M - Statement of Commitments

Lot 66 in DP 551005 Moonee Beach

‘Moonee Waters’
Residential Development & Conservation Reserve

Statement of Commitments

December 2008

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PART A **INTRODUCTION & INFORMATION BASE**

1 INTRODUCTION

The 'Moonee Waters' project is located on the north coast of NSW, south of the village of Moonee Beach, approximately 10km north of Coffs Harbour. The 'Moonee Waters' project is located on a single land holding (Lot 66 in DP 551055) of 102ha, of which:

- approximately 21.5ha (21%) is proposed for residential development (involving 210 lots in 2 separate 'villages'); and
- approximately 76.29ha (75%) is proposed for dedication as biodiversity conservation reserve.

The 'Moonee Waters' project has been the subject if an application pursuant to Part 3A of the *Environmental Planning & Assessment Act 1979* (EP&A Act) for approval of a *Concept Plan*. The proposal has involved an array of expert advice and documentation, and has been the subject of:

- a *Concept Plan* (2007 revised version) which detailed the original exhibited proposal;
- public exhibition and a review process;
- documentation in accordance with the *Director-General's Environmental Assessment Requirements* (DGEARs);
- refinement of the development concept in response to the submissions on the *2008 Revised Concept Plan*; and
- preparation of a *Preferred Project Plan*, to which this *Statement of Commitments* is attached.

2 STATEMENT of COMMITMENTS

The Director-General of the NSW Department of Planning (DoP), in the DGEARs, has specified a requirement for the preparation of a *Statement of Commitments* for the 'Moonee Waters' project, in accordance with Section 75F(6) of the EP&A Act. In accordance with the DGEARs for the 'Moonee Waters' project, this *Statement of Commitments* details the measures proposed by expert consultants to Hillview Heights Pty Ltd (the 'Proponent') for environmental mitigation and management of the *Preferred Project Plan* to which the proponent is committed.

This *Statement of Commitments* identifies *inter alia* those matters which will be dealt with in detail in future stages of the project in order to minimise impacts on the environment and to maximize environmental outcomes. The matters addressed herein arise from the detailed analyses of the project which have been conducted and which are documented in the various expert *Reports* which accompanied the EAR and/or subsequent investigations and documentation for the *Preferred Project Plan*.

On the basis that approval is granted under Part 3A of the EP&A Act, the Proponent will commit to the controls and actions for the construction and management of the project which are detailed in this

Statement of Commitments, as well as any conditions of approval imposed by the DoP and appropriate conditions of consent for Future DAs.

This *Statement of Commitments* is based on the detailed recommendations of the various expert *Reports* attached to the *2007 Revised Concept Plan*, as well as the design features contained in that *Plan*, as modified by the details contained in the *2008 Preferred Project Plan* (see below).

3 The Preferred Project Plan

The *2008 Preferred Project Plan* for the 'Moonee Waters' project has refined and revised the *2007 Concept Plan* for the project in light of the submissions made on the *Concept Plan*. The *2008 Preferred Project Plan*:

- provides for development activities over just 21% of the subject site;
- provides for the creation and dedication of 75% of the site for biodiversity conservation purposes;
- facilitates the retention of essentially all of the significant environmental features and resources on the site;
- promotes *Ecologically Sustainanble Development* and the objectives and goals of the EP&A Act, as well as the TSC At;
- constitutes a balanced approach and outcome, facilitating environmentally responsible and moderate development outcomes as well as outstanding environmental and biodiversity conservation outcomes at no cost to the public purse.

The Proponent will undertake subsequent stages (*ie* future DAs, construction and ongoing management) of the 'Moonee Waters' project generally in accordance with:

- the *Preferred Project Plan* (dated December 2008);
- relevant information contained in the supporting technical *Reports* included in the Appendices to the *2007 Revised Concept Plan*; and
- this *Statement of Commitments*.

PART B **SPECIFIC PROJECT COMMITMENTS**

4 STATUTORY REQUIREMENTS

All approvals, licences and permits required by relevant legislation will be obtained from the appropriate government agencies or authorities, and will be kept current as required.

The Proponent will comply with the planning controls set out in Part 3A of the EP&A Act, and any conditions attached to the approval of the *Preferred Project Plan* and or conditions of consent for future DA consents.

Relevant approvals and certificates (*eg Construction Certificates*, licences for activities and/or fill materials *etc*) will be obtained whenever required for the undertaking of all works on the subject site.

5 GEOTECHNICAL, SOILS & SURVEY

As part of any *Development Application* (DA) for works on the site, a detailed geotechnical investigation will be undertaken to confirm the ground conditions, to determine suitable foundation media and conditions for both dwellings and infrastructure and to guide the design of appropriate foundations for the proposed development.

Whilst acid sulfate soils are not likely to be an issue, further surveys will be undertaken where any excavation of soils is required in alluvial soils (if any) below about RL5m AHD.

Any bulk earthworks will be undertaken in accordance with an approved *Soil & Water Management Plan*, to be prepared to the satisfaction of the consent authority as part of a future *Development Applications* (DAs).

Any fill imported to the site will be approved by an engineer prior to the import of the fill, and will be of sound clean material, of reasonable standard, and free from large rocks, stumps, organic matter and other debris. Wherever possible, material having similar properties to the *in situ* soil material shall be sourced.

Detailed survey for all features on the subject site (perimeter and access roads, development Precinct footprints, internal roads and bioretention swales, lots and building footprints) will be undertaken following approval of the *Preferred Project Plan*, as part of future DAs for the development Precincts. The surveys will identify opportunities to retain hollow-bearing and other trees by minor adjustments to feature locations and/or lot layouts and building footprints.

6 DESIGN FEATURES

6.1 General Design Principles

The general design philosophy of the 'Moonee Waters' project will be within the parameters set out in Chapter 8.2 of the *Revised 2007 Concept Plan* and in the *Preferred Project Plan*, and will be in accordance with *Design Guidelines* to be agreed with Coffs Harbour City Council (CHCC) and/or the Department of Planning (DoP) and lodged with DA for subdivisions of the site.

Architectural input will be continued throughout the life of the project to ensure that high standards of design excellence are achieved.

Dwellings and structures will be designed and constructed in accordance with the *Design Guidelines* lodged with the future DA.

It will be an objective of the design process to provide a safe and secure environment within the project, by the provision of adequate and appropriate street and pathway lighting.

6.2 Services

Water Supply

The detailed design and construction timing of all infrastructure and service items will be required to be co-ordinated as the development evolves.

Under the *Moonee Development Control Plan* (DCP), the proponent will be liable for the costs of providing a water main to the development Precincts from the existing main adjacent to the Moonee Beach Tavern (approximately 800m to the north).

However, reimbursement to the proponent will be available if other developments can make use of this main for their own requirements.

The subdivision design provides potable water supply to all allotments, and is looped for security of supply and the optimisation of flows and pressure. Internal mains are linked to the trunk main at numerous locations.

Fire hydrants will be located at appropriate intervals in accordance with Council requirements. Control valving will be planned to enable mains shutdown of discrete areas with minimum impact on adjacent areas. Scour valves (or hydrants) will be placed at the end point of any dead end legs, and at the low points of the mains, to maintain clean water supply conditions.

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

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

Sewer

Coffs Harbour City Council has advised that sewer is to be directed to an existing gravity sewer main located at the Moonee Beach Tavern, approximately 300m to the north of the site.

A number of sewer pump stations will be required to service the 2 development Precincts. Preliminary analysis reveals that a maximum of six sewer pump stations may be required. However, this number may be reduced upon final detailed design of the sewer network, and depending upon the final designed surface levels of the development.

A sewer rising main will be required from the development site to the Council connection point, a length of approximately 300m.

The ultimate development has four distinct sewerage zones as dictated by the undulating topography. For this reason, a system of gravity collection mains, sewer pump stations and rising mains will be required to be connected either in series or delivering into common trunk rising main to be constructed to the existing gravity sewer infrastructure 300m to the north of the site.

Confirmation of the pipe sizing, main layout, manhole locations, rising main design and pump station details will be undertaken during the final detailed design phase for each DA. These works will be undertaken as outline in the requirements and standards established by CHCC.

No environmental impact will result from construction of sewer pumping station/rising mains as these will be located completely within development areas.

Electricity

There is currently an 11kV overhead electricity supply line within the power easement adjacent to the western boundary of the site. Country Energy is also planning the construction of an overhead 66kV supply line adjacent to the existing supply line.

The electrical services to be constructed as part of the development works will comprise electrical transformers, distribution pillars and underground cabling in conduits.

Electrical substations throughout the site will be located, wherever possible, to minimise the visual impact.

Prior to any works commencing, a 'Dial Before You Dig' search will be undertaken to determine the extent and location of all existing services.

Telecommunications

All telecommunication headworks (including conduits, cabling, pits and distribution pillars) will be supplied and installed by Telstra at their cost, during construction of the civil works.

6.3 Coastal Design Principles

Consistency with the *Coastal Design Guidelines* will be addressed by implementing the designs and controls specified in the *2007 Revised Concept Plan* and in the *Preferred Project Plan*, and associated expert documents, including:

- implementation of street-scaping, as provided for in the *2007 Revised Concept Plan* and the *Preferred Project Plan*;
- implementation of the subdivision design and principles, as set out in the *2007 Revised Concept Plan* and the *Preferred Project Plan and the Design Guidelines* to be submitted with DA;
- the limitation of dwelling heights throughout the development to generally 2 storeys (2 storeys plus attic may be permitted on corners); and
- implementation of the layout and building controls as set out in the *Preferred Project Plan*, to be further specified as Design Guidelines in subsequent DA for subdivision.

6.4 Community Facilities and Services

Community facilities and services will include:

- picnic areas in Conservation Areas;

- pedestrian paths and walkways through the *Conservation Area*;
- parking areas for the public.

These facilities are to be created by the Proponent in consultation with DoP, DECC and Council as part of future DA works, subject to approval of the *Preferred Project Plan*.

Reasonable contributions for facilities and services *in lieu* of Section 94 contributions will be negotiated with Council after approval of the *Preferred Project Plan*, and prior to the submission of subsequent DAs.

Payment of the agreed Contributions will be submitted with each DA, following consultation with Council.

6.5 Landscaping

Landscaping within the development Precincts will be carried out in accordance with a *Landscape Design & Management Plan*, to be prepared in association with future *Development Applications* to the satisfaction of the consent authority.

Plant species to be used in all landscaping of public or community lands will be:

- non-invasive;
- by preference, indigenous species; and
- drought-tolerant, and not dependent on significant water input.

Landscape plantings in all APZs, SFAZs and peripheral road/swale areas will consist of indigenous native species only, with no use of non-native species or native plants not indigenous to the site and/or locality.

7 CONSTRUCTION and SITE SECURITY

The development Precincts and associated infrastructure will be constructed in accordance with the *2007 Revised Concept Plan* and the *Preferred Project Plan*, as appropriate.

Prior to the commencement of any works on the site, an overall *Construction Management Plan* will be prepared to the satisfaction of the consent authority to address:

- traffic access to the site during construction;
- plans for the disposal of waste from the site;
- a detailed *Cut & Fill Plan* for the site, including the source of fill material;
- details of measures for the protection of vegetation to be retained on the site and the wetland areas on the site during the above works; and
- an acoustic and vibration management plan.

To prevent the unauthorised entry of people into the construction site and to prevent damage to the environment, security for the construction site(s) will include:

- lockable security gates;
- a security fence around the perimeter; and
- controlled access to the site.

Work as Executed Plans will be prepared for all construction works, and lodged with the relevant authorities, as required.

8 Acoustics & Noise

The issue of vehicle noise on the Pacific Highway in relation to the development Precincts will be further investigated in detail at the *Development Application* stage, and following detailed engineering design of the upgraded Pacific Highway.

Measures will be taken to ameliorate any adverse impacts (if necessary), as set out in the *Acoustic Report* contained in Appendix I of the *Concept Plan*, and to Australian Acoustic Standards.

The layout of features such as fences, walls and vegetation, as well as the orientation and design of the buildings and setbacks, will be utilised to effectively reduce noise levels for lots demonstrably affected by noise.

9 ROAD DESIGN and TRAFFIC MANAGEMENT

9.1 General

All roads to be dedicated as public roads will be constructed in accordance with Council's road standards.

The internal road network will comprise a variety of road types, depending on road function and location. These roads will range in width from 6m for rear lanes to 27m in width for 'ridge roads' ('boulevard' type streets with a wide central median incorporating bioretention swales) in the centre of the development Precincts.

Internal roads will be subject to detailed design at the DA stage in accordance with the principles identified in the *2007 Revised Concept Plan*.

9.2 Access

The ultimate access for the proposed subdivision will be restricted to the Moonee Beach Road and Split Solitary Road interchanges via a north-south 'collector road' parallel to the Pacific Highway.

In the interim, it is planned to provide access for the proposed subdivision via temporary access off the existing Pacific Highway, if residential development of the proposed subdivision precedes the Pacific Highway upgrade.

The temporary access will comprise a channelised *'seagull'* intersection incorporating left and right-turn lanes approximately 150m long (including tapered approaches) in accordance with AUSTROADS standards. The precise location of the temporary access intersections will be determined at DA stage, but is currently proposed at the Crown Road intersection.

10 STORMWATER & WATER QUALITY MANAGEMENT

All development will comply with the requirements of the *Water Management Report* prepared by Patterson Britton Pty Ltd (October 2007) and as detailed in the *2007 Revised Concept Plan* and the *Preferred Project Plan*.

Water quality on adjoining land and in the *Conservation Area* will be protected through:

- 'water sensitive urban design' features such as bioretention swales and buffer strips, as recommended by Patterson Britton;
- gross pollutant traps;
- infiltration structures;
- a *Soil & Water Management Plan* will be prepared to the satisfaction of the consent authority prior to construction activities; to control runoff during construction; and
- construct interim detention and water quality basins prior to any development.

10.1 Water Management Strategy

The Patterson Britton *Water Management Strategy*, designed to meet the following principles of *Water Sensitive Urban Design* (*WSUD*) and *Integrated Water Cycle Management* will be implemented.

The *Strategy* has been designed to:

- Minimise Potable Water Demand;
- Minimise Impacts on Water Quantity; and
- Minimise Impacts on Water Quality.

10.1.1 Minimising Potable Water Demand

It is expected that a 46% reduction in potable water demand can be achieved through implementation of the following measures:

- rainwater re-use tanks (*8000 litres per lot*);
- flow restrictors in the kitchen, laundry and bathroom;
- AAA rated dual flush toilets; and
- AAA rated shower heads and dishwasher.

This exceeds the 40% reduction required by BASIX.

10.1.2 Minimising Impacts on Water Quantity

The topography of the site is such that the Moonee Waters development will not be affected by elevated ocean and flood levels within Moonee Creek even taking into account possible future sea level rises due to global warming.

The peak flow rates for runoff in regular storms would be detained to existing flow rates by the rainwater runoff tanks, raingardens and bioretention swales. This would alleviate adverse impacts on the stability of both Sugar Mill and Moonee Creeks.

The adherence to best practice 'water sensitive urban design' would allow runoff for regular storms to mimic the existing runoff behaviour. This will be achieved through incorporation of large rainwater tank storage volumes and considerable infiltration into special drainage media in the raingardens and bioretention swales. Also, the maximization of pervious areas by minimising road carriageway and footpath widths further reduces runoff volumes.

The average annual runoff co-efficient for the existing site was determined to be 0.31. It has been shown that the runoff co-efficient for the developed site can be reduced to 0.20 through implementation of the following measures:

- installation of rainwater re-use tanks and reuse;
- installation of bio-retention swales and raingardens; and
- maximisation of pervious area within the development.

10.1.3 Minimising Impacts on Water Quality

Runoff water quality is to be managed through a combination of treatment measures in a treatment train, with special emphasis on source control. The proposed stormwater treatment strategy will consist of rainwater reuse tanks, raingardens on lots, bioretention swales in the road reserve, gross pollutant traps and a bioretention swale around the whole perimeter of the development area. The swale area would occupy approximately 17% of the development area.

The implementation of the various treatment measures would reduce runoff pollutant loads below existing levels, and contribute to the long-term improvement in the water quality in Sugar Mill and Moonee Creeks.

A treatment train approach will be implemented into the development which will involve:

- runoff from roof areas will be collected and retained in two 4kL slim line rainwater re-use tanks to be used for toilet flushing, car washing and irrigation;
- overflow from the tanks and runoff from the lot will be detained in an on-site detention tank (if required to supplement the storage in the rainwater tank and raingarden);
- flow from the tank will be treated in an 'on-lot' raingarden (40m_) where runoff will be filtered and treated biologically;
- flow from the lots and roads will be detained and treated in bioretention swales along the centreline of roads where runoff will be filtered and treated biologically;
- excess flows from the bioretention swales will flow to the pipe drainage system designed to cater for the 5 year ARI event;
- stormwater exiting the pipe drainage system will pass through a gross pollutant trap to remove remaining coarse sediment, litter, debris, oils and greases;
- stormwater will flow to a perimeter bioretention swale which will further treat the stormwater and ensure un-concentrated discharge to the receiving environment; and
- the perimeter swales will act as the discharge mechanism for the site. Flows will overtop along the whole length of the swale with a distributed sheetflow to the receiving environment, to replicate the existing conditions.

10.2 Stormwater Drainage Concept Plan

The elements of the proposed Stormwater Drainage Concept Plan are provided in the *Water Management Report* prepared by Patterson Britton (October 2007). Whilst the precise development footprints have changed from the *2007 Revised Concept Plan*, the principles contained in that *Report* apply equally to the *Preferred Project Plan*.

All flows generated as runoff are to be directed to rainwater tanks, raingardens, gross pollutant traps and bioretention swales. These will maximise the runoff treatment and minimize the runoff volumes, mimic the existing hydrology/runoff behaviour.

A major/minor drainage philosophy has been adopted. All piped drainage infrastructure will be designed to convey the 5yr ARI flows generated on site. Flows in excess of the 5yr ARI (*up to the 100yr ARI*) event will be conveyed safely within the internal roadways and swales.

The stormwater pipe drainage will have a 5yr ARI capacity as required by Council, and runoff beyond this capacity will flow overland along the roads. The overland flows will be contained within the road carriageways (and swales where present) and therefore measures will be implemented to ensure safe flows for pedestrian movement in all storms up to the 100yr ARI event.

The maximum longitudinal road grade within the development will be 10%, thus limiting the velocity of overland flows.

The use of rainwater re-use tanks and bioretention swales will reduce the peak flow rates from the site.

The peak flow rate of storms can be controlled with temporary storage and slow release. The rainwater tanks and 'on lot' raingardens will provide this temporary detention storage. The swales in the roads and around the site perimeter will also provide detention storage.

11 BUSHFIRE

The recommendations contained in the relevant *Reports* of Australian Bushfire Protection Planners ABPP 2007, 2008) will be implemented as a fundamental commitment for the 'Moonee Waters' project, subject to approval of the *2008 Preferred Project Plan*.

11.1 *Asset Protection Zones* (APZs) will be provided to the widths nominated in Tables 6 and 7, contained in the ABPP 2007 *Report* and *Preferred Project Plan* Section B.6, Figure 24.

11.2 The APZs and the landscape gardens within each lot shall be maintained as an *Inner Protection Area* (IPA) in accordance with Appendix 5 of *Planning for Bushfire Protection 2006* (PBP 2006) and the Rural Fire Service's (RFS) *"Specifications for Asset Protection Zones"*.

Management of the landscaped gardens shall comply with the following:

- maintain a clear area of low cut lawn or pavement adjacent to the buildings;
- keep areas under fences, fence posts, gates and trees raked and clear of combustible fuels;
- utilise non-combustible fencing and retaining wall structures;
- separate the tree canopy and shrub connectivity with defined landscaped garden beds;
- maintain tree canopies and shrubs so that they are clear of the building by at least 5 metres;
- utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as groundcover to landscaped gardens in close proximity to buildings; and
- maintain minimal fine fuel loading at ground level within the IPA and landscaped area (nominally 3 tonnes / hectare).

Trees and shrubs are acceptable provided that they are spread out and do not form a continuous canopy, are not species that retain dead material, and are located away from the buildings to minimize radiant heat and direct flame attack.

Landscape species selection shall be drawn from those that are considered to be species which are *"fire retardant",* and do not promulgate the spread of fire.

11.3 A *Fire Management Plan* (FMP) shall be prepared to address the maintenance of the APZs and landscaped gardens, and the residual vegetation on the land. The *Fire Management Plan* shall form part of the *Community Management Statement* for the development Precincts.

The management prescriptions of the FMP shall specifically address those measures required to meet the provisions of Section 63 of the *Rural Fires Act 1997,* whilst recognising the need to protect the plant communities in the low-lying parts of the property (wetlands, estuarine vegetation and swamp forest communities) that have been listed as *"endangered ecological communities"* (EEC) on the *Threatened Species Conservation Act 1995* (TSC Act), and the two threatened plant species (the Rusty Plum *Amorphospermum whitei* and the Moonee Quassia) located in the northern portion of the property.

Management of the vegetation within the *Conservation Area* should aim to prevent wildfires within EEC vegetation, and unplanned fire ignitions should be extinguished as soon as possible to prevent the spread of fire throughout this vegetation.

11.4 A Section 88B Covenant, in accordance with the provisions of the *Conveyancing Act 1919*, shall be created on the title of the future residential lots to ensure the ongoing management of the landscaped gardens and/or residual vegetation within the development in accordance with the

provisions of an *Inner Asset Protection Zone* (curtilage to dwellings) and the management prescriptions of the *Fire Management Plan*.

11.5 The application of bushfire construction standards shall apply to the future dwellings in accordance with Tables 4 and 5 of the ABPP 2007 *Report*. The minimum construction standard for future dwellings within the project shall be 'Level 1' construction standard, in accordance with the specifications of *Australian Standard A.S 3959 - Second Edition 1999* and *Amendment 1 2000: Construction of Buildings in Bushfire Prone Areas*.

11.6 Future public access roads in the project shall where relevant be constructed to comply with the 'deemed-to- satisfy' provisions of Section 4.1.3 of *Planning for Bushfire Protection 2006.*

The Specifications for Public Roads are:

- *Roads shall be designed for two-wheel drive all weather access;*
- *Perimeter roads shall be two-way with a minimum carriageway width of 8.0 metres, kerb to kerb, with shoulders on each side to allow traffic to pass in opposite directions;*
- *Roads shall be through roads. Dead ends shall not be more than 200 metres in length and incorporate a 12m outer radius turning circle;*
- *The capacity of road surfaces/bridges in a subdivision with reticulated water supply shall be 15 tonnes;*
- *Curves of roads shall have a minimum inner radius of 6 metres and a minimum outer radius of 12 metres;*
- *Vertical clearance above the road surface shall be 4.0 metres;*
- *All public roads eight metres wide shall locate services outside parking reserves to ensure accessibility to the reticulated water supply;*
- *All public roads between 6.5 & 8 metres in width shall be No Parking on one side with services (hydrants) located opposite the parking side;*
- *Public Roads less than 6.5 metres in width shall provide parking bays clear of the road formation and locate services outside the parking bays;*
- *Single lane one-way roads shall be no less than 3.5 metres in width with parking bays provided clear of the road formation;*
- *Parking Bays shall be 2.6 metres wide from kerb to the edge of the road formation;*
- *All access roads directly interfacing the bushfire hazard shall provide roll top kerbing to the hazard side of the road.*

The specifications for property (internal) access roads within the development are:

- *Internal roads are two-wheel drive capable, sealed, all-weather roads;*
- *Internal perimeter roads are provide with at least two traffic lane width [carriageway 8 metres minimum kerb to kerb] and shoulders to each side to allow traffic to pass in opposite directions;*
- *Roads are through roads. Dead end roads are not more than 100 metres in length from a through road, incorporate a minimum 12 metre outer radius turning circle or "T" turning head suitable for a 10.0m rigid truck, and are clearly sign posted as a dead end road;*
- *Speed humps/chicanes are not used to control traffic speed;*
- *A minimum carriageway width of 6.5 metres with "No Parking" and services [Hydrants] located on one side of the road;*
- *Passing bays shall be provided at approximately 200 metre intervals on internal roads. Passing bays shall be 20 metres long and 3 metres wide, clear of the road formation;*

- *The carrying capacity of the road surface/bridges shall be 15 tonnes for reticulated areas and 28 tonnes for non-reticulated areas;*
- *Curves shall have an inner radius of 6 metres and an outer radius of 12 metres;*
- *Maximum grades shall be 15 degrees (10 degrees preferred);*
- *A minimum vertical distance of 4.0 metres shall be provided clear of overhanging branches, trees and shrubs.*

11.7 The vegetation between the 'connector road' and the Pacific Highway carriageway shall be fuel managed as prescribed by the *Fire Management Plan*. Similarly, a fuel managed corridor of 20 metres width (a Secure Fire Access Zone – SFAZ) shall be provide to the eastern aspect of the 'connector road', south of the Northern Precinct, and a 30 metre wide SFAZ shall be provided within the Dry Blackbutt Open Forest on the northern side of the access road to the Southern Precinct.

11.8 The Coffs Harbour water supply mains shall be extended to service the future residential development, in accordance with the specifications of *Australian Standard AS 2419.2.* Hydrants shall have a flow rate of 10 litres/second, with blue pavement marks provided to locate hydrant positions. Fire hydrants shall be accessible and located such that a tanker can park within a maximum distance of 20 metres from the hydrant and the habitable buildings must be located such that a fire at the furthest extremity can be attacked by fire-fighters using two 30 metre hose lines and a 10 metre water jet. A clear unobstructed path between the hydrant and the most distant point of the building cannot exceed 90 metres. Blue hydrant markers shall be provided to locate the positions of the hydrants. The markers shall be positioned on the hydrant side of the centreline of the road pavement.

11.9 The roof gutters/valley of future buildings shall be fitted with a protection device that minimises the accumulation of combustible materials in the gutters/valleys. The protection device shall have a flammability index of <5, as measured under *Australian Standard AS1530.2 (1993) Methods for fire tests on building materials, components and structures. Test for flammability of materials.*

11.10 An *Evacuation Plan* shall be prepared for each development Precinct, and the Community Association shall establish an Evacuation Sub-Committee with the responsibility of monitoring and updating the *Evacuation Plan*.

12 MANAGEMENT & PROTECTION of the NATURAL ENVIRONMENT

12.1 Management of Impacts During Construction

Potential impacts which could arise from development activities on the subject site will be managed by an array of appropriate impact mitigatiuons and environmental management measure, to be fully detailed in a *Construction Environmental Management Plan* (CEMP) to be prepared and approved as part of each and every future DA.

The CEMP will deal with relevant matters including, but not limited to:

- the implementation of sediment and drainage controls during construction;
- the construction of sediment and drainage structures for the relevant areas prior to development activities commencing;
- the installation of plant and vegetation protection fencing, and the erection of signage;
- the construction of sediment fencing downslope of all works areas;
- the collection and stockpiling for re-use of vegetation and other natural resources (logs, treehollows *etc*) removed from development portions of the site; and
- the implementation of appropriate measures during construction activities to avoid the discharge of wastes, pollutants, chemicals or rubbish into retained areas of vegetation.

12.2 Environmental Management of Development

The two development Precincts are to be managed subject to individual Community Title Schemes, which will:

- co-ordinate management of all natural features within the development footprints (including community roads drainage swales, hollow-bearing trees and retained vegetation). The bioretention swales and water treatment ponds will be planted with indigenous aquatic and semi-aquatic plant species to provide supplementary habitat for wetland and wading birds, amphibians and microchiropteran bats;
- facilitate the involvement of local community scheme members in bush regeneration and enhancement measures;
- facilitate the monitoring by local residents and community scheme members of activities through the *Conservation Area*; and
- manage the community property (including the local roads and bioretention swales.

The development design will incorporate a range of measures and design principles specifically intended to minimise impacts on the adjoining *Conservation Area*, including:

- the concentration of development in two portions of the site and the limiting of boundaries and edges;
- the provision of stormwater detention swales around the development areas to filter and manage stormwater and contaminant discharges, and to provide additional resources and fauna habitat;
- the provision of low impact fencing and features to identify the boundary between the development areas and the conserved vegetation, and the provision of educational signage throughout the site; and
- the management of vegetation within the SFAZs by Council along the access roads (see above) in a manner which retains conservation values and which provides a "*buffer*" in retained conservation lands.

A range of educational signage is to be provided to encourage proper respect for the conservation values of retained vegetation on the site.

All trees retained in the development Precincts, including hollow-bearing trees, will be retained, and are not to be the subject of the Council TPO. These trees will be subject to management by the Community Associations for the Development Precincts. In the event that approval is given for the removal of any tree, the relevant lot owner or owners will be responsible for fully funding the replacement of all tree-hollows contained in any trees removed, within the *Conservation Area*.

The Development Precincts are to be managed with a strong focus on and commitment to the protection of native wildlife and habitats.

The 'Moonee Waters' development will be marketed as an 'ecologically friendly and sensitive' project, in which the maintenance and enhancement of the natural environment is a key objective.

12.3 Conservation Area Management

- The *Conservation Area* includes two elements designed for public access and public recreation purposes:
    - several 'local parks'/picnics areas; and
    - dedicated bicycle paths and walkways through the *Conservation Area*. These are to be constructed in an environmentally sensitive manner by the use of appropriate materials where those elements are 'on ground' and elevated boardwalks and bridges over wetlands or moist areas.
- The locations of all access tracks and pedestrian paths will be determined by the Project Environmental Manager by walked survey with the intention of avoiding specific features and/or species of relevance (*eg* threatened plants, hollow-bearing trees, ponds *etc*).
- Boardwalks will be constructed of materials which do not leach contaminants into the adjoining environment.
- Elevated parts of the pedestrian paths will be constructed in a manner which permits light penetration to allow plant growth beneath the boardwalks and to avoid the creation of areas of cleared and highly degraded lands.
- Educational material and signage will be placed along all pedestrian paths and in the local parks to encourage appropriate use and proper management of the natural environment, and to provide information about the ecological qualities and features of the environment.
- The local parks will be managed in a sensitive and appropriate manner without the use of herbicides or fertilizers.
- The local parks/picnic areas will be established and managed by:
    - the removal of only essential trees, leaving a native tree canopy;
    - the removal of understorey and shrub layer vegetation in patches, leaving islands of native understorey and shrub layer vegetation;
    - the establishment of patches of open grassland using non-invasive species; and
    - the provision of public facilities (such as barbeques, seats and public toilets), located so as to minimise impacts on the natural environment.
- Plant material (particularly groundcover and understorey species) will be salvaged where disturbance is required for installation of the pedestrian and bicycle infrastructure, and re-used to rehabilitate areas so affected or in the rehabilitation of areas of high weed infestation.
- Management of the *Conservation Area* generally will be a benefit to many threatened species as a result of a reduction in disturbance, weed infestation and rubbish dumping and in the identification and protection of particular habitats and features.
- For threatened fauna, no species specific management measures are required beyond the vegetation management measures proposed in the *Conservation Area* except that:
    - hollow limbs from large trees removed for development purposes will be installed in large remaining trees within the *Conservation Area* to provide supplementary habitat for threatened species; and

- the *Conservation Area* will be regularly monitored to identify any additional threatened biota and their habitats or habitat requirements, and to provide recommendations regarding specific management measures, if necessary.

- Prior to clearing activities for development of the Northern and Southern Precincts, and for associated infrastructure, a pre-clearing survey will be undertaken by the Project Environmental Manager or an appointed ecologist to identify any threatened flora and fauna species present and to retrieve and/or salvage individuals as appropriate.
- There are two threatened plant species on the subject site at Moonee:
  - the Rusty Plum (which has a wide but scattered distribution in coastal NSW north from Taree); and
  - the Moonee Quassia (which has a restricted distribution from approximately Moonee north to Grafton).
- Both species were located on the banks of and in the immediate environs of the tributary to Moonee Creek which is located on and adjacent to the northern boundary of the subject site.
- The known specimens and habitat for these species is located outside of the Northern Precinct, with some specimens present on the subject land and some along the tributary on other land to the immediate north.
- Specimens of both species have been adversely affected by existing uncontrolled human access, particularly off-road motorcycle riding. Some efforts have already been made to reduce impacts upon these species.
- Fencing of those areas occupied by the Rusty Plum and Moonee Quassia is to be undertaken in conjunction with the adjoining landowner(s) to the immediate north. In the event that no agreement can be reached with the adjoining landowner(s), that area of the *Conservation Area* on the subject site occupied by those two plant species will be fenced by the proponent, with signage to advise that the area is of special value and must not be disturbed.
- A program to propagate both the Rusty Plum and Moonee Quassia will be implemented, with additional specimens planted into the protected part of the *Conservation Area*.
- The 'Moonee Waters' site is characterised by extensive areas of swamp forest and wetland ecosystems which are listed as "*endangered ecological communities*" on the TSC Act.
- The overwhelming majority of the stands of "*endangered ecological communities*" (EECs) are contained within the *Conservation Area*, and will be protected by the array of environmental management and enhancement measures incorporated into a *Management Plan* for the *Conservation Area*, which is to be prepared in consultation with the Council and DECC.
- The *Management Plan* will involve:
  - identification of the specific management measures to be implemented;
  - identification of the timetable for implementation of various measures;
  - identification of the persons responsible for implementation of those measures;
  - the establishment of a monitoring regime to determine the success of the management measures and to identify additional measures required to rectify any problems; and
  - the establishment of a reporting regime for the *Management Plan*.

12.4 Coastal and Foreshore Access

Improvements to coastal land and foreshore access will be designed as part of future DAs in consultation with Council, DoP and the DECC. This will be achieved by:

- a pedestrian path network which provides for controlled public access to the beach and *Conservation Area*;
- managed access and walkways will be provided to the Beach, Green Point and Moonee Beach across Moonee Creek, as shown indicatively in the *2007 Revised Concept Plan*;
- managed on-street parking for beach users; and
- access points to the beach will be negotiated with the trustee of the Coffs Coast Regional Park (DECC and CHCC) as part of future DAs.

To minimise human trampling of dune areas, the landward edge of the dune vegetation will be fenced to prevent *ad hoc* access, seaward of the proposed development.

A maximum of four defined and constructed accessways will be considered, using DLWC (2001) information on beach accessways (design, position, alignment, gradients, surfaces, fencing, maintenance, and signage), and discussion on structures such as steps and stairways, elevated walkways, and viewing platforms.

13 ARCHAEOLOGICAL & INDIGENOUS HERITAGE

The management recommendations outlined below have been prepared:

- to demonstrate respect and consideration of the views of the local Aboriginal stakeholder groups;
- to provide clear guidance regarding appropriate management and protection of Aboriginal cultural heritage and archaeological values; and
- to reflect the results of the archaeological survey and assessment of the project area.

For the proposed development of the 'Moonee Waters' *Preferred Project Plan*, eight actions are to be undertaken with respect to indigenous archeology and heritage:

- the proponent will permit the relevant Aboriginal stakeholders, with the assistance of a suitably qualified person, to conduct surface collection of the SMC2 and 22-1-0198 sites per the methodology set out in Appendix 1 of the Umwelt 2007 *Report*. The surface collection will be undertaken in advance of any ground disturbing works associated with the proposed development. In addition, it is recommended that the proponent allow a representative from the relevant Aboriginal stakeholder groups to visit the SMC2 and 22-1-0198 site areas after ground disturbance works are completed, so that they may collect any artefacts uncovered by vegetation clearance;
- sub-surface investigation/salvage will be conducted in the 22-1-098 PAD and PAD 2 areas (refer to Figure 6.2 of the Umwelt 2007 *Report*). The sub-surface investigations/salvage should be undertaken in accordance with the salvage methodology detailed in Appendix 1 of that *Report*;
- the CHDLALC should retain the care of any artefacts collected/salvaged from the project area (refer to Appendix 1 of the Umwelt 2007 *Report*);
- any trails/walking tracks designated for the residents to access Sapphire Beach or Green Bluff should be clearly demarcated to limit the areas impacted by pedestrian traffic. Should ground disturbing works be required for the construction of these pathways further consultation with the Aboriginal stakeholders will be undertaken by the proponent;
- the proponent will engage in consultation with representatives from the relevant Aboriginal stakeholder groups, the Coffs Harbour City Council and any other relevant statutory agencies regarding a possible contribution to the construction of a retaining wall (similar to that shown in Plate 13 of the Umwelt 2007 *Report*) to protect the northwestern bank in the area of the 22-1-0051 site to prevent the further loss of cultural heritage material;
- the proponent will engage in consultation with representatives from the relevant Aboriginal stakeholder groups, the Coffs Harbour City Council and any other relevant statutory agencies regarding a possible contribution towards remediation or upgrading of the existing pedestrian track in the north of the site in order to protect and/or conserve site 22-1-0051;
- should the removal of Lantana or any other vegetation be necessary within land adjacent to site 22-1-0051, this should be undertaken in consultation with the Aboriginal stakeholders and should be undertaken in a manner that minimises ground disturbance; and
- in the event that any skeletal material is uncovered by the proposed development, works will cease immediately and the NSW Police Department, the DECC and the relevant Aboriginal stakeholder groups will be contacted, and appropriate management options identified.

Further investigation will be made in the cultural significance of possible scarred trees identified in the *Preferred Project Plan*, Appendix D. Design modification will be made if necessary to ensure their conservation (if they proved to be *Scarred Trees)*.

14 Section 94 CONTRIBUTIONS

The 'Moonee Waters' site is not currently subject to any *Section 94 Contributions Plans*. Consequently, it will be necessary for the Proponent to negotiate appropriate Contributions with Coffs Harbour City Council.

The commitment by Hillview Heights Estates in this regard is:

- to initiate negotiations with the Council;
- to document any offer to Council, and the basis for that offer;
- to provide the Minister, through the DoP, with a record of negotiations throughout the process; and
- to enter into a formal arrangement with the Council as may be required, for the payment of contributions, the undertaking of works or the dedication of land.

Note that a preliminary assessment has been made in the *Preferred Project Plan*, Section C.4 as a basis for negotiations.