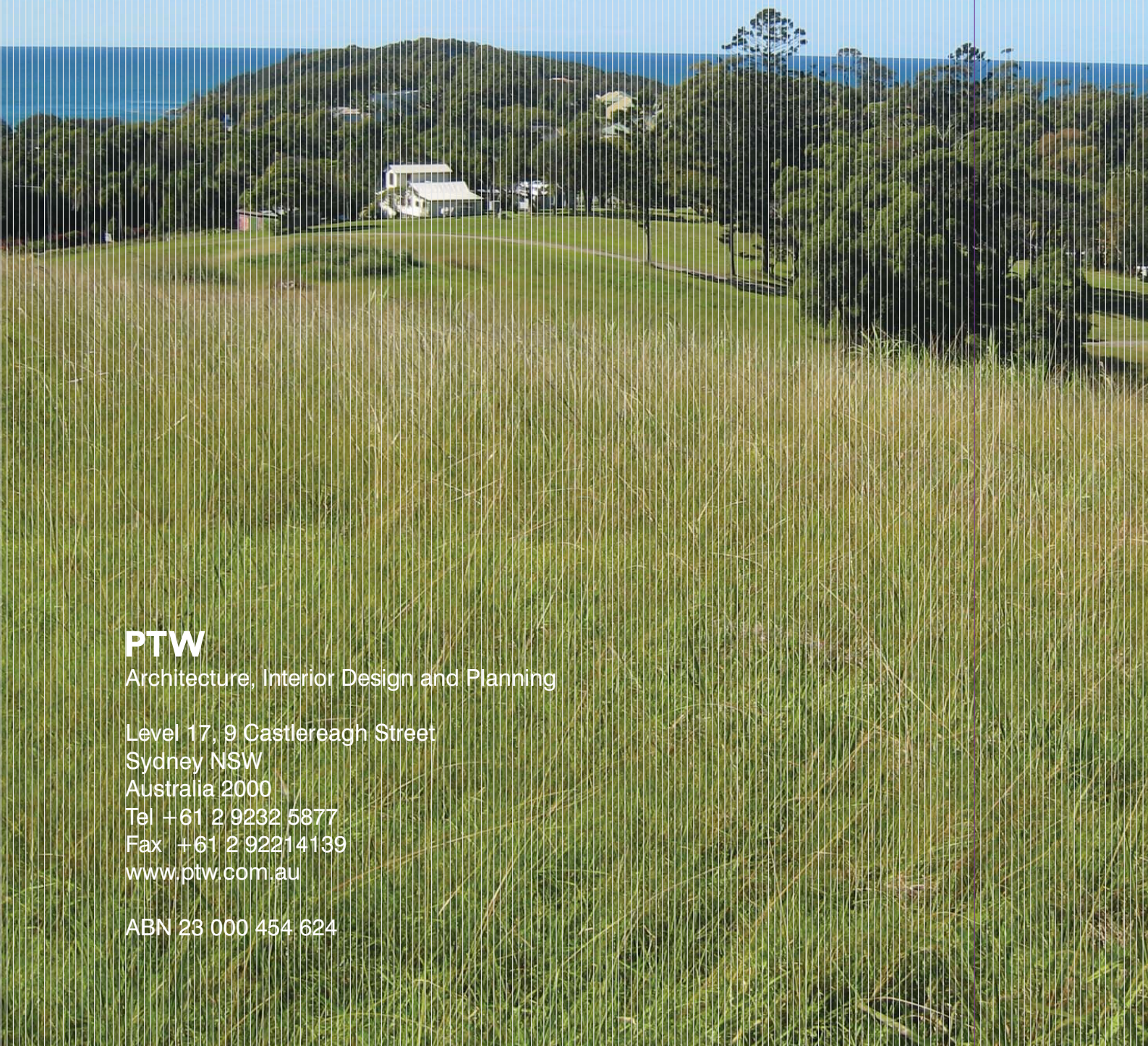
PTW Planning

Pacific Bay Western Lands
Project Application

Prepared for Pacific Bay Developments Pty Ltd.

Environmental Assessment Report
March 2010



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CERTIFICATION

This Environmental Assessment Report has been prepared by PTW Planning on behalf of Thakral Holdings Ltd.

The Environmental Assessment Report has been prepared in accordance with the Environmental Assessment Requirements issued by the Director General of the Department of Planning under part 3A of the Environmental Planning and Assessment Act.

In accordance with the Environmental Assessment Requirements issued by the Director General it is certified that the information contained in this environmental assessment is neither false or misleading.

Janet Thomson
PTW Planning
March 2010

NB (1): This application was originally prepared to relate to a larger site than now proposed. As a result the consultant studies may refer to the Western Area of the site which has now been removed.
(2): It is not proposed, as part of this application, to construct a bridge over Jordan's Creek.

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1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

In July 2006, a Preliminary Assessment for a Concept Plan, for the development of the Pacific Bay Western Lands at Korora Coffs Harbour, was submitted to the Director General of the Department of Planning. On 6 November 2006, the Minister for Planning (the Minister) formed the opinion that the proposal is a project and that Part 3A of the Environmental Planning and Assessment Act (EPA Act) applies to it. The Minister, on the same date, also authorised the submission of a Concept Plan for the proposal.


1.1 SITE - AERIAL OVERLAY

On 18 December 2006, the requirements of the Director General (DGR's) in relation to the Environmental Assessment of the proposal were received. However, as the site required rezoning to permit the development it was necessary to devise a process for the simultaneous consideration of the concept plan and the rezoning.
On 26 July 2007 Coffs Harbour Council advised the Director General of the Department of Planning (DOP) that it had resolved, pursuant to S54(4) of the EPA Act to prepare a separate Local Environmental Plan (LEP) for the Pacific Bay Western Lands. This was LEP Amendment 37.
In December 2007, a process was agreed between the Council, the DOP and the owners of the Pacific Bay Western Lands to prepare the Environmental Assessment Report (EAR) and Concept Plan for the site and the Local Environmental Study (LES) and Local Environmental Plan (LEP) for Amendment 38.


1.2 SITE SURVEY

It was agreed that, upon the owners completing the draft EAR, the information would be provided to Council and its consultants to form part of the overall LES/LEP, which is being prepared by Council for the North Coffs Harbour Release Area.
On 17 January 2008, revised DGR's were issued. In July 2008 it was decided to change the application to a project application rather than a concept plan and Council and the Department of Planning agreed this to. On 24 August 2008, new DGR's were issued for the project application.
This Environmental Assessment Report accompanies a project application for the site. It addresses the matters raised by the Director General and sets out the major issues associated with the proposal. It includes an assessment of the likely impacts of the proposal and a statement of commitments for the development proposal.

As there is a concurrent rezoning underway, the determination of this application is reliant on the rezoning proceeding.

1.2 SITE ANALYSIS

The site is located approximately 4.5 km north of Coffs Harbour on the New South Wales North Coast. It is on the western side of the Pacific Highway with frontage to the Highway in West Korora. It is bounded by Bruxner Park Road (northern boundary) Pacific Highway (eastern boundary), West Korora Road (southern boundary) and private land to the west.

1.3 THE OVAL

The site comprises the following properties identified by the following title details:

- Lot 1 DP 592173
- Lot 3 DP 820652
- Lot 4 DP 820652
- Lot 5 DP 820652
- Lot 23 DP 716144

The site has an area of 24.93 hectares.

The site contains an undulating topography with some level areas. The steeper sloping land is located in the northern and north-western parts of the site near Bruxner Park Road. The site ranges in height from 13AHD in the south-eastern corner up to 55AHD in the north-western part of the site.

The site is largely vacant with the exception of a rugby playing field and associated amenities and gym buildings located in the middle of Lot 5 DP 820 652.

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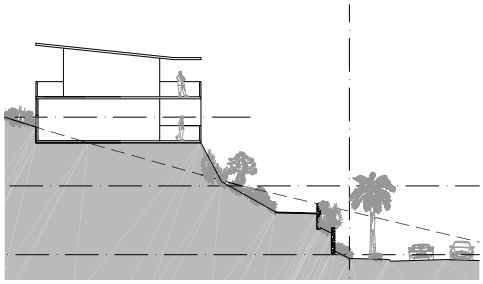
1.4 SLOPING TOPOGRAPHY

1.3 PROJECT DESCRIPTION

Options were considered for the development of the site and these related mainly to the form and density of the proposed development. The site analysis indicated that there were certain important areas on the site which needed to be preserved because of their conservation significance and the decision was taken to protect these from development and enhance their natural attributes as part of the development of the site.
It was also decided to retain the rugby oval on the site because of its historic significance and the contribution, which it could make to the recreation activities of the future population of the area.

The proposed density of development on the site was largely dictated by the topography of the site and the retention of the conservation areas. The steep nature of the upper areas of the site, and the views from the water of these areas, indicated that large sites would be required for development to ensure that earthworks were kept to a minimum and that sustainability principles could be adopted in the development. The larger sites would also enable landscaping to soften the impact of the built form when viewed from the water.



1.5 HILL SIDE LOCATION

The area around the oval is relatively flat and with the added amenity of views of the open space from the surrounding development a higher density of development was considered appropriate for this area.

The conservation significance of the Jordan's Creek area and the western area meant that development adjacent to these areas was of a lower density.

The overall theme for the development of this site is housing in a lushly vegetated landscape. The natural features of the site have been used to produce this outcome. The development includes 112 housing sites within four precincts as follows:

- The Upper Hill Side sites
- The Hill Side sites
- The sites around The Oval
- Jordan's Creek precinct

The size of the development lots varies depending on the location of the lot on the site with the larger lots on the steeper areas of the site. The proposals for the site have been based on the preservation and protection of those areas on the site, which are of environmental significance, and the retention of the open space area of the oval as a feature of the development.

There are large areas of open space around the development areas and between the development sites.

1.6 UPPER HILL SIDE SITES

1.7 SITES AROUND THE OVAL

Road System

The development has been designed on a road structure following the existing contours. Soft transitions, achieved by replacing common fence structures with low to mid height planting between road reserves and individual lots soften the urban road character and emphasize the country side feeling. The overall effect is of a circulating road system and street defining built form following the contours, with native tree planting between the blocks. Each dwelling has undercover off street parking possibilities. Where the access is from the downhill side car parking will be underground or semi-underground. These basements are clad in stone and create a podium for the houses. This combined with the low stone garden walls creates a terraced feel to the precinct reflecting the rural character of the area. The character stone walls and deep setbacks for front yards characterise the uphill side and the lush undergrowth and wide planting of the native gardens and timber bridges characterise the down hill sides. The site will be developed to be in harmony with the landscape, through the use of natural materials such as rendered masonry, rough stone retaining walls and natural timbers.

Density

There are a total of 112 dwellings in all precincts. These consist of 19 townhouses and 93 single dwellings. The sum of all lots is just above 75468 m^2. The overall density is slightly lower than in surrounding developments. This is a result of the natural steep slope of the site that will be maintained but resulted in slightly bigger lots to guarantee easy access to all houses utilizing serpentine like driveways where appropriate.

1.8 JORDANS CREEK PRECINCT

1.10 ROAD HIERARCHY

The total number of new units in the application is 112. The size of the lots varies with the largest being on the hilltop (min. 900 m²) and the smallest (min. 500 m²) further down the hill along the main collector road. The townhouse lots are the smallest (about 300 m²) Basically there is a hierarchy of the supreme lots on top of the hill being the biggest with decreasing lot size further down hill. In a second step the size of the lots was driven by the slope of the hill that makes it necessary to accommodate serpentine like driveways and access ways on many lots.

The oval precinct has 3 types of typical up to three storey townhouses on an average of 371 m² lots.
Type A to the north of the oval has a footprint of 180 m² including balconies and terraces with 140 m² of private garden and underground car park.
Type B to the east and west of the oval has a footprint of
153 m² including balconies and terraces with an average of 125 m² of private garden including garage courts or a garage on ground floor.

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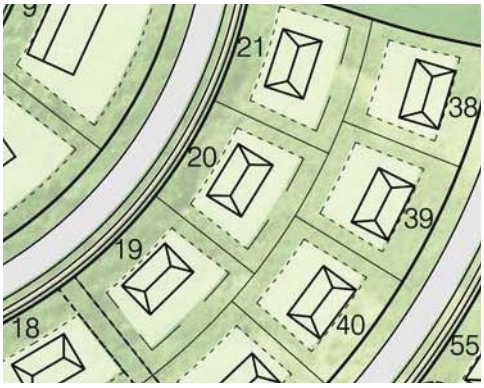


1.11 SETBACKS

Setbacks

A typical house envelope is generally set back from the street frontage by 6.5 meters. This setback is used to soften the transition between the individual lots and between the lots and the road reserve by having no fences or dividing structures but dense low to mid height planting resulting in a streetscape with a rather natural, parkland like feeling. The houses on the prime sites on the top of the hilltop precinct have generally butterfly roofs; the houses further downhill have pitched roofs.

A typical townhouse to the east and the west of the oval has an 8.5 m x 21 m development envelope including balconies and terraces. All townhouses are set back 6 m from the road reserve. The townhouses to the north of the oval have a 10 m x 18 m development envelope.

1.12 STREETS

Streets

The typical street has a 6 m carriageway. The main collector road has a 9 m carriageway. The one way shared streets on the top of the hilltop precinct (12 m road reserve) and around the parkland in the east of the site have a 4 m carriageway. The hilltop road will have a 4 m verge on each side of the road pavement. The parkland road will have a 2 m wide verge to the outside of the road. Parallel parking spaces shall be located on the inside of the road, and will enclose the central park land. This road type will be classified as a 'Share Way' providing for both vehicular and pedestrian movements within the low speed environment. Additional public parking will be provided at the southern side of the oval next to the play field.

1.13 PRECINCT PLAN

1.14 MAIN COLLECTOR AND CENTRAL PARK LAND

1.4 KEY ISSUES

The key issues examined in the EAR are as follows:

- Strategic planning
- The rezoning process
- Development design response
- Land use suitability
- Subdivision design
- Subdivision management
- Visual impacts
- Traffic management and access
- Flora and fauna
- Conservation areas and buffer zones
- Water cycle management
- Watercourses
- Hazard management and mitigation
- Noise
- Infrastructure and services
- Planning agreements and developer contributions
- Heritage
- Owners consent
- Consultation

The examination of all of these issues showed that the proposed development could be satisfactorily carried out on the site without any major adverse impacts providing certain measures were taken in relation to the development.

1.5 PLANNING ASSESSMENT

Providing part of the site is rezoned as suggested to Residential 2A the proposed development will generally comply with the planning controls relating to the site.

The likely impacts of the project application have been assessed and it has been concluded that there will be no adverse impacts on the environment as a result of the development. In fact there will be positive impacts in relation to the protection and improvement of the significant vegetated areas on the site. The conclusions in relation to environmental issues are as follows:

Design, Visual and Amenity

The development will be constructed to the highest standards of design and the proposals have adopted the principles of sustainability both in relation to the layout of the site and the future design of the buildings.

A Landscape Master Plan has been prepared for the proposal, which will provide for landscaping which will soften the built form and contribute to the overall setting of the proposal. The landscaping will be carried out in distinct zones related to the natural features of the site.

The 7A area and the area along the highway are the main elements in the setting for the development.
Although the development will have some visual impact it will be seen in the context of the landscaping on the site and the green escarpment behind. There will not be any blocking of views of the beach and the water from public viewpoints around the site.

Flora and Fauna

The proposal will not result in any loss of native vegetation and no threatened species will be impacted on by the proposals. A Management Plan has been prepared to provide for the revegetation and on going management of the 7A area on the site.

The desired outcomes of the plan are:

- To ensure that future development is consistent with relevant legislation, policies and guidelines;
- To address community concerns regarding the maintenance of biodiversity of the Coffs Harbour region;
- To rehabilitate and protect the vegetation along a creek line traversing the subject land and;
- To conserve areas previously identified as warranting Zone 7(a) Environmental Protection 'Habitat and Catchment' and 7(b) Environmental Protection 'Scenic Buffer' under the Coffs Harbour Local Environment Plan (LEP).

Natural Hazards

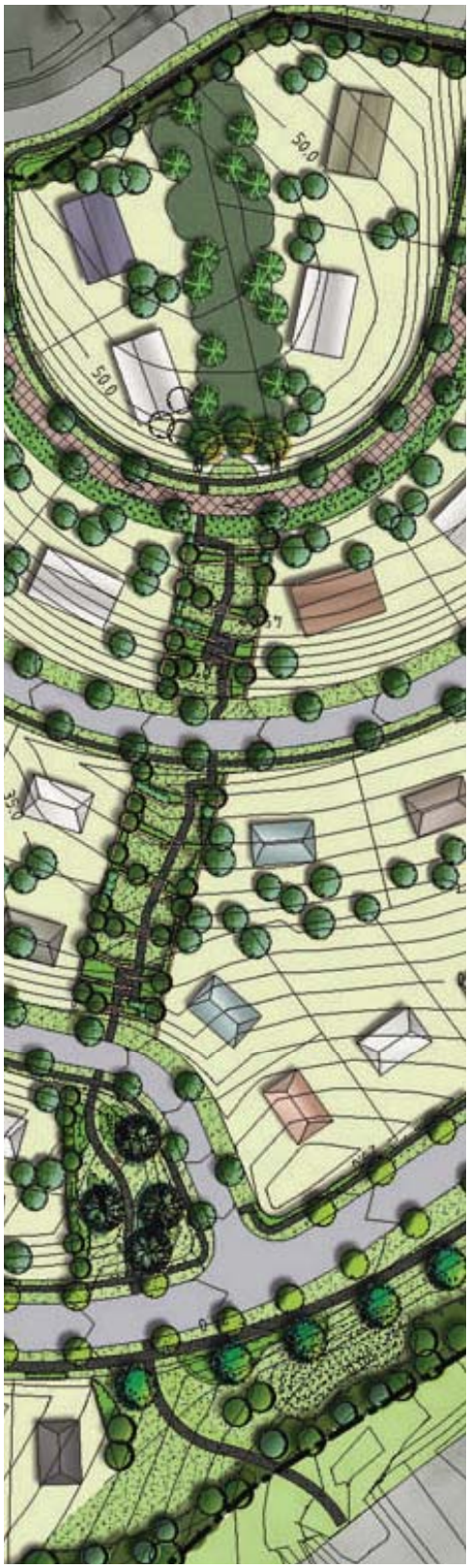
A Bushfire Risk Management Plan has been prepared for the development of the site and it concludes that the development can be safely carried out on the site and that it complies with the requirements for Asset Protection Zones and that access is in accordance with the requirements in Planning for Bushfire Protection 2001.
There are no acid sulphate soils on the site and the site is considered to be suitable for the proposed development in terms of contamination issues.

Noise

The only sources of noise likely for the development are traffic on the Pacific Highway and the revised route for the highway. It has been concluded that construction measures can be adopted to deal with these matters.

Integrated Water Cycle Management

A system of Integrated Water Cycle Management has been proposed for the site and this will utilise the principles of water sensitive urban design within a holistic framework to reduce the impacts of the development on all parts of the water cycle. The major aspects of the water cycle that are considered within the strategy include:



1.15 GREEN SPINE

- Stormwater;
- Groundwater;
- Potable Water Demand (from the Coffs Harbour reticulated supply);
- Wastewater generation;
- Water Conservation; and
- Water Quality.

The strategy provides for the incorporation of detention basins, rainwater tanks, buffers and gross pollutant trap into the design. The incorporation of these treatment devices will ensure that there is no increase in pollutant export from the site as a result of the development. As a result there will be no additional impacts on the Solitary Islands Marine Park as a result of the proposal.

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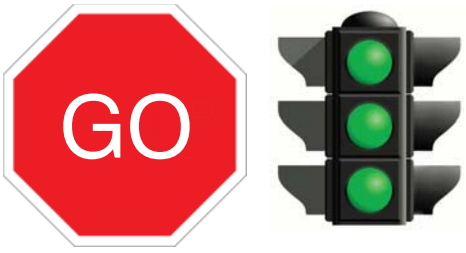

1.16 TRAFFIC AND ACCESS

Traffic and Access

Entry to the site is provided at two locations. One is from Bruxner Park Road and one from West Korora Road. The main access will be from Bruxner Park Road as most of the roads within the internal road network are linked to that access road. It is assumed that 70% of the traffic will use Bruxner Park Road and 30% will use west Korora Road.
It is not proposed to build a bridge over Jordan's Creek.

The proposed development is mainly expected to impact on the access intersections with the Pacific Highway, notably Bruxner Park Road and West Korora Road. The analyses show that the existing intersections will not operate satisfactorily if the existing intersection controls are to remain the same.

With the yield/give way intersection control currently operating at the intersection of Bruxner Park Road with the Pacific Highway, the existing traffic volumes (albeit very minimal) at the intersection are already experiencing considerable delays in finding gaps to enter the traffic flow along the Pacific Highway. Traffic volumes along the Pacific Highway are already considered high in terms of the nominal capacity provided by the highway. It is concluded that in order for the intersection to accommodate future traffic from the proposed development, it will be necessary introduce improvements to the intersection control by signalisation.

Following advice from Council, it is anticipated that West Korora Road will also serve as main access for the North Coffs Release Area. This area is comprised of a total of 34 hectares for the proposed development located south along West Korora Road and including the 7.7 hectares of the Big Banana site. Information provided by Council indicated that an estimate of approximately 340 lots will have to be serviced by the West Korora Road.
As no time frame for the development has been provided, it is assumed for the purpose of this assessment that full development of this area is likely to occur by 2015. For this scale of development, assuming all 340 lots are single-detached residential units, the associated peak hour traffic translates to an additional 289 vehicle-trips.

With the anticipated traffic from the development of the Pacific Bay Western Lands and the additional traffic from the North Coffs release, the option tested for intersection operational performance provided a continuous slip lane on West Korora Road turning left at the Pacific Highway and a 100 m turn slot exit lane to provide sufficient distance for merging. The results showed that this intersection configuration will operate satisfactorily even with the additional traffic.

Infrastructure Provision

Studies have shown that infrastructure can be satisfactorily provided to the site.

Heritage

There are no heritage items on the site and it is unlikely that there will be any items of cultural heritage on the site. However, if any are found during construction measures will be adopted to deal with the finds.

Social and Economic Environment

The development will provide jobs during the construction of the housing and the subdivision of the site.
The new development will provide housing for up to 320 persons.

The development may attract high net worth individuals and this will further contribute to the economic development of the region.

Generally the redevelopment of the site is expected to have positive economic and social impacts in the Coffs Harbour area.

1.6 COMPLIANCE WITH THE DGR'S

The following table indicates the location of the matters referred to in the Director General's Requirements for the Environmental Assessment of the project:

MATTER	LOCATION IN EAR
Executive Summary	Sec 1
Description of the project	
• Development options	Sec 5
• Justification	Sec 5, Sec 7
• Staging	Sec 5.17
Site Analysis	Sec 4
Statutory and non statutory provisions	Sec 3,Sec 8, Appendix 15
Environmental Planning and Assessment Act objects	Appendix 15
Impacts of the project	Sec 6, Sec 8
Statement of Commitments	Sec 9
Plans	Plans A3 Volume
Surveyors Certificate of Cost	Attached
KEY ISSUES	
Strategic Planning	
• Planning strategies	Sec 3, Sec 6.1
• Rezoning process	Sec 3.5
• Integration with North Coffs release area	Sec 6.3
Land Use Suitability	
• Sustainability and relation to surrounding area	Sec 6.4
• Suitability of urban development	Sec 6.4,Sec 8
Subdivision Design and Visual Aspects	
• Consistency with Coastal Guidelines	Sec 6.5.1
• Address site topography	Sec 6.5
• Energy efficiency and safety	Sec 6.5
• Details of building envelopes	Sec 5.8, Sec 6.5.7, Appendix 2
• Type of subdivision	Sec 5.15, Sec 6.6
• Staging	Sec 5.17
• Management and maintenance of open space	Sec 6.6
• Visual impact	Sec 6.7, Appendix 11
Traffic Management and Access	
• Traffic impact study	Appendix 12

MATTER	LOCATION IN EAR
• Pedestrian and cyclist access	Sec 6.8.9, Appendix 12
Flora and Fauna	
• Impacts on flora and fauna	Appendix 7, Sec 6.9
• Conservation of wildlife corridors	Appendix 7, Appendix 8, Sec 6.9
Conservation Areas and Buffer Zones	
•Identify conservation areas and buffer zones	Appendix 7, Sec 6.10
Water Cycle Management	
• Impacts on surface and ground water	Appendix 6, Sec 6.11. Sec 6.12
• Integrated water cycle management plan	Appendix 6
• Liaison with DWE and DPI re water use	Appendix 6
Hazard Management and Mitigation	
• Planning for Bushfire Protection	Appendix 9, Sec 6.13.1
• Flooding	Appendix 6, Sec 6.13.2
• Contamination	Appendix 5, Sec 6.13.3
• Acid Sulphate Soils	Appendix 4, Sec 6.13.4
• Geotechnical	Appendix 3, Sec 6.13.5
Noise	
• Road traffic noise	Appendix 13, Appendix 2, Sec 6.14
Infrastructure and Services	
• Capacity and requirements	Appendix 6, Sec 6.15
• Impacts on community facilities	Sec 4.13, Sec 6.15.7
• Planning agreements and S94 contributions	Sec 6.16
Heritage	
• Aboriginal cultural heritage	Appendix 10, Sec 6.17.1
• European heritage	Appendix 10, Sec 6.17.2
Socio-economic Impacts	
• Social impact assessment	Sec 4.13, Sec 6.15.7
Ownership	
• Land ownership and owners consent	Sec 6.18
Consultation	Sec 2.8, Sec 6.19

2. INTRODUCTION

2.1 BACKGROUND

In July 2006, a Preliminary Assessment for a Concept Plan, for the development of the Pacific Bay Western Lands at Korora Coffs Harbour, was submitted to the Director General of the Department of Planning. On 6 November 2006, the Minister for Planning (the Minister) formed the opinion that the proposal is a project and that Part 3A of the Environmental Planning and Assessment Act (EPA Act) applies to it. The Minister, on the same date, also authorised the submission of a Concept Plan for the proposal.

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On 26 July 2007 Coffs Harbour Council advised the Director General of the Department of Planning (DOP) that it had resolved, pursuant to S54(4) of the EPA Act to prepare a separate Local Environmental Plan (LEP) for the Pacific Bay Western Lands. This was LEP Amendment 37.

In December 2007, a process was agreed between the Council, the DOP and the owners of the Pacific Bay Western Lands to prepare the Environmental Assessment Report (EAR) and Concept Plan for the site and the Local Environmental Study (LES) and Local Environmental Plan (LEP) for Amendment 38.

It was agreed that, upon the owners completing the draft EAR, the information would be provided to Council and its consultants to form part of the overall LES/LEP which is being prepared by Council for the North Coffs Harbour Release Area.

On 17 January 2008, revised DGR's were issued. In July 2008 it was decided to change the application to a project application rather than a concept plan and this was agreed to by Council and the Department of Planning. On 24 August 2008, new DGR's were issued for the project application.

A copy of the DGR's is included in Appendix 1 to this report.

This Environmental Assessment Report accompanies a project application for the site. It addresses the matters raised by the Director General and sets out the major issues associated with the proposal. It includes an assessment of the likely impacts of the proposal and a statement of commitments for the development proposal.

Copies of all the consultant reports have been sent to Coffs Harbour Council for inclusion in their LES for the site.

2.2 SITE LOCATION

The site is located approximately 4.5 km north of Coffs Harbour on the New South Wales North Coast. It is on the western side of the Pacific Highway with frontage to the Highway in West Korora. It is bounded by Bruxner Park Road (northern boundary) Pacific Highway (eastern boundary), West Korora Road (southern boundary) and private land to the west.

2.3 LEGAL DESCRIPTION

The site comprises the following properties identified by the following title details:

- Lot 1 DP 592173
- Lot 3 DP 820652
- Lot 4 DP 820652
- Lot 5 DP 820652
- Lot 23 DP 716144

The site has an area of 24.93 hectares.

2.1 SITE LOCATION

2.4 THE APPLICANT

The applicant is Pacific Bay Development Pty Ltd. who owns the land.

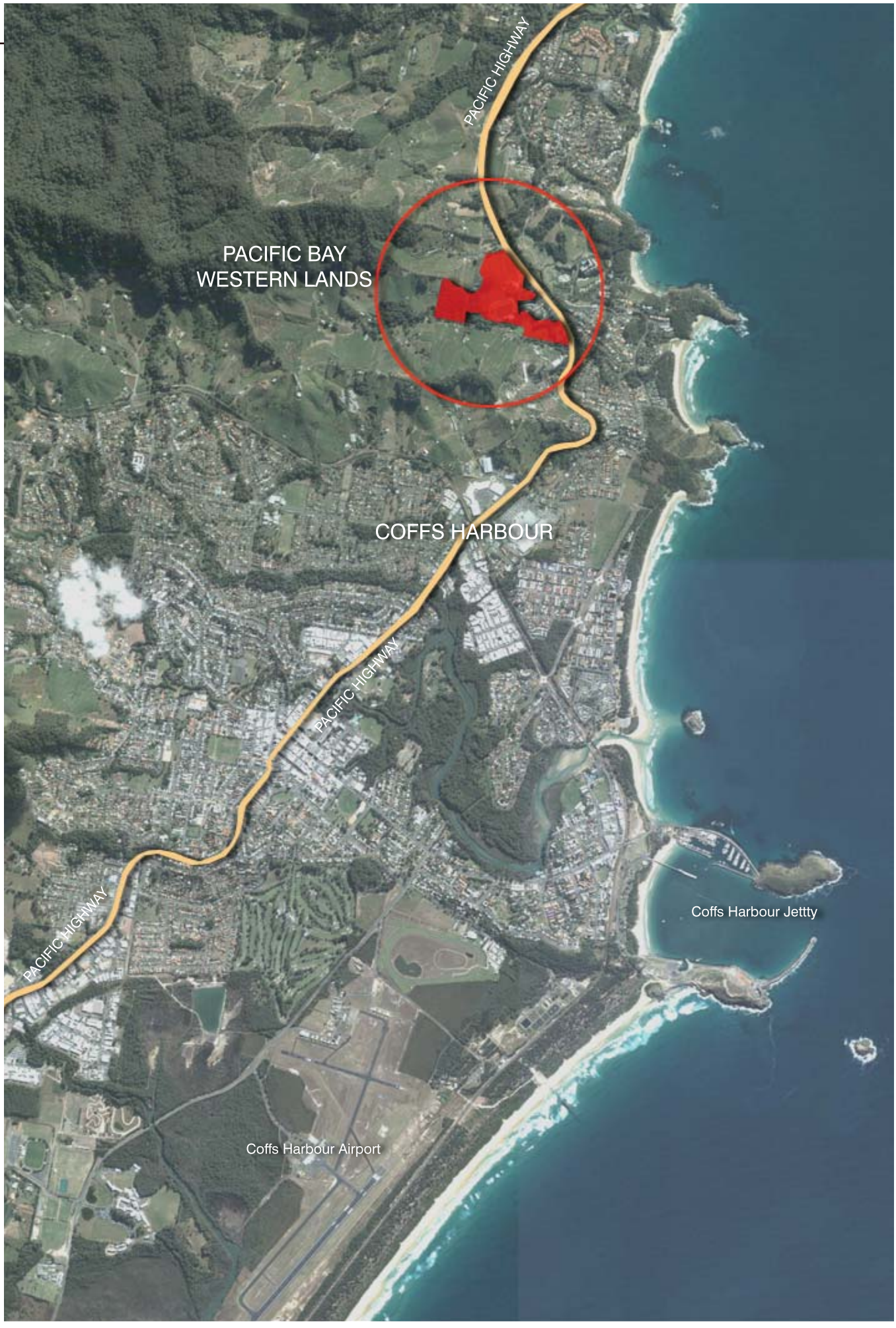
2.5 DEVELOPMENT FOR WHICH CONSENT IS SOUGHT

Consent is sought for the following:

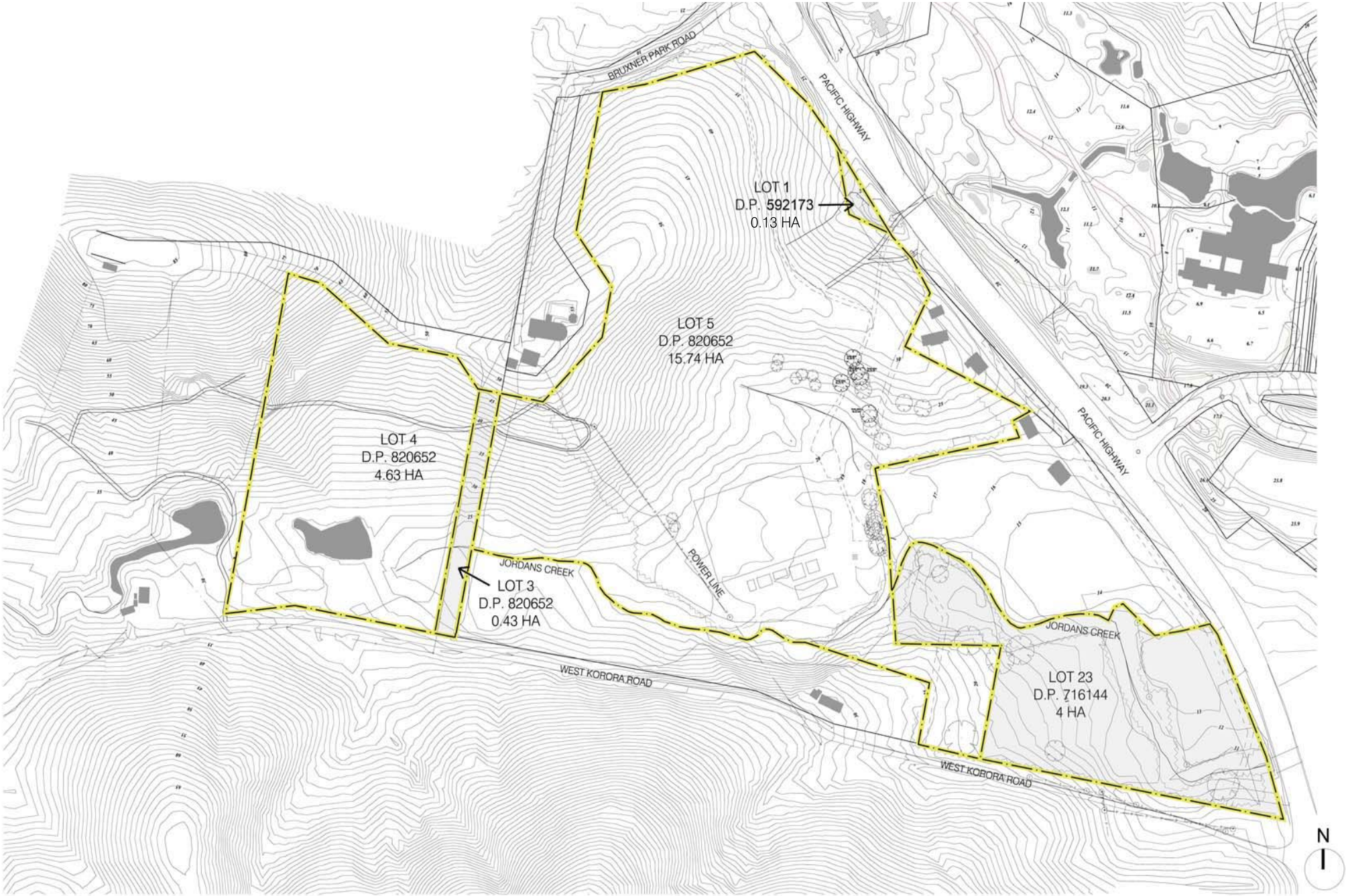
- Removal of existing structures
- Site works including excavation, fill and removal of vegetation
- Subdivision of the site in accordance with the subdivision plan
- Construction of roads and other infrastructure
- Improvements to the Environment Protection areas in accordance with the Vegetation Management Plan
- Landscaping of the site

2.6 THE PROCESS

The proposed development of the site involves the preparation of a project application for the identification and protection of environmentally sensitive areas on the site and the subdivision of parts of the site into housing lots and the subsequent development of these lots. The development also includes extensive areas of open space on the site. The proposed development falls within the definition of a Major Project as it is a coastal site which is subject to the provisions of State Environmental Planning Policy 71 – Coastal Protection (SEPP 71). As such it is a project of a kind described in State Environmental Planning Policy (Major Projects) (Major Projects SEPP) Schedule 2 Clause (1) (g) and/or (i).



2.2 SITE CONTEXT PLAN


BRUXNER PARK ROAD
PACIFIC HIGHWAY
LOT 1
D.P. 592173
0.13 HA
LOT 5
D.P. 820652
15.74 HA
LOT 4
D.P. 820652
4.63 HA
PACIFIC HIGHWAY
JORDANS CREEK
POWER LINE
LOT 3
D.P. 820652
0.43 HA
JORDANS CREEK
WEST KORORA ROAD
LOT 23
D.P. 716144
4 HA
WEST KORORA ROAD
N

It has been agreed by the Minister that a project application can be submitted for the development of the site and that this will fulfil the requirements of SEPP 71 for the preparation of a master plan for the site. The project application has been prepared and assessed in relation to the Director General's requirements for the site.
Residential development of the site is currently prohibited by the zoning of the site. However, together with the preparation of the project application for the site Coffs Harbour Council is preparing a LEP which will change the zoning of parts of the site to permit the development proposal.
In accordance with section 75H of the EPA Act, once the environmental assessment has been accepted by the Director General, the environmental assessment will be publicly available for at least 30 days. The LEP will also be exhibited during this time. Once the LEP has been gazetted and the project application for the site has been approved, applications can be submitted for the construction of houses on the site.

2.4 CONSULTANT TEAM

2.7 CONSULTANT TEAM

This report has been prepared by PTW Planning and is based on information and studies prepared by the following consultants:

Architects	PTW Architects
Landscape	Jackie Amos Landscape Architect
Engineering and Sustainability	GHD
Flora and Fauna	Bushfire Safe (Aust) Pty Ltd
Bushfire Risk	Bushfire Safe (Aust) Pty Ltd
Cultural Heritage	Archaeological Surveys and Reports Pty Ltd
Geotech	Coffey Geotechnics Ltd
Site Contamination and Acid Sulphate Soils	Douglas Partners

2.8 CONSULTATION

During the preparation of the project application detailed discussions were held with Coffs Harbour Council and the Department of Planning. Coffs Harbour Council are carrying out a Local Environmental Study of the North Coffs Release Area which includes the site. Information prepared for this application has been forwarded to the Council for inclusion in this study.

Informal discussions have also been held with adjacent land owners in relation to the application for the development of the site.

In addition the individual consultants preparing the studies for this application have carried out liaison with the relevant Government Departments and Council staff during the preparation of their studies. Those consulted included the following:

- Coffs Harbour City Council in relation to subdivision, road layout, traffic, flooding, WSUD, services, biodiversity, contaminated lands
- Coffs Harbour City Council Parks Department in relation to the visual and landscape report
- County Energy in relation to services
- Department of Environment & Climate Change
- Department of Water and Energy
- Northern Rivers Catchment Management Authority
- Road and Traffic Authority (RTA)
- Telstra

3. PLANNING FRAMEWORK

3.1 COMMONWEALTH MATTERS

Provides for a national process of environmental assessment and protection for significant matters including the Environment Protection and Biodiversity Conservation Act.

3.2 ENVIRONMENTS PLANNING AND ASSESSMENT ACT

S 5A of the Act provides that in dealing with development, consent authorities have to take into account whether there is likely to be a significant effect on threatened species, populations or ecological communities or their habitats.
Part 3 of the Act provides for the preparation of Planning Instruments generally and the preparation of Local Environmental Plans.
Part 3A of the Act sets out the procedures for dealing with applications for major projects.

3.3 STATE ENVIRONMENTAL PLANNING POLICIES

3.3.1 State Environmental Planning Policy 2005 Major Projects

This policy defines certain developments that are major projects under Part 3A of the Environmental Planning and Assessment Act 1979 and determined by the Minister for Planning. Under the provisions of this policy, the development of the Pacific Bay Western lands is a major project as it is within the coastal zone and involves a subdivision of over 25 lots. As a result any development on the site will be determined under the provisions of Part 3A of the EPA Act by the Minister for Planning.

3.3.2 State Environmental Planning Policy 55 Remediation of Land

The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated. If the land is unsuitable, remediation must take place before the land is developed. The policy makes remediation permissible across the State, defines when consent is required, requires all remediation to comply with standards, ensures land is investigated if contamination is suspected, and requires councils to be notified of all remediation proposals.

3.3.3 State Environmental Planning Policy 71 – Coastal Protection

SEPP 71 aims to protect and manage the attributes of the New South Wales Coast. It applies to the coastal zone. Where it is proposed to provide for the subdivision of land within the coastal zone into more than 25 lots, a master plan (which can now be a concept plan or project application under the provisions of Part 3A of the EPA Act) is required to be prepared and approved before consent can be granted to any application. The Minister has to approve a master plan. A draft master plan is to illustrate and demonstrate proposals for the following:

(a) design principles drawn from an analysis of the site and its context,

(b) desired future locality character,

(c) the location of any development, considering the natural features of the site, including coastal processes and coastal hazards,

(d) the scale of any development and its integration with the existing landscape,

(e) phasing of development,

(f) public access to and along the coastal foreshore,

(g) pedestrian, cycle and road access and circulation networks,

(h) subdivision pattern,

(i) infrastructure provision,

(j) building envelopes and built form controls,

(k) heritage conservation,

(l) remediation of the site,

(m) provision of public facilities and services,

(n) provision of open space, its function and landscaping,

(o) conservation of water quality and use,

(p) conservation of animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act), and their habitats,

(q) conservation of fish (within the meaning of Part 7A of the Fisheries Management Act 1994) and marine vegetation (within the meaning of that Part), and their habitats.

SEPP 71 also provides that the following matters are to be taken into consideration when considering development proposals in the coastal zone:

(a) the aims of this Policy set out in clause 2,

(b) existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved,

(c) opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability,

(d) the suitability of development given its type, location and design and its relationship with the surrounding area,

(e) any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant overshadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore,

(f) the scenic qualities of the New South Wales coast, and means to protect and improve these qualities,

(g) measures to conserve animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act), and their habitats,

(h) measures to conserve fish (within the meaning of Part 7A of the Fisheries Management Act 1994) and marine vegetation (within the meaning of that Part), and their habitats

(j) the likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes and coastal hazards,

(k) measures to reduce the potential for conflict between land-based and water-based coastal activities,

(l) measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals,

(m) likely impacts of development on the water quality of coastal water bodies,

(n) the conservation and preservation of items of heritage, archaeological or historic significance,

(o) only in cases in which a council prepares a draft local environmental plan that applies to land to which this Policy applies, the means to encourage compact towns and cities,

(p) only in cases in which a development application in relation to proposed development is determined:

(q) the cumulative impacts of the proposed development on the environment, and

(r) measures to ensure that water and energy usage by the proposed development is efficient.

3.3.4 State Environmental Planning Policy Infrastructure

This policy aims to provide streamlined assessment processes for development that complies with specified development standards by providing exempt and complying development codes that have state-wide application. A residential development code has been prepared and applies to the site.

3.4 REGIONAL PLANS AND POLICIES

3.4.1 North Coast Regional Environmental Plan

Aims

The aims of the plan are as follows:

(a) to develop regional policies that protect the natural environment, encourage an efficient and attractive built environment and guide development into a productive yet environmentally sound future,

(b) to consolidate and amend various existing policies applying to the region, make them more appropriate to regional needs and place them in an overall context of regional policy,

(c) to provide a basis for the co-ordination of activities related to growth in the region and encourage optimum economic and social benefit to the local community and visitors to the region, and

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

Relevant Policies

Relevant objectives and policies in the plan are as follows:

The Natural Environment

Objectives

(a) to protect areas of natural vegetation and wildlife from destruction and to provide corridors between significant areas,

(b) to protect the scenic quality of the region, including natural areas, attractive rural areas and areas adjacent to water bodies, headlands, skylines and escarpments, and

(c) to protect water quality, particularly within water catchment areas

Policies

(1)The council must not grant consent for the clearing of natural vegetation in environmental protection, scenic protection or escarpment preservation zones unless it is satisfied that:

(a) the wildlife habitat will not be significantly disturbed by the proposed development, and

(b) the scenery will not be adversely affected by the proposed development, and

(c) an erosion and sediment control plan will be implemented which will successfully contain on the site any erosion or sediment caused by the proposed development.

(2) In this clause, '*clearing of natural vegetation*' means:
(a) the removal of the majority of the vegetation, ground cover, topsoil or flora (other than noxious weeds, or trees which are dead, dangerous, exotic or propagated for horticultural purposes) within an area in excess of 1 hectare, or

(b) the reduction of the canopy or the population of any one tree species in excess of 20 per cent within an area in excess of 1 hectare, but does not include such removal or reduction:

(c) within 3 meters of the boundary of land in different ownership or occupation for constructing or maintaining a fence, or

(d) within 0.5 meter of the common boundary of land in different ownership or occupation to allow a registered surveyor to survey the boundary.

Coastal Development

Objectives

(a) to enhance the visual quality of the coastal environment,

(b) to provide for the appropriate recreational use of beaches,

(c) to protect the water quality of the coastal environment,

(d) to minimize risks to people and property resulting from coastal processes,

(e) to minimize changes to coastal processes resulting from development, and

(f) to encourage retention of natural areas and regeneration of those natural areas which are already degraded.

Policies

(1) This clause applies to land within the region to which the NSW Coastal Policy 1997 applies.

(2) In determining an application for consent to carry out development on such land, the council must take into account:

(a) the NSW Coastal Policy 1997,

(b) the Coastline Management Manual, and

(c) the North Coast: Design Guidelines.

(3) The council must not consent to the carrying out of development which would impede public access to the foreshore.

(4) The council must not consent to the carrying out of development:

(a) on urban land at Tweed Heads, Kingscliff, Byron Bay, Ballina, Coffs Harbour or Port Macquarie, if carrying out the development would result in beaches or adjacent open space being overshadowed before 3pm midwinter (standard time) or 6.30pm midsummer (daylight saving time), or

(b) elsewhere in the region, if carrying out the development would result in beaches or waterfront open space being overshadowed before 3pm midwinter (standard time) or 7pm midsummer (daylight saving time).

Heritage

Objectives

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

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

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

Urban Development - Residential Development

Objectives

To promote the provision of a range of adequate, affordable and suitable housing to meet the needs of the region's population.

Policies

(1) The council shall not grant consent to development for residential purposes unless:

(a) it is satisfied that the density of the dwellings have been maximised without adversely affecting the environmental features of the land,

(b) it is satisfied that the proposed road widths are not excessive for the function of the road,

(c) it is satisfied that, where development involves the long term residential use of caravan parks, the normal criteria for the location of dwellings such as access to services and physical suitability of land have been met,

(d) it is satisfied that the road network has been designed so as to encourage the use of public transport and minimise the use of private motor vehicles, and

(e) it is satisfied that site erosion will be minimised in accordance with sedimentation and erosion management plans.

Tall Buildings

Objectives

To ensure that proposals for buildings over 14 metres are:

(a) subject to the opportunity for public comment, and

(b) assessed for their local impact and regional significance.

Policies

(1) In this clause, a reference to a building does not include an aerial, chimney stack, mast, pole, receiving tower, silo, transmission tower, utility installation or ventilator or any other building, or a building of a class or description of buildings, exempted by the Minister from the provisions of this plan by notice published in the Gazette.

(2) The council shall not, without the concurrence of the Director, grant consent to a development application for the erection of a building over 14 metres in height.

(3) In deciding whether to grant concurrence to a development application in respect of development referred to in sub clause (2), the Director shall take into consideration the likely regional implications of the development as regards its social, economic and visual effect and the effect which it will or is likely to have on the amenity of the area.

(4) The provisions of sections 84, 85, 86, 87 (1) and 90 of the Act apply to and in respect of development for the purpose of a building over 14 metres in height in the same way as those provisions apply to and in respect of designated development.

Adequacy of Community and Welfare Services

Objectives

To ensure that full account is taken of the need for community services in the planning process.

Policies

Before granting consent to a development application for the subdivision of land intended for residential or rural residential purposes, the council shall consider the adequacy of community and welfare services available to the land and take into account the results of that consideration.

Tourism Development

Objectives

(a) to encourage tourism activity that will complement the existing natural and man-made features of the region and be of positive benefit to the region's economy, and

(b) to encourage a range of tourism facilities in the region without degrading important environmental or agricultural features of the region, and

(c) to encourage the location of tourism facilities so that they may benefit from existing air, road and rail services, physical service infrastructure, other tourist attractions, natural features and urban facilities, and

(d) to encourage large scale resort development in places that are easily accessible to tourists by roads, railways or water transport (or any combination of them) of a high standard and that are in proximity to urban services.

Policies

(1) The council must not grant consent to tourism development unless it is satisfied that:

(a) adequate access by road, railway or water transport (or any combination of them) exists or will be provided to service the development, taking into account the scale of the development proposed, and

(b) if the proposal involves permanent residential accommodation, all social and community services reasonably required by those residents exist in close proximity to the development, and

(c) the development will not be detrimental to the scenery or other significant features of the natural environment, and

(d) reticulated water and sewerage are available, or arrangements satisfactory to the council have been made for the provision of those facilities.

(2) In considering an application for consent to tourism development, the council must have regard to principles contained in the Tourism Development Along the New South Wales Coast: Guidelines.

(3) The council must not approve an application for large scale resort development unless it is within or adjacent to a prime tourism development area or adequate urban services are available.

3.4.2 Mid North Coast Regional Strategy 2009

Purpose

This was finalised in 2009 and has the primary purpose of ensuring that adequate land is available and appropriately located to accommodate the projected housing and employment needs of the Region's population over the next 25 years.

Environment

The Region contains a wealth of natural features, resources and landscapes. The coastal landscapes have long been an attraction for tourists and these areas are now in demand for settlement.

Population and Housing

This has been one of the fastest growing areas in New South Wales. The strategy is based on a potential population increase of 91000 between 2006 and 2031 and the greatest population growth will be around Coffs Harbour, Port Macquarie and great lakes/Taree. New initiatives to manage coastal growth will be necessary to accommodate the expected growth while protecting coastal values. By 2031, an additional 58400 dwellings will be required to satisfy population growth and there will need to be a greater proportion of multi-unit dwellings in the future.

Economy

The Regions economy is largely based on service industries, manufacturing, construction and agriculture. Tourism is a significant component of the regions economy. The economic challenges for the region relate to the creation of employment capacity.

Settlement Strategy

The Strategy identifies that Coffs Harbour has significant capacity to grow during the life of the strategy. And that 18600 dwellings have been planned for on the Coffs Coast. Settlement areas will be identified in local growth management strategies prepared by the local Councils.
Land may be rezoned for urban purposes if it is consistent with a local growth management strategy agreed between the Council and the Department of Planning.

Settlement Character and Design

Future built form is to reflect the existing positive design aspects of character, streetscape and landscape. Building heights will be established to reflect the future form and function of the settlement and mange visual impacts in urban and coastal areas. New development will include a range of well designed housing choices and an urban form based on “neighbourhood planning principles” which maximise pedestrian access across the settlement areas and provide easy access to services and facilities. A network of open space within and between settlements will cater for recreation, nature conservation and social interaction.

Environment and Natural Resources

The Strategy ensures that areas of high value will be protected from future urban development. Natural resource management policy and plans will be developed and implemented in the area.

Transport

The Regional Strategy identifies the regional transport corridors and hubs which link the Region’s major urban centres and destinations/origins outside the region. The Pacific Highway will be the primary inter/intra region road corridor. The efficiency and safety of this corridor will be

protected. Planning and construction of the Pacific Highway upgrades through the region will continue to completion.

3.5 LOCAL ENVIRONMENTAL PLANNING MATTERS

3.5.1 Coffs Harbour Local Environmental Plan 2000

Aims and Objectives

The aims of the plan are:

(a) to provide a single local environmental plan for the City of Coffs Harbour, and

(b) to encourage sustainable economic growth and development within the City, and

(c) to recognise the need to provide for, and to provide for, development within the City in an ecologically sustainable manner, and

(d) to provide a quality lifestyle within the City.

The objectives of the plan are:

(a) to provide a policy framework for the preparation of more detailed development control plans, and

(b) to identify areas for compatible development opportunities, and

(c) to protect environmentally sensitive areas and the City's heritage, and

(d) to allow for the equitable provision of social services and facilities for the community.

Zoning

The site currently has multiple zonings. The majority of the site (namely the cleared areas) are zoned 1A Rural Agricultural while the vegetated areas and the areas around Jordan's Creek are zoned 7A Environmental Protection Habitat & Catchment and are also shown hatched as Koala Habitat. There is also a strip of land along the Pacific Highway frontage which is zoned 7B Environmental Protection Scenic Buffer.

While the current 1A Rural Agricultural zoning of the site does not permit the development concepts presented in this submission, Council have formally resolved to commence the preparation of an amendment to the Coffs Harbour Local Environmental Plan 2000 for the site. LEP amendment 38 proposes the rezoning of the site to permit the development.


BRUXNER PARK ROAD
PACIFIC HIGHWAY
BANANACOAST CARAVAN PARK
WEST KORORA ROAD
JORDANS CREEK
2/226560
3/820652
5/820652
3/820652
23/716144
LEGEND
SITE OUTLINE
1A RURAL AGRICULTURE
7A ENVIRONMENTAL PROTECTION HABITAT AND CATCHMENT
7B ENVIRONMENTAL PROTECTION SCENIC BUFFER

Other Matters in the LEP

Tree Preservation

Objective of provision:
To enable preservation of trees to maintain the amenity of the City.

Koala habitat

Objective of provision:
To provide for the protection of koalas and their habitat.

Landform Modification

Objective of provision:
To control soil erosion, sedimentation, tree loss and drainage impacts associated with landform modification.

Waterways

Objective of provision
To ensure there are not adverse impacts from development on the Solitary Islands Marine Park

Environmental Hazards

Objective of provision
To ensure that environmental hazards are considered relating to development

Services

Objective of provision:
To ensure that all development has adequate water and sewage services.

3.5.2 Coffs Harbour Interim Settlement Strategy 2008

Background

In 1996, the Coffs Harbour Urban Development Strategy was adopted by Council and endorsed by the State Government. The area west of the current Pacific Highway, from the railway line in the south to The Mountain Way in the north, was identified as a Special Investigation area. The subject site described in Section 3 of this report formed part of the Special Investigation area.

In 1999, Council adopted its Rural Residential Strategy. This document identified an area west of the existing Highway, from West Korora Road in the south to The Mountain Way, in the north as the Korora Investigation area. Council progressed LEP Amendment No.3 which included the subject lands and aimed to rezone them to a rural residential zoning allowing for one and two hectare subdivision.

The DOP then requested Council to review its 1996 Urban Development Strategy. The review, "Our Living City" Settlement Strategy looks at social, environmental and economic issues in the area and proposes three possible development scenarios for the city – a compact city, an expanding city and a dispersed city. All of the scenarios envisage some future urban expansion in the West Korora area.

The subject site was included in the West Korora area and was identified in the Land Capability assessment as having potential for urban growth. Noted as PRL 1, the study noted that the land was steep and difficult to service with water at higher grades and provided a green backdrop to the city.

On 5 July 2007, Council endorsed the Settlement Strategy for Coffs Harbour and this was sent to the Department of Planning for endorsement. On 12 November 2007, the DOP endorsed an interim agreement to allow some short term matters to be progressed and this agreement included the North Coffs Release Area.

The Strategy

The Strategy envisages that by 2031, the population of the Coffs Harbour LGA will be 99,000 made up of 94,000 in the existing zoned areas and 6000 in areas for potential urban expansion. The figure used to project supply in new release areas was a dwelling density of 10 dwellings per ha. This meant that there would be 3726 additional dwellings in new residential zones in the LGA. The strategy also identified that areas along the northern beaches were likely to grow at a faster rate than the remainder of the LGA. The Northern beaches are expected to have a population of 30619 by 2031 which means there will need to be a growth in dwelling numbers of 5038. The current dwelling supply in the area is 3934 dwellings.

The Pacific Bay Site

The Pacific Bay site is shown in the settlement strategy as part of the Korora investigation area. The population of Korora is expected to grow from 2090 to 4420 in 2031. The key strategies for the development of this area are as follows:

- Develop as a coastal village
- Retain village character and prepare Place Management Plan
- Develop village core
- Undertake environmental studies to determine appropriate zonings (environmental constraints) and action accordingly
- Reinforce the significant role of tourist development
- Reinforce the relationship of urban form and the natural environment
- Ensure development addresses impacts of Pacific Highway and
- Pacific Highway Strategy
- Enhance riparian corridors to provide ecological links between coast and hinterland
- Allow for urban development west of the existing highway
- Ensure new development areas have regard to topography, servicing and other environmental constraints
- Maintain the city's backdrop with restrictions on development on or near ridge lines.

3.5.3 The Rezoning Process

On 20 April 2006, Coffs Harbour Council resolved to formally commence the preparation of an amendment to the Coffs Harbour LEP 2000 for the North Coffs area, in accordance with the DOP requirements. It was recommended that Council prepare a LES and draft LEP for the lands in the West Korora area. The subject site is included within these lands.

On 6 July 2006, Council resolved in accordance with S54 of the EPA Act to prepare a draft LEP for the North Coffs Release Area and a S54 Notification was provided dated 8 June 2006.

On 2 November 2006, Council resolved to allow environmental studies to be progressed separately on lands comprising part of the North Coffs Release Area at the Summit/Big Banana site and the Thakral landholdings (the subject site).

Council has employed consultants to carry out the overall Local Environmental Study (LES) for the North Coffs Release Area. A draft of all studies prepared for the EAR for the site have been supplied to the consultants undertaking the overall LES to inform the LES/LEP process for the North Coffs Area.

In order to identify an appropriate zone for the subject lands, it is necessary to undertake a complete assessment that addresses environmental, social and economic impacts for the proposed land uses. This is the role of the LES. Any resultant amendment to Coffs Harbour City LEP 2000 would have to address the environmental, social and economic criteria set by Council.

The State Government will not support the rezoning of major residential and rural residential release areas without Council completing appropriate strategies relating to all land uses, but particularly for urban and rural residential development. The proposed rezoning of lands in West Korora accords with the 1996 Urban Development Strategy and the Interim Settlement Strategy 'Our Living City' under preparation.

The Department of Planning circular PS 06-013 dated May 2 2006 gives advice about who can prepare local environmental studies. It is noted that provided there are appropriate review mechanisms in place, proponent prepared studies can provide a sound basis for decision making in relation to proposed rezoning.

3.5.4 Proposed Planning Controls for the Site

It is proposed that the draft LEP for the site amends the Coffs Harbour LEP 2000 by a map amendment which zones existing Rural 1A land on the site part Residential 2A Low Density and part Zone 6C Private Recreation. The area included in the 7A Environment Protection Zone will be considerably increased.

2A	Residential Low Density
7A	Environmental Protection Habitat and Catchment
6C	Open Space Private Recreation
	Deferred

N

1:6,000

LOCALITY: Coffs Harbour

DRAWN BY:RPG DATE:February 10 SCALE1:6000	ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979	CERTIFICATE ISSUED UNDER SEC.65 EPA ACT 1979. DATE:
SHEET NO. 1 OF 1 SHEETS	**COFFS HARBOUR CITY LOCAL ENVIRONMENTAL PLAN 2000**	PUBLISHED IN GOVT. GAZ. NO. OF
COUNCIL FILE NO.	**Draft Amendment No. 38**	CERTIFIED IN ACCORDANCE WITH THE ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979 AND REGULATIONS.
DEPT. FILE NO.		GENERAL MANAGER
CERTIFICATE PLAN NO. DATE:		DATE: 1.3.10

The aim of the 2A Residential Zone is:

To provide for the low density housing needs of the population.

The objectives of zone are:

- *to enable housing development and other development that is compatible with a low density residential environment.*
- *to provide for development that is within the environmental capacity of a low density residential environment and can be adequately serviced.*

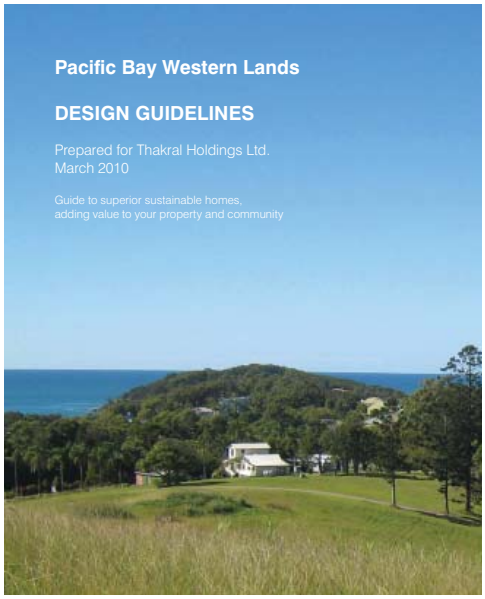
Uses permitted without development consent are:

Development for the purpose of: agriculture; bed and breakfast establishments; environmental protection works; home industries; home occupations; special care homes.

Uses permitted only with development consent are:

Development for the purpose of: aquaculture; attached dual occupancies; boarding houses; camp or caravan sites; child care centres; communications facilities; community facilities; dams; demolition; detached dual occupancies; dwelling-houses; educational establishments; forestry; general stores; group homes; multi-unit housing; places of worship; recreation areas; recreation facilities; roads; seniors housing; utility installations; veterinary clinics and subdivision of land.

All other uses are prohibited.



3.3 DRAFT DEVELOPMENT CONTROL PLAN

3.6 DRAFT DEVELOPMENT CONTROL PLAN (DESIGN GUIDELINES)

A draft Development Control Plan (Design Guidelines) has been prepared for the site, which sets out development standards for the site and design controls. The major control for the development is an overlay which establishes minimum lot sizes on various parts of the site ranging from 1000 m^2 on the steeper areas to 300 m^2 on the area around the private recreation area. The Design Guidelines are included in Appendix 2 to this report. Draft LEP 38 provides that consent shall not be granted for the subdivision or erection of dwellings on the site unless the provisions of the Development Guidelines are complied with. It is anticipated that, because of the provisions of the Exempt and Complying Development Code for Residential Development the Design Guidelines will also be applied to the development of the site through the owner's corporation providing that each individual dwelling complies with their provisions.

3.7 APPLICATION OF PLANNING CONTROLS TO THE SITE

This site is subject to a concurrent application for a rezoning of part of the site to a residential zone. As a result some of the existing controls which apply to the site will not be relevant when the final application is considered .Specifically this relates to the specific zoning of part of the site as Rural and the Korora Development Control Plan which provided for rural residential development on the land .All other state, regional and local planning provisions as outlined in this section will apply to the development of the site.

3.4 PROPOSED LOT SIZE DIAGRAM

4. SITE ANALYSIS AND EXISTING ENVIRONMENT

4.1 EXISTING SITE CONDITIONS AND USE

The site is located on the western side of the current Pacific Highway in West Korora, approximately 4.5 km north of Coffs Harbour CBD. The site has an area of 24.93 hectares. It is bounded by Bruxner Park Road (northern boundary), Pacific Highway (eastern boundary), West Korora Road (southern boundary) and private land to the west.

The site comprises the properties identified by the following title details:

- Lot 1 DP 592173;
- Lot 3 DP 820652;
- Lot 4 DP 820652;
- Lot 5 DP 820652; and
- Lot 23 DP 716144

The site contains an undulating topography with some level areas. The steeper sloping land is located in the northern and north western parts of the site near Bruxner Park Road. The site ranges in height from 13AHD in the south eastern corner up to 55AHD in the north western part of the site.

The site is largely vacant with the exception of a rugby playing field and associated amenities and gym buildings located in the middle of Lot 5 DP 820 652.

4.2 VIABILITY OF EXISTING USES

The subject property was previously used as a banana and avocado plantation. In the past, these horticultural pursuits were a viable, profitable ventures. However, the banana industry, and to some extent the avocado industry, in Coffs Harbour has declined to a point where it has become extremely difficult to make reasonable returns for living purposes. Due to the small, fractured nature of the site and the steep slopes of the western portion of the property, it is considered unsuitable for any other form of agriculture. The Soil Landscape Maps (Milford, 1999) have also indicated that the soil types at the site present moderate limitations to grazing and high to severe limitations to cultivation. As the surrounding area is developed for residential purposes, this presents an additional constraint to the use of the site for agricultural purposes due to the potential conflict between adjoining landholders/land uses.

Due to the issues outlined above, the property is not considered to be agriculturally viable or able to economically sustain agricultural activity. This is supported by the NSW Department of Planning's Mid-North Coast Farmland Mapping Project (DOP, 2007) map, which has not considered the site to be 'Regionally Significant Farmland'.

4.3 GEOTECHNICAL AND SOILS

A Preliminary Geotechnical Assessment has been prepared for the site and a copy of this is included in Appendix 3 to this report.

The site incorporates slightly to steeply sloping hills that are typical of the Coffs Harbour hinterland, and a low lying, valley bottom area. At the time of the investigation the site consisted of grassy hillsides, a densely forested area designated as protected koala habitat and a rugby field with a number of small associated structures. It is understood that the far western portion of the site previously contained a banana plantation. The site is partially bisected by Jordan's Creek which runs from the approximate centre of the site through to the south eastern corner. The eastern boundary of the site comprises of the Pacific Highway and the existing Bananacoast Caravan Park while the northern boundary is made up of the Bruxner Park rural residential subdivision. The southern boundary of the site consists of West Korora Road and partially forested land while the western boundary consists of densely forested land and a private dwelling.

The study identified that much of the development would occur on sloping, and in some locations very steeply sloping ground. As a result, critical to the investigation was the assessment of slope instability and this was the focus of the walkover survey and subsequent subsurface investigation.

Notably the majority of steep slopes were observed to have a cover of colluvium. Colluvium is a term applied to soils that have been subject to downslope movement in their development. No evidence of deep seated instability was specifically recorded by the walkover survey. Such evidence could include inclined or rotated trees or fence posts that could also result from soil creep, or sharp breaks in slope that could represent landslide backscarps from slumped soils. Similarly hummocky ground or wet ground within hillslopes could represent the toe of landslides, and no such features were identified during the survey.

Despite the above, the potential for ongoing soil creep in the colluvium mantling the steeper slopes cannot be overlooked. The survey did not identify any areas of boulders or rock outcrops above the planned development areas that could represent a source of risk to end users from toppling or rolling.

Test pits were drilled and the following geological profile was revealed:

- Topsoil: Silty Clay, medium plasticity, moist, dark brown, root affected to between 0.15 m and 0.3 m depth; overlying,

- Colluvial Soil: Clay, Sandy Silty Clay and Gravely Clay, medium to high plasticity, moist, red/orange and light brown, firm to very stiff to depths of between 0.7 m and 2.5 m; overlying,

- Residual Soil: Clay, Silty Clay, medium to high plasticity, moist, red/orange with yellow mottle and light grey with orange mottle, stiff to hard, grading to

- Extremely Weathered to Highly Weathered Argillite and Greywacke: Relic rock structure with extremely closely spaced defects (spacing < 80 mm), estimated low to medium strength, pale grey-orange and dark grey-orange, grading to

- Moderately Weathered Argillite and Greywacke: Extremely closely spaced defects (spacing < 80 mm), estimated medium to high strength, pale to dark grey and brown.

The following soil profile has been interpreted in the low lying area:

- Topsoil: Silty Clay and Silty Gravely Clay, medium to high plasticity, moist, dark brown, root affected to between 0.4 m and 0.7 m depth; overlying,

- Alluvial Soil 1 (TP115 Only): Gravel, loose, medium to coarse grained rounded gravel with some cobbles, to a depth of 2 m, overlying,

- Alluvial Soil 2: Interbedded (or lenses) of clay, silty clay, sandy clay and silty gravely clay, with some medium to coarse gravel and cobbles, low to high plasticity, moist and wet, firm to stiff to depths extending beyond the depth of investigation.

The report concluded that the site could be developed for residential purposes and provided considerations for design and construction on the site.

4.4 CONTAMINATION AND ACID SULPHATE SOILS

4.4.1 Contamination

Advice on site contamination is included in Appendix 5. It is as follows;

In 1996, Douglas Partners prepared a Stage 1 Preliminary Site Investigation for the site reportedly in accordance with the NSW EPA Draft Guidelines for Consultants Reporting on Contaminated Sites. A copy of the report is attached. The assessment identified areas at the site with concentrations of arsenic, cadmium and chromium greater than the relevant guidelines and recommended further investigation. In 1999, Holmes and Holmes assessed the potential contamination at the site from banana cultivation (see attached reports). The assessment was undertaken in accordance with the Draft Guidelines for Former Banana Plantation Sites (1992) and the Draft Guidelines for Vertical Mixing of Former Broad-acre Agricultural Land (1994).

The following is a summary of the Holmes and Holmes assessment:

- The concentration of contaminants assessed at Lot 23 DP 716144 were less than the relevant guidelines for residential developments;
- Thirteen soil samples from Lot 5 DP 820652 contained concentrations of arsenic greater than the relevant guidelines;
- Soil sample AD from Lot 5 DP 820652 contained concentrations of copper greater than the relevant guidelines;
- Concentrations of all other contaminants assessed were less than the relevant guidelines;
- A remediation strategy was prepared that indicates that vertical mixing to a depth of 300-350 mm will effectively reduce the arsenic concentrations to levels less than the relevant guidelines in all but sample location AQ. Figure 1 attached shows the area to be vertically mixed and sample location AQ;
- It was proposed that the contamination at location AQ be defined by further sampling and analysis. The contaminated soil is to then be removed and encapsulated at a suitable depth below roadworks. It is estimated that 300 m3 of soil will need to be encapsulated; and
- Similarly, it was recommended that the soil with elevated copper concentrations should be further defined and subsequently encapsulated as above. A similar quantity of soil may be involved.
- Cadmium and chromium are not listed by the EPA (1997) Contaminated Sites: Guidelines for Assessing Banana Plantation Sites as a primary contaminant in bananalands. However, Holmes and Holmes (1999) did analyse the soil for cadmium and chromium and the results indicated that the soil contained concentrations of cadmium and chromium less than the relevant threshold.

The advice recommended that the following work be completed prior to construction:

- The further sampling and analysis of the areas surrounding locations AQ and AD as per Holmes and Holmes' recommendation;
- Remediation via vertical mixing and encapsulation as per Holmes and Holmes' recommendation; and
- Validation of the remediation.

A Remedial Action Plan has also been prepared and is also included in Appendix 5.

4.4.2 Acid Sulphate Soils

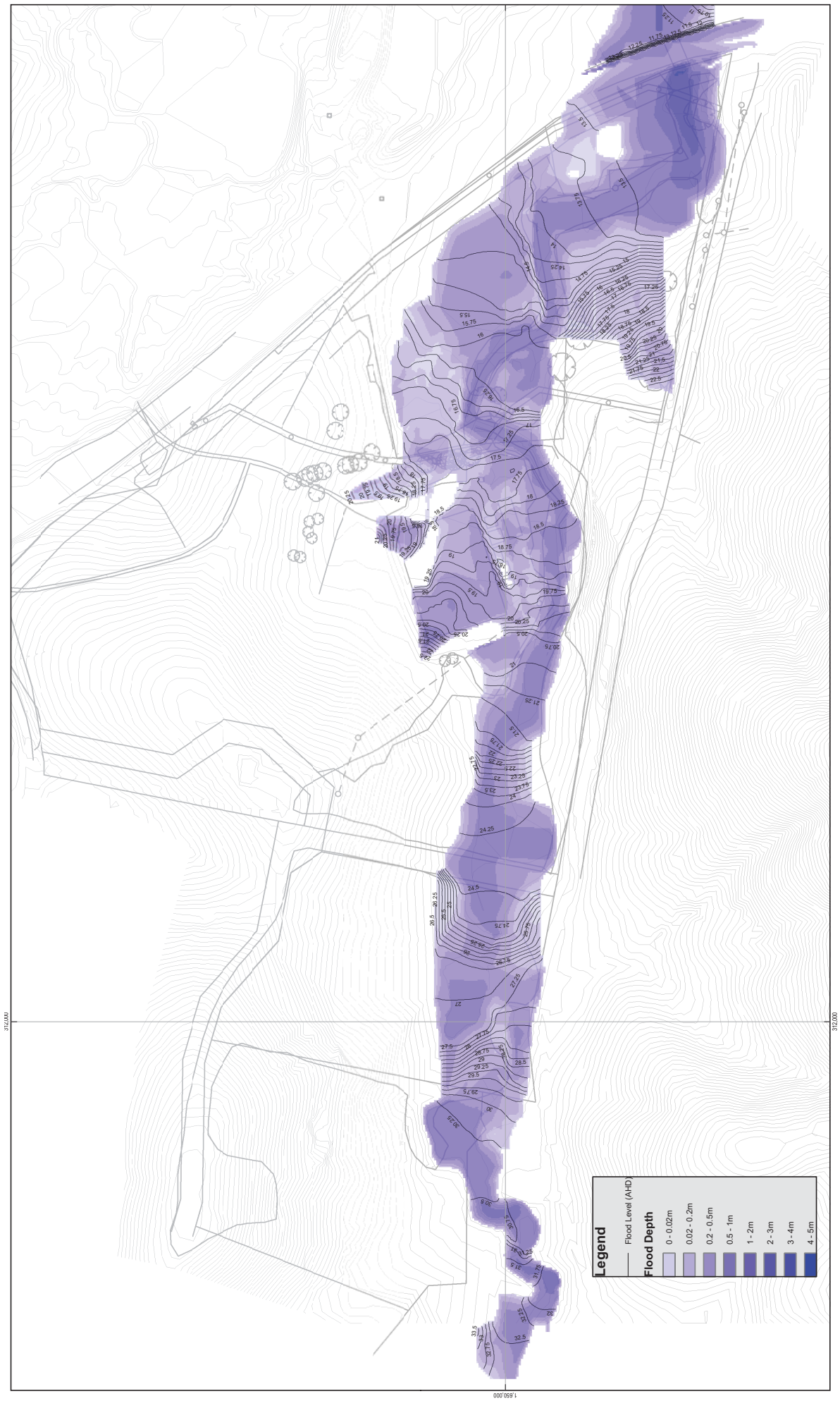
Advice has been received on acid sulphate soils on the site and this is included in Appendix 4. Acid sulphate soils are not anticipated to be an issue in relation to the future development of the site.

4.5 DRAINAGE

A detailed report on Integrated Water Sensitive Urban Design and Flooding has been prepared and is included in Appendix 6 to this report. The site is adjacent to Jordan's Creek and there is some potential for flooding on the site.
A flood model and report in August 2003 (Bewsher Consulting) predicted flood levels on the site. This report determined a flood level for the 100-year ARI and PMF events. Both the hydrology and hydraulics models used in this study were reviewed and adopted (after a number of modifications) for use in the current study. The hydraulic model was developed in TUFLOW.
A number of checks were carried out to verify the elevations, roughness's and other parameters adopted in the TUFLOW model. Checks of the model elevations showed that these reflect the survey provided, except that the playing field was not present in the topographic data. Review of the materials layer and recent aerial photography revealed some discrepancies, which were addressed.

The Pacific Highway configuration in the model was corrected, which subsequently showed that the Pacific Highway is effectively the downstream control when a 50% culvert blockage is applied and the highway is overtopped. Although Coffs Harbour City Council's Development Control Plan is silent on the issue of culvert blockage, it is our understanding that Coffs Harbour City Council requires the adoption of 50% blockage for all culverts with a minimum diagonal opening of 6m and complete blockage for culverts with a diagonal opening less than 2m. The Pacific Highway culverts all have an opening greater than 2m and less than 6m. Accordingly a blockage factor of 50% was applied for flood modelling. The modified model was simulated to provide a baseline of the 100-year ARI event flood conditions. Results show the existing condition event flood extent, flood level contours, flood depths, flood hazard and flow velocities. The flood modelling for the developed conditions was undertaken for the proposed development which does not include a bridge over Jordan's Creek.

The site in its pre-developed state experiences flooding during a 100-year ARI event. Areas that are submerged include the playing field (up to 1 m flow depth), the location of the proposed lots to the East of the playing field (up to approximately 0.5 m flow depth), and the location of the proposed lots on the southern side of Jordan's Creek(up to approximately 1.5m flow depth).
Flow velocities (in the order of 3 m/s) are experienced on the playing field, at several locations along Jordan's Creek, and at the location of the proposed lots on the southern side of Jordan's Creek; and a high flood hazard is experienced along the length of Jordan's Creek and on the playing field. The location of the proposed lots to the South of Jordan's Creek is also exposed to regions classified as high hazard.



4.1 EXISTING FLOOD LEVELS AND EXTENT

4.6 FLORA AND FAUNA

4.6.1 Introduction

Detailed flora and fauna studies have been carried out on the site and the report on these is included in Appendix 7 to this report.

4.6.2 Vegetation Communities

The aims of the flora assessment study were:

- To examine the occurrence, ecology and threat status of plant communities and species within the study area
- To describe areas examined during the course of studies
- To make ameliorative recommendations.

Surveys were carried out on the site and relevant literature was reviewed.

The NPWS Wildlife Atlas search revealed 14 records of threatened flora species within 10 km of the subject site. On the basis of habitat preferences, 14 of these species were considered possible occurrences at the subject site.

In the site survey a total of 197 species were recorded with 154 (78%) native and 43 (22%) non-native species being noted. One threatened species, Amorphospermum whitei Aubrev. was noted and was represented by approximately 15 mature trees with multiple stems, possibly as a result of a previous fire (pers comm). Eight species were recorded that are within 50 kilometers of their southern distributional limits (herbarium lodgements and personal unpublished information).

Clearing, settlement and horticulture within the period of European history has profoundly affected all aspects of the study area. For many years a large scale valuable logging industry has been based upon the majority of large tree species present. Fire is also likely to have impacted across the study area although the period to the last fire was not determined.
A visual assessment of threats listed in Schedule 3 of the Act noted the following threatening processes;

- High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition
- Clearing of native vegetation,
- Invasion of native plant communities by exotic perennial grasses,
- Removal of dead wood and dead trees,
- Invasion, establishment and spread of Lantana, and,
- Invasion of native plant communities by bitou bush and boneseed.

Further threats noted included runoff from adjoining agricultural lands and road surfaces, dumping of domestic garden wastes, maintenance of infrastructure including clearing under and adjacent to powerlines and the invasion of native plant communities by a range of exotic species including; Senna, Mexican Sunflower, Mickey Mouse Plant, Crofton

Weed, Camphor Laurel, Cocos Palm, Umbrella Tree, Slash Pine and Hackberry. No scientific research is known to have been undertaken on or nearby to the study area.

4.2 GIANT BARRED FROG HABITAT

4.3 GIANT BARRED FROG

4.6.3 Fauna Habitat

The fauna survey took place concurrently with the flora surveys during January, March, July and September 2007 following the same transects and random meander as outlined above in the flora survey. The survey involved both searching for threatened species and assessing the value of the site as habitat for fauna. Birds were surveyed by listening for their calls and observing through binoculars for any species present. Frogs were surveyed by listening for their calls and both reptiles and frogs were surveyed by searching potential hiding places, such as under stones and logs. Scats, tracks and other signs of mammals, herptiles and birds were also searched for. All fauna species seen, heard or represented by scats, tracks or other signs were noted, and attention was paid to habitat features such as:

- The presence of mature trees with hollows, fissures and/or other suitable roosting/nesting places
- The presence of Koala food trees
- The condition, flow and water quality of drainage lines and bodies of water
- Areas of dense vegetation
- The presence of hollow logs/debris and areas of dense leaf litter
- The presence of fruiting flora species
- The presence of blossoming flora species, particularly winter-flowering species
- Vegetation connectivity and proximity to neighbouring areas of intact vegetation
- The presence of caves and man-made structures that may be suitable for microchiropteran bat roost sites
- The presence of bulky nests which may belong to raptors

The NPWS Wildlife Atlas search revealed records of 41 threatened fauna species within 10 km of the subject site . On the basis of habitat preferences, 33 of these species were considered possible occurrences at the subject site.

38 species of vertebrates were recorded during the site survey, none of which are threatened.

In terms of habitat for threatened species, the most important features of the subject site are the presence of 7(a) zone tree species in Community 1 and the Riparian vegetation along Jordan's Creek in Community 3; although species are limited, these communities represent the majority (80%) of suitable habitat.

Based on the habitat features present, and considering that the natural vegetation is Rainforest and Wet Sclerophyll, an assessment was made of the suitability of the subject site as habitat for the threatened species listed and it was concluded that the site may provide suitable habitat for

33 of the listed threatened fauna species. The Giant Barred Frog was identified on the 3rd and 4th of March 2007 by Kimberly Stewart and Wayne Hadaway by using a call back method. A search for an opportunistic habitat for the Giant Barred Frog was conducted, concluding the area along Jordan's Creek near the crossing and fish weir was a suitable habitat site and shall remain intact and upgraded where possible without disturbance to the Giant Barred Frog habitat.

4.7 BUSHFIRE HAZARD ASSESSMENT

A Bushfire Risk Management Plan has been prepared for the property based on the possible residential development of part of the property. A copy of the plan is included in Appendix 9. The assessment was conducted in accordance with section 91A of the Environmental Planning and Assessment Act (1979) and section 100B of the Rural Fires Act (1997), and followed the guidelines recommended in Planning for Bushfire Protection (RFS, 2006).

4.4 BUSHFIRE HAZARD ASSESSMENT

The area subject to the proposed development is located on the western side of the Pacific Highway in West Korora, approximately 4.5 km north of Coffs Harbour Central Business District, within the Coffs Harbour Local Government Area, north coast of NSW. The property is bounded by Bruxner Park Road (northern boundary), Pacific Highway (eastern boundary) West Korora Road (southern boundary) and private land to the west. The majority of the site consists of vacant land. A rugby playing field with associated amenities and a gym building are located in the middle of Lot 5 DP820652. The above mentioned infrastructure shall be removed for the proposed development. A Transgrid power line traverses the property in a north-south direction on Lot 3 DP820652.

The subject property consists of moderately to steeply, undulating topography, the steeper areas are located in the northern and north-western portions of the subject property near Bruxner Park Road, and near level areas along the terraces of Jordan's Creek. The property is mostly cleared grasslands, a remanent of a prior agricultural land use (banana plantation). There is a large stand of sclerophyllous vegetation in the western portion of the subject property located on all of Lot 4 DP820652 and part of Lot 5 DP820652 and riparian vegetation occurs along the immediate banks of Jordan's Creek.

The Bushfire Risk Assessment was conducted through an on-site inspection undertaken in February, 2008 and using the methodology set out in Planning for Bushfire Protection manual (RFS,2006). The on-site assessment included traversing the subject property and all lands within 140 metres from the proposed subdivision.

The Property inspection identified areas of Forest, Rainforest and Grassland as bushfire prone vegetation within 140m of the proposed development. The terrain over most of the subject property is undulating, rising steeply away from the creek (>18° from the Jordan's Creek floodplain to the upper hill slopes).

The Tall Open Forest in the central portion and in the northwest corner of the subject land is identified as Category 1 bushfire prone vegetation, according to the Coffs Harbour Fire Prone Lands (CHFPL) map (Coffs Harbour City Council). The Riparian Lowland Rainforest community along Jordan's Creek is also Category 1 bushfire prone lands. The remainder of the subject property (grassland vegetation) is identified as being within the bushfire prone vegetation buffer zone. The assessed bushfire prone vegetation most influencing fire behaviour for each of the identified development precincts are:

- Western precinct The Tall Open Forest vegetation to the east (central area) and northwest (isolated) is assessed as the bushfire prone vegetation for this precinct. For this assessment, the ecological buffer to Jordan's Creek and Rainforest community is assumed that it will evolve over time and without management, to approach a Forested community structure.
- Eastern Precinct The Tall Open Forest vegetation to the west (main Forest area) is assessed as the bushfire prone vegetation for this precinct.
- Southern Precinct The Riparian Rainforest vegetation along Jordan's Creek is assessed as the bushfire prone vegetation for this precinct.

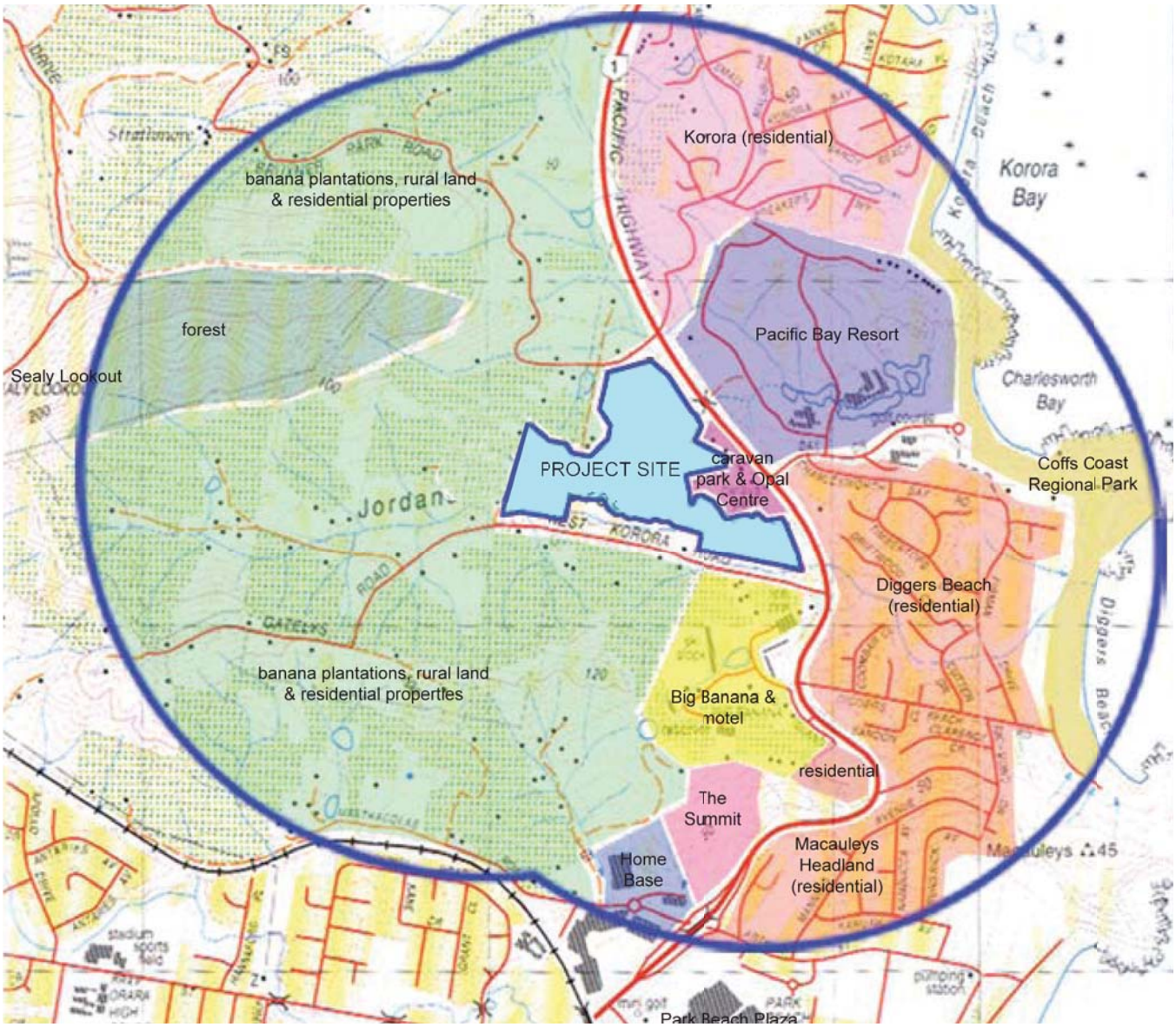
4.8 VISUAL AND LANDSCAPE ASSESSMENT

4.8.1 Character Elements of the Area

The Landscape Master Plan Report Appendix 11 which has been prepared for the site includes a detailed analysis of the existing character of the site and the surrounding area and identifies areas and elements of this situation which should be retained in any future redevelopment of the site.

The locality to the proposed residential development includes:

- Korora;
- Pacific Bay Resort;
- Diggers Beach & Macauleys Headland;
- Tourist facilities including the Big Banana, Coffs Harbour International Motel, Bananacoast Caravan Park & Opal Centre;
- Island View Close residences;
- The Summit residential development;
- Home Base;
- Banana plantations, rural land & residential properties (West Korora & Bruxner Park);
- forest (Bruxner Park); and
- Coffs Coast Regional Park.



4.5 SITE CONTEXT PLAN

The following is a brief description of the character of these locations within the site context.

Korora

The southern extent of the residential area of Korora is approximately 1km to the north of the project site. Korora is located on the eastern side of the Pacific Highway between the highway and Korora Beach. It is accessed from James Small Drive off the Pacific Highway. James Small Drive meets the highway at the southern and northern extents of Korora. It is the main through road within the settlement. Korora represents part

of the continuous development between the Pacific Highway and the coastline north of Coffs Harbour to Sapphire. The settlement retains it's identify as a separate settlement by being accessed from the highway at only two locations. Korora is also separated from other residential areas by the Pacific Bay Resort to the south and the Opal Cove Resort to the north.

Most of Korora represents an established residential area; however, there is some recent residential development immediately to the east of the highway. The street layout is organic in form with road locations determined by the undulating, and often steep topography. There are many mature garden and street trees and areas of reserves located along a series of lagoons. There is also a large area of park on the beach front. The overall character is of a leafy, attractive suburb. The road verges are grassed and are generally without kerb and gutter.

The topography at Korora is undulating but in general falls from the highway to the coastline. The settlement is located between the northern headland of Charlesworth Bay and the rocky point north of Korora Beach. The undulating landscape falls to two main drainage lines. The southern drains to the ocean at the southern end of Korora Beach and the northern, drains to the southern end of Opal Cove Beach. The majority of lots appear to have been established at approximately the same time, and are generally in the range of 600 to 800 m^2. Housing styles are varied, reflecting different eras of construction. Materials include brick, masonry and timber. New homes in the area tend to be of rendered block work with contemporary detailing.

4.6 PACIFIC BAY RESORT

West of James Small Drive, there are some remnant rural and banana properties. There is also a new subdivision which includes new homes and houses currently under construction. These newer homes tend to be of rendered block work with tile roofs. The street layout in the new residential area is also organic in format culminating in a number of cul-de-sacs. There are no street trees in this newer residential area.

At the southern extent of Korora a number of new large homes are currently under construction along Breakers Way. These homes are contemporary in style and feature rendered, painted block work, contemporary roof lines and timber detailing. These homes are located on the northern slope of the ridgeline between Korora and the Pacific Bay Resort. Korora includes a local school located on James Small Drive and a number of small resort facilities.
There is a car park and public access to the beach at the end of Sandy Beach Road. The Hills Beach Reserve is accessed by Norman Hill Road.

Pacific Bay Resort

The Pacific Bay Resort is located to the east of the project site, between the Pacific Highway and Charlesworth Bay. The resort is accessed from Charlesworth Bay Drive. The main resort facilities and buildings are located at the southern part of the site overlooking a series of lagoons. This area includes the existing resort buildings, internal access roads and car parking, pedestrian walkways, recreational facilities, community facilities, grassed open spaces, gardens, water courses and feature

lagoons. The area presents a highly manicured and maintained character. Plant species included in the resort landscape include exotic and indigenous species.
The resort includes a golf course that covers a corridor running initially parallel with the highway and then traversing the lower part of the site in an west to east direction. This is a highly maintained landscape, characterised by open green spaces. The golf course is set along the natural drainage line. It includes pockets of ground cover planting, tree groves and sand bunkers. In many locations it fits in and around the water bodies that are a feature of the resort landscape. The golf course open spaces are linear in nature.

The resort also includes a number of open grassed, undulating areas mostly surrounded by remnant vegetation. These areas represent proposed development sites within the resort. There are a number of pockets of remnant vegetation located to the north of the main resort facilities. Some remnant vegetation is located along natural drainage lines within the site. The vegetation varies from wet sclerophyll forest to rainforest. These areas have a high visual amenity, separate the development sites and represent a large proportion of the limited remnant vegetation in the broader surrounds. An internal access runs up through the middle of the resort. This provides access to a relatively new residential development at the highest part of the resort site. These new residences are located along a ridgeline and overlook Korora Bay.

4.7 DIGGERS BEACH

Diggers Beach & Macauleys Headland

The settlement of Diggers Beach is located to the east of the Pacific Highway between Diggers Head and Macauleys Headland. Once again this settlement is part of the continuous development existing between Coffs Harbour and Sapphire. The main access to Diggers Beach is from Diggers Beach Road off the Pacific Highway, opposite the “Big Banana”. Diggers Beach can also be accessed, from the north, on Charlesworth Bay Road and, from the south, on Richmond Drive.

The settlement at Diggers Beach is located between two headlands. Subsequently, much of the development is set below the ridgelines leading to the headlands. The settlement is largely defined by the site topography. Diggers Beach Road provides access to a public car park and foreshore parkland behind Diggers Beach. This is an older road within this settlement and is straight in nature, providing a direct link between the highway and the beach. North of Diggers Beach Road, the street layout is organic in form giving access to newer residential areas. There are a number of cul-de-sacs at this location. South of Diggers Beach Road the land rises to Macauleys Headland. A number of streets leave Richmond Drive and run roughly parallel with the contours. Homes along these streets have good views to the coast.

The older residential areas in Diggers Beach appear to be along Diggers Beach Road, on Macauleys Headland and just behind Diggers Head. Homes in these locations tend to be of varying styles and materials with well established gardens. Newer residential areas are located to the north of Diggers Beach. The most recent development appears to be the Pacific Terraces located along Charlesworth Bay Road at the northern

extent of Diggers Beach. The majority of lots within Diggers Beach appear to be in the range of 600 to 800 m^2. Streets include kerb and channel and are well maintained. There is a mixture of young and mature street trees. Diggers Beach is a popular coastline destination for locals and tourists. There is easy public access to the beach with two beach accesses and two public carparks. The beach itself is approximately 600 metres in length and there are timber steps and a paved walkway at its southern end providing access to Macauleys Headland. This is a popular walking route to Park Beach. There is a corridor of remnant vegetation behind the dunes to Diggers Beach. There are also large areas of remnant vegetation on Diggers Head and Macauleys Headland at either end of the beach.

At the eastern end of Diggers Beach Road and located between Firman Drive and Diggers Beach is the large established Anuka Resort. The buildings of this resort are well screened by dense lush planting along the western boundary. Planting to the resort focuses on palm and exotic sub tropical species. To the south of Diggers Beach is further residential settlement. This area is between the Pacific Highway, Macauleys Headland and Arthur Street. Residences in this area are accessed from Diggers Beach Road and Richmond Drive or from Park Beach using Arthur Street. There is also access off the Pacific Highway to Macauleys Headland Drive. This road runs along the ridgeline at the top of the headland and residences in this location have views both up and down the coastline.

4.8 THE BIG BANANA COFFS HARBOUR

The settlement pattern here is largely dictated by the sloping topography. Whilst Diggers Beach Road and Arthur Street provide a fairly direct route from west to east, the road layout between, tends to be organic running with the natural contours. Richmond Drive provides direct access up and over the headland. There are a number of short cul-de-sacs at this location. The area is an older residential area, however, there has been redevelopment of some properties as residential units and new large homes.
At the southern end of the precinct, there is a number of older units. Older style units are generally of brick and tile construction. New units and homes tend to be rendered and painted block work with detailing in contemporary materials. Streets include kerb and channel and there is a mixture of young and mature street trees.

Tourist Facilities

There are a number of tourist facilities located within the site context. These are the Big Banana and Coffs Harbour International Motel located south of the project site on the Pacific Highway and the Bananacoast Caravan Park and the Opal Centre located east of the project site. The caravan park and Opal Centre share their rear boundaries with the project site.

The Big Banana is a famous local attraction. It is situated just to the south of the intersection of the highway and Diggers Beach Road on the western side of the highway. It is accessed by Island View Close. The facility includes a number of public attractions located on steep

ground that was previously used for banana farming. Remnants of banana fields are retained and are utilised as part of the attraction. The facility includes a public car park, the "Big Banana", cafe, an indoor ski slope and an ice rink. The most recently constructed facilities include a theatre and a children's water park with large inflatable waterslides. The buildings are painted a bright green and are distributed up the slope behind the "Big Banana". The entry to the facility includes a large, white painted steel structure. This structure, the bright green buildings and the "Big Banana" are all very visible from the highway and the immediate surrounds. The "Big Banana" is a distinct local landmark and popular tourist destination.

Immediately to the north of the "Big Banana" is the Coffs Harbour International Motel. This includes brick buildings, signage, a pool, tennis court, car parking and gardens.

4.9 BRUXNER PARK

The Bananacoast Caravan Park and Opal Centre are located north of the intersection of the highway and West Korora Road. The facilities are both accessed from the highway and include extensive signage, a range of built elements and gardens of exotic plant species. The visual character of all these tourist facilities is typical of tourist facilities often found along the Pacific Highway at coastal settlements.

Island View Close Residences

South of the Big Banana and west of the Pacific Highway, there is another small residential precinct. This is accessed by Island View Close. This is a short residential street ending in a cul-de-sac. Residences along this close are elevated above the highway with views to the coastline. Homes in this precinct are approximately of the same era as the original Macauley Headland homes. Construction is predominantly brick and tile. There are number of large mature street and garden trees.

The Summit

"The Summit" is a newly established residential development located on vacant land between the Big Banana and the Home Base shopping precinct. The development is on the southeast facing side of a hill with access from Mastracolas Road. A main internal road provides access up the slope to individual unit accesses. A number of unit buildings have already been established with two and three level buildings.
Building materials include rendered, painted block work, glass and timber. Colour selection for the established units tends to be dark and subtle so that the buildings are not too visually prominent on the hillside. Rock gabion walls have been used to achieve building platforms and retaining. The works constructed to date, including the entry, access road and a number of units are landscaped with Indigenous species. There is revegetation planting at the eastern extent of the site.

Home Base

The northern part of the shopping precinct called "Home Base" falls within a 1 km radius from the project site. Home Base is a bulky good centres with a focus on products for the household including furniture, white goods, electrical items, pet supplies, car supplies and office goods. The northern part of Home Base is accessed from Mastracolas Road.

This particular area includes two separate large car parks. Each location has a series of attached businesses. The most obvious visual features of this location is the extensive hard pavement for car parking, the large building forms and signage. There is some juvenile tree planting to the car parking area.

West Korora & Bruxner Park

Much of the site surrounds to the south, west and north of the project site consist of rural land, residential properties, banana plantations and areas of remnant forest. Bruxner Park is located to the north and northwest of the site on the western side of the highway. The area is accessed by Bruxner Park Road off the Pacific Highway. The area includes plantations of bananas and other crops and residential properties. There are some new homes constructed and under construction on the slopes of Bruxner Park. Bruxner Park Road is a windy road that makes its way up the steep slopes to Bruxner Gap. Bruxner Park Road gives access to a large area of remnant forest in the hinterland to the north of Coffs Harbour.

This vegetation includes the Orara East State Forest and Ulidarra National Park. Bruxner Park Road culminates at Sealy Point Lookout where views are possible south to Coffs Harbour. West Korora Road, to the south of the project site, provides access to West Korora. This area also includes banana plantations, residential properties, pockets of remnant forest and plantations of other crops. The country is undulating and a variety of views are possible, back to the coastline and to the ridgeline of Sealy Lookout and associated peaks. Both West Korora and Bruxner Park are picturesque locations.

4.10 COFFS COAST REGIONAL PARK

Coffs Coast Regional Park

The Coffs Coast Regional Park (CCRP) is a joint initiative of the NSW National Parks and Wildlife Service (NPWS) and Coffs Harbour City Council (Council). Management of the Regional Park is shared in order to protect the areas significant natural and cultural values and to provide high quality recreational opportunities and facilities. The park consists of 26 kilometers of coastal dune systems, rainforests, heath lands, headlands, coastal lakes and parklands linking coastal towns and villages with the Solitary Islands Marine Park north from Coffs Harbour. The southern section of the park is a continuous coastal strip from Macauleys Headland to Green Bluff at Sapphire. Part of this section of the CCRP is within the 1 km site context of the project site. This includes an area from Macauleys Headland to Korora Bay.

There are a number of accesses to the CCRP within this stretch. Access to Diggers Beach and Macauleys Headland is via Diggers Beach Road. Access to Charlesworth Bay is via Bay Drive and the main access to Korora Bay is via Sandy Beach Road. This portion of the CCRP includes the vegetated headlands of Macauleys Headland, Diggers Head and the headland at the northern end of Charlesworth Bay. Walking tracks provide access over the headland.

4.8.2 Site Analysis

The following plan [Figure 4.9] shows the various elements in the site analysis.

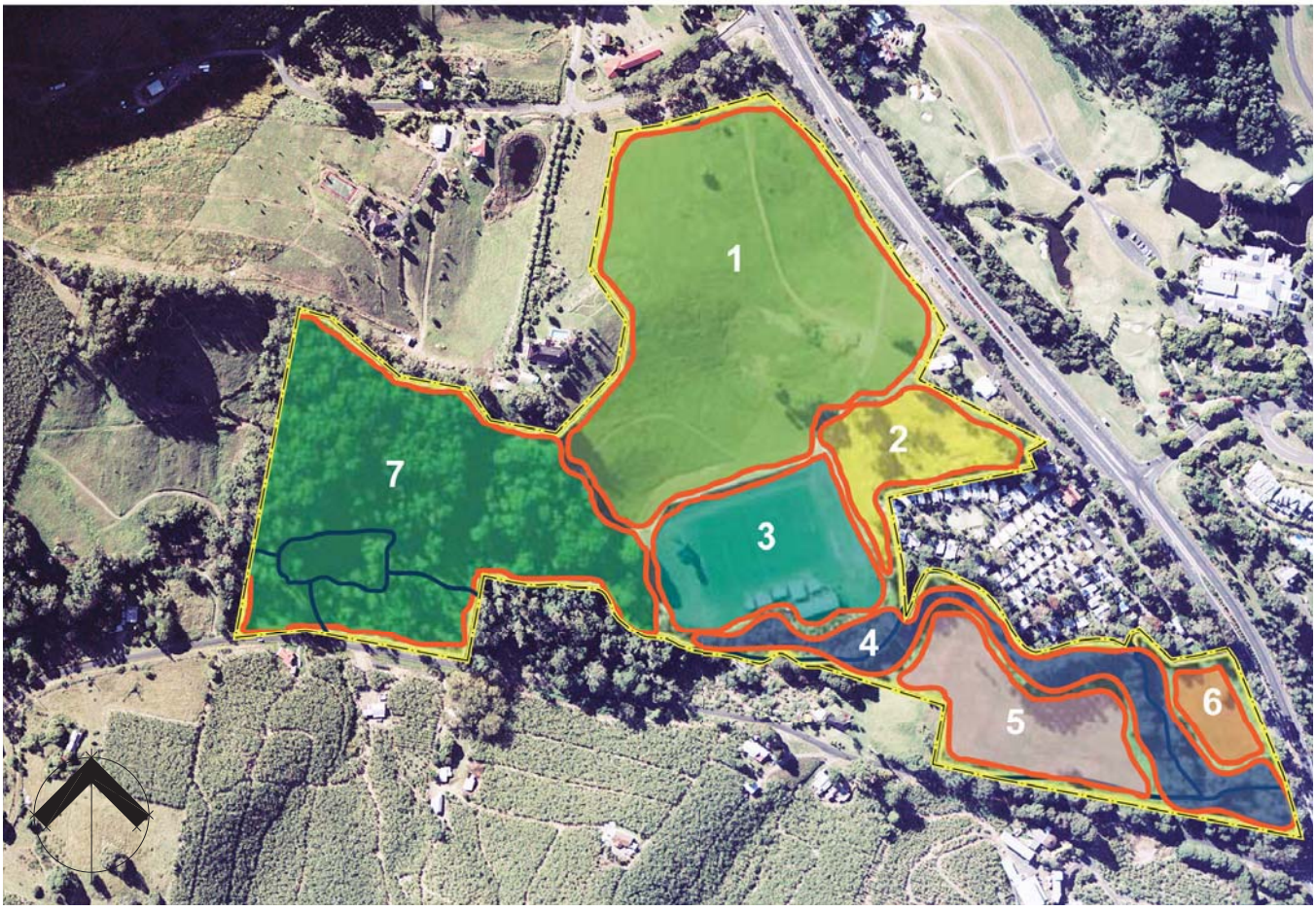
4.8.3 Visual Character

An analysis was also carried out of the character of the various areas of the site.

Character Area Type 1

Sloping Grassland

This character area is located at the north-eastern extent of the site and represents one of the larger character areas within the site. The character of this area is of sloping grassland with a very limited number of isolated remnant trees (less than 10 across the entire area). The grasses include Paspalum grass, Parramatta Grass and Rat Tail Grass. The two main slopes include a southeast facing slope and a northeast facing slope. The lower part of this area overlooks the Pacific Highway to the east and is visible from the highway. This area includes an existing underpass to the highway, providing a link with the Pacific Bay Resort. Much of the area has views to the Pacific Ocean.



LEGEND

1	character area type 1	3	character area type 3	5	character area type 5	7	character area type 7
2	character area type 2	4	character area type 4	6	character area type 6		

Character Area 2

Grassland and Remnant Trees

Character area type 2 is located between the open grassland, the rugby field and the adjacent properties of the caravan park and the opal store. It is similar to character area type 1 in that it includes grassland with Paspalum grass, Parramatta Grass and Rat Tail Grass, however, it also includes a number of mature remnant trees. These trees represent a visual feature in the otherwise broad open grassland. The area includes two main stands of trees. The first is to the northeast of the existing rugby field and includes specimens of Hoop Pines (Araucaria cunninghamii) and Tallowwood (Eucalyptus microcorys). The second stand of trees is located west of the caravan park and includes Blackbutt (Eucalyptus pilularis).

Character Area Type 3

Wallaby Training Field

Character area type 3 represents the rugby field that was used as the Wallaby training field. It also includes the buildings to the south of the field that were part of the training facility. The site has sentimental and cultural significance to the local community having been used by the Wallabies. The area represents a highly cultivated and maintained part of the site, with the field obviously irrigated, levelled and mowed. In addition to being a significant recreational site, the green field is a visually attractive facility. The area represents one of the lower locations within the site being located on the banks of Jordan's Creek. The site is currently linked to the Pacific Bay Resort by a gravel track and an asphalt road at the highway underpass.

Character Area Type 4

Jordan's Creek, east of the 7a vegetation

Jordan's Creek traverses the southern extent of the site, including parts of the large 7a vegetation remnant. Character Area type 4 is the stretch of Jordan's Creek east of the 7a vegetation area. This portion of Jordan's Creek has been separated out as it represents a highly modified and impacted on section of the creek. Jordan's Creek runs to the south of the rugby training facilities. It then meanders behind the caravan park and dissects the very south-eastern extent of the site. The creek corridor, within this character area, is vegetated and there are some remnant riparian trees and plants. The vegetation, however, is highly weed infested at many locations. Camphor laurel has become established along this stretch of creek. Immediately behind the caravan park the vegetated corridor is very narrow and there are obvious signs of human impact with fencing backing onto the creek and signs of rubbish disposal. Despite this, the creek does represent an attractive natural feature to this part of the site. There is an existing gap in the creek corridor just beyond the rugby facilities.

Character Area Type 5

Grassed area between Jordan's Creek & West Korora Road

Character Area type 5 is located between Jordan's Creek and West Korora Road and represents another of the cleared grassed areas within the site. The area slopes from Jordan's Creek to an approximate RL 24.00.

The area is bounded by the vegetated creek corridor to the north and by vegetation along West Korora Road to the south. There is an existing residence immediately west of the area. The area is attractive with a sense of privacy created by the remnant creek and road side vegetation and many fine Eucalyptus species adding visual amenity.

Character Area Type 6

Grassed area between Jordan's Creek & highway

Character Area type 6 is located between Jordan's Creek and the Pacific Highway at the south eastern corner of the site. This area is flood prone and represents one of the undevelopable locations within the site. It appears relatively level between the highway and the creek bank. Due to the density of vegetation along the creek corridor it is only possible to access the area from the Pacific Highway.

Character Area Type 7

7a Vegetation

Character Area type 7 is located approximately in the middle of the site and is bounded by the northern and southern site boundaries. The area commences at Jordan's Creek and slopes to an approximate RL 70.00. The area includes primary and secondary koala habitat. The vegetation includes a range of types, detailed in the Flora & Fauna survey. At a glance, the area appears as dense Eucalypt dominated forest with a bushy understorey. It is divided by a powerlines easement. At the southern extent of the 7a area, Jordan's Creek runs from west to east. This stretch of creek includes a large freshwater lagoon and a series of small waterfalls. There is some weed infestation, particularly of lantana, along the creek. An existing vehicular track runs through the area of 7a vegetation. The area, and Jordan's Creek, are natural features to the site.

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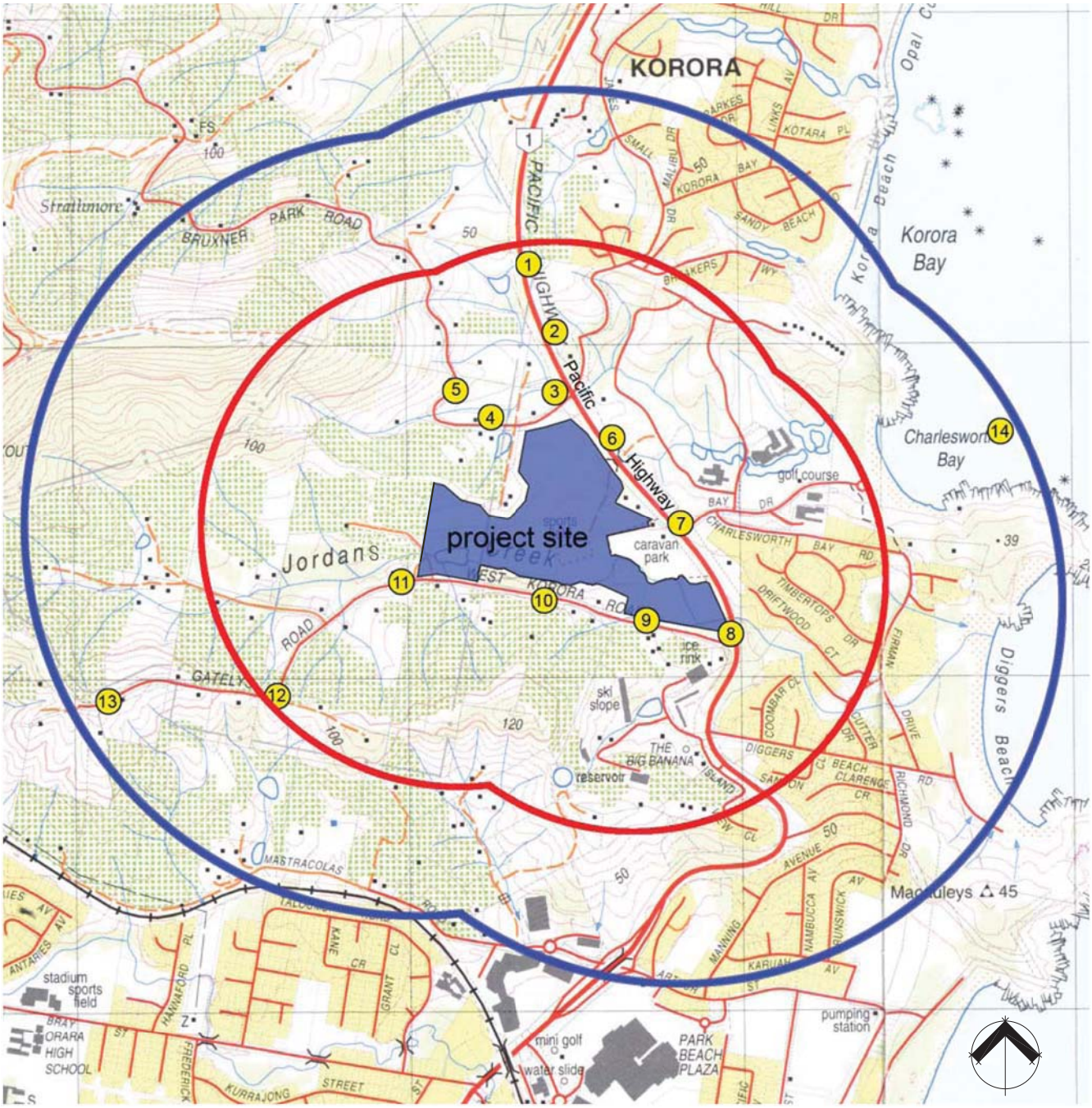


LEGEND

viewing location

500m from project site

1km from project site

4.13 VIEW LOCATION KEY

4.8.4 Views of the Site

A series of views of the site from public locations were analysed.

VIEW 1 - PACIFIC HIGHWAY, 500 m NORTH OF THE SITE

This view is from the Pacific Highway, 500 m north of the project site. The northern most extent of the site is visible travelling south along the highway. This area is part of the larger grassed area of the site and it is approximately 10% of the entire site area. The balance of the site is concealed by topography or vegetation along the highway corridor.

VIEW 2 - PACIFIC HIGHWAY, 300 m NORTH OF SITE

This view is from the Pacific Highway, 300 m north of the project site. Views are possible to the lower, east facing slope of the larger grassed area. This view takes in approximately 12% of the entire site area. The balance of the site is concealed by the site topography.

VIEW 3 - CORNER OF BRUXNER PARK ROAD AND PACIFIC HIGHWAY

This view is from the eastern end of Bruxner Park Road at its junction with the Pacific Highway. It is immediately to the north of the project site. The very northern extent of the site is visible from this location. Due to the viewing location being lower than the site, the view only takes in the very edge of the site, a relatively small proportion of the overall site.

VIEW 4 - BRUXNER PARK ROAD, 100 m FROM THE NORTH-WESTERN EXTENT OF THE SITE

This view is from Bruxner Park Road. This road provides access from the Pacific Highway to numerous residential properties, to Bruxner Park lookout and is an alternative route to Central Bucca. From this location, part of the larger grassed area is visible. The visible area equates to approximately 6% of the project site. This is one of the limited locations at which potential development may be viewed with the sky as a backdrop.

VIEW 5 - BRUXNER PARK ROAD, 300 m FROM THE NORTH-WESTERN EXTENT OF THE SITE

This view is also from Bruxner Park Road. It takes in the north facing slope of the larger grassed area. This represents approximately 16% of the project site. Given the windy nature of Bruxner Park Road, whilst this particular view does take in a significant portion of the site, the view is brief when seen from a car travelling along the road.

VIEW 6A - PACIFIC HIGHWAY, 500m NORTH OF NORTHERN EXTENT OF SITE

VIEW 6B - PACIFIC HIGHWAY, 500 m NORTH OF NORTHERN EXTENT OF SITE

Views 6A and 6B are from the Pacific Highway, immediately to the east of the project site. The views take in the eastern extent of the site, excluding the area to the south of the caravan park. Each view represents approximately 20 to 25% of the overall site. The site is visible travelling in either direction along the highway. Moving along this section of highway, the site is seen against the backdrop of a minor peak, the skyline and then Sealy Lookout.

VIEW 7 - PACIFIC HIGHWAY, 100 m EAST OF SITE

This view is from the western end of Charlesworth Bay Road at its junction with the Pacific Highway. The closest part of the site is 100 m away, however, this part of the site is concealed by other development along the highway. A small part of the larger grassed area is visible looking north along the highway. This represents a very small portion of the overall site area. It is seen against the backdrop of Sealy Lookout and the lower slopes of this peak.

VIEW 8 - PACIFIC HIGHWAY, SOUTH-EASTERN EXTENT OF SITE

This viewing location is at the south-eastern extent of the site on the Pacific Highway. This small area of the site, approximately 5% of the overall site area, is separated from the balance of the site by the dense corridor of vegetation at the rear of the photo.

VIEW 9 - WEST KORORA ROAD

This view is from West Korora Road, south of the project site. West Korora Road provides access from the Pacific Highway to numerous residential properties along this road and Gately Road. This view takes in the portion of the site located between this road and Jordan's Creek at the south-eastern extent of the site. The area equates to approximately 14% of the overall site. The view takes in the site with the vegetated corridor of Jordan's Creek as the backdrop.

VIEW 10A - WEST KORORA ROAD

VIEW 10B - WEST KORORA ROAD

VIEWS 10A AND 10B - WEST KORORA ROAD

Views 10A and 10B are from West Korora Road, at the most elevated location on the road where it is still running roughly parallel within the southern boundary of the project site. Only very limited views of the site are available from this location. Views are mostly screened by existing vegetation, residential gardens and banana crops.

VIEW 11 - WEST KORORA ROAD

This view is from West Korora Road, to the southwest of the project site. The topography and the large area of 7a vegetation means most of the site is not visible from this location. The area that is visible represents approximately 12% of the site. The view is seen with either the hill or remnant vegetation as a backdrop. It is only possible to see the site for a short length of road and there is limited traffic along the road due to the scattered residences in the vicinity and the route not being a through road.

VIEW 12 - WEST KORORA ROAD

This view is from the southern end of West Korora Road at its junction with Gately Road. The view takes in the most western extent of the site, with the balance being screened by the topography and the 7a vegetation on the site. The area is about 12% of the project site. The viewing location is approximately 700 m from the site. The view is seen against the backdrop of site vegetation.

VIEW 13 - WEST KORORA ROAD

This view is from Gately Road, to the southwest of the project site. Gately Road is not a through road and it provides access to a limited number of residential properties. Those properties are elevated and take in very broad views either of Coffs Harbour or Korora to the north. The site is approximately 1 km away and although approximately 12% of the site is visible, it is viewed within a broad site context. The topography and the large area of 7a site vegetation screen the balance of the site.

VIEW 14 - WEST KORORA ROAD

This view is approximately 500 m offshore from Charlesworth Bay. The view takes in the eastern extent of the site which is part of the large grassed area. This area represents approximately 10% of the overall site area. The view is seen against the backdrop of Sealy Lookout and its lower slopes. The existing buildings of Pacific Bay Resort are also visible.

4.9 HERITAGE/ARCHAEOLOGY

4.9.1 Background

A study of the archaeology of the site was undertaken and a copy is included in Appendix 10 to this report. The scope of works was to conduct an archaeological investigation of the study area with the assistance of representatives of the Coffs Harbour & District Local Aboriginal Land Council (LALC), Gumbular Julipi Elders, and Bagawa Birra Murri Aboriginal Corporation, to identify any Aboriginal sites and relics that might be present.

The results of the investigation were to be presented in a report, which was to include an assessment of the significance of any cultural relics or places identified, an appraisal of the options and opportunities arising from the discoveries, and clear recommendations for the management of those cultural resources.

4.9.2 Results of the Assessment

No sites, PADs or places of archaeological or Aboriginal cultural significance were recorded in the survey area. It was recommended that as a result of the investigation, there are no constraints on either cultural or archaeological grounds to the proposed subdivision of the property comprising Pacific Bay Western Land. However, the proponents are advised that they should be mindful that they are legally obliged to comply with the following provisions of the National Parks and Wildlife Act 1974 (as amended), which state that:

The owners, and their employees, earth moving contractors, subcontractors, machine operators and their representatives, whether working in the survey area or elsewhere, should be instructed that in the event of any bone or stone artefacts, or discrete distributions of shell, or any objects of cultural association, being unearthed during earth moving, work should cease immediately in the area of the find.

In the event that any bone cannot be clearly identified by a qualified archaeologist as being of animal remains the police are to be informed of its discovery, and officials and/or their representatives of the Coffs Harbour & District Local Aboriginal Land Council, Gunbular Julipi Elders, Bagawa Birra Murri Aboriginal Corporation, and DECC advised that the bone is subject to police investigation. Work should not recommence in the area of the find, until both the police (if bone has been found) and those officials or representatives have given their permission to do so. Those failing to report a discovery and those responsible for the damage or destruction occasioned by unauthorised removal or alteration to a site or to archaeological material may be prosecuted under the National Parks and Wildlife Act 1974, as amended.

4.10 TRAFFIC AND TRANSPORT

4.10.1 Existing Traffic Situation

A traffic and transport report has been prepared for the site (Appendix 9). It identifies that the Pacific Highway is a main arterial road which

constitutes the north-south connection between Sydney and the Queensland border and is one of the most heavily used interstate road corridors. The nature and condition of the Pacific Highway between Newcastle and the Queensland border varies greatly from divided carriageways to stretches of narrow two-lane road. In the vicinity of the site, the Pacific Highway is predominantly dual carriageway and has a posted speed of 80 km/h.
Bruxner Park Road serves as the north boundary of the Site and provides the main connection to the Pacific Highway from the proposed development. It forms a cross junction with the Pacific Highway and James Small Drive.

In the vicinity of Bruxner Park Road, the Pacific Highway consists of two lanes in each direction, with a separate left turn bay from the northbound approach and a separate right turn bay from the southbound approach for vehicles wishing to enter Bruxner Park Road. Turning traffic to and from Bruxner Park Road at the intersection give way or yield to traffic on the Pacific Highway. Bruxner Park Road is roughly 8.7 metres in width at the intersection approach and has a posted speed of 50 km.

West Korora Road runs parallel to the southern boundary of the Site and provides the connection to the Pacific Highway for the southern portion of the proposed development. It is a sealed narrow (6.3 metres wide) rural road with posted speed of 50 km/h. West Korora Road forms a T-junction with the Pacific Highway. Along the approach to the intersection on the Pacific Highway, a slip lane is provided on the northbound approach for vehicles turning left into West Korora Road and a turn slot is provided on the southbound approach for vehicles wishing to turn right into West Korora Road. U-turn manoeuvres are also permitted on the southbound direction of the Pacific Highway.

The Site is mainly accessible from the Pacific Highway via Bruxner Park Road and West Korora Road. No new connections to the Pacific Highway will be developed and it is envisioned that Bruxner Park Road will provide the main access.

4.10.2 Traffic Volumes

The observed traffic volumes near the town centre of Coffs Harbour at High Street manifested an increase in traffic growth of around 5% per annum over a ten year period from 1995 to 2004 with a sharp increase of 12.8% per annum over a three year period from 2001 to 2004. Further north to Coffs Harbour towards Woolgoolga, traffic volumes recorded were relatively lower by roughly half of that recorded near the centre. The observed traffic volumes south of Moonee Beach Road manifested a lower traffic growth rate of 2.8% per annum for the period from 1995 to 2004 and with only 1.1% per annum in the period from 2001 to 2004.

Analysis in the traffic report indicated that due to the high volume of traffic along Pacific Highway, vehicles exiting Bruxner Park Road, James Small Drive and West Korora Road experience lengthy delays as the Yield/Give way control at the intersections give priority to traffic along the Pacific Highway.

4.10.3 Crash Analysis

Crash statistics from the RTA's crash record database were analysed. The analysis covers a four-year period between October 2002 and September 2007 to understand road safety characteristics along the Pacific Highway corridor in the vicinity of the site. The section of the Pacific Highway analysed is from 500 m north of Bruxner Park Road to 500 m south of West Korora Road. The key findings from the analysis of crash data is summarised below. The length of the road analysed is approximately 1.9 km.

- A total of 18 crashes were recorded in this section of the Pacific Highway over a 5 year period;
- Crashes consist of 5 serious injuries (28%) and 13 non-casualties (72%). No fatal injuries (0%) were recorded;
- Only 1 (5.6%) crash involved a heavy vehicle;
- 9 (50%) crashes were recorded as intersection;
- In the vicinity of Bruxner Park Road, 2 (33%) crashes were recorded as non intersection crashes and 4 (67%) were recorded as intersection crashes;
- In the vicinity of West Korora Road, 2 (100%) crashes were recorded as non intersection crashes;
- 15 (83.3%) crashes occurred during weekdays; and
- 3 (16.7%) crashes occurred during the night.

Under the RTA's urban road network classification hierarchy, the Pacific Highway Road is classified as a "5u" road or a significant State road with a corresponding Class average of 5.8 casualty crashes per kilometre. The crash analysis above indicates that this section of Pacific Highway has a casualty crash rate of 2.6 which is less than the class average.

4.10.4 New Pacific Highway Route

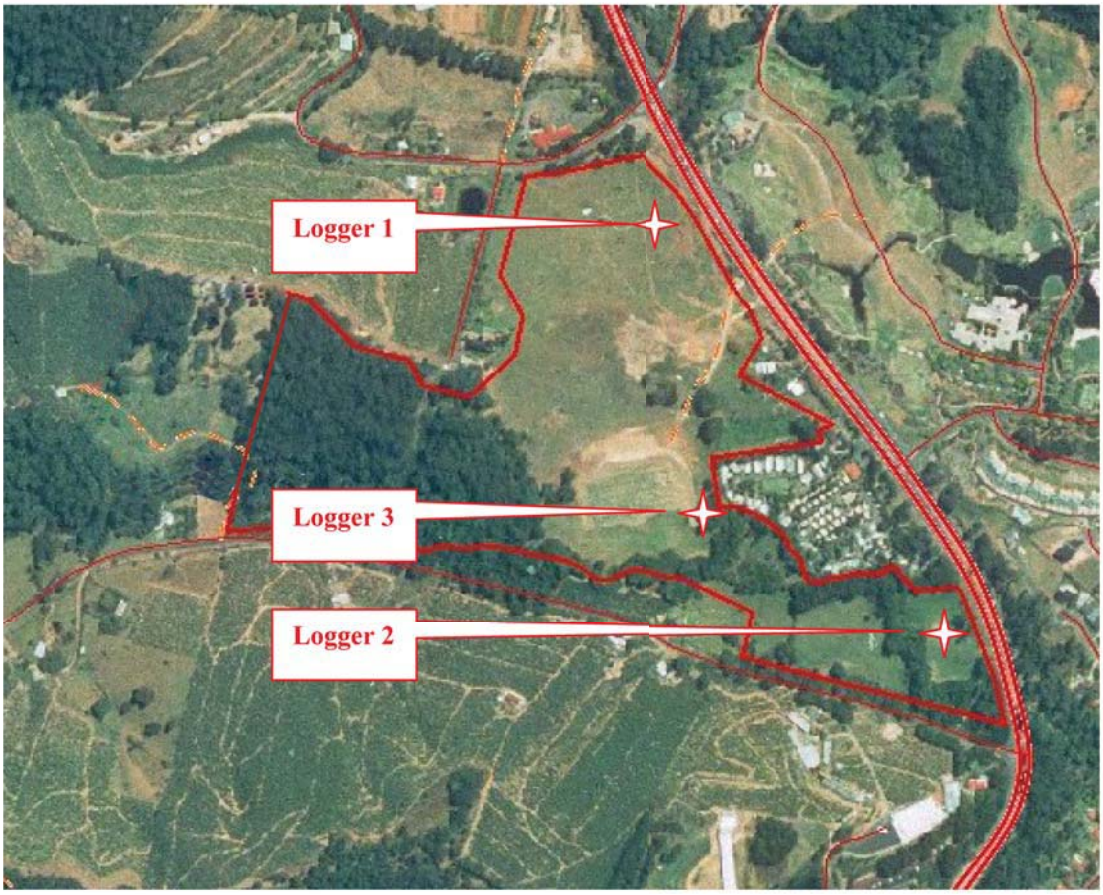
The Concept Design for the Pacific Highway Coffs Harbour Bypass has been completed, and is currently on display by the RTA. The concept has the Pacific Highway diverted to the west of Coffs Harbour, before rejoining the existing Pacific Highway north of Bruxner Park Road. The route is close to the western boundary of the site.

The Coffs Harbour Bypass proposal includes an upgrade of the existing arterial style dual carriageway highway between Korora Hill and the southern end of the Sapphire to Woolgoolga upgrade project to motorway (Class M) standard. Entry and exit to and from the bypass is limited to grade separated interchanges at key locations. These interchange facilities would provide for access to/from the proposed highway, the existing Pacific Highway and/or the local road network. The concept design provides for a total of three interchanges, as follows:

- Southern interchange at Englands Road;
- Central interchange at Coramba Road; and
- Northern interchange at Korora Hill.

Bruxner Park Road, which provides vehicular access to the site's northern component, will be incorporated into the proposed major Korora Hill Interchange. This interchange is to provide access to/from the proposed bypass to the northern precincts of Coffs Harbour.

4.10.5 Traffic Noise



4.14 NOISE LOGGER LOCATION

Table 3-1 – Continuous Noise Logger Details

Measurement Title	Logger 1	Logger 2	Logger 3
Monitoring Location	Elevated location, representative of road traffic noise ingress into the site, approximately 50m separation distance between the logging location and the Pacific Highway.	Approximately 26m separation distance between the logging location and the Pacific Highway.	The western boundary of the caravan park.
Logger Serial No.	194561	194801	194803
Measurement period started at:	12:45, 27th March 2008	13:30, 27th March 2008	14:15, 27th March 2008
Measurement period ceased at:	12:45, 4th April 2008	12:30, 4th April 2008	12:45, 4th April 2008
Frequency Weighting	A	A	A
Time Response	Fast	Fast	Fast
Engineering Units	dB(A) SPL re:20µPa	dB(A) SPL re:20µPa	dB(A) SPL re:20µPa
Pacific Highway speed limit past the location.	80 km/hr	80 km/hr, although the 60km/hr transition is situated approximately 30m south of the site.	n/a

4.15 CONTINUOUS NOISE LOGGER DETAILS

Noise Readings

Long term noise monitoring and attended field observations indicated that the noise environment at logging location 1 & 2 was primarily described by traffic noise emanating from the Pacific Highway. Field observations noted that the ambient noise environment at monitoring location 3 were typically dominated by relatively low background noise levels with intermittent noise contributions from the likes of Pacific Highway traffic.

4.11 SERVICE CAPACITY

Service reports have been prepared and are included in Appendix 6.

4.11.1 Electricity

Country Energy has advised that satisfactory infrastructure exists to cater for the proposed residential development of the site.

4.11.2 Sewer Services

From the 'Coffs Harbour and Sawtell Sewerage Augmentation Options Report' prepared by Sinclair Knight Merz, December 1998, a number of the sewer pump stations that convey the sewer from adjacent the proposed site to the Sewage Treatment Works are currently under-capacity. Therefore, the proposed development may necessitate the upgrade of a portion of the existing facilities prior to obtaining Certificates of Occupancy, and will be required to make contributions to the future

upgrades to the system. Council trunk water supply mains are located along the western frontage of the site, adjacent to the Pacific Highway. There is an existing feeder main for the existing water reservoir on Lot 3, DP 596492, south of the proposed development.

4.11.3 Water

Council trunk water supply mains are located along the western frontage of the site, adjacent to the Pacific Highway. There is an existing feeder main for the existing water reservoir on Lot 3, DP 596492, south of the proposed development.

4.12 URBAN CONTEXT

The Pacific Bay West site is part of the Korora Release Area. Currently the site is surrounded by a mix of land uses. Generally, the land to the east of the Pacific Highway is zoned for urban purposes. Adjacent to the site, across the Pacific Highway is the Pacific Bay Resort which includes a golf course, recreational facilities, resort as well as permanent residential accommodation. Land to the north and south of the Pacific Bay resort is used for low density residential development. Land to the west of the Pacific Highway and which surrounds the site is mainly zoned for rural/ agricultural uses. These areas have traditionally been used as banana plantations.
However, much of the land around Korora has been identified as future urban and Coffs Harbour Council is currently carrying out studies to identify potential urban land and environmentally sensitive land in the area.

4.16 URBAN CONTEXT

4.13 SOCIAL AND ECONOMIC CONTEXT

4.13.1 Socio Economic Profile

Coffs Harbour Council carried out a detailed study of the Coffs Harbour population in 2004. It showed that the estimated population in 2001 was 61770. The annual growth rate between 1996 and 2001 was 1.6%. The median age of the population was 39 and the average household size 2.5 persons. The major findings of the study were:

- Significant growth in the age group 45 – 60
- Decline in the 25 – 39 age group
- Drop in occupancy rate
- Males outnumber females
- Increase in Aboriginal and Torres Strait population
- Unemployment rate high at 13%
- Increase in the number of private dwellings.

By 2007 the population in Coffs harbour was estimated to be 68992. It was projected that by 2016 the population would have risen to 80000.

In Korora, there were 2701 people in 2001 and 1025 dwellings. Korora had a much higher percentage of professionals than in the overall Coffs harbour area.

4.17 COMMERCIAL AND RETAIL FACILITIES

4.13.2 Employment

In the 2004 study it was found that over half the workforce in Coffs Harbour were in the service industries with a quarter in wholesale and retail. The biggest increase in jobs was in the construction and retail and service industries. Health and education were also growing areas. By 2007, unemployment in the area had declined to 7.3%.
Coffs Harbour Council have produced a detailed study and economic development plan for the area. It identifies that there is a strong local economy and the aim is to increase employment in the area by growing sustainable businesses in targeted industry sectors.

The areas to be encouraged for growth are:

- Tourism
- Health industry'
- Technology
- Sport and events
- Education
- Manufacturing.

4.13.3 Commercial and Retail Facilities

Coffs Harbour Council has produced a detailed retail study and strategy for the LGA.

The strategy reveals that Coffs Harbour plays a leading regional role and the market has expanded considerably over the past few years. In 2006 there was over 200000 m^2 of retail floor space and 690 retailers in the LGA. Tourism was prominent in influencing retail trends as visitors provided 19.5% of retail turnover.
Palm Beach Plaza captured 32% of the retail expenditure with 40000m^2 of retail floor space. Although the CBD had more floor space (52000m^2) it was impacted on by Palm Beach Plaza and did not trade to the same extent. Currently there is an oversupply in the retail market in Coffs Harbour.

It is expected that by 2030 there will be 307000 m^2 of retail floor space in the LGA. Issues, which need to be addressed in the future, are fragmentation and oversupply in some areas.

4.13.4 Community Facilities and Services

12.2% of the Coffs Harbour workforce are employed in this sector so it is an important part of the local economy.

The LGA provides the full range of health and community services with a major hospital and all levels of care for the sick and elderly.

4.13.5 Educational Facilities

The area is well served with educational facilities.
Southern Cross University has a campus in Coffs Harbour and this provided degree programmes in Arts and Social Sciences , Business and Information Technology and Nursing. The area is well supplied with primary and secondary schools, both private and public.

4.13.6 Recreation Facilities

Coffs Harbour Council has a sports unit with a 5 year Strategic Plan for the development of sporting facilities and events in the area. It is the aim of the Council to develop the sports industry as a key economic driver for the city. The focus will be on:

- Surf life saving championships
- Camp Wallaby
- Management of assets
- Community sports development
- Marketing and media

A Recreation Preference Study was undertaken in the LGA and it identified that the population wanted more emphasis on:

- More open space
- Walkways and cycle ways
- Beaches and coastal parks
- Public transport

Major sports were golf, tennis and rugby league.
Over the past few years the Council has developed a major sporting facility at Marshall Park, the Sports and Leisure Park. This contains a stadium, hockey, cricket and rugby league venues and motor sports facilities. There are plans to provide accommodation at the venue in the future.

4.18 RECREATIONAL FACILITIES

4.13.7 Arts and Cultural Facilities

The area has a wide range of facilities for arts and cultural events. Within the LGA there are:

- Regional museum and gallery
- Theatre
- Commercial galleries
- Regional conservatorium of music
- Public library service
- Public art
- Tertiary education in the arts

There is a strategic plan to further arts and cultural investment in:

- Youth development
- Public art
- Industry development and
- Indigenous cultural development

4.13.8 Conclusion

Coffs Harbour is a vibrant growing centre with a wide range of social and educational facilities for the growing population in the area. The unemployment rate in the are has declined and plans to encourage

economic development have been prepared. The recently completed Settlement Strategy provides location for the future residential development which will take place in the area. The recommendations in this strategy are based on detailed social impact analysis in the Coffs Harbour area. The proposed development has been included in this strategy and as a result it is concluded that the Council and other authorities have factored the increase in population from this site to their future planning.

5. PROJECT APPLICATION DESCRIPTION

5.1 INTRODUCTION

This section describes the development in general terms in relation to the major principles and objectives, which have been adopted, for the development of the site. Detailed plans of the proposals accompany this application.

5.2 DEVELOPMENT OPTIONS

Options were considered for the development of the site and these related mainly to the form and density of the proposed development. The site analysis indicated that there were certain important areas on the site which needed to be preserved because of their conservation significance and the decision was taken to protect these from development and enhance their natural attributes as part of the development of the site.

It was also decided to retain the rugby oval on the site because of its historic significance and the contribution, which it could make to the recreation activities of the future population of the area.

The proposed density of development on the site was largely dictated by the topography of the site and the retention of the conservation areas. The steep nature of the upper areas of the site, and the views from the water of these areas, indicated that large sites would be required for development to ensure that earthworks were kept to a minimum and that sustainability principles could be adopted in the development. The larger sites would also enable landscaping to soften the impact of the built form when viewed from the water.

The area around the oval is relatively flat and with the added amenity of views of the open space from the surrounding development a higher density of development was considered appropriate for this area.

The conservation significance of the Jordan's Creek area and the western area meant that development in these areas was of a lower density.

5.3 DEVELOPMENT OBJECTIVES

The overall vision for the site development includes the following:

- A mix of moderately scaled new dwellings
- The enhancement of open space and native vegetation and\
- An overall landscape concept in keeping with the beauty of the surroundings

The objectives for the development are as follows:

Ecology

- Retention and enhancement of the natural surrounds
- Water sensitive urban design
- Promoting bio diversity
- Appropriate bushfire protection and management fauna
- Protect and improve existing koala habitat flora
- Retain all areas of rainforest vegetation
- Improve the wildlife habitat landscape
- Create an environmentally sustainable landscape
- Create a landscape of high visual amenity
- Provide for bushfire protection and management
- Establish a links to the adjacent resort and golf course and the wider surrounds
- Provide opportunities for outdoor recreation
- Incorporate indigenous plant species sustainable design
- Integrate water cycle management
- Develop sustainable landscape and use of drought tolerant native plants
- Protect the waterways
- Introduce energy conservation measures
- Develop energy efficient design of buildings

Heritage

- Respect the heritage of the area
- Monitor the works in relation to Aboriginal objects

Urban Design and Built Form

- Enhance views to the site
- Scale buildings to have minimum impact on the landscape
- Site the dwellings for maximum solar orientation
- Cross ventilation of dwellings
- Heavy walls to add thermal mass
- Wide balconies and timber screens to provide shade and natural ventilation
- Maintain the roof line below the existing tree line if possible
- Maintain the relaxed character of Coffs Harbour
- Create an environment in harmony with the landscape

Traffic and Transport

- Encourage the use of public transport and bus access to the site
- Provide a road network integrated into the site and landscape
- Provide adequate and shaded car parking areas
- Provide bicycle tracks through the site and link into the regional network
- Provide walkways integrated into the landscape
- Provide access to the conservation areas for the public

Recreation

- Provide superior play ground facility to residents and visitors to the site

5.4 SUSTAINABILITY DEVELOPMENT PRINCIPLES

5.1 SUSTAINABLE DEVELOPMENT

The major sustainable design principles have been adopted for the development are as follows:

- Create a community
- Reduce use of resources and materials
- Protect and enhance the physical and environmental aspects of the site
- Select low-impact materials for the development
- Save water and energy
- Create healthy buildings
- Minimise waste

The sustainability principles, which have been adopted for the planning of the site, include:

- Water cycle management;
- Sustainable landscape and the use of drought resistant native plants;
- Protection of the waterways;
- Water sensitive urban design; and
- Bushfire protection and management
- Siting and orientation of dwellings to maximise solar access, and natural ventilation and minimise cut-and-fill.

A key feature of this approach is the water cycle management strategy which includes:

- The use of Macrophytes in swales as an integral part of the bioretention infiltration system;
- Promoting bio-diversity while supporting the stormwater management;
- The use of gross pollutant traps and bio-retention infiltration to retain water quality;
- The use of a road drainage system that acts as an overland flow path;

In the planning of the development the following ecological principles have been applied:

- Retention and enhancement of natural surrounds
- Promoting bio diversity
- Appropriate bushfire protection and management
- Incorporating water sensitive urban design principles
- Creating a landscape of highly visible amenity
- Regenerate links to vegetation
- Regenerate riparian areas
- Provide wetland planting around stormwater detention areas
- Provide asset protection zones for bushfire protection

Design initiatives to promote sustainability include:

- Establishment of design guidelines applicable to all dwellings within the development
- Siting of buildings for maximum solar orientation;
- Cross ventilation is used to reduce energy consumption;
- Heavy walls add thermal mass to the buildings. Heavy mass is used modify the indoor climate and helps minimise energy loads;
- Shade planting and large over hangs are used for cooling; and
- Wide balconies and timber screens provide shade and promote natural ventilation.

5.2 PRECINCT PLAN

5.5 DEVELOPMENT DESCRIPTION

The overall theme for the development of this site is housing in a lushly vegetated landscape. The natural features of the site have been used to produce this outcome. The development includes 112 housing sites within four precincts as follows:

- The Upper Hill Side sites
- The Hill Side sites
- The sites around The Oval
- Jordan's Creek precinct

The size of the development lots varies depending on the location of the lot on the site with the larger lots on the steeper areas of the site.
The proposals for the site have been based on the preservation and protection of those areas on the site, which are of environmental significance, and the retention of the open space area of the oval as a feature of the development.

There are large areas of open space around the development areas and between the development sites.

5.6 SITE PREPARATION

A preliminary geotechnical assessment was undertaken by Coffey Geotechnics Pty Ltd. (Appendix 3) to assess the suitability of the area for residential development. The investigation concluded that the area is suitable for the construction of roads and services, and providing the usual erosion and sediment control measures are implemented and maintained during the course of construction, there is no significant risk of severe erosion or transport of sediment to waterways within the subject site or adjoining lands.

All bulk earthworks will be undertaken in accordance with an approved Soil and Water Management Plan. Any fill imported to the site will be approved by an engineer prior to the import of the fill to the site, and will be of a sound clean material, reasonable standard, and free from large rocks, stumps, organic matter and other debris. Wherever possible, material having similar properties to the in situ site material shall be sourced.
The bulk earthworks required for the development are generally within, and immediately adjacent to the proposed residential areas. It is expected that there will be an excess of fill generated. It is considered that the proposed development will generally conform to the natural contours of the site, and that bulk earthworks will be generally limited to the proposed road reserves and building footprints.

5.3 OPEN SPACE AND CONSERVATION AREAS

5.7 OPEN SPACE AND CONSERVATION AREAS

A major aspect of the development of the site is the conservation of large areas of bushland and rainforest vegetation and the retention of the koala habitat. The buildings on the site will be located to ensure no loss of vegetation for the Bushfire Asset Protection Zones.

5.7.1 Conservation Areas

The major conservation areas on the site are as follows:

- Revegetated area of Sclerophyll forest areas to provide a net increase of local provenance Koala Habitat trees and to increase rainforest habitat.
- The central rainforest area
- An area to the north of the site opposite the recently constructed Pacific Villas

The works to be carried out include camphor laurel control and general weed control and removal and planting in the northern area. The aims of the rehabilitation programme will be as follows:

- The removal and control of weed species
- Utilisation of best practice to achieve weed control
- Planting of appropriate species in identified areas
- Canopy cover to be achieved within 3 to 4 years for planted trees
- Continued and ongoing natural regeneration within the rainforest area

A monitoring programme will be set up as part of a five year plan of management for the rehabilitation of these areas and the management of the overall area. This will be achieved by a short annual recording of works undertaken and observations within the rainforest community. As part of the development in the area the following amelioration measures will be undertaken to ensure the conservation of the flora and fauna in the area:

- The majority of rain forest habitat will remain largely unaltered
- Transition zones will be planted between proposed buildings and retained rain forest
- Native species will be used in landscaping
- Stormwater will be managed to achieve no significant net change in the quantity or quality of run off from the site
- Weeds will be controlled during construction
- Weeds will be controlled in landscaped areas and areas of retained vegetation
- Known environmental weeds will be avoided
- Restrictions will be placed on the use of fires during dangerous weather periods
- There will be appropriate disposal of rubbish and food scraps to educe the opportunities for non native predators and disturbance adapted competitors

5.4 OPEN SPACE

5.7.2 Open Space

The major active open space area on the site will be the retained oval which will be available for use by residents and the general public. The playing field itself and the playground in the south make this the informal centre of the development. To create a pedestrian friendly urban character off street parking is mostly hidden by providing court yard parking to the dwellings east and west of the oval and underground parking to the northern townhouses

5.7.3 Fauna Conservation

There are feeding sites for koalas on the site. These will be retained and protected and the proposed development will not result in the loss of any Koala feed trees. Additional koala feed trees will be planted within the revegetated areas. There will be an increase in Koala habitat on the site.

Amelioration Measures to be introduced include:

- Koala food trees will be retained
- Additional Koala feed trees will be planted
- Strict controls will be placed on dogs if kept on the site
- Boundary fencing will be designed not to restrict the free movement of Koalas
- Swimming pools will be fenced to prevent access by Koalas
- Traffic speeds on the site will be restricted to 40kph and Koala signs will be located to alert drivers.

5.7.4 Access to the Conservation Areas

It is proposed to allow public access to the Conservation areas along designated trails. These are described in detail in the Landscape section S 5.9.

5.8 BUILDING ENVELOPES AND BUILT FORM

The development of the houses on the site will be controlled by detailed design guidelines which have been prepared to accompany this application and are included in Appendix 2 to this report. The major issues dealt with in the guidelines are as follows:

Road System

The development has been designed on a road structure following the existing contours. Soft transitions, achieved by replacing common fence structures with low to mid height planting between road reserves and individual lots soften the urban road character and emphasize the country side feeling. The overall effect is of a circulating road system and street defining built form following the contours, with native tree planting between the blocks. Each dwelling has undercover off street parking possibilities. Where the access is from the downhill side car parking will be underground or semi-underground. These basements are clad in stone and create a podium for the houses. This combined with the low stone garden walls creates a terraced feel to the precinct reflecting the rural character of the area. The character stone walls and deep setbacks for front yards characterise the uphill side and the lush undergrowth and wide planting of the native gardens and timber bridges characterise the down hill sides. The site will be developed to be in harmony with the landscape, through the use of natural materials such as rendered masonry, rough stone retaining walls and natural timbers.

5.5 HILLTOP PRECINCT

Density

There are a total of 112 dwellings in all precincts. These consist of 19 townhouses and 93 single dwellings. The sum of all lots is just above 75 468 m^2. The overall density is slightly lower than in surrounding developments. This is a result of the natural steep slope of the site that will be maintained but resulted in slightly bigger lots to guarantee easy access to all houses utilizing serpentine like driveways where appropriate.

The total number of new units in the application is 112. The size of the lots varies with the largest being on the hilltop (min. 900 m^2) and the smallest (min. 500 m^2) further down the hill along the main collector road. Basically there is a hierarchy of the supreme lots on top of the hill being the biggest with decreasing lot size further down hill. In a second step the size of the lots was driven by the slope of the hill that makes it necessary to accommodate serpentine like driveways and access ways on many lots.

The oval precinct has 3 types of typical 3 storey townhouses on an average of 371 m² lots.
Type A to the north of the oval has a footprint of 180 m² including balconies and terraces with 140 m² of private garden and underground car park.
Type B & C to the east and west of the oval has a footprint of
153 m² including balconies and terraces with an average of 125 m² of private garden including garage courts or a garage on ground floor.

Setbacks

A typical house envelope is generally set back from the street frontage by 6.5 meters. This setback is used to soften the transition between the individual lots and between the lots and the road reserve by having no fences or dividing structures but dense low to mid height planting resulting in a streetscape with a rather natural, parkland like feeling. The houses on the prime sites on the top of the hilltop precinct have generally butterfly roofs; the houses further downhill have pitched roofs.

A typical townhouse to the east and the west of the oval has an 8.5m x 18m envelope including balconies and terraces. The eastern townhouses are set back 5 m from the road reserve, the western 2 m. The townhouses to the north of the oval have a 10 m x 18 m envelope with a 6 m set back from the road reserve.

5.6 THE OVAL TOWNHOUSE TYPES A, B & C

Streets

The typical street has a 6 m carriageway. The main collector road has a 9 m carriageway. The one way shared streets on the top of the hilltop precinct (12 m road reserve) and around the parkland in the east of the site have a 4 m carriageway. The hilltop road will have a 4 m verge on each side of the road pavement. The parkland road will have a 2 m wide verge to the outside of the road. Parallel parking spaces shall be located on the inside of the road, and will enclose the central park land. This road type will be classified as a 'Share Way' providing for both vehicular and pedestrian movements within the low speed environment. Additional public parking will be provided at the southern side of the oval next to the play field.

Development within the precincts will be as follows:

UPPER HILLSIDE

The sloping terrain on the hills above the playing ground provides an ideal site for villas. These dwellings will provide naturally long distance views east to the ocean and north and south to the neighbouring peaks. They will sit in the landscape contours ensuring the roof line to remain below the tree canopy. This ensures the scale of the development is in harmony with the site.
The "Green Spine" and the "Eastern Park" are the urban counterbalance to the wild remnant vegetation surrounding the site.

HILLSIDE

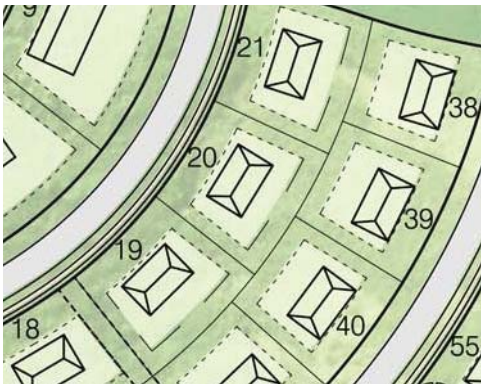
A mix of 1 to 2 storey detached houses will be encouraged in this central area of the site.

THE OVAL

The former training ground of the Wallabies creates the centrepiece of this precinct. As such it generates the highest density within the overall development consisting entirely of townhouses. The playing field itself and the playground in the south make this the informal centre of the development. To create a pedestrian friendly urban character off street parking is mostly hidden by providing court yard parking to the dwellings east and west of the oval and underground parking to the northern townhouses.

JORDAN'S CREEK

The most southern precinct of all in the proximity of Jordan's Creek is surrounded by the natural remains of the rain forest. Being the smallest of all precincts with only 15 lots it will be a very unique almost intimate living experience.



5.7 SETBACKS

5.9 LANDSCAPE

5.9.1 General

A detailed landscape master plan has been prepared for the site and is included in Appendix 11. The major provisions of this plan will be incorporated into the Design Guidelines for the site. Landscaping of all public domain areas on the site will be carried out in accordance with the plan as part of the works included in the subdivision of the site.

5.9.2 Landscape Principles

The landscape master plan for the development of the site is based on the following principles:

- To retain, enhance and protect the 7(a) vegetation, koala habitat and riparian corridor to Jordan's Creek;
- To reflect the setting including the proximity to the coast, the remnant bushland, Jordan's Creek and the undulating topography;
- To incorporate Water Sensitive Urban Design principles;
- To integrate stormwater management into landscape approaches for the site;
- To create a landscape of a high visual amenity that is both legible and has a distinct landscape character;
- To consider the broader site setting;
- To provide links to the site surrounds;
- To provide internal circulation and to maximise opportunities to create walking/cycle networks that take in key landscape/natural features;
- To provide for interaction with natural features in a restricted manner that also protects those features;
- To provide for appropriate bushfire protection and management areas as required by the NSW Rural Fire Service;
- To retain the rugby training field as a historic feature and to incorporate the field as a key community facility;

- To create corridors of koala habitat trees that provide for the safe passage of koalas and other wildlife through the site;
- To provide opportunities for outdoor passive and active recreation;
- And to utilise indigenous plant species.

5.9.3 Landscape Strategies

The landscape strategies for the development are as follows:

Vegetation and Koala Habitat

The 7(a) Environmental Protection Zone and Koala habitat will be retained. Revegetation and parkland planting and the planting of trees to individual allotments will seek to establish safe corridors for the movement of wildlife, in particular, koalas. The revegetation buffer to Jordan's Creek will also contribute to establishing a corridor for wildlife movement. A proposed plant species list for trees to be planted in parks, streets, revegetation areas and allotments has been included. Where development areas occur adjacent to 7(a) vegetation areas, appropriate bushfire measures will be incorporated. Tree planting will be spaced to maintain Asset Protection Zones with a maintained grassed understorey. Tree species will be selected to be bushfire retardant.

5.8 LANDSCAPE STRATEGIES

Jordan's Creek

Jordan's Creek traverses the site from west to east. A large portion of the creek is within the 7(a) vegetation zone. Where the creek emerges into open grassland the vegetated creek corridor has been more susceptible to human impacts. At this location, a buffer zone of an average of 30 m will be revegetated as per strategies included in the Bushfire Safe Vegetation Management Plan. At some locations, it is proposed the 30 m revegetation buffer be reduced in order to maximise opportunities for creek side parkland. Revegetation areas will be widened at other locations to compensate. This is particularly the case at the proposed play park. It is anticipated that the revegetation zone and rehabilitated riparian vegetation will still be adequate to prevent informal access to Jordan's Creek.

Other parkland, e.g. at the creek side precinct, will be located on the creek bank outside of the 30 m buffer zone. At some locations the pedestrian pathway meanders through the revegetation zone, however, human access will be limited to this pathway. At the creek side parks, park planting will be restricted to indigenous riparian species to limit the potential for exotic plant species to spread into the riparian habitat. Park facilities will be located to maximise views to the creek corridor. Revegetation and park planting will feature koala habitat trees to provide for the movement of koalas.

Stormwater Treatment

The development will incorporate Water Sensitive Urban Design strategies and traditional pit and pipe drainage system where topography restricts the use of open drainage swales. The 12 m road providing access to lots 1 to 5 will incorporate a swale on the lower side of the road. This will be mass planted with indigenous grasses and macrophytes to act as a

sediment trap and to extract nutrients from overland run off. Bollards will be included to limit parking to the edge of the swale.

The “central parkland” will also act as a stormwater treatment area. Two swales will drain into the parkland and will feature boulders and indigenous groundcover and macrophyte planting. The parkland will include a terrace with picnic shelters and seating. The lower part of the parkland will be grassed and will provide for stormwater treatment in addition to being an open grassed area for play. Existing Hoop Pines will be retained with their understorey mass planted with shade tolerant groundcovers.
The existing rugby field will be retained and will also provide for the treatment of stormwater. A grassed swale will be incorporated into the scenic buffer, adjacent to the collector road. This will have an organic alignment to contribute to the parkland character for this location. The swale will drain to a grassed stormwater treatment area at the southern end of the scenic buffer.

5.9 STREETSCAPES

Streetscapes

The main collector road will be landscaped to establish the road as the main access and thoroughfare for the community. Street trees will be arranged in a formal avenue. At three intervals along the road, the road will be narrowed for a length of 6 metres to provide for a widened road verge. At these locations, additional feature trees, with an understorey of low planting, will provide visual features along the route. The eastern side of the collector road will include a 2 metre wide bikeway. The western side of the road will include a 1.2 metre wide pedestrian pathway. Crossover locations will be provided at key locations. It is proposed the area between the pathway and the lot boundary be planted out to reinforce this as the most significant road and to create high visual amenity. Locations would be left unplanted for future lot driveways. This planting would vary from groundcover planting to low shrubs with a focus on achieving colourful contrast and patterning.

The scenic buffer is located between the collector road and the existing highway corridor. This would be treated to provide a visual buffer to the existing highway and to create a park like setting for this part of the collector road. Buffer planting along the eastern extent of the scenic buffer would include mounding and layered tree and shrub planting. The area between this buffer planting and the collector road would be grassed with a formal line of large, spreading feature trees.

The secondary streets will feature a more organic arrangement to street tree set out. Street tree species will be a combination of indigenous and exotic species. Where streets are in close proximity to Jordan’s Creek or the retained 7(a) vegetation, indigenous species will be used to reflect the natural setting. Secondary streets will include a 1.2 metre wide pathway to one side of the road. It is proposed the narrow roads, i.e. the access to the hilltop lots and the road to the central parkland, include an alternative road pavement treatment to define them as routes for local traffic. This pavement would be a combination of concrete with banding of stone cobbles.

Buffer Planting

Buffer planting is located between the property boundary and Bruxner Park Road, the development site and the Pacific Highway and between the property and the Crown road. Buffer planting would seek to create a dense visual buffer and would include upper, mid and lower storey planting. Plant species would be indigenous. Where it is appropriate to encourage the movement of koalas, buffer planting would incorporate koala feed trees.

Pedestrian Links

The development will include an extensive pedestrian/cycleway network. Secondary streets will include a 1.2 metre pedestrian pathway to one side of the street. The collector road will include a bikeway and a pedestrian pathway. The bikeway will extend from the Bruxner Park Road entry to the park along the creek. Green spaces will include pedestrian pathways, with pathways located to maximise outlooks and to take in natural features. The path running to the east of the 7(a) vegetation will meander down the slope and will incorporate shelters and seating areas. Pathways within the park along Jordan's Creek will meander through revegetation areas and open grassed areas. The pathway to the "green spine" will include a stepped access through a series of parkland terraces. Steps will be in concrete to minimise long-term maintenance with retaining walls in rock gabion. Concrete pathways will link terraces. In all instances the pathway network is intended to provide a range of recreational experience and to create a series of interesting and attractive journeys around the site. It is also proposed that a nature trail be established along the existing track in the northern part of the 7(a) vegetation area. The trail would be 1.2m wide and of a material appropriate to the setting. To minimise impact on vegetation, it could be established where weeds are removed from the existing riparian corridor. It is proposed a timber deck and seating location be established at the eastern lagoon. Interpretive signage could be included along the route to explain the vegetation communities and significance of the western lagoon.

Plant Species Selection

A list of proposed plant species and planting locations has been developed for the site and is included in the Landscape Master Plan. Planting will be undertaken within the streets, parks, stormwater treatment areas, individual allotments and within revegetation areas. The Vegetation Management Report details species and strategies for revegetation areas. For the other planting areas, key strategies include:

- providing shade for the users of pathways, cycleway and parklands;
- adding visual amenity to streetscapes and parklands;
- defining key vehicular and pedestrian routes;
- defining entries and nodes within parklands;
- incorporating a combination of drought tolerant indigenous and exotic species;
- utilising indigenous grasses and macrophytes within stormwater treatment areas to trap sediment and extract nutrients from stormwater run off;

5.10 PEDESTRIAN LINK

- utilising indigenous grasses and macrophytes within stormwater treatment areas to trap sediment and extract nutrients from stormwater run off;
- incorporating rainforest, fire-retardant tree species within Asset Protection Zones to minimise the extent of leaf litter/ground fuel;
- spacing tree planting within Asset Protection Zones to ensure there is at least 5 metres between individual drip line

5.10 SITE SERVICES

All services will be provided to the site and are described in the Services Report Appendix 6.

5.11 ACCESS AND CAR PARKING

Entry to the Site is provided at two locations. One access will be from Bruxner Park Road and one from West Korora Road.

Bruxner Park Road reserve is controlled by Coffs Harbour City Council. Access to the northern portion of the site will be from Bruxner Park Road. It is assumed that the entry from Bruxner Park Road would be the main access as most of main roads within the internal road network are linked to that access road connecting to Bruxner Park Road. It is assumed that 70% of traffic will use Bruxner Park Road and 30% will use West Korora Road. It is not proposed to build a bridge over Jordan's Creek.

Car parking will be provided on the lots and there will be public car parking on the roadways in some areas and a car park adjacent to the oval.

5.12 PEDESTRIAN ACCESS AND BIKEWAYS

These are described in detail in the Landscape Section 5.9 of this report.

5.13 SIGNAGE

A coordinated signage policy will be developed for the site as part of the subdivision works for the site.

5.14 ACCESSIBILITY OBJECTIVES

All development on the site will, where possible, adopt accessibility objectives.

5.15 HERITAGE/ARCHAEOLOGY

Studies (Appendix 10) have shown that there is unlikely to be archaeological sites uncovered. It is recommended though that the site be monitored during the development by the Local Aboriginal Land Council. Should any site be exposed the advice of the National Parks and Wildlife Service will be obtained before proceeding.

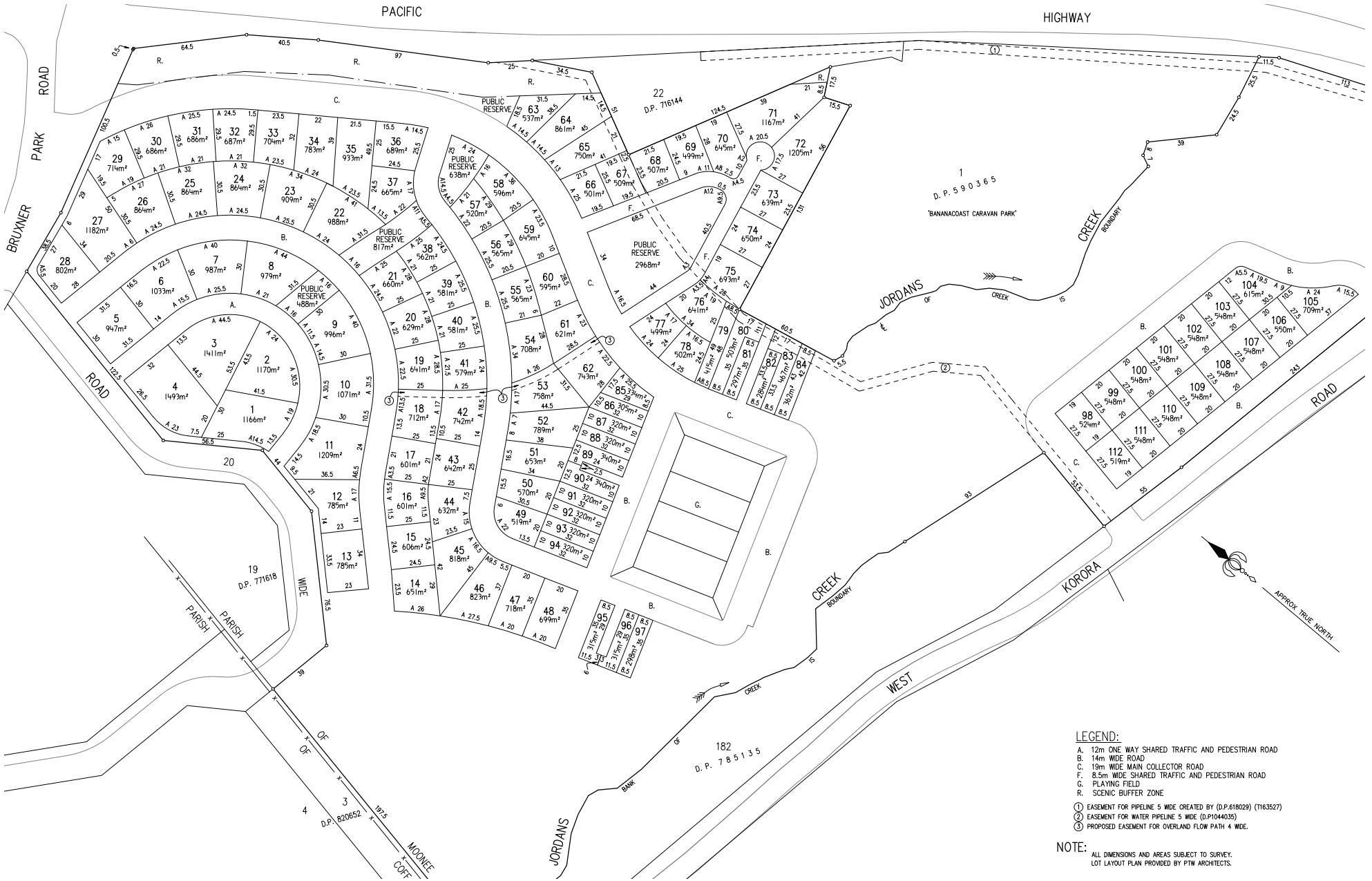
As a highlight of local history the former training ground of the Wallabies will be maintained and has been established as the centre of the development.

5.16 MANAGEMENT AND SUBDIVISION

The subdivision plan shows a total of 112 lots. These will be Torrens title lots and will comprise 93 house lots and 19 town house lots. The oval and the 7(a) zoned land will be in separate lots. It is intended that an owners corporation will be formed which will have responsibility for the oval and the 7(a) zoned land if this land is not accepted by the Council as dedicated open space. The owners corporation will also oversee the implementation of the Design Guidelines as each individual dwelling is designed and developed on the site.

5.17 STAGING

At this stage it is proposed that the development will be carried out in one major stage.



PROJECT APPLICATION DESCRIPTION

6. ENVIRONMENTAL ASSESSMENT - KEY ISSUES

6.1 STRATEGIC PLANNING

6.1.1 State Planning Strategies

There are no specific State Planning Policies or strategies which relate specifically to this land in terms of its future use and development. All of the general matters in SEPPs such as Land Remediation and Coastal Protection are dealt with later in this report.

6.1.2 Regional Planning Strategies

There are two major regional planning matters of relevance to the development of this site. These are the North Coast Regional Environmental Plan and the Draft North Coast Regional Strategy.

North Coast Regional Environmental Plan

The REP deals with protecting the natural environment, providing a regional planning process to serve as a framework to identify areas for further investigation and providing a basis for the coordination of activities related to growth in the area. The plan does not identify areas for future growth. As a result providing the proposed development satisfies all the policies related to protection of the natural environment, coastal development, heritage and the design and servicing of residential development the proposed development of the site will not conflict with any of the policies in this plan. These matters are dealt with in detail in S8.0 of this report. It is concluded there that the proposals are not in conflict with the strategic directions in the REP.

Draft North Coast Regional Strategy

The primary purpose of this strategy is to ensure that adequate land is available and appropriately located to accommodate the projected housing and employment needs of the region's population over the next 25 years.
The Strategy provides that land may be rezoned for urban purposes if it is consistent with a local growth management strategy agreed between the Council and the Department of Planning.

The Strategy identifies that the Coffs Harbour Settlement Strategy provides for 1860p additional dwellings for the Coffs coastal area. The Settlement Strategy identifies the Pacific Bay land as appropriate for rezoning for urban purposes.

The regional strategy also provides guidance on settlement character and design, environment and natural resources and transport. All of these have been taken into consideration in the design of the proposed development for the site and as a result the proposals implement the regional strategy.

6.1.3 Local Planning Strategies

The major local planning strategy governing the development of the site for urban development is the Coffs Harbour Settlement Strategy. This was adopted by Council and endorsed by the NSW State Government in 2007.

The Pacific Bay site is shown in the settlement strategy as part of the Korora investigation area. The population of Korora is expected to grow from 2090 to 4420 in 2031. The key strategies for the development of this area are as follows:

- Develop as a coastal village
- Retain village character and prepare Place Management Plan
- Develop village core
- Undertake environmental studies to determine appropriate zonings (environmental constraints) and action accordingly
- Reinforce the significant role of tourist development
- Reinforce the relationship of urban form and the natural environment
- Ensure development addresses impacts of Pacific Highway and Pacific Highway Strategy
- Enhance riparian corridors to provide ecological links between coast and hinterland
- Allow for urban development west of the existing highway
- Ensure new development areas have regard to topography, servicing and other environmental constraints
- Maintain the city's backdrop with restrictions on development on or near ridgelines.

6.1 REZONING

All of these matters, where applicable have been addressed in the development of the proposal for the site. The development has been designed to relate to the natural environment and the topography of the site. The existing areas of natural significance including the riparian areas have been retained and protected. The development will be integrated into the overall development of the West Korora area as part of the area being studies by the Coffs Harbour Council. The rezoning process for the site has been developed to achieve this integration.

6.2 THE REZONING PROCESS FOR THE SITE

In December 2007, a process was agreed between the Council, the DOP and the owners of the Pacific Bay Western Lands to prepare the Environmental Assessment Report (EAR) and a Concept Plan for the site and the Local Environmental Study (LES) and Local Environmental Plan (LEP) for Amendment 37.

It was agreed that upon the owners completing the studies for the EAR this information would be provided to Council and its consultants to form part of the overall LES/LEP, which is being prepared by Council for the North Coffs Harbour Release Area. This has been done.
In June 2008, it was decided to proceed with a project application for the site rather than a concept plan and revised DGR's were issued for this.

A summary of the studies which have been carried out on the site and information in relation to the rezoning of the site has been sent to the Council as input to their LES for the site.
The LES has been completed and a draft LEP 38 prepared.

For the preparation of the EAR for the project application additional studies were carried out in relation to the actual design and evaluation of the proposal and these are included in this EAR.

6.2.1 West Korora Urban Release Area

The area is generally bounded to the north and west by the RTA preferred Pacific Highway by pass corridor, the North Coast railway line to the south and the Pacific Highway to the east. It has been identified that land within the area below the 55 m contour can be serviced by the existing reticulated water supply.

6.2.2 Local Environmental Study

The LES of the West Korora area commenced in 2008 and is covering all physical and social matters in relation to the West Korora area. It is due for completion in early 2009.

6.2.3 Local Environmental Plan

Draft LEP 38 has been prepared for the site. This proposes the rezoning of the zoned Rural 1A areas of the site to a part Residential 2A zoning and a part Private Recreation 6C zoning. It also proposes an increase in the area zoned 7A. The rezoning of a western area adjacent to the site has been deferred pending the resolution of the route of the new Pacific Highway.

6.3 DEVELOPMENT DESIGN RESPONSE

6.3.1 Integration with North Coffs Study Area

The process for the planning of the site has proceeded together with the preparation of the Local Environmental Study for the North Coffs Area. All the studies, which have been done for the development of the Pacific Bay site, have been forwarded to the Council for inclusion in the overall LES.

During the preparation of the project application meetings have been held with the Council planners and with the consultants preparing the overall LES for the North Coffs area. Although the planning of this site has proceeded ahead of the overall area the design parameters being considered for the site have been discussed with the Council and no objections have been raised in relation to the integration of the planning with the overall study and objectives for the area.

6.3.2 Connectivity and Community Service Provision

The studies, which have been carried out for this site, have indicated that there is ample community service provision in the Coffs Harbour area to service any needs, which might arise from the development. The matter will be studied in more detail in the overall LES but there are no provisions in this application, which are likely to frustrate any overall proposals for the area. S94 contributions will be made for this development on the basis of the existing requirements of the Council.

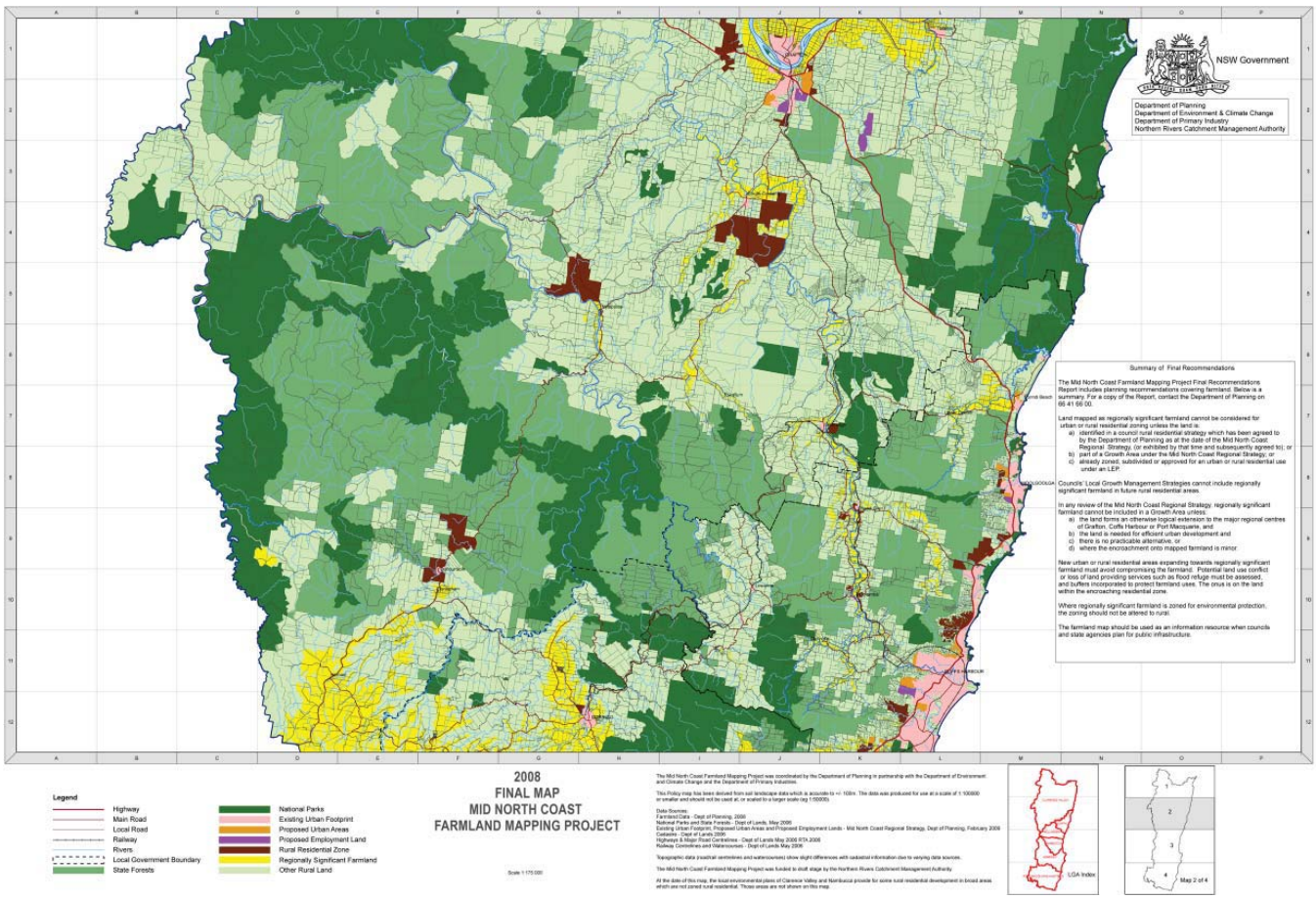
6.4 LAND USE SUITABILITY

6.4.1 Agricultural Use of the Land

The site was previously used as a banana and avocado plantation. In the past, these horticultural pursuits were a viable, profitable venture. However, the banana industry and to some extent the avocado industry in Coffs Harbour has declined to a point where it has become extremely difficult to make reasonable returns for living purposes. Due to the small, fractured nature of the site and the steep slopes of the western portion of the property, it is considered unsuitable for any other form of agriculture. The Soil Landscape Maps (Milford, 1999) have also indicated that the soil types at the site present moderate limitations to grazing and high to severe limitations to cultivation.

As the surrounding area is developed for residential purposes, this presents an additional constraint to the use of the site for agricultural purposes due to the potential conflict between adjoining landholders/ land uses.

Due to the issues outlined above, the property is not considered to be agriculturally viable or able to economically sustain agricultural activity. This is supported by the NSW Department of Planning's Mid-North Coast Farmland Mapping Project (DOP, 2008) map, which has not considered the site to be 'Regionally Significant Farmland'.



6.2 LAND SUITABILITY MAP

6.4.2 Land Use Conflicts with Existing Uses

There are no existing uses on the site apart from it being used occasionally for football in the oval area and the associated buildings. This use is connected to the adjacent Pacific Bay resort development. Adjacent uses comprise a caravan park and rural residential uses. The proposed residential development of the site is not likely to provide any land uses conflicts with these existing uses.

6.4.3 Commercial/Retail Land Use Proposals

There are no commercial retail uses included in the proposed development of the site.

6.4.3.1 Floor Space

There is no specific floor space figure adopted for the development proposal. The site will be subdivided into 112 lots comprising 19 townhouses and 93 single dwellings. The lots have a developable area of 75468 m^2 and it is expected that the maximum floor space ratio for each lot would be about 0.5:1. The larger lots will be between 1000 m^2 and 500 m^2 while the lots around the oval will be 371 m^2.

6.4.3.2 Traffic and Access Requirements

The Traffic Study (Appendix 12) has concluded that the proposed development is mainly expected to impact on the access intersections with the Pacific Highway, notably Bruxner Park Road and West Korora Road. The analyses show that the existing intersections will not operate satisfactorily if the existing intersection controls are to remain the same.

With the yield/give way intersection control currently operating at the intersection of Bruxner Park Road with the Pacific Highway, the existing traffic volumes (albeit very minimal) at the intersection are already experiencing considerable delays in finding gaps to enter the traffic flow along the Pacific Highway. Traffic volumes along the Pacific Highway are already considered high in terms of the nominal capacity provided by the highway. It is concluded that in order for the intersection to accommodate future traffic from the proposed development, it will be necessary introduce improvements to the intersection control by signalisation.

For the assessment, geometric improvements to the Bruxner Park Road approach to the intersection have been assumed. The approach layout considered in the assessment provides for a 100 m right turn lane, a through lane and a 50 m left turn lane. Two exit lanes have been assumed in the westbound direction. No changes to the configuration of the Pacific Highway or James Small Drive have been considered. The SIDRA analysis has indicated that the above changes will suffice for traffic volumes projected up to 2015 and further improvements will be required on the Pacific Highway by 2018.

For the intersection of West Korora Road with the Pacific Highway, the results of the SIDRA Analysis show that a left-in/left-out configuration will improve the operation at the intersection. However, the operational

performance of the intersection is expected to deteriorate by 2015 owing to the left turn movement limitations from West Korora Road in terms of sufficient gaps for vehicles to merge on the Pacific Highway. Adding an approach lane would improve the level of service in 2015 to "D" and suffice for 2015 traffic volumes. However, the level of service for the 2018 will remain at "F". Further tested was the provision of a continuous slip lane from West Korora turning left at the Pacific Highway and adding a 100 m turn slot exit lane to provide sufficient distance for merging. This new configuration will improve the level of service to "A".

6.4.3.3 Amenity Issues

It can be concluded that the proposal for the site will produce a development of high amenity which will add to both the visual and the landscape character of this area. The reservation of the environmentally significant areas on the site will also add to the amenity of the site and the surrounding area.

The proposed development has been designed to complement the adjacent Pacific Bay development so that the area overall will present as a planned and designed residential area.

6.5 SUBDIVISION DESIGN

6.5.1 Consistency with Coastal Design Guidelines

The proposed development of the site has been designed taking into consideration the Coastal Design Guidelines. The proposal:

- respects the ecological limits of the site and its context
- has been developed with careful consideration for landform and views from public areas.

It has been difficult in this area to provide alternative transport option from private car use, however the possibility exists for a public transport system to service the area when the overall development of the North Coffs area is completed.

The retention of the oval and the conservation areas on the site has meant that the proposed public domain relates to the geographic location and topography of the area.

The components of the public domain on the site include:

- a pattern of development based on the unique natural, urban, historic, visual and environmental features of the location
- reserves for nature conservation and flood processes
- open space and public places for the recreation and social needs of residents and visitors
- an interconnected street pattern providing long-term access and social and economic opportunities for the settlement
- areas for total water cycle management.

The proposal for the development of the site has avoided areas of ecological value and respects the setbacks between natural areas. Wildlife corridors, existing mature trees, waterways and natural features are incorporated into the green space networks, reserve areas, riverine and foreshore corridors.

Aboriginal and European places, relics and items will be protected.

Degraded natural areas on the site will be rehabilitated.

Built Form

The pattern of land development has been designed to provide amenity through the following measures:

- The settlement has as compact a footprint as the topography will allow to reduce land take.
- Blocks and streets are walkable and safe.
- Buildings address the street.
- Lot sizes and configurations are designed to support a range of housing types that integrate into the street pattern and the location of functions throughout the settlement.
- Residential areas consist of detached and semi-detached houses and town houses
- A diversity of lot and housing types are developed to accommodate various household sizes and types.
- Buildings are designed to suit the climate and use environmentally sustainable building design and materials.
- Housing types optimise visual and acoustic privacy, integrate passive solar design principles, minimise water use, and seek to achieve architectural distinction and excellence.
- Residential buildings are generally one to two storeys.
- Heights are subject to urban design guidelines.

New development is appropriate to the predominant form and scale of surrounding development (either present or future), surrounding landforms and the visual setting of the settlement. Buildings avoid overshadowing of public open spaces before 4 pm midwinter and 7 pm Summer Daylight Saving Time.

Building Design

The proposed guidelines for the development of buildings on the site will ensure that:

- The buildings footprint will relate to the subdivision pattern
- Vegetation and deep soil zones will be maintained between buildings.
- On-site car parking requirements are related to the steepness of the site.
- The impact of new development when viewed from the coastal area is minimised

6.5.2 Consistency With North Coast Urban Design Guidelines

The proposed development, has the characteristics of a coastal village although it is a development on the edge of a major regional centre. The design guidelines for a village have been addressed in the development of guidelines for the site and the proposals implement many of the objectives and design suggestions in these guidelines.

- The proposed buildings will be where possible of elevated, lightweight construction in response to climate and to take advantage of the views from the site.
- Flexible sun-shading devices, louvres and natural ventilation systems to allow passive environmental control can be installed in the dwellings.
- Owners will be encouraged to provide semi-sheltered outdoor spaces of usable dimensions to mediate between indoors and outdoors
- Buildings will be orientated towards the street
- Wide gutters to handle heavy rainfall
- Building elements will be integrated into the design of the façade and overall form
- There will be zones for street-side planting to provide shade for pedestrians and parked cars and provide screening and enhanced privacy of residential lots
- Footpath will be separated from street by a grassed or landscaped median strip
- Services will be discreet; major cables will be underground.

The aim, in adopting these guidelines is to provide residential buildings with a consistent front and side setback and an open informal character. The housing will be varied and generally of 1 to 2 levels. Gardens will have predominantly indigenous coastal plants. There will be a clear mediating zone between the natural and built environment.

6.5.3 Site Issues

A number of constraints were identified which affected the design of the subdivision.

Geotechnical Issues

It was observed that the majority of steep slopes on the site had a cover of colluvium, which is indicative that the site is likely to be subject to soil creep. Wherever possible, roads were designed to minimise the amount of fill over the colluvium, and provided maximum batter slopes at 2H to 1V. Refer to the Geotechnical Report by Coffey Geosciences for further detailed constraints.

The proposal has been designed to deal with these constraints by regulating the siting of the buildings and designing in detail the areas where the houses will be located on the site. These works have been developed between the engineers and the architects and the lots will be sold with the landform completed for the location of a dwelling on the site.

Services

The site currently has two council trunk water mains traversing within a 5 m wide easement. The proposed road network crosses these water mains in at least 5 locations. Wherever possible, the road network (and related earthworks) were designed to enable the water mains to remain in their current location.
However, to obtain compliant road intersections with Bruxner Park Road, approximately 100 m of water main will be required to be lowered where Road 1 and Road 8 intersect with Bruxner Park Road.
It is proposed to service the site with water from the Council trunk water main, which runs along the western edge of the Pacific Highway.
The sewer from the site shall be discharged to two separate receiving manholes to ensure that the downstream sewer network is not overloaded. The northern most portion of the site will be discharged to a sewer manhole located on the eastern side of the highway within the Pacific Bay Resort grounds. A gravity sewer main will need to be under bored beneath the Pacific Highway. The southern portion of the site will be discharged to a sewer manhole adjacent West Korora Road, which currently services the Banana Coast Caravan Park.

Flooding

The lower portions of the site are subject to inundation during major flood events. The earthworks design for the site has been undertaken to ensure that no allotments are inundated during the 1 in 100 Average Recurrence Interval (ARI) flood. Further to that, the site has been designed to ensure that water levels on adjoining properties are not exacerbated as a result of the development for all scenarios up to and including the 100yr ARI flood event.
The stormwater system design has been undertaken to ensure that there is no increase in runoff rate as a result of development. To achieve this goal, the existing rugby field shall be utilised as a detention basin to detain water during moderate to severe rain events.

Topography

The design of the subdivision for the site has been closely related to the topography of the site. The overall effect is of a circulating road system and street defining built form following the contours, with landscaping between the blocks. Each site has off street parking possibilities related to the topography. Where the access is from the downhill side car parking will be underground or semi-underground. Character stone walls and deep setbacks for front yards will characterise the uphill side and the lush undergrowth and wide planting of the native gardens and timber bridges characterise the down hill sides.
The site will be developed to be in harmony with the landscape, through the respect for the topography of the site.

Landscape Setting

A detailed analysis of the landscape setting of the site was carried out and the subdivision of the site was designed on the basis of ensuring that the development of the site would, as far as possible fit into and where possible enhance the landscape setting of the site. Further, the detailed plans which have been developed for the new landscaping of the site

6.3 TOPOGRAPHY

once it is subdivided will continue the existing nature and form of landscaping in the area.

Retention of Significant Vegetation

All of the identified significant vegetation on the site will be retained.

6.5.4 Road Design

Design Standard

Council has advised that the road through the site to the north (Road 1) is to be 'Collector Road' standard. This will comprise a 9 m wide sealed pavement within a 19 m wide road reserve. A number of 'slow points' will be constructed along the length of the collector road to reduce the vehicle speed of through traffic. Road drainage will be achieved through a piped drainage network to a number of controlled discharge points around the site. The geometric standards for the road design and intersection have been undertaken in accordance with Council's guidelines for developers. The adopted design speed for the Collector Road is 50km/h, and 40km/h for the remaining local roads.

6.4 ROAD DESIGN

Road Widths

The width of the internal road network was discussed with Council, giving consideration to the significant topography constraints. It was considered that the majority of internal roads for the development should be designed with a 6 m wide carriageway within a 14 m wide road reserve. The exceptions to this standard are the one-way streets (Roads 3, 7 and 7A), and the Collector Road (Road 1) to the north. There is no bridge proposed over Jordan's Creek.

One-Way Streets

The One-Way Street road types consist of a 4 m wide carriageway. Road 3 will sit within a 12 m wide road reserve, with a 4 m verge on each side of the road pavement. Road 7 and Road 7A will have a 2 m wide verge to the outside of the roads. Parallel parking spaces shall be located on the inside of the road, and will enclose the park land. This road type will be classified as a 'Share Way' providing for both vehicular and pedestrian movements within the low speed environment.

Typical Sections

Generally, the roads within the proposed development consist of a two-way cross fall, with kerb and gutter both sides of the roadway. The local roads consist of 4 m verges either side of the road carriageway. The verges will contain services such as electricity, telecommunications, water reticulation, and street lighting to service the development. One verge will convey a 1.2 m wide footpath along each road. The Collector Road consists of a 5.5 m wide verge to the east of the road carriageway which will convey a 2.5 m wide shared footpath/cycleway. The western verge will convey a 1.2 m wide footpath. Typical sections for each road are shown on the engineering drawings. A bridge over Jordan's Creek does not form part of this application.

Service allocations within the road reserve are allocated in accordance with Council requirements, apart from those servicing the lots fronting Road 7 and Road 7A. Due to the reduced verge width between the carriageway and the lot boundary, service allocations for electricity, telecommunications, water and sewer will be modified to cater for all required services. Due to the close proximity of the water main to the road carriageway, the water main will be constructed of Ductile Iron for Road 7 and Road 7A. Street lighting for these two roads will be located within the central park land.

Gradients

Road gradients have been designed to be in accordance with Coffs Harbour City Council design specifications. Generally, throughout the site roads have been designed to have a maximum longitudinal gradient of 16%, and a minimum longitudinal gradient of 1%.
Where the longitudinal gradients fall within this range, the longitudinal gradient has been determined to provide the desired topographical features within the site, to provide desirable gradients for the stormwater system, and to minimise the extent of bulk earthworks required.

Service Vehicles

All roadways have been designed to cater for the turning movements of service vehicles. Road 1 has also been designed to cater for buses, with allowance made for the provision of bus stops along its length.

6.5 CENTRAL PARK LAND

6.5.5 Connections to Existing and Planned Urban Areas

The connections to the site have been designed in consultation with the Council and the consultants preparing the overall plan for the West Korora Release Area. As a result connections to the planned areas have been provided for where it is considered appropriate.

The site will have three separate access points to the existing road network. The northern portion of the site will have access to Bruxner Park Road from Proposed Road 1 and Proposed Road 2. The southern portion of the site will have access to West Korora Road via the proposed looped Road 8.
Council has requested that allowance be made to link the north and south portions of the site via a bridged connection between Road 1 and Road 8. Allowance has been made in the road design but no bridge is proposed over Jordan's Creek.

Discussions were entered into with the RTA and Council at a meeting on 22/03/07 regarding access to the site. Council required that a future Collector Road type be allowed for, eventually joining West Korora Road with Bruxner Park Road. It was the preference of both the RTA and Council to encourage the access to the Pacific Highway via Bruxner Park Road rather than West Korora Road. Accordingly, Council requested that a potential future link be provided for, joining West Korora Road to Bruxner Park Road over Jordan's Creek.

As there are no established pedestrian and cycle paths in the regional network, appropriate linkages will be identified for future potential development. The pedestrian and cycle path network will be provided a link to the regional path network when the North Coffs Release Area details are released by Coffs Harbour City Council. A plan of the site and North Coffs Release area showing road hierarchy, pedestrian and cycleways North Coffs Release area documentation has not yet been released by Coffs Harbour City Council.

It is expected that the developer will need to make provision for the construction, or in some instances make contributions to the construction and upgrades of road intersections from the site. These will be determined as the North Coffs Release Area and Contributions Plans are developed by Council.

6.5.6 Energy Efficiency

The principles of energy efficiency have been adopted for the development proposal. These are:

- Water cycle management;
- Sustainable landscape and the use of drought resistant native plants;
- Protection of the waterways;
- Water sensitive urban design; and
- Bushfire protection and management
- Siting and orientation of dwellings to maximise solar access, and natural ventilation and minimise cut-and-fill.

These design principles have been implemented in the subdivision layout. The lots have been orientated to ensure that sun access to the future dwellings will be possible and to provide access to the views. The design guidelines for the development of the built form on the site will further encourage compliance with these standards and principles by addressing the issues of setbacks and orientation of dwellings. All dwellings to be constructed on the site will need to provide a BASIX certificate that they have complied with all the requirements in the details of the construction of the dwellings.

6.5.7 Safer by Design Principles

Throughout the development of the design of the subdivision, CPTED considerations and design principles have been adopted with respect to both personal safety of the residents as well as security of the individual properties:

With respect to personal safety, the development provides for:

- clear views of surrounding areas
- adequate lighting
- buildings that overlook both outdoor space and adjoining streets
- avoidance of the creation of entrapment spots
- landscaping and fencing that addresses crime prevention

To promote property security, the subdivision provides for:

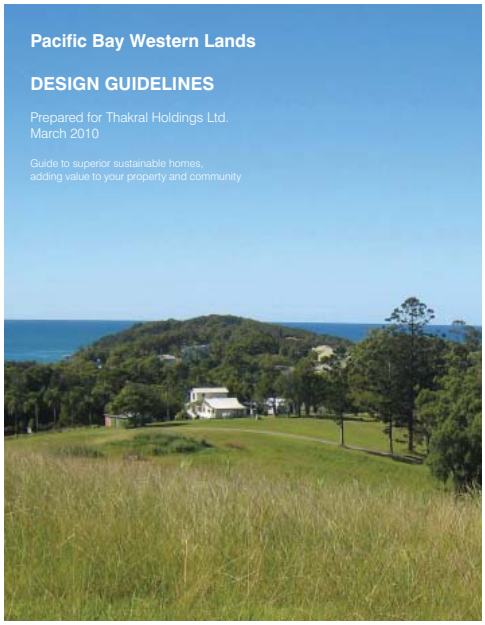
- defined sense of ownership of private, public and communal space
- landscaping and fencing that does not obscure windows and doors

6.5.8 Building Envelope and Built Form Controls

Building envelope and built form controls have been developed for the site and these, together with the "Complying Development Code" will regulate the bulk and location of dwellings on the site and their relationship to each other. Major controls are as follows:

- Lot sizes
- No front fences
- Front setbacks from the street
- Site Coverage
- Solar access
- Private open space
- Privacy
- House Design

A copy of these guidelines is included in Appendix 2 to this report.



6.6 DESIGN GUIDELINES

6.6 SUBDIVISION MANAGEMENT

6.6.1 Type of Subdivision

The subdivision will be Torrens title and there will be an overall management body which will look after the oval open space area. This will take the form of an owners corporation related to the torrens lots on the site. It is intended that the owners corporation will have responsibility for the oval and the 7(a) zoned land if this land is not accepted by the Council as dedicated open space. Pacific Bay Developments Pty Ltd. will also oversee the implementation of the Design Guidelines as each individual dwelling is designed and developed on the site.

6.6.2 Open Space Access

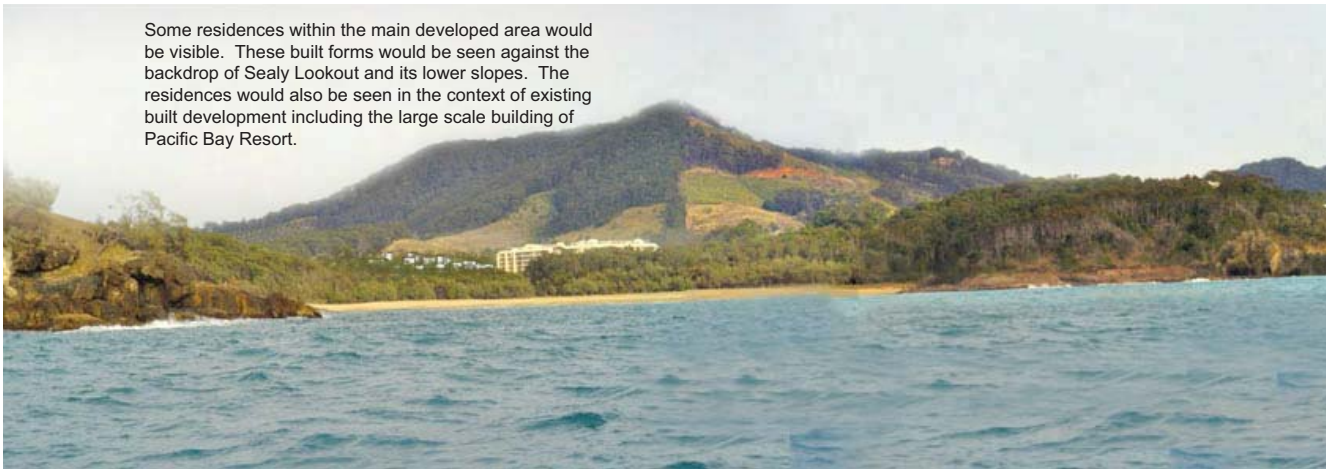
The intention is that all of the 7A areas on the site will be dedicated to the Council as public open space. If this is not acceptable to the Council then the owners corporation will be responsible for the land. Although it will remain in private ownership the oval will be available for use by the public and the public will have access to it. This site will be rezoned to Private Recreation because the land will remain in the ownership of the community association.

6.7 VISUAL IMPACTS

6.7.1 Amenity of Foreshore and Views From the Water

The proposed development is situated well away from the foreshore and as a result there will be no impacts on the foreshore area from the development.
The visual analysis contained in the Landscape and Visual Report in Appendix 11, addressed many views of the site from various locations (See Figure 4.1.3) . The following are the major areas where the new development will be visible from and photomontages have been prepared of these views.

A photomontage has been prepared of the view of the development from the water:



6.7 VIEW FROM WATER

The development will be barely visible from the water and will appear set against the backdrop of the mountains behind. The taller buildings at the nearby pacific Bay development continue to dominate this view.

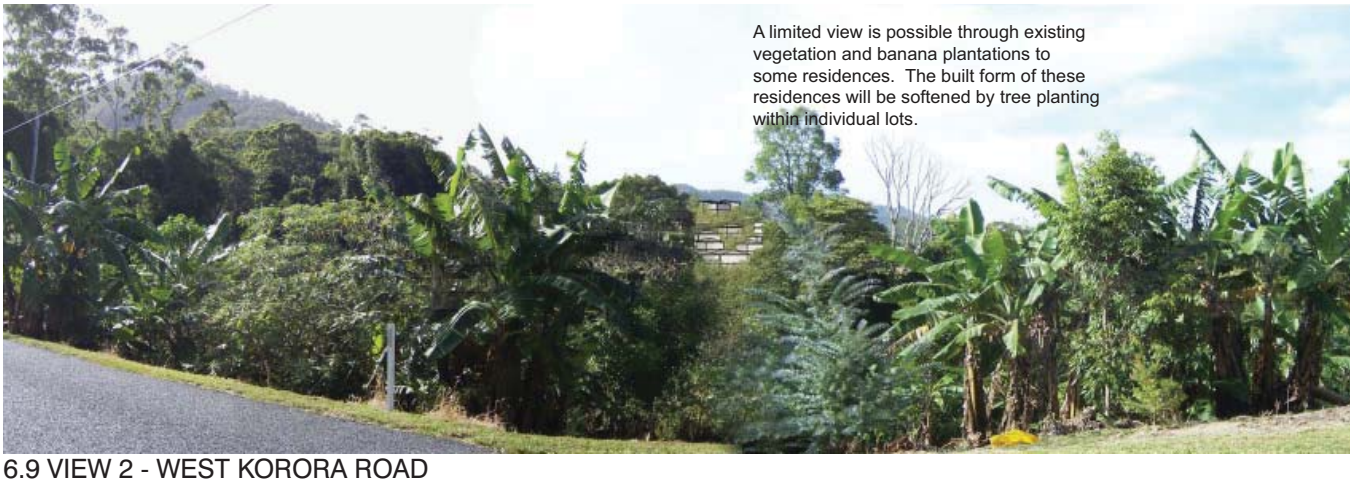
6.7.2 Overshadowing of Public Reserves

There will not be any overshadowing of public open space as a result of the development proposal.

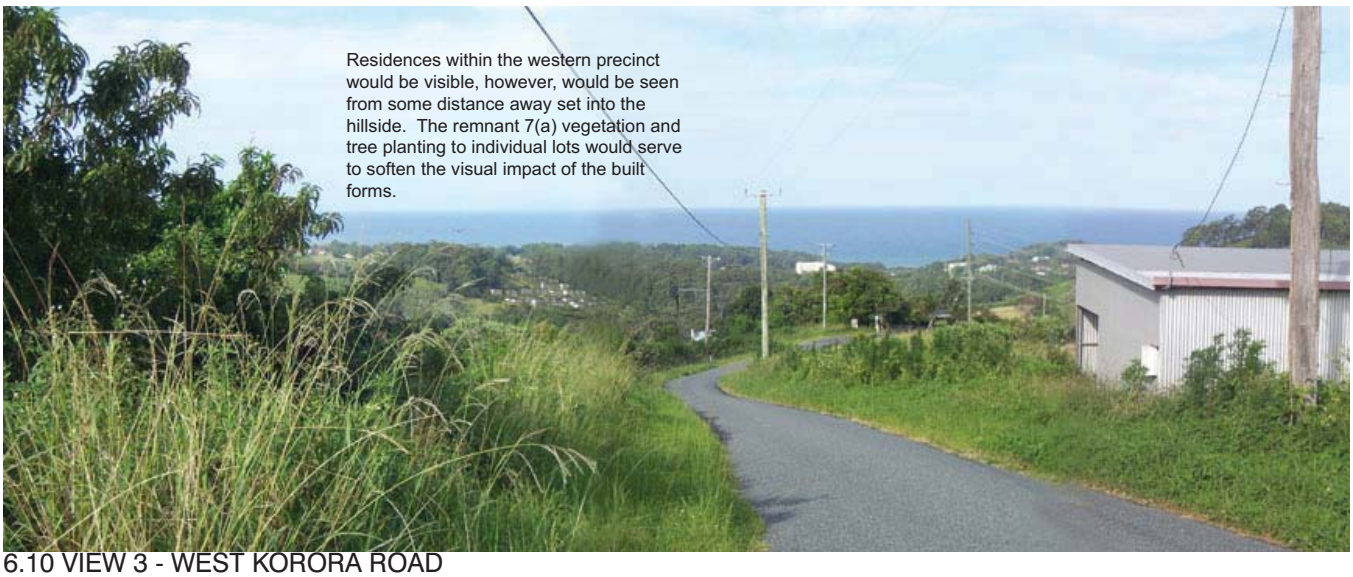
6.7.3 Loss of Views From Public Places

A series of views from surrounding public roads were assessed and the visual impact of the proposed development is insignificant. There is no loss of views from any major viewpoints as a result of the development.

6.8 VIEW 1 - PACIFIC HIGHWAY, 100 m EAST OF SITE



6.9 VIEW 2 - WEST KORORA ROAD



6.10 VIEW 3 - WEST KORORA ROAD

6.7.4 Impacts of the Built Form Controls

These views show that the proposed built form controls will ensure that the development of the site will have minimum impacts on the visual integrity of the surrounding environment.

6.7.5 Impacts of the Commercial/Retail Areas

No commercial or retail areas are proposed within the development.

6.7.6 Advertising Controls

It is unlikely that there will be any advertising on the site. A detailed strategy will be developed for the installation of directional and name signs on the site.

6.7.7 Cumulative Impacts of Subdivision

The possible impacts of the subdivision of the site have been studies in detail in the specific reports accompanying this project application. The cumulative impact of the development as art of the North Coffs Release Area will be examined in the LES for this area.

6.8 TRAFFIC MANAGEMENT AND ACCESS

6.8.1 General

A detailed traffic Analysis of the site and the proposed development has been prepared and is included in Appendix 12.

6.8.2 Traffic Generation

Traffic generation for the site was estimated on the basis of the RTA's "Guide to Traffic Generating Developments"

The site is expected to generate a total of 113 vehicle trips during the peak hour.

6.8.3 Distribution of Traffic

Outbound traffic is expected to be higher than inbound traffic in the morning peak while in the evening the opposite will be true.

6.8.4 Pacific Highway Planning Strategy

The Coffs Harbour Highway Planning Strategy (CHHPS), launched in September 2008 addresses the need to upgrade the Pacific Highway between Sapphire and Woolgoolga while planning for the future traffic needs within the Coffs Harbour urban area. Planning for the CHHPS was part of the 10 year Pacific Highway Upgrading Program funded by the NSW Government from 1996 to 2006. The CHHPS has been developed by the Roads and Traffic Authority (RTA) in consultation with other

government agencies, Coffs Harbour City Council (CHCC) and the community. The study area for the CHHPS has been split into two sections as follows:

- Northern (Sapphire to Woolgoolga upgrade) section; and
- Southern (Coffs Harbour bypass).

The Coffs Harbour Bypass proposal includes an upgrade of the existing arterial style dual carriageway highway between Korora Hill and the southern end of the Sapphire to Woolgoolga upgrade project to motorway (Class M) standard. Entry and exit to and from the bypass is limited to grade separated interchanges at key locations. These interchange facilities would provide for access to/from the proposed highway, the existing Pacific Highway and/or the local road network. The concept design provides for a total of three interchanges, as follows:

- Southern interchange at England's Road;
- Central interchange at Coramba Road; and
- Northern interchange at Korora Hill.

It is noted that the northern interchange will have an impact on the future traffic movements forecasted for the proposed Pacific Bay Western Lands since it sits close to the northern boundary of the proposed development and will significantly alter the access connections to the Bruxner Park Road.

The northern interchange at Korora Hill will consist of loading and unloading ramps interacting with existing intersections at James Small Drive and Bruxner Park Road and the proposed local access road through Korora. The proposed layout of the interchange includes a roundabout connecting the northbound unloading ramp and a relocated James Small Drive to the proposed local access road; and a roundabout connecting the north facing ramps to the existing highway south of the interchange, inclusive of connections to the new local access road and to Bruxner Park Road. An optional slip lane for the proposed local access road through the primary roundabout at Bruxner Park Road.

It is anticipated that with the Coffs Harbour Bypass there will be a diversion of existing through traffic from the Pacific Highway to the Coffs Harbour Bypass, improved intersection performance at the Bruxner Park Road with the Pacific Highway and improved access connections to the local access roads in the Korora area.

A left-in left-out configuration at the intersection of West Korora Road and the Pacific Highway does not allow for eastbound vehicles on West Korora Road to travel south. However, the provision of a roundabout at the Bruxner Park Road will allow vehicles from the West Korora Road to turnaround and travel in the southbound direction. It is also noted that additional vehicles from West Korora Road may also take the future collector road through the development and join the Pacific Highway from the Bruxner Park Road.

6.8.5 Access and Connections to the Site

Entry to the site is provided at two locations. One is from Bruxner Park Road and one from West Korora Road. Bruxner Park Road and West Korora Road currently operate as local roads providing access to the Pacific Highway for a relatively small number of rural properties. Bruxner Park Road also provides access to Ulidarra National Park. As these roads

do not and are not planned to connect to the regional road network to the west of the proposed development and because RTA does not permit direct access to the proposed development site from the Pacific Highway, all development traffic would access the site via Bruxner Park Road and West Korora Road intersections with the Pacific Highway.
The main access will be from Bruxner Park Road as most of the roads within the internal road network are linked to that access road. It is assumed that 70% of the traffic will use Bruxner Park Road and 30% will use West Korora Road.

6.8.6 Future Intersection Operations

The proposed development is mainly expected to impact on the access intersections with the Pacific Highway, notably Bruxner Park Road and West Korora Road. The analyses show that the existing intersections will not operate satisfactorily if the existing intersection controls are to remain the same.

With the yield/give way intersection control currently operating at the intersection of Bruxner Park Road with the Pacific Highway, the existing traffic volumes (albeit very minimal) at the intersection are already experiencing considerable delays in finding gaps to enter the traffic flow along the Pacific Highway. Traffic volumes along the Pacific Highway are already considered high in terms of the nominal capacity provided by the highway. It is concluded that in order for the intersection to accommodate future traffic from the proposed development, it will be necessary introduce improvements to the intersection control by signalisation.

For the assessment, geometric improvements to the Bruxner Park Road approach to the intersection have been assumed. The approach layout considered in the assessment provides for a 100 m right turn lane, a through lane and a 50 m left turn lane. Two exit lanes have been assumed in the westbound direction. No changes to the configuration of the Pacific Highway or James Small Drive have been considered.

The SIDRA analysis has indicated that the above changes will suffice for traffic volumes projected up to 2015 and further improvements will be required on the Pacific Highway by 2018.

For the intersection of West Korora Road with the Pacific Highway, the results of the SIDRA Analysis show that a left-in/left-out configuration will improve the operation at the intersection. However, the operational performance of the intersection is expected to deteriorate by 2015 owing to the left turn movement limitations from West Korora Road in terms of sufficient gaps for vehicles to merge on the Pacific Highway. Adding an approach lane would improve the level of service in 2015 to “D” and suffice for 2015 traffic volumes. However, the level of service for the 2018 will remain at “F”. Further tested was the provision of a continuous slip lane from West Korora turning left at the Pacific Highway and adding a 100 m turn slot exit lane to provide sufficient distance for merging. This new configuration will improve the level of service to “A”.

6.8.7 Servicing and Parking Arrangements

Parking will be provided on site for all lots and servicing will be from the entrance driveways.

6.8.8 Public Transport

There are no existing public transport services to the Site. There are existing bus and coach services that travel along the Pacific Highway linking Coffs Harbour and Woolgoolga but no bus stops are located along that stretch of the Pacific Highway.

6.8.9 Provisions for Pedestrians and Cyclists

The internal roads within the residential development should be connected to the existing road network without compromising pedestrian and cycle access or creating diversions. As there are no established pedestrian and cycle paths in the regional network, appropriate linkages should be identified for future potential development.

To assist in the promotion of sustainable transport modes, and design of public transport routes, opportunities should be developed to ideally reduce walking distances to bus stops and/or encourage cycling within the Site.

6.11 FLORA AND FAUNA

6.8.10 Construction Traffic

Detailed arrangements for construction traffic will be made in the Construction management Plan to be prepared for the subdivision of the site.

6.8.11 Connectivity with North Coffs Release Area

Following advice from Council, it is anticipated that West Korora Road will also serve as main access for the North Coffs Release Area. This area is comprised of a total of 34 hectares for the proposed development located south along West Korora Road and including the 7.7 hectares of the Big Banana site. Information provided by Council indicated that an estimate of approximately 340 lots will have to be serviced by the West Korora Road.

As no time frame for the development has been provided, it is assumed for the purpose of this assessment that full development of this area is likely to occur by 2015. For this scale of development, assuming all 340 lots are single-detached residential units, the associated peak hour traffic translates to an additional 289 vehicle-trips.

With the anticipated traffic from the development of the Pacific Bay Western Lands and the additional traffic from the North Coffs release, the option tested for intersection operational performance provided a continuous slip lane on West Korora Road turning left at the Pacific Highway and a 100 m turn slot exit lane to provide sufficient distance for merging. The results showed that this intersection configuration will operate satisfactorily even with the additional traffic.

6.9 FLORA AND FAUNA

6.9.1 Conservation of Flora and Fauna

A Flora and Fauna Report has been prepared for the proposed development and a copy is included in Appendix 7. It concluded that the development will not result in loss of any native vegetation for the construction of the residential dwellings, access roads, driveways, associated infrastructure and Asset Protection Zones for Bushfire protection. Removal of vegetation within the riparian corridor will be required for the construction of the flood excavation. An area of approximately 2400 m^2 will be removed; this will be on a short term basis as the area will be revegetated as part of the Vegetation management Plan prepared for the development as well as the revegetation of the excavation area giving an overall net gain in vegetation.

Potential environment impacts associated with the proposed development include:

- Potential degradation of potential habitat for small number of threatened species
- An increase in traffic along the Pacific Highway due to the proposed development is likely to result in an increase in heavy traffic to the site
- Increased potential for establishment of weeds in neighbouring areas of vegetation
- Impacts on water quality entering Jordan's Creek
- Increases in noise, light and disturbance may cause more reclusive species to move away from habitat edges of retained vegetation in the study area, in effect increasing the penetration of edge-effects on habitat.

In relation to the degradation of potential habitat this relates to the area of riparian vegetation in the riparian corridor which is identified as Primary Koala habitat in the LEP., Therefore removal of vegetation to construct the flood excavation would destroy habitat for threatened species, however, as stated above this would only be a temporary loss, once the area has be revegetated there would be a net gain.

In order to ameliorate any of these adverse impacts the report recommends that building envelopes be positioned to minimise the need to clear vegetation for units, houses and for bushfire buffers. A Vegetation Management Plan will be adopted and will include amelioration measures recommended in this report as follows:

- Rehabilitation of vegetated areas within the 7(a) zones and along Jordan's Creek
- Weed control in developed areas and areas of retained habitat
- Camphor Laurel trees located within Jordan's Creek shall be selectively removed over a period of 5 years rather than all at the same time
- Landscape, embellishment planting and compensatory planting shall be of local indigenous species

- Regeneration of vegetation in the south western portion of the subject property (is currently grasslands) to include re-vegetation
- A 30 metre buffer around Jordan's Creek
- A 50 metre buffer around the natural pond located in the southern portion of the property
- All stormwater from development to be diverted away from Jordan's Creek and stored on site to allow dissipation over a period of time.
- Suitable traffic control measures should be incorporated into the development for the protective measures of Koalas
- Retention and enhancement of areas of natural habitat throughout the development area
- Fencing to be provided to limit entry to vegetation areas and to provide physical separation between residential development and natural areas
- All fencing within the development area and surrounds should include the free movement of Koala
- All swimming pools should include a safety rope for Koala movement

The buffer zones to Jordan's Creek and the Freshwater lagoon recommended above have been determined by discussions with staff from the Department of Fisheries. Jordan's Creek is a third-order stream at the Pacific Bay West lands and hence a 30 m buffer to residential areas would be appropriate for this development.

To minimise impacts on the Giant Barred Frog a 30 m buffer will be implemented around the lagoon area and a swale and sediment fencing constructed between the lagoon and development to protect habitat Prior to any earthworks being undertaken a sediment and erosion control plan will be prepare to prevent any impact on the Giant Barred Frog habitat.

6.12 KOALA PLAN OF MANAGEMENT

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6.9.2 Koala Plan of Management

The Coffs Harbour Comprehensive Koala Plan of Management applies to the site and as a result the provisions of SEPP 44 do not apply. However, measures will be taken to manage and protect the koala.

The proposed development will not remove any native vegetation that is identified as Primary or Secondary Koala Habitat and hence there will not be any net loss of Primary or Secondary Koala Habitat as a result of this development proceeding. A number of amelioration measures that will mitigate any threats to koalas that may occur as a result of this development are listed below. These measures will allow the free movement of wildlife within the proposed development and provide a connection with vegetated areas to the east and west of the development.

Impacts on the potential loss of Koala habitat due to the construction of the future proposed collector road was not addressed, as it was understood that the road was not part of the development. Although the development has been designed to comply with Council requirements, Council would decide the design; timing and construction of the crossing

and Council should address any possible impacts on the loss of Koala habitat at this point.

Koala Road Risk

The stretch of Pacific Highway between the Big Banana and Bruxner Park Road is recognised as a minor koala "black spot" with koala mortalities. Recent koala activity both east and west of the Pacific Highway would indicate that this area is a corridor of regional significance (as mapped on the Biodiversity Conservation Lands spatial layer by the Department of Planning). As a consequence, the following amelioration measures will be incorporated into the concept plan for the development:

- A fauna underpass is proposed beneath the access road to the Western Lands of the development. This underpass will adopt similar strategies to that undertaken by the RTA for the Bonville Pacific Highway Reconstruction . The underpass will have the dimensions of 6 x 4 m; contain elevated horizontal poles allowing travel through the underpass; and refuge poles are each entrance. It will include koala-exclusion fencing to the road and native planting to connect these two significant areas of Primary Koala Habitat, encouraging movement of koalas along this corridor

- Planting of koala-preferred species along the north and north eastern boundaries of the property will be implemented to encourage wildlife to move through this vegetation and cross the Pacific Highway through an existing underpass that links this development with the Pacific Bay Resort to the east of the Pacific Highway. It is not feasible to include koala-friendly structures within this underpass as it will remain as a service road providing access for maintenance vehicles from the Pacific Bay Resort. However, the planting of native vegetation in combination with exclusion fencing will funnel wildlife through this underpass rather than across the Pacific Highway. The vegetated corridor through the Eastern Precinct will cross three internal access roads. It is proposed that surface wildlife crossings, will be constructed at these locations. These crossings will include: warning signs, appropriate lighting and rumble strips on the road to alert both drivers and wildlife. A 40 km/h speed restriction is proposed within the residential areas. It is not envisaged that Koala movement through the residential precinct be encouraged, but rather a habitat link be established along Jordan's Creek and continuing under the Pacific Highway through the existing underpass. Nevertheless, the measures proposed above will assist the movement of koalas within the residential areas of the development.

- Appropriate koala fencing will be placed along the major access roads to encourage the use of the proposed underpasses and eliminate koala road mortality. This fencing will also exclude koalas from entering the Sediment Retention Basin.

Koalas and Dogs

Dog attack on koalas represents a significant threat to individuals and populations in urban and rural areas. Dogs may kill, injure or stress koalas by chasing, barking or restricting normal ranging behaviour. The problem of savage attacks on koalas is exacerbated when dogs have the opportunity to form pairs or packs, when dogs can roam widely outside their home property and when large and aggressive breeds arecommon. The management of dogs needs broad community support to achieve any meaningful goals (Coffs Harbour City Council, 2000). Within the restrictions of this proposed development, all future purchasers will be advised about the possibility of koalas temporarily inhabiting the area, such that they may review their own strategies for maintaining companion animals, including providing dog-proof fencing.

Koala Health and Welfare

Koalas which are found sick, injured, orphaned or otherwise distressed in the Coffs Harbour LGA can often be rehabilitated to the wild. The local Koala carer group WIRES is the only wildlife care group currently accredited for Koala care in Coffs Harbour in accordance with the NPWS Policy Koala Care in NSW – Guidelines and Conditions, 1997. The most pressing health issue for Koalas that come into care is related to Chlamydia infection, and that symptoms may be instigated or exacerbated by additional stresses related to a number of factors including habitat clearing and disturbance (Lunney et al., 1999).

Bushfires

High intensity fires, particularly those which affect the tree canopy (crown fires), can directly kill or injure Koalas either by radiant heat or by inhalation of smoke and ash (Lunney et al., 1999). The development proposal will comply with the requirements for bushfire protection (RFS, 2006) such that the likelihood of extreme fires occurring is greatly reduced. All recommended asset protection zones are located outside vegetation identified as being either Primary or Secondary koala habitat. It is paramount that any additional planting of koala feeding trees be sited such that the potential bushfire risks that have already been accounted for in the Bushfire Risk Management Plan are not increased.

Landscaping

The use of preferred koala feeding trees will be adopted in street landscaping and within the wildlife corridor to encourage movement of koalas within the development. This will be complimented by koala-friendly fencing. In addition, prospective residents will be encouraged to plant appropriate species. However, consideration of the potential hazards associated with large Eucalyptus trees (e.g. Tallowwood trees) within a residential area during storm events must be addressed by the occupants of each allotment. It may not be appropriate to comply with this goal.

A SEPP 44 assessment concluded that the subject site does not support core Koala populations, therefore a Plan of Management for Core Koala Habitat document is not required.

6.10 CONSERVATION AREAS AND BUFFER ZONES

6.10.1 Protection of Remnant Vegetation and Riparian Areas

Through the implementation of the Vegetation Management Plan, there will be no net loss of riparian vegetation under this development proposal and hence there will be no disruption to the existing vegetationconnectivity along Jordan's Creek and no barriers to fauna movements within this vegetation community. Significant areas of retained native vegetation are proposed, such that there will be no impact upon the Rusty Plum population or the Lowland Rainforest in NSW North Coast and Sydney Basin Bioregions Endangered Ecological Community identified during the survey. The provision of a 30 m buffer zone to the freshwater lagoon will provide suitable protection for the Giant Barred Frog (only threatened fauna species recorded during surveys) to enable its continued existence.

Key areas of Primary and Secondary Koala Habitat will not be affected by the development with improved connection between areas of vegetation proposed along the western boundary of the property. This will be achieved through the planting of koala-preferred species in a 10 m wide buffer zone that separates the proposed development from the adjoining banana-growing property.

The proposed weed management strategy will: remove the existing Camphor Laurel trees from within the riparian vegetation over a 5 year interval; manage any Lantana present within this vegetation; and, after construction of the proposed allotments, manage herbaceous weeds within the developable areas. On-going maintenance will be provided by the ground staff of the Pacific Bay Resort with opportunities for community groups such as Landcare to be involved to enhance the retained vegetation.

6.10.2 Flora and Fauna Conclusions

The Vegetation Management Plan outlined above describes the procedures for the revegetation of areas along Jordan's Creek; surrounding the freshwater lagoon; along the western boundary of the property and throughout a flood-prone area to the southeast of the property.

It is recommended that a 30 m buffer either side of Jordan's Creek for its entire length on the subject property is created. This buffer will comprise a 20m wide Core Riparian Zone and an outer 10 m Vegetated Buffer and will exceed the vegetation presently existing along the creek. A section of the northern creek bank in the vicinity of the Playing Fields will be excavated to address potential flooding issues. Approximately 2400 m^2 of vegetation will be removed for this Flood Bypass. This vegetation includes trees planted following the development of the playing fields, approximately 15 years ago, and does not include any known threatened species. The area will be revegetated using native species present along other sections of Jordan's Creek and after completion, there will be:

- No net loss of riparian vegetation;
- No loss of connectivity along Jordan's Creek; and
- No barriers to fauna movement within this vegetation community.

A 30 m buffer zone is proposed to surround the freshwater lagoon located in the western portion of the subject land. The threatened species, Giant Barred Frog, was recorded within this lagoon.

The proposed buffer zone will be vegetated in zones to provide erosion control and will enhance the opportunities for the continued existence of this species on the property. A 10 m buffer zone is proposed along the western boundary. This buffer will be vegetated using known koala-preferred tree species, arranged in clumps to replicate natural occurrence; and will provide a connection between an isolated area of Primary Koala Habitat in the north-western portion of the property with the Secondary Koala Habitat along Jordan's Creek.

A strategy for the management of existing non-native plant species is proposed in the Vegetation Management Plan. This will include the removal of Camphor Laurel over a period of 5 years, management of Lantana along Jordan's Creek and the management of herbaceous weeds within the grassland areas. The applications of herbicide through either stem injection or painted onto any cut stem for smaller trees is the recommended technique for both Camphor Laurel and Lantana, with subsequent replanting with native species in the affected areas. The planting of strangler figs onto the lower forks of the Camphor Laurel after death will allow the figs to envelope the Camphor laurel trees over time, providing minimal disturbance to the soil. However, if removal of the Camphor Laurel is required, retaining the stump and root system will provide suitable erosion control measures. The physical removal of the Lantana from an infestation along Jordan's Creek is not recommended, but rather, allowing the growth of native species to colonise the area once the Lantana has been treated. The works proposed, materials and on-going maintenance will be provided by the ground staff of the Pacific Bay Resort with possible assistance from local community organisations such as Landcare.

6.13 WATER CYCLE MANAGEMENT

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6.11 WATER CYCLE MANAGEMENT

6.11.1 Integrated Water Cycle Management Plan

An Integrated Water Cycle Management Plan has been prepared for the development and a copy of this is included in Appendix 6.

It includes the following:

Potable Water

It is proposed that each new dwelling on the development site:

- Will be required to install rainwater tanks. The rainwater tanks will be connected for toilets, laundry and outdoor water supply. A rainwater tank of at least 3000 litres with mains water top up will be required to provide adequate supply to these water uses; and
- Will be required to provide in-dwelling water efficient fixtures with 6 star rating and 4 star rated toilets.

It is expected that the combination of water efficient fixtures and non potable supply to the remaining fixtures will reduce the demand on the potable water supply by greater than 40%.

Detention of Increased Runoff

Development of the site has the potential to increase the volume and peak flow rate of runoff from the site. To throttle this increase, it is proposed to provide a single precinct scale detention facility. This facility will be co-located on the playing field. The storage at this location (9250 m3) can be used to offset increases in runoff from the entire development, and areas not draining to the playing field will be discharged directly. The golf course located on the eastern side of the Pacific Highway abstracts water from the culvert under the highway. Thus it will be important to maintain existing conditions at this location.
To test the effectiveness of the single precinct scale detention facility, a DRAINS stormwater model was configured to simulate pre- and post-development flows. The 5, 20 and 100-year ARI design storm events were simulated. The model was configured to convey minor flows (20-year ARI) within the pipe network and flows exceeding that were conveyed above ground within the road network. A number of pipe sections passing between properties were designed to convey the full 100-year ARI event within the pipe network.
The results show that the available storage provided by the playing field is sufficient to throttle discharges for event up to and including the 100-year ARI event.

6.11.2 Impacts on Water Quality of Surface and Groundwater

Development of the site has the potential to increase the volume and peak flow rate of runoff from the site. To throttle this increase, it is proposed to provide a single precinct scale detention facility. This facility will be co-located on the playing field. The storage at this location (9250 m3) can be used to offset increases in runoff from the entire development, and areas not draining to the playing field will be discharged directly.

The golf course located on the eastern side of the Pacific Highway abstracts water from the culvert under the highway. Thus it will be important to maintain existing conditions at this location. To test the effectiveness of the single precinct scale detention facility, a DRAINS stormwater model was configured to simulate pre- and post-development flows. The 5, 20 and 100-year ARI design storm events were simulated.
The model was configured to convey minor flows (20-year ARI) within the pipe network and flows exceeding that were conveyed above ground within the road network. A number of pipe sections passing between properties were designed to convey the full 100-year ARI event within the pipe network.
The results listed below show that the available storage provided by the playing field is sufficient to throttle discharges for event up to and including the 100-year ARI event.

Table 1 Detention Modelling Results (Total Development Site Discharge)

Recurrence Interval (years ARI)	Entire Site Pre-Development Discharge. (m^3/sec)	Entire Site Post Development Discharge (m^3/sec)	Post Development Storage Used (m^3)
5	5.18	5.17	1800
20	7.50	6.76	3000
100	9.6	8.26	4500

6.14 TABLE 1 - WSUD REPORT APPENDIX 6

6.11.3 Stormwater Concept

A stormwater treatment train (hierarchy of treatment devices) has been selected based on the constraints, opportunities, likely pollutants, and pollutant sources, of the site. The following stormwater treatment devices are proposed for the site:

- Rainwater tanks with treated first flush devices;
- Gross pollutant traps; and
- Bio-retention swales.

The constraints of the site particularly the slope of the upper catchment limit the use of swales and other surface flow treatments.

To test the effectiveness of the strategy a MUSIC (Version 3.01) model was configured. MUSIC is a model for urban stormwater improvement conceptualisation. MUSIC simulates both quantity and quality of stormwater generated from catchments including urban, rural and forested land uses based on published research and data collected. MUSIC uses historical climate data to estimate the effectiveness of a stormwater quality treatment network and has options for the incorporation of a range of treatment devices, such as swales, bio-retention areas, wetlands, gross pollutant traps, sediment basins, ponds and filter strips.

The simulation results show that the proposed treatment train provides a removal efficiency of 49% for Total Nitrogen, an 67% reduction in Total Phosphorus and 95% reduction in Total Suspended Solids. Coffs Harbour Council indicated that they would be requiring a minimum of 45% reduction in TN & TP and a 90% reduction is TSS. These requirements can be met and exceeded by the proposed treatment train.

Groundwater was encountered during the geotechnical investigations on the site in both the hillslope and low lying areas. The geotechnical report recommended that the drainage on the hillslope be of good quality to ensure a minimum of water enters the ground. This was to reduce the risk of ground creep. Based on the geotechnical advice, the adopted drainage concept is to minimise charging of the ground with runoff and to

convey storm flows within a pit and pipe system. This will reduce the groundwater within the hillslope and reduce the risk of ground movement.

The proposed development will have minimal impact on the quality of groundwater as the drainage strategy aims to minimise the amount of rainfall and runoff entering the soil landscape.

The proposed development makes up less than 10% of the overall catchment draining to Jordan's Creek at the Pacific Highway. The proposed development consists of approximately 17Ha while the Catchment is 185Ha. A large portion of the catchment is unsuitable for urban development and hence is unlikely to be developed in the future. Based on this, it is unlikely that this development will have a major impact on the base flows within Jordan's Creek. It should also be noted that during the geotechnical investigation, the creek was flowing without any recent precipitation. This shows that the overall catchment produces sufficient ground water to maintain base flows within Jordan's Creek.

It is unlikely that the proposed development will have an impact on groundwater quantity or quality and hence is unlikely to have a detrimental impact on groundwater dependant ecosystems.

Wayne Hadaway of BUSHFIRESAFE (AUST) contacted Patrick Dwyer of the Department of Primary Industries (DPI), Glen Pullman of the Department of Water & Environment (DWE) and Nigel Cotsill of Coffs Harbour City Council regarding the proposed channel works in Jordan's Creek. These discussions took place in February 2009. The outcomes and requests from these discussions are detailed in the report in Appendix 6.

6.11.4 Maintenance and Management

Routine maintenance of the proposed infrastructure is required to minimise the potential for untreated stormwater discharging from the site. Maintenance requirements for the proposed stormwater management facilities at the site are:

- Rainwater tanks should be maintained by the lot owners in accordance with the manufacturers requirement;
- The Humeceptor GPT should be checked regularly at initial development stage, as there are higher levels of sediment and litter loads due to significant disturbance and the nature of the site construction. The unit should be checked at monthly intervals and immediately after significant rain events. Once the construction phase is completed routine maintenance should be subject to the manufacturer's guidelines. It is important that the GPT unit be maintained to minimise the incidence of failure due to debris reducing the effectiveness of the system. Utilising a maintenance log will assist in providing long term maintenance requirements;

- Maintenance of bio-retention devices is critical in ensuring that filtering capacity of the system will not be reduced. This will be primarily achieved by maintaining complete vegetation covering of the soil throughout the length or area of the system, and prevent conduct of activities that could compact the soil and limit the infiltration rate of water through it. Other maintenance works will include:

    - Watering, replanting and weeding to maintain vegetation cover especially during establishment;
    - Removal of litter and debris removal;
    - Routine inspection of inlet point, surcharge pits and field inlet pits;
    - Routine inspection and repairing any damage to the profile;
    - Removal and management of invasive plants;
    - Inspection after all storm events to verify that they are working as intended.
    - Removal of dead vegetation and replaced with plants of equivalent size and species;
    - Checking for channelling or erosion; and
    - Monitoring of ponding areas in the filter material
    - When necessary the top layer of the filter media can be removed and replaced.

A record of all maintenance checks for all stormwater controls on site should be kept. The maintenance record will also provides verification that maintenance procedures are being carried out and the maintenance report should include details of the following:

- The date of maintenance;
- The name of the persons performing the maintenance;
- Type of maintenance actions performed for each water quality device; and
- The state of the device including an estimate of the type and weight of litter removed and the amount of sediment captured where appropriate.

6.11.5 Conclusions

Findings were:

- A Council trunk water supply main is located along the western frontage of the site, adjacent to the Pacific Highway. There is an existing feeder main for the existing water reservoir, south of the proposed development. Lots should be satisfactorily serviced by the water supply main;
- The proposed development may necessitate the upgrade of a portion of the existing sewer facilities prior to obtaining Certificates of Occupancy, and will be required to make contributions to the future upgrades to the system.
- On advice from Country Energy, it is concluded that power supply to the site can be met; and

- Contact has been made with the telecommunications authority, Telstra, with respect to this development, and the intent to develop has been registered with Telstra Smart Community. GHD is awaiting written confirmation of Telstra's intent to pre-provide telecommunications network infrastructure for the proposed development.

In terms of Water Sensitive Urban Design, it is proposed that:

- Water efficient fixtures and non potable supply to the remaining fixtures will reduce the demand on the potable water supply by greater than 40%;
- Increased volume and peak flow rate of runoff from the developed site will be throttled by a single precinct scale detention facility. This facility will be co-located on the playing field. The storage at this location (9250 m3) can be used to offset increases in runoff from the entire development, and areas not draining to the playing field will be discharged directly. The effectiveness of this strategy has been tested using DRAINS stormwater modelling which showed that design criteria were met;
- To minimise the adverse impacts of construction activities on the surrounding environment, the contractor will be required to implement and maintain an Erosion and Sediment Control Plan as part of an overall Environmental Management Plan for the construction works. The Erosion and Sediment Control Plan will be prepared based on relevant Council and other statutory guidelines and submitted to Council for approval;
- A stormwater treatment train (hierarchy of treatment devices) has been selected based on the constraints, opportunities, likely pollutants, and pollutant sources, of the site. Stormwater treatment devices proposed for the site include rainwater tanks with treated first flush devices, gross pollutant traps and bio-retention swales. To test the effectiveness of the strategy a MUSIC (Version 3.01) model was configured, which showed that the proposed treatment train provides a removal efficiency of 49% for Total Nitrogen, an 67% reduction in Total Phosphorus and 95% reduction in Total Suspended Solids satisfying Coffs Harbour Council requirements.

6.12 WATERCOURSES

6.12.1 Liaison with DNR and DPI

Liaison was carried out with DNR and DPI during the preparation of this report and the details of this are included in the Flora and Fauna Report in Appendix 7.

6.12.2 Water Management in Watercourses

In order to maintain water quality downstream from Jordan's Creek, an erosion control management plan will be prepared and implemented for the work during the development stages.

6.12.3 Passage of Fish

A crossing of Jordan's Creek is located on the southern aspect of the subject property and a culvert has been put in place for the flow of water and fish passage. The eastern side of the culvert showed reduced opportunity for fish passage and a fish blockage with a waterfall effect, further investigation of Jordan's Creek identified rocky outcrops at a number of locations along the creek, which allows for changes to the elevation of the creek bed in some cases up to 500mm lower.

6.14 WATER COURSES

Any future crossing of Jordan's Creek will be constructed so there is no disturbance of the creek and any proposal to cross Jordan's Creek that impacts on the creek will be subject to a comprehensive Aquatic study to address the crossing and the fish passage. Since the construction of the existing crossing, a pond has established on the western aspect, which currently is a habitat for various species including the endangered Giant Barred Frog which has been identified within the pond. The water quality was assessed visually and appeared to be in a healthy state with no sightings of Gambusia (mosquito fish) present.

There is a culvert at the western portion of the creek, which forms the eastern wall of the lagoon. Due to the drastic changes in elevation (>1m) from the lagoon to the remainder of the creek within the property fish passage would not be achievable. However any culvert constructed as part of the proposed collector road would require to address fish passage too and beyond the crossing. It is proposed that any future road crossing should avoid any disturbance within the creek or banks and span the creek.

6.13 HAZARD MANAGEMENT AND MITIGATION

6.13.1 Bushfire Protection

A Bushfire Risk Management Plan has been prepared for the development and a copy of this is included in Appendix 9.

The Bushfire Risk Assessment was conducted through an on-site inspection undertaken in February, 2008 and using the methodology set out in Planning for Bushfire Protection manual (RFS,2006). The on-site assessment included traversing the subject property and all lands within 140 metres from the proposed subdivision.
The Property inspection identified areas of Forest, Rainforest and Grassland as bushfire prone vegetation within 140m of the proposed development. The terrain over most of the subject property is undulating, rising steeply away from the creek (>18° from the Jordan's Creek floodplain to the upper hill slopes).

Asset Protection Zones (APZ's)

The bushfire prone vegetation occurring over the subject property was identified as being Forest or Rainforest. Using this information, this bushfire risk assessment concluded that the following asset protection zones should be established:

Bushfire Prone Vegetation	Aspect	APZ (m)	IPA (m)	OPA (m)	Compliance with PBP
Eastern Precinct					
Forest	W	20	15	5	Yes
Riparian Rainforest	S	10	10	0	Yes
Western Precinct					
Forest (main area)	E	20	15	5	Yes
Forest (isolated)	W	20	15	5	Yes
	N	20	10	10	Yes
Forest (Jordan's Creek)	S	20	10	10	Yes
Southern Precinct					
Riparian Rainforest	N	10	10	0	Yes
	E	10	10	0	Yes
	S	10	10	0	Yes

The required Asset Protection Zones from: the Riparian Rainforest community; and the Coastal Wetland Lagoon are exceeded by the development buffer zones required from these ecologically significant areas and hence, portions of the required APZs are incorporated within the required environmental set back.

Bush Fire Attack Categories

Using the above designated APZs the proposed dwellings are assessed as being within the following Bushfire Attack categories:

Eastern Precinct

- Forest as the assessed bushfire prone vegetation (depending upon aspect);
- 0 - <5° down slope as the effective slope having the most impact of any bushfire behaviour.

Dwelling distance from Forest Vegetation Bush Fire Attack Category

20 – 31m	Extreme
31 – 42m	High
42 – 100 m	Medium
> 100 m	Low

Dwelling distance from Rainforest Vegetation Bush Fire Attack Category

10 – 14m	Extreme
14 – 20m	High
20 – 50m	Medium
> 50m	Low

Dwelling distance from Forest Vegetation Bush Fire Attack Category

20 – 31m	Extreme
31 – 42m	High
42 – 100 m	Medium
> 100 m	Low

Southern Precinct

- Rainforest as the assessed bushfire prone vegetation; and
- 0 - <5° down slope as the effective slope influencing bushfire behaviour towards the development.

Dwelling distance from Rainforest Vegetation Bush Fire Attack Category

10 – 14m	Extreme
14 – 20m	High
20 – 50m	Medium
> 50m	Low

Access

Access to the development is proposed to be via a two-way, bitumen-surfaced perimeter road connecting the Eastern Precinct of the development with Bruxner Park Road to the north. A perimeter road is proposed in the Concept Plan for the allotments within the Southern Precinct. This perimeter road will connect with West Korora Road to the south. A future possible link will be created with the Eastern Precinct using a crossing over Jordan's Creek, which does not form part of this application. Access to individual allotments will be via constructed driveways from either the perimeter road or internal, interconnecting roads. Most driveways will be short (<10 m) in length, hard (all weather) surfaced and will provide sufficient access for fire fighting vehicles. Special considerations will be given to the dwellings of the Hilltop Precinct and consideration should be given to the following requirements for access to the proposed development as outlined in the Planning for Bushfire Protection manual (RFS, 2006):

Services

There will be a reticulated water supply to the property. The water supply to this subdivision must use a ring main system with the perimeter road. The fire hydrant spacing, sizing and pressure of this reticulated water supply must comply with AS 2419.1 (2005). Fire hydrants are not located on any carriage way. All above ground water and gas service pipes are metal, including and up to any outside taps.
Where possible electrical transmission lines should be underground; where overhead electrical transmission lines are installed, lines should be installed with short pole spacing, unless crossing gullies, gorges or riparian areas. No part of a tree should be closer to a power line than the distance set by the appropriate authority. Regular inspection of lines is required to ensure they are not fouled by branches.

Construction Standards

The bushfire risk management assessment undertaken in relation to the proposed subdivision concluded that the construction standard in accordance with AS 3959 (1999) Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2001) will be assessed and nominated when development applications are submitted for the construction of dwellings on the approved allotments.

The proposed development will comply with the minimum requirements for:

1). Asset Protection Zones detailed in Table A2.5 Minimum Specifications for Asset Protection Zones for Residential and Rural Residential Subdivision Purposes (for class 1 & 2 buildings) in FDI 80 Fire Areas in the Planning for Bushfire Protection manual (RFS, 2006); and

2) Access in accordance with section 4.1.3-2 (Property Access) in the Planning for Bushfire Protection manual (RFS, 2006).

6.13.2 Flooding

Detailed flooding studies have been carried out for the development and development will not take place in those areas of the site which are likely to be subject to flooding. The flood modelling for the developed conditions was undertaken for the proposed development which does not include a bridge over Jordan's Creek.
It was concluded that:

- The updated and modified TUFLOW model was simulated to provide a baseline of the 100-year ARI event to define flood extents, depths, levels, velocity and hazard.

The findings were:

- The site in its pre-developed state experiences flooding during a 100-year ARI event. Areas that are submerged include the playing field (up to 1 m flow depth), the location of the proposed lots to the East of the playing field (up to approximately 0.5 m flow

depth), and the location of the proposed lots on the southern side of Jordan's Creek (up to approximately 1.5m flow depth). Flow velocities (in the order of 3 m/s) are experienced on the playing field, at several locations along Jordan's Creek, and at the location of the proposed lots on the southern side of Jordan's Creek; and

- With the development and associated channel excavation, local flood level increases of between 0.075 and 0.1 m occur at the southern bank of Jordans Creek, adjacent to the site boundary. This is due to filling in the development area. However, as the bank is steep at this location the associated change in flood extent is minimal. In the post-development state some areas (such as the Caravan Park to the east of the development) are less inundated as the drainage path from the north will be routed through the playing field detention basin. Parts of the Caravan Park can be seen to experience flood level increases that are less than 0.02 m and these are generally considered within the modellingaccuracy. The proposed lots are above the 100-year ARI event flood levels.

- With the development and associated channel excavation flow velocities are experienced on the playing field (up to 0.5m/s), and at several locations along Jordans Creek (up to 3m/s). The flow velocities on the playing field are reduced by up to 2.5 m/s as compared to the existing case. The flow velocities along Jordan's creek are similar for the developed and existing cases, except at the South- West corner of the playing field where velocities are increased by up to 1 m/s due tothe development; and

- Routine maintenance of the proposed infrastructure is required to minimise the potential for untreated stormwater discharging from the site. A number of maintenance recommendations are offered in the report.

- A separate assessment with the bridge showed that it would lead to local increase in flooding levels by less than 600 mm compared to existing conditions. However these would be contained within the development's site boundary and would be highly dependend on the final bridge design parameters.

In summary, it is believed the site can be adequately serviced and stormwater quality, quantity and flooding can be managed to satisfy the requirements of Coffs Harbour City Council and the Floodplan Development Manual.

There is no impact on water levels upstream of the Pacific Highway as a result of sea level rise that may occur over the predicted range. The design water level on the downstream side of the Pacific Highway is approximately RL 11.5m AHD. This is less than one kilometre from the outlet of Jordan's Creek into the Pacific Ocean. The effect of the rise in sea level would be absorbed within the lower reaches of the creek and have no effect on the western side of the Pacific Highway.

6.13.3 Contamination

A Remedial Action Plan has been prepared for the development proposal and a copy is included in Appendix 5.

The following is a summary of the assessment:

- The concentration of contaminants assessed at Lot 23 DP 716144 were less than the relevant guidelines for residential developments;
- Thirteen soil samples from Lot 5 DP 820652 contained concentrations of arsenic greater than the relevant guidelines;
- Soil sample AD from Lot 5 DP 820652 contained concentrations of copper greater than the relevant guidelines;
- Concentrations of all other contaminants assessed were less than the relevant guidelines;
- A remediation strategy was prepared that indicates that vertical mixing to a depth of 300-350 mm will effectively reduce the arsenic concentrations to levels less than the relevant guidelines in all but sample location AQ.
- It was proposed that the contamination at location AQ be defined by further sampling and analysis. The contaminated soil is to then be removed and encapsulated at a suitable depth below roadworks. It is estimated that 300m3 of soil will need to be encapsulated; and
- Similarly, it was recommended that the soil with elevated copper concentrations should be further defined and subsequently encapsulated as above. A similar quantity of soil may be involved.

The following work will be completed prior to construction:

- The further sampling and analysis of the areas surrounding locations AQ and AD
- Remediation via vertical mixing and encapsulation and
- Validation of the remediation.

6.13.4 Acid Sulphate Soils

The contamination report (Appendix 4) stated that the site contains Class 5 acid sulphate soils. According to Coffs Harbour City Local Environmental Plan (2000), works within Class 5 must not be carried out within 500 metres of adjacent Class 1, 2, 3 or 4 land which are likely to lower the watertable below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land. The proposal will not lower the water table below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land and therefore acid sulphate soils are not anticipated to be an issue in regards to planning approval and development of the site.

6.13.5 Geotechnical and Land Stability

A Geotechnical Study has been carried out for the development and a copy of this is included in Appendix 3. The report concluded that the site could be developed for residential purposes and provided considerations for design and construction on the site. Detailed geotechnical reports will be prepared prior to the construction of dwellings on the site. The report included the following guidance for house construction on the site and this will be included in the Design Guidelines for the site:

	GOOD ENGINEERING PRACTICE	*POOR ENGINEERING PRACTICE*
ADVICE		
GEOTECHNICAL ASSESSMENT	Obtain advice from a qualified, experienced geotechnical consultant at early stage of planning and before site works.	Prepare detailed plan and start site works before geotechnical advice.
PLANNING		
SITE PLANNING	Having obtained geotechnical advice, plan the development with the risk arising from the identified hazards and consequences in mind.	Plan development without regard for the Risk.
DESIGN AND CONSTRUCTION		
HOUSE DESIGN	Use flexible structures which incorporate properly designed brickwork, timber or steel frames, timber or panel cladding. Consider use of split levels. Use decks for recreational areas where appropriate.	Floor plans which require extensive cutting and filling. Movement intolerant structures.
SITE CLEARING	Retain natural vegetation wherever practicable.	Indiscriminately clear the site.
ACCESS & DRIVEWAYS	Satisfy requirements below for cuts, fills, retaining walls and drainage. Council specifications for grades may need to be modified. Driveways and parking areas may need to be fully supported on piers.	Excavate and fill for site access before geotechnical advice.
EARTHWORKS	Retain natural contours wherever possible.	Indiscriminant bulk earthworks.
CUTS	Minimise depth. Support with engineered retaining walls or batter to appropriate slope. Provide drainage measures and erosion control.	Large scale cuts and benching. Unsupported cuts. Ignore drainage requirements
FILLS	Minimise height. Strip vegetation and topsoil and key into natural slopes prior to filling. Use clean fill materials and compact to engineering standards. Batter to appropriate slope or support with engineered retaining wall. Provide surface drainage and appropriate subsurface drainage.	Loose or poorly compacted fill, which if it fails, may flow a considerable distance including onto property below. Block natural drainage lines. Fill over existing vegetation and topsoil. Include stumps, trees, vegetation, topsoil, boulders, building rubble etc in fill.
ROCK OUTCROPS & BOULDERS	Remove or stabilise boulders which may have unacceptable risk. Support rock faces where necessary.	Disturb or undercut detached blocks or boulders.
RETAINING WALLS	Engineer design to resist applied soil and water forces. Found on rock where practicable. Provide subsurface drainage within wall backfill and surface drainage on slope above. Construct wall as soon as possible after cut/fill operation.	Construct a structurally inadequate wall such as sandstone flagging, brick or unreinforced blockwork. Lack of subsurface drains and weepholes.
FOOTINGS	Found within rock where practicable. Use rows of piers or strip footings oriented up and down slope. Design for lateral creep pressures if necessary. Backfill footing excavations to exclude ingress of surface water.	Found on topsoil, loose fill, detached boulders or undercut cliffs.
SWIMMING POOLS	Engineer designed. Support on piers to rock where practicable. Provide with under-drainage and gravity drain outlet where practicable. Design for high soil pressures which may develop on uphill side whilst there may be little or no lateral support on downhill side.	
DRAINAGE SURFACE	Provide at tops of cut and fill slopes. Discharge to street drainage or natural water courses. Provide general falls to prevent blockage by siltation and incorporate silt traps. Line to minimise infiltration and make flexible where possible. Special structures to dissipate energy at changes of slope and/or direction.	Discharge at top of fills and cuts. Allow water to pond on bench areas.
SUBSURFACE	Provide filter around subsurface drain. Provide drain behind retaining walls. Use flexible pipelines with access for maintenance. Prevent inflow of surface water.	Discharge roof runoff into absorption trenches.
SEPTIC & SULLAGE	Usually requires pump-out or mains sewer systems; absorption trenches may be possible in some areas if risk is acceptable. Storage tanks should be water-tight and adequately founded.	Discharge sullage directly onto and into slopes. Use absorption trenches without consideration of landslide risk.
EROSION CONTROL & LANDSCAPING	Control erosion as this may lead to instability. Revegetate cleared area.	Failure to observe earthworks and drainage recommendations when landscaping.
DRAWINGS AND SITE VISITS DURING CONSTRUCTION		
DRAWINGS	Building Application drawings should be viewed by geotechnical consultant	
SITE VISITS	Site Visits by consultant may be appropriate during construction/	
INSPECTION AND MAINTENANCE BY OWNER		
OWNER'S RESPONSIBILITY	Clean drainage systems; repair broken joints in drains and leaks in supply pipes. Where structural distress is evident see advice. If seepage observed, determine causes or seek advice on consequences.	

6.13.6 Climate Change

The issues relating to climate change and its impact on the site have been addressed in the Flooding Report in Appendix 6. Further, it is considered that the major objectives in relation to climate change as set out in the NSW Draft Sea Level Rise Statement are satisfied by the proposed development.

6.14 NOISE

6.14.1 Road Traffic Noise

A Traffic Noise Intrusion Assessment was carried out of the proposed development of the site. A copy of this is included in Appendix 13 to this report. This was looked at in relation to noise from the existing Pacific Highway route and from the proposed new route for the highway. The study found that there would be noise impacts on some sites in the development area but that these could be mitigated through architectural treatment of the dwellings.

6.14.2 Mitigation Measures

Appropriate site planning, building design, and the use of insulation and sound absorbing materials in building construction will be utilised as outlined below for any proposed residences fronting any of the surrounding roadways. The following building processes and ways to design a house to mitigate road traffic related noise intrusion will be implemented.

Building materials, which insulate or absorb sound in the floors, walls, ceilings and roofs is another way of keeping traffic noise out of the home. For example, adding thermal insulation to the ceiling can reduce noise levels by 7 to 8 decibels.

The construction categories applicable to residential buildings exposed to different external traffic noise levels (LAeq,T) are shown below:

Table 7-1 Construction categories required to achieve indoor sound levels recommended as satisfactory in AS2107.

Type of Building	Category	Traffic Noise Level ($L_{Aeq,T}$) [dB(A)]	Definition of Construction Category
Residential buildings (private houses, hotels)	1	$L_{Aeq,T} \leq 45$	Standard construction; Openings, including open windows and doors may comprise up to 10% of the exposed façade.
	2	$45 < L_{Aeq,T} \leq 60$	Standard construction, except for lightweight elements such as plasterboard or metal cladding or all-glass façades. Windows, doors and other openings must be closed.
	3	$60 < L_{Aeq,T} \leq 75$	Special construction, chosen in accordance with AS3671 componen: selection derivations. Windows, doors and other openings must be closed.
	4*	$L_{Aeq,T} > 75$	Detailed and specialist acoustic advice to be sought.

Notes: * Category 4 is not applicable as the predicted received noise levels are less than 75 dB $L_{Aeq,T}$

6.15 TABLE 7-1 - NOISE INTRUSION ASSESSMENT APPENDIX 13

Construction Categories Required to Achieve Indoor Sound Levels Recommended as Satisfactory in AS2107.

Category 1:

External Walls

- Conventional timber stud-framed walls, clad externally with 9mm thick-timber or hard boards or flat cellulose-cement sheets, and internally lined with 10mm thick plasterboard or 6mm thick hardboard; or
- As above, plus cavity filled with mineral wool, or weatherboards backed by 12mm thick wood fibreboard, or similar;

Ceiling/Roof systems

- Pitched roof clad with tiles, or 0.5mm corrugated galvanised iron or 6mm corrugated cellulose-cement over 100 gypsum plasterboard, or similar; or
- Flat 0.6mm galvanized steel tough roofing, attached to the same timber framework and about 150mm above, the same ceiling as above;

External Windows

- Typically single glazing 4 – 6mm thickness, or similar;

External Doors

- Solid-core approximately 35mm thick plywood door with appropriate acoustic seals around sides, top and base, or similar.

Category 2:

External Walls

- Double-skin (cavity) clay brick wall, 270 mm thick in which the wall space is ventilated by connection with sub-floor vents; Upper part of internal wall sheeting is exposed to, and penetrated by upper wall vents leading to, the eaves space, or similar

Ceiling/Roof systems

- As for Category 1 above, but with ceiling of two layers of gypsum plaster board, or similar; or
- Pitched tiled roof and ceiling as for Category 1, plus 2-sided aluminium foil over rafters, or similar;

External Windows

- Appropriate double glazing system or 10-14 mm thick single glazing;

External Doors

- Solid-core approximately 35 mm thick plywood door with appropriate acoustic seals around sides, top and base, or similar.

Category 3:

External Walls

- 220 mm cavity brick wall of two leaves of 90 mm extruded perforated modular bricks with a 40 mm cavity, overall thickness 220 mm, surface density 310 kg/, or similar; or
- Single-leaf wall of 230 mm x 110 mm x 76 mm rendered 13 mm both sides, overall thickness 140 mm, surface density 230kg/m^2 or similar, or
- Poured dense concrete, 100 mm thick, or similar;

Ceiling/Roof systems

- As for Category 2 above, plus 50 mm, 12kg/m^2 glass fibre blanket between ceiling joists, or similar;
- As for option 2 of Category 1, plus 75 mm thick 85 kg/m3 mineral wool batts, or 100 mm thick 45 kg/m3 cellulose fibre fluff between ceiling joists, or similar;

External Windows

- Appropriate double glazing system;

External Doors

- Solid-core approximately 42mm thick plywood door with appropriate acoustic seals around sides, top and base, or similar

These nose requirements for the site have been included in the Design Guidelines for the site and all dwellings will need to be designed to comply with the provisions of the Guidelines in relation to acoustic design.

6.15 INFRASTRUCTURE AND SERVICES

6.15.1 Water

A detailed report on the provision of services and infrastructure to the site has been prepared by GHD and is included in Appendix 6.

Council trunk water supply mains are located along the western frontage of the site, adjacent to the Pacific Highway. There is an existing feeder main for the existing water reservoir on Lot 3, DP 596492, south of the proposed development. Lot 5, DP 820652 and Lot 23, DP 716144 should be satisfactorily serviced by the water supply main. The water reticulation will be designed to provide water service to all allotments and will be looped for security of supply and optimization of flows and pressure. The internal mains will be linked to the trunk main at locations determined by Coffs Harbour City Council. Fire hydrants will be located at appropriate intervals to give the allotments coverage from a distance of 60 metres from any one hydrant. Control valving will be planned to enable main shutdown of discrete areas with minimum impact on adjacent areas. Scour valves (or hydrants) will be placed at the end point of any dead end legs and at the low points of the mains, to maintain clean water supply conditions.

Final sizing of the internal water main network and trunk main will be undertaken during the detailed design for each stage and after confirmation from Council as to their preferred connection point to the reticulation system, and details of their proposed augmentation of the existing reticulation system.

Pressure and flow calculations for domestic and fire fighting purposes will be undertaken across the site, in order to determine pipe sizing.

6.15.2 Gas

No gas will be supplied to the site.

6.15.3 Sewerage

From the 'Coffs Harbour and Sawtell Sewerage Augmentation Options Report' (SKM 1998), a number of the sewer pump stations in the immediate area of the site are currently under-capacity. Therefore, the proposed development may necessitate the upgrade of a portion of the existing facilities prior to obtaining Certificates of Occupancy, and will be required to make contributions to the future upgrades to the system. The internal sewer reticulation will consist of 150mm gravity mains that will be designed to service all allotments and connect into the existing reticulation network at locations to be determined by Coffs Harbour City Council.

6.15.4 Electricity

After consultation in regards to power supply, Country Energy have provided the following written response:

> *"Country Energy wishes to advise that satisfactory Country Energy infrastructure exists to cater for the above subdivision. This advice is subject to the following condition:*
>
> > *As the magnitude of the electrical load and the nature of the development proposed for occupation on the newly created allotments is not known at this time, all connection costs associated with providing adequate capacity to each allotment will be determined when your subdivision application is received."*

It is thus concluded that power supply to the site can be met.

6.15.5 Telecommunications

Contact has been made with the telecommunications authority, Telstra, with respect to this development, and the intent to develop has been registered with Telstra Smart Community, Registration # 12023529. Written confirmation of Telstra's intent to pre-provide telecommunications network infrastructure for the proposed development is awaited.

6.15.6 Waste Disposal

The development will be designed to comply with all Council requirements in relation to the disposal of waste from the site. A Waste Management Plan will be prepared for the site prior to the occupation of any of the lots.

6.15.7 Impacts on Community Services

Coffs Harbour Council has very detailed planning arrangements in relation to the provision of social and community services in the local government area. These studies have shown that there should be sufficient capacity available to provide for the development of this area.

However, the matter has been studied in further detail as part of the preparation of the Local Environmental Study for the North Coffs Release Area. As a result of the findings of this study a detailed S94 Contributions Plan is being prepared for this area. The developers of this site will implement the provisions of this S94 plan as provided for in the commitments in S9 of this report.

6.16 PLANNING AGREEMENTS AND DEVELOPER CONTRIBUTIONS

As set out above, Coffs Harbour Council is preparing a detailed S94 Contributions Plan for the North Coffs Release Area. This plan includes the site. The information in relation to the development proposals for this site has been given to the council and their planning consultants and this will be included in the S94 Plan. The developer of the site has undertaken to comply with the requirements of this S94 Plan in relation to the payment of contributions for infrastructure and services relating from the development of this site.
As a result of the above it is considered that a Planning Agreement is not required for the site.

6.17 HERITAGE

6.17.1 Significance for Aboriginal Cultural Heritage

An Archaeological Study has been carried out of the site and is included in Appendix 10.

A detailed survey was carried out of the site as part of the study. The results were as predicted, primarily because of the extent to which those areas in which sites were most likely to occur had been disturbed, firstly by logging, and then by clearing, then by banana plantations, ploughing or harrowing, and more recently by grazing.

It is also highly unlikely that if Aboriginal people used the area in the past that their activities would have left any material evidence. Not only was there no stone suitable for napping in the survey area, but there were few places suitable for camp sites. Perhaps the only place where people might have gone, primarily because of its vantage point, was the summit of the central ridge. From there it might have been possible to observe both human and animal activity along the coastal strip; although it is more likely that the ridge supported a tall eucalypt forest and that the trees obscured the view. Prior to the mid-Holocene (pre 5000 years ago) the shoreline would have been within a hundred metres of the survey area and so it is possible that the eastern edge of the survey area was in a far more advantageous position that at present and that the ridge may have been a headland. However, there has been significant disturbance from logging, clearing of woodland, stump removal, banana plantation activities, and more recently, a new cycle of plantation clearing and levelling. It is therefore extremely unlikely that if any art factual material is present, that is either in its depositional context, or that it is visible.

No sites were recorded and no salvage is required.
In this instance, the representatives of Coffs Harbour & District LALC, Gunbular Julipi Elders, and Bagawa Birra Murri Aboriginal Corporation, were agreed that there were no known cultural associations with the survey area, and that there were no cultural constraints to the proposed development.

The report recommended that as a result of the investigation, there are no constraints on either cultural or archaeological grounds to the

proposed subdivision of the property comprising Pacific Bay Western Land. However, the proponents were advised that they should be mindful that they are legally obliged to comply with the following provisions of the National Parks and Wildlife Act 1974 (as amended), which state that:

The owners, and their employees, earth moving contractors, subcontractors, machine operators and their representatives, whether working in the survey area or elsewhere, should be instructed that in the event of any bone or stone artefacts, or discrete distributions of shell, or any objects of cultural association, being unearthed during earth moving, work should cease immediately in the area of the find. In the event that any bone cannot be clearly identified by a qualified archaeologist as being of animal remains the police are to be informed of its discovery, and officials and/or their representatives of the Coffs Harbour & District Local Aboriginal Land Council, Gunbular Julipi Elders, Bagawa Birra Murri Aboriginal Corporation, and DECC advised that the bone is subject to police investigation.

Work should not recommence in the area of the find, until both the police (if bone has been found) and those officials or representatives have given their permission to do so.

6.17.2 Items of European Heritage

There are no items of European heritage on, or adjacent to the site.

6.18 OWNERS CONSENT AND SUBDIVISION MANAGEMENT

Owners consent has been granted for the development proposals. The land owner is Pacific Bay Developments Pty Ltd.

6.18.1 Land Parcels

The Project Application proposes a number of areas including housing lots, open space, parkland and environmentally sensitive land. It is proposed that a Community Association will be established under the Community Land Development Act, 1989 to assist with the maintenance and upkeep of such areas. Ownership structures proposed will be as follows:

- Open space, including the oval will be handed over to Council after an agreed maintenance period.
- Playgrounds and other green spaces will be gifted to Council and maintained by the Association for an agreed period.
- Ownership of environmental protection land (7A) will be handed to Council once rehabilitation works contained in the Vegetation Plan of Management are complete. Terms and conditions will need to be agreed between Council and the proponent in order to ensure a successful plan of management is in place to ensure bushfire buffer zones are maintained that may be within the Part 7A areas.

- Roads and services infrastructure will be completed by the proponent and handed over to Council for on going maintenance.
- Individual lots will be torrents title with lot owners obligated to contribute to costs for areas to be maintained, including repairs, maintenance, landscaping etc. of all other areas throughout the precinct

6.18.2 Pedestrian Underpass

The ownership of the pedestrian underpass is unknown. However, it was constructed by the developers of the Pacific Bay Resort. Pacific Bay Developments Pty Ltd. intends that it remain open to provide access for the future residents to the facilities at Pacific Bay and the beach.

6.19 CONSULTATION

6.19.1 Groups Consulted

During the preparation of this EAR detailed discussions were held with the Department of Planning and Coffs Harbour Council in relation to the proposals for the site and the process for the approval of the rezoning of the site and the project application. Further, the individual consultants who were preparing the various studies liaised with the relevant Government authorities during the completion of their work. Those consulted included:

- Coffs Harbour City Council in relation to subdivision, road layout, traffic, flooding, WSUD, services, biodiversity, contaminated lands
- Coffs Harbour City Council Parks Department in relation to the visual and landscape report
- County Energy in relation to services
- Department of Environment & Climate Change
- Department of Water and Energy
- Northern Rivers Catchment Management Authority
- Road and Traffic Authority (RTA)
- Telstra

6.16 THE OVAL

6.19.2 Public Consultation

Although no formal public consultation exercise took place during the development of the application, informal discussions were held with neighbouring residents and businesses.

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7. JUSTIFICATION FOR THE PROPOSAL

7.1 NEED FOR THE PROJECT

The subject site has been identified as having potential for urban development for many years. It was originally considered that the site could be developed for large lot rural residential development but subsequent to this the site was included in the North Coffs Release Area. This release area was identified as a result of detailed study and planning exercises carried out by the Coffs Harbour Council which culminated in the production of the Coffs Harbour Settlement Strategy. The New South Wales Government has endorsed this Strategy in so far as it relates to this site.

It is concluded that the Settlement Strategy identified land for the future growth of the Coffs Harbour urban area and that this site was identified as one which would provide land for future development for residential purposes. This conclusion was based on detailed studies of the physical, environmental , social and economic issues associated with the future expansion of the urban area.

6.17 THE CENTRAL PARK LAND

As a result of the above it can be concluded that the proposed residential development of this site is needed in the area as it will provide for the range of housing needed in the next 30 years in the area. The specific physical characteristics of the site and its location in relation to the existing Pacific Bay Resort and the residential development which has been approved there has indicated the type of residential development which should take place on this site. There has been a large amount of medium and high density development approved on the adjacent site and much of this has not as yet been constructed. As a result it would seem appropriate to add to the range of accommodation available by developing low-density dwellings on this site. Further, the steep topography of the site is better suited to a lower density. The extensive landscaping, which has been proposed on the site will ensure that the development of a maximum of 2 storey dwellings, will not have adverse visual impacts on the escarpment in this area.

7.2 CONSEQUENCES OF NOT PROCEEDING

If this development were not to proceed then there would eventually be a shortage of housing accommodation in the Coffs Harbour area. Further, the proposal for the site provides for the significant regeneration and improvement of a significant area of important vegetation on the site which will be available for public access in the future. This rehabilitation of these areas will add to the environmentally important areas in the Coffs Harbour area.

This development has been designed on the basis of the principles of sustainable development and as such will provide a show case for future development in the area.

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8. PLANNING ASSESSMENT OF THE PROPOSAL

8.1 COMPLIANCE WITH PLANNING CONTROLS

A detailed assessment has been carried out of the compliance of the proposed concept plan with the planning controls applying to the site. This is included in Appendix 15. It shows that the proposal either complies or can comply with all the controls. The assessment has been prepared on the basis that the site has been rezoned as proposed in S3.5.5 of this report.

8.2 ENVIRONMENTAL IMPACTS

The likely impacts of the project application have been assessed in this Environmental Assessment Report and it has been concluded that there will be no adverse impacts on the environment as a result of the development. In fact there will be positive impacts in relation to the protection and improvement of the significant vegetated areas on the site. The conclusions in relation to environmental issues are as follows:

Design, Visual and Amenity

The development will be constructed to the highest standards of design and the proposals have adopted the principles of sustainability both in relation to the layout of the site and the future design of the buildings.
A Landscape Master Plan has been prepared for the proposal, which will provide for landscaping which will soften the built form and contribute to the overall setting of the proposal. The landscaping will be carried out in distinct zones related to the natural features of the site. The 7A area and the area along the highway are the main elements in the setting for the development.
Although the development will have some visual impact it will be seen in the context of the landscaping on the site and the green escarpment behind. There will not be any blocking of views of the beach and the water from public viewpoints around the site.

Flora and Fauna

The proposal will not result in any loss of native vegetation and no threatened species will be impacts on by the proposals. A Management Plan has been prepared to provide for the revegetation and on going management of the 7A area on the site.

The desired outcomes of the plan are:

- To ensure that future development is consistent with relevant legislation, policies and guidelines;
- To address community concerns regarding the maintenance of biodiversity of the Coffs Harbour region;
- To rehabilitate and protect the vegetation along a creek line traversing the subject land and;
- To conserve areas previously identified as warranting Zone 7(a) Environmental Protection 'Habitat and Catchment' and 7(b) Environmental Protection 'Scenic Buffer' under the Coffs Harbour Local Environment Plan (LEP).

Natural Hazards

A Bushfire Risk Management Plan has been prepared for the development of the site and it concludes that the development can be safely carried out on the site and that it complies with the requirements for Asset Protection Zones and that access is in accordance with the requirements in Planning for Bushfire Protection 2006.

There are no acid sulphate soils on the site and the site is considered to be suitable for the proposed development in terms of contamination issues.

Noise

The only sources of noise likely for the development are traffic on the Pacific Highway and the revised route for the highway. It has been concluded that construction measures can be adopted to deal with these matters.

Integrated Water Cycle Management

A system of Integrated Water Cycle Management has been proposed for the site and this will utilise the principles of water sensitive urban design within an holistic framework. To reduce the impacts of the development on all parts of the water cycle. The major aspects of the water cycle that are considered within the strategy include:

- Stormwater;
- Groundwater;
- Potable Water Demand (from the Coffs Harbour reticulated supply);
- Wastewater generation;
- Water Conservation; and
- Water Quality.

The strategy provides for the incorporation of detention basins, rainwater tanks, buffers and gross pollutant trap into the design. The incorporation of these treatment devices will ensure that there is no increase in pollutant export from the site as a result of the development. As a result there will be no additional impacts on the Solitary Islands Marine Park as a result of the proposal.

Traffic and Access

Entry to the site is provided at two locations. One is from Bruxner Park Road and one from West Korora Road. The main access will be from Bruxner Park Road as most of the roads within the internal road network are linked to that access road. It is assumed that 70% of the traffic will use Bruxner Park Road and 30% will use West Korora Road.

The proposed development is mainly expected to impact on the access intersections with the Pacific Highway, notably Bruxner Park Road and West Korora Road. The analyses show that the existing intersections will not operate satisfactorily if the existing intersection controls are to remain the same.

With the yield/give way intersection control currently operating at the intersection of Bruxner Park Road with the Pacific Highway, the existing traffic volumes (albeit very minimal) at the intersection are already experiencing considerable delays in finding gaps to enter the traffic flow along the Pacific Highway. Traffic volumes along the Pacific Highway are already considered high in terms of the nominal capacity provided by the highway. It is concluded that in order for the intersection to accommodate future traffic from the proposed development, it will be necessary introduce improvements to the intersection control by signalisation.

Following advice from Council, it is anticipated that West Korora Road will also serve as main access for the North Coffs Release Area. This area is comprised of a total of 34 hectares for the proposed development located south along West Korora Road and including the 7.7 hectares of the Big Banana site. Information provided by Council indicated that an estimate of approximately 340 lots will have to be serviced by the West Korora Road.
As no time frame for the development has been provided, it is assumed for the purpose of this assessment that full development of this area is likely to occur by 2015. For this scale of development, assuming all 340 lots are single-detached residential units, the associated peak hour traffic translates to an additional 289 vehicle-trips.

With the anticipated traffic from the development of the Pacific Bay Western Lands and the additional traffic from the North Coffs release, the option tested for intersection operational performance provided a continuous slip lane on West Korora Road turning left at the Pacific Highway and a 100 m turn slot exit lane to provide sufficient distance for merging. The results showed that this intersection configuration will operate satisfactorily even with the additional traffic.

Infrastructure Provision

Studies have shown that infrastructure can be satisfactorily provided to the site.

Heritage

There are no heritage items on the site and it is unlikely that there will be any items of cultural heritage on the site. However, if any are found during construction measures will be adopted to deal with the finds.

Social and Economic Environment

The development will provide jobs during the construction of the housing and the subdivision of the site.
The new development will provide housing for up to 320 persons.

The development may attract high net worth individuals and this will further contribute to the economic development of the region.

Generally the redevelopment of the site is expected to have positive economic and social impacts in the Coffs Harbour area.

8.3 SUITABILITY OF THE SITE

The various studies, which have been carried out for this EAR, have shown that the site is suitable for residential development and will provide for development of a residential area which will have significant amenity for the future residents.

8.4 SUBMISSIONS

There have been no submissions on this matter at this stage.

8.5 THE PUBLIC INTEREST

It is considered that the proposal is in the public interest as it will provide a residential development of high design standards on this important site in Coffs Harbour. The layout of the subdivision of the site has been designed to incorporate the environmentally sensitive areas of the site and to provide for the improvement of these areas.

The proposal will have positive environmental, economic and social impacts in the Coffs Harbour area.

9. DRAFT STATEMENT OF COMMITMENTS

9.1 INTRODUCTION

In accordance with the requirements of the Director General in relation to the preparation of this Environmental Assessment, this section provides a draft statement of commitments in relation to mitigation measures and environmental management for the preparation of future applications for the development proposals and in relation to the carrying out of the subdivision works on the site.

The draft statement identifies those matters, which will be dealt with in the next stage of the development in order to minimise impacts on the environment. They arise from the detailed analysis of the development proposals, which has been carried out in this report, and the accompanying expert reports.
The accompanying expert reports contained in the Appendix to this EAR contain design and management plans for the life of the development. The provisions in these reports will be implemented as the development progresses.

9.2 THE DEVELOPMENT

The proponent will undertake the subsequent stages of the development generally in accordance with:

- The Environmental Assessment Report dated March 2010, prepared by PTW Planning
- All supporting technical reports included in the Appendices to the above report
- The concept plans dated March 2010 prepared by PTW Architects
- This Statement of Commitments

9.3 STATUTORY REQUIREMENTS

- All approvals, licences and permits required by legislation will be obtained and kept current as required.
- The proposal will generally comply with the planning controls which relate to the site at the time of the granting of project/ development approval

9.4 ENVIRONMENTAL OUTCOMES

- The proponent is committed to producing good environmental outcomes from this project and the measures specified in this Statement of Commitments are included to ensure such outcomes.

9.5 CONSULTATION

- Consultation will continue throughout the development process with Coffs Harbour Council and relevant Government departments and local residents as necessary

9.6 GENERAL DEVELOPMENT AND DESIGN REQUIREMENTS

9.6.1 Design

- The design philosophy of the development will be within the parameters as set out by PTW Architects in the Design Guidelines in Appendix 2 of this EAR.
- These Design Guidelines will be implemented through the ARC to be established as part of the subdivision of the site. On registration of the subdivision the Design Guidelines will be adopted and a management structure formed to implement them in the design of each individual dwelling on the site
- Architectural input will be continued in the development of the proposals for the site to ensure that high standards of design excellence are achieved
- It will be an objective of the design process to provide a safe and secure environment within the development

9.6.2 Vegetation Management

- The Vegetation Management Plan prepared by Bushfiresafe Services and contained in Appendix 8 to this EAR will be adopted in relation to the future management of vegetation on the site
- Consultation will be carried out with Coffs Harbour Council the relevant Government Authorities and the community in the implementation of the Vegetation Management Plan
- The Vegetation Management Plan provides for the rehabilitation of the areas zoned Environment Protection and this will be implemented as part of the subdivision of the site

9.6.3 Bushfire Protection

- A Bushfire Management Plan (Appendix 9) has been prepared for the proposal and will be implemented as part of the development of the site
- The Bushfire Management Plan addresses the ongoing maintenance of the open space and landscaped areas on the site and these proposals will be implemented as part of the overall management of the development
- A Bushfire Evacuation Plan will be prepared for the proposal and submitted to the New South Wales Rural Fire Service for approval when the subdivision of the site is completed

9.6.4 Landscape

- Landscaping of the site will be carried out in accordance with the Landscape Management Plan prepared by Jackie Amos

Landscape Architect and included in Appendix 11 to this EAR
- A Landscape Architect will be retained to oversee the development and planting of the landscaped areas on the site as the development progresses

9.6.5 Integrated Water Cycle Management

- The principles of Water Saving Urban Design will be adopted for the development in accordance with the Services, Design and Flooding Report contained in Appendix 6 to this EAR
- The following matters have been provided for in the Services, Design and Flooding Report and plans and will be implemented as the development proceeds:

    - Detailed design of the stormwater management system
    - Detailed design and landscaping of the detention basins
    - Detailed implementation of water saving measures for the site
    - Plans for the maintenance of water quality on the site

- Each dwelling house is to have a rain water tank with a minimum size of 3000l fitted with a first flush device for the collection of the majority of roof area runoff
- The proponent will measure water quality before, during and after the completion of the development to ensure that ground and surface water quality is maintained

9.6.6 Traffic and Access

- The proponent will comply with the Coffs Harbour Planning Controls in relation to parking and the design of parking areas on the site
- Liaison will be continued with the RTA in relation to the upgrade of the Pacific Highway
- Discussions will be continued with the RTA in relation to the operation of the intersection with the Pacific Highway and possible changes to the operation of the intersection
- A Traffic Management Plan will be developed for the site before works commence on the site which will provide for the ongoing operation of the development in accordance with the requirements of the RTA
- Liaison will continue with the RTA and Council in relation to the provision of a Bus Stop and Shelter on the Pacific Highway

9.6.7 Heritage

- Prior to the commencement of any works on the site a programme will be prepared for the implementation of the recommendations of the Archaeological Report contained in Appendix 10 of this EAR
- The proponent will maintain a watching brief during excavation of the site for any signs of items of cultural heritage especially in the front area of the site

- Prior to the commencement of works on the site a procedure will be prepared and adopted to be implemented should any items of cultural significance be discovered on the site

9.6.8 Acoustics

- The requirements in the Traffic Noise Intrusion Assessment Report prepared by GHD dated December 2008 have been included in the Design Guidelines and will be applied in the design and construction of all dwellings on the site

9.6.9 Environmental Management

- Prior to the construction of each individual dwelling a geotechnical investigation will be carried out of the dwelling site
- A Waste Management Plan for the disposal of waste from the completed development will be prepared and adopted prior to the commencement of any works on the site.
- An Erosion and Sediment Control Plan will be prepared and adopted prior to the commencement of works on the site. This will include measures to protect the Giant barred Frog
- Detailed arrangements for the servicing of the site in liaison with the service and supply authorities will be prepared prior to the commencement of any works on the site

9.6.10 Construction

- Prior to the commencement of works on the site, a Construction Management Plan will be prepared which will cover the following:

    - Traffic access to the site during construction
    - The provision of environment protection fences/sediment control fences
    - Plans for the disposal of waste from the site
    - Acoustic and vibration management plan
    - Plans for the protection of vegetation on the site during construction

9.6.11 Cut and Fill Management

- All cut and fill works will be carried out in accordance with the earthworks plans

9.6.12 Monitoring Auditing and Reporting

- The proponent will establish standard locations for monitoring (once yearly for 5 years) vegetation growth, weed control and water quality within the Environment Protection Areas
- A maintenance programme will be prepared for the development site which will:

- Target noxious and environmental weed control
- Waste control
- Watering and revegetation maintenance
- Repairs and cleaning of sedimentation devices

- The proponent will review fuel management and bushfire risk on the site on an annual basis until the final occupation certificate is issued

9.6.13 Social and Community

- Appropriate s94 contributions for the development will be agreed with the Coffs Harbour Council once their studies of the North Coffs Release area are completed
- All standards relating to accessibility and mobility will be complied with in the development of the proposal