

**PREFERRED PROJECT REPORT/RESPONSE TO
SUBMISSIONS**

MP 06-0243 FRASER DRIVE SOUTH TWEED

CONICS (SYDNEY)

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Date: August 2008

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Version	Date	Author	Notes
1.	21 July 2008	Pradesh	Document recopied from 18 March 2008. Edits and amendments
2.	30 July 2008 – 1 August 2008	Pradesh	Instructions to Peter M for amendments, note all instructions in blue.
3.	01 August – 7 August 2008	Peter	Amend responses to issues in order to reflect responses from Consultants. Amendments in purple
4.	11 August 2008	PR	Review of comments and amendments
5.	12 August	PR	Consultation summary and amendments
6.	13 August	Peter	Amending Table of Submission/ Responses and ammend final draft

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EXECUTIVE SUMMARY

The report, 'Fraser Drive Preferred Project Report/Response to Submissions' (PPR/RS) follows exhibition of 'Fraser Drive, South Tweed Environmental Assessment Report Volumes 1, 2 and 3' (EAR) and provision to the Department of Planning of a draft PPR/RS on 18 March 2008 .

The PPR/RS details and number of projects amendments and responds to issues and the comments raised by State Agencies, Tweed Shire Council and the general public, including those comments made on the 18 April 2008 (included in Appendix O and R).

The PPR/RS is provided in accordance with section 75H(6) of the *Environmental Planning and Assessment Act 1979* and follows correspondence from the Department of Planning dated 15 August 2007 and 18 April 2008. Plans for approval including updated engineering plans are provided in Appendix S.

The EAR was exhibited for a period of 30 days between 14 June 2007 and 13 July 2007. During exhibition ten (10) submissions were made by Local/State Government Agencies and a total of seventy two (72) public submissions were received.

In summary, Agency submissions requested further information and clarification on:

- Buffer widths;
- Geotechnical;
- Aboriginal Heritage;
- Socio Economic Impact Assessment;
- Bushfire Hazard Assessment;
- Housing Density/Type; and
- Planning Provisions and Development Controls.

Public submissions were provided as a tabled summary and identified the following issues of concern:

- Geotechnical;
- Aboriginal Cultural Heritage;
- Traffic and Access;
- Flora and Fauna;
- Stormwater
- Loss of Character and
- Infrastructure.

Of the 72 public submissions made, 71 objections (including 61 form letters) were received and 1 letter in support was provided.

A draft PPR/RS was provided to the Department of Planning on 18 March 2008. On 18 April 2008, pursuant to a review by the Department and Tweed Shire Council a number of key issues were identified and further information requested. As such the following document responds to all issues raised and details the concluding position.

Our response has been informed through a review of the information placed on exhibition, meetings with the Department of Planning, Tweed Shire Council and a detailed analysis of the concerns raised. This analysis has resulted in further investigations and consequently resulted in the following project amendments.

SUBDIVISION IN TWO PARTS

The subdivision will be undertaken in two parts. The first stage will result in the proposed entry road off Fraser Drive being wholly contained within Lot 9 DP 1039569 (refer to plan "Proposed Boundary Adjustment Drawing No: 12512B Revision A" prepared by B&P Surveys Consulting Surveyors) and will result in the creation of two super lots (refer to plan "Proposed Subdivision Drawing No: 16104 B" prepared by B&P Surveys Consulting Surveyors).

Once the two lot subdivision and boundary adjustment have been registered, the proposal will then seek to create the subdivision layout proposed in the plan "Proposed Subdivision Drawing No: 20934-05M" prepared by Conics Pty Ltd.

SUBDIVISION LAYOUT – DUPLEXES AND LOT SIZES

The development will provide lots for detached housing at a minimum of 450 sq metres and duplex lots at minimum of 900 sq metres. Previously our smallest detached housing lot was 435 sq metres and smallest duplex block proposed was 600 sq metres. Lot size amendment follows negotiations with Tweed Shire Council and the Department of Planning. Consequently, the number of proposed lots and dwellings are reduced by 3 and 5 respectively.

INTEGRATED HOUSING SUPER LOT

The preferred subdivision layout has been amended to include approval of a 2.46 hectare Integrated Housing super lot for the proposed future integrated housing area. Under clause 11 of the Tweed Local Environmental Plan 2000, Tweed Shire Council will be the consent authority for any future dwellings. Under clause 19(2), Strata subdivision does not require consent. Construction of dwellings and strata subdivision will follow the Minister's determination. The reduction of lot size follows negotiations regarding the provision of a 40 metre SEPP 14 Buffer and Council's requirement of a failsafe stormwater contingency (i.e. a stormwater drainage-adjacent to the main entry road).

PARKS AND OPEN SPACE

The proposed Seaview Park has been amended in negotiation with Tweed Shire Council and now forms part of our structured open space network. Previously the park was provided as a non-conforming park. Concept landscaping plans are included in Appendix H. The Plans demonstrate the outcomes of our negotiations with Council. Consequently the private accessway that previously serviced Lots 141-145 has been widened to accommodate a local road.

ROAD LAYOUT

The road layout has been amended to reflect the concerns raised by Tweed Shire Council and the Department of Planning. Amendments include:

- Inclusion of private access ways into proposed lots
- Reducing private access ways to a minimum of 50 metres in length;

- Lengthening of the Merlot Court cul de sac head by approximately 45 metres; and
- Widening the private access way proposed for Lots 143, 142, 141, 140, 145 and 144 to accommodate full collector road.

PUBLIC TRANSPORT/PEDESTRIAN ACCESS

An additional public transport stop is proposed for Fraser Drive. This bus stop will ensure that future residents that resided in the southern portions of the site are able to access public transport. In addition, pedestrian connectivity through the site has been improved by creating pedestrian access points between the southern portion and northern part of the site and from the southern portion directly to Fraser Drive. Improved pedestrian connectivity will allow residents to access proposed public transport stops.

LOT 168

Previous proposed plans of subdivision identified proposed Lot 168 as the lot adjacent to the artificial wetland and backing onto existing properties at Ridgeway Crescent. A new lot numbering sequence has been incorporated following the aforementioned amendments and now Lot 168 is now referred to as Lot 91.

Lot 91 has been amended. The lot no longer includes remnant vegetation. This vegetation is now included in the area of the Artificial wetland. The SEPP 14 buffer has also been slightly amended to include the remnant area behind Ridgeway Crescent.

MIDDEN

The proposed development now includes management of the midden located in the Champagne Road Reserve. The midden area has been mapped and Tweed Shire Council has agreed to accept the midden within the proposed buffer to Fraser Drive. This area will not be subject to this development.

The issues raised in the submissions are addressed in detail within this Report. Each submission has been addressed directly and cross referenced to ensure consistency. A summary of the key issue responses are provided below.

GEOTECHNICAL

The site is subject to land slip hazard. Slumping is evident on the site and surrounding residents are concerned that bulk earthworks may place their properties at risk. Figure 4 of the Geotechnical Assessment (Appendix C) identifies those areas proposed for land slip remediation. This assessment has been based on additional investigations following the geotechnical assessments prepared in 2002 and 2006.

In order to ensure compliance with Tweed Shire Council's D6 Site Regrading Specification, the proposed development will require the construction of a number of revetment structures, the installation of subsurface drainage channels and further compaction of the soil. The assessment concludes that:

- a) the works will not result in any increased risk to adjoining properties and
- b) ensure that future development lots are suitable for residential development.

BUFFER WIDTHS

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The site includes both a SEPP 14 Wetland and Endangered Ecological Communities. The EECs are mainly contained within the boundary of the SEPP 14 Wetland, within the 50m buffer to the SEPP 14 and within a small area protruding into the development site.

The Ecological Buffer Analysis included in Appendix A concludes that provision of the buffer in addition to works to contribute to the rehabilitation of those EECs within the 50m buffer will provide sufficient protection. The Ecological Assessment considers:

- The quality of the existing vegetation including hydrological inputs;
- The character and condition of the adjoining land;
- The nature of existing and proposed drainage arrangements;
- That nature of the proposed uses adjoining the environmentally sensitive areas;
- The functions and characteristics of the buffer;
- Any enhancement and rehabilitation works and
- Landscaping and access controls.

The Ecological Buffer Analysis was prepared following the concerns raised by the Department of Planning and other agencies as to the adequacy of the proposed buffer. The Department advocated a blanket 50m buffer based on the comments raised by the relevant agencies.

Subsequently, during a meeting with the Department on the 23 April 2008 an agreed position to a 40m vegetated buffer separating the integrated housing lots with a 20m APZ outside of the ecological buffer has been reached. These buffer widths were the outcomes following a site visit and a review of the Ecological Buffer Analysis by Geoff Sainty, an independent wetland specialist commissioned by the Department. Comments detailing this position from the Department have been included in Appendix R.

The proposed 20m Asset Protection Zone is to be measured from the existing SEPP 14 50m buffer, or the outer edge of the 40m vegetated buffer or, other vegetation outside of the buffer area, which ever is further.

CULTURAL HERITAGE

The propose development site includes an aboriginal midden located within the existing Champagne Road Reserve, approximately 10m from the intersection of Fraser Drive. The Environmental Assessment Report identified the midden as falling within the proposed 10m buffer provided for the future widening of Fraser Drive and proposed that further investigations be undertaken as part of the development consent. The area would then be removed and buffered from development and that the on-going management of the item be determined between Council and the Local Aboriginal Land Council and Traditional Owners as part of the assessment of the future road widening.

Further to the Department's request for further investigation, Appendix D includes the Cultural Heritage Assessment which outlines the process for the on-going management of the midden. In summary,

- The midden will remain in situ and buffered from development;
- Council have agreed to accept protection and conservation the midden following the preparation of a draft Cultural Heritage Management Plan;

- The long term management of the midden site will be ensured under a Cultural Heritage Management Plan prepared by the developer in conjunction with input from the Local Aboriginal Land Council and Traditional Owners. This position reflects the outcomes of an on-site meeting and inspection with Council, the developers and representatives of the Local Aboriginal Land Council conducted on the 21st January 2008.

BUILDING TYPE/DENSITY

Stages 1A and 3A have been amended in response to Council's request to incorporate a failsafe overland flow channel on the northern edge of the entry road. In addition, following our negotiations with Council and the Department of Planning we have reviewed our proposed lot sizes in both stages and redesigned them to accommodate a minimum lot size of 450 square metres for detached dwelling lots and a minimum of 900 square metres for duplex lots.

The consequential amendments have resulted in the removal of the rear access laneways, the private access ways and a reduction in yield of approximately 5 dwellings. The lots have been reorientated to provide front access from a new internal road layout that now accommodates a new cul de sac.

INTRODUCTION

Conics Pty Ltd has been commissioned by GEO Property Group to prepare a Major Project application for the proposed residential subdivision of land described as Fraser Drive, South Tweed.

The following report has been prepared in response to our previous Preferred Project Report/Response to Submissions (PPR/RS) submission to the Department of Planning on the 18 March 2008. Pursuant to the 18 March 2008 we received a number of preliminary comments from the Department and Tweed Shire Council, seeking clarification or further information on the 18 April 2008.

We have since meet with the Department of Planning and Tweed Shire Council on the 23 April 2008 and 29 April 2008, 23 June 2008 and 29 July 2008 respectively. In this time we have sought to address the issues raised on the 18 April 2008. This report represents both the agreed and negotiated positions attained with the Department and Council and our recommendations to proceed with the future development of this site. As such this report represents the proposed development outcome we seek approval for.

Where possible we have updated our previous submission to incorporate the final positions agreed to. Nonetheless, unless identified, the contents of the 18 March 2008 remain.

Please note that Appendix A to Appendix R reflect the plans and concepts that form the base of negotiations to date, while these plans are not plans for approval they document a resolution to the relevant issues. The nature of these resolutions are provided in conjunction with the revised layout and engineering plans provided in Appendix S.

Site Description

The site is located approximately 4 km south west of the Tweed Central Business District. It is approximately 32 hectares in size and possesses a number of development constraints such as a SEPP 14 Wetland in the north, steep slopes and land slip hazards to the south and west and contains a midden on the southern boundary. The site is surrounded by residential development on the north, west and southern boundaries. Fraser Drive forms the major access point as well as the eastern boundary. The site, apart from the wetland area, has been cleared with only a few stands of vegetation. The site is currently vacant and has a past history of agricultural uses, specifically banana plantation and cattle grazing.

The site is zoned 2(C) Urban Expansion under the Tweed Local Environmental Plan 2000. It is identified as an urban area within the Far North Coast Regional Strategy and can be serviced by local infrastructure services. The site contains three landowners, two private and Tweed Shire Council.

The subdivision application seeks to create a:

- 151 lot residential subdivision, incorporating;
- A super lot for a future integrated housing development;

- An open space lot that contains an artificial wetland for the purposes of stormwater management;
- An open space lot for the retention of the SEPP 14 Wetland and buffer area;
- Dedication of a 10m wide buffer for the future upgrade of Fraser Drive.
- Provision of roads, pedestrian and cycle paths, bus stops and open space; and
- Drainage facilities, revetment structures and private access ways

The project application also seeks approval to undertake site rehabilitation works to stabilise current land slip hazards.

The proposal will incorporate Asset Protection Zones and will not result in the clearing of any significant vegetation. Stormwater will be treated on site prior to being disposed of into existing Council infrastructure. Land transformation works will be limited to ensure an outcome consistent with Tweed Shire Council's Site Regrading guidelines. The proposal does not include the construction of any dwellings.

Major Project Application Background

The application to declare the proposal a Major Project was submitted on 6th September 2006. The Minister for Planning declared the proposal a Major Project on the 6th October 2006 and Director General Environmental Assessment Requirements were issued on 5th November 2006.

A draft Environmental Assessment Report was submitted to the Department for review on 2nd February 2007. Further to the Department's comments of the 22nd February 2007 a final Environmental Assessment Report was lodged on the 1 June and exhibition occurred 13 June 2007 to 14 July 2007.

On the 15th August 2007 the Department of Planning provided a copy and summary of submissions made during the exhibition. Submissions raised a number of concerns with the proposal, particularly with regard to increase risk of land instability.

A draft PPR/RS was submitted to the Department on the 18 March 2008 addressing these concerns and providing other information. Subsequently, on the 18 March 2008 the Department and the Tweed Shire Council requested further information.

Notwithstanding, this PPR/RS provides all information requested to assist the Department to complete its assessment.

We would consider that the following information be read in conjunction with previously exhibited Environmental Assessment Report and the submission of the 18 March 2008. Where any inconsistencies exist between the previous reports and this report, this report prevails

All plans for approval and determination including updated engineering plans are included in Appendix S.

SUMMARY OF PROJECT AMENDMENTS

Following exhibition of the Environmental Assessment Report and in response to a number of issues raised by the submissions on the 15th August 2007 and 18 April 2008, the proposal has been amended. The cumulative impacts of the amendments are minor in nature and are described below. Further to our assessment, the amendments do not raise any additional issues and consequently our application does not require further exhibition.

Project Description

Section 5.1 of the Environmental Assessment Report described the proposal. Further to the amendments described below the project can now be described as:

Residential subdivision to create 151 freehold title lots that will provide for attached and detached dwellings (total potential number of potential dwellings not including the Integrated Housing Lot, 163). The subdivision will result in the creation of a 2.46 hectare “superlot” for a future integrated housing development comprising of strata or community titled subdivision. Development of the superlot will be subject to the provisions of the Tweed Shire Local Environmental Plan 2000 specifically clause 19.

The subdivision and creation of the freehold titled residential lots will be preceded by the creation and registration of a two lot subdivision and boundary adjustment between Lot 9 on DP 1039569 and Lot 2 on DP 100385. The two lot subdivision and boundary adjustment are detailed in the plans “Proposed Boundary Adjustment Drawing No: 12512B Revision A and “Proposed Subdivision Drawing No: 16104 B” prepared by B&P Surveys Consulting Surveyors.

The development will comprise:

- Works to rehabilitate land slip hazard areas as identified Figure 4, Appendix B of the report, ‘Proposed Residential Development Fraser Drive Tweed Heads South – Major Project 06-0243’ dated 31 October 2007 prepared by Morrison Geotechnical;
- Construction of revetment structures;
- Construction and dedication of permanent stormwater treatment facilities including the creation of an artificial wetland and periodically inundated dry detention basin;
- Dedication of open space areas as identified in “Proposed Subdivision Drawing No: 20934-05M” prepared by Conics Pty Ltd. Open space includes unstructured open space, open space for drainage purposes, and open space for conservation;
- Dedication of a generally 10m wide buffer the length of the development site adjacent to Fraser Drive which also includes an item of aboriginal cultural heritage significance;
- Provision of foot/cycle paths and public transport stops; and

- Construction and dedication of roads and laneways.

The development will generally be undertaken in accordance with the stages outlined in Proposed Subdivision Drawing No: 20934-05M" prepared by Conics Pty Ltd.

The development does not propose to construct dwellings or buildings however, for proposed Lots 166, 167 and 168 building envelopes have been identified.

The proposal will also result in the closure of the Champagne Road Reserve and will require access to be provided from Fraser Drive, Hillcrest Avenue, Ocean Avenue and Merlot Court.

The proposal includes land described as Lot 9 on DP 1039569 and Part Lot 2 DP 100385. Lot 2 contains an existing single dwelling (one storey timber construction) with direct access off Fraser Drive. The existing dwelling will remain, with our development of Lot 2 being limited to the construction of the main access way (and associated overflow drainage channel) off Fraser Drive. No further development will be proposed on Lot 2.

The development is permissible under the 2(C) Urban Expansion Zone of the Tweed Local Environmental Plan 2000 and is generally in accordance with the relevant and applicable State and Regional Environmental Planning Policies. The proposal does seek minor variations to the Tweed Development Control Plan 2007, specifically the proposal includes:

- The future provision of integrated housing; and
- The exclusion of the proposed Local Shops identified in Section B3 Map 2.

The variations do not detract from the existing residential character of the Banora Point West locality and does not result in a significant increase in residential density. The proposed variation to the provision of unstructured open space reflects the topographical constraints of the site and the requirement to achieve consistency with Council's site regrading specifications.

The variations described above are made to ensure that the proposed development achieves a sustainable development outcome that is sensitive to the site's topography and conserves and protects areas and items of significant environmental and cultural heritage value.

Project Amendments

The following project amendments are incorporated within the proposal.

1. SUBDIVISION IN TWO PARTS

Subdivision will be undertaken in two parts. The first stage will result in the proposed entry road off Fraser Drive being wholly contained within in Lot 9 DP 1039569 (refer to plan "Proposed Boundary Adjustment Drawing No: 12512B Revision A" prepared by B&P Surveys Consulting Surveyors) and will result in the creation of two super lots (refer to plan "Proposed Subdivision Drawing No: 16104 B" prepared by B&P Surveys Consulting Surveyors).

Once the two superlots have been registered, the proposal will then create the subdivision layout proposed in the plan "Proposed Subdivision Drawing No: 20934-05M" prepared by Conics Pty Ltd.

2. INTEGRATED HOUSING SUPER LOT

The preferred subdivision layout has been amended to include approval of a superlot for the proposed future integrated housing area. The strata subdivision of this site will be subject to assessment in accordance with clause 19 of the Tweed Local Environmental Plan 2000 and will follow the Minister for Planning's determination of the current proposal.

The proposed integrated housing lot has also been reduced in area and is now subject to the agreed SEPP 14 Buffer width of 40 metres (measured from the edge of the existing mapped SEPP 14 buffer) plus an additional 20 metre Asset Protection Zone.

The reduction in yield is a consequence of the amendments to Stages 1A and 3A and Council's request to incorporate a failsafe overland flow drain. The details of which are discussed in item 8 below. The proposed area for the integrated housing lot is now 2.46 hectares.

3. ROAD LAYOUT

The road layout has been amended to reflect the concerns raised by Tweed Shire Council. The extent of the response is detailed in the report and provided in the Appendix J. A new road layout is also proposed for Stages 1A and 3A, this is discussed in detail below.

4. PUBLIC TRANSPORT/PEDESTRIAN ACCESS

An additional public transport stop is proposed for Fraser Drive. This bus stop will ensure that future residents that resided in the southern portions of the site are able to access public transport. In addition, pedestrian connectivity though the site has been improved by creating pedestrian access points between the southern portion and northern part of the site and from the southern portion directly to Fraser Drive. Improved pedestrian connectivity will allow residents to access proposed public transport stops.

5. LOT 168

Previous proposed plans of subdivision identified proposed Lot 168 as the lot adjacent to the artificial wetland and backing onto existing properties at Ridgeway Crescent. A new lot numbering sequence has been incorporated following the aforementioned amendments and now Lot 168 is now referred to as Lot 91.

Lot 91 has been amended. The lot no longer includes remnant vegetation. This vegetation is now included in the area of the Artificial wetland. The SEPP 14 buffer has also been slightly amended to include the remnant area behind Ridgeway Crescent.

6. MIDDEN

The proposed development now includes management of the midden located in the Champagne Road Reserve. The midden area has been mapped and Tweed Shire Council has agreed to accept the midden with the proposed buffer to Fraser Drive. This area will not be subject to this development.

7. PARKS AND OPEN SPACE

The proposed Seaview Park has been amended in negotiation with Tweed Shire Council and now forms part of our structured open space network. Previously the park was provided as a non-conforming park. Concept landscaping plans are included in Appendix H. The Plans demonstrate the outcomes of our negotiations with Council. Consequently the private accessway that previously serviced Lots 141-145 has been widened to accommodate a local road.

8. STAGES 1A AND 3A

Stages 1A and 3A have been amended in response to Council's request to incorporate a failsafe overland flow channel on the northern edge of the entry road. In addition, following our negotiations with Council and the Department of Planning we have reviewed our proposed lot sizes in both stages and redesigned them to accommodate a minimum lot size of 450 square metres for detached dwelling lots and a minimum of 900 square metres for duplex lots.

The consequential amendments have resulted in the removal of the rear access laneways, the private access ways and a reduction in yield of approximately 5 dwellings. The lots have been reorientated to provide front access from a new internal road layout that now accommodates a new cul de sac.

CONSULTATION SUMMARY

The following section summarises the negotiations and consultation with Tweed Shire Council and Department of Planning in the period commencing from 18 March 2008 to the submission of this report.

Records of meeting minutes are provided in the Appendices O and R respectively. Nonetheless below we provide an overview of the major consultation items and relevant outcomes.

Tweed Shire Council – Comments dated 17 April 2008, meetings, 29 April 2008, June 23 2008 and 23 July 2008.

Tweed Shire Council comments dated 17 April 2008 were forwarded to the Department of Planning and provided to us on the 18 April 2008. The comments were addressed to the Department in response to our submission of 18 March 2008.

Council's comments are included in Appendix O, item O1. In summary Council were reluctant to support our proposal due to concerns on the following matters:

- Geotechnical issues;
- Roads, Public Transport and Connections;
- Stormwater Issues;
- Flooding;
- Open Space;
- Bushfire;
- Environmental Health Considerations;
- SEPP 14 Buffer Issues; and
- Planning and Urban Design.

Upon inspection of the matters raised by Council it was identified that the matters could be addressed through the provision of further detailed information, subsequently it was communicated that despite Council's general lack of support for the proposal, Council will consider its position in light of new information and as such were willing to meet and discuss the issue further.

Therefore, following our meeting with the Department of Planning on the 23 April 2008 (see below), a meeting was held at Tweed Shire Council's on the 29 April 2008. The agenda and outcomes of that meeting are included as item O2 in Appendix O.

From the meeting we agreed to amend the subdivision road layout to re-instate the connection to Merlot Court. The SEPP 14 buffer and wetland issues were resolved with respect to the outcomes of the meeting with the Department of Planning on 23 April 2008 (see below).

Generally it was agreed that further consultation will occur with Council on:

- Lot sizes, particularly duplex lot sizes;
- Roads;
- Open space; and
- Flooding.

Further we would provide further information on the following:

- General stormwater details;
- Planning and Urban Design;
- Geotechnical issues; and
- Bushfire.

Further an additional matter, Cultural Heritage, was raised in addition to the items presented in Council's comments of 17 April 2008. Council requested that vehicular access be provided from Merlot Court to the conserved Midden site adjacent to Fraser Drive.

We identified the previously agreed to position negotiated with Council officers and the Tweed Byron Local Aboriginal Land Council on the 23 January 2008. The agreed position was reflected in the submission provided in the 18 March 2008. We requested that Council's request represented a departure from the agreed position and sought to have Council review their comments in this regard. No further correspondence has been received from Council in this regard. Nonetheless we discuss the issue in section 1.3 and provide our recommendation.

Open Space

On the 20 May 2008 preliminary layouts for the Seaview Street proposed park were forwarded to Council and copied to the Department of Planning. Council's response, 22 May 2008, did not support the preliminary layout and requested a further examination of the Merlot Court park.

On the 2 June 2008 a preliminary concept for Merlot Court was provided to Council for comment. Council were unable to support the preliminary layout and provided comment on the 16 June 2008. Subsequently it was considered that an on-site meeting be held in order to discuss the merits of each proposal.

On the 23 June 2008 a meeting was held on site with Council's officers. From this meeting and pursuant to additional clarification provided by Council 27 June 2008, it was considered the Seaview Street Park concept could be reviewed to address in detail the issues raised on the 22 May 2008.

On the 21 July 2008 a detailed preliminary concept, in response to Council's concerns and requirements was provided (see appendix O item O3). It was considered that the proposed park concept satisfied Council's requirements. To date we are yet to receive confirmation from Council, however, the proposed concept is now reflected in our plan of subdivision.

Lot sizes – Duplexes

Further to our meeting of the 29 April 2008, Council officers advised us at our on-site meeting of 23 June 2008, that Council were unlikely to support duplex lots less than 900 square metres. As such we adopted Council's requirements for a 900 square metre duplex lot.

Roads

On 29 April 2008, Council requested further information on the site distances for the intersection of the private access way and Ocean Avenue. On the 14th May 2008 further information was provided. Council confirmed via email on the 5th August 2008 this information was satisfactory (refer to Appendix O, item O4).

Geotechnical

Further Council's comments dated 17 April 2008, on the 31 July 2008 a recommended Statement of Commitment was provided to Council to address their outstanding concerns with the geotechnical assessment. Council confirm on the 5th August 2008 that our recommended Statement of Commitment was satisfactory (refer to Appendix O, item O4).

Bushfire

Council requested that our Bushfire Assessment Report be amended to address the provision of the Asset Protection Zone for the sloping land behind Ridgeway Crescent. Our addendum to the Bushfire Assessment identified management obligations, as per Council's request, for the maintenance of the area. The addendum was forwarded to Council on the 21 July 2008 for comment. No response has been forthcoming (refer to Appendix O, item O3).

Further, Council required further information regarding the maintenance requirements for the landscaping proposed within the Fraser Drive road reserve. Notwithstanding, following the completion of our amended Noise assessment, the landscaping treatments for the proposed sound mounds are no longer required. In fact our revised assessment no longer recommended the provision of an acoustic wall or sound mound. As such our revised landscape plan in Appendix H includes the low maintenance planting requested by Council.

Flooding

At our meeting of 29 April 2008 Council further clarified their issues regarding flooding and the potential impacts of proposed underground piping proposal. In this light we sought to further investigate the matter to resolve to Council's satisfaction. The investigations were to focus on the provision of a contingency overflow channel to be constructed along the northern boundary of the proposed entry road of Fraser Drive.

On the 8th July a proposed concept for the overflow drainage channel was provided to Council (refer to item O5). Council responded on the 17th July 2008 indicating that the proposed channel was an undesirable outcome for an urban design perspective.

On the 23 July 2008 a meeting was held at Council to discuss various issues associated with the overflow channel (refer to item O6). On the 6th August a revised concept was forwarded to Council (refer to item O7). We are yet to receive confirmation from Council in this regard, however, we have amended our subdivision plan and landscaping plans to reflect this outcome.

Department Planning - Comments dated 18 April 2008 and meeting 23 April 2008

In summary the Department of Planning raised a number of issues with regarding:

- Housing Density/Type;
- Subdivision Design;
- Ecological Buffer;
- Stormwater;

- Bushfire Hazard Assessment;
- Flora and Fauna
- Statement of Commitments; and
- General Matters

The comments were provided in response to our submission of 18 March 2008. The comments are detailed in Appendix R, item R1.

Conics prepared a dot point response and tabled those response at meeting convened with the Department of Planning on the 23 April 2008. The responses and the subsequent Department's position can be found in Appendix R, item R2. The majority of issues raised by the Department required a negotiated outcome with Tweed Shire Council. Matters dealt with by Council are addressed above.

Notwithstanding at our meeting of the 23 April 2008 we agreed to the following:

- An agreed position on the proposed SEPP 14 Buffer in the vicinity of the proposed integrated housing lot was arrived at. This position is currently reflected in the plan, 'Proposed Subdivision Drawing No: 20934-05M' prepared by Conics Pty Ltd; and
- Acceptance of a minimum 450 square metre lot for detached housing;
- Acceptance of the provision of the Integrated Housing Lot within our development. The Integrated Housing Lot was a variation to Tweed Shire Council's; and
- Reinstatement of the link from Hillcrest Avenue to Merlot Court.

In the intervening period between 18 April 2008 and the present we have sought to inform the Department and seek further direction on matters relating to Lot sizes, open space requirements, road layout and staging.

As such we received partial draft conditions on the 8 May 2008 (item R3) and on the 11 August 2008 we received confirmation that, subject to a detailed assessment of the final report, the Department's issues with regard to subdivision design had been satisfactorily addressed (item R4).

TABLE OF SUBMISSIONS/RESPONSES

The following table is provided to assist the review of the PPR/RS.

KEY ISSUES	Section
NSW DEPARTMENT OF PLANNING	
1. SEPP 14 Wetland	
SEPP 14 Buffer	
<p>The proposed buffer to the SEPP14 wetland is insufficient. The Broadleaved Closed Forest to Woodland Community and Swamp She-Oak Closed Forest to Woodland community, as mapped, extend across the 50 metre buffer to the SEPP 14 wetland. These communities are considered to be broadly analogous to three Endangered Ecological Communities listed under the <i>Threatened Species Conservation Act 1995</i> and are associated with the SEPP14 wetland.</p> <p>Although the actual extent of the SEPP14 wetland appears to have been ground-truthed, the 50m buffer has been taken from the previously mapped boundary, and not the ground-truthed boundary.</p> <p>The SEPP14 maps are by no means accurate and should only be used as an indication of the extent of the wetland area. The boundaries were initially identified from stereo interpretation of 1:25 000 aerial photographs dated 1984 and 1986 and are subject to regular amendments. The plans should be amended to include a 50m buffer from the ground-truthed SEPP14 wetland boundary.</p>	<p>Section 1.1</p> <p>Appendix S</p>
Stormwater Management	
<p>It is proposed to drain part of the site to the SEPP14 wetland in the northwest of the site. Clause 7(e) of SEPP14 states that the consent authority should give consideration to establish whether any feasible alternatives exist to draining to the wetland (either on other land or by other methods) and if so, the reasons given for choosing to drain to this location. Alternative methods for draining this land have not been considered.</p> <p>If the only method for managing stormwater in the north west of the site is to drain to the SEPP14 wetland, further certainty regarding the effectiveness of the proposed management techniques to provide an acceptable level of protection to the wetland ecology is required. A conceptual MUSIC modelling exercise should be undertaken to demonstrate that the proposed stormwater management techniques will provide adequate protection to the wetland in terms of stormwater quantity (environmental flows) and quality.</p>	<p>Section 1.1</p> <p>Appendix B</p> <p>Appendix R</p>
2. Geotechnical	
Slope Stability Analysis	
<p>The Geotechnical Report at Appendix 8 of the EA states that an assessment of the relative likelihood of slope instability on natural slopes was made based on the local geomorphology and geology/subsurface conditions presented in the previous Coffey</p>	<p>Section 1.2</p> <p>Appendix C</p>

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<p>reports prepared in April and September 2002. Neither of these reports includes a detailed slope stability analysis.</p> <p>A detailed Slope Stability Assessment should be undertaken in accordance with the assessment methodology developed and presented in the Australian Geomechanics Society Sub-Committee (March 2000) "Landslide <i>Risk</i> Management Concepts and Guidelines" (AGS 2000) to demonstrate compliance with Council's Subdivision Manual (Section 5A of the Tweed DCP) prior to determination.</p> <p>A plan showing the area zones identified as Low (Rare), Medium (Unlikely), High (Possible) and Very High (Likely) with reference to the AGS 2000 should be provided. Hazards associated with unstable areas should be identified and for the hazards identified, the assessed likelihood and consequences of each hazard and the associated risk should be provided.</p> <p>Drawing No.1 of the Coffey (April 2002) Geotechnical Report is difficult to interpret. Please provide a revised plan that clearly shows the locations of the identified slip areas.</p> <p>The Statement of Commitments should include specific design/construction guidelines for construction of dwellings on the site. In particular, the constraints applied in the formulation of the proposed allotment layout should be included within the "Post-Construction" section of the Statement of Commitments.</p>	<p>Appendix O</p> <p>Statement of Commitments</p>
3. Aboriginal Heritage	
Consultation	
<p>It is noted that an Aboriginal archaeological and cultural heritage investigation was undertaken in 2000 and updated in 2007. The Department considers that the combined Aboriginal Heritage Assessment is unsatisfactory for the following reasons:</p> <ul style="list-style-type: none"> • Ms Jacqueline McDonald, the relevant local Aboriginal Community member, was not involved in the field inspection; and, • An advertisement was not placed in the local newspaper seeking comments and involvement in the assessment process from interested members of the local Aboriginal community in accordance with the DEC's draft <i>Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation</i> (DEC, 2005). <p>The level of consultation with the local Aboriginal community should comply with the DECC draft <i>Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation</i> (DEC, 2005). A comprehensive consultation process needs to be undertaken, including the placement of an advertisement in the local newspaper seeking the comments and involvement from interested members of the local Aboriginal community.</p> <p>Ms McDonald should:</p>	<p>Section 1.3</p> <p>Appendix D</p>

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<ul style="list-style-type: none"> • be given the opportunity to visit and inspect the site; • should confirm the extent of the traditional camp site and its potential for cultural significance; and. • be involved in the proposed mitigation / management of the midden and camp site. <p>SEPP71 'matters for consideration' include measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals. The Aboriginal Heritage Assessment provides insufficient information with regard to the potential impact on Aboriginal cultural heritage on and adjacent to the site to ensure appropriate measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals will be implemented.</p>	
Midden	
<p>The midden identified on the site has been located within the buffer to Fraser Drive. It is understood that this buffer has been provided to develop appropriate noise attenuation measures as part of the upgrade of Fraser Drive in the future. This is not, therefore, providing any long-term protection of the midden.</p> <p>Section 7.4.3 of the Aboriginal Assessment states that the <i>'Traditional Owner descendents are concerned that the remains of a badly disturbed midden within a road reserve on the southern boundary of the proposed subdivision may extend northward into the proposed subdivision.'</i> Further investigations works to determine the extent and appropriate management/protection of the midden should be undertaken prior to determination of this application to ensure that it does not affect the proposed subdivision layout.</p> <p>The investigation of the midden should be undertaken by a qualified archaeologist, representative of the LALC and the Traditional Owners. Excising a portion of the land to determine the extent of the midden during construction on other parts of the site is not an acceptable management approach.</p> <p>Section 8.4 of the Aboriginal Assessment states that archaeological investigative work in the form of test pitting of the southern side of the cutting of Champagne Drive <i>"has the support of the proponent and believe would have the support of the Land Council and Traditional Owner"</i>. The Land Council and Traditional Owner should be consulted to confirm their support for this investigative approach.</p> <p>The area required to protect the midden should be clearly shown on a plan and the subdivision plan amended as required.</p> <p>Please also note that Section 75U of the EP&A Act states that a Section 87 permit under the <i>National Parks and Wildlife Act 1974</i> is not required for an approved Part 3A project. Any approval given under Part 3A of the Act replaces the need for a Section 87 permit</p>	<p>Section 1.3</p> <p>Appendix D</p>

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under the NPW Act therefore the detail ordinarily required for a Section 87 permit is required in the Aboriginal Assessment report.	
4. Socio-Economic Impact Assessment	
<p>Section 3.5.3 of the Environmental Assessment refers to relevant provisions within the Tweed LEP 2000.</p> <p>It is noted that Clause 17 of the LEP directs Council to ensure proper consideration of development that may have a significant social or economic impact. Where it is considered that the proposed development will have a significant social or economic impact a socioeconomic impact statement must be prepared.</p> <p>Section A1 3 of the <i>Tweed Shire Development Control Plan</i> sets out the criteria for determining which types of development require a Socio Economic Impact Assessment (SEIA). Section A13.5.1 specifies that applications for residential subdivisions greater than 50 lots / dwellings in all stages require a SEIA. Section A13.6 sets out what is required within the SEIA.</p> <p>The Department requires a SEIA to be prepared for the proposal. This should address the need for affordable housing, in accordance with the <i>Far North Coast Regional Strategy</i> and the requirements of the Tweed Shire DCP.</p>	<p>Section 1.4</p> <p>Appendix R</p>
5. Bushfire Hazard Assessment	
Planning for Bushfire Protection (2006)	
The Bushfire Hazard Assessment has been prepared with reference to <i>Planning for Bushfire Protection 2001</i> . The assessment should be reviewed to ensure its consistency with the current document, <i>Planning for Bushfire Protection 2006</i> , particularly in relation to (but not limited to) the width of proposed APZs.	<p>Section 1.5</p> <p>Appendix E</p>
APZ Adjoining SEPP14 Wetland	
<p>The proposed 40 metre Asset Protection Zone (APZ) is partly contained within the buffer to the SEPP14 wetland. APZs have very strict maintenance regimes that include removal clearing of vegetation to achieve certain fuel loads. As the Inner Protection Zone is likely to be cleared for bushfire hazard maintenance purposes in the future, it is not appropriate for the Inner Protection Zone to be contained within the buffer area as this clearing may impact upon the health of the adjoining SEPP14 wetland.</p> <p>The subdivision layout should allow for a 50 metre buffer to the SEPP14 wetlands and associated vegetation as well as the appropriate Inner Protection Zone width. The Outer Protection Zone of the APZ may be contained within the ecological buffer.</p> <p>The recommendations provided in Section 7.9.4 of the EA state that the location of the APZ to the SEPP14 Tall Open Ecotonal Forest is to be determined by detailed vegetation inspection. This</p>	<p>Section 1.5</p> <p>Appendix 5 of the EA</p> <p>Appendix E</p>

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inspection should be undertaken prior to determination of this application to identify the exact location of the APZ in relation to the SEPP 4 / Ecotonal Forest, and to ensure that there is sufficient area for the APZ and the 50 metre buffer between the significant wetland and forest vegetation and the proposed lots.	
APZ Adjoining Eastern Lots	
It is noted that Fraser Drive is proposed to be used as a 30 metre permanent APZ between the lots along the east of the site adjoining Fraser Drive and the vegetation on the western side of Fraser Drive. APZs must generally be contained wholly within the boundaries of the subject site except in exceptional circumstances. As the road reserve is owned by Council, their written agreement to manage the road reserve as an APZ in perpetuity must be given prior to determination. Preferably, the plan should be amended to provide the required APZ such that it is not dependent on Council's road reserve.	Section 1.5 Appendix H
Statement of Commitments	
The Preconstruction Bushfire Management action within the draft Statement of Commitments should be amended to state compliance with <i>Planning for Bushfire Protection (2006)</i> not 2001.	Section 1.5
6. Housing Density Type	
<p>Section 53 - Banora Point West - Tweed Heads South in the Tweed Shire Council Development Control Plan sets out provisions for development in this area. The DCP identifies the site as predominantly 'Residential A, part Open Space and part Hazard Zone - Land Affected by Slip. The predominant housing type in 'Residential A' is conventional detached housing although dual occupancies may be permitted within this land use category in accordance with Section A12 of this DCP.</p> <p>The following non-compliances with the Tweed DCP have been identified:</p> <ul style="list-style-type: none"> • Section A.12 of the DCP states that lots identified for dual occupancies must be of a minimum site area of 900sqm or an area not less than 500sqm if the land is within 300m distance of a business centre listed under Schedule 8 of Tweed LEP. The proposed size of the dual occupancy lots within the development ranges are as small as 600sqm. A variation to the minimum lot size has not been justified. • the DCP states that integrated housing is not noted as a permissible housing type within the 'Residential A' area. It is noted that 26 lots have been identified for integrated housing. A variation to the housing type and density has not been provided. • Tweed LEP 2000 specifies that the minimum lot size for the Residential 2(c) Zone is 450sqm, while the Tweed Development Control Plan specifies a minimum allotment of 250sqm for integrated housing. The proposed development includes a single integrated housing allotment of 235sqm. No justification is provided for non-compliance with this development 	Section 1.6 Appendix S

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<p>standard has been provided.</p> <p>Justification for variations to these development standards must be provided in order for the Department to consider whether these non-compliances will be supported or not. Council's view on the non-compliances should be sought. The Department is unlikely to support the variations if Council does not give its support.</p>	
<p>Sea Level Rise and Climate Change forwarded in email 18 January 2008</p>	
<p>We note your advice that fill has been used to raise the site to the current 1 in 100 year flood level. However you are advised to take a conservative approach to addressing the consequence of sea level rise and climate change. Implications for the SEPP 14 wetland should also be assessed. This may require reconsideration of the hydraulic assessment undertaken as part of DA02/083 determined on 2 October 2002. You are advised refer to the DECC document '<i>Floodplain Risk Management Guideline – Practical Consideration of Climate Change.</i>'</p>	Section 1.6
ADDITIONAL INFORMATION REQUIRED I COMMENTS	
1. Executive Summary	
<ul style="list-style-type: none"> Those lots within Part B of the development that are subject to potential land slip and steep slopes are to be designed with larger lot sizes and include restrictive Building Location Envelopes. This should be included within the Statement of Commitments. A commitment regarding the dedication of land along the Fraser Drive frontage should be included within the Statement of Commitments. 	<p>Section 2.1</p> <p>Appendix 17 of the EA</p> <p>Appendix A</p> <p>Appendix F</p>
2. Strategic Context, Need and Objectives	
Flooding	
<ul style="list-style-type: none"> It is acknowledged that the development site has had bulk earthworks filling approved and constructed under an existing approval. It is noted that the site has now been filled to the 1 in 100 year flood level of 2.2m AHD. However, insufficient information has been provided to demonstrate that flood risk has been effectively managed (refer Section 2.2.3). The Department requires confirmation that consideration has been given to the risk of flooding during a Probable Maximum Flood event, in accordance with the NSW Floodplain Development Manual 2005? 	<p>Section 2.2</p> <p>Appendix S</p>
3. Statutory Planning Framework	
Section 3.5.3	
<ul style="list-style-type: none"> It is noted that the subject site is located within close proximity to the Coolangatta Airport and its flight paths. Any future development will need to be developed such that those materials used to does not cause any visual / reflectively issues for pilots of the aircraft. A design control that restricts the use of reflective material for any future 	Section 2.3

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<p>dwellings on the site should be included within the Statement of Commitments.</p> <ul style="list-style-type: none"> A design control relating to noise intrusion from the airport should also be included within the Statement of Commitments. All new dwellings should be constructed in accordance with the relevant Australian Standard AS 2021 - 1 994 (Acoustics - Aircraft Noise Intrusion - Building Siting and Construction) to ensure that noise does not impact on the amenity of future residents. 		
Section 3.6.2		
<ul style="list-style-type: none"> It is noted that there is no structured open space proposed as part of the development. The DCP requires 60% of the open space dedicated to Council to consist of structured open space and 40% to be casual open space. Where embellished structured open space cannot be dedicated a cash contribution will be required. Please confirm that the development cannot provide any structured open space and whether a contribution is proposed to be made to Council. The proposed development provides a buffer of vegetation within allotments 166 - 168. Who will be responsible for the retention and management of this vegetation? The Department is concerned that the buffer to the SEPP14 wetland is inadequate and should not require private landholders to be responsible for management of the buffer vegetation. 		Section 2.3
Section 3.6.4		
<ul style="list-style-type: none"> A commitment to address the requirements of part A1 of the Tweed DCP in future applications for the site should be included within the Statement of Commitments. 		Section 2.3
4. Description of Proposal		
Section 5.1		
<ul style="list-style-type: none"> The overview of the proposal indicates that the proposed development seeks both torrens and strata subdivision of 32.89ha of land. Please confirm whether the current application seeks strata subdivision of the 2.87ha medium density lot. Council's Subdivision DCP states that strata subdivision in Zone 2(a) does not require development consent. All strata subdivisions do require the issue of a subdivision certificate. 		Section 2.4
Section 5.2.2		
<ul style="list-style-type: none"> It is noted that the proposed roads, stormwater treatment measures, conservation and parks and recreation open space are to be dedicated to Council. Has Council confirmed that they are happy to take on the responsibility of this infrastructure? 		Section 2.4
5. Description of Environmental Impacts & Proposed Environmental Management Measures		
Section 7.3		

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<ul style="list-style-type: none"> It is noted that future sound attenuation measures are to be located within the 10 metre wide buffer to the existing road reserve on Fraser Drive. Is this consistent with Council's future plans for the future upgrade of Fraser Drive? 		Section 2.5 Appendix Q
Section 7.4		
<ul style="list-style-type: none"> Has a 7 part test been undertaken on the <i>Macadamia tetraphylla</i>? Have DECC confirmed that the propagation of seeds from the plant is an acceptable management solution? As this species is also listed as 'vulnerable' under the Commonwealth <i>Environment Protection and Biodiversity Act 1999</i> has the Department of Environment and Heritage confirmed that the development is not a 'controlled action'? 		Section 2.5 Appendix F
Section 7.1 0		
A plan showing the proposed flood evacuation routes should be provided for assessment.		Section 2.5 Appendix G
6. Stormwater Management		
<ul style="list-style-type: none"> Appendix 13 sets out the proposed concept for stormwater management. It is noted that external catchment runoff from the eastern side of Fraser Drive is proposed to be collected, treated by a Gross Pollutant Trap and discharged into the south-eastern corner of the existing SEPP 14 wetland zone. The Department is concerned that a GPT will not provide an adequate level of treatment to the stormwater prior to discharging into the SEPP 14 wetland. Will the volume of runoff be controlled such that it mimics the pre-development discharge? Conceptual sizing of the stormwater detention ponds /wetlands should be undertaken prior to determination of this application to confirm that there will be sufficient area for the proposed treatment ponds in the proposed open space areas. 		Section 2.6 Appendix B
7. Visual Impact Assessment		
<ul style="list-style-type: none"> The Visual Impact Assessment does not make any assessment of the proposed acoustic barrier that will be constructed between Fraser Drive and the eastern boundary of the proposed subdivision. An assessment of this structure should be undertaken. 		Section 2.7 Appendix Q
Tweed Shire Council		
Cut and Fill		
1. Amended Cardno Figure No.DA04 "Proposed Finished Surface Contours Plan" (Drawing No. 7214/29/01-DA04), with the removal of the 1.2 m high retaining wall in Part A of the subdivision, between future lots 28-47 removed, as it does not comply with Council's Development Design Specification D6 - Site Re-grading.		Section 3.1 Appendix I Appendix O

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<p>2. Further details which demonstrate that building sites are available on all steeply sloping allotments. The geotechnical review specifies that building areas within allotments should not lie on land with slopes steeper than 3H:1V (approx 18 degrees). The slope analysis layout plan prepared by Cardno shows a number of allotments that may not comply with this recommendation.</p>	<p>Section 3.1 Appendix B</p>
<p>3. Additional cross sectional detail is to be provided every 100m for all the existing properties along Seaview Street, Ocean Avenue and Hillcrest Avenue to demonstrate that pre-development levels are preserved at the external (perimeter) boundaries. Retaining walls and batters are to be located from existing boundaries as per clause 6.05.2 2(b) of Council's Subdivision Manual (Section 5A of the DCP).</p> <p>The cross sections are to show;</p> <ul style="list-style-type: none"> • Levels; • Distance to cut / fill / retaining walls / proposed road; • Height of proposed cut and fill volumes; and • Proposed subsoil drainage as recommended within the geotechnical review. 	<p>Section 3.1 Appendix I</p>
Geotechnical Issues	
<p>4. The geotechnical review prepared by Shaw Urquhart dated 11 December 2006 and 12 January 2007 does not address Council's Design Specification D6 – Site re-grading D6.16 - Geotechnical investigation for subdivisions where there is a risk of landslip or subsidence. Further geotechnical investigation is required to address the issue of slope stability for both the subdivision site and all adjoining areas external to the site.</p>	<p>Section 3.2 Appendix C Appendix O</p>
<p>5. The geotechnical review states that further geotechnical investigations are proposed to be carried out at the design stage to confirm the results of the review. This information is to be provided at the development application stage. The geotechnical and structural engineers report is to include;</p> <ol style="list-style-type: none"> An assessment of the stability of the proposal (for the subject land and all adjoining land); Address the expected settlement of compressible clays on the site and provide recommendations; Previous geotechnical reports prepared by Coffey (upon which the geotechnical review prepared by Shaw Urquhart is based) have provided recommendations for the seven existing land slip areas, natural springs, ground water seepage plus proposed cut and fill on the site. These recommendations include; <ul style="list-style-type: none"> • Landslip areas to be rectified - permanent drains have been recommended, constructed in a radial fan shaped pattern, proposing to discharge from subsurface drains into the stormwater reticulation system. 	<p>Section 3.2 Appendix C Appendix O</p>

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<ul style="list-style-type: none"> • Construction of footings from retaining walls, houses, pools etc are not to - be affected by drainage trenches. • Subsurface drains are recommended, constructed along the <i>fill</i> interface and natural ground to collect seepage, proposing to discharge into <i>the</i> stormwater reticulation system. <p>The geotechnical report is to address the above previous recommendations in the context of this development proposal. Specific drainage details to mitigate the slip cut & fill interface / ground water natural springs etc are to be detailed on a layout plan; All proposed drainage to mitigate the effects of landslip / natural springs / ground water cut and fill is to be contained within easements. Easement details are to be provided on an amended layout.</p> <ul style="list-style-type: none"> d. Recommendations for future maintenance of the proposed sub surface drainage is also to be provided; e. Recommended design criteria for earthworks, retaining walls and associated drainage; f. Recommended location and design criteria for underground services in the zone of influence of the earthworks; and g. Recommended periodic maintenance requirement for earthworks, drainage and retaining structures. 	
<p>6. A risk assessment of the proposed development based on the above request for further geotechnical assessment is to be provided based on borelog testing of the site and external surrounds and a slope stability analysis to demonstrate compliance with Council's Subdivision Manual (Section 5A of the DCP) pg A5-15 - Land with risk of Landslip or subsidence.</p> <p>Development proposals for sites that are at risk from landslip or subsidence must account for this risk by;</p> <ul style="list-style-type: none"> • Excluding the land at risk from the land suitable for development • Demonstrate that the land is suitable for its intended use. • Demonstrate that remediation works will eliminate the risk and render the land suitable for development. 	<p>Section 3.2</p> <p>Appendix C</p> <p>Appendix O</p>
Roads, Public Transport and Connections	
Proposed Laneways	
<p>7. Two laneways are proposed within the development. The cross sections show a 4.5m wide pavement width within a 6.5m wide road reserve. Neither of these laneways comply with Council's Development Design Specifications (contained within the Subdivision Manual - Section 5A of the DCP). Council's minimum laneway standards require a 6m wide pavement width within a 6m wide road reserve. Laneway No.1 is to be amended to comply with the minimum standard, please see below for comments in relation to Laneway No. 2.</p>	<p>Section 3.3</p> <p>Appendix S</p>
<p>8. Laneway No 2 does not provide adequate access to street</p>	<p>Section 3.3</p>

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frontage for proposed lots 56-59 and Lots 60-65, only laneway frontage. Council's Development Design Specifications stipulates that laneways are only to provide access to the side and rear of lots principally for access to garages. Proposed laneway No. 2 is to be designed as an access road with a pavement width of 6m within a 13m road reserve.	Appendix S
Proposed Access Easements	
<p>9. Five 'access easements' are proposed within the subdivision. Tweed Shire Council's Development Design Specifications do not address 'access easements'. The 'access easements' are to be amended to serve as either a right of carriageway or a local access road under Council's design standards. An Comments on Environmental Assessment Exhibition - Major Project 06-0243 for a 157 lot residential subdivision at Lot 9 DP 1039569, Fraser Drive Tweed Heads South urban access road is maintained by Council and a right of carriageway is maintained by all allotments accessing the right of carriageway. Council will not accept substandard roads to maintain.</p> <p>A number of other issues associated with the proposed access easements have not been addressed (which are usually accounted for within an urban subdivision when providing a local access street). These issues include;</p> <ul style="list-style-type: none"> • No on street car parking is provided. • No turnaround is located at end for the provision of a garbage truck. The current design requires future residents to walk up to 140m to place a wheelie bin within a suitable position for collection by a garbage truck. • Two of the proposed parks are located on 'access easements'. The parks are to be <i>accessible</i> by all residents with the park frontage accessible via a local access street. 	Section 3.3 Appendix S
<p>10. The following proposed 'access easements' are to be upgraded to conform with Council's minimum focal access street standards;</p> <ol style="list-style-type: none"> a. The road providing access to proposed lots 1 12 - 1 16 is to be upgraded to a local access street with a minimum pavement width of 6m within a 13m road reserve in accordance with Council's Development Design Specifications. A cul-de-sac is to be provided at the end of the local access street. b. The roads termed 'access easement' providing access to proposed lots 141 - 145, lots 166 - 168 and lot 78 are to be upgraded to a local access street with a minimum pavement width of 6m within a 13m road reserve in accordance with Council's Development Design Specifications. A cul-de-sac is to be provided at the end of the local access street. c. The remaining 'access easements' not upgraded to comply with Council's Development Design Specifications for an urban local access road are to be amended to serve as a right of carriageway. Lot boundaries are to be extended to 	Section 3.3 Appendix S

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<p>facilitate a right of carriageway traversing through the lots. The 888 instrument required at the subdivision certificate stage will be required to reflect the right of carriageway burdening and benefiting appropriate lots. Future maintenance is burdened by all allotments using the right of carriageway.</p>	
Proposed Roads	
<p>11. Road No. 3 will be required to be upgraded to a wider access street. A 6m wide pavement within a 13m road reserve is proposed for the full length of Road No. 3 which is approximately 820m in length. Council's Development Design Specifications stipulate a 6m wide pavement within a 13m road reserve is only applicable for the first 200m before a wider access street is required. Wider access streets specify a 7.5m wide pavement within a 14.5m road reserve. Amended plans are to be provided to demonstrate compliance. Comments on Environmental Assessment Exhibition - Major Project 06-0243 for a 157 lot residential subdivision at Lot 9 DP 1039569, Fraser Drive Tweed Heads South</p>	<p>Section 3.3 Appendix J</p>
Unnamed Roads located within the Integrated housing area located at the northern end of the site	
<p>12. The layout plans show a 10m wide road. No typical cross sections for these roads are provided with the standard cross section drawing no. 7214/29/01-DA 8 prepared by Carndo dated 8 December 2006.</p> <p>The same standards apply to roads in the area designated 'Integrated Housing' for as for an urban subdivision. The roads are to comply with Council's Development Design Specifications - DI Road Design for an urban local access street. The minimum width for a local access street is a 6m wide pavement within a 13m road reserve. The plans are to be amended to reflect these requirements.</p>	<p>Section 3.3</p>
Sight Distance	
<p>13. Please specify the ameliorative measures to be under taken at the intersection of Ocean Avenue and Road No.3 to achieve adequate sight distance.</p>	<p>Section 3.3 Appendix J</p>
<p>14. The intersection of Hillcrest Avenue and Road No. 3 has inadequate sight distance for vehicles turning right into or out of the site. Specify ameliorative measures should be undertaken to achieve adequate sight distance at this intersection. The recommendation for a no right turn sign at this intersection is not considered adequate.</p>	<p>Section 3.3 Appendix J</p>
Road Radius	
<p>15. Please provide details which demonstrate that the horizontal alignment (radius) for the intersections of Road No. 3 1 Ocean Avenue and Road No.3 / Hillcrest Avenue is in accordance with Australian standards and can accommodate a garage</p>	<p>Section 3.3 Appendix J</p>

KEY ISSUES	Section
truck. Turning templates are to be provided to demonstrate compliance.	
Traffic Restriction	
16. Provide detail of how traffic from the proposed development can be restricted from using Merlot Drive. The traffic report recommends only 25 allotments are to access Merlot Drive.	Section 3.3
Slow Points	
17. Slow points or speed control devices are to be provided on Road No.3 which has gradients varying from 16% to 0.5% and is 820111 in length.	Section 3.3 Appendix J
Footpaths	
18. A 1.2m wide footpath is to be provided on all roads as per Council's Development Design Specifications. The layout plan and cross sections are to be amended to provide for a 1.2m wide footpath on all roads as per Council's Development Design Specifications and Standard Drawings.	Section 3.3 Appendix J
Pedestrian connectivity	
19. Pedestrian connectivity is not proposed between proposed Roads No. 1 and 3, therefore effectively separating the subdivision into two separate sections. A pedestrian link is to be provided between proposed Road No. 1 and Road No. 3 to provide connectivity throughout the subdivision and to allow residents to access public transport. The layout plan is to be amended to provide a pedestrian link.	Section 3.3 Appendix J
Public Transport	
<p>20. Public transport has not been adequately addressed within the development.</p> <p>A bus stop and shelter is recommended to be located on Fraser Drive near the intersection of Road No. This recommendation was based on using a 400m radial area, the traffic report stating that the potential catchments encompass approximately 89% of the total dwellings. This assumption is inappropriate due to the fact that no pedestrian link is shown between part A and part B of the development, therefore not allowing future residents within Part B of the subdivision to access the proposed bus stop on Fraser Drive.</p> <p>Council's standards also require that 90% of residents are able to walk not more than 400m to a bus stop, therefore the use of a radial distance to address public transport is incorrect. Further information is required to adequately address Council's criteria in regards to public transport.</p>	Section 3.3 Appendix J
Rear Access to be provided Lot 2 DP 1000385	
21. Access to adjoining allotment Lot 2 DP 1000385 is to be provided from Road No. 1. Rear access is to be provided to Lot 2 DP 1000385, by deletion of one of the proposed allotments	Section 3.3 Appendix J

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adjoining Lot 2 DP 1000385.	
Parking	
22. As previously addressed under access easements, the proposed access easements do not address on-street parking as required by Council's 1 development design specifications for an urban local access road.	Section 3.3 Appendix J
Manoeuvring	
23. As previously addressed under access easements, the proposed easements do not address the manoeuvrability for a garbage truck.	Section 3.3 Appendix J
Road Widening	
24. As indicated on the plan, it is essential that road widening be dedicated for the sites full frontage to Fraser Drive to future widening to a 4 lanes.	Section 3.3 Appendix J
Fraser Drive Access	
25. The main access road to the site needs to access Fraser Drive through an intersection that can cater for a '4th leg' opposite the proposed access to enable efficient access to the development site on the east side of Fraser drive (there may be some conflict with the major drainage system proposed at this intersection). A detailed intersection design is required for this intersection and when approved, it must be constructed prior to release of the subdivision allotments.	Section 3.3 Appendix J
26. The southern intersection is to be restricted to left inlet out only and is to be designed in such a way that this restriction is controlled by physical means such as concrete islands.	Section 3.3 Appendix J
Stormwater Issues	
27. Provide design confirmation that the 3 cell 1500mm diameter piped system is adequate to cater for ARI 100 year stormwater runoff from a future urbanized catchment east of Fraser Drive, without resulting in flooding in Fraser Drive. Preliminary design details of Q100 inlet structures shall also be provided.	Section 3.4 Appendix B Appendix O
28. Amend the design of the 3 cell 1500mm diameter piped system to provide a straighter alignment (eliminating 90 degree bends) between the catchment east of Fraser Drive and the bypass channel for the treatment detention ponds in Part A of the subdivision, to maximise inlet capacity and minimise the chance of blockage. Further investigation of solutions to the potential conflict between stormwater services and the existing water main in Fraser Drive shall also be provided, to allow for the relocation of the stormwater inlet to the eastern side of Fraser Drive to eliminate the existing 900mm culvert.	Section 3.4 Appendix B
29. Identify the location of and provide preliminary design for drainage services, including interallotment drainage and ARI 100 year overland flow paths, to collect and convey runoff from	Section 3.4 Appendix B

KEY ISSUES	Section
external stormwater catchments to the west of the site (Hillcrest Avenue, Ridgeway St, Ocean Avenue and Seaview Street) through the subdivision to a lawful point of discharge.	
30. Provide an assessment of impacts on downstream properties and public infrastructure south of the subdivision site (Shiraz Place, Merlot Court) due to increased urban stormwater runoff.	Section 3.4 Appendix B
31. Provide justification that the existing culverts under Fraser Drive and receiving downstream private land represent a lawful point of stormwater discharge for the eastern catchment of Part B of the subdivision, as defined by Council's Subdivision Manual (Section A5 of the Tweed Shire DCP).	Section 3.4 Appendix B
32. Provide preliminary design for outlet control measures for the on site detention pond proposed on the eastern boundary of Part 8 of the subdivision, including any works required at the inlets to the receiving culverts under Fraser Drive.	Section 3.4 Appendix B
33. Provide an assessment of the existing cross sectional capacity of the open channel through the SEPPI4 wetland, downstream of the subdivision. This assessment shall include a design and plan of works to upgrade this channel as necessary to cater for post development flows from the subdivision.	Section 3.4 Appendix B'
34. Provide a plan of management for the SEPPI4 wetland and buffer zone for the concurrence of Council, the Department of Planning and other relevant government agencies. The plan of management must identify the required channel design to adequately cater for the post development flows from the subdivision, and protocols for Council to carry out maintenance works to maintain an adequate cross section in the open channel, without compromising the ecology of the wetland. These maintenance works must be able to be carried out by Council using conventional equipment, and the plan of management must address maintenance access into the wetland.	Section 3.4
35. Provide preliminary design for outlet control measures for the on site detention pond proposed for Part A of the subdivision, to maintain a hydraulic regime compatible with the receiving SEPPI 4 wetland.	Section 3.4 Appendix B Appendix O
36. Provide an engineering assessment as to the compatibility of the pond in Part A of the subdivision as a combined water treatment and on site detention device. Required volumes for on site detention must account for standing water levels necessary for water quality control in constructed wetlands. The assessment must consider how the combined device can cater for ARI 100 year storm detention, and water quality measures up to the ARI 3 month storm, without the remobilisation of pollutants under larger flows.	Section 3.4 Appendix B Appendix O

KEY ISSUES	Section
37. Amend stormwater drawings to include proprietary treatment devices on all minor road drainage systems that do not discharge to the water quality wetland in Part A of the subdivision. Flows from external catchments do not require treatment.	Section 3.4 Appendix B Appendix O
38. Provide an assessment of all stormwater management facilities in public open space in accordance with the criteria set out in Table A5-8.6 of Section A5 of the Tweed Shire DCP, in order for these areas to be credited towards open space obligations for the subdivision.	Section 3.4 Appendix B
Flooding	
39. Amend Cardno Figure No.DA04 "Proposed Finished Surface Contours Plan" (Drawing No. 7214/29/01-DA04) to extend the flood evacuation route along "Road No.1" to the medium density allotment at the northern extent of the subdivision. This evacuation route should be constructed at no less than the adopted design flood level of RL 2.6m AHD. Stormwater management in this area should be amended as necessary to cater for any increase in road levels to comply with the evacuation route requirements.	Section 3.5 Appendix B
Open Space	
<p>40. Based on an estimated population of 492 people, approximately 5,600m² of functional open space (parks) is to be provided. It is considered that the 2,500 m² (park adjacent to road 2) meets Councils criteria. If the park at the end of Road 4 is made functional, total casual open space contribution would be acceptable. However, with regard to the following, it is considered insufficient area of usable local park has been provided.</p> <p>The park located on Fraser Drive at the end of Road no. 4 has the following features:</p> <ul style="list-style-type: none"> • Located on sloping ground ranging from 10% to 30%. Slopes less than 10% are unable to be mowed and maintained by Council. • Access is via a cul-de-sac and the private access easement. This park is not considered accessible for the majority of residents. Parking would be limited to 1-2 vehicles within the cul-de-sac area not affected by the access easement. The private access easement does not address on 1 public on street parking, due to the narrow width of the easement and the easement is not a local access street maintained by Council. <p>The following features are noted in relation to the park located along the rear of properties on Seaview Street:</p> <ul style="list-style-type: none"> • Located on sloping ground ranging from 20% to over 33%. These types, of slopes are unable to be mowed and maintained by Council. The steepness of the land is not considered to a recreational area suitable for the activities of a park i.e. playing, walking a dog etc. 	Section 3.6 Appendix S Appendix H

KEY ISSUES	Section
<ul style="list-style-type: none"> • Access to the majority of the park is via a private access easement. The access is not considered suitable for the majority of the residents within the subdivision. • Configuration requirements are not met. <p>Council's Subdivision Manual requires the following minimum standards for local parks;</p> <ul style="list-style-type: none"> • Parks are to be located that 95% of residences are located within 400m walking distance. • A central activity zone of 400 m² for play areas and equipment (with a 20m buffer to residences). • 80% of the park area is to have slopes less than 8%. • Vehicular access is to be from local access streets, providing a minimum of 50% frontage to the park. <p>The two parks located within 'Part B' of the development do not provide passive open space areas and areas for unstructured open space. The two parks are to be amended to comply with Council's Subdivision Manual Specifications.</p> <p>The applicant should refer to Section A5 'Subdivision Manual' of Councils Development Control Plan, and particularly tables A5-8.2.1, A5-8.2.2 and A5- 8.5.2.3 which provide guidance on park requirements. Please also note DCP No. 3 and Section 94 contribution plan no. 1 apply to this area</p>	
41. Further information is required on the design of the open space / detention basin to determine its functionality as a usable open space area.	Section 3.6 Appendix H
42. With regard to the SEPP 14 Wetland, this park would be classified as an Environmental Open Space area and would not be included in Casual or Structured Open Space contribution.	Section 3.6 Appendix H
43. The entry statement should take into consideration maintenance requirements.	Section 3.6 Appendix H
Bushfire Assessment	
44. The applicant is advised that the RFS 'Planning for Bushfire Protection' guidelines state that Asset Protection Zones should be located on private land. The plan of development should clearly indicate the APZ as being within private land.	Section 3.7 Appendix E
Water	
45. The water network proposed interconnects two different pressure zones. Some detailed investigation will be needed to determine whether the higher level lots should be supplied from Glenys Street zone or from Hillcrest zone. It may be that two supply mains will be required in "Road No 3" between Hillcrest Avenue and "Road No.4". Changes to the existing Hillcrest and Glenys Street zones are also proposed including the creation of an additional booster zone for the upper levels	Section 3.7

KEY ISSUES	Section
of Hillcrest.	
46. The applicant is advised that analysis of the area has shown a need for a 200 diameter main to connect the 150 diameter main in Merlot Street to the existing 200 main in Fraser Drive.	Section 3.7
Sewer	
47. The sewer reticulation plan seems to have some peculiar connections that would not exist in reality, particularly in relation to Road No 3. Further details are requested in this regard.	Section 3.7
48. Attention needs to be given to the depth of sewer to SPS 3022 given the constraints of Council's Specification D2 and the existing depth of the inlet to the pump station. Further detailed design is required in this regard.	Section 3.7
Environmental Health Considerations	
Acid Sulfate Soils Management Plan	
49. The drilling of bore holes and the testing of soils within the actual excavation areas (such as detention basins) should be carried out rather than relying on test results relating to adjoining areas. Liming treatment rates may then be calculated directly rather than carrying out testing of excavated material at the time of actual excavation as is proposed. From practical experience testing done during excavation is unlikely to be carried out in a proper manner and excavation works are likely to proceed while samples are being analysed at the laboratory resulting in the improper management of Acid Sulfate Soils.	Section 3.8 Appendix K
50. Water quality investigations conclude that there is some influx of salt water occurring in the surface drainage system of the site, as a result the ASS Management Plan should include the pH criteria for discharge to marine waters as well as fresh waters i.e. less than 0.2 unit change.	Section 3.8 Appendix K
Construction Environmental Management Plan	
51. Council has used 7am to 7pm as its standard construction site operating hours for many years. Element - Tasks Actions of the proposed Plan restricts hours of operation to 7am to 8pm. This should be amended to coincide with Council's criteria as residents have become accustomed to such operating hours as being the normal requirements.	Section 3.8 Statement of Commitments
52. Performance indicators under the Plan regarding Monitoring, record keeping, and Corrective Action should where applicable include reference to Vibration as well as Noise.	Section 3.8
Acoustic Assessment	
53. A detailed review of this section was not carried out however the subject lot is outside of the 2020 ANEF for Coolangatta Airport and as such traffic noise impacts are likely to be the	.Section 3.8

KEY ISSUES	Section
main consideration. Following a detailed review of the acoustic assessment, appropriate conditions should be placed on any consent issued. It may be appropriate to consider 88b Restrictions on Titles and / or post construction noise assessment to be carried out to investigate the success of construction noise attenuation measures.	
Groundwater Assessment	
54. The recommendations as contained within Section 3.8 relating to the Groundwater Management Plan should be incorporated into conditions placed on any consent issued.	Section 3.8 Statement of Commitments
Soil Contamination Report	
55. Consideration should be given to including soil sampling of imported fill material to back up information provided by various other companies in respect to the potential contamination of this material.	Section 3.8
56. Confirmation should be requested that the reported soil test Lab results have been adjusted for the use of the composite sampling methodology employed.	Section 3.8
Cattle Tick Dip Sites	
57. It is noted that a cattle tick dip site exists across Fraser Drive opposite the proposed development. The likely impacts of any dip site that is within 200m of a proposed development should be assessed, using the ASSMAC Guidelines.	Section 3.8 Appendix K
Power Lines	
58. It is noted that there are above ground power lines traversing the site and future lines proposed near Fraser Drive. The applicant should investigate any Electromagnetic Field and Radiation relating to these lines, as well as assess any risk to human health that might consequently be involved.	Section 3.8
Planning and Urban Design	
Consolidated DCP Section A5 - Subdivision Manual	
59. The application does not address the objectives outlined in section A5.4.7 Urban Structure further information is required in this regard. It is considered that a neighbourhood / local centre should be established on the site. The proposal should be amended to this end.	Section 3.9 Appendix R
60. With reference to Table A5-9.3, it is noted that lot sizes for duplexes are proposed less than 900m ² and integrated housing is proposed at a density greater than 1/250m ² .	Section 3.9
61. The applicant is requested to provide justification for smaller lots, the applicant is required to address 'Lot Width and Garage Location' requirements for those lots with frontages less than 13 metres (refer page 65-66 of A5 - Subdivision Manual).	Section 3.9 Appendix S
62. General design criteria should be submitted for:	Section 3.9

KEY ISSUES	Section
<ul style="list-style-type: none"> Nominated duplex dwellings and integrated housing. Criteria should ensure that the streetscape will not be dominated by garages and will result in sufficient variety in design, setbacks and roof forms; and Development on sites over than 15%. 	
<p>64. The applicant is requested to submit design concepts for future duplexes located on lots less than 900m² and integrated housing on lots less than 250m². In particular, concepts should demonstrate:</p> <ol style="list-style-type: none"> garages do not dominate the street; sufficient variety (through the use of varied setbacks, roof forms and materials); Legible entrances; high level of articulation including openings and balconies; and protection of privacy and amenity 	<p>Section 3.9</p> <p>Appendix S</p>
B3 - Banora Point West - Tweed Heads South	
<p>65. Further to points raised, above, it is noted that the site is identified as Residential A within the consolidated DCP, Section 83. This area is intended to comprise predominantly of detached dwellings. Justification should be provided for provision of medium density given (with regard to section B3.8).</p>	<p>Section 3.9</p> <p>Appendix N</p>
<p>66. As identified above, a local shop is indicated as being required, the plan should be amended for provision of a neighbourhood centre.</p>	<p>Section 3.9</p>
General	
<p>67. Various allotments have roads at their front and rear. The plans should be amended to indicate which side access is proposed for these allotments.</p>	<p>Section 3.10</p> <p>Appendix S</p>
<p>68. The proposed Subdivision Plan (number 20934-5L) prepared by Conics Pty Ltd., dated 6 August 2008 indicates total site area for Part A and Part B. The applicant is Comments on Environmental Assessment Exhibition - Major Project 06-0243 for a 157 lot residential subdivision at Lot 9 DP 1039569, Fraser Drive Tweed Heads South requested to confirm if this area is net or gross (including areas for future road widening and parks).</p>	<p>Section 3.10</p> <p>Appendix S</p>
<p>69. The applicant is requested to complete the road closure process of Champagne Drive, so this land can be amalgamated with the site (Champagne Drive is still in Council ownership).</p>	<p>Section 3.10</p> <p>Appendix M</p>
<p>70. The applicant is requested to provide details on the future intent of Lot 2 on DPI000385. Confirm if this allotment has been incorporated within the site area.</p>	<p>Section 3.10</p> <p>Appendix S</p>

KEY ISSUES	Section
71. Council Officers are not in support of any gated communities that may be proposed within the subdivision (i.e. the integrated housing component).	Section 3.10
72. The submitted Landscape Concept Plan (dated December 2006, prepared by VIVO design) includes design concepts for the acoustic fence and entry statement. Given the length of the fence required along the frontage (approximately 800 metres) and its height (2.2 metres), further details are required to reduce its visual impacts. This may include greater variation in material design, mounding and landscaping variation.	Section 3.10 Appendix H
73. The applicant is requested to provide a cross section of the Fraser Drive frontage depicting the levels of dwellings, fence, mounding / landscaping, proposed height of fill and the ground level in the adjoining road reserve.	Section 3.10 Appendix H
74. A streetscape concept plan should be submitted indicating the visual quality of the frontage with regard to the height of the acoustic fence and the likely levels of dwellings adjoining Fraser Drive. Design criteria should be submitted for dwellings adjoining the frontage to ensure they overlook the street as much as possible.	Section 3.10 Appendix H
Additional Comments;	
1. The Development Traffic Advisory Group-requested-that: - a. A further detailed traffic analysis be undertaken for the ultimate major internal road - connection with Fraser Drive. b. Consideration be given to proposed Lot having a longer frontage to enable a driveway to be constructed further away from the major intersection. c. The layout should be integrated with the Tweed Shire Bicycle Plan.	Section 3.10 Appendix J
2. A plan of road closure is required to be registered over that part of Champagne Drive that is within the subdivision area. Following closure of the road by gazettal, the title of the closed road is to be transferred to the landowner subject to the dedication of road 1 widening along the Fraser Drive boundary. When Council is satisfied that this has occurred, the road closure parcel will be transferred to the landowner.	Section 3.10
3. In order to improve the current tidal flushing regime of the wetland, so as to enhance water quality and prevent mosquito and midge outbreaks, the existing fibreglass floodgates on the James Road culverts should be replaced by the developer with Council approved tidal gates.	Section 3.10
NSW Primary Industries	
Buffer Zones	
DPI AHPU acknowledges the incorporation of a buffer to the SEPP14 Wetland as indicated in the documentation. Field	.

KEY ISSUES	Section
<p>inspections and Figure 3 Vegetation Communities in <i>Proposed Development Fraser Drive – South Tweed Ecological Assessment</i>, prepared by Cardno 18 December 2006, reveal however that the wetland plant communities extend beyond the mapped SEPP 14 boundary. DPI policy with regard aquatic habitat buffers outlined in <i>Policy and Guidelines Aquatic Habitat Management and Fish Conservation 1999</i> which requires:</p> <p><i>“Terrestrial areas adjoining freshwater, estuarine and coastal habitats should be carefully managed in order to minimise land-use impacts on these aquatic habitats. As a precautionary approach, foreshore buffer zones at least 50m wide should be established and maintained, with their natural features and vegetation preserved. Such buffer zones may need to be fenced or marked by signs. The width of these buffer zones may need to be increased to 100m or more where they are adjacent to ecologically sensitive areas.”</i></p> <p>This policy is not achieved by the present proposal despite the policy being highlighted to the proponent in correspondence dated 26 September 2006, 13 May 2003 and as early as 10 December 2002, 3 July 2002 and 23 April 2002.</p> <p>Furthermore the present layout appears to require, as indicated in Drawing No: 71887_D_CP_01_01 Landscape Concept Plan prepared by Vivo Design contained within Statement of Landscape Intent that the ‘50m setback from SEPP 14 wetland to be recreated as tree break as per fire management report.”</p> <p>The consequential effect of this proposal is tree removal, clearing and thinning of part of the wetland community contrary with SEPP 71, DPI Fisheries buffers policy and requirements of threatened ecological communities. Furthermore, the documentation does not contain any indication of how the buffer zone is to be managed to maintain habitat and ecological values of the mapped SEPP 14 Wetland.</p> <p>It is unclear why a 50m habitat buffer zone consistent with DPI policy can be achieved from much of the site. Adjacent to the water quality / open space area there appears to be no reason, and the documentation does not justify, why the 30m bushfire asset protection zone cannot commence from the edge of the 50m habitat buffer zone to the SEPP 14 Wetland negating the need to clear existing wetland vegetation. North of the water quality/open space area adjacent to the proposed ‘Stage 1” there appears to be no limitations to achieving a 50m habitat buffer zone consistent with DPI policy by adjusting the 30m asset protection zone further to the east.</p>	<p>Section 4</p> <p>Appendix A</p> <p>Appendix S</p>
Fish Friendly Floodgate Management	
<p>The former NSW Fisheries and now DPI have variously raised the matter of a floodgate and piped road crossing presently restricts tidal inundation to the SEPP 14 Wetland. It is noted that the</p>	<p>Section 4</p>

KEY ISSUES	Section
proponent indicates that the SEPP14 area is to be dedicated to Council. DPI recommend that, if the development is approved, the approval incorporate a condition requiring the proponent to work with Council to improve management of the flood gate to improve the health and functioning of the SEPP14 Wetland as fish habitat and for aquatic biodiversity.	
Ad-hoc Planning	
DPI and AHPU is concerned that the cumulative impact of developments such as this proposal are not able to be adequately considered when filling and various stages are assessed separately. It is noted that this practice is increasing common on the North Coast limiting the holistic assessment of recommended by SEPP 71.	Section 4
Sea Level Rise / Climate Change	
<p>DPI AHPU strongly recommend that potential future sea level rise in low lying coastal floodplains be taken into consideration when assessing and determining such a development. The 2007 IPCC Science Assessment Report states that 'Projected globally-average sea level rise at the end of the 21st century will be between 0.28-0.43 metres; however...these projections may increase by a further 10-25%.'</p> <p>With this site for instance, filling of areas to the edge of the wetland and its buffer, undertaken prior to this assessment, limit the ability for wetland communities to adapt to the projected changes in sea level.</p>	Section 4 and Section 1.6
SEPP 62	
<p>Recently modifications to this SEPP require consideration of impacts on priority oyster growing areas within the vicinity of the proposed development be considered in the development assessment. The attached map, which illustrates the Terranora Broadwater has several areas identified as priority oyster growing areas, is available at: http://www.dpi.nsw.gov.au/data/assets/pdf_file/117993/OISAS-Tweed.pdf</p> <p>The SEPP requires appropriate and effective measures be undertaken to ameliorate impacts of the proposal on water quality and priority oyster growing areas. Turbidity from construction impacts can be particularly significant and adoption of effective sediment and erosion control is paramount. Incorporation of the effective aquatic habitat buffers into the layout of the subdivision and participation by the developer with Tweed Shire Council in fish friendly floodgate management contribute to achieving water quality objectives of SEPP 62 during the operation of the subdivision.</p>	Section 4 Appendix B
Recommendation	
With regard fisheries and aquaculture issues and the Department's policies and requirements the proposal requires some reworking	Section 4

KEY ISSUES	Section
<p>specifically:</p> <ul style="list-style-type: none"> • 50 metre habitat buffer achieved to SEPP 14 Wetland consistent with DPI policy, thereby necessitating that the bush fire asset protection zone commence and extend outward from the outer perimeter of the wetland habitat buffer zone; • That a management plan be developed for appropriate management i.e. aquatic habitat protection of the SEPP 14 Wetland and its habitat buffer; • That the proponent formally indicate and commence working with Tweed Shire Council to improve management of the floodgate to improve the health and functioning of the SEPP 14 Wetland as fish habitat and for aquatic biodiversity; and • Consideration of SEPP 62 during the preparation of sediment and erosion control plans during the construction phase. 	<p>Appendix A and Appendix B</p>
<p>CMA</p> <p>Extent and impact upon SEPP 14 wetland and fringing and associated EEC and wetland Vegetation</p>	
<ul style="list-style-type: none"> • The developers appear to have applied a very literal interpretation of the wetland using the GIs SEPP 14 boundary. The air photos clearly show that vegetation extends well beyond the SEPP14 boundary and judging from the air photos provided, it is probably all wetland vegetation and most likely Endangered Ecological Community. • The example of 'landscaped buffer' is unlikely to adequately protect the wetland values or fringing vegetation from human disturbance or issues associated with runoff, sediment loads and water quality. <p>The ecological assessment provided by the applicant states: <i>"the plan of development achieves compliance with the provisions of SEPP 14"</i>.</p> <p>The NRCMA is not satisfied that the wetland will be adequately protected and recommends that a buffer be extended around the wetland as a whole to protect the wetland system with its vegetation communities that may be interpreted as 'outside' of the SEPP14 boundary.</p> <p>The Draft <i>North Coast guide for avoiding and reducing rural land use conflict and interface issues</i> (Centre for Coastal Agricultural Landscapes - Southern Cross University, June 2007) recommends a buffer between wetlands and urban development of 100m.</p>	<p>Section 5</p> <p>Appendix A</p>
<p>NSW RURAL FIRE SERVICE</p>	
<p>1. Provision for suitable Asset Protection Zones (APZ) shall be made in accordance with Section 4.1.3 of <i>Planning for Bush Fire Protection 2006</i>.</p>	<p>Section 6</p> <p>Appendix E</p>

KEY ISSUES	Section
2. The appropriate APZs shall be provided for each stage of the development.	Statement of Commitments
3. The supply of water, electricity and gas shall be in accordance with Section 4.1.3 of <i>Planning for Bush Fire Protection 2006</i> .	Statement of Commitments
4. Public Road Access shall comply with Section 4.1.3(1) of <i>Planning for Bush Fire Protection 2006</i> .	Statement of Commitments
5. Property Access Roads shall comply with Section 4.1.3(2) of <i>Planning for Bush Fire Protection 2006</i> .	Statement of Commitments
Note: Any further residential development application lodged for proposed lots within this subdivision, identified as bush fire prone land on the Councils Bush Fire Prone Land map, may be subject to Section 79BA of the EP & A Act and must meet the requirements of Planning for Bushfire Protection, 2006.	
NSW DEPARTMENT OF HOUSING	
<ul style="list-style-type: none"> That the applicant addresses the Director General's requirements and Clause 17 of the Tweed LEP 2000 for a social and economic impact assessment of the development proposal. As the development proposes 178 lots and up to 272 dwellings, which could accommodate (on average occupancy rates for Tweed) 669 people, there is a need for a social impact study. The assessment should address how the increase in population will impact on services and social infrastructure in Tweed and whether there is adequate existing capacity. 	Section 7 Appendix N
<ul style="list-style-type: none"> To ensure housing diversity to meet the needs of the existing community, the Department of Planning require the applicant to ensure a minimum of 10% one bedroom dwellings and a minimum of 30% two bedroom dwellings in the proposed development. 	Section 7 Appendix N
<ul style="list-style-type: none"> The Department of Planning negotiates a voluntary planning agreement for a portion of lots in the subdivision to -be set aside for affordable housing. Given the need for affordable housing in Tweed Heads, it would be appropriate for this envelopment to incorporate a proportion of affordable housing. Affordable housing may constitute a diverse range of housing types priced at a level for which low to moderate income households who are renting or purchasing are able to pay their housing costs and still have sufficient income to meet other basic needs such as food, clothing, transport, medical care and education. Low to moderate income households are generally defined as households earning from less than 50% and up to 120% of the median income. In NSW this was equivalent to an annual household income of up to \$62,600 in 2006/07. 	Section 7 Appendix N

KEY ISSUES	Section
There are a number of recent examples where affordable housing has been integrated into new developments. These include the St Marys development on the former ADI site where the developer is allocating 3% of all residential allotments for the purpose of providing affordable housing, and the use of planning agreements in the City of Canada Bay and Penrith City to generate affordable housing. While the level of affordable housing contribution varies, the approach taken has been that contributions (whether monetary or in kind) are provided at no cost to a not-for-profit community housing provider, which then uses these contributions to accommodate low to moderate income, eligible households in affordable rental housing.	
<ul style="list-style-type: none"> The applicant be required to develop a minimum of 15% of all new housing on site as adaptable housing to enable residents to age in place and to cater for the needs of people with disabilities. 	Section 7 Appendix N
DEPARTMENT OF WATER AND ENERGY	
Acid Sulfate Soils	
Require that the data from 2000 and 2002 work, on which the recommendations were made, be incorporated into the ASS Management Plan	Section 8 Appendix K
Groundwater	
It is recommended that further clarification on proposed detention basin levels and ground water levels is provided. As well, details should be provided on the proposed method/standard of lining for the proposed detention basin.	Section 8 Appendix P
Flooding Impacts	
There are no concerns regarding the flooding impact for the development, or the flooding impact by the proposal on other developed areas	Section 8

1.0 DEPARTMENT OF PLANNING

1.1 SEPP 14 Wetland

ISSUE:

SEPP 14 BUFFER

The proposed buffer to the SEPP 14 wetland is insufficient. The broadleaved Closed Forest to Woodland community and Swamp She Oak Closed forest to Woodland community, as mapped, extend across the 50metre buffer to the SEPP 14 Wetland. These communities are considered to be broadly analogous to three Endangered Ecological Communities listed under the Threatened Species Conservation Act 1995 and are associated with the SEPP 14 wetland.

Although the actual extent of the SEPP 14 wetland appears to have been ground truthed, the 50m buffer has been taken from the previously mapped boundary, and not the ground truthed boundary.

The SEPP14 maps are by no means accurate and should only be used as an indication of the extent of the wetland area. The boundaries were initially identified from stereo interpretation of 1:25 000 aerial photographs dated 1984 and 1986 and are subject to regular amendments. The plans should be amended to include a 50m buffer from the ground-truthed SEPP14 wetland boundary.

RESPONSE

Further to our submission to the Department of Planning on 18 March 2008 the proposed development has been amended to reflect the agreed position resolved during a meeting with the Department on the 23 April 2008. This agreement resulted in a 40m vegetated buffer separating the integrated housing lots with a 20m APZ outside of the ecological buffer. These buffer width recommendations had been provided by independent wetland specialist, Geoff Sainty, after being commissioned by the Department to perform a site visit and a review of the Cardno report.

From the meeting it is also understood that:

- a detailed Vegetation Management Plan will also be required as a condition of any approval granted. This will be prepared to the satisfaction of the Department, in consultation with Council and will include management of matters such as weeds, rehabilitation/revegetation, bushfire management and ongoing maintenance.
- A condition of approval will require the proponent to be responsible for these areas for a period of 5 years before handing over to Council.

The provision of the buffer with regard to the areas adjacent to or areas away from the Integrated Housing Lot, remain as previously outlined in our submission of the 18 March 2008 and as reflected in our proposed plan of subdivision, 'Proposed Subdivision Drawing No: 20934-05M' prepared by Conics Pty Ltd provided in Appendix S.

ISSUE

STORMWATER MANAGEMENT

It is proposed to drain part of the site to the SEPP14 wetland in the northwest of the site. Clause 7(e) of

SEPP14 states that the consent authority should give consideration to establish whether any feasible alternatives exist to draining to the wetland (either on other land or by other methods) and if so, the reasons given for choosing to drain to this location. Alternative methods for draining this land have not been considered.

If the only method for managing stormwater in the north west of the site is to drain to the SEPP14 wetland, further certainty regarding the effectiveness of the proposed management techniques to provide an acceptable level of protection to the wetland ecology is required. A conceptual MUSIC modelling exercise should be undertaken to demonstrate that the proposed stormwater management techniques will provide adequate protection to the wetland in terms of stormwater quantity (environmental flows) and quality.

RESPONSE

Section 7.5.3 of the Environmental Assessment Report details the method by which stormwater management is to be treated prior to being discharged into the wetland. The treatment of storm water using constructed wetlands will ensure that the present environmental flows are maintained in volume and improved in terms of water quality.

Appendix B includes correspondence dated 27 September 2007 and 18 December 2007 from Cardno addressing in detail the concerns raised. The following summary is provided in response to the Department's comments.

Currently overland flow on the site drains to the wetland in the north west of the site, contributing suitable hydrological conditions for the continued existence of the wetland and associated vegetation. The proposal aims to maintain the existing conditions and flow regime on the site through the provision of water sensitive urban design concepts in a treatment train configuration. The proposed treatment train will maintain the existing flow regime whilst ensuring stormwater pollutants are treated to the required standard.

Diverting stormwater run-off to an alternate location would limit the stormwater recharge into the wetland, thereby disrupting the flow regimes required to maintain the wetland and associated vegetation. In light of this it was considered that maintaining the existing regime albeit with improvements would provide a better outcome. This is a practical outcome and as such no alternatives were considered.

The preliminary design of the treatment devices on-site have been sized in accordance with Tweed Shire Council's "Deemed to Comply" provisions. Appendix A addresses the issue of the MUSIC modelling exercise. This should be read in conjunction with Appendix B. Notwithstanding, the correct design and construction/ installation of the nominated devices are deemed to comply with the performance criteria outlined in the Tweed Urban Stormwater Quality Management Plan part 5.5.3. As such, modelling is not required.

Tweed Shire Council has outlined stormwater treatment objectives and maximum permissible loads that may be discharged from new urban developments. Table 5.4 of Council's Tweed Urban Stormwater Quality Management Plan outlines stormwater treatment objectives that new developments must demonstrate compliance with. Table 1 summarises part of the operational phase stormwater treatment objectives relating to the maximum permissible pollutant loads that may be discharged.

TABLE 1 - STORMWATER TREATMENT OBJECTIVES

Parameter	Maximum Permissible Pollutant Load Discharged (kg/ha/yr)* (Average Year)
Suspended Solids	300
Total Nitrogen	4.5
Total Phosphorus	0.8

* Taken from Tweed Urban Stormwater Quality Management Plan Table 5.4.

Sections D7.9 and D7.11 and Table 7.11-WS of Council's D7-Stormwater Quality specification provide design criteria for the construction of wetlands. Provided that the stormwater wetlands are appropriately designed and constructed to meet these criteria then the wetlands are 'Deemed to Comply' with the performance criteria outlined in Part 5.5 of Council's Tweed Urban Stormwater Quality Management Plan.

Table 7.11-WS indicates that where no formal sedimentation or pre-treatment processes are installed, such as sedimentation basins, the total wetland surface area including deep water zone and macrophyte zone shall be a minimum of 500m² per 1ha of urban development catchment area. This equates to 5% of the contributing development catchment area. Table 7.11-WS provides other pre-treatment processes that may be adopted within the development to assist in reducing the total wetland size.

In summary the proposed wetland has been sized to meet Tweed Shire Council's stormwater treatment objectives thus producing a water quality suitable for discharge to the existing wetland. The proposed wetland which meets the nominated objectives can be accommodated within the size of the proposed open space area. MUSIC modelling does not adequately demonstrate the effectiveness of the constructed wetland.

Correspondence from the Department dated 18 April 2008, raised concerns that MUSIC modelling had not been undertaken to demonstrate the effectiveness of the proposed stormwater wetland and other treatment measures in terms of stormwater quality or quantity. Our response to these concerns pointed to Appendix A, page 3 of correspondence dated 27 September 2007 which states:

"... The effectiveness of the constructed wetland cannot be determined through MUSIC modelling,"

Further Appendix B, correspondence dated 27 September 2007, provides further evidence of the effectiveness of the constructed wetland as it is built in accordance with the deemed to comply criteria of the Tweed Shire Council.

In correspondence dated 30 April 2008 the Department noted that they are satisfied with this response (refer Appendix R).

1.2 Geotechnical

ISSUE:

SLOPE STABILITY ANALYSIS

The Geotechnical Report at Appendix 8 of the EA states that an assessment of the relative likelihood of slope instability on natural slopes was made based on the local

geomorphology and geology/subsurface conditions presented in the previous Coffey reports prepared in April and September 2002. Neither of these reports includes a detailed slope stability analysis.

A detailed Slope Stability Assessment should be undertaken in accordance with the assessment methodology developed and presented in the Australian Geomechanics Society Sub-Committee (March 2000) "Landslide Risk Management Concepts and Guidelines" (AGS 2000) to demonstrate compliance with Council's Subdivision Manual (Section 5A of the Tweed DCP) prior to determination.

A plan showing the area zones identified as Low (Rare), Medium (Unlikely), High (Possible) and Very High (Likely) with reference to the AGS 2000 should be provided. Hazards associated with unstable areas should be identified and for the hazards identified, the assessed likelihood and consequences of each hazard and the associated risk should be provided.

Drawing No.1 of the Coffey (April 2002) Geotechnical Report is difficult to interpret. Please provide a revised plan that clearly shows the locations of the identified slip areas. The Statement of Commitments should include specific design / construction guidelines for construction of dwellings on the site. In particular, the constraints applied in the formulation of the proposed allotment layout should be included within the "Post-Construction" section of the Statement of Commitments.

RESPONSE

The attached report, dated 31st October 2007, prepared by Morrison Geotechnical Engineers (Appendix C) provides supplementary geotechnical information in response to concerns identified by the Department of Planning. Where roads and or allotments conflict with significant topographical constraints such as the steepness of slopes, site drainage, seepage and landslip, the report provides a detailed discussion of these constraints, together with engineering solutions designed to ensure that the site is suitable for the proposed development. Detailed guidelines are provided in relation to the control of ground water, needed to ensure the long term performance of the proposed engineering solutions.

The assessment has been undertaken in accordance with the guidelines established in the Australian Geomechanics Society Sub-Committee (March 2000) "Landslide Risk Management Concepts and Guidelines" (AGS 2000). Section 9.5 of the Morrison Report states that, "The risk of landslip has been assessed... as low to very high on the represent natural slopes, with the high risk associated with existing landslip. Remediation of the landslip changes the risk to low as defined in AGS-2000".

- Engineering solutions (stabilisation of unstable slope conditions)

It is proposed to lessen the slopes, referred to in Section B on Cardno Figure No. DA 4 (and included as supplementary information in Appendix C), by filling to depths of up to 6 metres on the lower slopes. It is then proposed to compact this fill to a density equivalent to or greater than the natural soils present on the site. The previous Coffey report indicates that compaction of fill can increase soil strength.

Placement of fill to a density equivalent to or greater than the natural soils would result in the calculated factor of safety on the engineered slope exceeding 2.0, which would provide a satisfactory level of safety. (Note: The degree of slope hazard can be expressed by the Safety Factor (F) which is the ratio of the forces that make a slope fail and those that prevent a slope from failing).

- $F < 1$ unstable slope conditions,
- $F = 1$ slope is at the point of failure,
- $F > 1$ stable slope conditions.

The stability of the natural and filled slopes, including remediated landslip areas has been addressed by the attached Morrison Report and is summarised as follows:

Natural Slopes slopes	Safety Factor for natural and filled
Less than 16 -18 degrees	Greater than 2.0
18 – 20 degrees	1.8 to 2.0
20 – 22 degrees	1.7 to 1.8

The report states that landslip remediation will not affect future surface construction. Bearing capacity is not affected. Consequently residential dwellings, retaining walls, swimming pools, roads and driveways can all be constructed to the appropriate Australian Standard.

Figure 4 (Appendix B of the Morrison Report) provides a detailed Slope Stability Assessment, identifying landslip remediation areas together with the location of proposed retaining walls. Figure 4 breaks down the site into 6 distinct topographical units.

Figure 4 shows not only the 6 topographical units but also the approximate areas of landslip remediation which can be used to indicate earthworks estimates. The plan shows that a total of ten allotments within the proposed subdivision are affected by the existing landslips and require ground improvements. The affected allotments and their respective mapping units are as follows:

- Allotments 117,118 and 125 (unit2)
- Allotments 97,98, 157, 158, 159, 166 (Unit 4)
- Allotments 168 (unit 6)

Topographical Units 1, 3 and 5, and the allotments contained in these respective units are not affected by landslip and do not require ground improvements. The ground improvements necessary for the allotments identified in Units 2, 4 and 6 would follow the method outlined above. With regard to Unit 2, the existing slip will have to be removed and repaired prior to filling of the slope to a depth of up to 3.0 metres. The procedure to accomplish this is outlined in Section 6 of the Morrison Report.

- Engineering solutions (remediation of landslip)

The key to the proposed ground improvements are the removal of landslips and any soils affected by water that contain moisture above the optimum level of compaction. It is proposed to remove these soils down to a competent base. At the level of the competent base it is proposed to place a drainage blanket formed from crushed aggregate together with a collector drain at the low point in the gully floor. A geotextile cover would be placed over the aggregate and an outlet to the site stormwater system would be provided before filling the slip with fill compacted in accordance with AS 1289.5.1.1. The details of this drainage solution are included in Figure 5 Drawing CEO7/099-3 of the attached Morrison Report.

- Engineering solutions (stormwater drainage from house sites on individual allotments)

The Morrison Report recommends that roof drainage to defined stormwater outlets be mandatory in this subdivision and that roof drainage connections be provided at low points on all allotments. This has been addressed in the Statement of Commitments.

The Coffey Report included the results of site investigations and identified areas of land slip hazard occurring on the site. The supplementary information provided in the Morrison report, together with the previous Coffey Report and the Shaw and Urqhart reports, demonstrate compliance with the Council's Subdivision Manual (Section 5A of the Tweed DCP)

Section A5.4.4 Environmental Constraints of the Tweed Shire Subdivision Manual, in relation to the assessment criteria for and with risk of land slip or subsidence states that, *"Development sites must be assessed to determine if they are at risk from landslip or subsidence:*

- *originating either on or off the development site; or*
- *from an existing risk or a risk that will result from proposed subdivision works; or*
- *elements at potential risk include proposed lots, roads, open space and public infrastructure.*

Development proposals for sites that are at risk from landslip or subsidence must account for this risk by:

- *excluding the land at risk from the land suitable for development; or*
- *demonstrate that, notwithstanding the risk, the land is suitable for its intended use; or*
- *demonstrate that remediation works will eliminate the risk and render the land suitable for development.*

With regard to Section A5.4.4, the Morrison Report demonstrates that remediation works will eliminate the existing and potential risk associated with landslip and render the site suitable for the proposed development.

The Statement of Commitments has been amended to include specific design construction guidelines for construction of dwellings on the site. The constraints applied in the formulation of the proposed allotment layout are included within the "Post-Construction" section of the Statement of Commitments.

Further with regards to comments from Tweed Shire Council re: Geotechnical Assessment of 17 April 2008 (refer Appendix O), we note that Council had identified we had not responded to doing geotechnical investigations for the flat area nor had we proposed any recommendations. Notwithstanding, it was not indicated if this issue could be addressed as a condition of consent.

Morrison Geotech have since advised that the lack of recommendations was not an oversight, but a reflection that such an issue would be addressed as part of the general approach to site preparation works. The site has been filled for a number of years, and it is likely some compression has occurred, however, in order for the development to proceed, some grading and minor filling will need to occur on site for the purposes of constructing the roads, lots, parks etc. As part of normal site

preparation work and construction management, testing would occur then to determine settlement and stability issues.

Given that the site is flat and not identified as possessing any significant land slip hazard, Council have notified us during correspondence dated 5 August 2008 that they would be satisfied if we included within our Statement of Commitments the following condition:

“Detailed engineering plans, including the results and recommendations of any subsequent geotechnical testing for works proposed on the pre-filled flat section of the site identified in drawing Ref No. T14246 'Site Plan Lot 9 in DP 1039569' dated 7.03.07 prepared by B & P Surveys Consulting Surveyors, but not including the ecological buffer area nominated in the vicinity of the Integrated Housing Lot, are to be provided to the Director of Engineering Tweed Shire Council for approval and signoff prior to the issue of a construction certificate.”

Tweed Shire Council responded via email on 5 August 2008 they were satisfied with this approach. Subsequently the Statement of Commitments has been amended accordingly.

1.3 Aboriginal Cultural Heritage

ISSUE CONSULTATION

It is noted that an Aboriginal archaeological and cultural heritage investigation was undertaken in 2000 and updated in 2007. The Department considers that the combined Aboriginal Heritage Assessment is unsatisfactory for the following reasons:

- *Ms Jacqueline McDonald, the relevant local Aboriginal Community member, was not involved in the field inspection; and,*
- *An advertisement was not placed in the local newspaper seeking comments and involvement in the assessment process from interested members of the local Aboriginal community in accordance with the DEC's draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC, 2005).*

The level of consultation with the local Aboriginal community should comply with the DEC draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC, 2005). A comprehensive consultation process needs to be undertaken, including the placement of an advertisement in the local newspaper seeking the comments and involvement from interested members of the local Aboriginal community.

Ms McDonald should:

- *be given the opportunity to visit and inspect the site;*
- *Should confirm the extent of the traditional camp site and its potential for cultural significance; and. be involved in the proposed mitigation / management of the midden and camp site.*

SEPP71 'matters for consideration' include measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals. The Aboriginal Heritage Assessment provides insufficient information with regard to the potential impact on Aboriginal cultural heritage on and adjacent to the site to ensure

appropriate measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals will be implemented.

RESPONSE

The concerns identified by the Department have been addressed in the attached Appendix D Aboriginal Cultural Assessment prepared by Everick Heritage Consultants (February 2008). The report includes an archaeological assessment and consultation with the wider Aboriginal community to gain a Traditional Owner perspective on the potential impact of the proposed development upon cultural heritage values of the site, as requested. The assessment conforms with the *DEC draft guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC, 2005)*.

Section 2.2 of the Report details the level of community consultation undertaken in accordance with the relevant guidelines. Consultation included newspaper advertisements, mail outs, review of methodology and meetings.

With regard to the matter raised under SEPP 71, the archaeological assessment of the site (Piper 2000) found that there were neither sites of archaeological significance nor areas of significance to the Tweed Byron LALC. This is largely a consequence of the degraded landscape of the site and the fact that little of the original land surface remains due to the long term slippage and slumping of the slopes and the filling of almost all of the floodplain proposed to be developed. This reduces the potential for Aboriginal archaeological sites to be found in their original context.

The Assessment re-examined the development's potential impacts on Aboriginal cultural heritage and identified that the only item of value was the Midden originally identified in the Environmental Assessment Report.

ISSUE

MIDDEN

The midden identified on the site has been located within the buffer to Fraser Drive. It is understood that this buffer has been provided to develop appropriate noise attenuation measures as part of the upgrade of Fraser Drive in the future. This is not, therefore, providing any long-term protection of the midden.

Section 7.4.3 of the Aboriginal Assessment states that the 'Traditional Owner descendents are concerned that the remains of a badly disturbed midden within a road reserve on the southern boundary of the proposed subdivision may extend northward into the proposed subdivision.' Further investigations works to determine the extent and appropriate management protection of the midden should be undertaken prior to determination of this application to ensure that it does not affect the proposed subdivision layout.

The investigation of the midden should be undertaken by a qualified archaeologist, representative of the LALC and the Traditional Owners. Excising a portion of the land to determine the extent of the midden during construction on other parts of the site is not an acceptable management approach.

Section 8.4 of the Aboriginal Assessment states that archaeological investigative work in the form of test pitting of the southern side of the cutting of Champagne Drive "has the support of the proponent and believe would have the support of the Land Council and Traditional Owner. The Land Council and Traditional Owner should be consulted to confirm their support for this investigative approach.

The area required to protect the midden should be clearly shown on a plan and the subdivision plan amended as required.

Please also note that Section 75U of the EP&A Act states that a Section 87 permit under the National Parks and Wildlife Act 1974 is not required for an approved Part 3A project. Any approval given under Part 3A of the Act replaces the need for a Section 87 permit under the NPW Act therefore the detail ordinarily required for a Section 87 permit is required in the Aboriginal Assessment report.

RESPONSE

Aboriginal Cultural Heritage is confined to the extreme south east corner of the subject land which contains a recorded midden site (DEC # 04-2-0088), located at the intersection of a closed road (Champagne Drive) and Fraser Drive. This area of the site was identified by members of the Nganduwal/Minjungbal descendents as potentially containing cultural remains from a badly disturbed midden, exposed when the adjoining road was constructed, possibly in excess of fifty years ago. The descendents are concerned that earthworks or other disturbances will destructively impact upon undisturbed remains of the site.

The field inspection of the site was carried out by the consultant and the Sites Officer of the Tweed Byron LALC Mr. Cyril Scott on April 18, 2007. The report states that,

“In order to avoid destructively impacting the site, investigate the site and to allow the Proponent to proceed concurrently with an application for a residential subdivision over the remainder of the Property, excluding the midden from the subdivision layout by truncating the design of Lot 135 would be the most practical means of mitigating impact upon the site by the proposed development. The location of the midden in relation to the proposed development and the Fraser Drive road reserve has been professionally surveyed. The midden occurs in a buffer area adjacent to Fraser Drive with a small intrusion into the south east portion of Lot 135. Excising an area of approximately 150sq m would retain the remaining cutting in which shell may be retained and also include shell fragments that lie on the surface of the former road reserve. There are no midden materials visible outside this confined area.”

A meeting was held on 23 January 2007 between representatives of the Tweed Shire Council, MFS Diversified Group, Conics Sydney Pty Ltd (formerly PMM Sydney), Everick Heritage Consultants and a representative of the Tweed Byron LALC, to discuss how the midden site could best be protected. Following this meeting, the site was re-surveyed to determine the area of significance. This area is identified in the report, however the survey plan 'Location Survey Drawing No 15975D-A' prepared by B & P Surveys Consulting Surveyors is provided as supplementary information and can be found in Appendix D.

It was acknowledged by all parties that the midden was a site of cultural heritage significance and that measures should be taken to ensure it is protected. An agreement was reached whereby the Proponents of the subdivision made a commitment to sponsor a Cultural Heritage Management Plan (CHMP) for the midden site and undertake appropriate works to protect the site in accordance with this Plan. In return for the assistance of the Proponents in this regard, the Tweed Shire Council formally acknowledged that the midden site existed on their land and

that they would retain responsibility for ensuring that the site was protected in the future (see Appendix E of the Cultural Heritage Assessment Report provided in Appendix D of this report)

As a result of this meeting Everick has been engaged to undertake further consultation with the Traditional Owners to formulate a CHMP. As outlined above, Everick in consultation with the Traditional Owners will produce a CHMP that will then be submitted in conjunction with a Section 87 application under the *National Parks and Wildlife Act 1974* (NSW). Given the significance of the site, Everick recommends that until a CHMP can be agreed upon, the site should be fenced off so that it can be protected from any inadvertent interference during the development works as part of the subdivision.

The report makes the following recommendations:

Recommendation 1

It is recommended that a semi-permanent fence be built 10 metres from the known boundary of the midden site in order to protect the site from any inadvertent harm by workers developing the Subject Lands. The fence should be built under the supervision of a qualified archaeologist and a representative of the Traditional Owners. The location of the midden should be inserted in all future drawing, maps and engineering plans connected with development of the sub-division.

Recommendation 2

It is recommended that following the implementation of Recommendation 1, a CHMP be drafted and provided to Council to support any future applications under Section 87 of the *National Parks and Wildlife Act 1974* (NSW). The finalisation of the CHMP will follow Council's negotiations with the Traditional Owners and relevant Indigenous representatives in undertaking the planned widening of Fraser Drive.

Recommendation 3

It is recommended that employees and contractors conducting earthworks on Lot 135 of the proposed Subdivision Plan be instructed that they are working close to a midden in a culturally sensitive area. It is possible that their works may unearth cultural material. Employees and contractors should be instructed that caution should be exercised when working on the site. They should be instructed on how to identify this cultural material and that in the event that they do find any they are to stop work immediately and follow Recommendation 5 of this report.

Recommendation 4

It is recommended that contractors engaged in earthworks or subsurface disturbance on the Subject Lands, be advised that under the terms of the *National Parks and Wildlife Act 1974* (NSW) it is an offence for any person to knowingly disturb, destroy, deface or damage or permit the destruction, defacement or damage to an Aboriginal object or Aboriginal place without first obtaining the written consent of the Director General of the Department of Environment and Climate Change.

Recommendation 5

It is recommended that in the event that future works at the proposed residential subdivision disturb Aboriginal cultural materials, works at or adjacent to the material must stop immediately. Temporary Fencing must be erected around the site and the material must be identified by an independent and appropriately qualified archaeological consultant. The Regional Archaeologist of the Cultural Heritage Unit of the Department of Environment and Conservation, Coffs Harbour, the Tweed Byron L.A.L.C. and the Ngunduwal/Minjungbal descendents must be informed. They

will advise as to the most appropriate course of action to follow. Works must not resume at the location without the prior written consent of the DECC, Tweed Byron L.A.L.C. and the Nganduwal/Minjungbal descendents.

Recommendation 6

It is recommended that due to the sensitivity of the ridgeline containing the closed Champagne Drive road reserve (Figure 3), any initial subsurface disturbance be monitored by representatives of the Traditional Owners to ensure that cultural material is identified and protected. This monitoring will be independent of the Cultural Heritage Management Plan adopted to protect the midden site. If cultural material is identified, then Recommendation 5 will come into effect.

ISSUE

MIDDEN ACCESS

In our meeting with Tweed Shire Council on 29 April 2008, Council requested that an access point (vehicular) from Merlot Court be provided to the midden site.

RESPONSE

The issue of the vehicular access to the Midden site is in addition to the outcomes agreed to in the presence of Tweed Shire Council officers and the Tweed Byron Local Aboriginal Council on 23 January 2008. Further it has not been demonstrated how the provision of the access way from Merlot Court benefits the on-going maintenance of cultural heritage values.

We consider that improved access to the Midden Site is a desirable objective of future management, however the provision of vehicular access from Merlot Court does not provide the opportunity to do this. The provision of a track in this location would impact on adjacent, existing landholders, further the site in this location does contain significant slope constraints and additional parking facilities cannot be provided along the Merlot Court strip. A track capable of accommodating vehicular access in this location is also quite onerous and inconsistent with our subdivision design philosophy of minimising land works in order to maintain consistency with existing topography.

We would consider that as part of the requirements under Recommendation 1, a more robust and beneficial outcome would be achieved by improving access from Fraser Drive. Improved access from the Fraser Drive side of the Midden would be consistent with achieving high quality heritage management outcomes. Detailed design of the Road widening is yet to be finalised.

1.4 Socio-Economic Impact Assessment

ISSUE

Section 3.5.3 of the environmental assessment refers to relevant provisions within the Tweed LEP 2000.. It is noted that clause 17 of the LEP group's council to ensure proper consideration of development that may have as if he can social and economic impact. Where it is considered that the proposed development will have a significant social or economic impact, a economic impact statement must be prepared. Section A13.5.1 (of the Tweed Shire DCP) specifies that applications for residential subdivisions greater than 50 lots/dwellings in all stages require a SEIA. Section A13.6 sets out what is required within the SEIA.

The Department requires a SEIA to be prepared for the proposal. This should address the need for affordable housing, in accordance with the Far North Coast Regional Strategy and the requirements of the Tweed Shire DCP.

RESPONSE

A SEIA has been prepared by Conics and Economics + Advisory (see Appendix N). The SEIA addresses the relevant requirements of the Tweed Shire DCP together with the need for affordable housing in the context of the *Far North Coast Regional Strategy*.

The SEIA concludes the development will have no adverse social and economic impacts. The proposed development is suitable for the site and is consistent with the planning, social and economic goals for Tweed.

Comments from the Department of Planning subsequent to receiving the SEIA have indicated that they were not satisfied with the SEIA and that conditions of consent are proposed. Our response to the Departments comments were:

"We prepared the SEIA in accordance with the Department's comments. Could the Department please advise if DoH is not satisfied with the criteria used to prepare the report. If so is there particular criteria that we need to respond to.

We would request that any conditions imposed in this regard be informed by the Department's legal branch so as to determine if such conditions are "reasonable and relevant"

The Department have responded further they may consider if any conditions are necessary (refer to minutes from meeting 23 April 2008 and further comments provided by the Department on 30 April 2008 provided in Appendix R).

1. 5 Bushfire Hazard Assessment

ISSUE

PLANNING FOR BUSHFIRE PROTECTION 2006

The Bushfire Hazard Assessment has been prepared with reference to Planning for Bushfire Protection 2001. The assessment should be reviewed to ensure its consistency with the current document, Planning for Bushfire Protection 2006, particularly in relation to (but not limited to) the width of proposed APZs.

RESPONSE

At the time of lodging the Environmental Assessment Report, the Planning for Bushfire Protection 2001 was the applicable document, the 2006 Guideline only becoming available during exhibition. Notwithstanding, the original Bushfire Hazard Assessment produced by Boskae Environmental Planning has been updated to ensure its consistency with *Planning for Bushfire Protection 2006*. Planning for Bush Fire Protection (2006) identifies five categories of bushfire attack ranging from "Low" to "Flame Zone". A Bush Fire Attack Assessment was completed on the site using this methodology. Details of this assessment are shown in Tables 4-6 of the attached report (Refer Appendix E).

ISSUE

APZ JOINING SEPP 14 WETLAND

The proposed 40 metre Asset Protection Zone (APZ) is partly contained within the buffer to the SEPP14 wetland. APZs have very strict maintenance regimes that include removal clearing of vegetation to achieve certain fuel loads. As the Inner Protection Zone is likely to be cleared for bushfire hazard maintenance purposes in the future, it is not appropriate for the Inner Protection Zone to be contained within the buffer area as this clearing may impact upon the health of the adjoining SEPP14 wetland.

The subdivision layout should allow for a 50 metre buffer to the SEPP14 wetlands and associated vegetation as well as the appropriate Inner Protection Zone width. The Outer Protection Zone of the APZ may be contained within the ecological buffer.

The recommendations provided in Section 7.9.4 of the EA state that the location of the APZ to the SEPP14 Tall Open Ecotonal Forest is to be determined by detailed vegetation inspection. This inspection should be undertaken prior to determination of this application to identify the exact location of the APZ in relation to the SEPP14 / Ecotonal Forest, and to ensure that there is sufficient area for the APZ and the 50 metre buffer between the significant wetland and forest vegetation and the proposed lots.

RESPONSE

Further to the Department's response above, reference should be made to, the Ecological Buffer Analysis, Bushfire Assessment Report, Ecological Assessment Report dated 18 December 2006 (previously submitted as Appendix 5 of the Environmental Assessment Report) and the Addendum to Bush Fire Assessment dated 15 May 2008 provided in Appendix E.

The provision of bushfire management measures in this vicinity is two fold:

- (a) the area adjacent to the SEPP 14 but not including the Integrated Housing Lot and
- (b) the Integrated Housing Lot.

For item (a) it should be noted that in the Environmental Assessment Report the Inner Protection Area was to be measured from the outer edge of the existing vegetation. While this would still be in the SEPP 14 no vegetation was proposed to be removed, as none existed in that area. Notwithstanding, the impacts of locating the Outer Protection Area within the existing vegetation was assessed and no significant impact was identified.

Further to the Department's comments the Preferred Subdivision layout has incorporated a 50m buffer to the SEPP 14 wetlands and located the 20m Inner Protection Area adjacent to this buffer or from the outer edge of the existing vegetation, which ever is further. No outer protection area is proposed or considered necessary to provide adequate levels of protection from bush fire attack so long as the façade facing the hazard complies with Level 3 construction as outlined in AS 3959-1999. If Level 2 or Level 1 construction is used then the OPZ needs to be increased to 24m and 34 metres respectively.

We have included a Statement of Commitment that to include a condition of consent that will ensure this outcome.

For item (b) we note the outcomes of the 29 April 2008 meeting with the Department of Planning. In this regard, a 20 metre APZ is provided in addition to the negotiated

40 metre buffer to the edge of the existing and mapped 50 metre SEPP 14 buffer area.

ISSUE

APZ ADJOINING EASTERN LOTS

It is noted that Fraser Drive is proposed to be used as a 30 metre permanent APZ between the lots along the east of the site adjoining Fraser Drive and the vegetation on the western side of Fraser Drive. APZs must generally be contained wholly within the boundaries of the subject site except in exceptional circumstances. As the road reserve is owned by Council, their written agreement to manage the road reserve as an APZ in perpetuity must be given prior to determination. Preferably, the plan should be amended to provide the required APZ such that it is not dependent on Council's road reserve.

RESPONSE

According to Section A2.3 in Planning for Bush Fire Protection 2006, non-vegetated areas including roads, footpaths, cycle ways and the like are not considered a hazard or as a predominant vegetation class/formation and can be included within an Asset Protection Zone. Fraser Drive provides a 30m permanent Asset Protection Zone between the adjoining lots and the hazard.

The Department of Planning's comments on the 18 April 2008 noted that Tweed Shire Council has not agreed for the proponent to use the Fraser Drive road reserve or the ecological buffer to the wetland as an APZ.

Please note our addendum to the Bushfire Assessment Report which provides further information to Council demonstrating the maintenance issues can be addressed by Council.

Further, on 30 June 2008 we requested further direction from Tweed Shire Council as to their acceptance of utilizing Fraser Drive as an APZ. Council have yet to respond on this matter. Notwithstanding further to our meeting of the 29 April we have reviewed the provision of landscaped measures within the Fraser Drive Road reserve and responded to Council's request to provide landscaping treatments that involve minimal management regimes. In this regard we refer to the amended Landscaping Plans provided in Appendix H.

ISSUE

STATEMENT OF COMMITMENTS

The Preconstruction Bushfire Management action within the draft Statement of Commitments should be amended to state compliance with Planning for Bushfire Protection (2006) not 2001.

RESPONSE

Noted.

1.6 Housing Density/Type

ISSUE

Section B3 – Banora Point West – Tweed Heads South into Tweed Shire Council Development Control Plan sets the provisions of development in this area. The DCP identifies the site is predominantly Residential A, part open space part Hazard Zone -

Land Affected by Slip. The predominant housing type in 'Residential A' is conventional detached housing although dual occupancies may be permitted within this land use category in accordance with section 8 of this DCP.

The following non-compliances with the Tweed DCP have been identified:

- *Section A12 of the DCP states that lots identified for dual occupancies must be minimum site area of 900 square metres or an area not less than 500 square metres if the land is within 300 m distance of the business Centre listed under schedule 8 of the Tweed LEP proposed size of the dual occupancy lots within the development ranges are as small as 600 square metres. The variation to the minimum lot size has not been justified.*
- *The DCP states that integrated housing is not noted as a permissible housing type within the 'residential A' area. It is noted that 26 lots have been identified for integrated housing. A variation to the housing type and density has not been provided.*
- *Tweed LEP 2000 specifies that the minimum lot size for the Residential 2(C) zone and is 450 square metres, while the Tweed development control plan specifies minimum allotment of 250 square metres for integrated housing. The proposed development includes a single integrated housing allotment of 235 square metres. No justification to the non-compliance with this development standard has been provided.*

Justification for variations to these development standards must be provided in, order for the Department to consider whether these non-compliances will be supported or not. Councils view on the non-compliance should be sought. The Department is unlikely to support the variations of council does not give it support.

RESPONSE

Pursuant to our submission of 18 March 2008 to the Department of Planning, we have since meet with the Department (23 April 2008) and Tweed Shire Council (29 April 2008, 23 June 2008) to review our proposal amended our plan of subdivision to ensure:

- All duplex lots are not less than 900 square metres; and
- All detached housing lots are not less than 450 square metres.

Please refer to the "Proposed Subdivision Drawing No: 20934-05M" prepared by Conics Pty Ltd provided in Appendix S.

Integrated Housing

The integrated housing component that has been excised from the proposal will be subject to a separate approval process. Reference to the integrated housing component has been removed from the plans.

Nonetheless it should be pointed out that section B3.3.1 of the DCP 'Residential A' does not confer development rights nor prohibits integrated housing development. In addition, in reference to clause 11 of the Tweed LEP 2000, 2(C) Urban Expansion, Integrated Housing is not identified as a prohibited or non permissible development.

The variation to the DCP is acceptable as it is contributing to an urban development form that is consistent with that proposed for Banora Point/South Tweed. It is in close proximity to identified areas of "Residential B" housing but more appropriately it contributes to the diversity of development proposed within the development site.

The variation is acceptable on the grounds that as yet sufficient Integrated Housing is yet to be provided within the DCP area, particularly in the areas already identified. As the SEIA notes, there is need for the provision of this type of built product. It should also be mentioned that its provision will not result in an over supply, as Integrated Housing is only one form of dwelling anticipated by Residential B designation within the DCP. A significant area of Residential B land on the adjoining Tourist Pioneer Park is also yet to be rezoned and thus be considered permissible.

The location of the proposed integrated housing lot is in close proximity to the public transport stop, the nearby school and opens space areas. It is unlikely to create any impacts to the existing residential amenity as it is sufficiently buffered from the majority of existing single dwellings. Further its inclusion within the development site greatly contributes to maximising development densities across the site and thus will greatly contribute to the ability to provide affordable housing product in the area. The final design of the Integrated Housing Lot will be the subject of a future assessment. Nonetheless we hope that the Department considers the variation acceptable in light of the contribution to a sustainable development outcome on this site.

Integrated Housing Lot Size

The previous Integrated Housing Lot layout has been deleted from this application so as to rationalise the assessment on issues such as location, desirability and suitability. In addition, no justification was provided as the layout had the potential to change over time. Variations to the existing controls will be assessed upon finalisation of the separate and future application to construct integrated housing on the site. The final design will be guided by the assessment of this proposal.

ISSUE

SEA LEVEL RISE AND CLIMATE CHAGE

We note your advice that fill has been used to raise the site to the current 1 in 100 year flood level. However you are advised to take a conservative approach to addressing the consequence of sea level rise and climate change. Implications for the SEPP 14 wetland should also be assessed. This may require reconsideration of the hydraulic assessment undertaken as part of DA02/083 determined on 2 October 2002. You are advised refer to the DECC document 'Floodplain Risk Management Guideline – Practical Consideration of Climate Change.'

RESPONSE

Following a preliminary review of the Floodplain Risk Management Guidelines prepared by the Department of Environment and Climate Change and Council's current Development Control Plan: Section A3 - Development of Flood Liable Land we note the following information.

Section 11 - Flooding Assessment & Emergency Flood Egress of the Engineering Report, dated 8 December 2006, prepared by Cardno, included as Appendix 17 of the Environmental Assessment Report, indicated that Part A of the proposed development was filled above the Council adopted 100 year ARI flood level of RL2.65m AHD as part of a previously approved application (Tweed Shire reference DA 02/083 determined on 2nd October 2002).

Cardno Figure No. DA04, dated 8 December 2006, also indicates that the proposed finished surface level of the majority of the residential allotments within Part A of the proposed development will be filled to approximately RL3.0m AHD or higher.

Council's Tweed Shire Development Control Plan: Section A3 - Development of Flood Liable Land 2007 outlines that the minimum floor level for dwellings has been revised following the completion of the Tweed Valley Flood Study 2005 and revised freeboard requirements. Table 3.1 Flood Levels in Tweed Heads, Tweed Heads West, Tweed Heads South & Banora Point of Council's document indicates that the design 100 year ARI flood level has been revised to the predicted 100 year ARI flood level indicated on Map 1 or 2.6m AHD, whichever is higher. For the proposed development site Map 1 indicates a predicted 100 year ARI flood level of 2.2m AHD. However, as Council has adopted a blanket minimum Design Flood Level of 2.6m AHD for the Lower Tweed area this minimum level of 2.6m AHD would now apply to the subject site. In addition to this Table 3.1 of Council's Development Control Plan Section A3 outlines that the adopted minimum floor level for residential development shall be the Design Flood Level plus 0.5m for the Tweed Heads South area. Council have indicated that the Tweed Valley Flood Study 2005 did not incorporate climate change impacts, however, revised modelling to incorporate climate change impacts is currently underway. Section A3.3.1 Flood Levels of Council's Development Control Plan outlines that the most recent revision to the flood level freeboard requirements increased the minimum floor level freeboard of habitable areas from 300mm to 500mm. The combined result of the adopted minimum Design Flood Level which is higher than the current predicted 100 year ARI flood level indicated on Map 1, and the increase in the minimum adopted freeboard will assist in allowing for the affects of anticipated climate change impacts on flood levels within the Tweed Heads South area. The above combined allowances result in an adopted floor level 900mm above the current predicted 100 year ARI flood level derived from the Tweed Valley Flood Study 2005.

Cardno Figure No. DA04, dated 8 December 2006, indicates the proposed flood evacuation route for the proposed properties within Part A of the proposed development area. The proposed evacuation route to Ocean Avenue will generally be above RL3.0m AHD. Based on the route indicated on Figure DA04, it does not appear that the proposed flood evacuation access way will be affected by any expected climate change impacts associated with rising flood levels.

The current wetland is contains vegetation influenced by tidal influences and stormwater runoff. While tidal influence is limited due to the flood gate installed off site, however, it is likely that sea level rise and climate change will have some influence on the integrity of the wetland and ecological functions. The Ecological Buffer Analysis (Appendix A) and Ecological Assessment Report (Appendix F) recognise that the natural functions of the wetland be allowed to continue and that only rehabilitation occurs in those areas adjacent to the proposed development. The provision of buffers and the controlled release of treated stormwater runoff will provide sufficient management measures to account for any potential impacts from sea level rise and climate change.

2.0 ADDITIONAL INFORMATION AND COMMENTS

2.1 Executive Summary

- *Those lots within Part B of the development that are subject to potential land slip and steep slopes are to be designed with larger lot sizes and include restrictive Building Location Envelopes. This should be included within the Statement of Commitments.*
- *A commitment regarding the dedication of land along the Fraser Drive frontage should be included within the Statement of Commitments.*

RESPONSE

Noted, the Statement of Commitments has been amended.

2.2 Strategic Context, Need and Objectives

FLOODING

- *It is acknowledged that the development site has had bulk earthworks filling approved and constructed under an existing approval. It is noted that the site has now been filled to the 1 in 100 year flood level of 2.2m AHD. However, insufficient information has been provided to demonstrate that flood risk has been effectively managed (refer Section 2.2.3).*
- *The Department requires confirmation that consideration has been given to the risk of flooding during a Probable Maximum Flood event, in accordance with the NSW Floodplain Development Manual 2005?*

RESPONSE

Pursuant to our submission of 18 March 2008 we have since meet with Tweed Shire Council officers (29 April 2008) who confirmed that the Shire wide Flood Study, while completed is yet to be made available for public viewing. The PMF established by the flood study was 4.3 metres AHD.

Council's officers were to make this information available to the Department of Planning to advise them of the PMF consideration. As such the following comments provided on the 18 March 2008 remain valid.

The Environmental Assessment Report, Technical Appendices Vol 3 included the drawing 'Figure No.DA04 Proposed Finished Surface Contour Plan'. This plan showed a Flood Evacuation Route that would assist in residents on the lower portion of the site being able to access higher portions of the site, particularly in flood events greater the 1 in 100 level; that is events up to and including PMF events. This Evacuation Plan was developed in consultation with Council's flood engineers and provides an acceptable solution to such time that Council are able to finalise their Reporting.

This plan is provided in Appendix S.

2.3. Statutory Planning Framework

SECTION 3.5.3

- *It is noted that the subject site is located within close proximity to the Coolangatta Airport and its flight paths. Any future development will need to be developed such that those materials used to do not cause any visual / reflectively issues for pilots of the aircraft. A design control that restricts the use of reflective material for any future dwellings on the site should be included within the Statement of Commitments.*
- *A design control relating to noise intrusion from the airport should also be included within the Statement of Commitments. All new dwellings should be constructed in accordance with the relevant Australian Standard AS 2021 - 1 994 (Acoustics - Aircraft Noise Intrusion - Building Siting and Construction) to ensure that noise does not impact on the amenity of future residents.*

RESPONSE

The Statement of Commitments has been amended to reflect these comments.

SECTION 3.6.2

- *It is noted that there is no structured open space proposed as part of the development. The DCP requires 60% of the open space dedicated to Council to consist of structured open space and 40% to be casual open space. Where embellished structured open space cannot be dedicated a cash contribution will be required. Please confirm that the development cannot provide any structured open space and whether a contribution is proposed to be made to Council.*
- *The proposed development provides a buffer of vegetation within allotments 166 - 168. Who will be responsible for the retention and management of this vegetation? The Department is concerned that the buffer to the SEPP 14 wetland is inadequate and should not require private landholders to be responsible for management of the buffer vegetation.*

RESPONSE

This issue was addressed in Section 3.7.1 of the Environmental Assessment Report, which reported that is no structured open space is provided within the development site. Section B3 Map 2 of the DCP identifies the allocation of Open Space within the Banora Point/South Tweed Area. In this instance Open Space is limited to that area identified as the SEPP14 Wetland and buffer area (that is non structured open space_.

As previously discussed the site is severely constrained by environmental issues and planning provisions. Therefore the ability to provide structure open space is limited. Section 3.7.1 of the Environmental Assessment Report identified the contributions that were to be levied.

Nonetheless further to our meeting with Tweed Shire Council of 29 April 2008 and 23 June 2008 we have since revised our Open Space contribution with regard to non structured open space. As such we have expanded the proposed park in the vicinity of Seaview Crescent to 3641 square metres. The Park, when landscaped, will now been dedicated to Council and thus meets our requirements for open space contribution across the site. The amendment to the Seaview has received support from Council.

Lot 168 has been amended. Remnant vegetation will now be included within the area dedicated for the artificial wetland. This area will be dedicated to Council for future management.

SECTION 3.6.4

- *A commitment to address the requirements of part A1 of the Tweed DCP in future applications for the site should be included within the Statement of Commitments.*

RESPONSE

Noted: The Statement of Commitments has been amended to reflect this comment.

2.4.Description of the Proposal

SECTION 5.1

- *The overview of the proposal indicates that the proposed development seeks both torrens and strata subdivision of 32.89ha of land. Please confirm whether the current application seeks strata subdivision of the 2.87ha medium density lot. Council's Subdivision DCP states that strata subdivision in Zone 2(a) does*

not require development consent. All strata subdivisions do require the issue of a subdivision certificate.

RESPONSE

The current proposal now seeks Torrens subdivision. Subdivision of the Integrated Housing Lot will be the subject of a future approval.

SECTION 5.2.2

- *It is noted that the proposed roads, stormwater treatment measures, conservation and parks and recreation open space are to be dedicated to Council. Has Council confirmed that they are happy to take on the responsibility of this infrastructure?*

RESPONSE

Pursuant to our submission of the 18 March 2008, we have sought Council's confirmation with regard to the acceptance of all items proposed for dedication. The most recent query was made on 30 July 2008. To date no response on this matter has been forthcoming.

The development has been amended to ensure all items proposed for dedication are consistent with Council's standards and requirements. Officers of Tweed Shire Council to date have not expressed any opposition to the dedication of the areas described above. The plan of development has been reviewed and amended to ensure that all elements are to Council's satisfaction to enable dedication.

2.5. Description of Environmental Impacts & Proposed Environmental Management Measures

SECTION 7.3

- *It is noted that future sound attenuation measures are to be located within the 10 metre wide buffer to the existing road reserve on Fraser Drive. Is this consistent with Council's future plans for the future upgrade of Fraser Drive?*

RESPONSE

Council are yet to commit to the upgrade of Fraser Drive and are yet to develop any route or engineering plans. Notwithstanding, conceptual road widening plans were provided by Tweed Shire Council following our meeting of the 29 April 2008.

As such we have revised our modelling to further assess noise attenuation options.

Recommendations and conclusions from this revised modelling is outlined below and a copy of the Acoustic Assessment is attached, refer Appendix Q:

"This results of the revised modelling showed reduced SPL values to those predicted in Version 1. A number of modelling scenarios were run, the results of which showed that the external acoustic quality objective would be exceeded with no noise amelioration, with the use of a 10m offset from the site boundary, and with use of the 10m offset and a 2.2m acoustic barrier. It was found that the 10m offset and offset combined with acoustic barrier did not provide significant noise reduction, and were not recommended for noise mitigation purposes at the site."

“As a number of predicted SPL values did not comply with the external objective, predicted noise levels were considered against the internal acoustic quality objective. Traffic Noise Reduction values to achieve the internal objective were determined in accordance with AS 3167. Lots 1, 14 – 25, 51, 95, 103 -106, 112 - 113, and 125 – 135 were found to require architectural treatment equivalent to Construction Category 2 to limit intrusiveness of traffic noise.

“Based on the findings of this acoustic assessment, the following recommendations are offered.

- Preparation of a building covenant requiring the Lots 1, 14 – 25, 51, 95, 103 -106, 112 - 113, and 125 – 135 to be constructed using Construction Category 2, as defined by AS 3167, and air conditioning to be installed at dwellings on these lots.”*

As such the noise attenuation mounds previously identified in our submission of the 18 March 2008 have been supersede by our recent investigations and no longer form part of the proposal.

SECTION 7.4

- *Has a 7 part test been undertaken on the Macadamia tetraphylla? Have DECC confirmed that the propagation of seeds from the plant is an acceptable management solution?*
- *As this species is also listed as 'vulnerable' under the Commonwealth Environment Protection and Biodiversity Act 1999 has the Department of Environment and Heritage confirmed that the development is not a 'controlled action'?*

Response

The Ecological Assessment Report provided as part of the Environmental Assessment Report and included at Appendix F addresses this matter. It should be noted that the loss of the *Macadamia tetraphylla* was not considered a significant impact, however, the measure to propagate within the open space buffer area was not opposed in the comments that accompanied the Department of Planning's 15 August 2007 response. To date no opposition to this measure has been identified. The information required is located in Section 7.3, which articulates the findings of the 7 point test.

Section 7.1 of the Ecological Assessment provides an assessment against the EPBC. The assessment concluded that the proposed development does not significantly impact on any matters of national environmental significance. Therefore the matter was not referred.

Further to the Department's involvement the Department of the Environment, Water Heritage and the Arts have written to us informing that an application involving any action is likely to have a significant impact on a matter of national environmental significance must be referred to the Department for assessment and approval.

We have responded to the Department's correspondence and forwarded a copy of the Ecological Assessment Report, highlighting the conclusions of the assessment.

No response has been forthcoming.

SECTION 7.1 0

A plan showing the proposed flood evacuation routes should be provided for assessment.

RESPONSE

The Environmental Assessment Report, Technical Appendices Vol 3 included the following drawing 'Figure No.DA04 Proposed Finished Surface Contour Plan'. This plan showed a Flood Evacuation Route that would assist in residents on the lower portion of the site being able to access higher portions of the site, particularly in flood events greater the 1 in 100 level, that is events up to and including PMF events. This Evacuation Plan was developed in consultation with Council's flood engineers and provides an acceptable solution to such time that Council are able to finalise their Reporting. This plan is provided in Appendix G.

2.6. Stormwater Management

- *Appendix 13 sets out the proposed concept for stormwater management. It is noted that external catchment runoff from the eastern side of Fraser Drive is proposed to be collected, treated by a Gross Pollutant Trap and discharged into the south-eastern corner of the existing SEPP 14 wetland zone. The Department is concerned that a GPT will not provide an adequate level of treatment to the stormwater prior to discharging into the SEPP 14 wetland. Will the volume of runoff be controlled such that it mimics the pre-development discharge?*
- *Conceptual sizing of the stormwater detention ponds /wetlands should be undertaken prior to determination of this application to confirm that there will be sufficient area for the proposed treatment ponds in the proposed open space areas.*

RESPONSE

Appendix B includes correspondence dated 27 September 2007 and 18 December 2007 from Cardno addressing in detail the concerns raised. The following summary is provided in response to the Department's comments.

There has been some confusion in reference to the eastern catchment. The applicant is not proposing to treat any external eastern catchment flows. The eastern catchment as referred to in the Department's correspondence is simply piped untreated to a point immediately downstream of the proposed wetland. Flows and water quality remain unchanged. Tweed Shire Council in their response to the Department also stated that external catchments do not have to be treated. See Clause 37 of Council's letter.

The eastern catchment referred to in the Cardno Stormwater Management Plan is part of the development site - Part B as shown on Figure 20 being 6.67ha. As this catchment contains less than 50 lots, the deemed to comply criteria outlined within the provisions of clause 7.11-2, Small Subdivisions of Tweed Shire Council Development Design Specification D7 have been applied. On-site detention is proposed for this catchment to ensure post development peak flows discharging from the site are equivalent to pre development conditions.

2.7 Visual Impact Assessment

- *The Visual Impact Assessment does not make any assessment of the proposed acoustic barrier that will be constructed between Fraser Drive and the eastern boundary of the proposed subdivision. An assessment of this structure should be undertaken.*

RESPONSE

Pursuant to our submission of the 18 March 2008 and subsequent revisions to the Noise Assessment Report referenced above and included in Appendix Q, there is no longer the requirement to provide an acoustic barrier along Fraser Drive. The acoustic barrier no longer forms part of this application.

3.0 TWEED SHIRE COUNCIL ADDITIONAL INFORMATION

Further to comments provided by Tweed Shire Council as part of the Department of Planning's response, Officers of Council, and representative of proponent including consultants met on 17th October 2007 to discuss Council's comments.

The meeting minutes were confirmed and circulated to all attendant parties (including a copy to the Department of Planning) on 3 November 2007. These minutes are included in Appendix H and will be referred to in responding the comments below.

Notwithstanding the above, the responses below were in part, included in our submission of the 18 March 2008, which was reviewed and commented on by Tweed Shire Council the detail of which are included in Appendix O. Subsequent to this review, we meet with Tweed Shire Council on the 29 April 2008 and 23 June 2008 to resolve the remaining outstanding issues. The following information provides the most recent agreed to outcomes.

3.1 Cut and Fill

ISSUE

1. *Amended Cardno Figure No.DA04 "Proposed Finished Surface Contours Plan" (Drawing No. 7214/29/01-DA04), with the removal of the 1.2 m high retaining wall in Part A of the subdivision, between future lots 28-47 removed, as it does not comply with Council's Development Design Specification D6 - Site Re-grading.*
2. *Further details which demonstrate that building sites are available on all steeply sloping allotments. The geotechnical review specifies that building areas within allotments should not lie on land with slopes steeper than 3H:1V (approx 18 degrees). The slope analysis layout plan prepared by Cardno shows a number of allotments that may not comply with this recommendation.*
3. *Additional cross sectional detail is to be provided every 100m for all the existing properties along Seaview Street, Ocean Avenue and Hillcrest Avenue to demonstrate that pre-development levels are preserved at the external (perimeter) boundaries. Retaining walls and batters are to be located from existing boundaries as per clause 6.05.2 2(b) of Council's Subdivision Manual (Section 5A of the DCP).*

The cross sections are to show;

- *Levels;*
- *Distance to cut / fill / retaining walls / proposed road;*
- *Height of proposed cut and fill volumes; and*
- *Proposed subsoil drainage as recommended within the geotechnical review.*

RESPONSE

1. RETAINING WALL

Appendix I includes a copy of the D6 Site Regrading Guideline. Council's concern with the 1.2m high retaining wall reflected a view that site was being unnecessarily flattened to provide flat building envelopes, which is not permitted. We expressed

the view that it has been our intention to provide a development outcome consistent with Council's D6- Site Regrading Standard. To this end compliance was subjective due to a typing error in the Standard.

The issue relates to Note 1 which accompanies Table D6.1 which makes a reference to a Note 1 of D6.04.4. Section D6.04.04 does not exist.

It is likely that the reference relates to Note 1 of D6.05.4 which states:

"A retaining wall or batter of maximum "combined height" (as defined in clause D6.05.6) of 1.2m at or adjacent to inter lot boundaries may be permitted to ease lot gradients, where lot longitudinal or cross gradient would exceed 10% in the absence of such retaining walls. "

In this regard the aforementioned 1.2m retaining wall complies with the D6 guideline. Appendix I also includes the relevant excerpts from the engineering plans submitted with the Environmental Assessment Report. This shows that site would exceed 10% slope in the absence of the wall.

In correspondence dated 17 April 2008 Council (refer Appendix O) have acknowledged the typographical error and further commented that the,

"applicant's assumptions in this regard are correct. However, the Applicant's response seems to be referring to the proposed wall at the Stage boundary, which is not the wall in dispute. Based on Figures DA04 and DA06 the wall between lots 28-47 should be deleted, as the affected lots would have longitudinal gradients of less than 10% in the absence of the wall. CONSENT CONDITIONS TO BE PROVIDED."

We are seeking further clarification from Council but we are generally happy to accept conditions of consent.

2. SLOPE ANALYSIS

We acknowledge this inconsistency as typographical error. The Geotechnical Assessment provided in Appendix B concludes;

"Slopes generally less than 25% have an operating factor of safety greater than 2.0, decreasing to 2.0 for the majority of the engineered slopes (e.g. Cardno Sections A-A and F-F) but still satisfactory at FOS = 1.8 for the steeper slopes in the northern part. "

3.ADDITIONAL DETAIL

The minutes included in Appendix I confirm that Council will include the requirement for dilapidation surveys to be undertaken on the adjoining properties as a condition of consent. Notwithstanding the additional information has been provided and forwarded directly to Council.

3.2 Geotechnical Issues

ISSUE

4. *The geotechnical review prepared by Shaw Urquhart dated 11 December 2006 and 12 January 2007 does not address Council's Design Specification D6 – Site re-grading D6.16 - Geotechnical investigation for subdivisions where there is a risk of landslide or subsidence. Further geotechnical investigation is required to address the issue of slope stability for both the subdivision site and all adjoining areas external to the site.*

5. *The geotechnical review states that further geotechnical investigations are proposed to be carried out at the design stage to confirm the results of the review. This information is to be provided at the development application stage. The geotechnical and structural engineers report is to include;*
- a. *An assessment of the stability of the proposal (for the subject land and all adjoining land);*
 - b. *Address the expected settlement of compressible clays on the site and provide recommendations;*
 - c. *Previous geotechnical reports prepared by Coffey (upon which the geotechnical review prepared by Shaw Urquhart is based) have provided recommendations for the seven existing land slip areas, natural springs, ground water seepage plus proposed cut and fill on the site. These recommendations include;*
 - *Landslip areas to be rectified - permanent drains have been recommended, constructed in a radial fan shaped pattern, proposing to discharge from subsurface drains into the stormwater reticulation system.*
 - *Construction of footings from retaining walls, houses, pools etc are not to be affected by drainage trenches.*
 - *Subsurface drains are recommended, constructed along the fill interface and natural ground to collect seepage, proposing to discharge into the stormwater reticulation system.*

The geotechnical report is to address the above previous recommendations in the context of this development proposal. Specific drainage details to mitigate the slip 1 cut & fill interface 1 ground water 1 natural springs etc are to be detailed on a layout plan; All proposed drainage to mitigate the effects of landslip 1 natural springs / ground water 1 cut and fill is to be contained within easements. Easement details are to be provided on an amended layout.

- D. *Recommendations for future maintenance of the proposed sub surface drainage is also to be provided;*
 - E. *Recommended design criteria for earthworks, retaining walls and associated drainage;*
 - F. *Recommended location and design criteria for underground services in the zone of influence of the earthworks; and*
 - G. *Recommended periodic maintenance requirement for earthworks, drainage and retaining structures.*
6. *A risk assessment of the proposed development based on the above request for further geotechnical assessment is to be provided based on borelog testing of the site and external surrounds and a slope stability analysis to demonstrate compliance with Council's Subdivision Manual (Section 5A of the DCP) pg A5-15 - Land with risk of Landslip or subsidence.*

Development proposals for sites that are at risk from landslip or subsidence must account for this risk by;

- i. *Excluding the land at risk from the land suitable for development*
- ii. *Demonstrate that the land is suitable for its intended use.*
- iii. *Demonstrate that remediation works will eliminate the risk and render the land suitable for development.*

RESPONSE

Section 9.0 of the Geotechnical Assessment provided in Appendix C provides a detailed response in accordance with the above. Further to the meeting of 17 October 2007, on the 7 November 2007 a draft copy of the Geotech Assessment was forwarded to Council for their review and comment. Council are yet to provide a response; however we remain satisfied that the additional information addresses Council's concerns.

As outlined previously in this report, comments provided by Council on the 17 April 2008 raised concerns that no geotechnical investigations or recommendations have been carried out on the flat, low land which contains compressible clay material as requested. Notwithstanding, it was not indicated if this issue could be addressed as a condition of consent.

Morrison Geotech have since advised that the lack of recommendations was not an oversight, but a reflection that such an issue would be addressed as part of the general approach to site preparation works. The site has been filled for a number of years, and it is likely some compression has occurred, however, in order for the development to proceed, some grading and minor filling will need to occur on site for the purposes of constructing the roads, lots, parks etc. As part of normal site preparation work and construction management, testing would occur then to determine settlement and stability issues.

Given that the site is flat and not identified as possessing any significant land slip hazard, Council have notified us during correspondence dated 5 August 2008 that they would be satisfied if we included within our Statement of Commitments the following condition:

"Detailed engineering plans, including the results and recommendations of any subsequent geotechnical testing for works proposed on the pre-filled flat section of the site identified in drawing Ref No. T14246 'Site Plan Lot 9 in DP 1039569' dated 7.03.07 prepared by B & P Surveys Consulting Surveyors, but not including the ecological buffer area nominated in the vicinity of the Integrated Housing Lot, are to be provided to the Director of Engineering Tweed Shire Council for approval and signoff prior to the issue of a construction certificate."

Statement of Commitments have been amended accordingly. Comments from Council have been included in Appendix O.

3.3 Roads, Public Transport and Connections

ISSUE

PROPOSED LANEWAYS

7. *Two laneways are proposed within the development. The cross sections show a 4.5m wide pavement width within a 6.5m wide road reserve. Neither of these laneways comply with Council's Development Design Specifications (contained within the Subdivision Manual - Section 5A of the DCP). Council's minimum laneway standards require a 6m wide pavement width within a 6m wide road reserve. Laneway No1 is to be amended to comply with the minimum standard, please see below for comments in relation to Laneway No. 2.*
8. *Laneway No 2 does not provide adequate access to street frontage for proposed lots 56-59 and Lots 60-65, only laneway frontage. Council's Development Design Specifications stipulates that laneways are only to provide access to the side and rear of lots principally for access to garages. Proposed laneway No. 2 is to be*

designed as an access road with a pavement width of 6m within a 13m road reserve.

RESPONSE

Pursuant to our submission of 18 March 2008, the plan of subdivision has been amended as a consequence of the Council's comments and subsequently the plan no longer proposes laneways (Refer Appendix S).

PROPOSED ACCESS EASEMENTS

9. *Five 'access easements' are proposed within the subdivision. Tweed Shire Council's Development Design Specifications do not address 'access easements'. The 'access easements' are to be amended to serve as either a right of carriageway or a local access road under Council's design standards. An urban access road is maintained by Council and a right of carriageway is maintained by all allotments accessing the right of carriageway. Council will not accept substandard roads to maintain.*

A number of other issues associated with the proposed access easements have not been addressed (which are usually accounted for within an urban subdivision when providing a local access street). These issues include;

- *No on street car parking is provided.*
- *No turnaround is located at end for the provision of a garbage truck. The current design requires future residents to walk up to 140m to place a wheelie bin within a suitable position for collection by a garbage truck.*
- *Two of the proposed parks are located on 'access easements'. The parks are to be accessible by all residents with the park frontage accessible via a local access street.*

10. *The following proposed 'access easements' are to be upgraded to conform with Council's minimum local access street standards;*

- a. *The road providing access to proposed lots 1 12 - 1 16 is to be upgraded to a local access street with a minimum pavement width of 6m within a 13m road reserve in accordance with Council's Development Design Specifications. A cul-de-sac is to be provided at the end of the local access street.*
- b. *The roads termed 'access easement' providing access to proposed lots 141 - 145, lots 166 - 168 and lot 78 are to be upgraded to a local access street with a minimum pavement width of 6m within a 13m road reserve in accordance with Council's Development Design Specifications. A cul-de-sac is to be provided at the end of the local access street.*
- c. *The remaining 'access easements' not upgraded to comply with Council's Development Design Specifications for an urban local access road are to be amended to serve as a right of carriageway. Lot boundaries are to be extended to facilitate a right of carriageway traversing through the lots. The 88B instrument required at the subdivision certificate stage will be required to reflect the right of carriageway burdening and benefiting appropriate lots. Future maintenance is burdened by all allotments using the right of carriageway.*

RESPONSE

The proposed development layout has identified the access easements as rights of carriage way that will burden the applicable lots. These access easements will not be

dedicated to Council and have been designed to address Council's requirement for the number of lots to be accessed via the easements. With regard to garbage truck access, garbage trucks will be able to sufficiently turn within the local road, further garbage pads are provided at the intersection of access ways and the local road to provide for waste pick up facilities. The detail design of the pads can be addressed as part of the construction certificate; however, access easement lengths have been reduced to ensure that future residents will have a maximum distance of 50metres to travel. The access easements have been shortened to ensure access to parks via a local road. The access easement around Seaview Park has been widened to accommodate full road reserve Refer to Landscape Plan 71887_SD_2.05 and Subdivision Plan Drawing No: 20934-05M provided in Appendix S.

ISSUE

PROPOSED ROADS

11. *Road No. 3 will be required to be upgraded to a wider access street. A 6m wide pavement within a 13m road reserve is proposed for the full length of Road No. 3 which is approximately 820m in length. Council's Development Design Specifications stipulate a 6m wide pavement within a 13m road reserve is only applicable for the first 200m before a wider access street is required. Wider access streets specify a 7.5m wide pavement within a 14.5m road reserve. Amended plans are to be provided to demonstrate compliance.*

RESPONSE

The previous response provided on 18 March 2008 remains. That is, appendix J provides detailed response to this comment. In summary the road has been upgraded in accordance with Council's response. Refer to Figure No.DA18A included within Appendix J.

ISSUE

Unnamed Roads located within the Integrated housing area located at the northern end of the site

12. *The layout plans show a 10m wide road. No typical cross sections for these roads are provided with the standard cross section drawing no. 7214/29/01-DAI 8 prepared by Carndo dated 8 December 2006.*

The same standards apply to roads in the area designated 'Integrated Housing' for as for an urban subdivision. The roads are to comply with Council's Development Design Specifications - DI Road Design for an urban local access street. The minimum width for a local access street is a 6m wide pavement within a 13m road reserve. The plans are to be amended to reflect these requirements.

RESPONSE

Note that Integrate of Housing Lot layout no longer forms part of this application. The recommendations of Council will be referenced in the future design of the Integrated Housing Lot.

ISSUE

SIGHT DISTANCE

13. *Please specify the ameliorative measures to be under taken at the intersection of Ocean Avenue and Road No.3 to achieve adequate sight distance.*
14. *The intersection of Hillcrest Avenue and Road No. 3 has inadequate sight distance for vehicles turning right into or out of the site. Specify ameliorative measures should be undertaken to achieve adequate sight distance at this*

intersection. The recommendation for a no right turn sign at this intersection is not considered adequate.

RESPONSE

Refer to Appendix J, Cardno Sketch No 13 which shows Road 3 being a continuation of Ocean Avenue. Road No 3 will be the priority road over Seaview Avenue. Traffic calming including deflector islands as shown on the Sketch will be installed at the intersection of Road 3 and Ocean Avenue. Stop signage will be installed on the Ocean Avenue intersection.

Pursuant to our meeting with Tweed Shire Council of 29 April 2008 we have also provided further information detailing Road 3 Elbow design in Drawing no. 7214/29/01-DA026(refer Appendix O. Council have responded in correspondence dated 5 August 2008 that this drawing adequately addresses there concerns(refer Appendix O).

ISSUE

ROAD RADIUS

15. Please provide details which demonstrate that the horizontal alignment (radius) for the intersections of Road No. 3 1 Ocean Avenue and Road No.3 / Hillcrest Avenue is in accordance with Australian standards and can accommodate a garage truck. Turning templates are to be provided to demonstrate compliance.

RESPONSE

Refer to Appendix J, Cardno Sketch No 13 which shows Road 3/ Hillcrest Avenue being restricted to Left in and Left out traffic turning movements only. A median island in addition to signage will be installed on Hillcrest Avenue to prevent illegal turning.

ISSUE

TRAFFIC RESTRICTION

16. Provide detail of how traffic from the proposed development can be restricted from using Merlot Drive. The traffic report recommends only 25 allotments are to access Merlot Drive.

RESPONSE

Pursuant to our meeting with Tweed Shire Council of 29 April 2008 we have reinstated the link to Merlot Court as per the layout plan exhibited with the Environmental Assessment Report.

ISSUE:

SLOW POINTS

17. Slow points or speed control devices are to be provided on Road No.3 which has gradients varying from 16% to 0.5% and is 820111 in length.

RESPONSE

A traffic slow point has been introduced on Road No 3 adjacent to lots 157 / 98. The slow point will have small islands and signage indicating a narrowing of the carriageway and slowing traffic.

ISSUE

FOOTPATHS

18. A 1.2m wide footpath is to be provided on all roads as per Council's Development Design Specifications. The layout plan and cross sections are to be amended to

provide for a 1.2m wide footpath on all roads as per Council's Development Design Specifications and Standard Drawings.

RESPONSE

A 1.2m wide footpath / stairway within the proposed 5 m wide drainage reserve will be constructed between lots 97/98 and 85/86. A single handrail will be placed on the stair sections. Full details of the pathway and stairs will be submitted as part of the Construction Certificate application.

ISSUE

PEDESTRIAN CONNECTIVITY

19. *Pedestrian connectivity is not proposed between proposed Roads No. 1 and 3, therefore effectively separating the subdivision into two separate sections. A pedestrian link is to be provided between proposed Road No. 1 and Road No. 3 to provide connectivity throughout the subdivision and to allow residents to access public transport. The layout plan is to be amended to provide a pedestrian link.*

RESPONSE

Refer to Appendix J, sketch No 14. Two bus stops are now proposed along Fraser Drive to ensure all residents are within 400 m of a bus stop. A 1.2m wide footpath will be built through the open space adjacent to lot 125 to link to the bus stop for the Part B development. Full details of the pathway and stairs will be submitted as part of the Construction Certificate application.

ISSUE

PUBLIC TRANSPORT

20. *Public transport has not been adequately addressed within the development.*

A bus stop and shelter is recommended to be located on Fraser Drive near the intersection of Road No. This recommendation was based on using a 400m radial area, the traffic report stating that the potential catchments encompass approximately 89% of the total dwellings. This assumption is inappropriate due to the fact that no pedestrian link is shown between part A and part B of the development, therefore not allowing future residents within Part B of the subdivision to access the proposed bus stop on Fraser Drive.

Council's standards also require that 90% of residents are able to walk not more than 400m to a bus stop, therefore the use of a radial distance to address public transport is incorrect. Further information is required to adequately address Council's criteria in regards to public transport.

RESPONSE

Refer to Appendix J, sketch No 14. Two bus stops are now proposed along Fraser Drive to ensure all residents are within 400 m of a bus stop. A 1.2m wide footpath will be built through the open space adjacent to lot 125 to link to the bus stop for the Part B development. Full details of the pathway and stairs will be submitted as part of the Construction Certificate application.

ISSUE

Rear Access to be provided Lot 2 DP 1000385

21. *Access to adjoining allotment Lot 2 DP 1000385 is to be provided from Road No. 1. Rear access is to be provided to Lot 2 DP 1000385, by deletion of one of the proposed allotments adjoining Lot 2 DP 1000385.*

RESPONSE

Currently Lot 2 is accessed from Fraser Drive. This will remain the case.

ISSUE

PARKING

22. As previously addressed under access easements, the proposed access easements do not address on-street parking as required by Council's development design specifications for an urban local access road.

RESPONSE

The access easements/ laneways have been incorrectly identified in the submission documents. They are now correctly proposed as RIGHT OF WAY ACCESS. The Right of Way Access complies with minimum standards of access in accordance with TSC Road Design Spec D1 – Clause D1.22. Up to 5 properties can be served with a 4.5m wide formed pavement. The allotments proposed for the south and west slopes are all large allotments, therefore adequate parking can be accommodated on each lot.

ISSUE

MANOEUVRING

23. As previously addressed under access easements, the proposed easements do not address the manoeuvrability for a garbage truck.

RESPONSE

Refer to Appendix J, Cardno Sketch No 13 which shows the computer auto turn turning path movements for a garbage truck /service vehicle. All turning movements are satisfactory based on this analysis.

ISSUE:

ROAD WIDENING

24. As indicated on the plan, it is essential that road widening be dedicated for the sites full frontage to Fraser Drive to future widening to a 4 lanes.

RESPONSE

Noted.

ISSUE

FRASER DRIVE ACCESS

25. The main access road to the site needs to access Fraser Drive through an intersection that can cater for a '4th leg' opposite the proposed access to enable efficient access to the development site on the east side of Fraser drive (there may be some conflict with the major drainage system proposed at this intersection). A detailed intersection design is required for this intersection and when approved, it must be constructed prior to release of the subdivision allotments.

26. The southern intersection is to be restricted to left inlet out only and is to be designed in such a way that this restriction is controlled by physical means such as concrete islands.

RESPONSE

Noted.

3.4 Stormwater Issues

ISSUE

27. Provide design confirmation that the 3 cell 1500mm diameter piped system is adequate to cater for ARI 100 year stormwater runoff from a future urbanized catchment east of Fraser Drive, without resulting in flooding in Fraser Drive. Preliminary design details of Q100 inlet structures shall also be provided.

RESPONSE

Following our submission of 18 March 2008, Tweed Shire Council advised us in our meeting of the 29 April 2008 of their requirement to protect their current ability to access the existing drainage easement extending across from Fraser Drive to the SEPP 14 Wetland. The ability to access the easement and to undertake works to manage any flood events was diminished by the having the existing open easement replaced by an underground piped system.

Further to on-going discussions with Council, we have since amended our plan of subdivision to incorporate a failsafe drainage overflow channel adjacent to the main entrance of Fraser Drive. A conceptual plan was provided to Council on the 6th August 2008 for comment. The overflow channel addresses the concerns of Council should the piped system become blocked.

The piped system caters for an ARI 100 year storm event.

Minutes from the Council Meeting is provided in Appendix O

ISSUE

28. Amend the design of the 3 cell 1500mm diameter piped system to provide a straighter alignment (eliminating 90 degree bends) between the catchment east of Fraser Drive and the bypass channel for the treatment detention ponds in Part A of the subdivision, to maximise inlet capacity and minimise the chance of blockage. Further investigation of solutions to the potential conflict between stormwater services and the existing water main in Fraser Drive shall also be provided, to allow for the relocation of the stormwater inlet to the eastern side of Fraser Drive to eliminate the existing 900mm culvert.

RESPONSE

This issue has been addressed in Appendix B. In summary, Council have previously requested that this site and the site across the road share a common intersection for access to Fraser Drive. The entrance to this site was placed in accordance with Council's recommendation. As the stormwater pipes are located under the roadway due to their size, it makes it impossible to align the stormwater line perpendicular to Fraser Drive without affecting opposite properties driveway access, or possible future development. Even placing pipes under Fraser Drive at a 45 degree angle to the road would require earthworks in the opposite property to change the existing overland flowpath, and re-grade it to the new culvert crossing.

This response remains as per our submission of the 18th March 2008.

ISSUE

29. Identify the location of and provide preliminary design for drainage services, including interallotment drainage and ARI 100 year overland flow paths, to collect and convey runoff from external stormwater catchments to the west of the site

(Hillcrest Avenue, Ridgeway St, Ocean Avenue and Seaview Street) through the subdivision to a lawful point of discharge.

RESPONSE

In summary, inter allotment drainage is better considered in the detailed design phase. We request that Council address this issue as a condition of consent.

This response remains as per our submission of the 18th March 2008.

ISSUE

30. *Provide an assessment of impacts on downstream properties and public infrastructure south of the subdivision site (Shiraz Place, Merlot Court) due to increased urban stormwater runoff.*

RESPONSE

No increased runoff is attributed to the external downstream properties as the catchment is modified to ensure nil increase in runoff. Refer to Cardno Stormwater Management Plan dated 8 December 2006 (page 3 first paragraph) provided in Appendix B. The portion of impervious area of the catchment has increased, but the overall area has decreased, creating no net increase in runoff. Further to the meeting of 17 October 2007, Council were to provide further clarification on this matter.

Notwithstanding the above, pursuant to our meeting with the Tweed Shire Council on 29 April 2008, we agreed to provide further information on this matter to Council for consideration. The following is provided in response to our meeting of 29 April 2008.

No increase in peak runoff is expected to be attributed to the external downstream properties south of the proposed development site (i.e. Shiraz Place and Merlot Court) as the contributing area of the southern catchment will be modified as part of the proposed development works to ensure nil increase in peak runoff post development. Refer to Cardno Stormwater Management Plan, dated 8 December 2006 (page 3 first paragraph) provided in Appendix B.

It is noted that the fraction of impervious area will increase as part of the proposed development of the site. Therefore to ensure no net increase in peak flows discharging from the developed southern catchment the contributing area of the southern catchment will be sufficiently reduced to produce an equivalent pre-development peak discharge. The surplus area from the southern catchment will be redirected towards the eastern contributing catchment. The on-site detention storage volume proposed within the eastern catchment will be sized to allow for the area redirected from the southern catchment.

Inter-allotment drainage should be provided within a drainage easement to be located along the southern boundary of the proposed development site. This drainage system should be designed to convey runoff to the existing drainage pits located along the southern property boundary. A drainage reserve and easement have been provided within the existing subdivision located south of the proposed development to allow runoff from the subject site to discharge through to the existing drainage infrastructure located with Shiraz Place and Vintage Lakes Drive.

Copies of the preliminary existing and developed condition calculations, undertaken

using the rational method and the associated catchment plans Figure No.'s DA 19 and 20 have been included in the Cardno Stormwater Management Plan.

ISSUE

31. *Provide justification that the existing culverts under Fraser Drive and receiving downstream private land represent a lawful point of stormwater discharge for the eastern catchment of Part B of the subdivision, as defined by Council's Subdivision Manual (Section A5 of the Tweed Shire DCP).*

RESPONSE

We refer to Tweed Shire Council's Consolidated Development Control Plan section A5.4.7 Stormwater, Drainage, Waterways and Flooding, subheading 'Drainage' which states:

Lawful point of discharge

Stormwater runoff and drainage must only be discharged from a subdivision at a "lawful point of discharge". This must be on or immediately adjacent to the development site and may be:

- *a natural watercourse or waterway to which the development site naturally drains;*
- *a "lawful point of discharge" agreed to by Council (i.e. an existing constructed public drain).*

In this regard, the proposed drainage strategy utilises the existing culverts that exist under Fraser Drive. We are unable to determine when the existing culverts were constructed, however, from our inspection of previously prepared contour plan we can established the existing drainage point is consistent with a natural watercourse or waterway to which the development naturally drains.

Appendix B includes a contour plan prepared by McLauchland Surveying Pty Ltd Consulting Surveyors. While no date can be attributed to this plan, we are advised this plan was prepared prior to any filling (refer to email from Barry Green, Director, Landsurv dated 8 July 2007, included in Appendix B).

In addition we inspected the adjacent property to determine the efficacy of the discharge point. The inspection was undertaken on the 9 July 2008. From this inspection it appeared the culverts drained into a constructed drainage channel (or waterway) which ran along the adjacent to the property boundary north to an existing water way identified on the Topographic maps prepared by the Department of Lands.

The photographs taken from the inspection are provided below:



Photo 1: View from Sullivans' Land of existing drainage culvert looking towards development site, photo taken 9 July 2008



Photo 2: Drainage channel heading north from existing culvert, Sullivans Land, 9 July 2008



Photo 3: View of drainage line heading north, taken from Fraser Drive road reserve, 9 July 2008

From these photos we can determine that our proposed discharge point can be utilised as the legal point of discharge. We note that our stormwater drainage strategy will maintain the current flows into the existing drainage corridor. There will not be a net increase in discharge post development of our site.

In this regard we believe we adequately demonstrated that our site drainages within the existing drainage regime and will not adversely impact on the adjoining land.

ISSUE

32. Provide preliminary design for outlet control measures for the on site detention pond proposed on the eastern boundary of Part 8 of the subdivision, including any works required at the inlets to the receiving culverts under Fraser Drive.

RESPONSE

In correspondence dated 17 April 2008, Council have agreed to address this issue as a condition of consent (refer Appendix O) A preliminary design sketch can be provided in accordance with normal development application documentation.

ISSUE

33. Provide an assessment of the existing cross sectional capacity of the open channel through the SEPP14 wetland, downstream of the subdivision. This assessment shall include a design and plan of works to upgrade this channel as necessary to cater for post development flows from the subdivision.

RESPONSE

The existing drain, by survey, has no capacity. It grades up hill and in some places is over 0.5m, lower than the outlet at James Road. Figure DA 20 which was provided as part of the supporting engineering diagrams to the Environmental Assessment Report, is included in Appendix B as supplementary information. This drawing shows levels. The regime is to maintain existing flows into the channel and wetland by detention control. The channel should remain unchanged to maintain ecological balance.

Section 2.2 of the Ecological Buffer Analysis discusses the nature of the open channel and its use. From this assessment it would appear that the conclusions drawn in response to the stormwater management issues are valid.

Notwithstanding, pursuant to our meeting with Tweed Shire Council of 29 April 2008, we sought to provide further information to address Council's comments of the 17 April 2008. This information is provided below.

Existing survey information of the drainage channel through the SEPP 14 wetland area indicates that the existing channel has no capacity. The existing levels tend to show that the channel generally grades up hill, and in some places is over 0.5m lower than the outlet culverts located under James Road. Refer to Figure No. DA 20 included in Appendix S which shows some existing survey levels. The proposed flow regime is to maintain existing discharges into the channel and wetland by detention control. It is suggested that the channel should remain unchanged to maintain ecological balance.

Preliminary figures prepared for the proposed stormwater treatment and detention pond indicate the standing water level for the pond at RL 1.0m AHD. Existing survey information of the culverts located under James Road show the upstream invert levels to be at approximately RL 0.0m AHD. This indicates that any runoff that ponds within the SEPP 14 wetland area will drain out through the James Road culverts before backing up into the proposed stormwater pond located within the proposed development site.

ISSUE

34. Provide a plan of management for the SEPP14 wetland and buffer zone for the concurrence of Council, the Department of Planning and other relevant government agencies. The plan of management must identify the required channel design to adequately cater for the post development flows from the subdivision, and protocols for Council to carry out maintenance works to maintain an adequate cross section in the open channel, without compromising the ecology of the wetland. These maintenance works must be able to be carried out by Council using conventional equipment, and the plan of management must address maintenance access into the wetland.

RESPONSE

Further to our submission to the Department of Planning of the 18 March 2008, Tweed Shire Council's comments dated 17 April 2008 and our meeting with Tweed Shire Council of 29 April 2008, we understand that additional information to address this issue is no longer required as the flows leaving the site will disperse through the wetland area.

ISSUE

35. *Provide preliminary design for outlet control measures for the on site detention pond proposed for Part A of the subdivision, to maintain a hydraulic regime compatible with the receiving SEPP14 wetland.*

RESPONSE

The outlets will be designed at detailed design phase. Council still have final approval during construction & s68 approvals. Refer to Appendix B, attached Sketch SK-016 for typical details. Tweed Shire Council have agreed to apply conditions of consent in this regard. Please refer to Council's correspondence dated 17 April 2008, Appendix O.

ISSUE

36. *Provide an engineering assessment as to the compatibility of the pond in Part A of the subdivision as a combined water treatment and on site detention device. Required volumes for on site detention must account for standing water levels necessary for water quality control in constructed wetlands. The assessment must consider how the combined device can cater for ARI 100 year storm detention, and water quality measures up to the ARI 3 month storm, without the remobilisation of pollutants under larger flows.*

RESPONSE

This is a query relating to detailed design. Council still have final approval during construction and S68 approvals. Similar wetlands that incorporate water quality treatment and detention have been approved and constructed in the Terranora Azure development, located approximately 5 km from the Fraser Drive site. The wetland is designed so the water level remains constant during dry periods, but rises during rainfall events to attenuate the flows leaving the site. Additional storage volume is allowed for in the design of the wetland. See attached pictures of similar wetland located in Terranora. Tweed Shire Council have agreed to apply conditions of consent in this regard. Please refer to Council's correspondence dated 17 April 2008, Appendix O.

ISSUE

37. *Amend stormwater drawings to include proprietary treatment devices on all minor road drainage systems that do not discharge to the water quality wetland in Part A of the subdivision. Flows from external catchments do not require treatment.*

RESPONSE

All flows from the northern portion of the site go into the wetland except for the medium density site which has a GPT. The medium density site catchment has been included in the sizing of the wetland as requested by Danny Rose via email (28th August 2006). It is proposed to install Ecosol RSF100 or similar stormwater treatment devices into the Gully pits connecting into the 3x1500dia line before discharging into SEPP14 wetland as opposed to an additional dedicated drainage line for these pits. Tweed Shire Council have agreed to apply conditions of consent in this regard. Please refer to Council's correspondence dated 17 April 2008, Appendix O.

ISSUE

38. *Provide an assessment of all stormwater management facilities in public open space in accordance with the criteria set out in Table A5-8.6 of Section A5 of the*

Tweed Shire DCP, in order for these areas to be credited towards open space obligations for the subdivision.

RESPONSE

This comment refers to the two open space areas that also accommodate drainage features such as the artificial wetland and the park adjacent to Fraser Drive which provides for intermittent detention.

Table A5-8.6 states that drainage open space will be considered for a credit towards provision of open space category b1 Local Parks if the drainage open space under consideration complies with standards and criteria set out in Table A5-8 b2 for that category. Table A5-8 b2 refers to Standard A5.8.2.2: Neighbourhood Parks.

The following table is provided for your assessment:

Element	Standard	Artificial Wetland	Fraser Drive Park	Comment
Area	1-1.5 ha, greater than 75% of perimeter framed by streets.	1.752 ha, bounded by wetland, private properties and the integrated housing lot.	7355 sq.m, bounded by road, and future Fraser Drive.	Fraser Drive Park conforms.
Shape	Length/width ratio shall not exceed 4:1	Ratio =1.6:1	Ratio = 2.5:1	Parks do not conform
Landform	>80% of the area to have slopes less than <15%. Must be filled to greater than Q100-1metre. Must have Q1 flood immunity	Area is flat . Height between 2.6-2.7m AHD, above Q100. Is immune from Q1 flooding	Proposed area is flat. Height between 4-5metres AHD. Not flood prone. Designed as dry detention basin, unlikely to flood in Q1 events.	Conforms
Access	Vehicular access, accessible for garbage removal, pedestrian and cycle accessible.	Yes	Yes	Conforms
Road Frontage	>75% of perimeter for surveillance, security and	No	No.	Does not conform.

Element	Standard	Artificial Wetland	Fraser Drive Park	Comment
	visibility.			
Amenities	Drinking fountains, seating shade landscaping walkways, lighting if appropriate.	To be designed	To be designed	Is able to comply if requested by Council.
Constraints	Must not contain contaminated land, be separated from roads, waterways and overhead electrical cables.	Complies	Complies	Conforms
Services	Access for garbage collection, regular mowing, water, sewerage, electricity	Access is available	Access is available	Conforms

The assessment concludes that the parks used for drainage purposes only partially conform to the performance criteria specified in Council's DCP. We have not considered these parks to form part of the credit in the provision of open space, but it should be noted that the provision these areas greatly enhance visual amenity and provide a significant benefit in addressing existing stormwater management drainage issues. We request that Council view the contribution in light of the merits of the proposal.

3.5 Flooding

ISSUE

39. Amend Cardno Figure No.DA04 "Proposed Finished Surface Contours Plan" (Drawing No. 7214/29/01-DA04) to extend the flood evacuation route along "Road No.1" to the medium density allotment at the northern extent of the subdivision. This evacuation route should be constructed at no less than the adopted design flood level of RL 2.6m AHD. Stormwater management in this area should be amended as necessary to cater for any increase in road levels to comply with the evacuation route requirements.

RESPONSE

NOTED.

3.6 Open Space

ISSUE

40. Based on an estimated population of 492 people, approximately 5,600m² of functional open space (parks) is to be provided. It is considered that the 2,500 m² (park adjacent to road 2) meets Councils criteria. If the park at the end of Road 4 is made functional, total casual open space contribution would be acceptable. However, with regard to the following, it is considered insufficient area of usable local park has been provided.

The park located on Fraser Drive at the end of Road no. 4 has the following features:

- Located on sloping ground ranging from 10% to 30%. Slopes less than 10% are unable to be mowed and maintained by Council.
- Access is via a cul-de-sac and the private access easement. This park is not considered accessible for the majority of residents. Parking would be limited to 1-2 vehicles within the cul-de-sac area not affected by the access easement. The private access easement does not address on street parking, due to the narrow width of the easement and the easement is not a local access street maintained by Council.

The following features are noted in relation to the park located along the rear of properties on Seaview Street:

- Located on sloping ground ranging from 20% to over 33%. These types, of slopes are unable to be mowed and maintained by Council. The steepness of the land is not considered to a recreational area suitable for the activities of a park i.e. playing, walking a dog etc.
- Access to the majority of the park is via a private access easement. The access is not considered suitable for the majority of the residents within the subdivision.
- Configuration requirements are not met.

Council's Subdivision Manual requires the following minimum standards for local parks;

- Parks are to be located that 95% of residences are located within 400m walking distance.
- A central activity zone of 400 m² for play areas and equipment (with a 20m buffer to residences).
- 80% of the park area is to have slopes less than 8%.
- Vehicular access is to be from local access streets, providing a minimum of 50% frontage to the park.

The two parks located within 'Part B' of the development do not provide passive open space areas and areas for unstructured open space. The two parks are to be amended to comply with Council's Subdivision Manual Specifications.

The applicant should refer to Section A5 'Subdivision Manual' of Councils Development Control Plan, and particularly tables A5-8.2.1, A5-8.2.2 and A5- 8.5.2.3 which provide guidance on park requirements. Please also note DCP No. 3 and Section 94 contribution plan no. 1 apply to this area.

RESPONSE

The previous assessment undertaken for the Fraser Drive Park (Merlot Court) demonstrates that it only partially addresses Council's criteria under the DCP, further to the amendments flagged throughout the proposal. That is the local road being extended and the access easement being reduced.

It should be pointed out that the Fraser Drive Park is provided in order to address stormwater drainage issues. Its dual purpose is that it will provide the opportunity to retain existing drainage patterns across the site. We have not considered its contribution as structured open space or a local park in the sense of the DCP, however, we have recognised its dual purpose in provided a landscaped feature that will greatly contribute to the future amenity of future residents. We request that Council form its own view as we are prepared to dedicate this area to Council, while recognising the Council has the opportunity to levy s94 contributions to assist in its future management. The dedication and levies should be tied to Council being satisfied with its final design and construction.

With regard to Seaview Park, further to our meeting with Tweed Shire Council of the 29 April 2008 and 23 June 2008 we have now resolved a proposed park plan that will satisfy the requirement for open space within the site. Reference should be made to the proposed plan of subdivision "Proposed Subdivision Drawing No: 20934-05M" prepared by Conics Pty Ltd (Appendix S) and Appendix H.

ISSUE

41. *Further information is required on the design of the open space / detention basin to determine its functionality as a usable open space area.*
42. *With regard to the SEPP 14 Wetland, this park would be classified as an Environmental Open Space area and would not be included in Casual or Structured Open Space contribution.*
43. *The entry statement should take into consideration maintenance requirements.*

RESPONSE

Please refer to the assessment undertaken to address point 38 above. With regard to points 42 and 43, we note the comments.

3.7 Bushfire Assessment

ISSUE

44. *The applicant is advised that the RFS 'Planning for Bushfire Protection' guidelines state that Asset Protection Zones should be located on private land. The plan of development should clearly indicate the APZ as being within private land.*

RESPONSE

The majority of the Asset Protection Zone (APZ) is within private lots or the proposed integrated housing lot. Because the layout has been designed in part with an emphasis on protecting and conserving the SEPP 14 Wetland and associated Endangered Ecological Community we are unable to exchange the location of the artificial wetland area in order to ensure that the remaining APZ is located within private land.

We have considered the requirements on the Bushfire guidelines on balance with the enhanced environmental and urban design outcomes delivered by the proposal. In this light the remaining APZ that is located in the area dedicated to Council will be

managed by Council. Further there is little risk from bushfire threat in this area on private property.

Further to our meeting with Tweed Shire Council of 29 April 2008 we sought to review the provision of the APZ having regard to the management issues Council raised in our meeting.

Please refer to the addendum to the Bushfire Assessment provided in Appendix E. The addendum concludes that in regard to future management of this area:

"that the proposed open space should be managed as a low fuel zone or Outer Protection Area (OPA) for 20m from the rear boundaries of the residential properties. The OPA should provide a tree canopy cover of less than 30% and be managed in accordance with Planning for Bush Fire Protection 2006. The understory in this area should be managed (mowed where possible) to treat all shrubs and grasses on an annual basis in advance of bush fire season (usually September)."

WATER ISSUE

45. *The water network proposed interconnects two different pressure zones. Some detailed investigation will be needed to determine whether the higher level lots should be supplied from Glenys Street zone or from Hillcrest zone. It may be that two supply mains will be required in "Road No 3" between Hillcrest Avenue and "Road No.4". Changes to the existing Hillcrest and Glenys Street zones are also proposed including the creation of an additional booster zone for the upper levels of Hillcrest.*
46. *The applicant is advised that analysis of the area has shown a need for a 200 diameter main to connect the 150 diameter main in Merlot Street to the existing 200 main in Fraser Drive.*

RESPONSE

Noted. These issues can be addressed as part of the detailed design.

SEWER ISSUE

47. *The sewer reticulation plan seems to have some peculiar connections that would not exist in reality, particularly in relation to Road No 3. Further details are requested in this regard.*

RESPONSE

Sewer connection at west end of Road 3 will not exist. The sewer line will stop at Lot 161.

48. *Attention needs to be given to the depth of sewer to SPS 3022 given the constraints of Council's Specification D2 and the existing depth of the inlet to the pump station. Further detailed design is required in this regard.*

RESPONSE

This issue is noted and better considered as part of the detailed design. Council will still have final approval during construction of the development.

3.8 Environmental Health Considerations

ISSUE

ACID SULFATE SOILS MANAGEMENT PLAN

49. *The drilling of bore holes and the testing of soils within the actual excavation areas (such as detention basins) should be carried out rather than relying on test results relating to adjoining areas. Liming treatment rates may then be calculated directly rather than carrying out testing of excavated material at the time of actual excavation as is proposed. From practical experience testing done during excavation is unlikely to be carried out in a proper manner and excavation works are likely to proceed while samples are being analysed at the laboratory resulting in the improper management of Acid Sulfate Soils.*
50. *Water quality investigations conclude that there is some influx of salt water occurring in the surface drainage system of the site, as a result the ASS Management Plan should include the pH criteria for discharge to marine waters as well as fresh waters i.e. less than 0.2 unit change.*

RESPONSE

A revised Acid Sulfate Soils Management Plan has been prepared following the above comments. The Plan is located in Appendix K.

ISSUE

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

51. *Council has used 7am to 7pm as its standard construction site operating hours for many years. Element - Tasks Actions of the proposed Plan restricts hours of operation to 7am to 8pm. This should be amended to coincide with Council's criteria as residents have become accustomed to such operating hours as being the normal requirements.*
52. *Performance indicators under the Plan regarding Monitoring, record keeping, and Corrective Action should where applicable include reference to Vibration as well as Noise.*

RESPONSE

Noted. The Construction Management Plan is to be prepared as a condition of consent and will reflect the above comments.

ISSUE

ACOUSTIC ASSESSMENT

53. *A detailed review of this section was not carried out however the subject lot is outside of the 2020 ANEF for Coolangatta Airport and as such traffic noise impacts are likely to be the main consideration. Following a detailed review of the acoustic assessment, appropriate conditions should be placed on any consent issued. It may be appropriate to consider 88b Restrictions on Titles and / or post construction noise assessment to be carried out to investigate the success of construction noise attenuation measures.*

RESPONSE

Noted.

ISSUE

GROUNDWATER ASSESSMENT

54. *The recommendations as contained within Section 3.8 relating to the Groundwater Management Plan should be incorporated into conditions placed on any consent issued.*

RESPONSE

Noted.

ISSUE

SOIL CONTAMINATION REPORT

55. *Consideration should be given to including soil sampling of imported fill material to back up information provided by various other companies in respect to the potential contamination of this material.*
56. *Confirmation should be requested that the reported soil test Lab results have been adjusted for the use of the composite sampling methodology employed.*

RESPONSE

Rather than undertake soil sampling, an investigation was undertaken to determine if appropriate certification was provided to ensure that imported fill was not contaminated. Our investigation concluded that there is not risk from contamination from the fill.

ISSUE

CATTLE TICK DIP SITES

57. *It is noted that a cattle tick dip site exists across Fraser Drive opposite the proposed development. The likely impacts of any dip site that is within 200m of a proposed development should be assessed, using the ASSMAC Guidelines.*

RESPONSE

We understand that Council are aware that the cattle dip is downstream from the site, therefore the site is unlikely to be potentially impacted on. The findings of the supplementary Acid Sulfate Soil Study and Management Plan are located in Appendix K.

ISSUE

POWER LINES

58. *It is noted that there are above ground power lines traversing the site and future lines proposed near Fraser Drive. The applicant should investigate any Electromagnetic Field and Radiation relating to these lines, as well as assess any risk to human health that might consequently be involved.*

RESPONSE

The potential impact of any risk associated with Electromagnetic radiation has not been identified as an issue in our consultation with Council and the Department in preparing the request for Director General Environmental Assessment Requirements and the Environmental Assessment Report. The impacts of the existing powerlines are considered to be no more or less than that experienced by the surrounding existing residents that is minor from low voltage powerlines. Further, future residents along Fraser Drive will be buffered by a 10m wide reserve provided for the future expansion of Fraser Drive. Should Council however, consider that a serious risk is likely, conditions of consent can be included to ensure that such an investigation be required prior to the finalisation of the construction certificate.

3.9 Planning and Urban Design

ISSUE

CONSOLIDATED DCP SECTION A5 - SUBDIVISION MANUAL

59. *The application does not address the objectives outlined in section A5.4.7 Urban Structure further information is required in this regard. It is considered that a neighbourhood / local centre should be established on the site. The proposal should be amended to this end.*

RESPONSE

Pursuant to our submission of the 18 March 2008, Tweed Shire Council in their comments of the 17 April 2008 required further information in order to support our arguments for not providing a neighbourhood/local centre.

With respect to the comments made by Council, our submission of the 18 March 2008 sought to address all the objectives identified in section A5.4.8 Urban Structure, The provision of daily convenience centres within an urban structure is only one of eight objectives identified. We consider that Council, in the absence of any comment in response other than that of convenience centre, accepted that our development responded to the majority of the remaining objectives.

Our arguments for not providing a local shopping centre as identified in Map 2 of section B3 of the Consolidated Development Control Plan responded to the pragmatic realities of locating a convenience centre in the northern portion of our site that had limited exposure to the main traffic route, being Fraser Drive, and was not convenient to access from other parts of the site.

Further given our objective to maximise opportunities for the provision of affordable housing, the flat non constrained section of the site provided the ideal location to deliver this in balance to considering the need for a local retail centre. This needs to be considered also in light of the overall design of the site in which development density is significantly limited across the site due to the topography.

We concluded that the provision of a small local retail centre as anticipated by the DCP would not be considered a sustainable development outcome, as there is: little opportunity to expand; attract passing traffic; provide sufficient parking and adequately address potential impacts to future residential amenity from deliveries and parking.

The provision of a small retail centre in this particular would not be consistent with achieving the remaining objectives stated. We recognised that daily convenience opportunities were limited and thus drew attention to the fact our site did not retain the characteristics of other daily convenience centres located nearby, al be it implied rather than explicitly stated..

Notwithstanding, at our meeting of the 29 April 2008, we identified that the future local community will be adequately serviced by local convenience retail facilities at the newly constructed Banora Point Shopping Centre at the corner of Leisure Drive and Fraser Drive, approximately 800 metres south of the proposed site. This centre has since come on line pursuant to our submission of the 18 March 2008 and consequently was not identified in our assessment.

The Banora Point Shopping Centre provides convenience retail facilities such as a full line operating grocery store (Coles), newsagent, medical facilities, post office, café and other local retail opportunities (gift shops etc). The current centre is estimated to be greater than 4500 square metres and can be accessed by the current public transport network.

In light of satisfactorily responding all but one of the objectives identified in Section 5.4.7 of the DCP we believe that the requirement to provide local convenience centre in the location anticipated by Council does not demonstrate a sustainable land use decision, nor will it complement or enhance the amenity of future residents in this location.

While the provision of the Banora Point Shopping Centre does not strictly conform to the ideal of providing convenience facilities within a 5 to 10 minute walk of dwellings, we would consider that given the outcome anticipated by our development the provision of a walkable convenience location in our site would not represent a long term sustainable land use.

Nonetheless, on the 11th August 2008, the Department of Planning expressed satisfaction with our proposed plan of subdivision (see Appendix R).

ISSUE

60. With reference to Table A5-9.3, it is noted that lot sizes for duplexes are proposed less than 900m² and integrated housing is proposed at a density greater than 1/250rn. The applicant is requested to provide justification for smaller lots

RESPONSE

This issue has been addressed in the Section 1.6 Building Density/Type. We ask Council to refer to this section.

ISSUE

61. The applicant is required to address 'Lot Width and Garage Location' requirements for those lots with frontages less than 13metres (refer page 65-66 of A5 - Subdivision Manual).

RESPONSE

Further to our submission of the 18 March 2008, we note that all lots are now consistent with Council's design controls. Refer to Proposed Subdivision Drawing No: 20934-05M provided in Appendix S.

ISSUE

62. General design criteria should be submitted for:

- *Nominated duplex dwellings and integrated housing. Criteria should ensure that the streetscape will not be dominated by garages and will result in sufficient variety in design, setbacks and roof forms; and*
- *Development on sites over than 15%.*

RESPONSE

Dwellings and buildings will be subject to further assessment at the building stage. While we appreciate Council's concern, information regarding the general indicative building outcome was provided as part the Preliminary Environmental Assessment. Council reviewed the Preliminary Environmental Assessment in the preparation of the Director General's Environmental Assessment Requirements. We ask Council to review that information and provide specific advice should they have further concern.

We have emphasised that for the vast majority of duplex lots streetscapes will ensure a high level of built form amenity by providing rear access. Reference should be made to Appendix S which includes design concepts for duplex lots.

Due to the variety of lots proposed frontage setbacks will vary across the site. The design however will be consistent with that product already being developed and marketed by MFS Diversified Group particularly in the northern flat section. The built product, proposed to be developed is similar to contemporary small lot housing product being provided throughout the Gold Coast and Tweed.

We are of the opinion that sufficient controls already exist within the current planning and development framework that will ensure a satisfactory outcome with regards to built form, in addition we have committed to including as condition of consent restrictions to:

- a) use of roof materials in response to the issues raised by the Gold Coast Airport Limited; and
- b) the above restrictive covenant in relation to Lot widths and garages.

Should Council wish to suggest specific design criteria we would also consider implementing those as well.

With regard to developments on slopes greater than 15% future dwelling design will need to be in accordance with Section A 14, Cut and Fill on Residential Land. A14 applies to development on lots greater than 10%. Section A14.3.1 Dwelling Design states,

- 'Dwelling design is to adopt urban design principles that are sympathetic to the topographical features of the site and neighbouring area.'
- 'Dwellings must not be designed to be on a contiguous slab on ground type if the building site has a slope of greater than 10%.'
- 'Development on such land is to be of pole or pier construction or multiple slabs or the like that minimise the extent of cut and fill.'

This criteria provides specific direction to the future built form.

ISSUE

64. The applicant is requested to submit design concepts for future duplexes located on lots less than 900m² and integrated housing on lots less than 250m². In particular, concepts should demonstrate:

- a. *garages do not dominate the street;*
- b. *sufficient variety (through the use of varied setbacks, roof forms and materials);*
- c. *Legible entrances;*
- d. *high level of articulation including openings and balconies; and*
- e. *protection of privacy and amenity*

RESPONSE

The subdivision plan has been amended and no longer incorporates duplex lots less than 900m². Please refer to Drawing 20934-5M for details (refer Appendix S)

2.6.1 B3 - BANORA POINT WEST - TWEED HEADS SOUTH

ISSUE

65. Further to points raised, above, it is noted that the site is identified as Residential A within the consolidated DCP, Section 83. This area is intended to comprise

predominantly of detached dwellings. Justification should be provided for provision of medium density given (with regard to section B3.8).

RESPONSE

Justification for the provision of medium density development is provided Section 1.6 Building Type/Density. This response should be read in conjunction with the Socio Economic Impact Assessment in Appendix N and Section 3.6.2 'Banora Point West – South Tweed' of the Environmental Assessment Report.

ISSUE

66. As identified above, a local shop is indicated as being required, the plan should be amended for provision of a neighbourhood centre.

RESPONSE

We have addressed the issue of a neighbourhood centre as part of our response to point 59 above. In summary, we have not proposed the neighbourhood centre within our development due to:

- a) the limited availability of suitable land that can service adequate and viable neighbourhood centre, the neighbourhood centre would be need to be on the flat portion of the site;
- b) medium density controls limit development to a two storey height limit, further we are seeking variations to medium density lots sizes to achieve at least an 8 dwellings per hectare across the site which is significantly less than what is proposed for urban development (that is 15 dwellings per hectare), the reduced density reflects the approach to provide a development sensitive to the topographical constraints and conservation values of the site; and
- c) access and proximity to Fraser Drive is limited due to the provision of the 10m buffer, further Council have only long term plans for the upgrade of Fraser Drive.

Section 4.16 reviews the proximity of existing neighbourhood and social centres in relation to our site. We would consider that the site is adequately serviced by the existing facilities.

3.10 General

ISSUE

67. Various allotments have roads at their front and rear. The plans should be amended to indicate which side access is proposed for these allotments.

RESPONSE

Council are advised that where lots have dual frontage to local roads and lane ways (particularly on the northern flat section) access will be from the rear lane way. On the south west slopes reference should be made to the supporting engineering diagrams which indicate that for all lots except 112-116, access is from the top of the lot.

68. The proposed Subdivision Plan (number 20934-5d) prepared by PMM, dated 23 May 2007 indicates total site area for Part A and Part B. The applicant is requested to confirm if this area is net or gross (including areas for future road widening and parks).

RESPONSE

Confirmation is provided in the preferred project layout, Please refer to Proposed Subdivision Drawing No. 20934-05M. An A1 plan to scale is provided in Appendix S.

ISSUE

69. the applicant is requested to complete the road closure process of Champagne Drive, so this land can be amalgamated with the site (Champagne Drive is still in Council ownership).

RESPONSE

Appendix M includes Council's recommendation supporting the closure of Champagne Drive. To this end we understand that the closure cannot be finalised until a subdivision plan has been registered. A plan cannot be registered until the proposed development has been determined and approved by the Minister of Planning. In this regard Council have granted permission to utilise Champagne Drive as part of the application. Owners consent is provided in Appendix M.

ISSUE

70. The applicant is requested to provide details on the future intent of Lot 2 on DPI000385. Confirm if this allotment has been incorporated within the site area.

RESPONSE

Lot 2 is utilised to the extent of providing access off Fraser Drive. As part of this application, the boundary of Lot 2 will be amended to ensure that access is preserved within the overall development. Council should refer to Appendix S, plan "Proposed Boundary Adjustment Drawing No: 12512B" prepared by B&P Surveys Consulting Surveyors. Lot 2 is only included to the extent of the access road.

ISSUE

71. Council Officers are not in support of any gated communities that may be proposed within the subdivision (i.e. the integrated housing component).

RESPONSE

We note Council's comments.

ISSUE

72. The submitted Landscape Concept Plan (dated December 2006, prepared by VIVO design) includes design concepts for the acoustic fence and entry statement. Given the length of the fence required along the frontage (approximately 800 metres) and its height (2.2 metres), further details are required to reduce its visual impacts. This may include greater variation in material design, mounding and landscaping variation.

RESPONSE

Revised Landscape Plans (dated July 2008 prepared by Conics) addressing this issue are provided in Appendix H.

ISSUE

73. The applicant is requested to provide a cross section of the Fraser Drive frontage depicting the levels of dwellings, fence, mounding / landscaping, proposed height of fill and the ground level in the adjoining road reserve.

74. A streetscape concept plan should be submitted indicating the visual quality of the frontage with regard to the height of the acoustic fence and the likely levels of

dwelling's adjoining Fraser Drive. Design criteria should be submitted for dwelling's adjoining the frontage to ensure they overlook the street as much as possible.

RESPONSE

A revised landscape assessment that addresses the above is provided in Appendix H.

2.8 ADDITIONAL COMMENTS (DATED 31 JULY 2007)

ISSUE

1. *The Development Traffic Advisory Group requested that: -*
 - a. *A further detailed traffic analysis be undertaken for the ultimate major internal road - connection with Fraser Drive.*
 - b. *Consideration be given to proposed Lot 1 having a longer frontage to enable a driveway to be constructed further away from the major intersection.*
 - c. *The layout should be integrated with the Tweed Shire Bicycle Plan.*

Response

A traffic analysis was undertaken as part of the Environmental Assessment Report. The analysis was included within the report 'Fraser Drive Residential Development December 2006' prepared by Cardno Eppell Olsen. This report is included within Appendix J for Council's review.

The main intersection for Fraser Drive will occur as a 4-way signalised intersection. The location of the intersection was directed by Council so as to create a 4-way intersection with the Pioneer Tourist Park. The report concludes that, having regard to the number of trips generated by the proposal, the intersection will operate satisfactorily.

The detailed design of the intersection will occur during the construction phase of the development

ISSUE

2. *A plan of road closure is required to be registered over that part of Champagne Drive that is within the subdivision area. Following closure of the road by gazettal, the title of the closed road is to be transferred to the landowner subject to the dedication of road 1 widening along the Fraser Drive boundary. When Council is satisfied that this has occurred, the road closure parcel will be transferred to the landowner.*
3. *In order to improve the current tidal flushing regime of the wetland, so as to enhance water quality and prevent mosquito and midge outbreaks, the existing fibreglass floodgates on the James Road culverts should be replaced by the developer with Council approved tidal gates.*

Response

Noted.

4.0 NSW PRIMARY INDUSTRIES

ISSUE

BUFFER ZONES

DPI AHPU acknowledges the incorporation of a buffer to the SEPP14 Wetland as indicated in the documentation. Field inspections and Figure 3 Vegetation Communities in Proposed Development Fraser Drive – South Tweed Ecological Assessment, prepared by Cardno 18 December 2006, reveal however that the wetland plant communities extend beyond the mapped SEPP 14 boundary. DPI policy with regard aquatic habitat buffers outlined in Policy and Guidelines Aquatic Habitat Management and Fish Conservation 1999 which requires:

“Terrestrial areas adjoining freshwater, estuarine and coastal habitats should be carefully managed in order to minimise land-use impacts on these aquatic habitats. As a precautionary approach, foreshore buffer zones at least 50m wide should be established and maintained, with their natural features and vegetation preserved. Such buffer zones may need to be fenced or marked by signs. The width of these buffer zones may need to be increased to 100m or more where they are adjacent to ecologically sensitive areas.”

This policy is not achieved by the present proposal despite the policy being highlighted to the proponent in correspondence dated 26 September 2006, 13 May 2003 and as early as 10 December 2002, 3 July 2002 and 23 April 2002.

Furthermore the present layout appears to require, as indicated in Drawing No: 71887_D_CP_01_01 Landscape Concept Plan prepared by Vivo Design contained within Statement of Landscape Intent that the ‘50m setback from sepp 14 wetland to be recreated as tree break as per fire management report.”

The consequential effect of this proposal is tree removal, clearing and thinning of part of the wetland community contrary with SEPP 71, DPI Fisheries buffers policy and requirements of threatened ecological communities. Furthermore, the documentation does not contain any indication of how the buffer zone is to be managed to maintain habitat and ecological values of the mapped SEPP 14 Wetland.

It is unclear why a 50m habitat buffer zone consistent with DPI policy can be achieved from much of the site. Adjacent to the water quality / open space area there appears to be no reason, and the documentation does not justify, why the 30m bushfire asset protection zone cannot commence from the edge of the 50m habitat buffer zone to the SEPP 14 Wetland negating the need to clear existing wetland vegetation. North of the water quality/open space area adjacent to the proposed ‘Stage 1’ there appears to be no limitations to achieving a 50m habitat buffer zone consistent with DPI policy by adjusting the 30m asset protection zone further to the east.

RESPONSE

Further to the Department’s comments in response to the Ecological Buffer Analysis, the recommended buffers widths have been incorporated in the Preferred Project Layout. Refer to Subdivision Layout Drawing No.20934.05M provided in Appendix S for details.

ISSUE

FISH FRIENDLY FLOODGATE MANAGEMENT

The former NSW Fisheries and now DPI have variously raised the matter of a floodgate and piped road crossing presently restricts tidal inundation to the SEPP 14 Wetland. It is noted that the proponent indicates that the SEPP14 area is to be dedicated to Council. DPI recommend that, if the development is approved, the approval incorporate a condition requiring the proponent to work with Council to improve management of the flood gate to improve the health and functioning of the SEPP14 Wetland as fish habitat and for aquatic biodiversity.

RESPONSE

The location of the flood gate is outside of the development area and as such any conditions as suggested above are likely to be considered unlawful under the *Environmental Planning and Assessment Act 1979*. To this end the long term management of the SEPP 14 will need to be discussed as part of dedicating the site to Council. Council will need to provide further guidance to the landholder to determine the most appropriate means of addressing this issue as part of this proposal.

ISSUE

AD-HOC PLANNING

DPI and AHPU is concerned that the cumulative impact of developments such as this proposal are not able to be adequately considered when filling and various stages are assessed separately. It is noted that this practice is increasing common on the North Coast limiting the holistic assessment of recommended by SEPP 71.

Response

The concerns of the DPI are noted, however, it should be noted that filling of the site preceded the commencement of State Environmental Planning Policy No.71. Notwithstanding, we are required to address the matters for consideration under clause 8 of SEPP 71. SEPP 71 has been identified as an applicable instrument and was considered Chapter 3 of the Environmental Assessment Report.

ISSUE

Sea Level Rise / Climate Change

DPI AHPU strongly recommend that potential future sea level rise in low lying coastal floodplains be taken into consideration when assessing and determining such a development. The 2007 IPCC Science Assessment Report states that 'Projected globally-average sea level rise at the end of the 21st century will be between 0.28-0.43 metres; however...these projections may increase by a further 10-25%.'

With this site for instance, filling of areas to the edge of the wetland and its buffer, undertaken prior to this assessment, limit the ability for wetland communities to adapt to the projected changes in sea level.

Response

Further to the comments provided on 15 August 2008, the Department of Planning have required further information to assess the impacts of climate change and sea level rise. Please to refer to the response in section 1.6

ISSUE

SEPP 62

Recently modifications to this SEPP require consideration of impacts on priority oyster growing areas within the vicinity of the proposed development be considered in the development assessment. The attached map, which illustrates the Terranora Broadwater has several areas identified as priority oyster growing areas, is available at: http://www.dpi.nsw.gov.au/data/assets/pdf_file/117993/OISAS-Tweed.pdf

The SEPP requires appropriate and effective measures be undertaken to ameliorate impacts of the proposal on water quality and priority oyster growing areas. Turbidity from construction impacts can be particularly significant and adoption of effective sediment and erosion control is paramount. Incorporation of the effective aquatic habitat buffers into the layout of the subdivision and participation by the developer with Tweed Shire Council in fish friendly floodgate management contribute to achieving water quality objectives of SEPP 62 during the operation of the subdivision

RESPONSE

The assessment of the proposals impact on the nearby priority oyster growing areas is considered having regard to the proposed water quality management controls proposed for both construction and operation.

Appendix B includes plan, 'Figure NoDA10 Erosion and Sediment Control Plan' which was included within Environmental Assessment Report Vol 3. Further the information provided to respond to both Council's and the Department of Planning addresses the effectiveness of the proposed stormwater management controls. These measures provided in accordance with the proposed buffers will ensure that any runoff entering the wetland is sufficiently treated to a level consistent with that specified in Council's deemed to comply controls.

ISSUE

RECOMMENDATION

With regard fisheries and aquaculture issues and the Department's policies and requirements the proposal requires some reworking specifically:

- *50 metre habitat buffer achieved to SEPP 14 Wetland consistent with DPI policy, thereby necessitating that the bush fire asset protection zone commence and extend outward from the outer perimeter of the wetland habitat buffer zone;*
- *That a management plan be developed for appropriate management i.e. aquatic habitat protection of the SEPP 14 Wetland and its habitat buffer;*
- *That the proponent formally indicate and commence working with Tweed Shire Council to improve management of the floodgate to improve the health and functioning of the SEPP 14 Wetland as fish habitat and for aquatic biodiversity; and*
- *Consideration of SEPP 62 during the preparation of sediment and erosion control plans during the construction phase.*

RESPONSE

Noted.

5.0 CATCHMENT MANAGEMENT AUTHORITY

ISSUE

Extent and impact upon SEPP 14 wetland and fringing and associated EEC and wetland Vegetation

- *The developers appear to have applied a very literal interpretation of the wetland using the GIs SEPP 14 boundary. The air photos clearly show that vegetation extends well beyond the SEPP14 boundary and judging from the air photos provided, it is probably all wetland vegetation and most likely Endangered Ecological Community.*
- *The example of "landscaped buffer" is unlikely to adequately protect the wetland values or fringing vegetation from human disturbance or issues associated with runoff, sediment loads and water quality.*

The ecological assessment provided by the applicant states: "the plan of development achieves compliance with the provisions of SEPP 14".

The NRCMA is not satisfied that the wetland will be adequately protected and recommends that a buffer be extended around the wetland as a whole to protect the wetland system with its vegetation communities that may be interpreted as 'outside' of the SEPP14 boundary.

The Draft North Coast guide for avoiding and reducing rural land use conflict and interface issues (Centre for Coastal Agricultural Landscapes - Southern Cross University, June 2007) recommends a buffer between wetlands and urban development of 100m

RESPONSE

The extent of the buffers proposed is detailed in the Preferred Project Layout. The provision of buffers has been informed through negotiations with the Department of Planning.

6.0 NSW RURAL FIRE SERVICE

ISSUE

1. *Provision for suitable Asset Protection Zones (APZ) shall be made in accordance with Section 4.1.3 of Planning for Bush Fire Protection 2006.*
2. *The appropriate APZs shall be provided for each stage of the development.*
3. *The supply of water, electricity and gas shall be in accordance with Section 4.1.3 of Planning for Bush Fire Protection 2006.*
4. *Public Road Access shall comply with Section 4.1.3(1) of Planning for Bush Fire Protection 2006.*
5. *Property Access Roads shall comply with Section 4.1.3(2) of Planning for Bush Fire Protection 2006*

Note: Any further residential development application lodged for proposed lots within this subdivision, identified as bush fire prone land on the Councils Bush Fire Prone Land map, may be subject to Section 79BA of the EP & A Act and must meet the requirements of Planning for Bushfire Protection, 2006.

RESPONSE

The above issues have been addressed in Appendix E. The previous Bushfire Assessment Report has been amended to accord with the Planning for Bushfire Guidelines 2006. Points 3, 4 and 5 may be addressed as conditions of consent.

7.0 NSW DEPARTMENT OF HOUSING

ISSUE

That the applicant addresses the Director General's requirements and Clause 17 of the Tweed LEP 2000 for a social and economic impact assessment of the development proposal. As the development proposes 178 lots and up to 272 dwellings, which could accommodate (on average occupancy rates for Tweed) 669 people, there is a need for a social impact study. The assessment should address

how the increase in population will impact on services and social infrastructure in Tweed and whether there is adequate existing capacity.

To ensure housing diversity to meet the needs of the existing community, the Department of Planning require the applicant to ensure a minimum of 10% one bedroom dwellings and a minimum of 30% two bedroom dwellings in the proposed development.

The Department of Planning negotiates a voluntary planning agreement for a portion of lots in the subdivision to -be set aside for affordable housing. Given the need for affordable housing in Tweed Heads, it would be appropriate for this envelopment to incorporate a proportion of affordable housing. Affordable housing may constitute a diverse range of housing types priced at a level for which low to moderate income households who are renting or purchasing are able to pay their housing costs and still have sufficient income to meet other basic needs such as food, clothing, transport, medical care and education. Low to moderate income households are generally defined as households earning from less than 50% and up to 120% of the median income. In NSW this was equivalent to an annual household income of up to \$62,600 in 2006/07.

There are a number of recent examples where affordable housing has been integrated into new developments. These include the St Marys development on the former ADI site where the developer is allocating 3% of all residential allotments for the purpose of providing affordable housing, and the use of planning agreements in the City of Canada Bay and Penrith City to generate affordable housing. While the level of affordable housing contribution varies, the approach taken has been that contributions (whether monetary or in kind) are provided at no cost to a not-for-profit community housing provider, which then uses these contributions to accommodate low to moderate income, eligible households in affordable rental housing.

The applicant be required to develop a minimum of 15% of all new housing on site as adaptable housing to enable residents to age in place and to cater for the needs of people with disabilities.

RESPONSE

Appendix N includes the Socio-Economic Impact Assessment. The Assessment concludes that the development will provide affordable housing in Tweed.

8.0 DEPARTMENT OF WATER AND ENERGY

ISSUE

Acid Sulfate Soils

Require that the data from 2000 and 2002 work, on which the recommendations were made, be incorporated into the ASS Management Plan

Response

Appendix K includes the amended Acid Sulfate Soils Management Plan. Notwithstanding, the above issue can be addressed as a condition of consent.

ISSUE

Groundwater

It is recommended that further clarification on proposed detention basin levels and ground water levels is provided. As well, details should be provided on the proposed method/standard of lining for the proposed detention basin.

RESPONSE

Refer to Appendix P.

ISSUE

Flooding Impacts

There are no concerns regarding the flooding impact for the development, or the flooding impact by the proposal on other developed areas

Response

Noted.

9.0 PUBLIC SUBMISSIONS

Appendix N includes the detailed summary of the public submissions made during the exhibition of the Environmental Assessment. Each submission was grouped under the following issue headings: Geotechnical, Aboriginal Cultural Heritage, Traffic and Access, Flora and Fauna, Land Use, Stormwater, Loss of Character and Infrastructure. A summary of the concerns raised and subsequent response are provided under each heading:

ISSUE

Geotechnical

Concerns were raised as to the efficacy of the proposal to address the land slip hazard. Assurance was required to ensure that the proposal do not result in increased land slip hazard risks to existing dwelling surrounding the site and to determine if the proposed management measures were sufficient

RESPONSE

The Geotechnical report provided in Appendix C details the extent to which development can be implemented on the site without increasing land slip hazard to adjoining properties. Section 9.2 specifically addresses adjoining landholders and concludes that the development will not impact on these residents.

ISSUE

Aboriginal Cultural Heritage

Requires the midden site to be protected in situ.

RESPONSE

The aboriginal site will be protected and buffered from the proposed subdivision. The site will remain in Council's ownership.

ISSUE

Traffic & Access

Submissions raised general concerns with the proposals impact on the existing road network, particularly with access proposed from the western boundaries of the site, that is Hillcrest and Ocean Avenue.

RESPONSE

Appendix J includes the Traffic Impact Assessment Report. The report concludes there is sufficient capacity in the existing road network to accommodate the development.

ISSUE

Flora and Fauna

Submissions raised general concerns with the existing habitat on the site

RESPONSE

The development will result in the clearing of sum individual stands of vegetation across the site. However this will not have a significant impact on the site's conservation and habitat values. The Ecological Assessment included within Appendix F indicates that the SEPP 14 and fringing vegetation contains the most significant conservation and habitat values. This area will be protected and conserved. The development will not require the clearing of any significant vegetation.

ISSUE***Land Use***

Submissions claimed the site was inappropriate for residential development.

RESPONSE

The site is zoned 2(c) Urban Expansion. Residential development is permissible. Section B3 of the Tweed Shire Development Control Plan identifies the site for future residential development.

ISSUE***Stormwater***

Submission raised the need to ensure drainage from the existing residential area be addressed.

RESPONSE

Stormwater management has been developed to address runoff entering the site.

ISSUE***Loss of Character***

It was considered that the rural nature of the Tweed would be further reduced by the proposal.

RESPONSE

Average density across the site is approximately 8 dwellings per hectare. Notwithstanding, the development is urban infill and adjoins existing residential developments. The site has no agricultural value.

ISSUE***Infrastructure***

There was concern there was insufficient capacity within existing water and sewerage infrastructure to service the development.

RESPONSE

Council have indicated that sufficient capacity is available in current water and sewerage infrastructure.

STATEMENT OF COMMITMENTS

Action	Timing for Completion	Responsibility
PRE CONSTRUCTION		
Development Staging		
Objective Minimise potential environmental impacts to on-site environmental values and surrounding residential amenity, during construction.		
Action Development staging is to be generally in accordance with Proposed Plan No. 20934-5M prepared by Conics Pty Ltd.		Construction Project Manager
Purpose To ensure the application of environmental measures for each stage of the proposal.		
Vegetation Management		
Objective Protect on-site conservation values and vegetation with habitat quality and to ensure conservation of endangered ecological communities.		
Action Prepare Vegetation Rehabilitation Management Plan for the area adjacent to the identified Endangered Ecological Communities within the SEPP 14 Buffer. The VRMP is to be endorsed by Tweed Shire Council.	Prior to the issue of a Construction Certificate	Proponent
Propagation and replanting of the rough-shelled bush nut within the proposed buffer areas and open space within the site.	Prior to the issue of a Construction Certificate	Proponent
Water Quality		
Objective Ensure that any runoff is treated to address desired water quality objectives as specified by Council:		

Action	Timing for Completion	Responsibility
- Water discharged during operational phases is to have a maximum suspended solids concentration of 300kg/ha/yr, a maximum Total Nitrogen of 4.5Lg/ha/yr and a maximum Total Phosphorus of 0.8kg/ha/yr.		
Action Prepare a Sediment and Erosion Control Plan for endorsement by Council. The Sediment and Erosion Control Plan is to be based on Drawing No. 7214/29/01-DA10 of the supporting diagrams to the Engineering Report and the specifications of the Engineering Report as follows:	Prior to the issue of a Construction Certificate	Proponent
-Conventional street drainage would be utilised to convey stormwater runoff from the upper reaches of the catchment area down to the stormwater treatment and detention devices to be constructed around the lower parts of the development site.	Prior to the issue of a Construction Certificate	Proponent
-Treatment devices such as gross pollutant traps and wetlands would be incorporated into the open space areas (sized to meet Council's 'deemed to comply' criteria outlined in the Development Design Specification D7 - Stormwater Quality).	Prior to the issue of a Construction Certificate	Proponent
Purpose To achieve ANZECC water quality criteria or any criteria set by Council.		
Public Areas		
Objective Ensure nominated areas of public space are developed to a standard that will allow dedication to Council.		
Action Develop roads in accordance with Council's criteria and satisfaction.	End of construction phase	Private Certifier
Construct to develop parks in accordance with Council's criteria and satisfaction.	End of construction phase	Private Certifier
Construct to develop stormwater treatment areas in accordance with Council's criteria and satisfaction.	End of construction	Private Certifier

Action	Timing for Completion	Responsibility
	phase	
Purpose To provide nominated areas of public space in accordance with Council's existing management measures.		
Access		
Objective To provide safe and efficient access to the site for construction traffic and future residents.		
Action Provide access via those points identified in 'Proposed Subdivision Plan', drawing no. 20934-5M prepared by Conics Pty Ltd and described as follows:		
<ul style="list-style-type: none"> • Access A – will be the major all movement access located on Fraser Drive at the north-eastern corner of this site; 	Prior to issue of Construction Certificate.	Proponent
<ul style="list-style-type: none"> • Access B – accesses Fraser Drive via a left in left out arrangement; 	Prior to issue of Construction Certificate.	Proponent
<ul style="list-style-type: none"> • Access C – local street connection to Ocean Avenue; 	Prior to issue of Construction Certificate.	Proponent
<ul style="list-style-type: none"> • Access D – local street connection to Hillcrest Avenue on the western periphery of the development; 	Prior to issue of Construction Certificate.	Proponent
<ul style="list-style-type: none"> • Access E – local street connection as an extension to Merlot Drive at the southern end of the development. 	Prior to issue of Construction Certificate.	Proponent
Upgrade of the current Fraser Drive/Pioneer Country	Prior to	Proponent

Action	Timing for Completion	Responsibility
Access intersection to a four-leg, signalized intersection.	issue of Construction Certificate.	
Purpose To allow residents to access their properties and construction traffic to access the site without impacting on residential amenity.		
Bush Fire Management		
Objective To minimise the risk associated with the loss of property and human life from bush fire.		
Action Incorporate a 20 metre Asset Protection Zone from the outer edge of the marked SEPP 14 50 Buffer.	Prior to Construction Certificate	Proponent
Construct the elevation of the residential lots facing the SEPP 14 Wetland/Tall Open Ecotonal Forest in accordance with Level 2 performance levels AS3959-1999.	Prior to Occupation Certificate	Proponent
The appropriate APZs shall be provided for each stage of the development.	Prior to Occupation Certificate	Proponent
The supply of water, electricity and gas shall be in accordance with Section 4.1.3 of <i>Planning for Bush Fire Protection 2006</i> .	Prior to Occupation Certificate	Proponent
Public Road Access shall comply with Section 4.1.3(1) of <i>Planning for Bush Fire Protection 2006</i> .		
Property Access Roads shall comply with Section 4.1.3(2) of <i>Planning for Bush Fire Protection 2006</i> .		
Note: Any further residential development application lodged for proposed lots within this subdivision, identified as bush fire prone land on the Councils Bush Fire Prone Land map, may be subject to Section 79BA of the EP & A Act and must meet the requirements of Planning for		

Action	Timing for Completion	Responsibility
Bushfire Protection, 200f.		
Landslip and Hazards		
Objective Determine the exact nature of the geotechnical aspects of the soil and groundwater interface and identify and lessen landslip risk.		
Action Excavate approximately thirty excavator test pits, one on each proposed allotment boundary where such boundaries intersect the current estimated or inferred location of the basalt/metamorphic contact zone as shown on Coffey Drawing 1 in report ref. B17439/1-B. The purpose of these test pits is to intersect the basalt/metamorphic contact zone to gain further information on the location and geometry of contact zone and to retrieve representative disturbed samples and undisturbed U50 tube samples of the various soil types present for laboratory testing.	Prior to Construction Certificate	Proponent
Make observations of any groundwater seepage encountered in the test pits.	Prior to Construction Certificate	Proponent
Provide a full time experienced Geotechnical Engineer or Engineering Geologist at the testing who would be responsible for locating the test pits, nominating and directing sampling and field testing, retrieving representative samples of soil for laboratory testing and providing field logs of the subsurface conditions encountered. During logging, the strength of the clay soils would be measured with a pocket penetrometer or vane shear instrument. All test pit locations would be pegged and surveyed for location and reduced level.	Prior to Construction Certificate	Proponent
Continually review the results of the test pitting to assess if additional test pits are required to investigate and/or clarify particular areas of the site or aspects of the subsurface conditions.	Prior to Construction Certificate	Proponent
Commence the test pitting program near one of the Coffey test pit locations (e.g. test pits TPC5, TPC20) which clearly intersected the contact zone and move	Prior to Construction Certificate	Proponent

Action	Timing for Completion	Responsibility
outwards from there, to improve the likelihood of intersecting the contact zone at a relatively shallow depth which will allow personnel to enter the pit to view and measure the orientation, thickness and nature of the soil in the contact and to retrieve disturbed samples and undisturbed U50 tube samples.		
Excavate approximately fifteen excavator test pits at selected locations to infill the areas between existing Coffey test pits (which were mostly located on lines or "fences" in rows on from the upper to lower areas of the slope) and other areas of interest which may arise.	Prior to Construction Certificate	Proponent
Carry out subsurface geotechnical investigations (test pits or boreholes) for engineering structures to be constructed on the site, including retaining walls, cuttings and buried services.	Prior to Construction Certificate	Proponent
Undertake a program of laboratory testing to assess the geotechnical properties for the various soil types present. These would include but not necessarily be limited to the following: <ul style="list-style-type: none"> o Atterberg limits. o Natural moisture content. o Unit weight. o Undrained shear strength. o Peak and residual effective stress shear strength parameters. 	Prior to Construction Certificate	Proponent
Measure the peak and residual effective stress parameters using consolidated, undrained triaxial tests with pore pressure measurements (for peak values) and direct shear tests (for peak and residual values). All laboratory testing would be carried out by a NATA-registered geotechnical laboratory.	Prior to Construction Certificate	Proponent
Carry out slope stability analyses when the results of the field and laboratory investigations have been finalised, utilizing the results of subsurface investigations, groundwater observations, laboratory test results, final ground surface profile and structural loadings appropriate for each allotment. Each analysis would reflect the current knowledge of the local subsurface conditions and include any variability in such conditions and the geometry of individual layers. Any variability in surface profile would also be assessed.	Prior to Construction Certificate	Proponent

Action	Timing for Completion	Responsibility
Carry out the slope stability analyses using limit equilibrium methods. The slope stability analyses should confirm the stability of the slopes under "normal" and adverse conditions for a factor of safety of not less than 1.5. The analyses would include sensitivity studies of variability in soils strength parameters and groundwater (phreatic) conditions.	Prior to Construction Certificate	Proponent
Assess the effects of any modifications made to slope profiles and installation of subsurface drains on slope stability.	Prior to Construction Certificate	Proponent
Compile the results of the geotechnical investigations in a formal report presenting discussion of the methodologies used, the results of field investigations and laboratory testing and the results, conclusions and recommendations reached as a result of the geotechnical engineering interpretations and analyses of the investigations.	Prior to Construction Certificate	Proponent
Limit development on areas identified as having landslide risk to a defined building envelope on the larger residential lots.	Prior to Construction Certificate	Proponent
Provide the Director of Engineering Tweed Shire Council detailed engineering plans, including the results and recommendations of any subsequent geotechnical testing for works proposed on the pre-filled flat section of the site identified in drawing Ref No. T14246 'Site Plan Lot 9 in DP 1039569' dated 7.03.07 prepared by B & P Surveys Consulting Surveyors, but not including the ecological buffer area nominated in the vicinity of the Integrated Housing Lot,	Prior to Construction Certificate	Proponent
Purpose To provide detailed measures for revetment structures as per the recommendations of the geotechnical report prepared by shaw:urquhart, dated 12 January 2007 and letter dated 8 March 2007.		
Acid Sulphate Soils		
Objective		

Action	Timing for Completion	Responsibility
To minimise potential impacts from acid sulphate soils.		
Action Prepare an Acid Sulphate Soils Management Plan for endorsement by Council.	Prior to Construction Certificate	Proponent
Test all soils excavated from below the current surface level for the presence of AASS and PASS during excavation.	Prior to Construction Certificate	Proponent
Treat all AASS and PASS material in accordance with the ASSMAC guidelines.	Prior to Construction Certificate	Proponent
Ensure that any surface water discharged off site is acceptable under the ANZECC (2000) water quality criteria prior to release from the site.	Prior to Construction Certificate	Proponent
Ensure that on-site activities do not impact upon groundwater quality, levels or movement outside of conditions experienced during drought or flood.	Prior to Construction Certificate	Proponent
Ensure that appropriate and adequate erosion and sediment control measures are installed and maintained for the duration of the construction works.	Prior to Construction Certificate	Proponent
Purpose Implementation of the commitments of the Acid Sulphate Soils Management Plan prepared by Gilbert and Sutherland dated September 2007 to ensure the implementation of best practice environmental management.		
Landscaping		
Objective To prevent the potential visual impacts of revetment walls.		
Action All Landscaping is to be in accordance with the Statement of Landscaping Intent prepared by Vivo.	Prior to Construction Certificate	Proponent
Purpose		

Action	Timing for Completion	Responsibility
To ensure that proposed landscaping is consistent with Council's guidelines and the management of potential visual impacts from the construction of revetment walls and removal of on site vegetation.		
Flooding		
Objective Provide for the safe evacuation of future residents in the event of flood.		
Action Prepare a Flood Evacuation Plan to be endorsed by Council.	Prior to Construction Certificate	Proponent
A flood evacuation pathway that extends from Fraser Drive development to Fraser Drive (to front of acoustic mound) and enters into the Fraser Drive Park. Evacuation and service crews would be able to access the higher areas of the site.	Prior to Construction Certificate	Proponent
Purpose To ensure a system is in place for the evacuation of residents in the event of flood.		
CONSTRUCTION		
Conservation and Vegetation Management		
Objective To protect on-site conservation values, vegetation with habitat quality and to ensure conservation of endangered ecological communities.		
Action Provide appropriate development setbacks.	Prior to Construction Certificate.	Proponent
Implement an appropriate weed management program to target existing infestations of environmental weeds which currently threaten these communities. (On-going).	Prior to Construction Certificate.	Proponent
Clearly delineate and physically mark out areas of conservation value to be retained.	Prior to Construction Certificate.	Proponent

Action	Timing for Completion	Responsibility
Ensure construction vehicles do not impact on the integrity of conserved vegetation.	Prior to Construction Certificate.	Proponent
Purpose To maintain the integrity of endangered ecological communities.		
Residential Amenity		
Objective Protect residential amenity during construction.		
Action Prepare a Construction Management Plan for both site preparation works and construction works in accordance with Council's requirements for endorsement by Council. The Plan would include the construction of roads, public facilities, park and open space and stormwater management treatment measures. It would include measures relating to the hours of work, site access and egress, noise attenuation on heavy vehicles and machines, location of waste receptacles, management and disposal of construction waste, notification of adjacent landholders and management of acid sulphate soils.	Prior to issue of Subdivision certificate.	Proponent
Purpose To formulate a Plan to reduce the potential impacts of construction on the amenity of surrounding properties.		
Land Slip and Hazards		
Objective Prevent land slip through the construction phase.		
Action Undertake earth works and construct revetment walls in accordance with the technical details of the geotechnical report.	Prior to issue of construction certificate.	Proponent
Provide all geotechnical services through the one company to ensure continuity.	Prior to issue of construction certificate.	Proponent

Action	Timing for Completion	Responsibility
Provide on-site geotechnical presence during the construction phase to advise on the following activities:	Prior to issue of construction certificate.	Proponent
<ul style="list-style-type: none"> • Level 1 earthworks testing of all fill during site preparation and the placing and compaction of soil. 	Prior to issue of construction certificate.	Proponent
<ul style="list-style-type: none"> • Excavation of footings for retaining walls and other structures to conform the conditions and design parameters as expected from the geotechnical investigations. 	Prior to issue of construction certificate.	Proponent
<ul style="list-style-type: none"> • Bulk excavations to map the location, orientation and geometry of the basalt/metamorphic contact zone and to retrieve representative samples of the materials within the contact zone for laboratory tests as required and identifying any further areas of groundwater seepage which can then be treated if required. 	Prior to issue of construction certificate.	Proponent
Purpose Undertake earth works in accordance with the geotechnical report and provide on-site geotechnical presence to provide advice and identify any further problems.		
Cultural Heritage		
Objective Protect on-site items and objects of archaeological and cultural value to the Traditional Owners and ensure management of any impacts are managed in accordance with the relevant statutory requirements.		
Action A semi-permanent fence be built 10 metres from the known boundary of the midden site in order to protect the site from any inadvertent harm by workers developing the Subject Lands. The fence should be built under the supervision of a qualified archaeologist and a representative of the Traditional Owners. The location of the midden should be inserted in all future drawing, maps	Prior to issue of subdivision certificate.	Proponent

Action	Timing for Completion	Responsibility
and engineering plans connected with development of the sub-division.		
It is recommended that following the implementation of the above, a CHMP be drafted and provided to Council to support any future applications under Section 87 of the <i>National Parks and Wildlife Act 1974 (NSW)</i> . The finalisation of the CHMP will follow Council's negotiations with the Traditional Owners and relevant Indigenous representatives in undertaking the planned widening of Fraser Drive.	Prior to issue of subdivision certificate.	Proponent
It is recommended that employees and contractors conducting earthworks on Lot 135 of the proposed Subdivision Plan be instructed that they are working close to a midden in a culturally sensitive area. It is possible that their works may unearth cultural material. Employees and contractors should be instructed that caution should be exercised when working on the site. They should be instructed on how to identify this cultural material and that in the event that they do find any they are to stop work immediately and follow Recommendation 5 of this report.	Prior to the construction certificate	Proponent
It is recommended that contractors engaged in earthworks or subsurface disturbance on the Subject Lands, be advised that under the terms of the National Parks and Wildlife Act 1974 (NSW) it is an offence for any person to knowingly disturb, destroy, deface or damage or permit the destruction, defacement or damage to an Aboriginal object or Aboriginal place without first obtaining the written consent of the Director General of the Department of Environment and Climate Change.	Prior to the construction certificate	Proponent
It is recommended that in the event that future works at the proposed residential subdivision disturb Aboriginal cultural materials, works at or adjacent to the material must stop immediately. Temporary Fencing must be erected around the site and the material must be identified by an independent and appropriately qualified archaeological consultant. The Regional Archaeologist of the Cultural Heritage Unit of the Department of Environment and Conservation, Coffs Harbour, the Tweed Byron L.A.L.C. and the Ngunduwal/Minjungbal descendents must be informed. They will advise as to the most appropriate course of action to follow. Works must not resume at the location without the prior written consent of the DECC, Tweed Byron L.A.L.C. and the Ngunduwal/Minjungbal descendents.	Prior to the construction certificate	Proponent

Action	Timing for Completion	Responsibility
It is recommended that due to the sensitivity of the ridgeline containing the closed Champagne Drive road reserve any initial subsurface disturbance be monitored by representatives of the Traditional Owners to ensure that cultural material is identified and protected. This monitoring will be independent of the Cultural Heritage Management Plan adopted to protect the midden site. If cultural material is identified, then Recommendation 5 will come into effect.	Prior to the construction certificate	Proponent
Purpose To protect, conserve and manage the potential impacts to archaeological and cultural heritage values in accordance with the requirements of the relevant statute.		
Water Quality and Sediment Control		
Objective Ensure that runoff is treated to achieve water quality parameters specified by Council for construction phases to ensure water quality and to minimise dust emission.		
Action Adhere to the measures of a Council endorsed Erosion and Sediment Control Plan.	Prior to issue of construction certificate.	Proponent
Worn, damaged or otherwise defective materials and components would be repaired, refurbished or replaced as soon as they became ineffective for their design purpose.	Prior to issue of construction certificate.	Proponent
Water Quality		
Direct all contaminated surface runoff to a treatment device to prevent sediment transport from the site. As a minimum, the Contractor shall provide the temporary erosion control measures as detailed on Cardno Figure No DA10, to prevent soil erosion, scouring, sediment transport and deposition. Temporary control measures may include: temporary sedimentation basins; temporary sediment filter fences; controls on amount of open ground; stabilisation of stockpiles; catch drains/perimeter bunds; and check dams.	During Construction Phase	Proponent
Install whatever other measures are considered	During	Proponent

Action	Timing for Completion	Responsibility
necessary to minimise the impact of construction activities on the surrounding environment.	Construction Phase	
Locate any stockpiles of topsoil and/or fill as far away as possible from dwellings and other buildings near the site and will have perimeter sediment filter fencing installed.	During Construction Phase	Proponent
Store any chemicals (including lime) or fuel/oil stored on site under cover in a bounded area or placed sufficiently above ground level to preclude contamination of surface water.	During Construction Phase	Proponent
Provide permanent stormwater treatment measures as soon as possible after the completion of each construction area.	Post Construction	Proponent
Operate and maintain all sediment control structures in an effective operational condition. These structures must not be allowed to accumulate sediment volumes in excess of 70% sediment storage design capacity. Where sediment basins are used a marker shall be placed within the basin to show the level above which the design capacity occurs. Materials removed from sediment retention devices must be disposed of in a manner approved by Council that does not cause pollution.	Post Construction	Proponent
Undertake monitoring of any temporary sediment basins. Non complying test results would be notified to the developer. A site inspection would be undertaken by the developer at least each week, immediately before site closure and immediately following rainfall events that cause runoff.	Post Construction	Proponent
Undertake self audits systematically on site, recording:	On-going	Proponent
-Installation/removal of any erosion and sediment control device		
-The condition of each device employed (particularly outlet devices), noting whether it is likely to continue in an effective condition until the next self audit		

Action	Timing for Completion	Responsibility
-Circumstances contributing to damage of any devices, accidental or otherwise		
-Storage capacity available in pollution control structures		
-Time, date, volume and type of any additional flocculants		
-The volumes of sediment removed from sediment retention systems, where applicable, and the site where sediment is disposed		
-Maintenance or repair requirements (if any) for each device		
-Circumstances contributing to the damage to device		
-Repairs effected on erosion and pollution control devices		
Keep signed, completed self audits, original test results, weekly and other result sheets on site and ensure they are available on request to Council officers and other relevant statutory authorities. All records would be maintained in a form suitable for Council submission.		
Corrective Action:		
Deal with non compliance with the Erosion and Sediment Control Plan immediately.		
If possible, stop discharge and store runoff on site if the pH is below 6.5. A lime dose would be applied to restore to an acceptable pH before further discharge. The contractor would notify Council's Environmental and Health Services Unit of non compliance within 24 hours.		
If possible, stop discharge and store runoff on site if the pH is above 8.5. Dilution with other water until the pH was in the acceptable range would need to occur before further discharge.		

Action	Timing for Completion	Responsibility
I Accept non-compliance if suspended solids are greater than 50mg / L and it is due to a storm event greater than the design of storm control devices. If not, stop and store discharge. Use flocculation agents to lower NFR, or Pump contaminated water over grassed filter strips or buffer areas to lower NFR. Repair or redesign/replace erosion and sediment control devices if non compliance is due to damage or ineffectiveness to ensure future compliance.		
Dust Control		
Minimise the preclearing of land. No vegetation clearing or stripping will occur in situations of high wind.	During Construction Phase	Proponent
Revegetate all permanent bunds and reshaped areas as quickly as possible.	During Construction Phase	Proponent
Minimise stockpiling on site where possible.	During Construction Phase	Proponent
Make available an onsite water cart at all times.		
Undertake visual monitoring throughout the construction phase. The Contractor will ensure any dust production is kept to a minimum and that action is taken on any complaints received.	During Construction Phase	Proponent
Maintain a daily record of site conditions and the dust management measures implemented. Complaints by residents are to be recorded in a complaints register.	During Construction Phase	Proponent
Implement the following measures depending on the source of any dust : application of water sprays to vegetation; dampening of exposed areas; the covering of all loaded trucks; an increase in the number of water trucks in operation; cessation of operations during periods of string winds.	During Construction Phase	Proponent

Action	Timing for Completion	Responsibility
Purpose To ensure that any runoff or surface water shall only be discharged from the site once it has been treated to achieve ANZECC water quality parameters; to comply with the Environmental Planning and Assessment Act, Tweed Shire Council's Tweed Urban Stormwater Quality Management Plan and Development Design Specification D7 - Stormwater Quality, and with the approved Acid Sulphate Soils Management Plan; and to control the movement of dust offsite from the site works.		
POST CONSTRUCTION		
Infrastructure and Public Transport		
Objective Provide water, sewerage, electricity and telephone infrastructure to the future residents at the site.		
Action Ensure the connection of all constructed developable lots to existing and available services. A statement would be provided to the private certifier indicated that all lots are adequately serviced.	Prior to issue of subdivision certificate.	Proponent
Purpose To ensure future residential development is adequately serviced by urban services and infrastructure.		
Conservation and Vegetation Management		
Objective To protect on-site conservation values, vegetation with habitat quality and to ensure conservation of endangered ecological communities post construction.		
Action Implement appropriate weed management programs to target existing infestations of environmental weeds which currently threaten these communities.	Prior to Subdivision Certificate	Proponent
Purpose Continuation of weed management programs to control weed infestation.		
Public Transport		

Action	Timing for Completion	Responsibility
Objective Provide access to public transport facilities for the future residents at the site.		
Action The applicant is to construct a bus stop on Fraser Drive as recommended by the Traffic Assessment.	Prior to issue of subdivision certificate.	Proponent
Purpose Ensure future residents are able to be serviced by existing public transport facilities.		
Future Dwellings		
Objective Ensure future dwellings are not impacted by aircraft noise.		
Action All new dwellings should be constructed in accordance with the relevant Australian Standard AS 2021 - 1 994 (Acoustics - Aircraft Noise Intrusion - Building Siting and Construction) to ensure that noise does not impact on the amenity of future residents.		
Purpose Construction guideline for future dwellings.		
Objective Ensure development does not occur on areas not suitable for residential development		
Action Future dwellings on Lots 166, 167 and 168 are limited to area identified as the building envelop.		

Action	Timing for Completion	Responsibility