

Environmental Assessment

VOLUME 1 OF 4

**Staged Community Title Subdivision and
erection of dwellings together with 2 residue
Torrens title lots on**

**Lot 211 DP 1044292 and Lot 1, DP 262300
Pacific Highway, Moonee Beach**

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TOWN PLANNERS & DEVELOPMENT ADVISERS

12a Bellingen Road (PO Box 1925)
COFFS HARBOUR NSW 2450
Email: geoff.smyth@bigpond.com
Phone: 02 66524490
Facsimile: 02 66527242
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EXECUTIVE SUMMARY

Project Application

This Project Application has been prepared to accompany a proposal for the staged community title subdivision of Lot 211, DP 1044292 and Lot 1, DP 262300 Pacific Highway, Moonee Beach and the construction of dwellings on the subsequent residential lots. Two residue lots will also be created from the development.

The proposed development is classified as a “Major Project” under Part 3A of the *Environmental Planning & Assessment Act 1979* and the Major Projects SEPP.

A Preliminary Assessment was lodged with the Department of Planning for this project and requirements for inclusion in a Project Application were issued by the Director General. This Project Application addresses the criteria set out in the Director General’s Environmental Assessment Requirements.

The Preliminary Assessment was lodged by Ian Maher Town Planning Consultancy. Ian Maher is no longer available to complete this project and therefore the Project Application report has been prepared by Geoff Smyth Consulting.

Proposal

It is proposed to develop the site as a staged integrated subdivision and housing proposal including the following.

- Construction of a collector road required by the Moonee Development Control Plan (DCP) and connection road access from Woodhouse Road to the collector road.
- Creation of 32 residential lots under a Community Title. Lot size varies from 255m² to 1120m², accessed by internal private roadway with connection from the public road from Woodhouse Road and the Collector Road. Access to the site from the Pacific Highway is not proposed.
- Dedication of a residue lot as a public reserve.
- Creation of a residue lot fronting the Pacific Highway and separated into two areas as future development sites.
- All reticulated services will be provided.
- Construction of 3 x 2 bedroom and 29 x 3 bedroom dwellings.

It is proposed to develop the proposal in two stages.

Stage 1 Subdivision

- 20 residential lots – Lots 1-20 and construction of dwellings on each lot. Lot size varies from 320m² to 920m².
- Dedication of residue area for environmental protection as a public reserve.
- Construction of connection road from Woodhouse Road. From this road internal private access road ways will serve the individual lots. The connector road from Woodhouse Road will serve as a perimeter road for both bushfire management purposes and protection of the creek.
- The remainder of the residential development area will be controlled by the community association.

- A residue area fronting the Pacific Highway will remain as a future development lot separated into two sections of 818m² and 2429m² with one dwelling entitlement.

Stage 2 Subdivision

- 12 residential lots and construction of dwellings on each lot. Lot size varies from 255m² to 1120m².
- Construction of the collector road within the residential development section as required by the DCP and extension of the Stage 1 access road to join the collector road.
- Extension of private access roadways.

Plans of the subdivision and buildings are shown in Attachment 1.



Key Issues

This report follows the criteria set out in the Director General's Environmental Assessment Requirements dated 23 March 2008. The conclusion of the assessment is that the subdivision proposal addresses the relevant issues raised in the detailed studies and responds to the inherent site characteristics and the locality. The key issues identified during the planning assessment are as follows:

(a) Compliance with statutory planning criteria

The proposal complies with the vision for coastal development set out in State Environmental Planning Policy 71 (SEPP 71), the NSW Coastal Policy, Coastal Design Guidelines, the North Coast Regional Environmental Plan (REP) and Coffs Harbour City Local Environmental Plan (LEP) 2000.

The subdivision and building development will be consistent with the detailed precinct planning for Moonee. It accommodates the provision of a collector road and cycleway and links to the shopping centre. The density is less than that anticipated in the outline plan for Moonee but, given the site constraints, is the maximum appropriate development.

(b) Flora and fauna

Inherent site characteristics have determined the local plan zoning with sensitive areas with an Environmental Protection Zone. The land proposed for residential development is generally grassland with a few scattered trees and no useful native habitat. A small area of Threatened Moonee Quassia and Rusty Plum is located on the site. A stand of Quassia is located on the route of the proposed collector road. It is proposed to relocate the Quassia to land in the environmental protection zone. The NSW strategy calls for the Quassia to be retained at its present size. The proposal achieves this criterion.

(c) Protection of the water course

A strategy has been prepared which minimises environmental impact and encourages re-use of rainwater. It achieves neutral or beneficial impact on the quality of water leaving the site.

(d) Noise

There is likely to be some impact from traffic noise on the Pacific Highway. Design requirements have been recommended for some dwellings that will attenuate noise impacts to acceptable levels.

(e) Bushfire

A 30m wide Asset Protection Zone is required on the southern side of the development together with specified construction standards for some dwellings.

(f) Design

The design proposes sustainable development of the site. It reflects natural site characteristics and takes into account the opportunities, constraints and recommendations identified in specialist studies. The buildings satisfy BASIX requirements and are compatible with the existing neighbourhood. The development is also guided by the relevant state, regional and local plans and policies.

There will be a change to the appearance of the site, from open paddock to residential development. This will impact on the view from 5 residences. This change is not considered unreasonable given the residential zoning of the land.

Preparation

This Project Application has been prepared by Geoff Smyth Consulting of 12A Bellingen Road, Coffs Harbour.

The following detailed studies have been undertaken.

- Subdivision and Services Design – Newnham Karl Weir & Partners
- Flora and Fauna – James Warren and Associates
- Water Quality - Gilbert & Sutherland
- Archaeology – Bonhomme Craib
- Bushfire Risk Management Plan – Bushfire Safe (Aust) Pty Ltd
- Architectural Plans – Ross Colquhoun Architect.

- Traffic Impact Assessment – Gutteridge Haskins & Davey (GHD)
- Phase 1 Contamination Assessment - GHD
- Preliminary Acid Sulfate Soil Assessment - GHD
- Acoustic Assessment – Black EARTH environmental services
- Geotechnical Assessment – de Groot & Benson Pty Ltd.

The information contained in this report is neither false nor misleading



Geoff Smyth

1 THE SITE

1.1 Property

The property description is Lot 211, DP 1044292 and Lot 1, DP 262300 Pacific Highway, Moonee Beach. The site has an area of 5.749 ha.

1.2 Location

Moonee is a residential community 11 kilometres north of Coffs Harbour, in the Coffs Harbour City Council area on the NSW North Coast.

The property is on the eastern side of the Pacific Highway, 400 metres south of its junction with Moonee Beach Road. The land lies between the Highway and the residential area of Moonee Beach.

Land to the west comprises large lots facing the Pacific Highway. There are standard residential lots along the eastern boundary. Land to the south has been identified as of high vegetation value, predominantly Brushbox forest. Shopping and community facilities have been constructed to the north of the subject site, on the southern side of Moonee Beach Road.

The land is more than 600 metres from Moonee Creek.

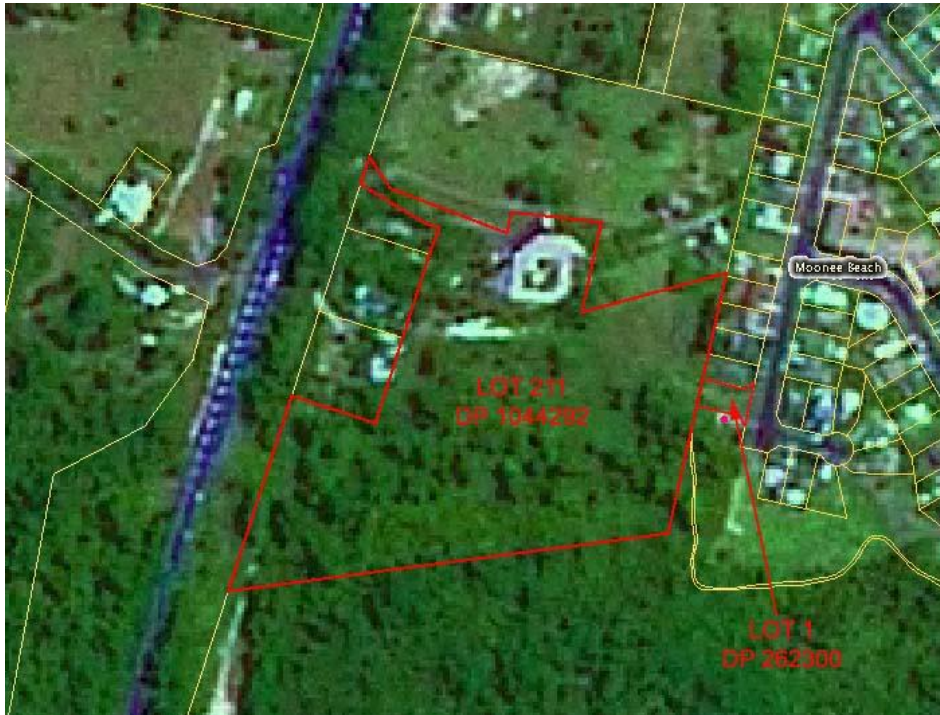


LOCATION PLAN

1.3 Present land use

The northern, level section of the land is used for an animal boarding establishment and landscaped garden. There is a constructed access to and from the Highway to serve the animal boarding establishment and informal access from Woodhouse Road.

The central section of the site, the location of the proposed residential lots, is generally cleared with grassland and some remnant trees. The lower part of the site, contains a small watercourse and is well vegetated. Photographs of the site are shown in Part 6 of the report.



AERIAL PHOTOGRAPH

1.4 Site description

Slope

The northern section of the land is relatively level, falling with a moderate slope to the south, to a watercourse. There are areas of slope over 20% in the centre of the site. The southerly slopes are the location of the proposed Stage 1 residential subdivision. Elevation ranges from 20m (AHD) in the north to 4m (AHD) in the south of the land.

The geotechnical assessment showed moderate constraints over part of the site. These constraints can be successfully managed through appropriate design and construction techniques.

Hydrology

The site is gently to moderately inclined. It forms part of the Moonee Creek catchment. Run-off from the development area flows to the south, to the un-named creek flowing through the property generally from west to east.

This creek flows eastwards into Sugar Mill Creek some 300 metres from of the site. Sugar Mill Creek joins Moonee Creek 200 metres downstream and the latter reaches the ocean a further 200 metres from this confluence. The 100 year flood level on Sugar Mill Creek, of which this is a tributary has been calculated as 2.8 metres, rising to 3.1 metres in 100 years. The development site is set above the 3.5 metre contour.

There has been no specific testing of the water quality of the creek on the property. However, for modelling purposes it can be assumed that it will show the characteristics of a watercourse affected by rural land uses.

Soils

The Geological Survey of NSW indicates that the site is underlain by rocks of the Cainozoic era generally comprising alluvial, paludal and estuarine deposits consisting mainly of sands, silts and gravels.

Gilbert and Sutherland conducted a soil survey of the site as part of the Stormwater Report (see Attachment 4). Brown dermasols were identified as the main soil order. Soil tests confirmed the presence of soils that are not normally erosive but may cause stability problems. Soils tend to clay and are not very permeable. Permeability is higher at the top of the slope compared to the lower sections due to the presence of medium grade sand and a lower amount of silt.

In order to minimise the mobilisation of subsoils during the construction phase, effective erosion and sediment control measures will need to be implemented on all soil types to ensure minimal sediment movement across and from the site.

1.5 Vegetation and wildlife

A flora and fauna assessment, carried out by James Warren and Associates, is included in Attachment 3. The conclusions of this assessment are as follows:-

The northern section of the site, in the commercial zone, consists of mixed landscape planting of trees in mown grassland. The conservation status is low.

On the western side of the area there is found Open Coastal Brushbox. This ecosystem is not considered rare, endangered or vulnerable. It is poorly developed and disturbed by lantana. Fifteen stems of endangered Quassia species (Moonee Creek) occur in a juvenile form. These plants are located in the proposed route of the collector road.

The greater part of the proposed residential area is open grassland with scattered trees and lantana. This area has a low conservation value due to the high level of disturbance and weed invasion. Five stems of the Rusty Plum were also located on the western side of the site.

The southern part of the site, in the 7A zone, contains tall sparse forest, Brushbox predominating. The small creek forms the basis for rain forest species. There is evidence of previous logging. The area is well developed with moderate to high conservation value. Land near the southern boundary of the site is highly degraded. This section of low dense shrub has suffered a high level of weed invasion and has a low conservation status.

The fauna study recorded no reptiles nor amphibians. However, it was concluded that the site presents a moderate quality habitat for reptiles. Twenty bird species were recorded, none of these were threatened species. Eastern grey kangaroo and dogs were seen on the site. Much of the site has been identified as secondary koala habitat by Coffs Harbour City Council. No sign of koala activity was evident during the survey.

1.6 Bushfire

A bushfire risk management assessment was carried out by Bushfire Safe (Aust) Pty Ltd (Attachment 5).

In summary, the study concluded that the predominant factor is the extensive area of tall sparse forest vegetation on the land immediately south of the proposed subdivision. Future planning for Moonee indicates that this vegetation will remain in an environmental protection zone.

2 PROPOSED DEVELOPMENT

2.1 Development concept

The intention of the proposal is to achieve a sustainable extension of the present Moonee community by adopting the principles of ecological sustainability by implementing water sensitive urban design principles; protection of adjacent habitat and enhancement of natural features.

The natural features determine the extent of the development footprint:

- A watercourse, a tributary of Sugar Mill Creek, flows through the lower section of the subject site. Water quality and flows in the creek should be protected. The environmental protection zone will allow a riparian zone of at least 40 metres which is more than adequate. Measures to control water flowing into the creek during both construction and occupation are proposed.
- Provision of an Asset Protection Zone between residences and remnant bushland in the environmental protection zone will determine the location of the proposed dwellings.

The relevant local planning objectives are:

- The potential development site is limited by the residential and business zoning. A density of 43 dwellings is anticipated in the DCP.
- Provision of a collector road and cycleway through the site. This road will link potential development south of the subject site to the shopping centre and northwards to the Pacific Highway junction and the northern beach areas. Provision of a link road from Woodhouse Road, in the established residential part of Moonee, through the site to the collector road.

It is proposed to develop the site by a staged integrated subdivision and housing proposal.

- Construction of the collector road required by the DCP within the residential development area and connection of road access from Woodhouse Road to the collector road. This road will serve as a perimeter road for both bushfire management purposes and protection of the creek.
- Creation of 32 residential lots under a Community Title and construction of dwellings on each lot. Lot size varies from 255m² to 1120m², served by private internal roadways, with access from Woodhouse Road and the collector road. Direct access to the site from the Pacific Highway is not proposed.
- Dedication of part of the residue land as a public reserve.
- Creation of a residue lot fronting the Pacific Highway and separated into two areas as future development site.
- All reticulated services will be provided.

2.2 Dwelling design

- Dwellings are designed to present an integrated development where the individual buildings contribute to an overall scheme. Designs are shown in Attachment 2.

- The proposed dwellings are to be constructed of brick veneer with concrete floor and metal roof.
- The majority of dwellings will contain 3 bedrooms except for the houses on proposed Lots 7, 33 and 35 which will contain 2 bedrooms.
- Dwellings comprise 5 different floor layouts with similar facades. Dwellings will be given different colour schemes to provide an individual appearance while maintaining a common architectural theme.
- Each dwelling will be provided with a rainwater tank, generally of 3000 litres except for 2000 litres on proposed Lot 10 and 3500 litres for proposed Lots 13 and 14.
- Certain construction standards are required for some dwellings to minimise bushfire hazard.
- Details of rainwater tanks are shown in Attachment 2.
- BASIX certificates are shown in Attachment 2.

The following 3 pages show:

- Site set out of the total project on plan 01;
- A typical dwelling
- Streetscape elevations.

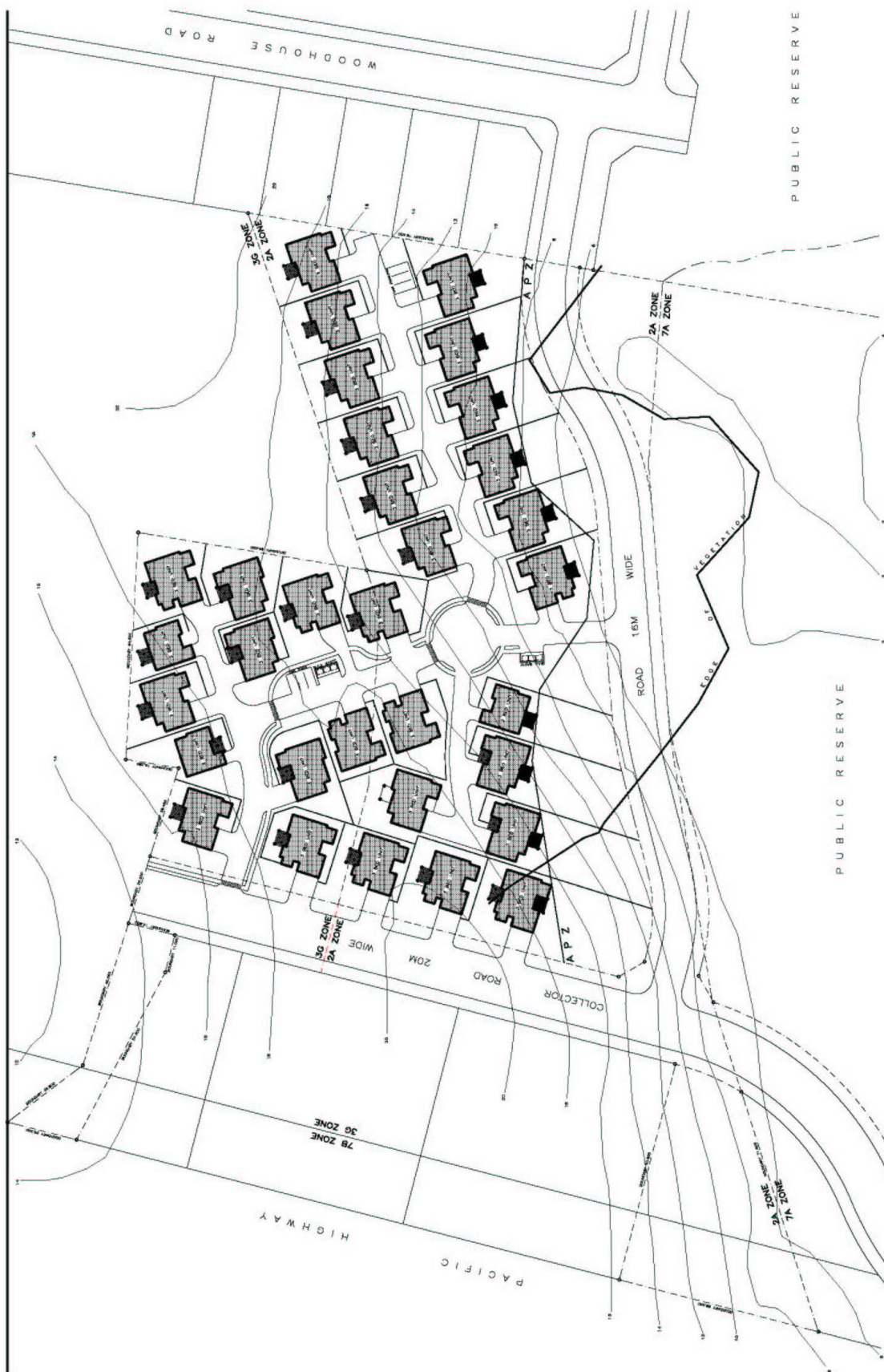
2.3 Infrastructure

- Water - Water is to be supplied by extending the existing water main network. It is anticipated that residents will also collect rainwater in tanks for re-use.
- Sewerage - Connection to the reticulated sewerage system will be required for health and environmental reasons. Sewer for the 1st stage of the project will be directed to the pumping station located to the east of the site.
- Electricity - Country Energy is aware of the proposed expansion of Moonee and existing infrastructure is adequate to support the development.
- Telecommunications - There are no impediments to the supply of telecommunication services.
- Waste Management - The traditional method of collecting waste and recyclable material will be employed. Collection bins will be left within the road reserve of the collector road or the connecting road to Woodhouse Road and collected by the relevant contractor.

2.4 Landscaping

The project will be fully fenced and landscaped. The landscaping plans for Stage 1, Stage 2 and the final site landscaping plan are shown in Attachment 2 (plans 9, 10 and 11).

The emphasis is on native species. Landscaping will include street tree planting and relocation of the endangered species (refer to Section 4 regarding relocation of plants).



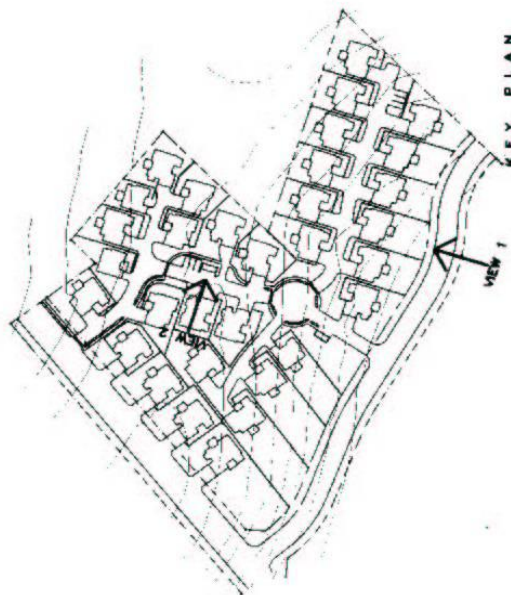
PROJECT TELAT PTY LTD PROPOSED LOW DENSITY HOUSING PACIFIC HIGHWAY MOONEE BEACH	DATE MAY 2007	SCALE 1:1000	PRELIMINARY	
	REVISION 01	DATE MAY 2007	SCALE 1:1000	PRELIMINARY
	REVISION 01	DATE MAY 2007	SCALE 1:1000	PRELIMINARY
	REVISION 01	DATE MAY 2007	SCALE 1:1000	PRELIMINARY



STREETSCAPE VIEW 1



STREETSCAPE VIEW 2



KEY PLAN

		STREETSCAPE ELEVATIONS		D.A.
PROPOSED LOW DENSITY HOUSING		DATE: JUNE 2007		400
PROJECT NUMBER: 000000		08-008		32
08-008		08-008-12		R06-028-SK

2.5 Stormwater Management

Control measures are detailed in a Storm Water Management Plan (SWMP) prepared by Gilbert & Sutherland (Attachment 4) and have been developed to minimise impacts on the environment and achieve the following objectives (see plan on next page):

- appropriate stewardship of natural resources;
- protection of downstream flora and fauna habitats;
- confirmation of the success of impact control measures by the means of monitoring during the construction of each stage;
- compliance with statutory requirements; and
- preservation of water quality within the receiving environment.

It is intended that the SWMP will provide a set of performance criteria and guiding principles with which the engineering designs for the development will comply. The plans and specifications forming part of the construction contract for each stage should also include these performance criteria. The SWMP details the person responsible for the implementation, the issue, the performance criteria, the implementation strategy, monitoring, auditing, reporting, failure identification and the corrective action.

The identified issues are:

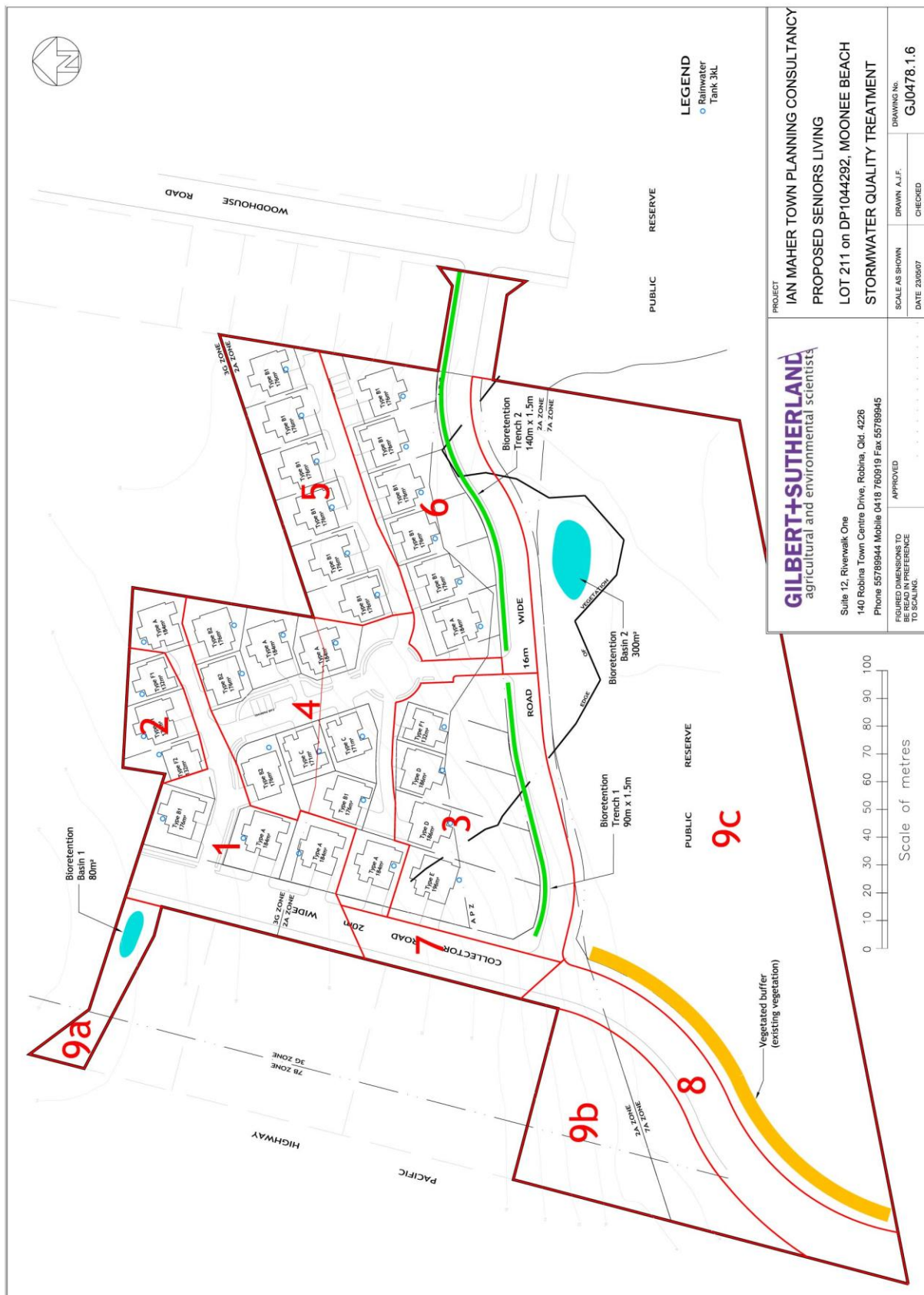
- Construction phase (developer responsibility) management of: dust; sediment and erosion controls; surface water monitoring; contractor management.
- On-maintenance phase (6 months after construction but before Coffs Harbour City Council (CHCC) assumes responsibility) of: sediment and erosion controls; surface water monitoring; maintenance.
- Operational phase matters (which must be complied with by CHCC after it assumes responsibility for the subdivision works) of: monitoring and maintenance of permanent water quality control devices as detailed; surface water monitoring; maintenance of structures.
- Amendment of the SWMP.

2.6 Development Stages

It is proposed to develop the proposal in two stages.

Stage 1 Subdivision, shown on site plan 03 (page 15).

- 20 residential lots and construction of dwellings – Lots 1-20. Lot size varies from 320m² to 920m².
- Dedication of residue area for environmental protection as a public reserve.
- Construction of road access from Woodhouse Road. From this road internal private access ways will serve the individual lots. The connection road from Woodhouse Road will serve as a perimeter road for both bushfire management purposes and protection of the creek.
- The remainder of the residential development area will be controlled by the community association.
- A residue area fronting the Pacific Highway will remain as a future development lot separated into two sections of 818m² and 2429m² with one dwelling entitlement.



Stage 2 Subdivision, shown on site plan 05 (see plan on page 18).

- 12 residential lots and construction of dwellings. Lot size varies from 255m² to 1120m².
- Construction of the collector road with the residential development section as required by the DCP and extension of the Stage 1 access road to join the collector road.
- Extension of private access ways.

As access is available to Woodhouse Road, there will be no reason to require construction of the collector road in the first stage of the proposal. In addition, it is imperative that construction be deferred to Stage 2 to allow funds to be collected from Stage 1 to permit construction. It is not economically viable to construct the collector road in stage 1 without the sale of some lots.

The following pages show:

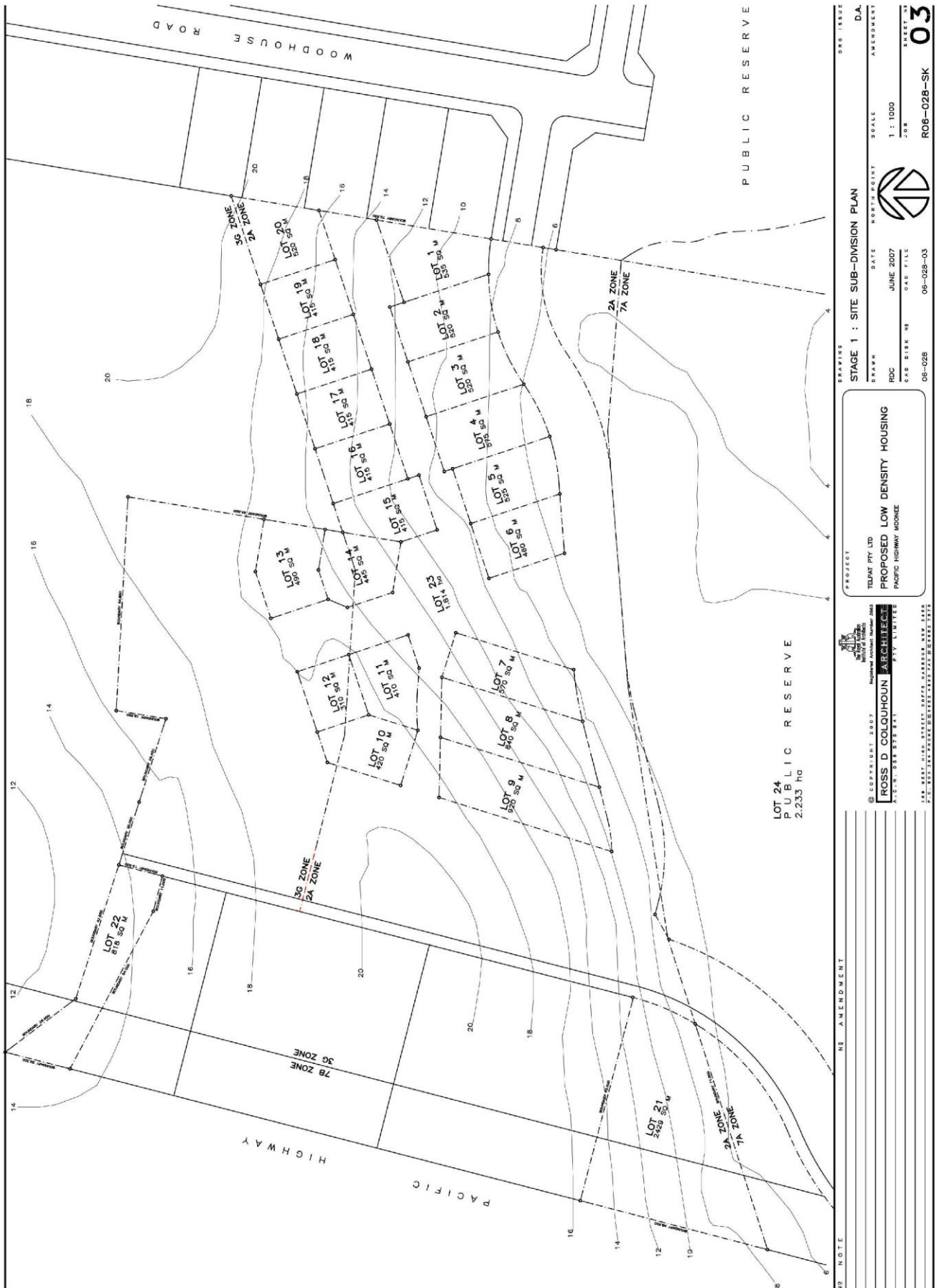
- Plan 03 – stage 1 subdivision;
- Plan 05 – Stage 1 and 2 subdivision;

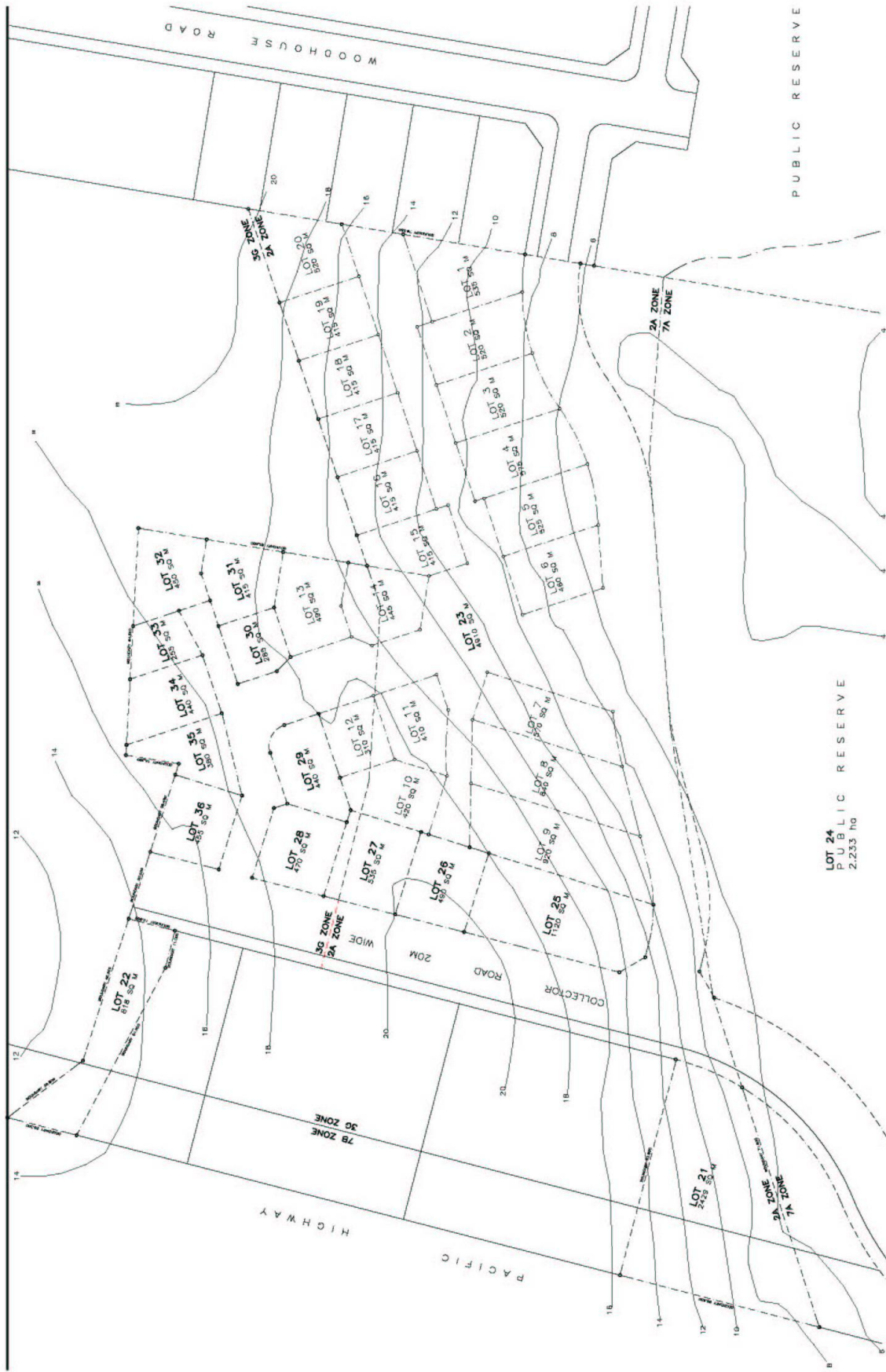
2.7 Community Management

A draft Community Management Statement has been prepared for the project (Attachment 7). It references issues such as architectural, building and landscape matters; use and maintenance of community property; keeping of animals, asset protection; council access.

2.8 Development Options

Options are limited by site characteristics and the planning objectives for Moonee Beach. The alternatives within the potential development site are a subdivision to provide standard residential lots or an integrated subdivision and housing proposal which would allow a higher density, nearer to the Council's expectations for density. As the site is close to the shopping centre and the topography of the developable area is not difficult, the integrated option was adopted for the proposal. A conventional residential subdivision would not achieve the highest and best use of the land and would further reduce the residential lots available for the future growth of Moonee. The integrated housing proposal offers an alternative housing choice for the Moonee area.





PROJECT PROPOSED LOW DENSITY HOUSING PACIFIC HIGHWAY MOONEE BEACH	DRAWING STAGE 2 : SITE SUB-DIVISION PLAN	DATE JUNE 2007	SCALE 1 : 1000	SHEET NO. 05
	DRAWN RDC	DATE JUNE 2007	SCALE 1 : 1000	SHEET NO. 05
	DRAWN RDC	DATE JUNE 2007	SCALE 1 : 1000	SHEET NO. 05
	DRAWN RDC	DATE JUNE 2007	SCALE 1 : 1000	SHEET NO. 05

3 STATUTORY PLANNING PROVISIONS

3.1 State and regional plans and policies

Relevant plans and policies are:

- State Environmental Planning Policy 71 - Coastal Protection (SEPP 71)
- State Environmental Planning Policy Major Projects (SEPP Major Projects)
- State Environmental Planning Policy 44 – Koala Habitat (SEPP Koala Habitat)
- State Environmental Planning Policy 55 – Remediation of Land (SEPP 55 Remediation of Land)
- State Environmental Planning Policy BASIX – (SEPP BASIX)
- North Coast Regional Environmental Plan (REP)
- Coastal Design Guidelines for NSW
- NSW Coastal Policy 1997
- Sustainable Urban Settlement Guidelines

3.2 Local Plans

The following local plans apply

- Coffs Harbour LEP 2000
- Moonee DCP
- Moonee developer contributions plan
- Subdivision DCP
- Low Density Housing DCP

This proposal is consistent with these plans and policies. It is also consistent with the objects of the *Environmental Planning and Assessment Act 1979*.

The provisions of the abovementioned Plans and policies are discussed in detail in the following section of this report.

4 RESPONSE TO DIRECTOR GENERAL'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

This assessment follows the criteria set out in the Director General's Environmental Assessment Requirements dated 23 March 2008.

1. Strategic Planning

1.1 Justify the proposal with reference to relevant local, regional and State planning strategies. Provide justification for any inconsistencies with these planning strategies.

(a) State and regional plans and policies

This proposal is consistent with relevant plans and policies. It is consistent with the objects of the *Environmental Planning and Assessment Act 1979*.

Major Projects SEPP

The proposed development is classified as a project to which Part 3A of the *Environmental Planning & Assessment Act 1979* applies and is a major project under this SEPP.

SEPP 71 – Coastal Protection

The site is within the “coastal zone” as defined in SEPP 71 – Coastal Protection and the land has a potential for more than 25 lots.

The land is not in a “sensitive coastal location”. Preparation of a master plan is not warranted as detailed master plan provisions have been established by Council under the Moonee Development Control Plan. The preparation of a master plan would not achieve any additional benefit from the detail included in the DCP and this Project Application.

SEPP 44 – Koala Habitat

The aim of SEPP 44 is to encourage the conservation and management of areas which provide Koala habitat. It is intended to establish a permanent population over the present range and reverse the current decline in numbers.

The site has been extensively modified, with much of the site vegetation being removed. A flora and fauna assessment found that much of the site is classified as Secondary Koala Habitat by Council, along with a small area of Tertiary habitat.

The proposed development will not result in the loss of any of the tree species listed in the Coffs Harbour Koala Plan of Management as secondary Koala habitat (Tallowwood, Swamp mahogany, Flooded gum, Forest red gum or Small-fruited grey gum).

The site survey did not identify any sign of Koala activity on the subject site.

SEPP 55 – Remediation of Land

This instrument requires the consideration of whether land is suitable for residential use by way of contamination.

The site is largely vacant except for the Pettina Pet Care Centre in the northern portion of the site. Half the vacant area is well vegetated and not proposed to be developed. The remaining area of vacant land is cleared and used occasionally to accommodate horses.

A preliminary site investigation identified the following past and current activities as having the potential to contribute to on-site soil and groundwater contamination:

- Uncontrolled fill in various locations;
- Stormwater runoff and detention area;
- Septic tank and disposal area;
- Pettina Pet Care Centre buildings;
- Two sites of periodic rubbish burning; and
- Two rubbish piles.

A Phase 1 assessment recommends that Detailed Site Investigations (DSI) be undertaken to further assess the extent and degree of contamination across the site. It is anticipated that this investigation would be undertaken following demolition of the structures on site but prior to any earthworks. Following the DSI, a Remedial Action Plan may be required to outline procedures for the remediation of the site.

If the DSI is carried out before demolition works, the report is likely to be not comprehensive due to restricted access to some sites of concern. It should consequently be a condition of consent.

SEPP BASIX

- Certificates are shown in Attachment 2

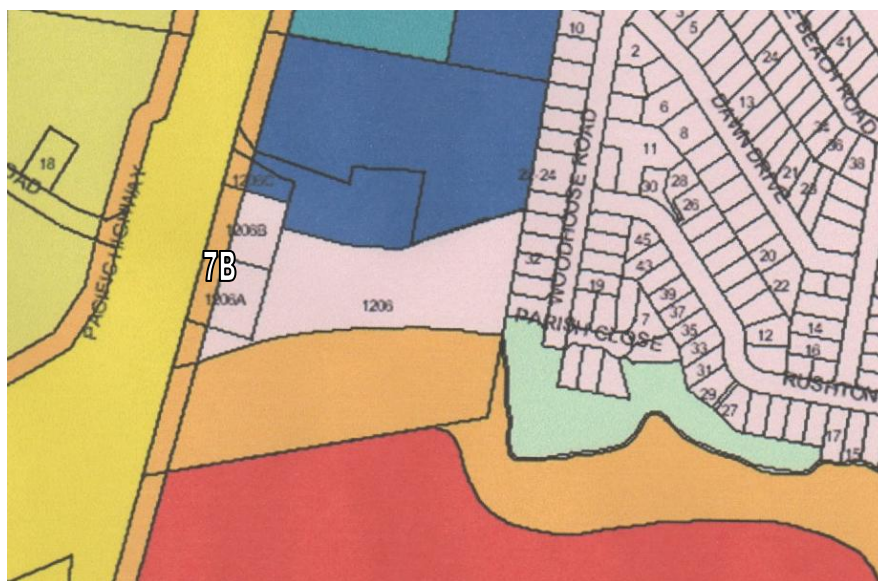
North Coast REP

- Natural areas and water catchment – the major natural area along the watercourse will be retained; management plans for threatened species are proposed; erosion and sediment controls are proposed to protect the watercourse and natural areas in both construction and operational phases.
- Coastal hazard areas – the site is not affected by coastal processes and development is well above the 1 in 100 year flood potential.
- Residential development - the dwellings will comply with design guidelines; the density of development suits the land capability; the roads are not of excessive width; the techniques set out in the storm water management plan will be adequate to minimise impacts.
- Adequacy of community and welfare services – the Council has in place a Contributions Plan to ensure adequate and timely provision of community services and facilities. The Moonee shopping precinct is located some 200m to the north.

(b) Coffs Harbour LEP 2000

Under the LEP, the land is zoned part Residential 2A low density; part Business 3G Mixed Use; part Environmental Protection 7A Habitat and Catchment; and part Environmental Protection 7B Scenic Buffer. The LEP identifies an area of secondary koala habitat in the southern section of the property (in the 7A zone).

The LEP intends this precinct in Moonee to be a low density residential environment, developed within the environmental capability of the land. The proposed development complies with the Residential and Business Mixed Use zoning of the land. The subdivision is permissible under the zoning, the 7A land is to become a public reserve and the Highway frontage zoning is respected.



	2A Residential low density		7A Environmental Protection Habitat and Catchment
	3G Business mixed uses		7B Environmental Protection Scenic Buffer

2. Subdivision Design, Layout and Desired Future Character

2.1 *Demonstrate the consistency of the proposal with the character of existing development in terms of the locality, street frontage, scale, building envelopes and future built form controls, aesthetics, energy and water efficiency and safety.*

The major site character derives from the adjacent forest which can be seen from all parts of the site. The design therefore aims to stress that visual link, both in the design of the perimeter road and as a focus to many of the dwelling sites.

Photographs of the site are shown in Section 6.

The LEP and DCP intend the subject land to be a low density residential environment, developed within the environmental factors.

A low density residential character is suitable for this site. Land to the east forms part of an established residential precinct. A retail centre and community facilities have been developed to the north of the property, with access to be available at a future date from the subject site by way of the proposed collector road. Land to the west of the site comprises large lots facing the Pacific Highway.

Proposed dwellings are modest in scale, single level of brick and metal roof construction. As the site photographs indicate this will be consistent with existing built character. This form of development adjacent to the shopping centre is appropriate.

The proposed dwellings will comply with BASIX requirements. Water tanks are provided for each house.

2.2 Demonstrate the consistency of the proposed subdivision design and layout with the Coastal Design Guidelines for NSW, NSW Coastal Policy 1997, SEPP 71 – Coastal Protection and Coffs Harbour City Council's Subdivision Development Control Plan, Moonee Development Control Plan and Low Density Housing Development Control Plan..

Moonee Beach has been designated for residential purposes under the Moonee Beach Development Control Plan. This Development Control Plan fits within a strategy that complies with the vision for coastal development as set out in State Environmental Planning Policy No 71, the New South Wales Coastal Policy, Coastal Design Guidelines, the North Coast Regional Environmental Plan and relevant Development Control Plans.

Coastal Design Guidelines

The proposal promotes the guidelines for Coastal Villages, particularly:

- Design of the subdivision and buildings maintaining a compact development footprint and providing an interconnected and permeable system of streets.
- Implementing total water cycle management and water sensitive urban design initiatives.
- Development is set well back from areas affected by coastal processes, flooding, erosion and sea level rise.
- Protecting endangered ecological communities: - invasive plant species are to be removed from ecological areas and threatened species relocated with additional planting.
- The boundary between public and private land is defined with a public street.
- The layout of new streets responds to geographic features.

Coastal Policy

The site is not adjacent to the foreshore, nor will the development pose an adverse impact. The proposal complies with the Design and Locational Principles, the relevant objectives are:

- To conserve the diversity of all native plant and animal species and to protect and assist the recovery of threatened and endangered species; - Recovery plans are proposed for the Moonee Quassia (see Part 9 of this section of the report).

- To improve water quality in coastal and estuarine waters and coastal rivers where it is currently unsatisfactory and to maintain water quality where it is satisfactory: -stormwater management measures will produce a neutral or beneficial effect on the local water course and consequently Sugar Mill Creek.
- To give the impacts of natural processes and hazards a high priority in the planning and management of coastal areas: - no development is proposed in the flood liable area.
- To promote compact and contained planned urban development in order to avoid ribbon development, unrelated cluster development and continuous urban areas on the coast: - this is an “infill” site which will promote a compact town.

SEPP 71

Clause 8 of SEPP 71 sets out the following matters for consideration:

(a) the aims of this Policy

This proposal complies with the relevant aims of the Policy, in particular: management of the attributes of the coast in accordance with the principles of ecologically sustainable development; ensuring that the subdivision is appropriate for its location; protecting scenic values and significant vegetation; and promoting the strategic planning for the area set out by the Council and the Department of Planning.

(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,

The land is not located on the foreshore.

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

The land is not located on the foreshore.

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

The LEP and DCP intend the subject land to be a low density residential environment, developed within the environmental factors.

A low density residential character is suitable for this site. Land to the east forms part of an established residential precinct. A retail centre and community facilities have been developed to the north of the property, with access to be available at a future date from the subject site by way of the proposed collector road. Land to the west of the site comprises large lots facing the Pacific Highway.

Proposed dwellings are modest in scale, single level of brick and metal roof construction. As the site photographs indicate this will be consistent with existing built character. This form of development adjacent to the shopping centre is appropriate.

No adverse social impacts are likely. Coffs Harbour Council Community Services Plan 1998 specifies the community services required for future development. There is a shopping centre and proposed community centre within 200 metres of the site.

The development contributions plan identifies a need for regional conservation management, specifically to ensure that natural areas are protected and managed for conservation in order to achieve sustainable urban growth. A district sporting facility, a district park and local neighbourhood parks are also specified. Cash contributions will be paid toward these facilities.

(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,

The land is not located on or near the foreshore. No adverse impact is likely.

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

The land is not located near the foreshore. There will be no effect on coastal scenic values, or on views from the Pacific Highway.

(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,

A flora and fauna assessment, including a Seven Part Test, was made by James Warren & Associates (Attachment 3).

The area proposed to be subdivided will be significantly changed. The vegetation to be lost is predominantly grassland with scattered trees, of low conservation value. However, an occurrence of the endangered Moonee Quassia and protecting tall mid-dense forest is likely to be removed by the planned collector road. This road, while not essential to the proposed first stage subdivision is integral to the Council's road planning for Moonee. The proposed development will result in the loss of 3 Rusty Plums, the majority of Rusty Plums will be retained.

Additional potential impacts will arise from disturbance and weed colonisation, removal of vegetation and habitat for development and visits to the remnant forest area.

Fauna will be affected by loss of habitat, impact of domestic animals and increased activity on the edge of the remnant forest. The proposed development will contribute to the loss of some secondary koala habitat.

The southern section has good connectivity to Brushbox forest immediately to the south of the site and to the key corridors identified in the area by the National Parks and Wildlife Service. This section is zoned 7A and is to be retained in its vegetated state. The protection of this area will offset any loss elsewhere on the site.

A Section 5A assessment was completed for twelve (12) threatened fauna species considered possible occurrences in the Study area, over time. The assessment concluded that the impacts of the proposed development would be unlikely to result in the local extinction of any of these species. A Species Impact Statement is not required.

A Section 5A assessment was completed for the threatened flora species Moonee Quassia. The assessment concluded that any future development is likely to have a significant impact on this population, and may result in the extinction of this species from the Study area. Transplanting of recorded specimens into protected habitat (such as that found in the south of the site within the 7A area) is likely to be necessary if the collector road is to be developed in the future. Transplanting will protect the species from significant impact.

An assessment under the Commonwealth Environment Protection and Biodiversity Conservation Act (1999) concluded that the proposed development will not have a significant impact on any matters of National Environmental Significance. Commonwealth assessment of the proposal is therefore not required.

Recommended amelioration measures are as follows:-

- As vegetation within the collector road reserve is not likely to be retained, transplanting of recorded Moonee Quassia specimens into protected habitat (such as that found in the south of the site within the 7A area) as part of Stage 2 development.
- Retention of mature trees in the grasslands where possible.
- Weed control including: during construction; in landscaped areas; mulching removed vegetation on site to avoid introduction of weed seeds; and avoiding use of environmental weeds.
- Landscape planting to include forage habitat.
- Weed infestation to the south of the site should be controlled during construction.
- Measures to protect fauna include control of cats and dogs; appropriate disposal of rubbish; traffic speed control (40 kph); imported landscape and fill materials to be sourced from suppliers free from cane toads.

(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

No impact on marine habitats is likely. Stormwater management is proposed to ensure there will be no impacts.

(i) existing wildlife corridors and the impact of development on these corridors,

The southern section has good connectivity to Brushbox forest immediately to the south of the site and to the key corridors identified in the area by the National Parks and Wildlife Service. This section is zoned 7A and is to be retained in its vegetated state.

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

The land is not located near the foreshore. Sugar Mill Creek is not tidal at this point. It is not anticipated that the development of this land will impact on, or be affected by, coastal processes and coastal hazards.

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

Not relevant

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

No evidence has been found of historic camps or surface relics that may require protection. The Local Aboriginal Land Council support the findings.

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

The development is separated from the watercourse by an environmental protection area to be dedicated to Council. The watercourse is not tidal at this point.

A stormwater management plan has been prepared and measures recommended to ensure that development of the site is likely to have a neutral or beneficial effect on the flow and quality of water leaving the site and into Sugar Mill Creek.

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

There are no heritage issues associated with the site.

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

(i) the cumulative impacts of the proposed development on the environment,

The proposed subdivision will be developed in accordance with the principles of ecologically sustainable development. Amelioration measures will minimise cumulative impacts particularly with regard to the watercourse and protection of native vegetation. This is an “infill” site and does not extend the village boundaries.

The proposal includes measures to minimize impact on the adjacent valuable forest area and will reintroduce native vegetation in its street planting and replanting areas.

Water cycle management is aimed to achieve neutral or beneficial flows from the site and maximise re-use of rain water.

Site erosion will be controlled during the construction process and water management measures will maintain quality.

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

The water quality study recommends current best practice in water sensitive urban design for application to the development.

Key components of the water quality management plan are the control of stormwater from road surfaces, provision of a bio-detention basin. Provision of rainwater tanks to all houses should minimize the use of potable water.

The houses comply with BASIX requirements (see certificate in Attachment 2).

Moonee DCP

The site is part of the Moonee Village Precinct with a small section within a Medium Density Precinct. The proposed development complies with the DCP.

The Moonee DCP indicates a collector road and cycleway to be located on the western side of the subject site. Connection is also required from this collector road to Woodhouse Road, in the existing Moonee residential area.

The desired local character of the residential area is for low density housing. The DCP indicates a target yield of 43 dwellings for the total site. Due to the need to provide asset protection, road corridor, and public open space dedication the maximum appropriate lot yield is 32.

The lower section of the land, near the watercourse is shown as subject to flooding and the location of protected vegetation. The land is to be transferred to the ownership of Council.

Moonee Developer Contributions Plan

Provision of necessary services and infrastructure for Moonee, including this site, has been planned by the Council and a contributions plan prepared to ensure timely and adequate provision.

Subdivision DCP

Sets out design and performance standards for subdivision. The relevant merit and performance criteria regarding subdivision and road design; energy efficiency and lot orientation; density; infrastructure; stormwater drainage; utility services; erosion and sediment control; and street trees have been complied with for this proposal.

Low Density Housing DCP

Sets out design and performance standards for dwellings. The proposal satisfies the density requirements of the DCP. Proposed lots will allow specified performance criteria for dwellings to be met. A dwelling has been designed for each lot, see Attachment 2.

The residential zoned area is 2.1 ha with a target density of 43 dwellings under the Moonee DCP. This equates to a density of 1 dwelling per 488m² and as such complies with the low density requirement of 1 dwelling per 400m² even though part of the land is identified as a medium density precinct. As a result of site investigations a density of 34 dwellings is achieved which equates to a density of 1 dwelling per 617m².

2.3 Identify the type of subdivision proposed across the site ie. community, Torrens, strata.

Community Title subdivision is proposed with 2 lots created under torrens title.

2.4 Provide details of potential building envelope, built form, fencing, streetscape and design quality controls and the means for implementing them.

See building plans in Attachment 2.

2.5 Provide details of any staging that demonstrates the lots will be released in an orderly and coordinated manner.

It is proposed to develop the proposal in two stages.

Stage 1 Subdivision

- 20 residential lots – Lots 1-20 and construction of dwellings on each lot. Lot size varies from 320m² to 920m².
- Dedication of residue area for environmental protection as a public reserve.
- Construction of connection road from Woodhouse Road. From this road internal private access road ways will serve the individual lots. The connector road from Woodhouse Road will serve as a perimeter road for both bushfire management purposes and protection of the creek.
- The remainder of the residential development area will be controlled by the community association.
- A residue area fronting the Pacific Highway will remain as a future development lot separated into two sections of 818m² and 2429m² with one dwelling entitlement.

Stage 2 Subdivision

- 12 residential lots and construction of dwellings on each lot. Lot size varies from 255m² to 1120m².
- Construction of the collector road within the residential development section as required by the DCP and extension of the Stage 1 access road to join the collector road.
- Extension of private access roadways.

2.6 Provide a draft Community Management Statement.

A draft Community Management Statement has been prepared for the project (Attachment 7). It references issues such as architectural, building and landscape matters; use and maintenance of community property; keeping of animals, asset protection; council access.

2.7 Outline the long-term management and maintenance of any areas of open space or conservation including ownership and control, management and maintenance funding, public access, revegetation and rehabilitation works and bushfire management.

The lower section of the land, near the creek has been identified as of conservation value. The land is to become a public reserve, managed by the Council. A contributions plan for management of open space is also applicable to the subject site.

3. VISUAL IMPACT

3.1 Address the visual impact of the proposal in the context of surrounding development and relevant mitigation measures. In particular address impacts on the amenity of the foreshore, overshadowing of public reserves, loss of views from public places and cumulative impacts.

Few houses at present look over the land which has been generally cleared for grazing purposes. Apart from the planned change from paddock to houses there will be little visual impact. Site photographs, showing relationship to nearby houses, are included in Section 6 of this report. There will be no effect on foreshores, no overshadowing of reserves or loss of views.

4. INFRASTRUCTURE PROVISION

4.1 Address existing capacity and requirements of the development for sewerage, water, electricity, waste disposal, telecommunications and gas in consultation with relevant agencies. Identify and describe staging, if any, of infrastructure works.

Water and sewerage

Coffs Harbour City Council is the provider of water and sewerage services. Council confirms that there is capacity to accommodate the densities proposed in the Moonee Development Control Plan. This subdivision proposal is within the densities allocated to this subject site. A reticulated water supply is required for the subdivision, by extending the existing water main network. Connection to the reticulated sewerage system will be required. Sewer will be directed to the pumping station located to the east of the site.

Electricity

Country Energy is aware of the proposed expansion of Moonee and existing infrastructure is adequate to support the development.

Telecommunications

There are no impediments to the supply of telecommunication services.

Waste Management

The traditional method of collecting waste and recyclable material will be employed. Collection bins shall be left in the road reserve of the collector road or the connecting road to Woodhouse Road and collected by the relevant contractor. There is capacity in both the collection service and the depot.

4.2 Address and provide the likely scope of a planning agreement and/or developer contributions with Council/ Government agencies.

Coffs Harbour City Council has prepared a development strategy for Moonee which includes the provision of necessary services and infrastructure.

With regards to Moonee, a contributions plan identifies that anticipated increases in population will require augmenting or providing new services. These services have been identified. The development is within the density expectations for Moonee.

Utility Services

Coffs Harbour City Council is the provider of water and sewerage services. Contributions will be required for headworks.

Provision of public facilities and services

Coffs Harbour City Council Community Services Plan 1998 specifies the community services required for future development. The contributions plan includes a new multi-purpose hall and relevant plans and strategies. There are shops and a proposed community centre in proximity to the subject site.

As the proposed development is within the development potential envisaged in the DCP, no provision apart from the appropriate contribution is required for this subdivision.

Provision of open space, its function and landscaping

The development contributions plan identifies a need for regional conservation management, specifically to ensure that natural areas are protected and managed for conservation in order to achieve sustainable urban growth. A district sporting facility, a district park and local neighbourhood parks are also specified. A contribution will be made as required to assist in the provision of these facilities.

Moonee Developer Contributions Plan

This Plan identifies the amount of cash contribution per lot required to provide public amenities and services required as a consequence of increase population. The contributions for the proposed subdivision are as follows:

Service/Facility	Per lot/large dwelling
Community Facilities	682.78
District Open Space	4,575.00
Local Open Space	1,134.70
Traffic Facilities	9238.40
Stormwater Management	28.62
Urban Planning	114.09
Local Traffic Facilities	4,023.45
Total Section 94	19,797.04

Additional charges are required for water and sewerage augmentation. These charges are calculated at the date of granting consent, however, the "Sewer Developer Services Plan" and the "Water Developer Services Plan" includes the following contribution rate at 2003.

Water \$ 5,550.00 per dwelling.

Sewer \$ 3,790.00 per dwelling.

Further charges are levied as follows:

Coffs Harbour Regional, District and Neighbourhood Facilities & Services

Service/Facility	Per lot/large dwelling
Library Resources	235.20
Regional Open Space	853.86
Beach Protection	206.84
Northern District Open Space	2,798.74
Coffs Harbour District Open Space	654.39
Southern District Open Space	2,027.10
Ararawarra/Mullaway N'hood Open Space	65.130
Woolgoolga N'hood Open Space	471.10
Korora N'hood Open Space	379.23
S94 Co-ordination & Administration	3 0 9 . 7 1
Total Contributions	8,048.77

Coffs Harbour Road Network Contribution

RESIDENTIAL CONTRIBUTIONS		
Sector	Weighting	Per lot/large dwelling
A	66.65%	1,735.58
B	33.35%	764.12

Surf Rescue Equipment Contributions

Service/Facility	Per lot/large dwelling
Rescue Equipment	86.33

In summary, according to the tables above the total contribution to be paid per lot as at the date of publication of the relevant contributions document is \$ 39,772.34. This rate is increased by the consumer price index for each year up to the date of payment. It is considered that not all of these contributions are relevant to the subject subdivision and the correct amount will be verified at the time of payment.

5. TRAFFIC AND ACCESS

5.1 Prepare a traffic impact study which addresses, but is not limited to the following matters:

- The capacity of the road network to safely and efficiently cater for the additional traffic generated;
- Access to and within the site;
- Servicing and parking arrangements;
- Intersection site distances;
- Connectivity to existing developments;
- Impact on public transport (including school bus routes);
- Provision of access for pedestrians and cyclists to, through and within the site; and
- Identify suitable mitigation measures, if required to ensure the efficient functioning of the road network.

The subdivision design conforms to the traffic circulation plan for the Moonee area, in respect of the collector road system, cycleway and pedestrian connections.

A Traffic Impact Assessment was carried out by GHD, fulfilling the RTA criteria (Attachment 8). The following conclusions are made based on the investigations:

- The estimated total traffic generation as a result of the development is estimated to be 288 additional vehicle trips per day on the road network.
- The number of heavy vehicles using Woodhouse Road and Moonee Beach Road is not expected to increase except during the construction phase when an additional 10 to 15 construction vehicles per day would use these roads.
- Under current traffic conditions the capacity of the existing roads provides a satisfactory level of service for the demands of the existing residential areas they serve.
- The volume of vehicles generated by the proposed development would have a minor impact on the amenity of residents along Woodhouse Road and Moonee Beach Road.
- Moonee Beach Road and Woodhouse Road and associated intersections have the capacity to accommodate the traffic expected to be generated by the full development.
- The median island in Woodhouse Road may restrict the safe passage of large vehicles accessing the site during construction.

Based on these conclusions the following recommendation is made:

- Appropriate traffic management measures should be in place to manage possible safety issues associated with the restricted width of Woodhouse Road at the narrow median section.

5.2 Provide details of any staging for the construction of roads, including the Moonee collector road to demonstrate that roads will be constructed in an orderly manner.

The east-west local road will be constructed from Woodhouse Road to serve Stage 1 of the subdivision.

The collector road will be built in stage 2. Connection from the end of the Stage 1 east-west local road to the collector road will also be constructed in Stage 2.

6. HAZARD MANAGEMENT AND MITIGATION

Coastal Processes

6.1 Address coastal hazards and the provisions of the Coastline Management Manual. In particular consider impacts associated with wave and wind action, coastal erosion, sea level rise and more frequent and intense storms.

It is not anticipated that the development of this land will impact on, or be affected by, coastal processes and coastal hazards. The land is 1 kilometre from the ocean. It is outside the indicative 100 year regression line of the coast. The watercourse is not tidal at the site.

6.2 A risk management assessment of climate change impacts to the year 2100 using the latest available information from the International Panel on Climate change (IPCC), Department of Environment and Climate Change (DECC) and the CSIRO. This should include sensitivity analyses for low level, mid range and high level ocean impacts as set out in Floodplain Risk Management Guideline: Practical Consideration of Climate Change (2007).

Practical Consideration of Climate Change requires risk assessment of sea level rise where flood levels are directly controlled by ocean levels. The high level impact is estimated by DECC as 0.91 metres.

The watercourse on the subject land is not controlled by ocean levels.

Contamination

6.3 Identify any contamination on site and appropriate mitigation measures in accordance with the provisions of SEPP 55 – Remediation of Land.

GHD Pty Ltd was engaged to conduct a Preliminary Site Investigation (PSI) at the property. (Attachment 9).

The objectives of this PSI were to:

- Assess whether past or current site uses have the potential to impact the quality of site soil and/or groundwater; and
- Identify potential contaminants and location of contaminants.

The PSI identified the following past and current activities as having the potential to contribute to on-site soil and groundwater contamination:

- Uncontrolled fill in various locations;
- Stormwater runoff and detention area;
- Septic tank and disposal area;
- Pettina Pet Care Centre buildings;
- Two sites of periodic rubbish burning; and
- Two rubbish piles.

Based on the Phase 1 assessment, GHD recommends that Detailed Site Investigations (DSI) be undertaken to further assess the extent and degree of contamination across the site. It is anticipated that this investigation would be undertaken following demolition of the structures on site but prior to any earthworks. Following the DSI, a Remedial Action Plan may be required to outline procedures for the remediation of the site.

The DSI and Remedial Action Plan (if required) should be a condition of consent to be completed following demolition works. If the DSI is undertaken currently, the report is likely to have gaps in it due to restricted access to some sites of concern.

It is considered that requiring a DSI as a condition is the best option because it ensures the assessment is undertaken. It also allows the assessment to be undertaken at the most appropriate time as there will be access to the whole site which will result in a more comprehensive assessment.

Acid Sulfate Soils

6.4 Identify the presence and extent of acid sulfate soils on the site and, where relevant, appropriate mitigation measures.

GHD Pty Ltd (GHD) was commissioned to undertake a Preliminary Acid Sulfate Soil (ASS) assessment. (Attachment 10)

Testing shows concentrations of Total Actual Acidity (TAA) equal to the action criteria of 62 moles H⁺ tonne for fine soils (for less than 1000 tonnes of soil disturbed). This indicates that the soils are acidic, but extracted sulfur testing (%S) indicates that the soil is not pyritic in nature.

Therefore, it is considered that a brief Acidic Soil Management Plan would be required if greater than 1000 tonnes of soil are disturbed during the construction.

Bushfire

6.5 Address the requirements of Planning for Bush Fire Protection 2006 (RFS, 2006).

Bushfire risk management assessment has been carried out by Bushfire Safe (Aust) Pty Ltd (Attachment 5). The proposal will comply with requirements.

The assessment identified three categories of bush fire attack for the proposed subdivision: see diagram on the following page. The following hazard reduction measures are required:-

“Extreme” for 10 properties, fronting the southern access road.

- APZ of 30m for building envelopes, measured from the southern side of the road reserve.
- Level “3” building requirements under AS3959 “Construction of Buildings in Bushfire Prone Areas”.

“High” for the 10 central dwellings.

- Level 2 building requirements.

“Medium” for the 12 northern dwellings.

- Level “1” building requirements

Geotechnical

6.6 Provide an assessment of any geotechnical limitations that may occur on the site and if necessary, appropriate design considerations that address these limitations.

A geotechnical report has been prepared by de Groot and Benson Pty Ltd (Attachment 12). Overall and notwithstanding the qualification listed below, the site's soil and geology does not pose any substantial or unusual constraints to development.

Slope Instability Risk

The soil mineralogy and the underlying rock geology of the site is not prone to instability. However, all but the flattest of slopes pose some risk of instability. The Australian Geomechanics Society (AGS 2007) defines five geotechnical hazard classes ranging from very high risk, to very low risk. These are derived from a risk assessment based on the likelihood of instability, the kinds of instability and the consequences of such instability. Details of the procedure are attached.

Based on the field investigation and the history of the adjacent village of Moonee Beach on similar topography & geology, the site can be divided into three of the five hazard classes as shown on figure 09095-SK1.

The area of the site within the VL classification is at very low risk of slope instability and can be safely developed following standard construction practices.

The area within the L classification is at slightly greater risk of slope instability. This greater risk can be successfully managed with appropriate design. Some of the measures as summarised on the attached Guidelines for Hillside Construction are warranted, specifically:

- Deep cut and fills (greater than 1.5m), as may be required for large single level slab on ground construction, should be avoided;
- All slab on ground construction over fill should be pierced well into the natural soil;
- All retaining walls over 1 metre in height should be appropriately engineered;
- Roadways across the slope should not be excessively cut in or filled without detailed geotechnical and slope stability assessment.

It is noted that the proposed dwellings, as shown on Figure 09095-SK2 have only modest footprints and in several cases conventional single level slab on ground construct with the provision of piers will be acceptable. In some steeper locations, strip footings with suspended floors or stepped slab on ground construction will be warranted.

The provision of these good hillside construction practices is quite common throughout the Coffs Harbour region and does not pose a significant constraint on development.

The area of the site within the M classification will require greater design consideration to manage the instability risk. However, Figure 09095-SK2 shows that the development proposed in this area is limited to road construction. All the proposed dwellings fall outside this area, although some rear yards do lie within it.

The east-west road constructed along the base of the slope should not be excessively cut into the slope. Deep cuts at the base of the slope will significantly increase instability risk, especially considering the likelihood of high groundwater in this location. The road should be generally filled rather than cut. It is noted that such filling may also be required to achieve required flood level protection.

Road Construction

The proposed east-west local road runs along the creek flats adjacent the toe of the southern slope. Poor subgrade conditions are anticipated along this alignment due to silty soils of low Californian Bearing Ratio (CBR) and high soil moisture content. Further, and as noted above,

the east-west road should not be cut significantly into the toe of the slope. Its design should allow for significant subgrade replacement and embankment construction. While not precluding road construction, such measures will necessitate greater expense and may necessitate the importation of fill.

The north-south collector road runs up the southern slope at a steep angle, nearly perpendicular to the contour. It also climbs the steepest part of the slope, within the M hazard area with ground slopes of 35%. The maximum gradient for a collector road under Council's standards is 12%.

Subsequently, significant embankment construction and cutting excavation will be required, to a combined maximum of up to 8 metres (i.e. 4m of cut and 4m of embankment).

Such construction, with appropriate design, will adequately manage the instability risk, but will require significant earthworks and associated expense.

Erosion and Sediment Control

The site's soils are not particularly prone to erosion. The Stormwater management Plan prepared by Gilbert & Sutherland P/L (Sept 2005) undertook eight Modified Emerson Crumb tests finding classes 3M & 4/7M which do not indicate high erodeability.

Regardless, construction on such slopes, no matter what class of soil, has the potential to greatly increase erosion with subsequent increased turbidity and sedimentation to Sugar Mill Creek. The development will require appropriate erosion and sedimentation measures put in place and maintained during construction and until adequate revegetation is achieved.

Conclusion

This assessment has examined the geotechnical conditions of the proposed site with respect to their potential impact on the development. The principle constraints found were that of moderate slope and associated risk of instability, poor ground conditions for road construction and erosion risk.

These constraints can be successfully managed through appropriate design and construction techniques. While such management will add to the development costs, they are unlikely to threaten the development's viability. It is noted that many successful developments in and around Coffs Harbour have faced and managed similar constraints.

Flooding

6.7 Provide an assessment of any flood risk on site in consideration of any relevant provisions of the NSW Floodplain Development Manual (2005) including the potential effects of sea level rise and an increase in rainfall intensity.

Practical Consideration of Climate Change requires that where a watercourse is not directly controlled by ocean levels, consideration should be given to increased frequency of events due to increased rainfall intensity.

Department of Environment & Climate Change figures for the Northern Rivers indicate a possible change in rainfall intensity of -10% to +5% by 2030 and +5% to +10% by 2070.

The 100 year flood level on Sugar Mill Creek, of which this is a tributary has been calculated as 2.8 metres, rising to 3.1 metres in 100 years. The development site is set above the 3.5 metre contour. Much of the run off that contributes to local flow will be controlled by proposed subdivision works.

As a practical reference, the houses recently built on Parish Close are above the 1% ARI but below the height of this site.

The land downstream of the site broadens out to a wider flood plain. Hence there are no downstream blockages to affect storm flow. The flood estimates are generally not sensitive to potential increases in rainfall.

6.8 Consider the potential impacts of any filling on the flood regime of the site and adjacent lands.

No filling of flood liable land is proposed.

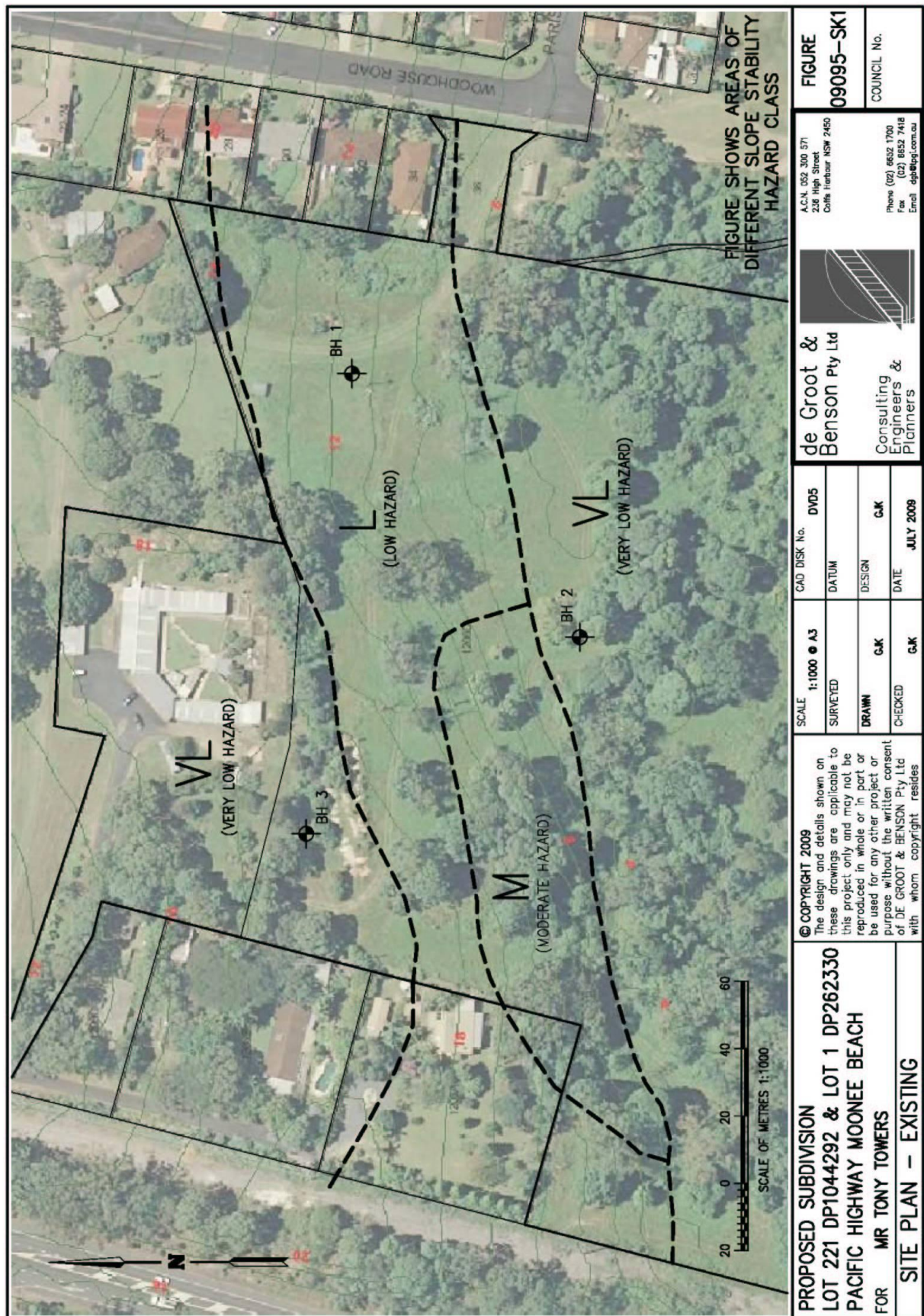
7. Water Cycle Management

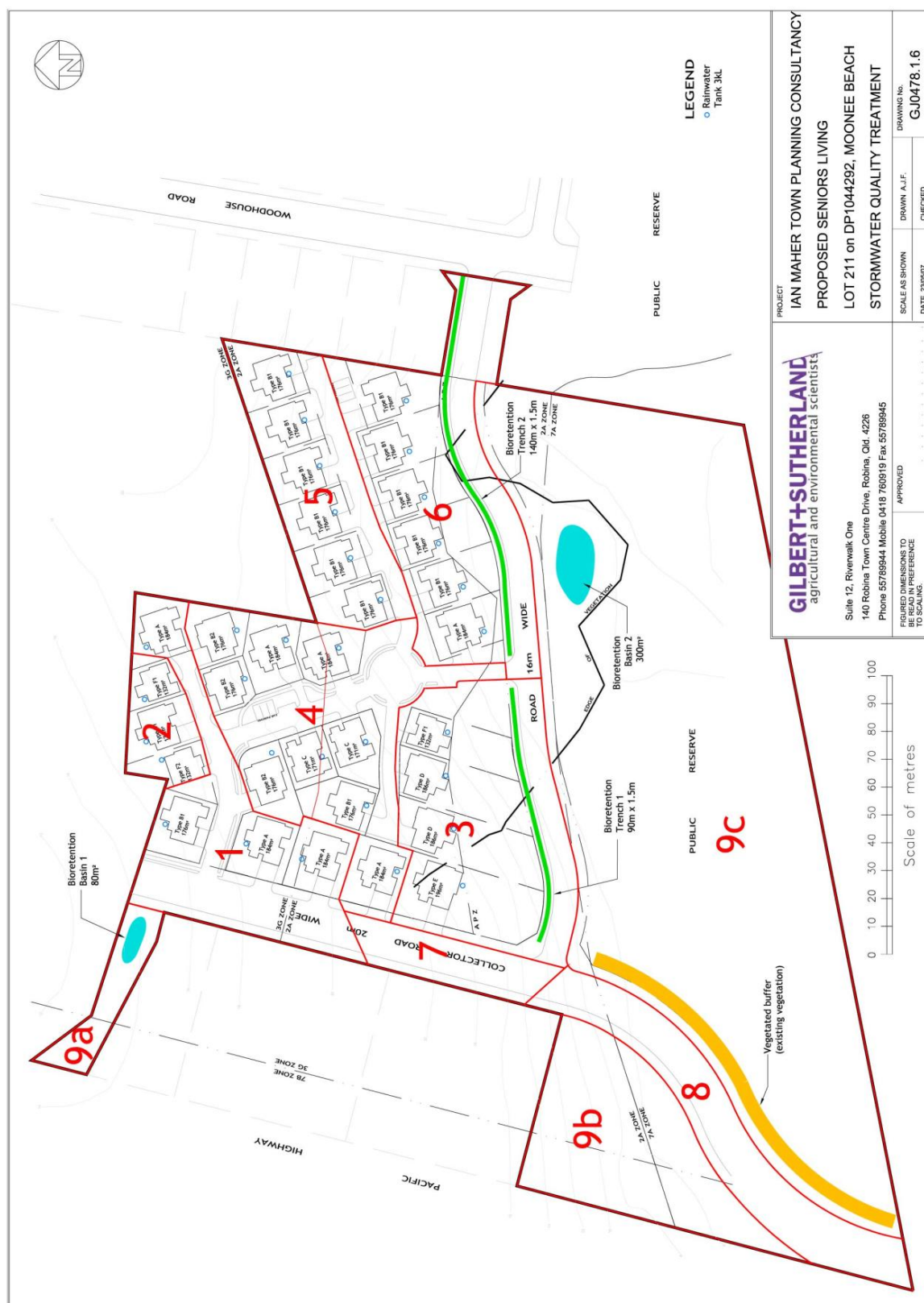
7.1 Address and outline measures for Integrated Water Cycle Management (including stormwater) based on Water Sensitive Urban Design principles which addresses impacts on the surrounding environment, drainage and water quality controls for the catchment, and erosion and sedimentation controls at construction and operational stages.

7.2 Assess the impacts of the proposal on surface and groundwater hydrology and water quality during both construction and occupation of the site.

7.3 Demonstrate how water will be re-used on-site (e.g. rainwater tanks, greywater recycling) and how the principles of Water Sensitive Urban Design will be incorporated into the development.

Assessment was made (by Gilbert and Sutherland – Attachment 4) of the changes in runoff and pollutants and the impacts of the proposal on surface and groundwater hydrology and water quality during both construction and occupation of the site that are likely to occur if the development was completed without any stormwater management or treatment measures. These results indicate an increase in annual runoff, which may be attributed to the increase in impervious surfaces. Specific measures are proposed to achieve a neutral or beneficial impact on the watercourse.





The results also indicate the subsequent changes to pollutant will comply with Coffs Harbour City Council pollutant road reduction targets and no worsening from the Base Case Levels would be achieved.

The same areas were modelled under the same rainfall conditions in a developed state with treatment measures included. A comparison of the estimated average annual pollutant loads in the stormwater runoff before and after completion of the proposed development, including the proposed treatment measures, indicates that the proposed treatment measures have the capacity to:

- significantly reduce the suspended sediment; and
- reduce nutrient loads to a level below or comparable to those from the current land use.

In summary, the specific stormwater management methods recommended are as follows (see plan on previous page):

- Run-off from the northern area, including the animal boarding establishment will continue to flow north.
- Collection of runoff from house roof areas in rainwater storage tanks (generally 3000L) for reuse.
- The inclusion of vegetated buffers and grasslands to treat shallow overland flow.
- Bio-retention trenches will be provided to treat overflow from the built areas of the site.
- The provision of two Bio-retention basins as shown on drawing No GJ0478.1.6. Basin 1 will be a small basin providing final treatment for run-off from catchment one, draining to the north of the site. Basin 2 will be the main basin providing final treatment for run-off from catchments three to seven.
- The developers of the structures on the individual allotments should also be encouraged to implement the principles of “Water Sensitive Urban Design” in their developments to ensure a two phase treatment system is in place to complement the proposed treatment measures.

In order to minimise the mobilisation of subsoils during the construction phase, effective erosion and sediment control measures will need to be implemented on all soil types to ensure minimal sediment movement across and from the site. Details will be provided at the Construction Certificate stage after completion of detailed engineering design works.

Based on these estimates it is considered that the quality of the stormwater runoff from the site during the operational phase will be acceptable provided the modelled permanent control measures are installed and properly maintained. However, careful management will be required to ensure that the projected quality levels are achieved and maintained.

A stormwater management plan has been prepared and is included in this report in Attachment 4. The principle objective of this SWMP is to provide mitigation measures to minimise the potential impacts of the development. Additionally, the SWMP provides information on specific site management issues relating to potential environmental impacts from the development during the construction and operational phases.

8. Heritage and Archaeology

8.1 Identify whether the site has significance to Aboriginal cultural heritage, assess potential impacts and identify appropriate measures to preserve any significance (Aboriginal community consultation should be undertaken in accordance with DEC's Interim Community Consultation Requirements for Applicants).

No evidence has been found of historic camps or surface relics that may require protection. Appropriate consultation has taken place. (See report by Bonhomme Craib. Attachment 6). Consultation with Indigenous stake holders has been carried out according to DECC guidelines.

8.2 Identify any items of European heritage significance, assess potential impacts, and where relevant, provide measures for the conservation of such items.

There are no heritage issues associated with the site.

8.3 Address impacts on World Heritage areas, places listed on the National Heritage List and protected under the EPBC Act.

There will be no impacts. EPBC Act is addressed in the flora and fauna report (Attachment 3)

9. Flora & Fauna

9.1 Outline potential impacts on aquatic and terrestrial flora and fauna and their habitats (within the meaning of the Threatened Species Conservation Act 1995 and the Fisheries Management Act 1994), including (but not limited to) the Quassia sp Moonee Creek and Rusty Plum (Amorpha sp whitei). Provide measures for their conservation, where relevant

A flora and fauna assessment was carried out by James Warren and Associates (Attachment 3).

The northern section of the site, in the commercial zone, consists of mixed landscape planting of trees in mown grassland. The conservation status is low.

On the western side of the area there is found Open Coastal Brushbox. This ecosystem is not considered rare, endangered or vulnerable. It is poorly developed and disturbed by lantana. Fifteen stems of endangered Quassia species (Moonee Creek) occur in a juvenile form. These plants are located in the route of the collector road proposed by Council.

The greater part of the proposed residential area is open grassland with scattered trees and lantana. This area has a low conservation value due to the high level of disturbance and weed invasion. Five stems of the Rusty Plum were also located on the western side of the site.

The southern part of the site, in the 7A zone, contains Tall Sparse forest, Brushbox predominating. The small creek forms the basis for rain forest species. There is evidence of previous logging. The area is well developed with moderate to high conservation value. This area will be retained in a vegetated state and its protection will offset any losses elsewhere on the site.

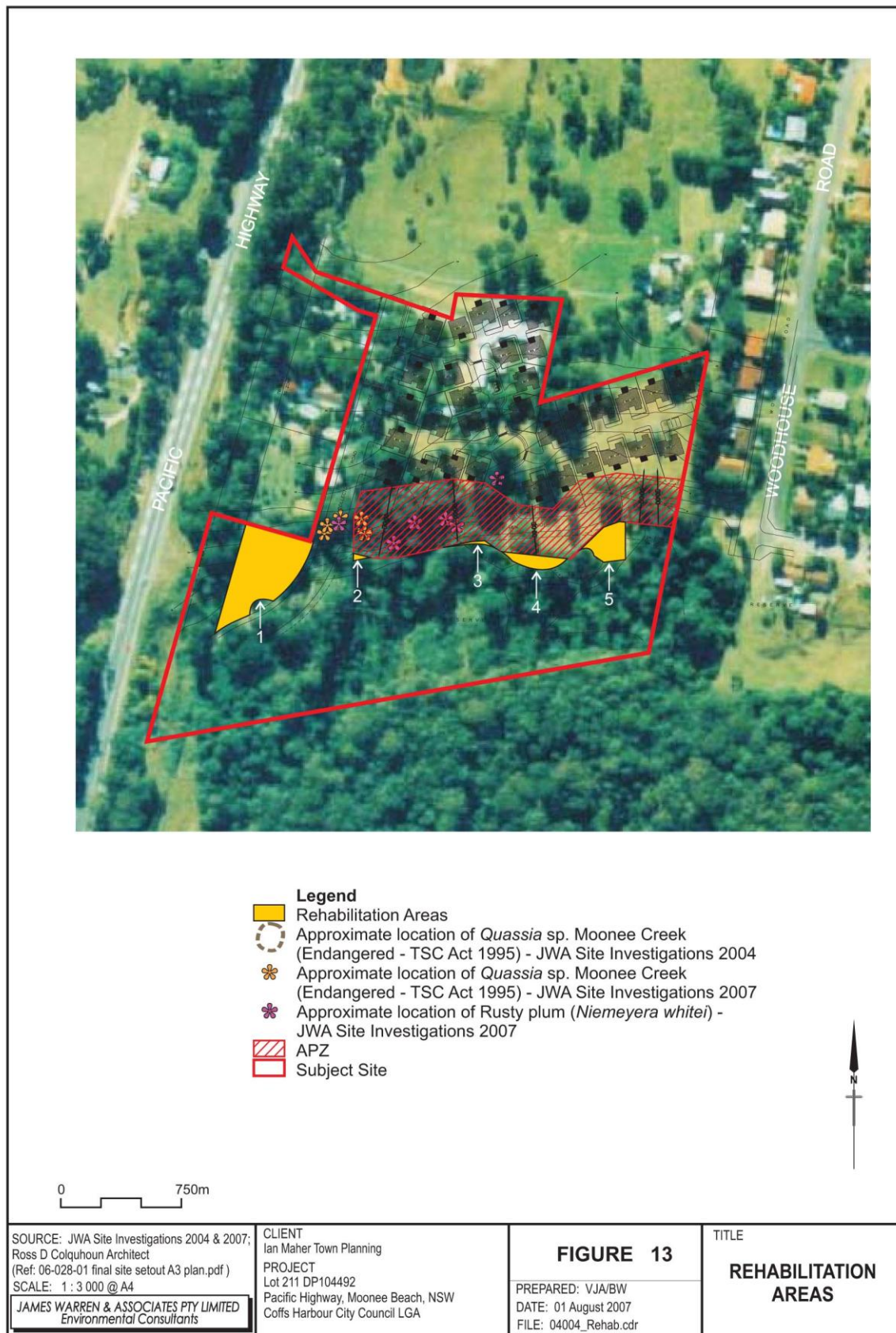
An occurrence (as stems in a juvenile form) of the endangered Moonee Quassia and its tall mid-dense forest protection is likely to be removed by the planned collector road. This road, while not essential to the proposed first stage subdivision is integral to the Council's road planning for Moonee. The proposed development will result in the loss of 3 Rusty Plums, the majority of Rusty Plums will be retained.

A Section 5A assessment (and 7 part test) was completed for the threatened flora species Moonee Quassia. The assessment concluded that any future development is likely to have a significant impact on this population, and may result in the extinction of this species from the Study area. Transplanting of recorded specimens into protected habitat (such as that found in the south of the site within the 7A area) is likely to be necessary if the collector road is to be developed in the future. Transplanting will protect the species from significant impact.

The fauna study recorded no reptiles nor amphibians. However, it was concluded that the site presents a moderate quality habitat for reptiles. Twenty bird species were recorded, none of these threatened species. Eastern grey kangaroo and dogs were seen on the site. Much of the site has been identified as secondary koala habitat by Coffs Harbour City Council. No sign of koala activity was evident during the survey.

Amelioration (See map on next page.)

- As vegetation within the collector road reserve is not likely to be retained, transplanting of recorded Moonee Quassia specimens into protected habitat (such as that found in the south of the site within the 7A area) should take place as part of Stage 2 development.
- Retention of mature trees in the grasslands where possible.
- Weed control including: during construction; in landscaped areas; mulching removed vegetation on site to avoid introduction of weed seeds; and avoiding use of environmental weeds.
- Landscape planting to include forage habitat for birds and bats.
- Weed infestation to the south of the site should be controlled during construction.
- Additional specific measures relating to koala protection include planting of compensatory koala habitat trees outside the development envelope; fencing swimming pools; locating bushfire asset protection zones outside the secondary koala habitat.
- Stormwater management should aim to achieve no significant net change in run-off into the creek in order to protect water quality.
- Vegetation removed should be mulched on-site.
- Professional bush regenerators are to be engaged to control weeds.
- Any Moonee Quassia or Rusty Plums that are removed will be replaced within the public reserve area at a ratio of 5 to 1.
- Traffic speeds be reduced to 40kph in the development.
- Land owners to control cats and dogs. All animals to reside within fenced enclosures and on a leash when outside the enclosure.
- Appropriate disposal of rubbish and food scraps.
- Landscape and fill material to be sourced from suppliers where cane toads do not occur.



9.2 Consider the approved NSW and National Recovery Plan for the Quassia sp. Moonee Creek (Moonee Quassia) July 2005

An occurrence (as stems in a juvenile form) of the endangered Moonee Quassia and its tall mid-dense forest protection is likely to be removed by the planned collector road. This road, while not essential to the proposed first stage subdivision is integral to the Council's road planning for Moonee.

The Department of Environment and Climate Change identified 8 priority action to help recover the Moonee Quassia. The relevant action in respect of this site is the retention of each known population at its current size.

A Section 5A assessment (and 7 part test) was completed for the threatened flora species Moonee Quassia. The assessment concluded that any future development is likely to have a significant impact on this population, and may result in the extinction of this species from the Study Area. Transplanting of recorded specimens into protected habitat (such as that found in the south of the site within the 7A area) is likely to be necessary if the collector road is to be developed in the future. Transplanting will protect the species from significant impact.

As vegetation within the collector road reserve is not likely to be retained, transplanting of recorded Moonee Quassia specimens into protected habitat (such as that found in the south of the site within the 7A area) should take place as part of Stage 2 development.

See map on previous page.

9.3 Outline measures for the conservation of existing wildlife corridor values and/or connective importance of any vegetation on the subject land.

The southern section has good connectivity to Brushbox forest immediately to the south of the site and to the key corridors identified in the area by the National Parks and Wildlife Service. This section is zoned 7A and is to be retained in its vegetated state and dedicated to Council for management.

9.4 Address impacts on migratory species, RAMSAR wetlands and species listed under Section 18 and 18A of the Environmental Protection and Biodiversity Conservation Act 1999.

No impacts are expected. The site is a grazed and mown paddock. This aspect is addressed in the Flora and Fauna Assessment in Attachment 3.

10. Riparian Corridor

10.1 Address potential impacts on the water quality and ecological integrity of Sugar Mill Creek.

The LEP and Moonee DCP intends to protect the riparian area of the watercourse and a 40m buffer has been provided.

A stormwater management plan has been prepared. An objective is to minimise impact on down stream vegetation and Sugar Mill Creek.

Measures are proposed to protect the riparian area from weed infestation during construction.

Stormwater management will achieve no significant net change in run-off to the creek.

10.2 Address measures to protect and manage the Sugar Mill Creek riparian corridor, including the provision of appropriate buffers.

The zoning has been designed to provide an adequate riparian corridor, approximately 75 metres wide. Measures are proposed to further protect the 7A zone in which the creek is located.

Land is to be dedicated to Council. A developer contributions plan is in place for management of such areas.

10.3 Provide appropriate access to Sugar Mill Creek.

Public access will be available as the land is to be under Council ownership. However, physical access should be restricted for environmental protection of the creek and its riparian areas.

11. Noise

11.1 Address potential noise impacts, in particular road traffic noise, for future residents and appropriate mitigation measures.

BlackEARTH Environmental has prepared an acoustic assessment in relation to the proposed development. (Attachment 11). This noise assessment report has been prepared to assess the potential impact the Pacific Highway may impose on the site development.

Ameliorative measures may include one or more of the following:

- At Source Measures - Reduction of speed limit along the existing and proposed roadways.
- Building Design and Treatments - A review of the proposed building layouts, design and orientation has been undertaken and the proposed buildings provide a reasonable response to limit internal noise environment. Some noise control treatments will be required such as glazing and mechanical ventilation for certain houses in Stage 2. No changes to the proposed building layout designs are therefore proposed.

12. Consultation

You should undertake an appropriate and justified level of consultation with the following agencies during the preparation of the environmental assessment:

(a) Agencies or other authorities:

Comments received from agencies have been included in the Director General's Environmental Assessment requirements and are addressed in this Project Application.

Discussions have been held with Council in preparing the proposed design.

Local Indigenous stake holder groups were consulted during preparation of the heritage and archaeology report as required by DECC.

Discussions have been held with infrastructure providers.

(b) Public:

The Project Application should be placed on exhibition at Coffs Harbour City Council administrative centre and Woolgoolga library for a period of thirty (30) days. Any person may make a written submission to Council during this period.

A notice of the exhibition should be placed in "The Independent".

All adjoining owners are aware that development is proposed in accordance with the Moonee DCP. The formal exhibition of the application is the appropriate consultation process in this case.

5 DRAFT STATEMENT OF COMMITMENTS

5.1 General

The aim is to ensure that potential environmental impacts are effectively controlled through each stage of development, i.e. site preparation, construction and post construction phases.

The developer will carry out the project generally in accordance with the plans and development management proposals submitted as part of the Project Application report prepared by Geoff Smyth Consulting and any conditions of consent.

The developer will construct the subdivision in accordance with the Staging Plan or as otherwise approved in Construction Certificate plans approved by Coffs Harbour City Council.

5.2 Specific commitments

The developer will also carry out the project in accordance with the following table:

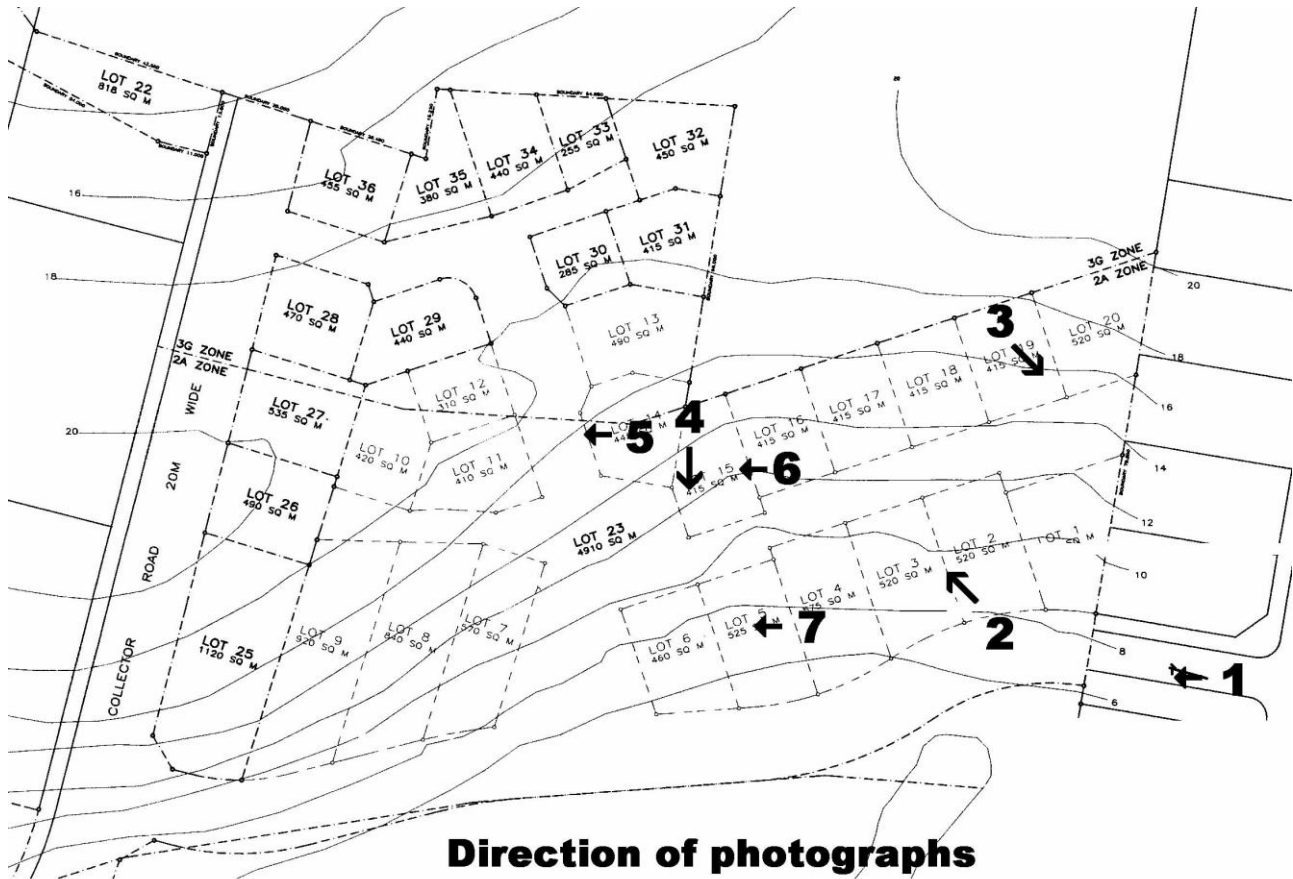
Outcome	Commitment	Timing	Responsibility
Sustainable development	Flora and fauna • Preparation of a Vegetation Management Plan (VMP) in relation to the Moonee Quassia for approval by Coffs Harbour City Council. The developer will implement the recommendations and prepare the site in accordance with the VMP prior to dedication of the reserve beside the watercourse to the Council. • The Endangered Ecological Community will be maintained in accordance with the recommendations of the approved Vegetation Management Plan for a period of 3 years. • Retention of mature trees in future open space where possible. • Weed control including: during construction; in landscaped areas; mulching removed vegetation on site to avoid introduction of weed seeds; and avoiding use of environmental weeds. • Landscape planting to include forage habitat. • Measures will be implemented to control weed infestation in the proposed reserve during construction. • Traffic speed control (40 kph); • Imported landscape and fill materials to be sourced from suppliers free from cane toads. • Impose a restriction on the title of each allotment requiring that any dogs or cats are kept only within the curtilage of a dwelling house, however dogs may be kept outside the curtilage if secured on a leash. • Proposed creek reserve, is to be dedicated to Council	Prior to the release of the Subdivision Certificate During construction Prior to the release of the Subdivision Certificate	Proponent Proponent Proponent
	Riparian protection • Stormwater management will be constructed in accordance with the approved plan. • The creek riparian corridor, is to be dedicated to Council	Prior to release of Subdivision Certificate	Proponent
	Slope Stability • Development will follow good engineering and building practices to avoid landslip hazard	During construction	Site Manager

	Development management The developer will prepare a Construction Management Plan for approval by the Council including education of workers in compliance with the conditions (particularly soil erosion and sediment controls, flora and fauna, riparian corridor protection), details of the environmental management during the development phases and measures relating to waste minimisation and management.	Prior to the commencement of construction and for the duration of the subdivision works.	Proponent
Minimise use of potable water and energy	Water and energy efficiency Each dwelling will be provided with a rainwater tank, generally of 3000 litres except for 2000 litres on proposed Lot 10 and 3500 litres for proposed Lots 13 and 14.		Developer
Stormwater management will achieve no significant net change in run-off to the creek.	Stormwater management - The developer will prepare a soil and water management plan to control run off during construction in accordance with the principles of the Landcom publication Managing Urban Stormwater (MUS): Soils and Construction Volume 1, 4th Edition and Construction Certificate Plans approved by Coffs Harbour City Council. - The inclusion of vegetated buffers and grasslands to treat shallow overland flow. - Bio-retention trenches will be provided to treat overflow from the built areas of the site. - The provision of two Bio-retention basins as shown on drawing No GJ0478.1.6. Basin 1 will be a small basin providing final treatment for run-off from catchment one, draining to the north of the site. Basin 2 will be the main basin providing final treatment for run-off from catchments three to seven. - The developers of the structures on the individual allotments should also be encouraged to implement the principles of “Water Sensitive Urban Design” in their developments to ensure a two phase treatment system is in place to complement the proposed treatment measures. - The developer will design and install water quality control measures in accordance with the Construction Certificate Plans approved by the Council. The developer will maintain the water quality control measures for a period of three years after dedication to the Council.	Prior to the release of the Subdivision Certificate for each stage.	Developer

Provide adequate infrastructure for the proposal	Services - The developer will provide reticulated water and sewerage services to each lot in the subdivision in accordance with the requirements of Coffs Harbour City Council. - The developer will provide underground power and telecommunications infrastructure to each residential lot in the subdivision in accordance with the requirements of the service provider.	Prior to the release of the Subdivision Certificate for each relevant stage.	Developer
	Drainage The developer will install street and inter-allotment drainage as necessary in accordance with plans approved by Coffs Harbour City Council.	Prior to release of the Subdivision Certificate for each stage.	Developer
	Access - The developer will construct all roads and intersections, including, footpaths bus shelters and signs in accordance with the City Council's requirements and approved Construction Certificates. - Construction of the collector road/required by the DCP will be carried out in the second stage of the development. - Dedication of the roads to Council.	Prior to the release of the Subdivision Certificate for each relevant stage.	Developer
Minimise potential hazard	Bushfire risk management The developer will impose a Section 88B Restriction as to User on the title of relevant allotments specifying an APZ and a Level of Construction: - APZ of 30m for building envelopes, measured from the southern side of the road reserve. - For properties fronting the southern access road - Level "3" building requirements under AS3959 "Construction of Buildings in Bushfire Prone Areas", for 10 of the southern most town houses, level 2 for 13 of the central townhouses and level 1 for 12 of the most northerly townhouses. - For southern buildings Level "1" building requirements under AS3959 "Construction of Buildings in Bushfire Prone Areas". The developer will install relevant infrastructure as required, including fire hydrants.	Prior to the release of the Subdivision Certificate for each stage.	Developer

Visual Amenity	• All landscaping following site preparation works should be undertaken in accordance with a landscape masterplan.	Prior to release of Subdivision Certificate	Proponent
Developer Contributions	• The developer will pay Section 94 developer contributions in accordance with Coffs Harbour City Council's Moonee Developer Contributions Plan on a "per ET" basis for each stage of the residential subdivision. • The developer will pay water and sewer developer contributions in accordance with the development servicing plan applicable at the time of payment.	Prior to the release of the Subdivision Certificate for each stage.	Developer

6 PHOTOGRAPHS OF THE SITE





1. VIEW OF SITE FROM WOODHOUSE ROAD, LOOKING WEST



2. LOOKING NORTH FROM THE ACCESS FROM WOODHOUSE ROAD



3. LOOKING SOUTH EAST AT REAR OF WOODHOUSE ROAD HOUSES



4. LOOKING SOUTH TOWARDS THE FORESTED AREA



5. LOOKING SOUTH WEST FROM THE TOP OF THE RESIDENTIAL ZONING



6. LOOKING WEST ALONG THE NORTHERN BOUNDARY FENCE



7. LOOKING NORTH WEST TOWARDS THE HIGHWAY

Environmental Assessment

VOLUME 2 OF 4

**Staged Community Title Subdivision and
erection of dwellings together with 2 residue
Torrens title lots on**

**Lot 211 DP 1044292 and Lot 1, DP 262300
Pacific Highway, Moonee Beach**

July 2009



TOWN PLANNERS & DEVELOPMENT ADVISERS

12a Bellingen Road (PO Box 1925)

COFFS HARBOUR NSW 2450

Email: geoff.smyth@bigpond.com

Phone: 02 66524490

Facsimile: 02 66527242

28 July 2009

Reference No: IM05010.5

Attachment 1

Subdivision Plans

Attachment 2

Building Plans

Attachment 3

Flora & Fauna Report

Environmental Assessment

VOLUME 3 OF 4

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Attachment 4

Stormwater Report

Attachment 5

Bushfire Risk Management Report

Attachment 6

Archaeological Assessment

Attachment 7

Draft Community Management Statement

Environmental Assessment

VOLUME 4 OF 4

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Attachment 8

Traffic Impact Statement

Attachment 9

Phase 1 Contamination Assessment

Attachment 10

Preliminary Acid Sulfate Soil Assessment

Attachment 11

Acoustic Assessment

Attachment 12

Geotechnical Assessment