canopy habitat which provides a movement corridor and foraging area for arboreal fauna.

(e) Conservation

Development Precinct 1C is integrated within the Conservation Precinct C2. This Conservation Precinct comprises a natural watercourse, which will be revegetated, creating a movement corridor for fauna and flora. The existing residence within the Development Precinct 1C will be maintained as a rural dwelling and will allow for the continued retention of scattered trees.

5.1.3 Development Precinct 2 (D.2)

FUNCTION – DEVELOPMENT (RESIDENTIAL) – medium to low density

5.1.3.1 The Objectives

- To provide a residential environment that provides larger lots with a rural character, which harmonises with the surrounding, existing natural character of the landscape
- Single dwellings on lots
- To provide pockets of natural vegetation within lots assisting in the movement of fauna and genetic plant material within the post development landscape

5.1.3.2 Precinct guidelines

(a)Character

The character of Development Precincts 2A shall convey village living that brings the natural environment into the living domain. The village setting will comprise streetscapes of native trees and plants, which will form corridors to remnant bushland areas, replanted creeklines and within areas of open space.

Natural screens for privacy and visual aesthetics will be formed through the retention of remnant bushland and the replanting of creeklines.

(b) Building Design

These Precincts will contain a mixture of styles, which convey a variety of architectural designs. Development will be predominately low density and will be designed around the steeper topography of the land.

(c)Visual Impact

Development Precinct 2A is centred between the Conservation Precinct C2 to the north and the natural ridgeline to the south which forms Open Space Precinct 1 and Conservation Zone C3. These areas of Conservation and Open Space will provide adequate screening of the proposed development from all vantage points.

(d) Landscaping

Planting of indigenous species together with the retention of established vegetation will be used to separate building masses. Streets are to be lined with native trees and various other native plantings. This will allow the existing landscape to be maintained, providing continuity and coherence of vegetation linkages to surrounding bushland.

(e) Conservation

This development precinct will be integrated with Conservation Precincts C2, C3 and C4. Native landscaping within the development will complement these areas of conservation. In addition, nearby open space areas will also provide ecological value to this portion of the site, whilst also encouraging recreational activities.

5.1.4 Development Precinct 3 (D.3)

FUNCTION – DEVELOPMENT (RESIDENTIAL) – high density

5.1.4.1 The Objectives

- To provide a residential environment that provides smaller lots with a mixture of single and multiple dwellings
- To provide integrated pocket parks, which encourage recreation and provide open space. Pocket parks will include native landscaping.

5.1.4.2 Precinct guidelines

(a) Character

The character of this Precinct is higher density with pocket parks and streetscapes comprising of native trees and plants, which will form stepping stones to larger native vegetation remnants and corridors within the site.

(c) Building Design

These Precincts will contain a mixture of styles, which convey a variety of architectural designs. Development will be predominately high density, designed around pocket parks.

(d) Visual Impact

The southern portion of the site which forms Development Precinct 3 will be screened from George Bass Drive by the large Conservation Precinct C5. Conservation Precinct C5 comprises Bevian Wetland and remnant native vegetation.

(e) Landscaping

Planting of indigenous species together with the retention of established vegetation will be used to separate building masses. Streets are to be lined with native trees and various other native plantings. This will provide stepping stones of habitat to the larger retained remnants and corridors within the site.

(f) Conservation

This development precinct will be integrated with Conservation Precincts C3 and C4 to the north and C5 to the south. In addition, Open Space Precinct 1 to the north and Open Space Precincts 2A, 2B, 2C and 2D to the south provide both ecological and recreational values. The Development Precinct D3 will provide stepping stones of native street plantings and pocket parks to these larger areas of conservation and open space.

5.2 CONSERVATION PRECINCTS

5.2.1 Conservation Precinct C1 (C.1)

FUNCTION – CONSERVATION – Spotted Gum/Ironbark Vegetation

Conservation Precinct C1 conserves a remnant of Spotted Gum/Ironbark Open Forest in the north-western corner of the site. The topography of the land within this Precinct is steep and unsuitable for development. The Spotted Gum/Ironbark Open Forest provides important habitat for threatened species identified within the site including the Yellow-bellied Glider, Glossy Black-Cockatoo, Powerful Owl and a number of microbats. The remnant to be conserved in this Precinct provides connectivity from the subject site to the adjacent Mogo State Forest.

5.2.2 Conservation Precinct C2 (C.2)

FUNCTION – CONSERVATION – Ecological Corridor 1

Conservation Precinct C2 conserves the natural watercourse within the northern portion of the site. The water course runs in a west-east direction. The watercourse will be revegetated with Spotted Gum/Ironbark vegetation and will provide an ecological corridor across the northern portion of the site. This corridor will provide vegetation connectivity to Mogo Forest to the west of the site and allow for the movement of fauna and genetic transfer of plant material. The revegetation of the watercourse will also improve the existing water quality within and leaving the site.

5.2.3 Conservation Precinct C3 (C.3)

FUNCTION – CONSERVATION – Ecological Corridor 2 - Banksia Scrub

Conservation Precinct C3 conserves and important area of remnant vegetation known as Banksia Scrub. This vegetation will be retained and restored through regeneration works and will provide foraging habitat and shelter for native fauna. This vegetation will also assist in screening the development and forming a second ecological corridor within the site.

5.2.4 Conservation Precinct C4 (C.4)

FUNCTION – CONSERVATION – Ecological Corridor 2 - Blackbutt Woodland and Spotted Gum/Ironbark vegetation

Conservation Precinct C4 conserves remnant Blackbutt Woodland and Spotted Gum/Ironbark vegetation on the eastern boundary of the site. This vegetation links with the Open Space Precinct 1B and 2D and forms Ecological corridor 2 within the site. This vegetation will be retained and restored through regeneration works and will provide foraging habitat and shelter for native fauna. This vegetation will also assist in screening the development.

5.2.5 Conservation Precinct C5 (C.5)

FUNCTION – CONSERVATION – Bevian Wetland and surrounds

Conservation Precinct C5 forms the Bevian Wetland and surrounding vegetation the majority of which forms the endangered ecological communities, Swamp Oak Floodplain Forest, Riverflat Eucalypt Forest and Freshwater Wetlands on Coastal Floodplains.

This Precinct will be protected from stormwater runoff associated with the development through the Open Space Precincts 2A and 2C which form retention basins. In addition, a range of best practice stormwater management measures will be implemented within the adjacent Development Precinct D3 to ensure that the existing water quality conditions within the site are maintained or improved.

This area also screens the development from George Bass Drive.

5.3 OPEN SPACE PRECINCTS

5.3.1 Open Space Precinct 1A (OS.1A) and 1B (OS.1B)

FUNCTION – OPEN SPACE – Parklands and recreational activities (Ecological Corridor 2)

Open Space Precinct 1A and 1B will provide parklands and an area for recreational activities. Located on the ridgeline which divides the site into the northern and southern portions, this precinct will offer views to the coastline.

This precinct will also provide an area for the retention of native vegetation and the creation of native landscaping and in this manner will form the Ecological Corridor 2 within the site.

Any construction in this area will form public amenities such as carparks, toilets and tables.

5.3.2 Open Space Precinct 1C (OS.1C)

FUNCTION – OPEN SPACE – Parklands and recreational activities (Ecological Corridor 1)

Open Space Precinct 1C forms the area immediately surrounding the existence residence. This area will provide parklands and an area for recreational activities.

This precinct will also provide an area for the retention of native vegetation and the creation of native landscaping and in this manner will form the Ecological Corridor 1 within the site.

5.3.2 Open Space Precinct 2A (OS.2A)

FUNCTION – OPEN SPACE – Western bio-retention basin

Open Space Precinct 2A forms the area of the western bio-retention basin, which will capture runoff from the adjacent Development Precinct D3. This basin provides and important function in the stormwater treatment train in preventing any sediments from entering the Conservation Precinct C5 at in the southern portion of the site.

This area also provides for the restoration of the Swamp Oak Floodplain Forest endangered ecological community associated with the floodplains surrounding the Bevian Wetland.

5.3.3 Open Space Precinct 2B (OS.2B)

FUNCTION – OPEN SPACE – Community facilities

Open Space Precinct 2B will form the location for community facilities in the southern portion of the site. This may include sporting fields and a community hall.

5.3.4 Open Space Precinct 2C (OS.2C)

FUNCTION – OPEN SPACE – Eastern bio-retention basin

Open Space Precinct 2C forms the area of the eastern bio-retention basin, which will form the same function as Open Space Precinct 2A, capturing runoff from the adjacent Development Precinct D3. This basin provides and important function in the stormwater treatment train in preventing any sediments from entering the Conservation Precinct C5 at in the southern portion of the site.

This area also provides for the restoration of the Swamp Oak Floodplain Forest endangered ecological community associated with the floodplains surrounding the Bevian Wetland.

5.3.4 Open Space Precinct 2D (OS.2D)

FUNCTION – OPEN SPACE – Parklands and recreational activities (Ecological Corridor 2)

Open Space Precinct 2D is located on the south-eastern boundary of the subject site and will provide parklands and an area for recreational activities.

This precinct will also provide an area for the retention of native vegetation and the creation of native landscaping and in this manner will form the Ecological Corridor 2 within the site.

5.3.5 Open Space Precinct 2E (OS.2E)

FUNCTION – OPEN SPACE – Sewage Treatment Plant (STP) setback

Open Space Precinct 2D forms the Sewage Treatment Plant (STP) setback area. This area will also be used for recreational sporting fields and general open space.

SECTION 6.0 - PRIMARY OUTCOMES FOR THE DEVELOPMENT

The key environmental and bushfire outcomes of this development should include:-

1. An ecologically sustainable development which responds to ecological, cultural, bushfire and landscape constraints,
2. Retention of remnant vegetation, including Spotted Gum/Ironbark, Blackbutt Woodland, within Conservation Precincts 5, 6 7 and 8. These Precincts are development exclusion zones,
3. Protection of habitats for Yellow-bellied Glider, Powerful Owl, Glossy Black-Cockatoo, Eastern Freetail-bat, Greater Broad-nosed Bat and Eastern Bentwing-bat,
4. Protection and enhancement of regionally significant, Banksia scrub and preliminary determined *EPBC* listed EEC, Dry Rainforest of the South East Forests, within Open Space Precincts and Conservation Precincts,
5. Protection and rehabilitation of endangered ecological communities, Freshwater Wetlands on Coastal Floodplains and Swamp Oak Floodplain Forest, within Conservation Precinct 5,
6. A Community Management Statement for the implementation of
   - Community facilities and services,
   - Ongoing management of the environmental and ecological values of the landscape,
   - The obligations of the owners/occupiers or lessee's of each lot, and
   - Landscape maintenance.
7. Protection and maintenance of the site's Aboriginal cultural heritage sites,
8. Integration of urban infrastructure within the local context,
9. Protection for the proposed development from bushfire threats and provisions of adequate facilities to defend property and infrastructure, including evacuation planning initiatives,
10. Implementation of best practice stormwater management measures,
11. Revegetation of riparian zones across the development.
12. Restoration of the Swamp Oak Floodplain Forest endangered ecological community,
13. Minimised significant environmental impacts.
14. A restoration program to offset negative environmental impacts.

The proposed development needs assessment against the above primary environmental and bushfire outcomes. The Environmental Validation Report (EVR) will validate the proposed development against these outcomes by analysing the relevant considerations as listed in section 7.0.

To ensure that the above outcomes are enunciated into development control planning initiatives a series of development control planning technical environmental reviews should occur. They include;

1. Environmental Validation Assessment
2. Bushfire Contingency Plan
3. Bushfire Protection Assessment
4. Bushfire Evacuation Plan
5. Ecological Site Management Plan
6. Fuel Management Plan

These reports embody the outcomes of the development and provide a framework for implementation of bushfire and environmental management strategies within the context of a large scale development.

SECTION 7.0 – CONSIDERATIONS FOR VALIDATION OF THE DEVELOPMENT

The CLUMP has reviewed the proposed land use at Rosedale and made recommendations in respect of matters that require consideration prior to any decision that is to be made by the Minister for Planning with respect to a development application.

Forty (40) considerations have been identified and they require analysis against fourteen (14) primary environmental and bushfire outcomes discussed in Section 6.

The appropriate method to undertake this assessment is via an Environmental Validation Report. This process will allow the Minister for Planning the ability to directly compare the adequacy of any development application within the subject site with the requirements of the CLUMP.

Environmental Considerations

- Maintained or improved hydrological functioning of the landscape,
- Maintained or improved biodiversity across the site,
- Maintained or improved water quality within the site,
- Ecological functioning of Spotted Gum/Ironbark Open Forest,
- Ecological functioning of Banksia Scrub,
- Ecological functioning of Blackbutt Woodland,
- Ecological functioning of Dry Gully Rainforest (Dry Rainforest of the South East Forests preliminary EEC),
- Ecological functioning of Swamp Oak Open Forest (Swamp Oak Floodplain Forest - EEC),
- Ecological functioning of Regrowth Redgum Open Woodland (River Flat Eucalypt Forest on Coastal Floodplains - EEC),
- Ecological functioning of Freshwater Wetland Vegetation (Freshwater Wetlands on Coastal Floodplains - EEC),
- Connectivity between remnant vegetation within the site and to vegetation off-site,
- A subdivision pattern and streetscape that is dictated by the natural site features and the desire to provide diversity of housing lots,
- Vegetation connectivity within the site and to areas off-site,
- Integration of ecological, heritage and cultural features within the subdivision pattern,

- Integrity of buffer zones surrounding threatened flora, fauna or vegetation communities,
- Ecological functioning of wildlife corridors/riparian zones,
- Maintained or improved habitat for threatened fauna species, in particular hollow dependent species,
- Connectivity with surrounding remnant vegetation,
- Visual screening of the development through the retention of trees,
- Integrity of buffer zones adjacent to ecologically sensitive habitats,
- Reduction and effective control of pest species,
- Protection of all native fauna, in particular threatened fauna species,
- Visual absorption capacity and enrichment of sites visual significance,
- Integration of urban infrastructure within the local social, ecological and economic context,
- Environmental impacts of proposed urban infrastructure,
- Environmental Impacts of cut and fill operations,
- Public access to community resources and public lands,
- Development setback from the Tomakin Sewage Treatment Plant (TSTP),
- Adequacy of buffer zones and other odour abatement measures,
- Location of overflows and breathers,
- Alternative energy systems such as solar,
- Energy efficient appliances within households,
- Availability and adequacy of alternative human movement options such as walkways, cycle ways and public transport facilities,
- Proximity to commercial facilities to reduce private vehicle dependency,
- Adequacy of open space and conservation areas allowing for tree retention,
- Rezoning of conservation and open space areas to the new E2 Zone – Environmental Conservation, as recommended in the *South Coast Sensitive Urban Lands Review* (Refshauge *et al* 2006).

Bushfire Considerations

- Prevention of bushfire incidence,
- Bushfire suppression capabilities,
- Community awareness of bushfire threats,
- Adequate access, egress and evacuation capabilities,
- Managing hazard without compromising ecological and scenic values.

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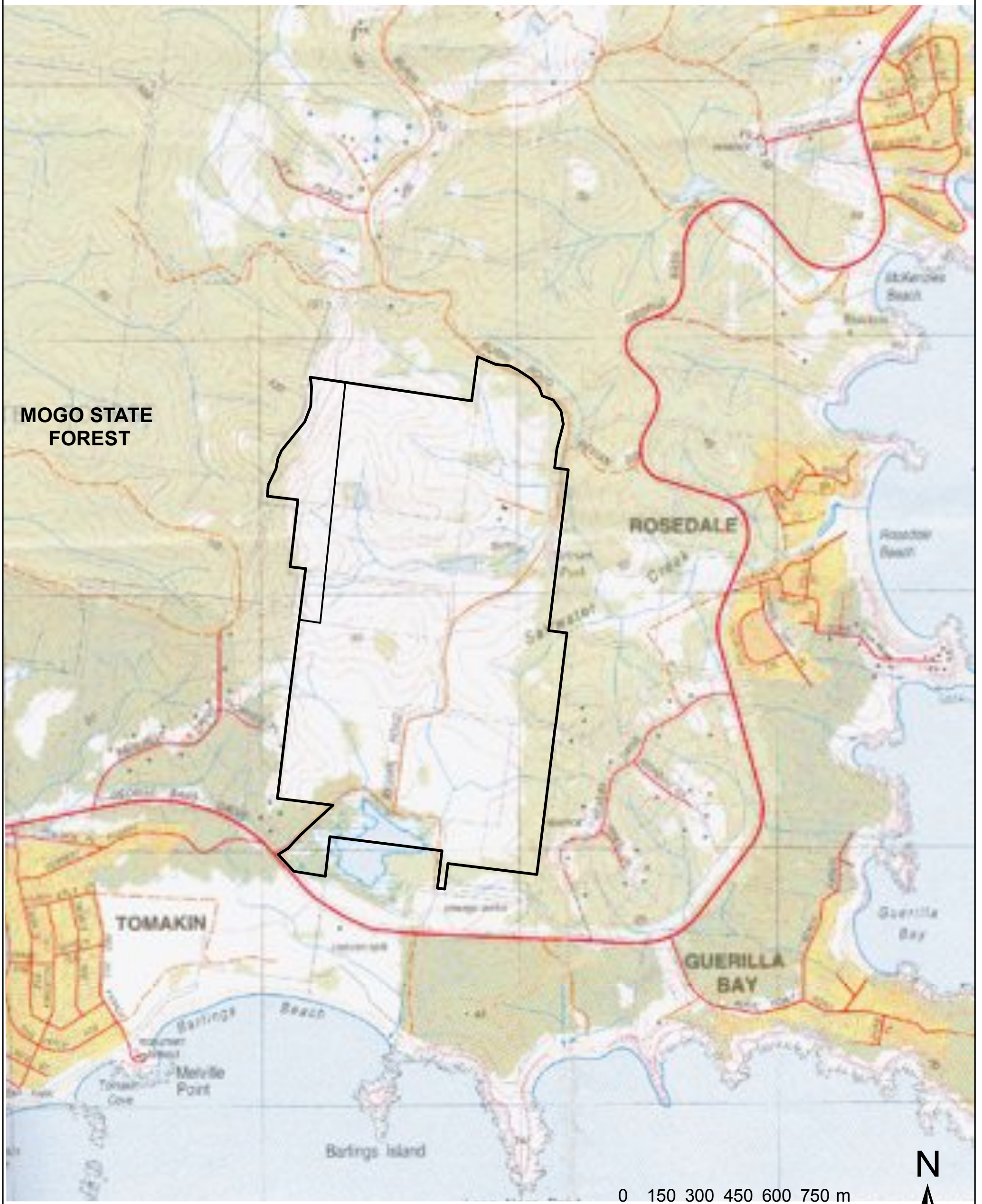
Refshauge, A., Berkhout, V. & Robertson D., (2006) *Independent Review Panel, South Coast Sensitive Urban Lands Review,* prepared for the Minister of NSW Department of Planning (DoP),

Urbis (2002) *Statement of Environmental Effects (Rosedale Urban Expansion Area – Masterplan development application)*

FIGURES



CONACHER TRAVERS

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Figure 1 -
Property Location
Bevian Road, Rosedale

Ver.F1 By.TM 17/10/07 Ref.No.6052

Source: Dept. of Lands 1:25,000 Aerial Photograph,

0 200 400 600 800 1,000 m

1:14,000

Original plan produced in A3 colour

N

Legend

Property Boundary

*Subject Site boundary subject to final survey

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Figure 2 -

Aerial Appraisal

Bevian Road, Rosedale

Ver.F2 By.TM 17/10/07 Ref.No.6052

Source: Dept. of Lands 1:25,000 Aerial Photograph,

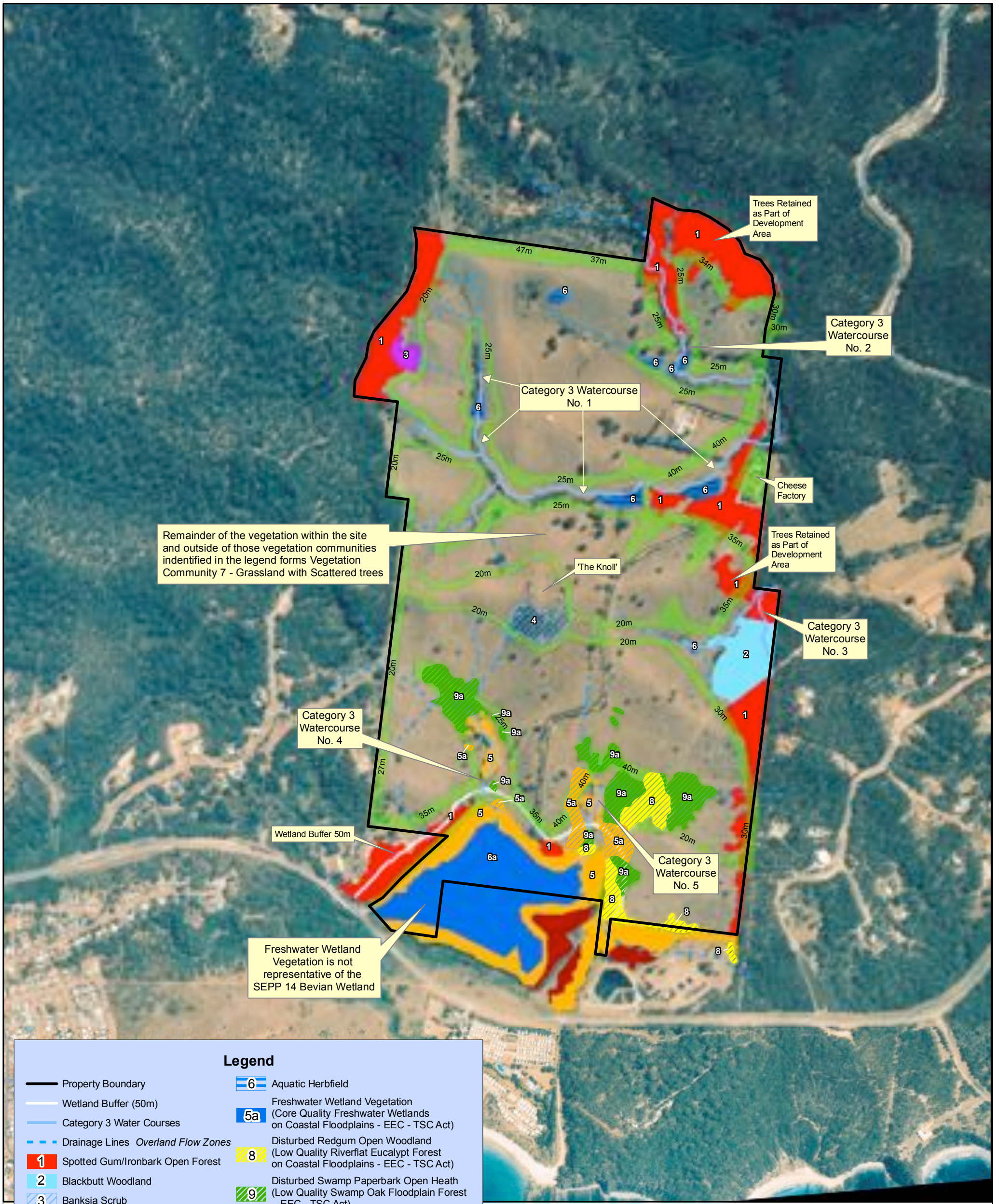

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Figure 3 -
The Constraints Map - Ecological and Bushfire Constraints
Bevian Road, Rosedale

Ver.F3 By.TM 17/10/07 Ref.No.6052

Source: Dept. of Lands 1:25,000 Aerial Photograph,

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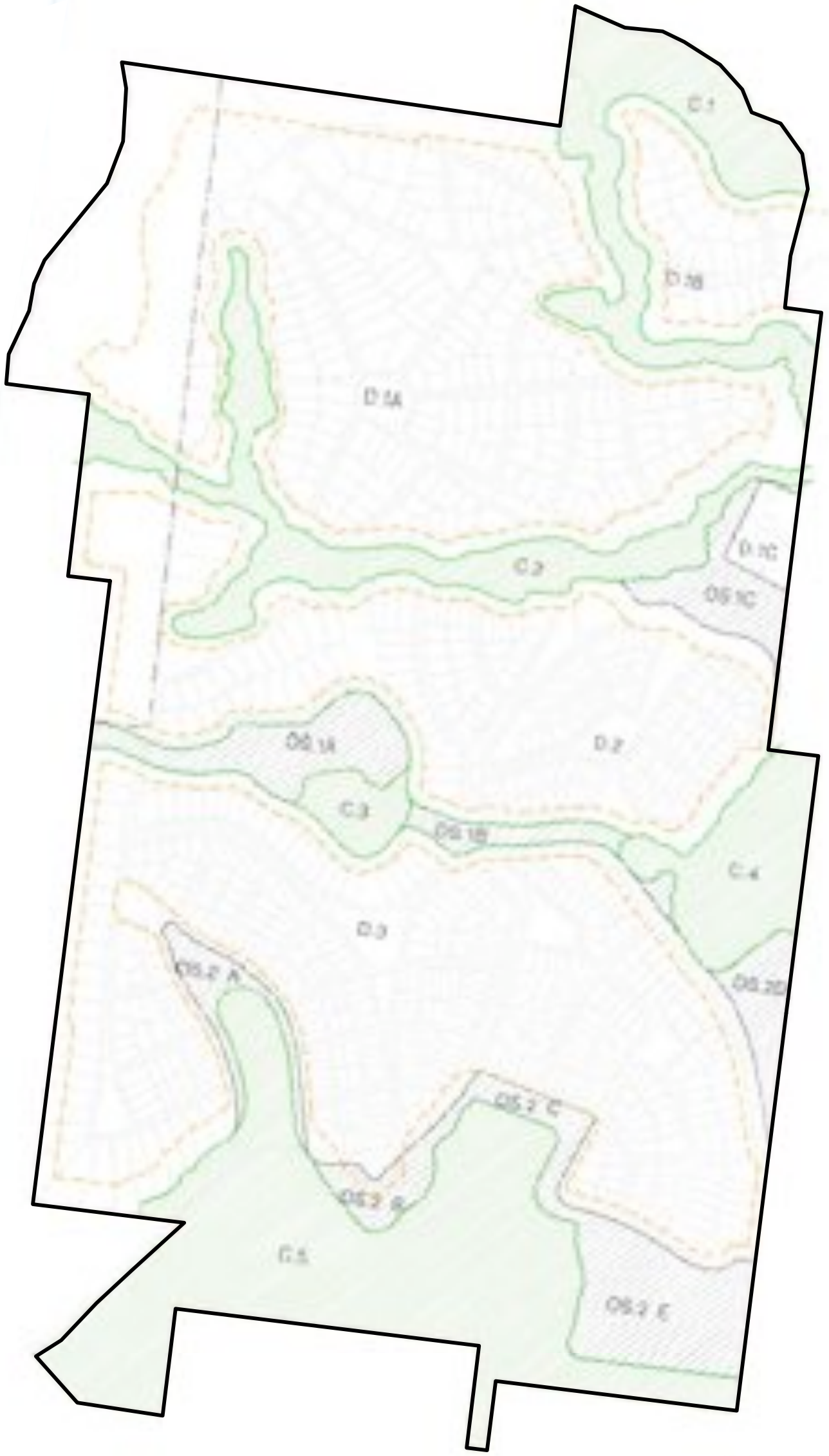
Figure 4 -
The Plan of Subdivision
Bevian Road, Rosedale

Ver.F4 By.TM
17/10/07
Ref.No.6052

Source: Dept. of Lands 1:25,000 Aerial Photograph,



0 100 200 300 400 500 m

1:7,000

Original plan produced in A3 colour

N

Legend

Property Boundary

**Subject Site boundary subject to final survey*

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Figure 5 -

Precinct Plan

Bevian Road, Rosedale

Ver.F5
17/10/07
Ref.No.6052

Source: Dept. of Lands 1:25,000, Aerial Photograph

Remainder of the vegetation within the site and outside of those vegetation communities indentified in the legend forms Vegetation Community 7 - Grassland with Scattered trees

Freshwater Wetland Vegetation is not representative of the SEPP 14 Bevian Wetland

Legend

- Property Boundary
- 1 Spotted Gum/Ironbark Open Forest
- 2 Blackbutt Woodland
- 4 Banksia Scrub
- 3 Dry Gully Rainforest (Preliminary EEC - EPBC Act)
- 5 Swamp Oak Open Forest (Core Quality Swamp Oak Floodplain Forest - EEC - TSC Act)
- 5a Disturbed Swamp Oak Open Heath (Low Quality Swamp Oak Floodplain Forest - EEC - TSC Act)
- 6 Aquatic Herbfield
- 6a Freshwater Wetland Vegetation (Core Quality Freshwater Wetlands on Coastal Floodplains - EEC - TSC Act)
- 8 Disturbed Redgum Open Woodland (Low Quality Riverflat Eucalypt Forest on Coastal Floodplains - EEC - TSC Act)
- 9 Swamp Paperbark Closed Scrub (Core Quality Swamp Oak Floodplain Forest - EEC - TSC Act)
- 9a Disturbed Swamp Paperbark Open Heath (Low Quality Swamp Oak Floodplain Forest - EEC - TSC Act)
- Bangalay Sand Forest
- Category 3 Water Courses
- Drainage Lines

N

0 90 180 270 360 m

1:8,000

Original plan produced in A3 colour

Flora and fauna survey locations are approximate and have not been fixed by land survey

*Subject Site boundary subject to final survey

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Figure 6 -
Vegetation Communites
Bevian Road, Rosedale

Ver.F6 By.TM
17/10/07
Ref.No.6052

Source: Dept. of Lands 1:25,000 Aerial Photograph,

Remainder of the vegetation within the site and outside of those vegetation communities indentified in the legend forms Vegetation Community 7 - Grassland with Scattered trees

Freshwater Wetland Vegetation is not representative of the SEPP 14 Bevian Wetland

Legend

- Property Boundary
- Vegetation Condition Sampling Plots (20m x 20m)
- Glossy Cockatoo
- Powerful Owl
- Eastern Freetail Bat
- Greater Broad-nosed Bat
- Eastern Bentwing Bat
- Call Playback Station
- Anabat Station
- Elliot Trap Lines
- Cage Trap Line
- 20m x 20m Vegetation Quadrat
- 10m x 40m Vegetation Quadrat
- Category 3 Water Courses
- Drainage Lines
- Wetland Buffer
- 1 Spotted Gum/Ironbark Open Forest
- 2 Blackbutt Woodland
- 3 Banksia Scrub
- 4 Dry Gully Rainforest (Preliminary EEC - EPBC Act)
- 5 Swamp Oak Open Forest (Core Quality Swamp Oak Floodplain Forest - EEC - TSC Act)
- 5a Disturbed Swamp Oak Open Heath (Low Quality Swamp Oak Floodplain Forest - EEC - TSC Act)
- 6 Aquatic Herbfield
- 6a Freshwater Wetland Vegetation (Core Quality Freshwater Wetlands on Coastal Floodplains - EEC - TSC Act)
- 8 Disturbed Redgum Open Woodland (Low Quality Riverflat Eucalypt Forest on Coastal Floodplains - EEC - TSC Act)
- 9 Disturbed Swamp Paperbark Open Heath (Low Quality Swamp Oak Floodplain Forest - EEC - TSC Act)
- 9a Swamp Paperbark Closed Scrub (Core Quality Swamp Oak Floodplain Forest - EEC - TSC Act)
- Bangalay Sand Forest

N

12 Approximatly 200m East

0 100 200 300 400 500 m

1:7,000

Original plan produced in A3 colour

Flora and fauna survey locations are approximate and have not been fixed by land survey.

*Subject Site boundary subject to final survey

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Figure 7 -

Flora & Fauna Survey Locations & Records

Bevian Road, Rosedale

Ver.F7 By.TM 17/10/07 Ref.No.6052

Source: Dept. of Lands 1:25,000 Aerial Photograph,

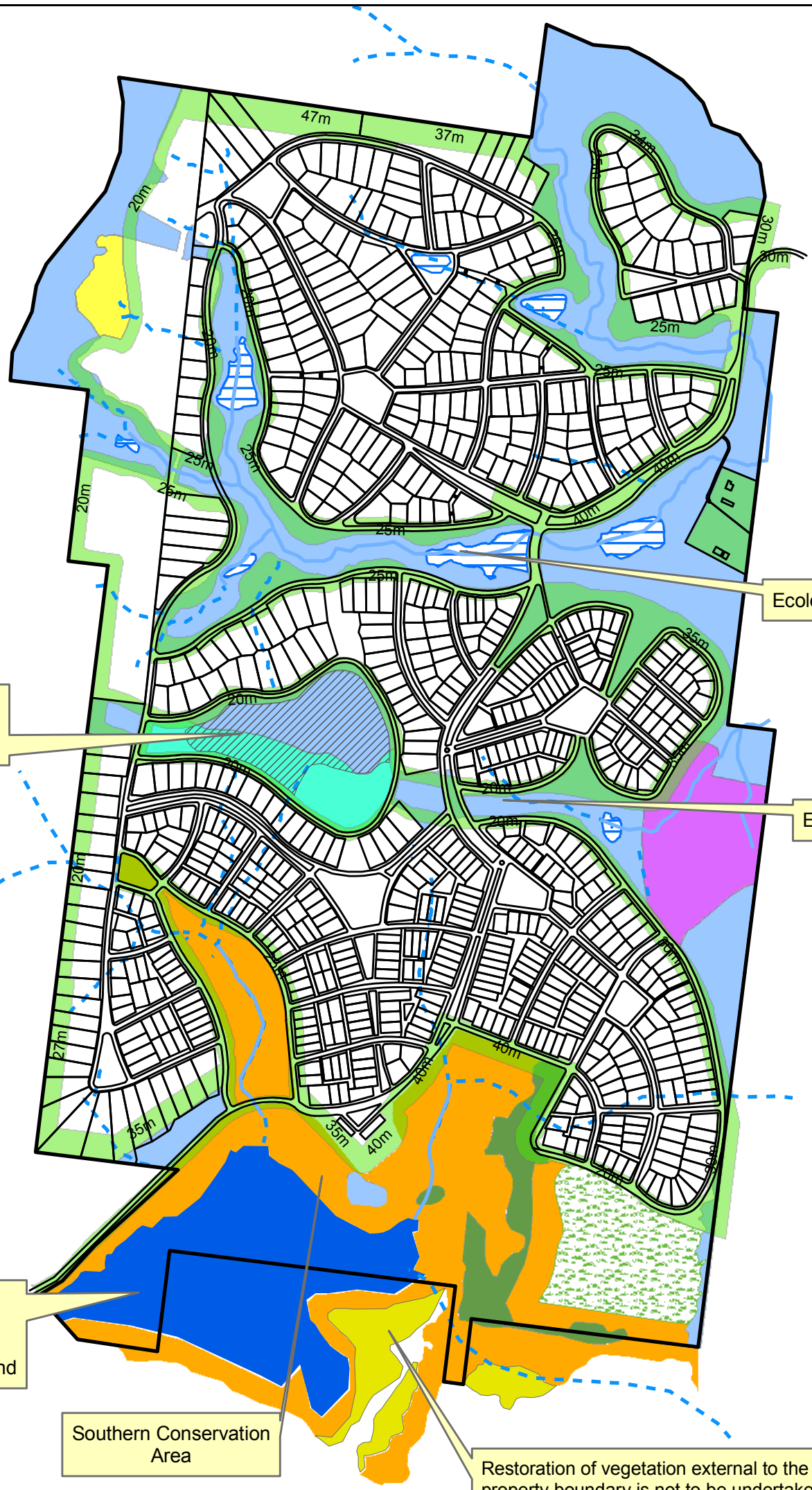
SCHEDULES

Schedule 1 – Restoration Management Plan

Restoration Specifications

Restoration is to be achieved through a combination of regeneration, revegetation and formal landscaping. The following specifications apply to the restoration of the target communities.

1. Open space areas within ecological corridors are to planted with locally occuring native plant species.
2. Revegetation within the riparian zones are to be in accordance with the General Terms of Approval to be issued by DWE.
3. Rehabilitation of EEC vegetation is to be fully structured vegetation endemic to that EEC.



Legend

Target Regeneration / Restoration Communities

- Bangalay Sand Forest
- Freshwater Wetland Vegetation (TSC Act EEC)
- Asset Protection Zone
- Grassland
- Swamp Oak Open Forest
- Spotted Gum / Ironbark Open Forest
- Banksia Scrub
- Blackbutt Woodland
- Dry Gully Rainforest (Preliminary EEC)
- Disturbed Redgum Open Woodland (TSC Act EEC)
- Aquatic Herbs/Macrophytes
- Passive Recreation Area
- Category 3 Water Courses
- Drainage Lines
- Property Boundary

Note: Open space areas are to be provided within ecological corridors in accordance with the Landscape Concept Plan.

0 100 200 300 400 500 m

1:8,000

Original plan produced in A3 colour

N

All features located by Trimble GPS have been modified
All mapped features are approximate and require land survey to confirm the location of Asset Protection Zones relative to developement footprint
Property boundary subject to final survey

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Schedule 1 -
Restoration Management
Bevian Road, Rosedale

Ver.S1 By.TM 11/02/08 Ref.No.6052

Source: Dept. of Lands 1:25,000 Aerial Photograph,