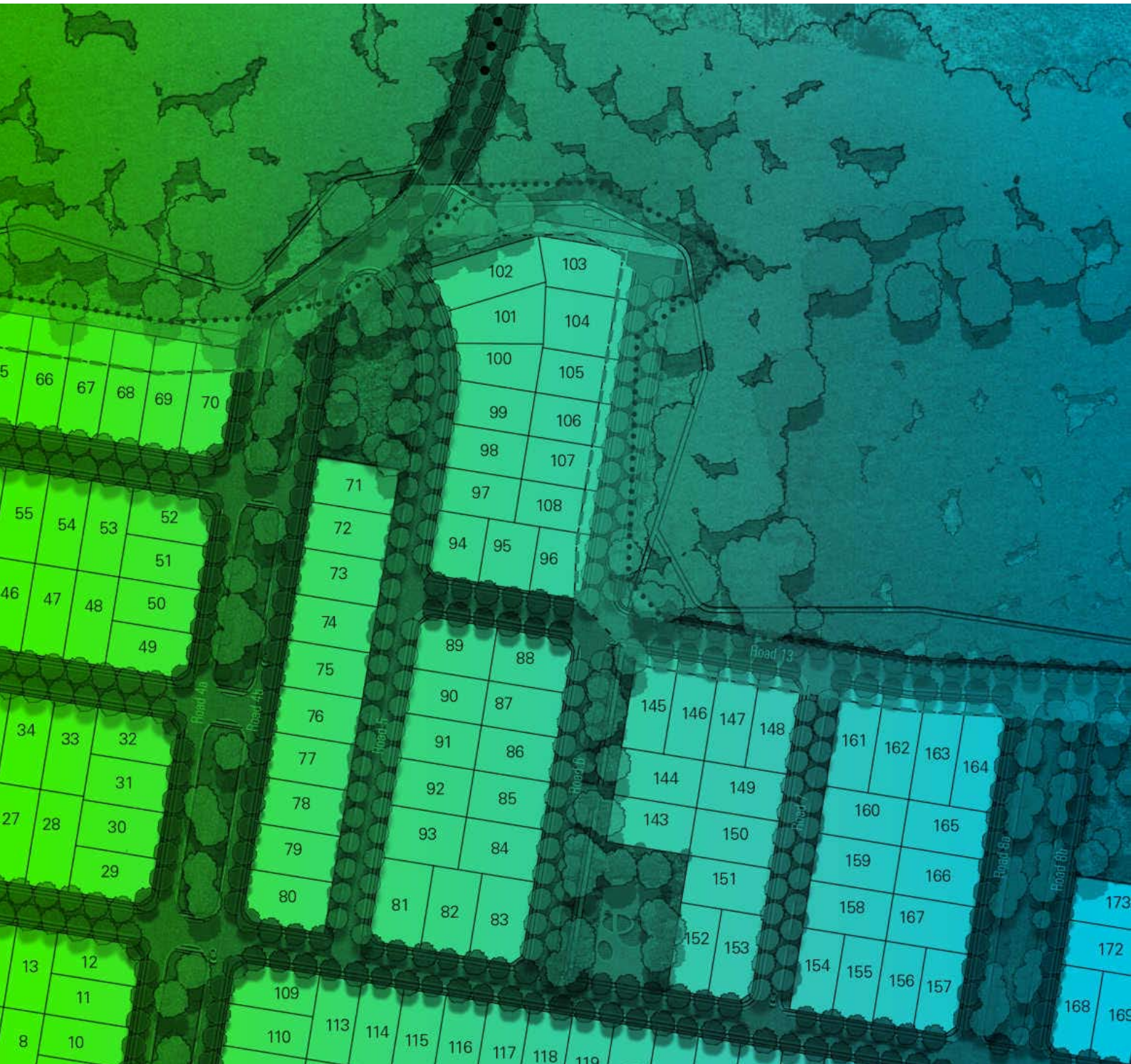
AECOM Design + Planning

Preferred Project Report

Malbec Properties / Saltwater Development South West Rocks

Part 3A Project Application MP 08_0167 | Malbec Properties | 5 August 2010



Preferred Project Report

Malbec Properties / Saltwater Development - South West Rocks

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1.0 Introduction

1.1 Overview

This Preferred Project Report (PPR) has been prepared by AECOM on behalf of Malbec Properties (the Proponent) in relation to the Malbec Properties and Saltwater Development owned site west of Belle O'Connor Street in South West Rocks. This site is the subject of a Major Project Application for a residential subdivision, including associated road network, stormwater drainage systems and open space provision (MP08_0167).

This PPR provides a brief history of the Malbec Properties/Saltwater Development project (the proposal), and outlines the key steps associated with the preparation, lodgement and assessment of the project application. In this regard, this report summarises the amendments to the proposal in response to certain issues raised by the NSW Department of Planning (DoP), State and local public authorities and agencies and the general public during the exhibition period and provides a revised Statements of Commitments for the project.

The Proponent and the specialist consultant team have reviewed and considered the submissions and prepared this PPR, in accordance with Section 75H(6) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). A determination by the Minister for Planning is now requested under Section 75J(1) of the EP&A Act.

1.2 Public Exhibition and Submissions

The Environmental Assessment (EA) for the original proposal was publicly exhibited for a period of 30 days between 30 September 2009 and 9 November 2009. In response to the public exhibition, written submissions were received from a range of State and local public authorities and agencies, including:

- NSW DoP, Regional Projects, North Coast;
- NSW DoP, Northern Region;
- NSW Department of Environment, Climate Change and Water;
- Land and Property Management Authority;
- NSW Office of Water (NOW);
- NSW Rural Fire Service;
- Northern Rivers Catchment Management Authority (NRCMA);
- NSW Department of Industry and Investment (DII);
- Kempsey Shire Council (Council); and
- NSW Roads and Traffic Authority (RTA).

In addition to the above, a total of 59 public submissions were received by the DoP which were issued to the Proponent in summary form.

The issues raised in submissions received from State and local agencies, as well as the general public are as follows:

- Subdivision design and residential amenity;
- Land use and development control;
- Biodiversity and conservation;
- Traffic and transportation;
- Infrastructure provision and funding;
- Flooding;
- Stormwater;
- Sea level rise;
- Groundwater;
- Fire hazard management;
- Odour and noise buffer distances; and
- Consultation.

Copies of submissions were provided to the Proponent for review following the completion of the exhibition period. Each of the issues raised in submissions has been detailed in the Submission Response Table, which is attached as **Appendix A**. A summary of the issues raised and responses by the relevant specialist consultant on behalf of the Proponent are provided in **Section 3.0** of this report.

1.3 PPR Content and Structure

This PPR comprises the following sections:

- Section 1 – Introduction, Project Background, Exhibition and Submissions;
- Section 2 – Preferred Project Description;
- Section 3 – Response to Issues;
- Section 4 – Revised Statements of Commitments; and
- Section 5 – Conclusion.

The PPR is supplemented by a number of documents, including amended plans and specialist investigations as follows:

- Appendix A – Submission Response Table
- Appendix B – Amended Plan Package, AECOM, July 2010
- Appendix C – Addendum Traffic and Transport Report, Colston Budd Hunt & Kafes, April 2010
- Appendix D – Amended Water Cycle Management Plan, Martens Consulting Engineers, July 2010
- Appendix E – Subregional Groundwater Model, Martens Consulting Engineers, July 2010
- Appendix F – Acid Sulphate Soils Assessment, Martens Consulting Engineers, June 2010
- Appendix G – Response to Submissions, Whelans Insites Development Consultants, July 2010
- Appendix H – Additional Flood Modelling, WBM Oceanics Australia, March 2010

This PPR should be read in conjunction with the EA report prepared by EDAW dated 21 August 2009.

2.0 Preferred Project

2.1 Overview

The exhibited proposal has been amended in a number of respects in response to submissions received during the exhibition period and following review by the Proponent. These changes are illustrated in the amended plan package included at **Appendix B** and detailed in **Section 2.2** below. The changes are primarily in response to the DoP's comments on the proposed subdivision layout in relation to amenity for future residents. Following discussions with the DoP and a review of the original subdivision layout, the proposal has been modified to reduce the development footprint through a reduction in the number of residential lots being created on the site and an increased area of open space.

In addition to the changes to the plan package, a number of specialist assessments have been revised, or addendums provided in response to comments received from the DoP, State and local government agencies and authorities and the general public, as detailed in **Section 2.3** below.

The issues raised by government agencies are summarised in **Section 3.0** and are presented under relevant issues based headings, including a response in relation to how each issue has been dealt with. A summary table is provided in **Appendix A**, detailed where each issue has been addressed within **Section 3.0.**

In response to the amended proposal and issues raised in submissions, the Statement of Commitments has been revised to clarify and strengthen planning and environmental management actions in relation to the proposal.

2.2 Revised Subdivision Layout

In response to the issues raised by DoP and as a result of design refinements the Proponent has revised the subdivision layout for the proposal. The revised subdivision layout is illustrated in **Figure 1**. The full, at scale plan package is located at **Appendix B** of this report. The following provides a summary of the amendments to the subdivision layout.

- Reduction in total number of individual development lots by 50 lots from 318 lots to 268 lots, which is equivalent to an overall reduction of 8.4 %.
- Addition of one medium density super-lot within the western portion of the site to show consistency with Council's proposed Development Control Plan (DCP) for the area.
- Realignment of Roads 4a and 4b and Roads 8a and 8b.
- Removal of active open space areas and water treatment constructed wetland from within the 7(b) Environmental Protection (Habitat) Zone.
- Incorporation of active open space areas and construction wetland within the 2(a) Residential zone.
- Increase in overall open space area for the proposal by 3,748 m^2.
- Removal of Road 2 and all required asset protection zones (APZs) from within the 7(b) Environmental Protection (Habitat) Zone.
- Removal of cycleway from within the 7(a) Wetlands Protection Zone (as defined under *State Environmental Planning Policy No 14—Coastal Wetlands* (SEPP 14)).
- Removal of two roundabouts.
- Increase in lot sizes for lots adjacent to the eastern property boundary.

The breakdown of lot sizes and numbers following amendments to the subdivision are shown on the Lot Size Plan (see **Appendix B**) and in **Table 1** below.

Table 1 Number of Proposed Lots by Size

Lot Size	Number of Proposed Lots
500 m^2 – 549 m^2	127 lots
550 m^2 – 599 m^2	71 lots
600 m^2 – 649 m^2	39 lots
650 m^2 – 699 m^2	14 lots
700 m^2 – 799 m^2	7 lots
800 m^2 – 900 m^2	10 lots

Figure 1 Amended Subdivision Plan

2.3 Specialist Assessments

2.3.1 Traffic and Transport

An addendum Traffic and Transport report has been undertaken by Colston Budd Hunt & Kafes (CBHK) dated April 2010. The addendum report discusses the amended subdivision layout with regard to access, internal circulation and layout and provides an assessment relating to the traffic generation and potential traffic impacts of the Preferred Project. The findings of the addendum report with regard to the amended subdivision layout are summarised below.

The report also provides responses to issues raised as a result of the exhibition period. These are discussed in further detail in **Section 3.5**. The full CBHK Traffic and Transport report can be viewed at **Appendix C**.

Access, Internal Circulation and Layout

Vehicular access is proposed to be provided via a Road 14 on the southern boundary of the site, and a new road connecting north from the site towards Phillip Drive (northern extension of Road 4). These road connections are essentially the same as proposed within the original exhibited proposal. Access via Road 14 would be controlled by a new roundabout at the intersection of Belle O'Connor Street, Road 14 and the STP access road (see **Figure 2**). As advised by CBHK, this new roundabout would operate at level of service A/B, a good level of service, with average delays of less than 15 seconds per vehicle. This roundabout would operate until Belle O'Connor Street is extended through the proposed development area located to the south of the subject site known as Seascape Grove.

As Seascape Grove is developed, the extension of Belle O'Connor Street could be constructed, which would facilitate a new site access to the subject site. This new site access (referred to in **Figure 2** as the future/long term site access) would meet the Belle O'Connor Street extension at an intersection controlled by a second new roundabout. This second roundabout would only be constructed once the extension of Belle O'Connor Street is completed through the Seascape Grove site to the south. Once this extension occurs, the western part of Road 14 would be closed where it is not needed for property access.

Figure 2 Proposed Roundabout

New internal roads would connect from Road 14 for access to the development in three locations at Roads 4a/b, 8a/b and 11. Roads 4a/b would provide the main north-south connection through the development to other sites in the release area to the north.

In addition to connecting to other parts of the release area to the north, the road connection to the north would provide for a connection through to Phillip Drive, via Waianbar Avenue. This connection would distribute traffic

more evenly on the surrounding road network, provide more convenient access to and through the release area and reducing overall vehicle kilometres travelled. It would also improve public access to the beach and coastal foreshore.

A summary of proposed internal road widths, as presented within the amended subdivision layout is outlined in **Table 2**. The proposed carriageway widths are generally in accordance with Council's Guidelines for Engineering and Subdivision (DCP 36), which suggest carriageway widths of seven metres (access place), nine metres (local street) and 11 m (collector road). The exceptions are roads 4a/4b and 8a/8b, which provide 6 m carriageways. These roads include a drainage swale in the centre and one way carriageways on each side of the swale. The carriageway configurations would cater for traffic volumes on these roads as well as access to individual properties. They are therefore considered to be appropriate for these roads. Reserve widths are also generally in accordance with DCP 36, except where they are wider to include drainage swales and bicycle paths.

Pedestrian/cycle connections would be provided from Belle O'Connor Street into the subdivision. Bicycle paths and pedestrian footpaths would also be provided internally, including to the neighbourhood park.

Table 2 Proposed Internal Road Widths

Road	Reserve width	Verge width	Carriageway width	Swale & EOC
Road 1	16m	3.5m x 2	9m	-
Road 2	16m	3.5m x 2	9m	-
Road 3	16m	3.5m x 2	9m	-
Road 4a	36m	3.5m x 2	6m	15m swale 1m EOC x 2 (either side of swale-17m with EOCs)
Road 4b			6m	
Road 5	17m	3.5m x 1 eastern side only	9m	3.5m swale, EOC 1m one side only (4.5m swale + EOC)
Road 6 (north of Road 13)	15m	3.5m x 2	8m	-
Road 6 (south of Road 13)	24.5m	3.5m x 1 8m x 1 (includes bike track behind swale)	8m	4m swale, 1m EOC on one side (5m swale + EOC)
Road 7	15.5m	3.5m x 1	7m	4m swale, 1m EOC on one side (5m swale + EOC)
Road 8a	36m	3.5m x 2	6m	15m swale, 1m x2 EOC (one on either side of swale) 17m Swale +EOC
Road 8b			6m	
Road 9	15m	4m x 1	7m	3m Swale, 1m EOC (one side) 4m swale + EOC
Road 10	16m	3.5m x 2	9m	-
Road 11	18.5m	3.5m x 1	9m	5m swale, 1m EOC (6m Swale + EOC)
Road 12 east	15m	3.5m x 1	7m	3.5m swale, 1m EOC one side = 4.5m swale + EOC
Road 12 south	15m	4m x 2	7m	-
Road 13	16m	3.5m x 2	9m	-
Road 14 (west of western swale)	22.75m	6.25m x 1 northern side 5.5m x 1 southern side	11m	-
Road 14 (east of western swale)	21.5m	6.5m x 1 northern side 6m x 1 southern side	9m	-

2.3.2 Stormwater, Flooding, Groundwater and Acid Sulfate Soils

A number of documents have been prepared by Martens Consulting Engineers (Martens). These documents were prepared to provide additional information and data as requested by the DoP, DECCW, Council, NRCMA, NOW and the community. Documents prepared by Martens include the following:

- Amended Water Cycle Management Plan, July 2010. The scope of the report includes the review of the development in the context of the Director General's Environmental Assessment Requirements (DGEARs), particularly on stormwater and water quality and outlines proposed water quality and stormwater management and mitigation measures for the proposal. As outlined within the Plan, Martens flooding assessment drew on two previously flood assessments carried out by WBM Oceanics Australia as follows:
  - *Saltwater Creek Flood Study*, WBM Oceanics Australia, 2005. This initial flood assessment was undertaken on behalf of Kempsey Shire Council and details flood behaviour of the Saltwater Creek and Lagoon catchment.
  - *Additional Flood Modelling for the South West Rocks Development*, WBM Oceanics Australia, 2010. This modelling was undertaken as a result of DoP's request that additional Saltwater Creek modelling scenarios be investigated. The modelling includes an assessment of the additional flows from the subject site due to the proposal, assessment of the impacts of climate change on the subject site and catchment and further analysis of site storm surge impacts.
- Sub-regional Groundwater Model Report, July 2010. The report documents the formation and results of a sub-regional numerical groundwater model that was developed to assess groundwater related impacts associated with the proposal. The model was developed in response to requests for further information that were outlined by the DoP following an independent peer review by GHD of Martens 2009 Engineering Services and Stormwater Management Report submitted as part of the original application.
- Acid Sulfate Soils Assessment, July 2010. The assessment includes a desktop study review of site geomorphic setting and acid sulfate soil (ASS) risk maps, detailed site soil landscape investigations and laboratory analysis of collected soil samples. The objective of the assessment is to determine the extent of potential and actual ASS on-site, the risk of ASS exposure during development works, and to prepare an ASS management plan if required based on soil chemistry test results.

Responses from this report to the issues raised are summarised in **Section 3.7.** The Martens Amended Water Cycle Management Plan, Groundwater Model and ASS Assessment can be viewed in full at **Appendix D**, **Appendix E** and **Appendix F** respectively. Additional Flood Modelling undertaken by WMB Oceanics Australia in 2010 can be viewed in full at **Appendix H**.

2.3.3 Ecology

A Response to Submissions document has been prepared by Whelans Insites Development Consultants (Whelans Insites) dated July 2010.

The document was prepared to provide additional information and data as requested by the DoP, DoP – Regional Office, DECCW, Kempsey Shire Council, the NRCMA, NOW and the community. Specifically, this report seeks to provide the following:

- justification of methods used during flora and fauna investigations which have been carried out by Whelans Insites and various other consultants over the subject site and in the immediate vicinity;
- further assessment of environmental constraints and of potential adverse impacts upon native (including threatened) biota and their habitats;
- justification of the amended proposal from an ecological perspective.

Responses from this report to the issues raised are summarised in **Section 3.4**. The full Whelans Insites report can be viewed at **Appendix G**.

2.4 Revised Statement of Commitments

In response to the amended proposal and issues raised in submissions, the Statement of Commitments has been revised to clarify and strengthen proposed planning and environmental management actions in relation to the proposal. The revised Statement of Commitments can be viewed in **Section 4.0** of this report.

3.0 Response to Issues

3.1 Overview

This section provides a summary of the issues raised in the submissions and a general response to those issues. Details of the issues raised in the submissions are presented in the Submission Response Table in **Appendix A**.

The issues raised in submissions are as follows:

- subdivision design and residential amenity;
- land use and development control;
- biodiversity and conservation;
- traffic and transportation;
- infrastructure provision and funding;
- flooding, stormwater, sea level rise and groundwater;
- fire hazard management;
- odour and noise buffer distances; and
- consultation.

3.2 Subdivision Design and Residential Amenity

3.2.1 Number and Size of Allotments

Issue

The DoP raised concern that the number of proposed allotments was excessive and would create a dense residential population in an otherwise rural residential setting. The DoP has recommended a reduction of the total number of lots, particularly through the eastern part of the site to allow better integration with the surrounding locality.

The community raised the issue that proposed lot sizes are small and dense when compared to the surrounding area.

Response

To address the concerns of the DoP, the revised scheme includes a reduction in total number of individual development lots by 50 lots from 318 lots to 268 lots.

The lots fronting the eastern property boundary have been reduced from ten to seven, to provide a better transition to the rural residential area adjacent to the site and to allow for better integration with the surrounding locality. As a result of a reduction in the total number of allotments fronting the eastern boundary, these lots have increased in size from 506 m² to 806 m².

Further, as illustrated on the Building Envelope Plan (**Appendix B**), the closest dwelling located to the east of the proposal would be provided with a separation of approximately 50 m. This separation, combined with the reduction in total number of lots and increase in size of lots adjoining rural areas has enabled a more suitable density transition between the existing rural residential setting and the proposed development.

3.2.2 Provision of Open Space

Issue

The DoP has recommended that active open space areas be incorporated within the subdivision design to break up continual rows of residential development. Council has advised that the *South West Rocks Open Space Strategy 2004* has not been sourced in the EA, with the EA only addressing the needs of this development in isolation. The community raises the issue that there is minimal provision for open space in the Residential 2(a) zone, with the majority of open space and recreational facilities located within the 7(b) Environmental Protection (Habitat) zone. The DoP recommends active open space areas be incorporated within other parts of the subdivision to provide a more sustainable outcome. In addition, the DoP Regional Office recommends that open space areas be situated on previously cleared areas to avoid the need for extensive clearing of vegetation within the 7(b) zone.

Response

The amended proposal increases the overall open space area by 3,748 m^2 from the 2,500 m^2 that was proposed as part of the original design. As a result, some 6,248 m² of open space is proposed as part of the current amended proposal. Further, active open space areas have been removed from within the Conservation Zone and incorporated within the Residential 2(a) zone (referred to as the development site), as shown in **Figure 1**. These active open space areas are located throughout the development site in the following form and dimensions:

- A Pocket Park in the north western corner of the development site, with access via Road 1. This park has an area of 760 m² and acts as a link between the proposed medium density allotment and 2 m wide cycleway that runs between the development area and 7(b) zone. The park would provide an informal recreation space for local residents. A small amount of play equipment and informal seating is proposed to be provided in this park.
- A second Pocket Park located in the south eastern area of the development site, on the corner of Roads 3 and 11. This Pocket Park would consist of an area of 507 m² and accommodate a small amount of play equipment and informal seating to facilitate passive recreation.
- A Bushland Exercise Park at the northern end of Road 6 located along the northern site boundary adjoining the 7(b) zone, comprising an area of 2,481 m². This park would consist of a turfed clearing with an exercise station to tie into the function of the bike/jogging track that runs through it. Informal seating and picnic tables would also be provided.
- Neighbourhood Park in the centre of the development site, containing a playground on an approximate area of 2,500 m². A turfed area with a playground would lie in the centre of the park, surrounded by remnant vegetation which would be managed by periodic slashing. A strip of remnant vegetation would contain a cycleway to connect the Neighbourhood Park to the wider cycle network that travels through the site and Conservation Zone.

While the designated active and passive open space areas described above have been located entirely within the Residential 2(a) zone, a cycleway is proposed to travel through the 7(b) zone. However it is noted that unlike the original proposed design, the cycleway has been removed from within the 7(a) Wetlands Protection zone in order to minimise potential impacts upon this area. At this stage, proposed cycleways in the 7(b) zone are indicative positions only. Bike paths in this area are proposed to follow existing tracks, to minimise disturbance to natural vegetation. The exact positioning of the cycleways are to be determined in consultation with Council during detailed design of the proposal.

Kempsey Shire Council's *South West Rocks Open Space Strategy 2004* outlines standards for open space within the Kempsey LGA. As outlined in Section 5 of the Strategy, open space areas within the proposal would be defined as local parks, and should meet the objective of providing landscaping and playground equipment within 500 m of all residents. The Strategy also outlines criteria for location, size and quantity for local parks as follows:

- Quantity – sufficient to meet location and size criteria of 1.13 ha per 1000 persons, comprising of local and district parks.
- Location/distribution – within 500 m of all residents and safe access without major road crossings.
- Size – minimum size of 2,000m^2, exclusive of any drainage/ stormwater management reserves and serves up to 1,000 people.

Based on an occupancy rate of 1.8 persons per dwelling[1] (or allotment) future population of the proposal can be estimated at approximately 482 persons (excluding the proposed medium density lot). Based on the amended designs, 6,248 m^2 of open space is provided as part of the proposal, which equates to the provision of approximately 1.3 ha of open space per 1000 persons, in excess of Council's requirement.

As illustrated in **Figure 1**, proposed open space areas have been located and distributed to be within 500 m of future residents. This has been achieved through the location of smaller pocket parks within the south eastern and north western portions of the development site. It is noted that these pocket parks do not meet the minimum size of criteria of 2,000m^2, however it is considered that these parks are of adequate size to provide a small amount of play equipment and informal seating to facilitate passive recreation and thereby achieve the general objectives of Council's Open Space strategy. With the exception of future dwellings located within the eastern portion of the development site, the majority of the future residents of the site would be within 500 m of the proposed 2,500 m^2 Neighbourhood Park located in the centre of the development site.

[1] Occupancy rates are based on those used within Council's *Residential Land Release Strategy*.

3.2.3 Residential Amenity

Issue

Submissions received from the community indicate concern that the proposed subdivision is isolated from the main township of South West Rocks and not contiguous with any other major subdivision or retail or community facilities.

Both Council and the community raised concern over mosquito management in the area andit was noted that the EA makes provision for the planting of trees to act as separation barriers around the saltwater lagoon, but does not address the potential for drainage lines through the site to encourage mosquito breeding.

Response

An assessment of the need and justification for the proposal with regard to consistency of the proposed subdivision with the existing strategic planning framework, environmental constraints and suitability of the subject site was provided in Section 1.4 of the EA for this proposal. In this regard, the proposal has been found to be a suitable form of development for the subject site with regard to location and proximity to existing and future public infrastructure and facilities.

The issue of mosquito management is addressed in **Section 3.4.13**.

3.3 Land Use and Development Control

3.3.1 Development in the Environmental Protection zone

Issue

The DoP, Kempsey Shire Council and the community raised concerns over the location of roads and APZs along the north western edge within the 7(b) zone. The use of land in the 7(b) (Environmental Protection (Habitat) Zone) for the purpose of roads and APZs is not considered by the DoP or Council to be consistent with the objectives of the zone and therefore not supported.

Further, the DoP and the community raised concern over the proposed location of ancillary development, such as recreational facilities, playground areas, cycleways, barbeque facilities and stormwater protection works in the 7(b) Environmental Protection zone. This was similarly considered by the DoP and Council to be inappropriate in the 7(b) zone, particularly in proximity to the wetland. The DoP recommends that the proposed pathway and boardwalk layout either be removed from the 7(b) zone, or redesigned to avoid encroachment within areas of SEPP 14 Wetland.

Response

As illustrated in **Figure 1** and detailed in **Section 2.2** of this report, the following design changes have been made to the proposal to address the above issues:

- Removal of active open space areas and water treatment constructed wetland from within the 7(b) Environmental Protection (Habitat) Zone;
- Incorporation of active open space areas and construction wetland within the 2(a) Residential zone;
- Removal of Road 2 and required APZs from within the 7(b) Environmental Protection (Habitat) Zone; and
- Removal of cycleway from within the 7(a) (Wetlands Protection) Zone.

It is considered that as a result of the above design changes, the issues raised by the DoP, Council and the community in relation to inappropriate land uses within conservation zones have been adequately addressed.

3.3.2 Housing Oversupply

Issue

Submissions received from the community raised the issue of housing oversupply and state that currently there are over 200 vacant unsold lots in South West Rocks. Concern was raised in submissions regarding the scale of the proposed development, which is considered by the respondents to outweigh the actual need and demand for land in the area.

Response

The Kempsey Shire Council *Residential Land Release Strategy 1990* (RLRS) states that South West Rocks is the fastest growing urban area in the Kempsey Shire local government area (LGA). Population projections contained

within the RLRS predict that the population of South West Rocks will increase to 7,600 by 2016 (census data showed it was 4,069 in 2006). Dwelling projections within the *Mid North Coast Regional Strategy* (NSW Department of Planning 2009) require provision for an additional 17,800 dwellings in the Hastings – Macleay Valley subregion over the next 25 years, with part of this growth expected to occur in the South West Rocks release areas.

The proposal would contribute towards the housing supply needed to meet the projected demand for housing due to the anticipated population growth in the South West Rocks area, Kempsey Shire Council LGA and the Mid-North Coast Region as a whole. The RLRS population projections and local and regional strategies point to a need for an increase in the supply of housing in the region, part of which would be provided by the residential lots proposed to be created under the proposal. . The proposal aims to provide for this development within the ecological constraints of the site, reducing the need for new land release elsewhere within the locality and the broader Kempsey LGA.

The development of the site for residential development is therefore considered to be consistent with both State and local government strategic planning policy, and projected housing need for the region.

3.3.3 Application of Kempsey Local Environmental Plan 1987

Issue

Kempsey Shire Council and the community raised concern in submissions in relation to the way in which the project application addresses the relevant provisions of *Kempsey Local Environmental Plan 1987* (KLEP 1987). Clause 66 of KLEP 1987 applies to development on land at Philip Drive and Belle O'Connor Drive, South West Rocks, which includes the subject site. The objectives of Clause 66 are to ensure that:

a) development enhances the natural environment, and

b) future dwellings achieve acceptable residential amenity, having regard to noise and odour emanating from the South West Rocks Sewage Treatment Works, and

c) environmental management works proceed concurrently with development, and

d) infrastructure and facilities, including public open space, are provided in an efficient manner, and

e) development occurs in accordance with a development control plan that has been prepared for the land.

In its submission, Kempsey Shire Council recommended the following actions for incorporation into a site specific DCP:

- adopting similar guidelines as recommended in the Local Environmental Study (LES) for development of the Saltwater Catchment;
- adopting guidelines as requested by NSW Health, for amelioration of natural environmental and industrial hazards including mosquito breeding; and
- a staging plan to represent the optimum rational sequencing of development for all land subject to Clause 66 of KLEP 1987.

Response

Consideration of the objectives of clause 66 of KLEP 1987 is provided in the table below.

Table 3 Consideration of Clause 66 of LEP1987

Objective	Consideration of Proposal
development enhances the natural environment,	In accordance with Amendment No. 55, the proposal includes a Conservation Area, which seeks to protect the riparian corridor and SEPP 14 wetland in the north of the site. This area contains existing remnant vegetation and would be preserved in perpetuity with subsequent benefits to the natural environment in terms of conservation of vegetation and habitat for native species. The design also responds to the flooding and drainage issues which occur in the area and integrates a water sensitive stormwater drainage solution for the site. The proposed drainage swale system and water treatment elements would improve the water quality of runoff before it enters the Conservation Area and surrounding sensitive environments. The use of this approach also minimises the need for cut and fill that would generally be required for the construction of a conventional drainage system, reducing the overall environmental impact of the proposal.
future dwellings achieve acceptable residential amenity, having regard to noise and odour emanating from the South West Rocks Sewage Treatment Works	Residential amenity is preserved in the proposal through the design of the proposed subdivision and the preservation of appropriate buffers between the residential areas and the existing Sewage Treatment Works. The EA undertaken for the project demonstrates that the future residents of the site would not be subject to unacceptable noise or odour impacts. The provision of approximately 6,248 m^2 of open space within the development site also results in a high quality environment which promotes a high standard of residential amenity.
environmental management works proceed concurrently with development	A range of environmental management works are proposed as part of the development to ensure that the potential impacts of the project are minimised. These include the construction of treatment wetlands and drainage swales for water management, the provision of adequate areas of active and passive open space and the use of a suite of controls to minimise erosion and sedimentation as part of the proposed development.
infrastructure and facilities, including public open space, are provided in an efficient manner	As discussed above, some 6,248 m^2 of open space is proposed to be provided as part of the development, comprising a Neighbourhood Park and a number of Pocket Parks to service the future residential community. Appropriate infrastructure such as roads and drainage works are also provided as part of the development.
development occurs in accordance with a development control plan that has been prepared for the land	It is noted that development declared by the Minister to be 'major development', eligible for assessment under Part 3A of the EP&A Act is not strictly subject to the provisions of local environmental plans or development control plans. A draft Saltwater DCP is currently being prepared by Planit Consulting on behalf of Kempsey Shire Council for the wider Amendment No. 55 area, which includes the subject development site is part. The draft DCP is not yet available to the general public and has not been placed on public exhibition. As access to the DCP is not available, an assessment of the proposal against the provisions of the DCP cannot be undertaken at this time. The master plan prepared for the subject site and submitted with the project application, along with the conditions which would apply to any approval issued for the project would establish sufficient controls for this stage of the development. It is anticipated that development of individual lots on the site would be subject to Council's draft DCP once publicly released and adopted by Council.

3.3.4 Application of Relevant State Environmental Planning Policies

Issue

Kempsey Shire Council states that the project application fails to adequately address the Matters for Consideration in *State Environmental Planning Policy No. 71 – Coastal Protection* (SEPP 71), particularly in relation to the likely impacts of coastal processes and hazards on the development and the likely impacts of the development on coastal processes and hazards (Clause 8(j)) and the likely impacts of the development on the water quality of the coastal foreshore (Clause 8 (m)).

The NRCMA raised concern over the proximity of the development to a wetland protected under SEPP 14, which in some areas only has a buffer of 50 m. NRCMA recommends that the development comply with the recommendations and principles provided in the *Living and Working in Rural Areas* handbook (Centre for Coastal Agricultural Landscapes, 2007), particularly under Chapter 6 – Development Control. Accordingly, NRCMA recommends that buffers between residential areas and wetlands are to be a minimum of 100 m. Further, in submissions received from the community, the issue was raised that the saltwater lagoon currently exceeds its natural nutrient load and increasing the footprint of development within the lakes drainage area, may threaten the health and biodiversity of the adjacent SEPP 14 listed wetland.

Response

Section 3.4.9 and **Section 3.7.9** of this report provide discussion of the proposal in relation to SEPP 14 and SEPP 71.

3.4 Ecology

Whelans Insites has provided a Response to Submissions document that provides responses to ecological issues raised below. Responses from this report to the issues raised are summarised in the following sections as appropriate. The full Whelans Insites report can be viewed at **Appendix G**.

3.4.1 Flora and Fauna Survey

Issue

The DECCW considers that the Director Generals requirements 9.1 to 9.4 have not been adequately addressed and state that the methods described by Fanning (2009) that were used to survey the flora and fauna on the site appear to be inconsistent with the DEC 2004a survey guidelines.

Response

Whelans Insites highlight that the DEC 2004a Survey Guidelines are not a statutory requirement, but rather a guide and that the Guidelines state that not all the survey methods would be appropriate or necessary in all situations.

The subject site and surrounding lands have been surveyed over a period of eight years (Parker, 2002; Kendall & Kendall, 2003; Umwelt, 2004; ERM, 2006; Connell Wagner, 2005, 2008; Cumberland Ecology, 2008; Whelans Insites, 2009). The data provided in the Whelans Insites 2009 Report, on which the conclusions of the EA are based, is an accumulation of these investigations. None of those studies have revealed the presence of any threatened plant species on the subject site or any other EECs than that identified by Whelans Insites.

Given the above, a non-consistency with the DEC 2004a Draft Survey Guidelines is not considered to be of significant concern. No further flora surveys of the subject site at South West Rocks are considered to be necessary.

3.4.2 Guiding Principles for Threatened Species Assessment

Issue

The DoP requested that each of the six guiding principles for threatened species assessment (at 1.2 of the *Guidelines for Threatened Species Assessment - for Part 3A*, (DEC & DPI, 2005) be explicitly addressed.

Response

The *Draft Guidelines for Threatened Species Assessment for Part 3A* matters (prepared by the DEC and DPI in July 2005) identified six Guiding Principles for Threatened Species Assessment (in Chapter 1.2 of the Guidelines). The Draft Guidelines state that the *"objective of the assessment process is to provide information to enable decision makers to ensure that developers deliver the following environmental outcomes:*

1) *Maintain or improve bio-diversity values (i.e. there is no net impact on threatened species or native vegetation);*
2) *Conserve biological diversity and promote ecologically sustainable development;*
3) *Protect areas of high conservation value (including areas of critical habitat);*
4) *Prevent the extinction of threatened species;*
5) *Protect the long-term viability of local populations of a species, population or ecological community; and*
6) *Protect aspects of the environment that are matters of natural environmental significance".*

The Draft Guidelines further state that the "*assessment is designed to provide information and analysis to demonstrate that feasible alternatives have been considered, that the project has been designed to be consistent with the principles outlined above, and where there are impacts, that adequate mitigation measures are implemented"*.

The ecological assessment and subsequent addendum report prepared by Whelans Insites (**Appendix G**) provides a consideration of these principles in relation to the proposal.

3.4.3 Regional Habitat Corridors

Issue

The proposed development area has been identified as both a regional corridor and key habitat. DECCW requested that the EA address regional linkages and wildlife corridors, as well as the connective importance of the protection and management of the riparian corridor and adjacent aquatic habitats.

Response

Whelans Insites has evaluated the regional corridor identified by Scotts (2003) over the subject site as highly fragmented, traversing extensive areas of existing and proposed residential land. The extent of existing residential development in the corridor, the extent of cleared land and land identified for "future urban growth", are considered to significantly reduce the functionality of this corridor.

Whelans Insites has concluded that there is no contiguous east west wildlife corridor in the location identified by Scotts, and development of the subject site would not result in fragmentation to or severance of the wildlife corridor. The northern part of the subject site is to be retained for biodiversity conservation purposes, constituting the southern half of a broad (approximately 300m wide) tract of land along Saltwater Creek comprising native vegetation and habitat which would be a dedicated Conservation Area. It is considered that this land would act as a local east west wildlife corridor connecting the open space of the golf course (at its western end) with Saltwater Lagoon (at its eastern end). This approach would provide both insitu habitat for a range of native biota (including many of the species identified within the subject site), as well as the resources and habitats necessary for any east west movements which may occur at this locality.

3.4.4 Swamp Sclerophyll Forest EEC

Issue

The DoP requested that specific measures be outlined to ensure the protection of the Swamp Sclerophyll Forest on Coastal Floodplains (SSFCF) Endangered Ecological Community (EEC).

Response

The presence of this EEC on the site is limited to the proposed Conservation Area, and is separated by a minimum of approximately 50m from proposed development areas. The intervening vegetation therefore, would act as a buffer, functioning to protect the EEC from significant impact. In addition, as the SSFCF community is located within the Conservation Area, it would be afforded a level of protection by the limited access provided to the Conservation Area.

The proposed development has incorporated a range of Water Sensitive Urban Design (WSUD) measures and features intended to maintain water quality and soil water conditions to minimise impacts on swamp communities, including the SSFCF EEC, down slope and downstream of the proposed development.

The VMP which is to be prepared for the ongoing management of the Conservation Area on the subject site would document an array of rehabilitation and enhancement measures for the SSFCF. However, the development design, including controlled access along pedestrian walkways and bicycle paths, and the limited extent of disturbance within the Conservation Area (involving only the northern access road), would generally protect the SSFCF community.

3.4.5 Wallum Froglet and Squirrel Glider

Issue

The DoP requested clarification on how the proposal maintains or improves biodiversity values for the Wallum Froglet and Squirrel Glider).Further detail was also requested with regard to the ability for stormwater infrastructure to provide habitat for the Wallum Froglet.

Response

The areas of preferred or quality foraging habitat and other habitat and resources for the Wallum Froglet and Squirrel Glider are relatively concentrated on the subject site.

The proposed development has attempted, as far is reasonably practicable, to maintain or improve biodiversity values through the appropriate location of development activities and through the incorporation of measures to retain, protect and enhance areas of high biodiversity value. In this regard:

- much of the vegetation within the development footprint has previously been slashed and/or used for agricultural pursuits over a long period;
- areas of high biodiversity value have been identified and incorporated into the proposed Conservation Area;
- best practice stormwater management and treatment features have been incorporated into the project. This means that water quality and quantities, and habitat for threatened biota is maintained within the Conservation Area;
- the proposal has identified a commitment to the maintenance, rehabilitation and enhancement of vegetation within the Conservation Area to improve biodiversity values;
- the proposal has incorporated measures to control human access into the Conservation Area in order to maintain biodiversity values in that part of the site.

Relevant habitat for the Wallum Froglet is located primarily in the low-lying portions of the subject site, predominantly in the north east where moist soil conditions, acidic conditions and swampy habitats are prevalent. Whilst the Wallum Froglet would likely use other parts of the subject site during periods of high rainfall, these areas constitute peripheral or marginal habitat used on an occasional basis.

Specific measures which have been incorporated into the project either by way of design features or by ongoing management for the purposes of protecting the Wallum Froglet and its habitat include:

- retention of important and significant habitat for the Wallum Froglet in the north-eastern parts of the subject site;
- retention of much of the potential or likely foraging and ‘home range’ for the Wallum Froglet in slightly higher adjoining parts of the Conservation Area;
- the maintenance of appropriate stormwater discharge regimes including both water quality and overland flow discharge volumes and rates;
- the provision of features designed to facilitate the infiltration of stormwater runoff into the groundwater layer; and
- the provision of artificial stormwater features (bio-retention swales and detention basins) designed to provide supplementary habitat for the Wallum Froglet.

With respect to the Squirrel Glider:

- the majority of relevant habitat for this species (i.e. open forest and woodland vegetation), including all of that within which Squirrel Gliders have been recorded, is located within the Conservation Area in the north-western part of the subject site;
- the narrow band of modified re-growth woodland through the central part of the subject site (which is to be removed for development) represents only a minor and marginal element of potential habitat for this species;
- the areas of heath and shrubland (which characterise most of development area on the site) do not constitute relevant habitat for this species; and
- the area of Swamp Oak along the artificial drainage line in the south-eastern part of the site, and the small area of Swamp Oak vegetation in the south-eastern corner do not constitute relevant habitat for the Squirrel Glider.

Based on those observations, the majority of habitat and important habitat features (particularly hollow-bearing trees) for the Squirrel Glider would be retained within the Conservation Area, and protected and managed in perpetuity. Specific measures in this regard would include:

- retention of the majority of hollow-bearing trees within the Conservation Area on the subject site;
- retention of the majority of known habitat for the Squirrel Glider (and all of that in which the species was recorded) within the Conservation Area;
- the provision of supplementary hollow resources either by the reuse of salvaged tree-hollows removed from the development footprint or by the provision of artificial nest boxes; and
- management of the Conservation Area in perpetuity for the purposes of providing habitat and resources for the Squirrel Glider and other native species.

Given the above, the potential impacts upon the Squirrel Glider as a result of the proposed subdivision and development of the subject site are expected to be minimal.

The Conservation Area on the subject site is proposed to be transferred to the ownership of Council or the DECCW, as a contribution to the maintenance of biodiversity values at this location. The rehabilitation and enhancement of disturbed areas within the Conservation Area, and ongoing management pursuant to the VMP identified in the Whelans Insites 2009 Report and in the Statement of Commitments would contribute in a positive manner to the maintenance and improvement of biodiversity conservation values at this location.

On the basis of the protection and long-term management and enhancement of the Conservation Area, which constitutes the overwhelming majority of habitat for threatened species known to occur on the subject site or likely to be present, the proposal is considered to achieve a “no net impact on threatened species or native vegetation” outcome. Protection of that land in perpetuity (by dedication or otherwise), and its enhancement and management, are acknowledged as appropriate means to compensate for the loss of other vegetation on the site (particularly vegetation of less biodiversity conservation value).

3.4.6 Hollow Bearing Trees

Issue

The DoP requested that a plan showing the hollow-bearing tree resources on the site be provided.

Response

Six hollow bearing trees are located in the development area. These have been accurately surveyed and mapped on the Hollow Bearing Tree Plan located at **Appendix B**. Hollow bearing trees located within the Conservation Area are proposed to be retained. As such, survey and mapping of the Conservation Area for hollow bearing trees has not been undertaken.

3.4.7 Saltwater Lagoon and Saltwater Creek

Issue

The DoP requested in its submission that the impacts of large-scale residential development on the functioning of the Saltwater Lagoon and Saltwater Creek be considered and mitigation measures provided accordingly.

Response

Stormwater management and control measures (relating both to water quality and water volumes) were key issues for consideration in the design of the proposal.

The 50m (horizontal) buffer indentified in the LES from the 1:100 flood line on the subject site (to protect Saltwater Creek and Saltwater Lagoon) has been respected, and encompasses a substantial part of the Conservation Area on the subject site. This area of native vegetation provides further protection to Saltwater Creek and Saltwater Lagoon, although it is not intended that notable discharge of nutrients or contaminants (above natural levels) would result from the proposed development. The potential impacts of the proposal on the functioning of the nearby Lagoon and Creek have been considered in the EA and mitigation measures recommended as appropriate, including:

- appropriate urban design (maintaining substantial buffers to the Creek and Lagoon); and
- incorporation of comprehensive water management and water quality control features into the project.

The primary habitat for the Wallum Froglet is located in the wet heath vegetation in the north-eastern part of the subject site. The Wallum Froglet does not generally inhabit such water bodies as Saltwater Creek or Saltwater Lagoon but utilises shallow and often ephemeral swampy areas characterised by sedges, small shrubs and

wallum, particularly where the water is slightly acidic. Based upon this understanding of the preferred habitat for this species, as discussed in the original EA, the Wallum Froglet is likely to inhabit the north-eastern low-lying parts of the subject site, rather than along Saltwater Creek itself or within Saltwater Lagoon.

3.4.8 Wetlands Protection Zone

Issue

The DoP requested that measures be provided to ensure that existing vegetation and water quality within the 7(a) zone, and particularly within and immediately surrounding the Saltwater Lagoon is protected and maintained in its current condition.

Response

The Conservation Area on the subject site would protect water quality and supply so that the continuing operation of wetland eco-system is not jeopardised. The proposal has been designed specifically to provide the best available water quality controls such that the stormwater that leaves the subject site does not contain elevated levels of nutrients or contaminants. It is intended that parts of the stormwater management system would be used by native species such as the Wallum Froglet for foraging and/or other purposes. The proposal incorporates features and measures designed specifically to protect water quality and supply in order to protect the Wetlands Protection Zone, Saltwater Lagoon, Saltwater Creek and the Wallum Froglet.

3.4.9 SEPP 14 Wetland

Issue

The development is situated near a SEPP 14 wetland and in some places is 50 m away. The *Living and Working in Rural Areas* handbook was published in 2007 and produced by the Centre for Coastal Agricultural Landscapes primarily to reduce land use conflict. The NRMCA recommends that the development comply with the recommendations and principles in Chapter 6 – Development Control. The recommendation for buffers between residential areas and wetlands is a minimum of 100m. The NOW similarly suggest that Saltwater Creek and the SEPP 14 wetland be protected within the conservation zones by appropriate buffers.

The DoP Regional Office suggested that consideration be given to relocating the proposed cycleways out of the SEPP14 wetland area.

Response

The current development proposal has taken into account the presence of the SEPP 14 wetland and the proposed subdivision layout has been designed in consideration of this environmentally sensitive area. The land which is zoned 7(b) – Environmental Protection (Habitat), which surrounds the SEPP 14 wetland provides a buffer for protection of the wetland habitats present within the 7(a) – Wetlands Protection Zone, including the SEPP 14 wetland.

It is noted that the 100 m buffer recommended in the in the *Living and Working in Rural Areas* handbook, is a guidelines only. The buffer provided under the current proposal is considered to meet the general objectives of this guideline in relation to the protection of the wetland area as:

- there is a minimum buffer of 50 m provided between the SEPP 14 wetland and the residential area, all of which is vegetated. This vegetated area, and the stormwater management regime for the proposal are considered to constitute an effective buffer to the wetland;
- the development contains an innovative stormwater drainage system that is specifically designed to avoid or minimise adverse impacts on water quality or water quantity discharges for the protection of the surrounding environment, including the SEPP 14 wetland and associated ecosystems.

The proposed bicycle tracks through the wetlands in the Conservation Area have been removed from the current design for the subject site and the proposed bicycle path and pedestrian track which remain as part of the proposal would be located on existing dirt tracks.

3.4.10 Nutrient and Effluent Runoff

Issue

Submissions received from the community raised the potential for removal of native vegetation on the site to result in an increase in nutrient and effluent runoff into Saltwater Lagoon and potentially impact upon the SEPP 14 wetland.

Response

The development includes an innovative stormwater drainage system that is designed to avoid or minimise adverse impacts on water quality or water quantity discharge for the protection of the surrounding environment, including the SEPP 14 wetland and associated ecosystems.

3.4.11 Property Vegetation Plan

Issue

The NRCMA raised the issue that the removal of vegetation in the 7(a) zone for the proposed connection to Phillip Drive and the two proposed cycleways may require an offset strategy in the form of a Property Vegetation Plan as specified under the *NSW Native Vegetation Act 2003*

Response

The requirement for a Property Vegetation Plan under the *Native Vegetation Act* 2003 is regarded by Whelans Insites as unnecessary given that the Conservation Area would be:

- maintained in perpetuity for biodiversity conservation purposes;
- ultimately dedicated either to Council or the DECCW; and
- the subject of a VMP.

However, if a Property Vegetation Plan is required, it is recommended that it apply only to the Conservation Area, including the northern access road and the pedestrian and bicycle pathways.

3.4.12 Introduced Species

Issue

The DECCW raised an issue in relation to the potential impact on management of the adjoining Hat Head National Park in terms of the increased risk of pests and weeds. The community has suggested that there is insufficient information in the EA regarding provisions to control the likely increase in introduced species to the currently protected area.

Response

It is noted that domestic pets are not confined to the proposed development, and could readily roam around Saltwater Lagoon from any part of the existing residential and rural-residential areas of South West Rocks. It is considered by Whelans Insites that it would be inappropriate to impose controls and conditions on pet ownership upon a single development in isolation.

With respect to introduced weeds or potential weed species, the Landscape Plan for the proposed development and the Vegetation Management Plan (VMP) to be prepared for the Conservation Area would incorporate measures designed to limit the possibility of weeds spreading to the Conservation Area or Hat Head National Park. Amongst the management regimes for the Conservation Area, the VMP would identify a range of appropriate weed control measures and strategies to be implemented within the Conservation Area, including a monitoring regime for weed species, a protocol for the removal of any weeds which are subsequently identified and a targeted monitoring program to identify issues before they become problems.

3.4.13 Mosquito Control

Issue

Kempsey Shire Council has requested further information regarding the proposed means to control mosquito breeding associated with proposed stormwater control measures as required by NSW Health.

Response

Given that mosquitoes can travel up to 10 km, an individual development such as that proposed on the subject site can only provide limited control of mosquitoes.

Appropriate measures have been incorporated into the Statement of Commitments for the project, and additional measures on individual dwelling sites would be the responsibility of those landowners.

It is recommended that the documents regarding mosquitoes and the risk of disease from mosquitoes prepared by NSW Health (the "*Mosquitoes are a Health Hazard"* Warning Sheet and Information Sheet) be provided to all residents.

In addition, the Proponent would commit to participating in any LGA wide or local mosquito control management regime. In particular, monitoring of the stormwater control system which has been designed for the proposed development (particularly the drainage swales and detention basins) would be undertaken to identify any potential increase in mosquito breeding opportunities, and to appropriately deal with the risk of mosquito activities.

3.4.14 Cumulative Impacts

Issue

The DoP and DECCW suggested that consideration and justification be given to the cumulative impacts of the proposed development on the ten threatened species recorded on site and their environment.

Similarly, submissions received from the community also requested that the EA consider the cumulative effects of the proposed development on habitat and species loss in the area.

Response

The proposed development would result in an increased human presence and associated traffic and noise increases on a local basis as a consequence of the proposal. There would also be a substantially greater number of additional dwellings on the lands to the immediate north and immediate south, as anticipated by the *Mid-North Coast Regional Strategy*.

The various development proposals would somewhat extend the urban footprint of South West Rocks to the east, but would also leave substantial tracts of land in the vicinity and locality. Development on the subject site and surrounding lands confines the cumulative impacts to a contained footprint.

The increases in traffic and noise would predominantly occur within an envelope that encompasses the future residential areas as well as the existing residential parts of the South West Rocks village, and would be highly localised. These low-level increases are not regarded as of significance with respect to biodiversity conservation in general or to threatened biota in particular, given their localised nature.

However, habitats in the immediate vicinity of the development footprint along the northern boundary of that area may be rendered less suitable for some native biota (those particularly sensitive to noise and/or light). Such impacts would be of local distribution and limited effect. In this regard, it is noted that:

- those threatened biota which occur on the subject site are already subjected to various impacts arising from modified land uses and/or adjoining urban activities;
- many of those species are regularly recorded within or adjacent to urban environment; and
- the Conservation Area on the subject site, combined with that on the land to the immediate north and the considerable extent of natural habitats to the northwest, constitutesa broad tract of native vegetation habitats into which the relevant biota can retreat, if necessary. The potential for cumulative impacts to be imposed upon threatened biota have been taken into account as part of the proposal and design measures have been incorporated to ensure that these are minimised,
- the proposal involves the removal of vegetation which is generally of lower conservation value from the site, and deliberately protects the most ecologically valuable vegetation and habitats in accordance with the LEP and the Regional Strategy. This approach is consistent with habitat retention and protection on adjoining developments, providing an appropriate response to potential cumulative impacts. The proposal provides for the protection and enhancement of the most important areas of vegetation and habitat within the Conservation Area. In this regard:
    - approximately 37% of the subject site (14.9 ha) is to be protected for the purposes of biodiversity conservation in a Conservation Area which is to be rehabilitated and ultimately dedicated (to Council or the DECCW) for permanent conservation purposes;
    - the proposal includes the enhancement of vegetation within the Conservation Area (pursuant to a VMP), involving the enhancement of existing habitats;
    - the maintenance of the southern half of a riparian corridor along Saltwater Creek to provide a movement corridor across the subject land between Saltwater Lagoon and the golf course; and
    - the provision of stormwater treatment features in the eastern part of the subject site which would facilitate the movement of the Wallum Froglet between its core habitat in the north-eastern part of the subject site and land to the immediate south.

The contribution of the proposed development on the subject site to the removal of native vegetation and/or to habitat degradation at this general location is regard as of limited concern given:

- the extent of habitats and resources to be retained on the subject site in the Conservation Area;
- the extent of native habitat and resources conserved in the immediate and general locality, including within extensive National Parks;
- the information base and considerations which were part of the process of determining the appropriate zoning of the subject land in 2009 and in developing the *Mid-north Coast Regional Strategy* as a 'whole of government' planning approach to South West Rocks; and
- the native biota, particularly threatened species, present or likely on the subject site and the distribution of relevant habitats for those biota.

In respect of those considerations, the proposed development is regarded as an appropriate balance between development opportunities and conservation goals, including in a cumulative sense.

The proposed development is one of several large residential developments currently under consideration in this locality, including those on lands to the immediate north and south. Certain cumulative impacts are inevitable given the location of the site within a broader urban release area and the associated increase in residential and other development in the locality. The 'contribution' of each individual development in terms of cumulative impacts is appropriately minimised within each individual project to the greatest extent reasonably practicable, through carefully considered design and mitigation measure such as the following adopted within the proposed development:

- implementation of appropriate high standard environmental management and protection measures;
- use of appropriate development design elements in the project. The proposal on the subject site at South West Rocks has sought to limit the potential for adverse impacts, as discussed in detail in the EAR, EIAR and other relevant documentation;
- appropriate design of the residential area and its relationship to the Conservation Area, in accordance with the principles embodied in the rezoning of the subject site by Council and the DoP in 2008, pursuant to an LES process that specifically addressed ecological issues and values;
- retention of a substantial area of land (14.9ha or 37% of the site) in the Conservation Area;
- employment of current 'best practice' water management and treatment measures;
- protection and enhancement of vegetation and habitats in the Conservation Area; and
- provision of supplementary habitats and resources for the use of native (including threatened) biota, including tree-hollows and/or artificial nest boxes for arboreal hollow dependent fauna, and artificial wetlands for Wallum Froglets. Bike paths, BBQ areas and playgrounds (other than bike and pedestrian paths on existing tracks outside of the wetland areas) have mostly been removed from the Conservation Area on the site in response to various agency recommendations.

3.4.15 Landscaping Strategy

Issue

In its submission, Kempsey Shire Council requested an overall landscaping strategy to protect remnant and riparian vegetation, or consider the relationship to adjoining vegetation. It is Council's view that a consistent, strategic approach is required across the remaining undeveloped parts of the catchment.

Response

A Landscape Plan is to be prepared for the development site (comprising some 25.13 ha) which would address landscaping across the site in consideration of broader relevant landscape principles, guidelines and/or policies which apply to the locality. It is at this point where further consideration would be given to the landscape strategy for the site.

3.5 Traffic and Transport

3.5.1 Traffic and Access

Issue

Kempsey Shire Council raises concern that the Traffic Impact Study is incomplete and does not provide adequate assessment information in accordance with NSW RTA *Guide to Traffic Generating Developments*. Council notes that the following information is omitted from the EA:

- relationship of the proposed development with surrounding development(s) relative to the existing council road network;
- the impact of traffic noise on lots located off the link road connecting Belle O'Connor Street to Phillip Drive being a future significant collector road;
- identification of existing proposals for improvement of the existing road network and hierarchy;
- impacts on internal and external road safety, including efficiency of access between the site and adjacent road network;
- the annual average daily traffic volumes and historical trends on key adjacent roads;
- impacts of generated traffic on key adjacent intersections, streets in the locality of the proposed development, the environment and other major traffic generating development sites in close proximity;
- Development Traffic Calming Principles for the internal roads in the proposed development; and
- the impact of the development on the proposed collector road number 6 located within the 7(b) Environmental Protection Zone.

Response

CBHK have provided an addendum Traffic and Transport report (**Appendix C**) that provides responses to the issues raised above. These responses are outlined in **Table 4**.

Table 4 Response to Traffic and Access Issues

Council Concern	CBHK Response
The relationship of the proposed developments with the surrounding development(s) relative to the existing council road network.	The relationship of the proposal with surrounding development was described in Sections 2.1 - 2.5 and Figures 1 and 2 of the Transport Report prepared by Colston Budd Hunt and Kafes Pty Ltd (November 2008) submitted with the original EA.
The impact of traffic noise on lots located off the link road connecting Belle O'Connor Street to Phillip Drive being a future significant collector road.	The impact of traffic noise on future residential lots would be addressed by incorporating appropriate acoustic treatment in the design of each dwelling, which could be assessed at the time that applications are made for individual dwellings on these lots, and imposed by Condition of Consent if required.
Identification of existing proposals for improvement of the existing road network and hierarchy;	Proposals for improvement of the existing road network and hierarchy include road and intersection upgrades along Gregory Street, Landsborough Street, Phillip Drive and Arakoon Road. These upgrades are identified in Council's Section 94 plan and are to cater for new development in the area.
The impact on road safety;	The future road connection to Phillip Drive to the north would distribute traffic more evenly on the surrounding road network and provide more convenient access to and through the release area as well as reduce overall vehicle kilometres travelled. The internal layout of the proposed subdivision provides for low traffic speeds sand appropriate provision for pedestrians and cyclists in a local residential environment. Most of the internal roads would carry less than 100 vehicles per hour two-way therefore internal intersections would not require specific traffic control measures to cater for such low traffic volumes. The proposed roundabout at the Belle O'Connor Street extension would provide appropriate intersection control and capacity and would operate at a good level of service A/B.
The annual average daily traffic volumes and historical trends on key adjacent roads;	The Roads and Traffic Authority's (RTA) latest published traffic data does include roads in the South West Rocks area. CBHK have independently undertaken traffic counts and have estimated daily traffic volumes as follows: • Gregory Street: some 3,000 to 6,000 vehicles per day, • Belle O'Connor Street: some 1,000 to 2,000 vehicles per day, • Phillip Drive: some 1,000 to 1,500 vehicles per day.
Safety and efficiency of proposed internal road layout;	The future road connection to Phillip Drive to the north would distribute traffic more evenly on the surrounding road network, provide more convenient access to and through the release area and reduce overall vehicle kilometres travelled. It would also improve public access to the beach and coastal foreshore. Internally, roads within the development would be provided in accordance with

Council Concern	CBHK Response
	the principles in Council's DCP 36 and AMCORD. The internal layout provides for low traffic speeds and appropriate provision for pedestrians and cyclists in a local residential environment. Most roads within the development would carry traffic volumes less than 100 vehicles per hour two-way. Internal intersections would not require specific traffic control measures to cater for these low flows. At the main access location to the development, the proposed roundabout at the Belle O'Connor Street extension would provide appropriate intersection control and capacity and would operate at a good level of service A/B, with average delays of less than 15 seconds per vehicle at peak times.
Impact of generated traffic on key adjacent intersections, streets in the locality of the proposed development, the environment and other major traffic generating development sites in close proximity;	The previous traffic report (sections 3.19 and 3.27) discusses the impacts of generated traffic on adjacent key intersections. It is noted that Council have also commissioned a previous traffic study which recommended a series of road and intersection upgrades to cater for development of these sites. Appropriate contributions would be made by this and other developments in the area under Council's Section 94 plan toward road and intersection works.
Safety and efficiency of access between the site and adjacent road network.	These matters are discussed above.
Development Traffic Calming Principles for the internal roads in the proposed development.	The internal road layout has been provided in accordance with the principles in Council's DCP 36 and AMCORD, which provides an appropriate framework for low speeds and provision for pedestrians and cyclists in a local residential environment. The widths of the streets and urban design principles provide for slower vehicle speeds and appropriate residential and pedestrian amenity.
The impact of the development on the proposed collector road number 6 located within the 7(b) Environmental Protection Zone, having regard to the provisions contained in Clause 66 of Kempsey Local Environmental Plan 1987 and provisions contained in the Local Environmental Study (S7.8) Traffic and Transport Management. In particular, there is no assessment of the means proposed to ensure the road is designed to minimise the impact on threatened species, with the LES recommending no road be permitted through the 7(b) land.	The traffic effects of the proposed road connection to the north are discussed above in paragraph 13 and in our previous report in paragraphs 3.8 and 3.19 to 3.27. Matters associated with threatened species are being addressed by other study team members.

3.5.2 Road Layout

Issue

Council highlight a number of deficiencies in the proposed road layout which they have suggested further highlights the need for a DCP. Road layout issues as raised by Council include:

- The proposed intersection of Belle O'Connor Street and Steve Eagleton Drive is considered to be dysfunctional and justification of the link to the Saltwater development has not been demonstrated.
- Location of the future intersection (southern access point) is inappropriate off the existing dedicated Belle O'Connor Street to accommodate what would become a collector road, given the expected significant traffic volumes and site constraints such as insufficient sight distance, being located on a horizontal curve.
- Inadequate turning circles for service vehicles and provision for temporary turning where internal roads end at staged boundaries and where there is no through road access.
- Proposed lots 1 to 11 inclusive have dual access. Council has been approached by another property owner to have this existing right of carriageway dedicated as public road fronting these lots to the existing made section of Belle O'Connor Street. This again highlights the non-coordinated approach by different developers

and the need for a DCP setting down principles to coordinate transport and traffic arrangements between competing developments.

- Whilst access is available to a future dedicated public road along the eastern frontage (proposed road 1), there is no legal access to the current right of carriageway through Crown land that services Council's Sewage Treatment Works. There is nothing in the EA limiting physical and legal access to this right of carriageway.
- Inadequate provision has been made for turning of service vehicles (garbage trucks, furniture vans etc) base upon current lot layout and provision for temporary turning where internal roads end at staged boundaries and where there is no through road access.

Response

CBHK have provided responses to the above issues in their addendum Traffic and Transport report (**Appendix C**). Responses to each point above are summarised below.

- With regard to the proposed roundabout intersection of Belle O'Connor Street and Steve Eagleton Drive, CBHK have concluded that with additional development traffic, the intersection of Gregory Street with Belle O'Connor Street and Steve Eagleton Drive would operate with average delays for the highest delayed movement of less than 15 seconds per vehicle during morning and afternoon peak periods. This represents level of service A/B, a good level of service.
- The future roundabout intersection at Belle O'Connor Street, Road 14 and the STP access road would have appropriate capacity to cater for the traffic volumes which would use it, and would operate at a good level of service, with average delays of less than 15 seconds per vehicle. The roundabout would be designed and provided in accordance with appropriate standards.
- As discussed in **Section 2.3.1** of this report, the staging of access arrangements to the development site is proposed as follows:
  - the intersection of Belle O'Connor Street, Road 14 and the STP access road is proposed to be controlled by a roundabout;
  - in the future, as Seascape Grove and Saltwater / Malbec land is developed, the extension of Belle O'Connor Street identified by Council could be constructed. Once this occurs, the western part of Road 14 could be closed where it is not needed for property access.
- With regard to the provision of lots with dual access along the western property boundary, this matter has been superseded by the amended plans. All of the lots within the subdivision have now been provided with access from roads within the subdivision, and do not rely on the right of way for access. However, the proposed development does not preclude the right of way becoming a public road in the future.

With regard to the provision of turning circles for service vehicles, provision would be included, at the western ends of Roads 1, 2 and 3, for garbage trucks and furniture vans to turn around during detailed design. At stage boundaries, temporary turning facilities would also be provided.

3.5.3 Future Road Link

Issue

The EA has identified a future road link north of this site linking with existing Phillip Drive. This development would make use of any future road to the north as it would provide direct access for the residents of this development to the main beach and entertainment precinct in Livingstone Street. The community and Council raise concern that the Traffic Impact Study does not deal with development of a road north of the Malbec land boundary and there is no mention in the EA of how this development intends to contribute its share to the provision of the northern link road (including intersection work at Phillip Drive).

Response

The road connection to the north would be constructed to the extent of the site boundary. Future extension of this road to the north would be undertaken in association with development of adjacent sites. Appropriate contributions toward road and intersection works would be made by the proposed development, as well as other developments in the area, generally in accordance with Council's Section 94 plan.

3.5.4 Belle O'Connor Street

Issue

The Land and Property Management Authority raised the issue of a Crown road to the south of the site being required for access as part of development. The Authority requires the affected Crown section of Belle O'Connor Street be transferred to Council prior to any works commencing.

Response

Noted.

3.6 Infrastructure Provision and Funding

3.6.1 Voluntary Planning Agreement (VPA)

Issue

The DoP provided that Kempsey Shire Council are required to provide a response generally outlining agreement with the provisions of the Voluntary Planning Agreement (VPA) prepared in relation to the proposed development.

Response

The Proponent is in the process of undertaking discussions directly with Council regard the principles that may be included in the draft VPA for management of the land proposed to be dedicated for the purpose of habitat protection. In a letter dated 27 April 2010 Council provided advice for the purpose of negotiating the VPA, and advised that Council's agreement would be contingent upon the VPA being drafted by Council at the developers cost, with prior written agreement to fund drafting of the VPA to be provided.

3.6.2 Infrastructure Funding

Issue

In its submission, Kempsey Shire Council raised the issue that no Infrastructure Servicing Strategy had been provided with the EA, to identify and support the position that all services would be available to the development site. The Council request that an Infrastructure Servicing Strategy be prepared to investigate the provision of services over the whole of the Saltwater Catchment and consider that this would be best addressed in conjunction with the preparation of the site specific DCP.

Response

As outlined in Section 2.3 of the EA, a site servicing investigation was undertaken by Martens (2009) in order to identify the potential for the development of the site and inform the subdivision design. Martens undertook assessment and consultation with utility providers to identify opportunities and/or constraints for potential servicing options for the proposal for water, sewer and other utilities. With the exception of town gas, investigations show that utilities, including water, sewer, power and telecommunications are readily available to the site.

A draft Saltwater DCP is currently being prepared by Planit Consulting on behalf of Kempsey Shire Council for the wider Amendment No. 55 area. In order to facilitate the timely and coordinated approach for the delivery of infrastructure, it is considered more appropriate that an Infrastructure Servicing Strategy be prepared for the wider Amendment No. 55 area, rather than the subject development site.

3.6.3 Water and Sewer Infrastructure

Issue

The DoP Regional Office submission stated that upgrades to water and sewer infrastructure would be required to serve the site and surrounds. The DoP sought clarification in relation to whether the Sewage Treatment Plant (STP) upgrades had occurred or would occur prior to the release of the first stage of the subdivision. NOW supports the provision of water to the development by town water supply.

Response

Martens have advised that supply of potable water for the development would be from the existing reticulated town water supply servicing South West Rocks. Additionally, potable water would be available from rainwater tanks to be installed at each dwelling (in accordance with BASIX requirements), which would reduce the town water demand. There is also potential for the development to have non-potable effluent re-use further reducing the town water demand. Design of the reticulated town water supply mains would be in accordance with the

requirements of Kempsey Shire Council DCP 36 (2000) and WSA (2002) guidelines and undertaken at a later stage of the development.

The development would to be connected to a new reticulated sewerage system directing wastewater to the existing sewage treatment plant servicing South West Rocks (adjacent to the subject site). Design of the reticulated sewerage mains would be in accordance with the requirements of Kempsey Shire Council DCP 36 (2000) and WSA (2002) guidelines and undertaken at a later stage of the development.

With regard to timing and completion of the STP upgrades, Council has advised that upgrade works to the STP have commenced and are due for completion in 2010.

3.7 Hydrology

Martens have prepared an Amended Water Cycle Management Plan, Groundwater Model report and ASS Assessment to address issues raised with regard to flooding, stormwater, sea level rise and groundwater. Responses from these reports to the issues raised are summarised in the following sections as appropriate. The full reports can be viewed at **Appendix D**, **Appendix E** and **Appendix F** respectively.

3.7.1 Culverts

Issue

The NOW consider that the EA is unclear about whether culverts would be placed under the road to maintain current flow paths.

Response

The culverts have been located in local drainage depressions to allow for the passage of stormwater under roads, onto and through the site.

3.7.2 Water Quality and Surface Runoff

Issue

The DoP requested a description of the proposed management measures to ensure that water quality and surface runoff volumes are appropriately dealt with.

Response

The design of the site stormwater drainage and treatment system achieves the targets set for the site, i.e. that the post development water quality is equal to or better than that of the pre-development quality. Measures required to achieve this outcome include:

- Grassed drainage swales for the rep-treatment of road runoff and for the safe conveyance of water from the site;
- Central drainage swales to convey and pre-treat water from upslope catchments;
- Two water quality wetlands of 1500 m^2 and 1900 m^2 on road swales 2 and 6 respectively.

The surface and sub-surface flow systems are intrinsically connected at the site due to the shallow groundwater table. As a result of the proposed development, modelling results predict surface flow to increase overall by approximately 22% as a result of increased site impervious area. The net effect of this increase is considered negligible and of little impact to the surrounding environment. Results of additional modelling undertaken by WBM (2010) indicate that the development of the site would have negligible impact on the existing flood behaviour down slope of the site and therefore on-site detention is not required.

3.7.3 Integrated Water Cycle Management

Issue

Kempsey Shire Council identified that neither the EA nor the Martens Report address the impact on the proposed residential subdivision on either existing and or future developments outside the boundaries of this proposal, which are critical to the proposed stormwater control system, including:

- The proposed raised Detention Pond on the neighbouring Seascape Grove Residential Estate located south of this site immediately upstream;
- The existing stormwater drainage entering off Belle O'Connor Street immediately below the Country Energy Sub-station; and

- Existing developments west of the Golf Course Drain.

Response

The amended Water Cycle Management Plan prepared by Martens and included as Appendix D addresses the on and off site impacts of the proposal in relation to stormwater management.

3.7.4 Stormwater Runoff

Issue

The DoP has requested an outline of the proposed measures to ensure stormwater flows and runoff derived from the site do not end up in the Saltwater Lagoon and Saltwater Creek catchment area.

Response

Stormwater quality is managed through the integration of source and end of pipe water quality control structures. These include drainage swales and wetlands. Seepage from these structures is taken (in MUSIC modelling) to be zero thus ensuring a conservative design. The lining of wetlands is proposed so that stormwater is not discharged directly into the underlying aquifer.

The design of the site stormwater drainage and treatment system means the post development water quality is equal to or better than that of the pre-development quality. Measures required to achieve this outcome include:

- grassed drainage swales for the rep-treatment of road runoff and for the safe conveyance of water from the site;
- central drainage swales to convey and pre-treat water from upslope catchments; and
- two water quality wetlands of 1500 and 1900 m^2 on road swales 2 and 6 respectively.

A 50m buffer has been provided to ameliorate effects on the downstream receiving waters and habitat.

The proposed drainage configuration for the site has been designed so that adequate conveyance of flows from the site to the receiving environment whilst also providing water quality treatment.

Major grassed swales traverse the site and convey flow from upstream catchments across the site and into the Saltwater Creek and Lagoon ecosystem. These swales also provide water quality treatment of surface flows prior to discharge during low flow events. Proposed site wetlands shall provide additional water quality treatment prior to discharge to downslope environments. Outlets from site drainage swales shall be designed at construction certificate stage of the development to minimise potential adverse effects of flow concentration.

The proposed drainage system for the site including roadside swales and site wetlands achieves water quality targets and so protects downstream environments from water quality related degradation; such as eutrophication.

Outlet structures (e.g. flow spreaders and energy dissipaters) for site roadside drainage swales shall ensure that during high flow events, scour and erosion of the downstream environment does not occur.

Periodic maintenance of the site drainage system shall be required to ensure the continued performance of the system. It is envisaged that maintenance shall include such measures as:

- periodic inspection of all site wetlands and roadside drainage swales to determine the requirement for removal of accumulated sediments and gross pollutants;
- periodic grass cutting of all site roadside drainage swales;
- periodic inspection and maintenance of wetland vegetation and sediment accumulation; and
- periodic inspection and cleaning (if required) of site outlet structures and down slope flow paths for any signs of erosion or other deterioration.

Monitoring of downstream receiving environments shall occur during the construction phase and during the revegetation establishment phase (up to 6 months after development is completed). Monitoring principles that are recommended to be included as part of the consent conditions are outlined in Table 12 of the *Amended Water Cycle Management Plan*.

3.7.5 Stormwater and Groundwater Modelling

Issue

Submissions received from the community requested clarification with regard to the parameters used in respect of the stormwater and groundwater modelling undertaken for the EA.

Response

This issue is addressed by the additional groundwater analysis completed by Martens in 2010. This is documented in the Sub-regional Groundwater Model Report. This report was peer reviewed by GHD, to ensure modelling adequacy.

The steady-state calibration model was developed and calibrated to groundwater level measurements taken by Martens on 22 February 2010. These measurements were elected as the calibration data because based on historical residual rain mass analysis they are more likely to be representative of typical groundwater levels as opposed to the Douglas Partner's measurements which were taken in 2007 after a dry period. Furthermore this data marks the start of the continuous groundwater level monitoring period and therefore the calibrated model output provides an appropriate initial heads surface for subsequent transient model runs which correspond to the period of continuous groundwater level monitoring.

3.7.6 Climate Change and Global Warming

Issue

Submissions received from the community raise the potential for increases in the frequency of flooding and the impacts of sea level rise as a result of the effects of climate change and global warming.

Response

The ability of the proposed development to adapt to anticipated climate change induced changes is assessed through review of the WBM (2010) analysis and the adopted site FPL. For the purposes of this review it is assumed that a 0.9 m rise in sea level (as recommended in NSW Sea Level Rise Policy Statement, 2009), as well as a 30 % increase in rainfall intensity (as recommended in Practical Consideration of Climate Change, 2007) shall occur due to climate change processes. It is furthermore assumed that the increase in sea level shall result in a commensurate increase in Berm height. When considering adaptive capacity, the WBM (2010) report identifies Scenario 4 as the conditions which generate the highest design flood level. This scenario assumes an increase in Berm height to 3.0 m (in response to sea level rise) and a 30 % increase in the design 1 in 100 year precipitation event. The resultant flood level at the site is determined to be 3.6 mAHD. Review of the proposed FPL (3.7 mAHD) therefore confirms that the development would have sufficient adaptive capacity to accommodate the most severe predicted climate change induced hydrological conditions. This confirms that the proposed site FPL of 3.7 m AHD is appropriate.

3.7.7 Water Licensing

Issue

The NOW stated that there is currently an embargo on further applications for sub surface water licences for 'Coastal Floodplain Alluvial Groundwater Sources and Highly Connected Alluvial Groundwater Sources of Coastal Catchments – Regional NSW'. It notes that there are exemptions under this embargo which may be applicable to the development, and discussions should be undertaken with NOW licensing officers.

Response

Martens considers that there is not a need for a licence under the *NSW Water Act 1912* (Part 5). Temporary dewatering licenses (<10 ML) may be required for construction but these are exempt in the gazetted embargo (see page 12941 of 2008 NSW Gazette).

3.7.8 Dewatering Licence and Plan

Issue

In its submission, the NOW comments that if the water table is to be intercepted, a dewatering licence is required prior to excavation of the site. If dewatering, then a dewatering plan is required.

Response

The Amended Water Cycle Management Plan (**Appendix C**) states that temporary dewatering may be required during construction. If this is the case, a dewatering plan and licence from NOW would be required.

3.7.9 SEPP 71 Compliance

Issue

Kempsey Shire Council requested that the EA address Clause 8 of SEPP 71, with specific reference to Clause 8(j) and (m).

Response

Martens has prepared the following documents which satisfy the principles of Water Sensitive Urban Design and the appropriate technical guidelines:

- Acid Sulfate Soils Assessment.
- Amended Water Cycle Management Plan; and
- Sub-regional Groundwater Model.

As part of the development of the Amended Water Cycle Management Plan, a detailed site stormwater management system has been prepared. Surface and groundwater modelling results have fed into the overall design of the water management system proposed for the site.

Data indicates that groundwater exists at shallow depths beneath the site (typically 0.35 to 1.70 mBGL). The Amended Water Cycle Management Plan and updated Sub-regional Groundwater Model investigate the influence of this shallow groundwater on the engineering aspects of the proposed development. For instance, as a result of the shallow and variable groundwater table, a range of engineering works have been identified to mitigate potential adverse effects of the development.

3.7.10 Existing Adjacent Groundwater Movements

Issue

Kempsey Shire Council has requested further information on the potential impact on this development of existing adjacent groundwater movements.

Response

Groundwater monitoring has been undertaken, the results of which are provided and discussed in the updated Sub-regional Groundwater Model report (July 2010). This report has been peer reviewed by GHD to ensure that the necessary factors have been suitably addressed.

The report shows that the proposed development would not impact existing adjacent groundwater movements.

3.7.11 Groundwater Impacts and Management Measures

Issue

The DoP requested further detail with regard to the extent that the groundwater would be impacted upon by the proposed development. It was suggested that further studies may be required to understand the full extent of groundwater impacts.

Response

Further work has been undertaken by Martens in relation to groundwater in the form of a Sub-Regional Groundwater Model. The proposed development would result in the following hydrogeological changes at the site:

- reduced site recharge due to increased impervious area;
- increased discharge to surface water through the function of site road drainage swales as groundwater drains;
- drawdown in average water table levels beneath the site. Drawdown of the order of 0.35 m is anticipated at the centre of the site based on steady-state modelling. Drawdown decreases outwards from the centre of the site towards site boundaries. Drawdown at the site boundaries is typically of the order of 0.1 to 0.2 m; and
- drawdown of the water table in the area of adjacent vegetated lands by depths of the order of 0.03 to 0.16 m (based on steadystate and transient modelling).

Modelling results indicate that the drawdown in groundwater levels in the area of vegetated lands would be minor when considered in light of the shallow (~1 m) groundwater in these areas. These changes are not expected to have any adverse impacts on local vegetation association.

3.7.12 Artificial Wetland Construction

Issue

The NOW commented that it would prefer that the artificial wetland is constructed above the watertable and lined with impermeable materials.

Response

A review of the wetland locations, swale design and groundwater information indicates that wetlands would be located above the local groundwater table.

Aquifer wetlands are to be lined with an impermeable liner such as ELCOseal geosynthetic clay liner or an appropriate HDPE liner.

3.7.13 Water Table Interception

Issue

The NOW stated that if wetland construction was likely to intercept the water table, further discussion would be required with NOW licensing officers and hydrologists.

Response

The artificial wetlands would be located above the local groundwater table.

3.7.14 Acid Sulfate Soils

Issue

The NOW has requested that acid sulfate soil (ASS) testing be undertaken in the high risk area and that potential contamination of groundwater resulting from the disturbance of ASS be addressed.

Response

This issue is addressed in the updated Acid Sulfate Soils Assessment undertaken by Martens in June 2010. This involved an assessment including a desktop study review of site geomorphic setting and ASS risk maps, detailed site soil landscape investigations and laboratory analysis of collected soil samples. The assessment determined the extent of any potential and actual ASS on-site and the risk of ASS exposure during development works. The report was prepared in accordance with the following guidelines:

- NSW Acid Sulfate Soil Management Advisory Committee (ASSMAC, 1998); and
- Kempsey Shire Council (1999) Development Control Plan No. 30: Acid Sulfate Soils.

Where ASS have been identified and site hydrogeological assessment indicates that groundwater lowering below typical water table depth may occur, measures at detailed design would be included to mitigate possible acid drainage. As a risk management measure, an ASS Management Plan would be instigated for works that are proposed at a depth of 2m or more.

3.7.15 Works within Riparian Areas

Issue

The NOW has commented that it expects that all works within riparian areas be undertaken with minimal disturbance, erosion and sediment control measures, provision of adequate drainage, maintenance of hydrological flow regimes and appropriate revegetation and rehabilitation of all disturbed areas.

Response

It is recommended that a site specific Soil and Water Management Plan (SWMP) be required at the construction certificate stage of the development, following the finalisation of the development layout, and should be developed in conjunction with the engineering plans for the sub-division in accordance with the provisions outlined in Landcom (2004).

The revegetation establishment phase would occur up to six months after the proposed development is completed.

The protected habitat area to the north of the site has been provided with a 50 m buffer to the proposed residential development to ameliorate effects on the downstream receiving waters and habitats.

3.7.16 Estuary Management Study and Plan

Issue

The NOW has requested that the development is consistent with the Estuary Management Study and Plan that has been developed for Saltwater Creek and Lagoon.

Response

The primary aim of the *Saltwater Creek Estuary Management Plan* (EMP) is to achieve an equitable balance between opportunities for future development and ensuring such development does not degrade the natural values of the area.

The EMP outlines a number of objectives for future management in the catchment. Table 7 of the *Amended Water Cycle Management Plan* summarises the development compliance with the Saltwater EMP Water Quality objectives that are relevant to stormwater management and water quality at the site. For instance:

- in accordance with the objectives for future management as detailed in the EMP, water quality modelling was undertaken to satisfy the requirement that the post development water quality be equal to or better than the predevelopment water quality discharging from the site;
- the EMP recommended a development extent of 50 m from the 3.0 m AHD contour. This extent has been adopted for development planning;
- the proposed development would supply runoff to the estuary system which is of equal or better quality than that of the existing and thus has no impact on the current recreational use of the Creek and Lagoon;
- as a risk management measure, an ASS Management Plan would be instigated for works that are proposed at depth of 2m or more.

3.8 Fire Hazard Management

Issue

The DoP raise issue with the location of APZ's within the 7(b) zone. DoP recommended that APZ's be incorporated into private property if they cannot be provided within the road reserve.

The Rural Fire Service provides a number of recommendations for fire hazard management within the subdivision. At the issue of the subdivision certificate and in perpetuity, a 20 m APZ is to be provided to the northern elevation of the development zone and shall be managed as an inner protection area (IPA) as outlined in *Planning for Bush Fire Protection 2006* and the NSW Rural Fire Services document Standards for asset protection zones. It is also recommended that a 10 m APZ is maintained at the southern boundary of the development site and that the whole development precinct is managed as an outer protection zone until the completion of the subdivision. Each stage shall be provided to those edges that do not require permanent asset protection zones, a temporary 100 m wide inner protection zone.

At the issue of the subdivision certificate and in perpetuity, the land surrounding the existing dwelling to a distance of 20 m shall be maintained as an IPA.

The Rural Fire Service recommends that the following development components comply with *Planning for Bushfire Protection 2006:*

- water electricity and gas
- road access and public roads constructed within each stage that do not provide a through road shall provide a temporary 'T' turning head until such time as they are linked.
- fire trails, including temporary fire trails shall be provided within the temporary inner protection area for fire fighting so as to provide fire fighting access to the perimeter for the stage.
- landscaping to the site is to comply with the principles of Appendix 5.

Response

As detailed in **Section 2.2**, the subdivision layout has been amended to ensure that all required APZ's sit within the Residential 2(a) zone and not the 7(b) zone. As a result of this amendment, all lots to the north of Road 1 are required to accommodate a 20m APZ within the allotment. As demonstrated on the Building Envelope Plan (see **Appendix B**) the depth of these lots is sufficient to accommodate a single dwelling and the APZ. RFS also requires a 10 m APZ to lots located along the south eastern property boundary. As shown on the Bushfire Constraints Plan (**Appendix B**), this APZ has been provided to lots 246, 247 and 248. A Section 88B Instrument,

under the *Conveyancing Act 1919* would be created on lots affected by these APZ's. This requirement has been included within the revised Statement of Commitments.

In addition to the requirement for APZ's, the RFS has recommended that the proposal complies with specific components of *Planning for Bushfire Protection 2006.* These recommendations are already included in the Statement of Commitments as a result of the Bushfire Protection Assessment undertaken by Australian Bushfire Protection Planners (October 2008).

3.9 Odour and Noise Buffer Distance

Issue

DECCW raised concern that the 150 m buffer around the sewage treatment plant (STP) is narrow and although modelling indicates this is adequate, coastal towns often experience very high sewage loads in holiday periods. DECCW recommends consideration of an increased buffer width, with Macleay Water recommending a buffer of 400 m, between the subdivision and the STP.

The Department of Planning, Northern Office raises concern that the Odour and Noise Assessment Report was completed in 2005 and assessment reports are only current for a period of two years. It is recommended that the noise assessment report be revised to ensure compliance with potential legislative amendments or changes to the context under which the report was initially based.

Response

The 2(a) Residential zone line which set the 150 m buffer from the STP was determined following on site monitoring of noise, odour and weather conditions as part of the LES. Consideration was given to peak load (holiday periods), varying wind, temperature and operating conditions.

The Kempsey Council commissioned report undertaken by SKM in July 2008 indicated that the 35 DBA thresholds only occurred 100 m to the south of the site boundary of the plant. The 2(a) residential zoning boundary has been set at 150 m which is a 50% additional distance to account for any unforeseen variances from the assessment. The 150 m buffer is considered reasonable.

With regard to the need to update the 2005 noise assessment, the following should be considered:

- aside from upgrades to the STP, no significant changes in land use have been introduced in the area since 2005 that could impact background noise levels;
- no changes in assessment methodologies have been introduced since 2005 by regulators i.e. the *NSW Industrial Noise Policy* is still relevant.

The STP was constructed in the early 1970's. Upgrades currently being undertaken at the plant would result in the replacement of old equipment with more efficient technology. Upgrades to the plant would be required to comply with the requirements of the *NSW Industrial Noise Policy*. With regard to potential operational noise impacts as a result of upgrades, the onus is on the STP operators to ensure compliance with the Policy in consideration of existing and future planned land use in the surrounding area for which the buffer zone was created.

3.10 Consultation

3.10.1 Community Consultation

Issue

The community raise the issue of public consultation in relation to the proposed development.

Response

The statutory exhibition period allowed the community adequate opportunity to consider the proposal and lodge submissions.

3.10.2 Consultation with Indigenous Groups

Issue

DECCW acknowledges that the EA provides evidence from two local Aboriginal community groups who participated in the LES. However the EA has not included copies of formal correspondence received from these groups regarding the project application, nor has the Proponent requested a list of local Aboriginal stakeholders in the area.

DECCW raises concern that consultation with the Aboriginal community should occur in support of the development application process, prior to the exhibition if the EA. DECCW recommends additional consultation is undertaken in accordance with the DECCW consultation guidelines to demonstrate that all local Aboriginal community groups have been provided an opportunity to contribute to the Part 3A ACH assessment process.

Response

As detailed in Section 5.4.1.6 of the EA, a public notice was placed in The Macleay Argus local newspaper on the 11 August 2009 requesting registration of interest from local Aboriginal stakeholders to comment on the public exhibition of the proposed development. The Proponent has also contacted a total of 19 aboriginal stakeholders groups in the Kempsey and Port Macquarie – Hastings LGA in order to satisfy the consultation requirements. The Proponent has not received any responses to letters or the public notice.

3.11 Construction Management

Issue

DECCW indicate that the Proponent would need to ensure that noise, water and air quality impacts are satisfactorily managed during the construction phase and appropriate best practice measures are put in place to control ongoing impacts from the completed development.

Response

A statement of commitment has been included that requires the preparation of a construction environment management plan (CEMP) for the proposal.

4.0 Revised Statement of Commitments

In response to submissions received and amendments to the proposal, the Proponent has amended and finalised its Statement of Commitments (SoC). In accordance with the EA requirements under Part 3A of the EP&A Act, the following SoC is provided. The SoC sets out the Proponents environmental commitments and details on the environmental management and monitoring of the proposed during its construction and operational activities.

Table 5 Revised Statement of Commitments

Issue	Statement of Commitment
Vegetation Management Plan	A Vegetation Management Plan (VMP) should be prepared for the 7(a) and 7(b) zoned Conservation Area within the site. The VMP should be based on the Vegetation Management Principles Plan prepared for the Conservation Area, located at Appendix G of the Ecological Issues & Assessment Report prepared by Whelans Insites, dated August 2009.
	The VMP is to also include an appropriate monitoring regime for dealing with issues that may arise, for instance; outbreaks of weed infestation, predation by domestic pets, uncontrolled access by people into the Conversation Area.
	The VMP is to include a protocol for the salvage and re-use of hollow-bearing trees in accordance with recommendations outlined in the Response to Submissions Report prepared by Whelans Insites dated July 2010.
	The VMP should be prepared in consultation with Kempsey Shire Council and DECCW.
Mosquito Monitoring	Monitoring of the stormwater control system which has been designed for the proposed development (particularly the drainage swales and detention basins) should be undertaken to identify any potential increase in mosquito breeding opportunities, and to appropriately deal with the risk of mosquito activities.
Bushfire Management	A Fire Management Plan is to be prepared in coordination with the proposed VMP. The management prescriptions of the Fire Management Plan shall address those measures required to meet the provisions of Section 63 of the *Rural Fires Act 1997* whilst specifically recognising the need to protect the plant communities within the Conservation Zone. The Fire Management Plan is to include recommendations relating to the provision and management of APZs, 88B Covenants, construction standards to future buildings, standards relating to public access roads provision of fire trails and water supply and staging of development, as detailed within the Bushfire Protection Assessment prepared by Australian Bushfire Protection Planners dated October 2008.
Landscaping Management	A Landscape Management and Maintenance Plan is to be developed to guide appropriate management and maintenance of open space and public domain areas within the 2(a) Residential zone.
Visual Impact	A Street Tree Planting Scheme is to be developed for the 2(a) Residential zone and would incorporate the following: • trees with heights at least 50% higher than the heights of the proposed buildings; and • trees with dense foliage, e.g. *Melaleuca quinquenervia*, or broad canopies, e.g. *Eucalyptus racemosa*, both at reasonably close spacings, e.g. 10 – 12m centres.
Water Cycle Management	Stormwater is to be managed as outlined within the Amended Water Cycle Management Plan prepared by Martens (July 2010).
Water Quality Monitoring	Monitoring of downstream receiving environments should occur during the construction phase and during the revegetation establishment phase (up to 6 months after development is completed). Water Quality Monitoring is to be undertaken as outlined within the Amended Water Cycle Management Plan prepared by Martens (July 2010).
ASS management	Works proposed at depths below or likely to result in water table changes below 2m below ground level are to be undertaken in accordance with the Acid Sulfate Soil Management Plan prepared by Martens (June 2010).
Indigenous Heritage	All construction contractors and their employees are to be advised of their legal

Issue	Statement of Commitment
	obligations with regard to Aboriginal Cultural Material. This advice is to form a component of a Construction and Environmental Management Plan (CEMP) prepared for the Site, and the CEMP should be forwarded to the DEC Northern Aboriginal Heritage Unit (Coffs Harbour) for its records.
	In the event that identified or suspected Aboriginal cultural materials are detected with during Aboriginal monitoring or elsewhere: • Disturbance in the vicinity of the find should immediately cease and temporary protective fencing would be erected around the find to define a 'no-go' zone. • The developer would contact the Aboriginal stakeholder groups and the DECCW to inspect the find so that appropriate actions and management recommendations can be formulated, In the event that findings consist of or include possible or identified Aboriginal skeletal remains, the NSW Police Department would be contacted. • Work may proceed at an agreed distance from the find, in consultation with Aboriginal stakeholders and the DECCW. If the find is identified as an Aboriginal object, work causing disturbance or destruction of the object may not recommence until an appropriate archaeological inspection/investigation has been carried out to the satisfaction of the DECCW and the DoP.
Traffic	Internal roads are to be designed in accordance with AMCORD and Council's Guidelines for Engineering and Subdivision works.
Construction management	A Construction Environment Management Plan (CEMP) would be developed prior to the commencement of works and should address: • induction and training of contractors, subcontractors, delivery contractors and all other staff on site; • reporting and induction of visitors to site; • emergency and clean-up procedures; • noise mitigation (operational and machinery) through temporary noise walls; • maintenance of machinery; • location and storage of all fluids/oils/fuels on site for machinery to be in bunded areas; • use of sediment traps; • minimisation of stockpiling and correct management practices; • soil and dust management; • traffic management measures, including management of truck and machinery movements, to and from the Site; • disruption of services; • mosquito Management; and • waste disposal. The CEMP would be kept on site at all times. The CEMP would be prepared in partnership with local Aboriginal community groups.
Soil and Water Management	A site specific Soil and Water Management Plan (SWMP) should be prepared at the construction certificate stage of the development, following the finalisation of the development layout, and should be developed in conjunction with the engineering plans for the sub-division in accordance with the provisions outlined in Landcom (2004).
Waste Management	A Waste Management Plan (WMP) to be developed as part of the construction phase of the development. The plan is to include (but is not limited to) disposal of demolition materials, recycling options, location of approved waste disposal depots or approved landfill sites which would be utilised for disposal and treatment and disposal of waste water in accordance with relevant pollution control legislation and guidelines. The WMP should specify that no wastes (including building rubble,

Issue	Statement of Commitment
	garbage, contaminants, fuels, oils, paints or other chemicals) are discharged from the construction area, and that all such wastes and contaminants are appropriately managed.
Open Space Management	The Proponent is to enter into a Voluntary Planning Agreement (VPA) with Kempsey Shire Council under Section 75F(6) of the EP&A Act in regards to the management and dedication of the 7(a) and 7(b) zoned Conservation Area on the site.