

**SUBMISSIONS TO MP 08_0141
GEORGE EVANS ROAD, MUNDAMIA**

<i>Submission</i>	<i>Comment</i>
NSW DEPARTMENT OF PLANNING & INFRASTRUCTURE	
<p>1. <u>Flora and fauna issues</u></p> <ul style="list-style-type: none"> • The EA has not established that a suitable offset is proposed for the loss of native vegetation, removal of threatened species and habitat as a result of the project. • The bio-banking assessment methodology, or Property Vegetation Plan (PVP) calculator, should be used to determine the appropriate level of offsetting for the loss of habitat and impacts on threatened species. • The impact of the project on threatened species, and particularly groundwater dependent species, has not been satisfactorily addressed by the EA. You should demonstrate that water management will maintain suitable hydrologic conditions for ground water dependent threatened species, in particular the endangered Nowra Heath Myrtle, and for areas of Kunzea shrubland (an indicator of possible presence of the critically endangered Spring Tiny Greenhood orchid), refer also to comments below in relation to water management issues. • The National Recovery Plan for Nowra Heath Myrtle <i>Triplarina nowraensis</i> (OEH 2011) has not been considered and should be addressed, including the loss of critical habitat and threats to this species from the development. • The project will result in the removal of 5% of the population (although it is unclear whether this is 5% of individuals or known habitat). • Further surveys for the Spring Tiny Greenhood orchid <i>Pterostylis vernalis</i> are required (particularly for areas mapped as Kunzea shrubland) along with clarification and justification in regard to the techniques used to identify terrestrial orchid species and the suitability of those techniques, such as random meander searches. 	<p>These issues have been dealt by Gunninah in Annexure 10 in conjunction with the amended Flora and Fauna Assessment by SLR Consulting (Annexure 3).</p>

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<ul style="list-style-type: none">Impacts of the project on the riparian zone in the north eastern part of the site have not been adequately addressed, including the upper intermittent watercourse areas affected by proposed residential lots, which are important in conveying water runoff to Flat Rock Creek and Shoalhaven River, through the proposed conservation areas containing groundwater dependent threatened species.Additional recovery plans, listed below, have not been considered and need to be addressed to assess the significance of impacts from the project on threatened species and whether the project will be consistent with the recovery objectives or actions of the plans:<ul style="list-style-type: none">Draft National Recovery Plan for the Grey-headed Flying fox <i>Pteropus poliocephalus</i> (DECCW (NSW) 2009);Recovery Plan for the Yellow-bellied Glider <i>Petaurus Australia</i> (NSW NPWS 2003); andRecovery Plan for the Large Forest Owls (including the Powerful Owl) (DEC (NSW) 2006).There is insufficient information about the means of securing the conservation status of the conservation areas, including their initial establishment and their ongoing management and maintenance.There is a lack of assessment of indirect impacts, and mitigation measures required, resulting from residents accessing the conservation areas, once the subject land is developed and occupied.Proposed asset protection zones (APZs) and fire trails should be relocated out of the conservation areas.A draft VMP, as outlined in the principles for a VMP set out in the SLR flora and fauna assessment report, should be provided with the PPR. In conjunction with the statement of commitments this should address and include initial management and maintenance by the proponent for the conservation and open space areas.A list of specific issues regarding the SLR flora and fauna assessment is provided at Appendix A, which should also be addressed.	

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<ul style="list-style-type: none"> Due to the issues raised above the department has concerns about the extent of development currently proposed. In particular this is due to the lack of suitable offsets for the loss of threatened species, native vegetation and habitat as well as the uncertainty about the impacts on ground water dependent threatened species from potentially adverse changes to hydrologic conditions. 	
<p>2. <u>Water Management Issues</u></p> <ul style="list-style-type: none"> The Department engaged Evans & Peck Pty Limited to undertake a review of the water/stormwater management for the proposed residential subdivisions at Mundamia. This included a review of the <i>Water Cycle Management</i> report prepared by Storm Consulting (November 2012) and the <i>Hydrogeological Assessment</i> prepared by Martens Consulting (June 2011). Evans & Peck have identified issues and limitations with the proposed water management system and hydrogeological assessment. They have advised that: <i>The behaviour of the shallow groundwater system is not sufficiently well understood to provide a reliable basis for the development of a surface water management strategy that aims to maintain the hydrologic conditions for the areas of Nowra Heath Myrtle and Kunzea shrubland (an indicator of possible presence of Spring Tiny Greenhood orchid) located around the northern and eastern sides of the proposed developments.</i> Evans & Peck consider that a stormwater management system based on the distribution of recharge throughout the development areas, as recommended in the Martens Hydrogeological Assessment will not be able to deliver the required hydrogeological regime to the threatened species. Evans & Peck have also highlighted issues with the proposed mitigation strategy and stormwater infiltration recharge system including that it would be hard to implement, maintain, monitor and manage and would cause ongoing problems for Council. 	<p>The assessment of Martens Consulting Engineers (Annexure 2) included consideration of hydrologic flows in order to minimise impacts. This review has included assessment utilising DRAINS modelling to consider volume and MUSIC modelling to examine water quality.</p> <p>This has resulted in changes to the development including the provision of detention basins to supplement the OSD proposed. Martens Consulting Engineers concluded that:</p> <ul style="list-style-type: none"> The completed analysis indicates that, even with best practice water quality and quantity control solutions as developed in this assessment it is not feasible to achieve a post development surface water regime which exactly mimics the pre-development condition. The proposed development does not have an adverse impact on downslope areas (in terms of increased peak discharge rates and pollutant loads) based on detailed hydrological and water quality modelling completed. <p>The recommendations of Martens Consulting Engineers has included :-</p> <ul style="list-style-type: none"> raft slabs not being founded on rock, thereby not impeding groundwater flows; strip footing with piers to rock, this enabling sub-spoil flows of water; roads being constructed with the use of drainage blankets under pavements allowing sub-soil drainage to pass beneath; use of impermeable material in the backfilling of trenches thereby forcing water to continue passage across a trench and downslope. <p>The recommended mitigation measures outlined by Martens Consulting Engineers (Annexure 2) have been included in the amended Statement of Commitments.</p>

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<ul style="list-style-type: none">• A copy of the Evans & Peck advice is attached, at Appendix B, for your information and review. You should address the findings and recommendations listed in their advice, and in particular:<ul style="list-style-type: none">• Recommendations in section 3.2.4 regarding a more thorough and detailed analysis of the existing hydrogeological conditions and the requirements for threatened species; and• Recommendations listed in section 4 regarding measures required to ensure the success of a stormwater management system, including matters raised in sections 4.1.1 to 4.1.6 regarding subdivision layout, on site detention, flood flow conveyance, bio-retention, climate change impacts and operational monitoring and maintenance.	
<p>3. <u>Staging of the project</u></p> <ul style="list-style-type: none">• Details of the project staging should include the staging of all proposed works, including bulk earthworks, remediation works, road construction, bushfire management, as well as details of when dedication of land to Council for open space and conservation purposes is to occur.	<p>The proposed subdivision staging is as shown on APA drawing 25489-11 Rev 05.</p> <p>There are no bulk earthworks proposed as part of the works at all. Due to the relatively flat topography, there will be minimal cut/fill with any roadworks and roadworks will generally follow the grade of the existing ground. Roadworks at staging boundaries are provided with temporary gravel turning circles as per Council's DCP100 requirements. This is standard Shoalhaven City Council subdivision practice.</p> <p>Remediation works will be undertaken as part of Stage 1 works.</p> <p>Bushfire management will occur progressively with each stage with a temporary APZ and fire trail being provided around each stage. APA have also prepared a plan showing Interim Bushfire Measures implementing the recommendations of Eco Logical Australia.</p> <p>Stormwater works will occur progressively with each stage along with downstream OSD basins and pipework and outlets being provided with the first stage that drains to each OSD basin.</p> <p>Public reserve dedication will occur with each stage closest to that section following VMP implementation.</p>

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<ul style="list-style-type: none"> Demonstrate that staging will be consistent with the staging of the adjoining project, MP09_0056 (refer to section 3.5 of EA for MP09_0056), including construction of the main access over the crown road reserve (and who will be responsible for the construction of this road access). <p><u>Stage 1A and potential legal issues</u></p> <ul style="list-style-type: none"> The Department notes that stage 1A of the project is also subject to a separate development application to Council. Preliminary legal advice on this matter from the Department's legal branch indicates that Part 3A is the exclusive approval pathway for the project, including stage 1A. However it is ultimately a matter for the Council to determine whether it has power to determine the Part 4 application. An option for dealing with this matter could be via an amendment to the project declaration to excise stage 1A, being the development the subject of the Part 4 application, from the Part 3A project. This change should also be addressed in the PPR, if there are no adverse implications for the remainder of the project. Clarify how stage 1A (and the existing dwelling house) will be accessed before the later stages of the subdivision are constructed, including satisfactory bushfire access. 	<p>Staging of the two adjoining subdivisions are completely independent.</p> <p>The central spine road to the "Hub" is being constructed by SCC through the subsequently adopted Section 94 CP.</p> <p>The construction of the northern section of crown road will occur in accordance with normal SCC practice which is for the first developer to proceed in an area constructs half the road +1m.</p> <p>Shoalhaven City Council have subsequently approved Stage 1A as a separate development application. Consequently, this is no longer part of the application the subject of this PPR and this has been confirmed by the Department of Planning & Infrastructure in correspondence dated 23rd January 2014.</p> <p>N/A given approval to separate subdivision application and this stage no longer forms part of the application.</p> <p>N/A given approval to separate subdivision application and this stage no longer forms part of the application.</p>
<p>4. <u>Subdivision design and layout</u></p> <ul style="list-style-type: none"> Demonstrate consistency with the draft DCP 124 for the Mundamia urban release area, attached to Council's submission. 	<p>The provisions of draft DCP No 124 have not been formally adopted by Shoalhaven City Council and as such, have no statutory weight and do not require consideration. Despite this, an assessment of the proposal against the exhibited provisions is provided as Annexure 9. It is considered that the proposal generally complies with the principles of the DCP. It is also noted that SCC has been making significant amendments to draft DCP124 since it went on exhibition in light of submissions made. This modified draft is not available for review at the time of submission.</p>

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<p><u>Consistency between MP 08_0141 and MP09_0056</u></p> <ul style="list-style-type: none"> The proposed subdivision layout along the crown road reserve/road six is inconsistent with the adjacent project (MP09_0056). This includes the portion of the Crown road reserve which is proposed to be closed for a public reserve, where this road closure is identified as part of the proposed village centre in MP09_0056. This is also highlighted in the submission from Crown Lands. Liaise with the proponent (Council and NLALC) for the adjoining project (MP09_0056) and provide an overall subdivision layout plan to demonstrate that both projects will be consistent and that relevant road layouts and widths will be consistent and align, particularly along the central spine road and road six. <p><u>Gateway road and general road widths</u></p> <ul style="list-style-type: none"> Provision should be made for the 'gateway road' as required under the Mundamia master plan, and identified within the draft DCP 124. Road widths should in general be consistent with Council requirements and consistent across both projects, MP08_0141 and MP09_0056. <p><u>Bushfire measures</u></p> <ul style="list-style-type: none"> Proposed APZs will encroach on the residential lots, particularly those in stages 9 and 10 which will be significantly affect by a 60 m wide APZ. The subdivision layout will need to be altered to reduce the impact of APZs on the residential allotments or alternatively you need to demonstrate, on plan, that there is sufficient development potential remaining for affected lots, which takes account of suitable building footprints in addition to areas for private open space. <p><u>Open space</u></p> <ul style="list-style-type: none"> Open space areas should be suitably spaced within the subdivision layout, so that they are proximate to all lots, particularly those lots within the northern part of the site. The Mundamia master plan, as shown in the master plan diagram reproduced at Figure 7 of the EA, shows areas for local parks within the northern and southern portions of the site, besides park areas adjacent to the village centre. 	<p>The proposed subdivision layout has been amended in light of draft DCP124, Council's proposed subdivision layout (which was not available at the time the EA was originally submitted) and ongoing discussions with SCC. It is understood that the areas of concern have now been resolved and the two developments now appropriately integrate.</p> <p>The Plan (Annexure 1) has been modified to incorporate relevant elements of the proposed subdivision layout over the adjoining site (MP09_0056) including the central spine road and Road 6.</p> <p>The Plan (Annexure 1) has been amended to provide the "gateway road" as required in the form of a widened entrance.</p> <p>The Subdivision Sketch Plan (Annexure 1) prepared by APA depicts the required APZ identified by ELA (Annexure 5) and which demonstrates that sufficient developable land is available on each allotment. In this regard, relevant APZ affect only that land which would comprise either front or rear setback allowing significant extent of developable land on each allotment.</p> <p>Open space is located principally around the neighbourhood hub where local facilities are to be established. Whilst not strictly according to the Masterplan, it is considered to represent a reasonable extent of open space when:</p> <ul style="list-style-type: none"> the Contributions Plan exhibited by Council obligates the Proponent of this project to contribute to the public reserve featured in MP 09_0056 including its area and embellishment;

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<ul style="list-style-type: none"> The proposed public reserve with an area of 2048 m² includes the area within the Crown road reserve, where the village centre has been identified in the adjoining project application (MP09_0056). The effective public reserve area is therefore likely to be significantly less than 2048 m². Section 3.2.7 of the EA refers to a public reserve of 2612 m² sited on the east of road one, whereas the subdivision layout plan, drawing 25489-01, indicates the area of this reserve is 1986 m². <p><u>Future collector road</u></p> <ul style="list-style-type: none"> The project should provide for the proposed east/west collector road, as identified in the Nowra Bomaderry structure plan and the Mundamia master plan. This should include any setbacks to accommodate the road, which also have regard to noise impacts and landscaped buffers. <p><u>Bus route</u></p> <ul style="list-style-type: none"> The project and subdivision/road layout should be designed to accommodate the provision of a potential bus service, with a suitable bus route and appropriate road widths being identified on plan. The proponent should commit to negotiate with the local bus operators and Transport for NSW to provide a service in the early stages of the development. 	<ul style="list-style-type: none"> combines with the bushland public reserves which flank the perimeter of the site to provide open space; all allotments are sited within 550 m of the proposed formal public reserve. <p>The proposal for an east/west collector road is a long term strategy of Shoalhaven City Council that is adopted under the Nowra Bomaderry Structure Plan. It is noted that this road:</p> <ul style="list-style-type: none"> may never get built; is located on land that is not in the ownership of Council; has NOT been identified by Shoalhaven Council in the recently adopted Shoalhaven LEP 2014 – Land Reserve Acquisition Map; is identified on land that contains native forest vegetation and is likely to be ecologically constrained; and traverses a steep gorge to the east of the subject site with significant engineering constraints. <p>Consequently, it is considered unreasonable to impose additional constraints on the current application. In the event that the road is ever constructed in the location currently identified, it is reasonable to provide noise attenuation with its construction should environmental assessment of that project deem that such is warranted.</p> <p>The Subdivision Sketch Plan prepared by APA (Annexure 1) includes a proposed bus route to service the Mundamia Living Area. This route has been developed following consultation with local Bus service providers who expressed strong concern against 'left turn' movements in favour of right turn movements where more of the road is available to turn the larger vehicles.</p>

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<p><u>Pedestrian and cycling facilities</u></p> <ul style="list-style-type: none"> Demonstrate of the provision of safe pedestrian and cycling facilities, and provision of access between the site and the nearby University Campus, as stages of the project are developed. 	<p>This route identified by the APA plan (Annexure 1) considers the proposed bus route identified in MP09_0056, which enters the URA and undertakes a left turn, proceeds along a perimeter road where it turns to the right, and continues along the perimeter road until intersecting with the main spine road in this proposal where a right turn is required. The route then continues along the main spine road past the identified community hub to exit the site. This plan shows a bus route with three identified bus stops which services all lots within a 500 m radius of the stop.</p> <p>Furthermore, following consultation with bus service providers, the proposed bus route minimises left turn manoeuvres, a turning path that requires tighter turning circles.</p> <p>It is considered that the bus route proposed will satisfactorily service future residents of the URA and also address manoeuvrability concerns of bus service providers.</p> <p>The amended Subdivision Sketch Plan prepared by APA has identified a bus route through the Mundamia URA following consultation with the local service provider.</p> <p>The Contributions Plan exhibited by Shoalhaven Council includes a shared Cycle/Pathway linking the Mundamia URA with the University Campus.</p> <p>The proponent has committed to the payment of all relevant Section 94 Contributions in accordance with the CP adopted by Shoalhaven Council.</p>
<p>5. <u>Developer contributions and proposed Planning Agreement</u></p> <ul style="list-style-type: none"> Statement of Commitment No. 33 should refer to the proposed Planning Agreement, in respect to developer contributions and dedication of public reserve areas, as there is no relevant contributions plan in place. You should continue to liaise and consult with Council regarding the proposed planning agreement and provision of appropriate infrastructure as well as their agreement to accept dedication of the public reserve areas, including the proposed conservation areas. 	<p>Since making these comments, Shoalhaven Council has commenced adopted a Contributions Plan (CP). The proponents have agreed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p>

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<ul style="list-style-type: none"> • Arrangements and negotiations with Council will need to include provision for the external traffic improvements, and these should be reflected in the planning agreement as well as in the Statement of Commitments. The expected timings or triggers for the provision of the external traffic improvements need to be identified. A preliminary review of this matter on behalf of the Department is provided at Appendix C. • A draft VPA should be provided with the PPR along with a copy of an associated letter of offer to Council. 	
<p>6. <u>Traffic and access</u></p> <p><u>George Evans Road</u></p> <ul style="list-style-type: none"> • The EA does not address the current status of unconstructed road connection via the realignment and extension of George Evans Road (which is outside the current site area) nor the expected timing for its completion. Further details are required regarding this matter, including details of any approval/s for the construction of this road access and the expected timing for its commencement and completion. • The timing for commencement of construction of the road access and its completion needs to be factored into the commencement and staging of the project. It is expected that, at least, the issue of construction certificate/s for the initial stages of the project would be dependent upon the commencement and/or completion of this road access. <p><u>Crown road reserve</u></p> <ul style="list-style-type: none"> • Provide evidence of any agreement between Crown Lands and Council regarding the transfer of the Crown road to Council and arrangements for the construction of the road, before the determination of the application. You should liaise with Crown Lands and Council regarding this matter. <p><u>Traffic assessment</u></p> <ul style="list-style-type: none"> • The traffic assessment, by Colston Budd Hunt & Kafes (CBHK), has not considered the combined and cumulative traffic impacts of development proposed within the Mundamia release area, including the adjoining project being undertaken by Council and the NLALC, MP09_0056. 	<p>The construction of approaches to the site via George Evans Road is the subject of a Contributions Plan which has been prepared by Council and the proponent has committed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p> <p>Noted and agreed.</p> <p>It is standard practice that when Crown Roads are constructed to Council standards, the ownership of the road reserve is subsequently transferred from the Crown's care and control to Council's care and control. Shoalhaven City Council have commenced the relevant processes in order to have the roads transferred into their ownership (Annexure 11).</p> <p>Since making these comments, Shoalhaven Council has prepared a Contributions Plan (CP) which includes traffic infrastructure, including that beyond the site. The proponents have agreed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p>

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<ul style="list-style-type: none"> • The RTS and PPR must assess cumulative traffic impacts and identify, in consultation with Council and the RMS, intersection upgrades and external traffic improvements that will be required as a result of these cumulative traffic impacts. The potential environmental impacts of these external traffic improvements should also be identified. • A revised traffic assessment should also address the following matters: <ul style="list-style-type: none"> • A reassessment of traffic volumes and levels of service for key intersections, as indicated in the RMS submission, particularly where traffic counts are underestimated or understated, such as the intersection of Albatross and Yalwal Roads. • The assessment of the holiday period and 10 years horizon was restricted to the intersection of Yalwal Road with Albatross Road; but needs to be carried out for the other surveyed intersections. • An assessment of the mid-block capacity (between intersections) of George Evans Road, Yalwal Road and Albatross Road should also be undertaken, in accordance with Austroads requirements for the existing conditions, with development in the 10 year horizon. 	<p>Since making these comments, Shoalhaven Council has prepared a Contributions Plan (CP) which includes traffic infrastructure, including that beyond the site. The proponents have agreed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p> <p>Shoalhaven Council has prepared a Contributions Plan (CP) which includes traffic infrastructure, including that beyond the site. The proponents have agreed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p>
<p>7. <u>Bushfire measures</u></p> <ul style="list-style-type: none"> • As indicated above in relation to the subdivision layout, the impacts of proposed APZs which encroach on the residential lots need to be addressed. • As required by RFS, staging of bushfire measures need to be further detailed, and this should include plan details. 	<p>Refer above.</p> <p>Staging of the subdivision has been identified in the Subdivision Sketch Plan (Annexure 1) and Interim Bushfire Measures Plan prepared by APA, whilst the Bushfire Protection Assessment prepared by ELA (Annexure 5) has addressed the proposed staging regime. The Interim Bushfire Measures include:</p> <ul style="list-style-type: none"> • provision of a temporary 100m Asset Protection Zone surrounding Stage 1 of the subdivision, • temporary alternate bushfire access for Stage 1, • temporary fire trail network for Stage1.

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<ul style="list-style-type: none"> Stage 1A and the creation of a larger residential lot needs to provide appropriate bushfire access and include provision for rights of carriageway and easements for any proposed bushfire measures required for adjacent residential lots. 	<p>The provision of relevant APZ, access and fire trails can be readily implemented and maintained as long as necessary as the staged implementation of the subdivision progresses.</p> <p>Stage 1A is no longer part of the Project Application.</p>
<p>8. <u>Aboriginal Heritage assessment</u></p> <ul style="list-style-type: none"> Due to the length of time since the Aboriginal heritage assessment was undertaken in 2008, this should be updated in respect to the AHIMS search and review of any more recent archaeological reports in general vicinity of the site. 	<p>NSW Archaeology were engaged to update the earlier assessment and have prepared an Aboriginal Heritage – Further Information report, and this forms Annexure 7 to the PPR. NSW archaeology advises as follows:</p> <ul style="list-style-type: none"> A new AHIMS site search indicates there are no sites recorded in the proposed subdivision area; An AHIMS report search indicates there are no relevant, recent reports in the general vicinity of the subdivision area It is concluded therefore that the original assessment of the archaeological potential and status of the proposal area remains valid. <p>NSW Archaeology have made the following conclusions and recommendations:</p> <ol style="list-style-type: none"> No new AHIMS sites have been identified to be present in the subdivision area. The report search did not result in any modification of the relevant predictive model for the subdivision area. It is concluded that the original conclusions and recommendations as outlined in the South East Archaeology Pty Ltd (2008) report are sound and remain relevant. <p>It is noted that NSW OEH has made an explicit recommendation regarding the preparation and implementation of an Aboriginal Heritage Management Plan and that this should be included as a specific condition in the Statement of Commitments (set out on pages 5 – 6 of the correspondence from OEH dated 12.6.2013).</p>

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<p>9. <u>Site earthworks</u></p> <ul style="list-style-type: none"> No plan details have been provided to show earthworks to accommodate the proposed road system and the extent of filling and reshaping required across the site. Preliminary plans of these earthworks, showing existing and proposed finished site levels and the expected volumes of cut and fill, should be provided. 	<p>There are negligible earthworks proposed. Roads are generally constructed at ground level and blended in to suit the topography. Subdivisions on relatively flat topography, as is the case at Mundamia, do not require any bulk earthworks. Hence there is no bulk earthworks plan required in this instance.</p>
<p>10. <u>Noise impacts</u></p> <ul style="list-style-type: none"> Noise impacts have not been adequately addressed by a suitably qualified acoustic consultant. A revised noise impact assessment should be provided that includes assessment of aircraft noise and road traffic noise impacts and include recommendations regarding measures required to mitigate any adverse noise impacts. (Note: in this regard and for comparison refer to the noise assessment submitted with the environmental assessment for the project application MP09_0056.) 	<p>Day Design where engaged to review the proposal and have prepared an Aircraft and Traffic Noise Intrusion Report (Annexure 4 to the PPR).</p> <p>Having regard to aircraft noise, Day Design note that the subject lands are 3.8 km outside of the ANEF 20 contour, and consequently, in consideration of AS 2021 , the location of the site is suitable for the development without the need to provide protection for aircraft noise.</p> <p>With respect to road and traffic noise, Day Design indicate that the proposal does not trigger the need for a road traffic noise intrusion assessment under SEPP Infrastructure. Notwithstanding this, Day Design have considered the likely impacts of traffic noise and have indicated that the acceptable noise limits can be met using standard construction methods and provided the following examples:</p> <ul style="list-style-type: none"> Brick veneer or fibre cement composite clad external walls; A pitched, tiled or sheet metal roof with sarking, one layer of 10 mm standard plasterboard on the underside of timber ceiling joists lined with standard thermal insulation; and Minimum 4 mm float glass throughout. <p>According to Day Design, the proposal is suitable having regard to acoustic impacts from aircraft and road traffic noise.</p>
<p>11. <u>Acid Sulphate Soils (ASS)</u></p> <ul style="list-style-type: none"> An assessment for the site has not been undertaken. An appropriate assessment including soil sampling must be undertaken by a suitably qualified consultant. An ASS management plan be prepared if necessary. 	<p>A preliminary Acid Sulfate Soils Assessment (SSA) has been prepared by Martens Consulting Engineers (Annexure 6) to consider this issue. The SSA has involved:</p> <ul style="list-style-type: none"> Site walkover; Drilling of boreholes; and Laboratory analysis of 16 soil samples.

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	<p>The SSA has advised that 2 of the samples contain Actual Acid Sulfate Soils (AASS); Potential Acid Sulfate Soils (PASS) where found in 11 of the samples; whilst neither PASS or AASS were identified in the remaining 3 samples.</p> <p>Ordinarily, development that affects PASS or AASS requires preparation of a management plan to deal with the site disturbances. Analysis by Martens however has revealed that the origin of the soils acidity is the underlying geology and is present in the aerobic zone of the soil profile. Consequently, Martens consider, following consultation with NSW OEH ASS expert, Dr Mitch Tulau, that it is unlikely that disturbance of the soils will result in environmental impacts. On this basis, Martens consider that an ASS management plan is not required to ensure protection.</p>
<p>12. Geotechnical assessment</p> <ul style="list-style-type: none"> The Preliminary Geotechnical Assessment carried out by Martens November, 2008, recommends that footings for all permanent buildings on the site be taken to weathered sandstone where possible, given the relatively shallow bedrock depth underlying parts of the site. As highlighted by Evans and Peck advice (refer to copy attached as Appendix B) this is likely to disrupt natural groundwater flows and likely lead to soil saturation. Saturated soils may cause impacts on the integrity of foundations, retaining walls, road pavements and other structures. This matter needs to be addressed in the PPR, having regard to other matters and recommendations in the Evans & Peck advice. 	<p>Martens Consulting Engineers reviewed these comments and provided correspondence to the Department dated 19th November 2013. This is in addition to the Stormwater Management Assessment (Annexure 2) which has resulted in amendments to the manner in which stormwater is managed, and groundwater is recharged, across the site.</p> <p>Having regard to dwelling foundations, Martens advise that these are ordinarily provided by way of:</p> <ul style="list-style-type: none"> Raft slab which do not impede groundwater flows, and Strip footings. <p>Most importantly, Martens advise that the Mundamia DCP should include controls preventing the construction of dwellings with strip footings constructed to rock. This has not been adopted by Council, and as such, it is considered that such restriction can also be imposed by way of a restriction as to user under Section 88B on each allotment.</p>
Appendix A – Flora And Fauna Assessment Issues	
<p>Methodology <u>Desktop Assessment</u></p> <ul style="list-style-type: none"> Given the proximity of the subject land to the Shoalhaven River and Flat Rock Creek, details regarding the potential interaction between water flows on the subject land and these waterways should be provided. Some general information should also be provided on the soils within the subject land. Database searches were conducted in May 2012. New searches should be conducted for any additional species or records. 	<p>These issues have been dealt by Gunninah in Annexure 10 in conjunction with the amended Flora and Fauna Assessment by SLR Consulting (Annexure 2).</p>

<i>Submission</i>	<i>Comment</i>
<p><u>Field Surveys</u></p> <ul style="list-style-type: none"> Whilst Appendix A contains the details of quadrat and transect surveys undertaken within the subject land by Environmental InSites in 2008, this information has been omitted from the list surveys within Section 2.1 (Field Investigations). The locations of such surveys should be shown on a Figure within the report. <p>Results</p> <p><u>Database and Literature Review</u></p> <ul style="list-style-type: none"> No information is provided on the habitat requirements of each species and no justification for the determination of likelihood of occurrence is provided. Where a species is considered to be unlikely to occur, detail is required to justify this assessment (ie. not suitable habitat, no recent records). Additional information should also be provided for species considered likely to occur (ie. suitable foraging habitat) or present (ie. recorded foraging/roosting in the northern portion of the subject land). <p><u>Flora Species</u></p> <ul style="list-style-type: none"> Additional detail should be provided to document the extent of weeds within the subject land, to further support the position that portions of the site are modified. <p>Impact Assessment</p> <p><u>Vegetation Communities</u></p> <ul style="list-style-type: none"> Given that establishment and maintenance of the asset protection zones (APZs) will require modification of vegetation and associated habitats, these areas should be included within the development footprint, and located outside of the E2 zoning. <p><u>Threatened Flora Species</u></p> <ul style="list-style-type: none"> The total area of impact to the threatened species or the total number of individuals has not been documented. Whilst it is acknowledged that 5% of the population within the subject land will be removed, it is unclear that if this is 5% of the known habitat or 5% of individuals; 	

Submission	Comment
<ul style="list-style-type: none"> • Additional detail should be provided on indirect impacts of the project on the local population of the Nowra Heath Myrtle, such as alteration of the hydrological regime and physical damage by residents; • Establishment and maintenance of the APZs may also result in direct and indirect impacts to the local population, which has not been qualified; • There is no assessment of the risks associated with potential failure of stormwater management regime to mimic natural hydrological flows on the Nowra Heath Myrtle population and adjoining vegetation; • The 'National Recovery Plan for <i>Triplarina nowraensis</i>' (OEH (NSW) 2011) is relevant to the subject land. This should have been consulted and addressed to assess the significance of impacts and whether the development is consistent with the recovery objectives or actions of the plan; • Whilst considered within Section 16.2 (Relevant EPBC Act Considerations), <i>Pterostylis vernalis</i> (Spring Tiny Greenhood orchid) is not discussed within the main chapter (Section 8.2); and • The inclusion of an assessment of significance (7 part test) would provide sound reasoning for determining a non-significant impact to the Nowra Heath Myrtle and Spring Tiny Greenhood orchid. <p><u>Threatened Fauna Species</u></p> <ul style="list-style-type: none"> • The inclusion of an assessment of significance (7 part test) would provide sound reasoning for determining a non-significant impact to threatened species. • The following recovery plans are relevant to the subject land and should be consulted and addressed to assess the significance of impacts and whether the project will be consistent with the recovery objectives or actions of the plans. <ul style="list-style-type: none"> – Draft National Recovery Plan for the Grey-headed Flying-fox <i>Pteropus poliocephalus</i> (DECCW (NSW) 2009); – Recovery Plan for the Yellow-bellied Glider <i>Petaurus australis</i> (NSW NPWS 2003); and – Recovery Plan for the Large Forest Owls (including the Powerful Owl) (DEC (NSW) 2006). 	

<i>Submission</i>	<i>Comment</i>
<p><u>Habitat and Connectivity</u></p> <ul style="list-style-type: none"> Additional detail should be included to assess impacts to any water habitats. <p>Avoidance, Mitigation and Compensatory Measures</p> <p><u>Mitigation Measures</u></p> <ul style="list-style-type: none"> Additional detail should be provided regarding the monitoring of mitigation measures and an action plan should the measures be identified as inadequate during monitoring. <p><u>Adaptive Measures for Stormwater Management</u></p> <ul style="list-style-type: none"> No contingency plans or adaptive measures have been discussed, should the stormwater and groundwater designs not function as described in the Martens (2011) and Storm Consulting (2012) reports. <p><u>APZ Management</u></p> <ul style="list-style-type: none"> Slashing in the APZ as a management technique to protect and enhance Nowra Heath Myrtle is not considered an appropriate strategy and is not discussed within the Recovery plan for the species. <p><u>Hollows</u></p> <ul style="list-style-type: none"> Installation of nest boxes requires consideration of target species and appropriate hollow density. Details of follow-up monitoring, ideally annually, will also be required to ensure that hollows and nest boxes remain in good condition and are inhabited by targeted fauna species. <p><u>Access to the Conservation Areas</u></p> <ul style="list-style-type: none"> No indication is provided as to whether the public should be excluded from the conservation area. Details are required of further mitigation measures if access is allowed to prevent impacts to Nowra Heath Myrtle, including trampling, potential spread of soil pathogens, soil disturbance and disturbance of habitat by domestic pets. <p><u>Funding</u></p> <ul style="list-style-type: none"> No detail is provided on the proposed funding of any of the management measures proposed. 	

Submission	Comment
<p><u>Conservation Areas</u></p> <ul style="list-style-type: none"> • Consideration needs to be given to mechanisms required to secure the conservation areas in the long term; and • Other compensatory measures should be considered, such as research or involvement in management as per the proposed recovery actions of the National Recovery Plan for <i>Triplarina nowraensis</i>. <p><u>Other matters</u></p> <ul style="list-style-type: none"> • The total area of land that is proposed for development is reported as 30.94 ha on pages 2, 3 , 45 and in Table 2, reported as 30.95 ha in Table 7 and 31.03 ha on page 3; • Areas of clearing in text on page 35 do not all match the areas provided in Table 7; and • The vegetation committee reported as regrowth woodland and scattered trees in Table 1 and 2 is reported as Regrowth woodland with kunzea heath in Table 7. 	
<p>Appendix B – Review and assessment of water/stormwater management for proposed residential subdivisions at Mundamia (MP08_0141 and MP09_0056) – Evan and Peck Pty Limited, 9 July 2013</p>	
<p>Appendix C – Traffic Measures and Improvements</p>	
<p>The department engaged a traffic consultant to review the traffic assessments with the EAs for both MP08_0141 and MP09_0056. Following this review and having regard to the findings and conclusions of the traffic assessment reports, the following recommendations have been made regarding suggested traffic measures and improvements and broad timeframes for their implementation. These recommendations should be reviewed as part of the further traffic assessment for the response to submission and PPR, also having regard to the submissions and requirements of the RMS and Council (particularly in relation to the VPA).</p> <ul style="list-style-type: none"> • The proponent shall contribute towards the provision of a safe pedestrian and cycleway to the University Campus. 	<p>Council has prepared a draft Contributions Plan for the Mundamia URA and which the exhibited version has included projects including:-</p> <ul style="list-style-type: none"> • Construction of local access roads within the Mundamia URA. • Provision of shared cycleway/pathways in the Mundamia URA; and • intersection upgrade at the George Evans Road and Yalwal Road; • Upgrade of the intersection of Yalwal Road and Rannoch Drive with a roundabout; • Upgrade of the intersection of Yalwal Road and Lightwood Drive with a roundabout; and • Provision of traffic signals and associated works at the intersection of Albatross and Yalwal Roads. <p>The proponent has committed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p>

<i>Submission</i>	<i>Comment</i>
<ul style="list-style-type: none"> • The proponent shall contribute towards the following measures required in the short term (within 3 years): <ul style="list-style-type: none"> – The construction of a roundabout at the junction of George Evans Road with main access to the subdivision (unmade Crown Road) including provision for future connections to the east (to West Nowra and the Nowra CBD) and west (to the university and future bypass); – The replacement of the current AUR arrangement at the intersection of George Evans Road with Yalwal Road with a CHR (Short Lane) arrangement as per Austroads Guide to Road Design (2005); and – Provision of a roundabout at the intersection of Yalwal Road with Albatross Road. • The proponent shall contribute towards the following measures required in the medium term (within 3 to 5 years): <ul style="list-style-type: none"> – The provision of a CHR treatment at the intersection of Depot Street with Yalwal Road; and – The replacement of the roundabout at the intersection Albatross Road with Kalandar Street and Kinghorne Street with traffic signals. The section of Kalandar Street to the west of Albatross Road should be incorporated in the design. • The proponent shall contribute towards the following measures required in the medium to long term (5 to 8 years): <ul style="list-style-type: none"> – The provisions of an exclusive left turn lane into Berry Street from Albatross Road, and exclusive left and right turn lanes along Berry Street approach to the roundabout at the intersection of Albatross Road with Berry Street; and – The provision of further signposting/delineation/lighting measures for pedestrian safety purposes, particularly in the vicinity of the road crossing areas near the intersection of Albatross Road with Berry Street. 	<p>The CP has included those projects identified by Council as being warranted in order to mitigate impacts associated with the development of the Mundamia URA. The proponent has committed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p>

<i>Submission</i>	<i>Comment</i>
NSW RURAL FIRE SERVICE	
<p>The following will need to be provided for further assessment:</p> <ol style="list-style-type: none"> 1. It appears that the proposed subdivision is to be constructed in stages. Currently it is not clear that each stage of the proposed subdivision can achieve compliance with Planning for Bush Fire Protection 2006 (PBP). Please submit further details demonstrating compliance with PBP for each stage of the development with particular attention to the following sections of 4.1.3. 2. PBP outlines requirements for Asset Protection Zones (APZs) for residential subdivisions. Currently it is not clear that each stage of the subdivision can achieve compliance with Appendix 2 of PBP. Please demonstrate that each stage of the development can achieve APZs in accordance with Table A2.4 of PBP. Where APZs will be located outside lot boundaries and over adjoining land, information should be submitted demonstrating how adjoining land will be managed in perpetuity. In some instances, it may be necessary to create an easement in accordance with 88B of the Conveyancing Act 1919. 	<p>Having regard to the Staging of development, Eco Logical Australia advise that each stage of the subdivision will provide a primary and alternate access route, perimeter aces and Asset Protection Zones (APZ), with access roads or a perimeter fire trail complying with the requirements for Planning for Bushfire Protection (PBP). Having regard to the provision of APZ, Eco Logical Australia recommend that these be provided in accordance with PBP for allotments sited on the perimeter of the development, or alternatively for allotments inside the ultimate perimeter, a temporary minimum APZ of 100 m or to the final development perimeter is required.</p> <p>The Plan prepared by APA shows the interim protection measures required for Stage 1 of the subdivision as follows:-</p> <ul style="list-style-type: none"> • provision of a temporary 100m Asset Protection Zone surrounding Stage 1 of the subdivision, • temporary alternate bushfire access for Stage 1, • temporary fire trail network for Stage1. <p>The provision of relevant APZ, access and fire trails can be readily implemented and maintained as long as necessary as the staged implementation of the subdivision progresses.</p>

Submission	Comment
<p>3. PBP outlines requirements for public road access. Currently the proposed subdivision does not appear to achieve compliance with PBP for each stage of the subdivision. Please demonstrate that each stage of the development can achieve public access road requirements. In particular, it is recommended that all roads are through roads considering the nature of the development and proximity to unmanaged forest vegetation. Where this cannot be achieved for each stage of the subdivision, further information should be provided demonstrating compliance with the relevant performance criteria and intent of measures for public road access.</p> <p>4. Currently it is not clear how the existing dwelling will be accessed until later stages of the subdivision are constructed. Please submit further information demonstrating compliance with property access requirements of PBP for the existing dwelling. It should be noted that where dwellings are located greater than 200 metres from a public through road, an alternative property access road should be provided. Alternatively, compliance with the relevant performance criteria and intent of measures should be demonstrated.</p> <p>5. It is acknowledged that the proposed subdivision includes two reserves which are proposed to be maintained as an environmental conservation zone. Currently it is not clear how this land is proposed to be managed and whether any hazard management of those areas is proposed. It is also noted that areas of the reserves are proposed to be maintained as Asset Protection Zones and fire trails. Please submit further details of proposed vegetation management of reserves, including whether of Plan of Management will be developed for the land.</p>	<p>.</p> <p>Since these comments from the NSW RFS, it is noted that consent has been granted to a boundary adjustment (SF 10328 approved by SCC) and this allotment no longer forms part of the Project Application. That approval is accessed via an existing track accessible via Jonsson Road, a public road maintained by Shoalhaven Council. This access will continue until it is replaced by further subdivision proposed in this Project.</p> <p>This issue has been dealt by Gunninah in Annexure 10 in conjunction with the amended Flora and Fauna Assessment by SLR Consulting (Annexure 2).</p>
NSW ROADS & MARITIME SERVICES	
<p>The following comments are provided for consideration:</p> <ul style="list-style-type: none"> – RMS notes that the subject subdivision is located within the Mundamia urban release area (part of the Nowra Bomaderry Structure Plan) which includes another large scale subdivision subject to a separate project application (MP09_0056) which was lodged and referred to RMS simultaneously. 	<p>Comment only. No response required.</p>

Submission	Comment
<ul style="list-style-type: none"> – RMS notes that these are being assessed separately. RMS have reviewed the Traffic Impact Study prepared for the subject project application and notes that the cumulative impacts of the traffic generation of both developments has not been considered in the EA for MP08_0141. 	<p>Comment only. It is noted that Shoalhaven Council have also outlined concerns in relation to traffic matters, and these issues are addressed in that section of this table.</p>
<ul style="list-style-type: none"> – RMS requires that a conservative approach to the traffic modelling is undertaken to give an indication of the 'worst case' traffic scenario which could potentially result from the development, taking into account the cumulative impacts of other developments (approved or likely to be approved) to give a more realistic picture of the traffic volumes that will be using the intersection in the future year traffic scenario. 	<p>Noted.</p>
<ul style="list-style-type: none"> – As the combined traffic generated by both developments is likely to impact the performance of nearby junctions on Albatross Road (MR92) and warrant intersection upgrade/s, RMS is of the view that the Traffic Study should consider the traffic generation potential of both developments to give an accurate picture of the cumulative traffic impacts as a result of the Mundamia subdivision. By comparison, it appears the traffic generation potential of both applications would be more or less equal. 	<p>Noted.</p>
<ul style="list-style-type: none"> – The SIDRA modelling should be revised to consider the traffic associated with the subdivision which is the subject of MP09_0056. 	<p>Noted</p>
<ul style="list-style-type: none"> – It should be noted that Albatross Road south of the Yalwal Road junction, and Yalwal Road is a 25-26m B-double approved route. Therefore any intersection upgrade would need to be designed to cater for the turning movements of B-Doubles from Albatross Road south to/from Yalwal Road. 	<p>Noted.</p>
<ul style="list-style-type: none"> – The applicant should identify suitable infrastructure required to ameliorate any traffic impacts and safety impacts associated with the development. This should include identification of pedestrian, cyclists and public transport infrastructure. Concept plans should be provided for any works proposed within the classified road reserve of Albatross Road. 	<p>Since making these comments, Shoalhaven Council has adopted a Contributions Plan (CP) which includes traffic infrastructure. The proponents have agreed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p>
<ul style="list-style-type: none"> – Any intersection upgrades identified to ameliorate these impacts should be included in the draft Statement of Commitments in the Environmental Assessment. 	<p>Noted.</p>

Submission	Comment
<p>– RMS highlights that in deciding whether or not to approve the major project application under Part 3A of the Environmental Planning and Assessment Act, 1979, it is the Minister's responsibility to consider the environmental impacts of any road works which are ancillary to the development. This includes any works which form part of the proposal and/or any works which are deemed necessary to include as requirements in the conditions of any development consent. Depending on the level of environmental assessment undertaken to date and nature of the works, the Department may require the developer to undertake further environmental assessment for any ancillary road works.</p> <p>The following preliminary comments are provided with regard to the Traffic Study and intersection analysis:</p> <ul style="list-style-type: none"> • RMS notes that the through traffic volumes provided for the PM peak hour on Albatross Road for the existing and future scenarios appear to be understated when compared to the manual traffic counts undertaken on behalf of Council for MP09 0056. RMS notes from the Traffic Study for MP09_0056 that the manual traffic counts in the PM peak from 2008 for Albatross Road at the junction with Yalwal Road were already at 563vph northbound on Albatross Road. RMS notes that the Traffic Study for MP08_0141 indicates much lower northbound through traffic for the existing PM peak hour. • Further, the Traffic Impact Study for MP09_0056 indicates that the Yalwal Road approach at the junction with Albatross Road is already experiencing delays in the 2012 PM peak. RMS notes that the delays would be doubled as a result of the combined additional turning traffic demand as a result of the two subdivisions. The study also indicates that the '2022 + development traffic' PM peak scenario results in a Level of Service (LoS) F with delays of up to 89 seconds for the right turn into Yalwal Road from Albatross Road when the traffic from both subdivisions is considered. 	<p>Noted.</p> <p>As outlined above, Shoalhaven City Council has prepared a Contributions Plan which includes significant traffic infrastructure. The proponents have agreed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p>

Submission	Comment
<ul style="list-style-type: none"> RMS has reviewed the electronic SIDRA analysis for MP08_0214 and notes that the 'PM Holidays + Dev No Upgrade' scenario modelled (see attached) results in a Level of Service F on the Yalwal Road approach, with delays of up to 73 seconds and queues of 222 m. RMS has significant road safety concerns with these delays on the minor road which can lead to driver frustration and high-risk gap acceptance for motorists attempting to turn onto Albatross Road. <p>RMS cannot support the application until appropriate infrastructure upgrades are identified and an appropriate funding mechanism is in place to make provisions for developer funding of required road / transport infrastructure improvements that may be required as a result of the combined traffic impacts from both subdivisions. RMS recommends that the two proponents liaise with the Department and come up with an agreement for the apportionment of funding and Statement of Commitments.</p>	
UNIVERSITY OF WOLLONGONG	
<p>The University of Wollongong (UOW) understands that this residential development adjacent to the Shoalhaven Campus is in accordance with Shoalhaven City Council strategic plans. UOW, in principle, is supportive of this development but will not make a formal submission.</p>	<p>Noted. No further comment required.</p>
SHOALHAVEN CITY COUNCIL – DEVELOPMENT & ENVIRONMENTAL SERVICES	
<p>2. Strategic Planning Matters</p> <p>The Shoalhaven Local Environmental Plan (SLEP) 1985 and the exhibited draft SLEP 2013 applies. The lodgement of the application and the Department's intended assessment has preceded the process for Council's Development Control Plan (DCP) 124 and Contribution Plan (CP) for the URA.</p> <p>Council has prepared a draft DCP 124 - Mundamia; this has not yet proceeded to exhibition, however it provides information on matters Council considers relevant for the URA. A copy is shown in Appendix 2 (of the Council's submission).</p> <p>A CP that identifies facilities and works to support the URA has not been prepared and Council considers that a Voluntary Planning Agreement will be required. Council resolved at its meeting on 26 March 2013:</p>	<p>Since this submission, the provisions of Shoalhaven LEP 2014 (SLEP 2014), commenced operation on 29th April 2014. The SLEP 2014 has zoned the land R1 General Residential and E2 Environmental Conservation.</p> <p>Since this submission, Shoalhaven Council have publicly exhibited Draft DCP 124. The proponent has made a submission in relation to the contents of the Draft DCP which is yet to be considered by Council. The DCP remains in Draft form, and as such, is not a document that requires any consideration under the provisions of the Environmental Planning and Assessment Act, 1979. Notwithstanding this, assessment of the exhibited provisions has been undertaken and forms Annexure 9 to this PPR and it is considered that the proposal complies with the guiding principles of the DCP.</p>

Submission	Comment
<p>A proposed east west road on the southern boundary of the subdivision is part of the Nowra Bomaderry Structure Plan (NBSP). While there is no timeline for the provision of road reservations provision should be made for that road including identifying the necessary setbacks required to accommodate such a road in the future. Adequate setbacks for noise and landscaped buffer are recommended. The extract from the NBSP is shown in Appendix 4 (of the Council's submission).</p> <p>The application shows a number of interspersed lots for medium density developments and dual occupancy lots. Council prefers that the medium density lots be located and grouped in closer proximity to the commercial and community facilities hub. The proposed zone and lot sizes will permit dual occupancy development throughout the subdivision. There is little point nominating dual occupancy lots when all normal residential lots can legally attain dual occupancy development.</p>	<p>The proposal for an east west road is a long term strategy of Shoalhaven City Council that is adopted under the Nowra Bomaderry Structure Plan. It is noted that this road:</p> <ul style="list-style-type: none"> • may never get built, • is located on land that is not in the ownership of Council, • has NOT been identified by Shoalhaven Council in the recently adopted Shoalhaven LEP 2014 – Land Reserve Acquisition Map, • is identified on land that contains native forest vegetation and is likely to be ecologically constrained, and • traverses a steep gorge to the east of the subject site with significant engineering constraints. <p>Consequently, it is considered unreasonable to impose additional constraints on the current application. In the event that the road is ever constructed in the location currently identified, it is reasonable to provide noise attenuation with its construction should environmental assessment of that project deem that such is warranted.</p> <p>The proposed subdivision layout has been amended to cluster the medium density and dual occupancy allotments closer to the neighbourhood hub, being approximately within a 300 m radius. The criticism of Council in regard to the development of dual occupancies is noted, however contrary to Council's view expressed here, it is noted that the Draft DCP requires identification of dual occupancy allotments up front in order to ensure overall dwelling targets are achieved. Further, the DCP provides incentives for dual occupancy on these allotments in that only identified sites can be further subdivided.</p>
<p>3. Open Space</p> <p>Council considers the proposed "open space" areas shown on plan are unsatisfactory. It is considered that larger useable open space areas should be provided in central and accessible locations. The perimeter steep conservation lands do not constitute useable open space.</p>	

Cowman Stoddart Pty Ltd Page 26

Submission	Comment
<ul style="list-style-type: none"> The two environmental protection natural areas both contain constraints including significant areas for Asset Protection Zones (APZs) that may impact the future management of the areas. <p>The small triangular shaped park that adjoins the community/commercial land use on MP09_0056 should be designed to integrate and be functional with the proposed adjoining land uses.</p> <p>Council request the Department considers the overall practical open space provision and impacts.</p>	<p>Noted however it is considered appropriate that these are managed by Shoalhaven City Council as this will ensure that the APZs, which benefit many properties within and surrounding the proposed subdivision, are maintained in a consistent and timely manner in perpetuity.</p> <p>Noted and removed in the layout of the subdivision.</p> <p>As outlined, it is considered that the provision of open space is suitable under the circumstances having regard to both its extent and quality.</p>
<p>4. Contributions Plan</p> <p>Council has given in principle support in lieu of a contributions plan to enter into a Voluntary Planning Agreement (VPA) with the landowners to cover essential community infrastructure, not currently included in the Shoalhaven Contributions Plan 2010. Council's position is identified in Section 2 of this submission, above.</p> <p>Facilities and works associated with the development of the area include:</p> <ul style="list-style-type: none"> Contributions towards external traffic improvements; Realignment and construction of George Evans Road to provide access to the URA; Central Open Space within the URA; A community centre/ child care centre within the URA; Any works associated with drainage measures to protect ecologically sensitive areas; Contributions towards citywide and planning area wide contributions projects i.e. sports fields etc <p>Council welcomes continuing discussions with the applicant to achieve the desired outcomes.</p>	<p>Council has prepared a Contributions Plan for the Mundamia URA and the proponent has committed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p>

<i>Submission</i>	<i>Comment</i>
<p>5. Staging comments</p> <p>Each stage should be functional. It is noted in the EA Report, Appendix 6 – (recommendations clause 11) that the clearing required for the APZs in each stage should be incorporated into the approval conditions.</p>	<p>Noted.</p> <p>The amended Subdivision Sketch Plan prepared by APA is provided with Staging Details as follows:</p> <ul style="list-style-type: none"> • Development commences at the southern boundary of the site; • Progresses in a northward manner to the neighbourhood hub; and • Thence radiates out generally in a north to south direction. <p>Staging is consistent with the requirements of the Mundamia URA Draft DCP.</p>
<p>6. Bushfire and Asset Protection Zones</p> <p>EAR Site Plan and Appendix 6 (Bushfire) identifies required APZs including a 60 m wide APZ in Stages 9 and 10 and also an APZ in Stage 12 that potentially adversely impacts on the proposed Environmental Conservation (EC) Zone. There are objectives within the environmental conservation zone and inconsistencies in the applications regarding expected conservation values and bush fire management under Planning for Bushfire Protection 2006. Council considers the conflict between environmental conservation and hazard reduction for fire safety purposes as unresolved. An alternative design approach is recommended.</p> <p>There are 25m APZs proposed for some areas that are located within the 20m wide road reserve and up to 5m within residential lots. This may be acceptable as the area of the lots impacted is equivalent to expected dwelling setbacks.</p> <p>The provisions for an APZ and fire trail through the large lot EC zone will potentially compromise the ecological integrity of impact of the EC lot as well as an ongoing maintenance burden for Council and should be included as part of the residential subdivision with responsibility for maintenance being with the owner of the residential lots. The criteria for the fire trail are included in EAR-Appendix 6 (Bushfire) Table 2.</p>	<p>The assessment of SLR Consulting (Annexure 3) has considered the direct and indirect impacts of the subdivision including management of Asset Protection zones required by ELA in the Bushfire Protection Assessment (Annexure 5).</p> <p>According to ELA (Annexure 5), the preference for the APZs that are located beyond proposed allotment building setbacks and adjoining road reserves is that they are managed by Shoalhaven City Council as they will benefit many properties within and surrounding the proposed subdivision, and will ensure that they are maintained in a consistent and timely manner in perpetuity.</p>

Submission	Comment
<p>7. Stormwater and drainage</p> <p>The submission identifies some matters that should be addressed in subsequent detailed design.</p> <p>A total of seven (7) stormwater outlets are proposed directly into future Environmental Conservation Areas (ECA). If the ECA's are to be dedicated to the public as reserve then the drainage systems must be contained within the road reserve to facilitate future maintenance.</p> <p>The design of stormwater drainage systems needs to consider the objectives of DCP100 RE11 and in particular the Major and Minor objectives. It should be noted that RE11 objective 01 does not appear to have been considered particularly with regard to the provision of bio-swailes which are indicated to have a 150mm diameter pipe under driveways.</p> <p>The bio-swailes have a large cross sectional area which will carry the major system flows and therefore the driveways need to be bridged over the swales. Council does not accept any pipe in a public road carrying less than the 1% AEP capacity without a secondary flow path and piped driveway crossings must be provided with a minimum 375 mm pipe. The individual vehicle crossings for the residential lots should be provided at subdivision stage to ensure consistency in the design and construction solution and prevent damage to swale during the house building phase. Controls (e.g. bollards, landscaping) need to be provided to ensure vehicle access to the swales are prevented.</p> <p>Generally, the applicant should consider more closely the proposed drainage system and a preliminary drainage design should be provided with the application. The applicant also needs to address how sedimentation and water quality will be controlled during the subdivision and dwelling construction phases prior to completion of development (dwellings) and the construction or bringing online of the bio-swailes.</p> <p><u>Overland Flood Path</u></p> <p>The Stormwater Management Report recommends a major flow overland flow path along Road 4 and 15, but the measures do not appear to have been incorporated in the preliminary engineering plans included in the application. The recommendation is for a 10 m wide carriageway and the typical cross section for the affected roads are shown at 5 m. As noted above 5 m wide carriage ways are not supported.</p>	<p>Issues in relation to Stormwater and Drainage have been resulted in the preparation of comprehensive Stormwater Management Assessment prepared by Martens Consulting Engineers (Annexure 2), and changes to the proposal involving the provisions of OSD basins.</p> <p>This has recommended the following measures to be incorporated into the design of the subdivision:</p> <ul style="list-style-type: none"> • <i>Stormwater runoff from all site roofs is to be directed to rainwater tanks on individual lots for non-potable re-use purposes (eg. irrigation, toilet flushing, laundry, etc.). Rainwater tanks are to have a minimum volume of 3 KL/lot for individual residential lots and 1.5 KL/dwelling for medium density and dual occupancy lots.</i> • <i>A dedicated OSD (with appropriately designed orifice controlled outlet) of 3KL/lot is also to be provided as either a standalone OSD tank or as dedicated additional OSD volume within the rainwater tank.</i> • <i>Stormwater runoff from lots and roads is to be directed to roadside bioretention swales. Swales are to have a minimum top width of 3.0 m and a minimum base width of 2.0 m. Swales are to be a minimum of 0.1 m deep with 1V:2.5H side slopes. Bioretention filters are to be a minimum depth of 0.52 m and are to be unlined to allow groundwater recharge. Swales are to have an underdrain and overflow system connected to an appropriately sized pit and pipe drainage system.</i> • <i>A stormwater system including pits, pipes and associated infrastructure is to be constructed within road reserves to direct flows from bioretention swales to site OSD basins and discharge control structures. Detailed sizing and location of all pits and pipes is to be completed prior to the issue of a construction certificate.</i> • <i>Runoff from site areas is to be directed to proposed OSD basins located as shown in Attachment A and consistent with properties as outlined in Table 6. Basin C2a is to incorporate a bioretention filter with parameters as outlined in Table 11.</i> • <i>Preliminary OSD basin design consists of a discharge pit with low-level, mid-level and high flow pipes that discharge to an outlet headwall. Pipe outlets are summarised in Table 6. Basin 2a pipe discharge is to be located east of the proposed development in the vicinity of the outlet for Basin C2.</i>

Submission	Comment
<p>Furthermore, the recommendation is to convey part of the major flows underground and a large diameter pipe (nominal 1.2 m) is proposed along road four which will be at least 2 m below ground at the outlet and will require significant outlet works to provide velocity reduction, flow spreading and tail out into the environmental conservation zone. The impact of these works needs to be considered and details provided for assessment.</p> <p>It is also unclear how the applicant is proposing to capture surface flows for conveyance into this pipe system. Significant number of inlet structures, particularly when blockages are factored in, maybe required and therefore the practicality of this solution needs to be assessed. The preliminary engineering plans need to be updated to include stormwater drainage.</p> <p>Alternative solutions to manage the major flows need to be considered. An open drain / swale maybe necessary.</p>	<ul style="list-style-type: none"> • <i>Site stormwater outlets will require appropriate level spreader(s) / energy dissipater(s) to replicate existing flow conditions. A nominal 20 m setback should be established between site stormwater outlets and areas of sensitive vegetation.</i> <p>In addition to the modified design measures, Martens Consulting Engineers have also recommended the following implementation measures:</p> <ul style="list-style-type: none"> • <i>The construction of end of pipe and roadside structures would be undertaken as a condition of future sub-division consent and would occur as the development road system is constructed. On completion, these systems may be maintained for a period by the developer or be transferred to Council for their management. It is anticipated that the specifications for the system shall form a condition of future sub-division consent.</i> • <i>Future allotments shall be burdened with the need for stormwater management infrastructure to achieve the objectives of this study. The infrastructure required shall include a rainwater tank (as is generally required throughout NSW due to BASIX), and dedicated OSD storage, both with minimum volume as detailed in this report.</i> <p>Martens Consulting Engineers have made the following recommendations to ensure that the proposed stormwater system continues to operate in a satisfactory manner:</p> <ul style="list-style-type: none"> • <i>Road side bioretention swales and OSD basins should be inspected and cleaned routinely to ensure litter accumulation does not become excessive.</i> • <i>Periodic removal of accumulated silts from bioretention swales, beds, and OSD basins may be required to ensure ongoing hydraulic performance. System monitoring is to be undertaken to ensure that adequate infiltration into filter media is maintained. Where infiltration deteriorates, the owner of the infrastructure shall be required to replace filter media.</i> • <i>Vegetation management is required to ensure that systems do not become clogged with dead and decaying vegetation and to ensure that vegetation does not block water flow through the systems. Maintenance requirements for vegetation shall depend on the nature of the plants and is to be developed in detail as part of the final project landscape management plan.</i>

Submission	Comment
<p><u>Onsite Detention</u></p> <p>No onsite detention is proposed. The applicants report indicated this is not required based on the site proximity to the river. However, the adjoining development (MP09_0056) has provided detention to facilitate hydrological loading and therefore mitigating the impact on threatened flora. Further advice is required to determine if detention is required for ecological reasons. If detention is required, proposed devices should be integrated into open space and be design with consideration to safety, amenity and ongoing maintenance.</p> <p><u>Rain Gardens</u></p> <p>The applicant's proposal to provide rain garden on individual lots is not supported. The individual lot solution will need ongoing maintenance by individual owners and is likely to result in deterioration of these devices creating a regulation / enforcement burden on Council.</p> <p><u>Erosion and Sediment Control Plan</u></p> <p>There has been no assessment of the typical erosion and sediment controls submitted. This plan cannot be fully assessed until the extent of exposed soil is known. The controls need to be provided in accordance with the blue book and the provision of sediment basin maybe required.</p>	<p>OSD is proposed in the assessment of Martens Consulting Engineers in the form of three on site detention areas with a total area of 1.89 ha.</p> <p>Following reconsideration of this matter by Martens Consulting Engineers (Annexure 2), the rain gardens have been replaced with alternative detention methods including OSD on public infrastructure, and rainwater tanks on individual lots which have some detention capacity. The system recommended by Martens Consulting Engineers does not require significant maintenance by individual allotment owners.</p> <p>APA have prepared an Erosion and Sediment Control Plan with typical erosion sediment controls to be implemented.</p>
<p>8. Environment and Hydrology Conflict</p> <p>It will be difficult for the applicant to meet the requirements of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) determination governing changes to hydrological flows without similar control measures also applying to neighbouring land (MP09_0056). The controls relate to the changes to hydrological flow regimes leaving the site. They require recharge to ensure there is no significant impact on <i>Pterostylis vernalis</i> which is listed as Critically Endangered by both Federal and State legislation. In order for adequate recharge to occur there will need to be an adequate area of pervious surfaces across the site (to be determined by detailed studies).</p>	<p>The assessment of Martens Consulting Engineers (Annexure 2) included consideration of hydrologic flows in order to minimise impacts. This review has included assessment utilising DRAINS modelling to consider volume and MUSIC modelling to examine water quality.</p> <p>This has resulted in changes to the development including the provision of detention basins to supplement the OSD proposed. Martens Consulting Engineers concluded that:</p> <ul style="list-style-type: none"> • The completed analysis indicates that, even with best practice water quality and quantity control solutions as developed in this assessment it is not feasible to achieve a post development surface water regime which exactly mimics the pre-development condition. • The proposed development does not have an adverse impact on downslope areas (in terms of increased peak discharge rates and pollutant loads) based on detailed hydrological and water quality modelling completed.

Submission	Comment
It appears that there are differing requirements for this application compared to MP 09_0056, and the Department is requested to determine equivalent conditions and commitments for both applications.	The recommended mitigation measures outlined by Martens Consulting Engineers (Annexure 2) have been included in the amended Statement of Commitments.
<p>9. Flora and Fauna and Biodiversity</p> <p>The Director General's Requirements (DGR's) – Flora and Fauna state the proponent must undertake particular assessments. The proposed development does not meet the DGR's specific to Flora and Fauna Assessment and further information should be submitted. The lack of information suggests that the extent of impacts would be unknown if the proposal was to proceed in its current form.</p> <p>In particular, the environmental assessment:</p> <ul style="list-style-type: none"> • does not provide offsets that meet the improve or maintain test (DGR 9.2) • does not demonstrate offsets have been prepared in consideration of the EEC's (Swamp Sclerophyll Forest on Coastal Floodplains) present at the site or the number of threatened species that are likely to be impacted • demonstrates insufficient survey and assessment of threatened species, populations and endangered ecological communities • provides insufficient assessment of impacts and unrealistic mitigation measures. The concept of retaining and enhancing a threatened plant population in an APZ is considered unrealistic and impractical <p>Additional detail is provided in Appendix 5.</p>	These issues have been dealt with by Gunninah in Annexure 10 in conjunction with the amended Flora and Fauna Assessment by SLR Consulting (Annexure 2).
<p>10. Traffic and Access</p> <p><u>External Impacts to Yalwal Road and Albatross Road</u></p> <p>The application does not satisfactorily address the impacts of Mundamia developments on the existing West Nowra residential area. The two applications for residential subdivision before the Department have included traffic consultant's recommendations that have different conclusions.</p> <p>Section 2 of the Council's submission includes reference to a Council resolution for discussions for a Voluntary Planning Agreement (VPA) that includes "Contributions towards external traffic improvements".</p>	<p>As outlined above, Shoalhaven City Council has adopted a Contributions Plan which will currently include relevant traffic infrastructure in the form of land acquisition (road widening), upgrade of various local roads, and several intersection upgrades with roundabouts and traffic signals. The carrying out of the works identified in the CP will resolve traffic issues.</p> <p>The proponents have agreed to the payment of all relevant Section 94 Contributions in accordance with the adopted CP.</p>

Submission	Comment
<p>Appendix 6 provides Council's additional assessment detail for West Nowra that takes into account future impacts including for the Mundamia URA. Council considers that the intersection of Yalwal Road and Albatross Road should be upgraded as part of the VPA discussions.</p> <p>The Department is requested to undertake an independent peer review of the traffic reports and the assessments in Appendix 6 to determine appropriate conditions of approval for the Yalwal Road / Albatross Road and George Evans Drive / Yalwal Road intersections. It is identified that release of the early stages of the residential development will trigger upgrade requirements.</p> <p>In the Department's consideration of the difference in the traffic assessments, Council recommends a cost benefit be undertaken between a roundabout suitable for heavy vehicles using Albatross Road and an option for traffic signals which will achieve improved pedestrian safety and traffic capacity outcomes.</p> <p>The apportionment of costs may be identified in a VPA.</p> <p><u>Sub-Division issues – Both sub-divisions (MP08 0141 and MP09 0056)</u></p> <p>This information refers to both subdivisions. It is requested that a similar setback (similar to Council Lots 1-4) across the Twynam sub-division be ensured to make adequate allowance for the future east-west road, ie road #8 could be extended to road#2, west of road 2 road #8 could be cul-de-sac east of road#1 (no access to road#1 / unformed crown road) and any development not permitted to the south of road#8. This will require some redesign of the lot layout.</p> <p>It is recommended that the bus route be determined as being via the network of roads including the unformed crown road, Council road #2, George Evans Road between Road #2 and Johnson Rd, Johnson Road full length, and via the Twynam Road #1. This is preferred for greater coverage and more efficient route for buses integrating the two developments, and is included in Draft DCP 124.</p> <p>The bus network should be at minimum 9m to ensure is suitable for future bus access.</p>	<p>The subdivision layout (Annexure 1) has been amended by APA to co-ordinate with the proposal on adjoining land.</p> <p>The amended Subdivision Sketch Plan prepared by APA (Annexure 1) has identified a bus route through the Mundamia URA following consultation with the local service provider.</p> <p>The amended Subdivision Sketch Plan prepared by APA (Annexure 1) has identified a bus route through the Mundamia URA following consultation with the local service provider.</p>

<i>Submission</i>	<i>Comment</i>
The intersection of Council road#2 and the unformed crown road should be a roundabout suitable for bus and service vehicle access.	The amended Subdivision Sketch Plan prepared by APA (Annexure 1) has identified a bus route through the Mundamia URA following consultation with the local service provider.
The intersection of Council road#3, Twynam Road#10 and the unformed crown road should be a roundabout suitable for bus and service vehicle access.	The amended Subdivision Sketch Plan prepared by APA (Annexure 1) has identified a bus route through the Mundamia URA following consultation with the local service provider.
There should be no uncontrolled direct access to the unformed crown road / Twynam Road#1. The proposed median on this section of main road entrance (unformed crown road / Twynam Road#1) would make it acceptable to allow some direct access (ie two roundabouts joined by continuous landscaped median along the main road in this section).	The amended Subdivision Layout prepared by APA (Annexure 1) details the provision of a central median making direct access acceptable.
DCP100 in Element RE4 – Local Street Network on page 14 under acceptable solutions states “Intersections should either be T-junctions or roundabouts.” Whilst this is stated under the heading acceptable solutions there are really no alternatives other than cross. Cross roads in local streets or access streets generally end up with Council having to provide give way or stop signage.	Noted. Road layout and proposed hierarchy supported by CBHK in original EA.
Within a subdivision where the streets do not yet exist T-junctions are preferred (see page 12 DCP100) over roundabouts.	Noted. Road layout and proposed intersection location supported by CBHK.
Some minor road intersections are also angled and desirably they should be provided perpendicular to the road they join.	Noted. Road layout and proposed intersection location supported by CBHK.
Roads should be 6m or 9m. If roads had to be wider than 6m they should be 9m, not less.	Noted.
In regards to the unformed crown road and the Twynam Road #1 past the commercial zone. If parking is to be allowed on both sides of the main road then 11 m width is satisfactory, as long <u>as there was suitable pedestrian treatment for access to the commercial zone from the adjacent development area</u> . This width would also allow for future bus pick up/set down on both sides of the road in front of the commercial area if/as required.	Noted. Proposed Subdivision has been modified in the vicinity of the proposed commercial zone (Hub) as required, as shown in the Subdivision Plan prepared by APA (Annexure 1).

Submission	Comment
<p>The Mundamia Master plan envisaged a gateway boulevard style for the road entering the URA, with a 24m road reserve with 4m landscaped median and 2 x 5.5m road widths (with concrete edging), and this doesn't appear to be mentioned or proposed.</p>	<p>The amended Subdivision Layout prepared by APA (Annexure 1) details the provision of a boulevard style road with a central landscaped median in accordance with this recommendation.</p>
<p>11. Bus Route</p> <p>The application proposed a road system that does not provide for a suitable bus route that incorporates the URA sites. The adjoining MP09_0056 may also incorporate a bus route. The road pattern proposes a 20m wide road (9m carriageway) only in Road 1 and other roads are proposed as 16m (5.5m carriageway) that is unsuitable for a bus route.</p> <p>The draft DCP 124 includes provisions for a bus route which requires at least a 9m carriageway throughout and Council requests consideration of an overall bus route being provided.</p>	<p>The Subdivision Sketch Plan prepared by APA (Annexure 1) includes a proposed bus route to service the Mundamia Living Area. This route has been developed following consultation with local Bus service providers who expressed strong concern against 'left turn' movements in favour of right turn movements where more of the road is available to turn the larger vehicles.</p> <p>This route identified by the APAP plan (Annexure 1) considers the proposed bus route identified in MP09_0056, which enters the URA and undertakes a left turn, proceeds along a perimeter road where it turns to the right, and continues along the perimeter road until intersecting with the main spine road in this proposal where a right turn is required. The route then continues along the main spine road past the identified community hub to exit the site. This plan shows a bus route with three identified bus stops which services all lots within a 500 m radius of the stop.</p> <p>Furthermore, following consultation with bus service providers, the proposed bus route minimises left turn manoeuvres, a turning path that requires tighter turning circles.</p> <p>It is considered that the bus route proposed will satisfactorily service future residents of the URA and also address manoeuvrability concerns of bus service providers.</p> <p>The amended Subdivision Sketch Plan prepared by APA has identified a bus route through the Mundamia URA following consultation with the local service provider.</p>
<p>12. Infrastructure – Water and Sewer</p> <p>The provision of water and sewer infrastructure is managed by Shoalhaven Water, a division of Council. A separate response has been forwarded to the Department by letter dated 24 May 2013.</p>	<p>Noted.</p>

Submission	Comment
<p>Some information from Shoalhaven Water's assessment for MP09_0056 is included as Appendix 7 for the information of the Department and the applicant.</p> <p>The submitted documentation makes limited reference to water supply and sewerage infrastructure. Some of the documentation is conflicting and/or not clear and needs clarification. The Shoalhaven Water requirements are stated below:</p> <p>"1. <i>Matters Relating to a Certificate of Compliance</i></p> <p><i>The following condition shall be incorporated in the body of the operational consent (where approval is granted):</i></p> <p><u>"Certificate of Compliance:</u></p> <p>STANDARD CONDITION TO BE INCLUDED IN DEVELOPMENT APPLICATION APPROVAL (OPERATIONAL CONSENT) WHERE A CERTIFICATE OF COMPLIANCE IS REQUIRED</p> <p>Water and/or Sewer Contributions</p> <p>(a) <i>The applicant is to apply under Section 305 of Division 5 of Part 2 of Chapter 6 of the Water Management Act 2000 for a Certificate of Compliance from Shoalhaven Water.</i></p> <p>(b) <i>Relevant conditions/requirements, including monetary contributions (where applicable) under the Water Management Act 2000, can be provided under Section 306 of Division 5 of Part 2 of Chapter 6 of the Water Management Act 2000. A Development Application Notice issued by Shoalhaven Water will outline all conditions/requirements to be adhered to.</i></p> <p>I <i>A Certificate of Compliance (CC) under must be obtained to verify that all necessary requirements for matters relating to water supply and sewerage (where applicable) for the development have been made with Shoalhaven Water. A Certificate of Compliance shall be obtained from Shoalhaven Water after satisfactory compliance with all conditions as listed on the Development Application Notice and prior to the issue of an Occupation Certificate, Subdivision Certificate or Caravan Park Approval, as the case may be.</i></p>	<p>Noted and can be incorporated as conditions.</p>

Submission	Comment
<p><i>In the event that development is to be completed in approved stages or application is subsequently made for staging of the development, separate Compliance Certificates shall be obtained for each stage of the development.</i></p> <p><i>Where a Construction Certificate is required all conditions listed on the Shoalhaven Water Development Application Notice under the heading "PRIOR TO THE ISSUE OF A CONSTRUCTION CERTIFICATE" must be complied with and accepted by Shoalhaven Water. The authority issuing the Construction Certificate for the development shall obtain written approval from Shoalhaven Water allowing a Construction Certificate to be issued."</i></p> <p>2. <i>Matters Relating to Provision of Land for a Sewage Pumping Station & Associates Infrastructure</i></p> <p><i>Land shall be set aside for the provision of a sewerage pumping station (SPS) to service the lands that will drain to this proposed SPS.</i></p> <p><i>The parcel of land for the SPS shall be:</i></p> <ul style="list-style-type: none"> <i>– adjacent and/or have access to a public road by axe-handle. Where a public road is initially not available then an easement for access and services over Lot 3 DP 568613 is to be provided in favour of SCC. Easement width shall be 10m wide.</i> <i>– at least 40m radial distance from any residential lot,</i> <i>– approximately 20m x 20m in dimension,</i> <i>– transferred into Shoalhaven City Council's name at no cost. Transfer shall take place a minimum of 1 year prior to commencing any sewerage construction works.</i> <p><u><i>The plan of subdivision by Allen Price and Associates REF No. 25489-01, sheet 1 of 1 Rev 04, lasted revision 16-5-2012 needs to have stage 1A modified to also include the SPS site and necessary public road access or initial easements for access and services.</i></u></p>	<p>Significant liaison has occurred between Shoalwater and APA during the PPR process. APA plan 25489-11 has been provided to Shoalwater for comment and their design purposes. No negative feedback has been received regarding the location of the proposed SPS site and it is understood that Shoalwater staff have commenced survey and design activities for the SPS site and associated mains. The site generally complies with Shoalwater's requirements and will be subject to their design and construction requirements as the SPS is being funded by Shoalwater under its Development Servicing plan. The SPS site will be dedicated with the Stage 1 subdivision. If Shoalwater requires the SPS site, it must acquire the land under the Land Acquisition (Just Terms Compensation) Act 1991.</p>

Submission	Comment
<p>SUMMARY</p> <p><i>The proposed development is required to provide water supply and sewerage services to all urban lots created under the Mundamia Urban Release area. Town water is available however, approval is required from all landowners where the water main is to run through private lands and must be placed within an Easement for Water Supply where within private land.</i></p> <p><i>Council resolved to assist by:</i></p> <p><i>At its meeting on 27 January 2009, Council resolved the following:</i></p> <ul style="list-style-type: none"> <i>a) Council adjust its Development Servicing Plan for Water and Sewerage by bringing forward the investigation, concept design and environmental studies for the Mundamia release area to the 2008/2009 financial year, with funding provided through its deferred developer works;</i> <i>b) Council adjust its Development Servicing Plan for Water and Sewerage by bringing forward the detailed design and construction works to service the Mundamia release area to 2009/2010. The implementation of these works would be pending gazettal of the draft LEP,</i> <i>c) Council adjust the water and sewerage capital works program to reflect the alteration in the DSP;</i> <p><i>The proposed development must comply with Section 64 of the Local Government Act which provides a cross-reference to the Water Management Act. The applicant/developer is required to make application for a Certificate of Compliance under Section 305 of the Water Management Act. “</i></p>	
SHOALHAVEN CITY COUNCIL – SHOALHAVEN WATER	
<p><u>“Certificate of Compliance:</u></p> <p>STANDARD CONDITION TO BE INCLUDED IN DEVELOPMENT APPLICATION APPROVAL (OPERATIONAL CONSENT) WHERE A CERTIFICATE OF COMPLIANCE IS REQUIRED</p> <p><i>Water and/or Sewer Contributions</i></p> <ul style="list-style-type: none"> (a) The applicant is to apply under Section 305 of Division 5 of Part 2 of Chapter 6 of the Water Management Act 2000 for a Certificate of Compliance from Shoalhaven Water. 	<p>Noted and can be incorporated into conditions of consent. With respect to the SPS site, the proposed site is identified and significant liaison has been undertaken with Shoalhaven Water regarding the proposed site. No negative feedback has been received and survey and design activities have commenced.</p>

Submission	Comment
<p>(b) Relevant conditions/requirements, including monetary contributions (where applicable) under the Water Management Act 2000, can be provided under Section 306 of Division 5 of Part 2 of Chapter 6 of the Water Management Act 2000. A Development Application Notice issued by Shoalhaven Water will outline all conditions/requirements to be adhered to.</p> <p>(c) A Certificate of Compliance (CC) under must be obtained to verify that all necessary requirements for matters relating to water supply and sewerage (where applicable) for the development have been made with Shoalhaven Water. A Certificate of Compliance shall be obtained from Shoalhaven Water after satisfactory compliance with all conditions as listed on the Development Application Notice and prior to the issue of an Occupation Certificate, Subdivision Certificate.</p> <p>In the event that development is to be completed in approved stages or application is subsequently made for staging of the development, separate Compliance Certificates shall be obtained for each stage of the development.</p> <p>Where a Construction Certificate is required all conditions listed on the Shoalhaven Water Development Application Notice under the heading “PRIOR TO THE ISSUE OF A CONSTRUCTION CERTIFICATE” must be complied with and accepted by Shoalhaven Water. The authority issuing the Construction Certificate for the development shall obtain written approval from Shoalhaven Water allowing a Construction Certificate to be issued.”</p> <p>The purpose of this condition is to ensure that the applicant/developer is aware of their obligation and requirement to apply to the water authority “Shoalhaven Water” for a Certificate of Compliance” for their development.</p> <p>Shoalhaven Water has reviewed the documentation submitted and whilst there are some minor corrections and clarifications listed below it is essential for the provision of a sewage pumping station that the following modifications be made/inserted into the plan/s and documentation prior to approval being granted:</p>	

Submission	Comment
<p>The development requires that a sewage pumping station be constructed to support the development. A parcel of land shall be:</p> <ul style="list-style-type: none"> • adjacent and/or have access to a public road by axe-handle. Where a public road is initially not available then an easement for access over Lot 3 DP 568613 is to be provided in favour of SCC. Easement width shall be 10 m wide. • at least 40 m radial setback from any residential lot, • approximately 20 m x 20 m in dimension for the SPS site, • transferred into Shoalhaven City Council's name at no cost. Transfer shall take place a minimum of 1 year prior to commencing any sewerage construction works to allow the water authority to plan and construct the asset. <p>This is essential to the sewer servicing of this development. The plan of subdivision by Allen Price and Associates REF No. 25489-01, sheet 1 of 1 Rev 04, lasted revision 16-5-2012 needs to have stage 1A modified to also include the SPS site and necessary public road access or initial easements for access and services.</p> <p>Matters which require correction/clarification include:</p> <p>Water Supply:</p> <p>The documents reference Shoalhaven Water's Water Supply Development Servicing Plan (DSP) 2005. This document is currently being reviewed and the proposed work in the 2005 will not be listed in the new water DSP. The reason this is that the proposed water supply infrastructure has been down-sized and as such it is now classified as reticulation work, which is carried out by the developer.</p> <p>It is noted that the EA report by Cowman Stoddart P/L references Section 64 water supply rates (refer to page 85) which are 2011/12 year and not the current 2012/13 year. The Section 64 water supply rate for 2012/13 is \$6,578/lot created.</p> <p>The applicant/developer shall be required to pay towards water services to each lot created. Cost for a 20mm metered water service is \$692.00 (2012/13).</p>	

Submission	Comment
<p>Sewerage Services:</p> <p>Plan No. 25489-07 sheets 1 to 3 by Allen Price & Associates need clarification. Sheet 1 of 3 does not correlate with sheets 2 and 3. In addition the electronic title provided for these documents does NOT match the drawing number on each respective plan.</p> <p>It is noted that the EA report by Cowman Stoddart P/L references Section 64 sewerage services rates (refer to page 84) which are 2011/12 year and not the current 2012/13 year. The Section 64 sewerage services rate for 2012/13 is \$8,339/lot created.</p>	
DEPARTMENT OF DEFENCE	
<p>The proposed subdivision is located in an area mapped by Defence as "Birdstrike Group B 8km Buffer Area" as indicated in the attached bird strike map for HMAS Albatross. In this buffer area the use of artificial water bodies needs to be controlled as they have the potential to attract wildlife which contributes to the risk of birdstrike. Defence understands that the proposed subdivision contains artificial water bodies for stormwater management. Defence is concerned that the proposed artificial water bodies will potentially increase the risk of bird strike for aircraft operating from HMAS Albatross. Defence requests that the Department of Planning and Infrastructure provide appropriate development conditions to ensure that the design of the artificial water bodies minimise habitat opportunities for birds and bats (eg by careful selection of landscaping, water body edge treatments etc).</p> <p>Defence notes that the subject site is constrained by building height controls that protect airspace near HMAS Albatross. The Defence (Areas Control) Regulations (DACR) restriction over the proposed site ranges from "structures higher than 45m require approval" and "structures higher than 90m require approval". Although Defence recognises that these heights are unlikely to be reached by residential buildings, any structure (including buildings, light poles, cranes, mobile telephone towers or vegetation) that exceeds this level will need to be referred to Defence for comment.</p>	<p>Comments are noted. Further detailed design of detention ponds can incorporate measures to ensure that these artificial water bodies minimise habitat opportunities through landscaping and the treatment of edges.</p> <p>Noted and does not affect this proposal. Future development within the Mundamia URA unlikely to be of a height to encroach into the area of concern (ie. 45 m or higher).</p>

Submission	Comment
<p>Extraneous lighting is a potential hazard to aircraft. Consequently the amount of upward light emitted in specific areas needs to be controlled. Due to the proximity of the site to HMAS Albatross, it is recommended that all outside lighting associated with the proposed subdivision is to comply with the requirements of the Civil Aviation Safety Authority (CASA) Manual of Standards Part 139 Aerodromes.</p> <p>If it is found that after the construction of the development or at any time in the future that the lighting endangers the safety of aircraft operations, Defence or CASA may require the lighting to be extinguished or suitably modified, even where these lighting installations have been designed and constructed in accordance with the above requirements.</p>	<p>Noted. Street lighting to be in accordance with the requirements of Shoalhaven City Council and Endeavour Energy.</p> <p>Noted.</p>
NSW OFFICE OF ENVIRONMENT & HERITAGE	
<p>Issues that need to be addressed before OEH would support the project proposal:</p> <ul style="list-style-type: none"> • The development footprint overlies areas deemed to be high conservation value vegetation on the eastern edge of the site which should be excluded from the development area. There is a need to protect the creekline and riparian area in the northwest of the site for whole of its length. • In addition proposed Asset Protection Zones (APZs) for some areas of the site are co-located with areas both already zoned E2 and proposed to be dedicated for conservation purposes. APZs are considered to be part of the development footprint and consequently the proponent should consider: <ul style="list-style-type: none"> (a) reconfiguring the subdivision layout to remove APZs from areas of vegetation included as part of a proposed offset/conservation area or (b) including the APZ in any assessment of impacts on threatened species (including the Nowra Heath Myrtle) and in the area calculation of vegetation impacted by the development 	<p>These issues have been dealt by Gunninah in Annexure 10 in conjunction with the amended Flora and Fauna Assessment by SLR Consulting (Annexure 2).</p>

Submission	Comment
<ul style="list-style-type: none"> In the view of OEH the area within the site proposed to be set aside for conservation purposes is insufficient to be consistent with an improve or maintain principle for biodiversity offsets. The native vegetation to be removed/modified contains threatened species habitat and is greater in area than the area proposed as an offset. There is also no mechanism currently agreed upon to secure and manage the offset in perpetuity. The subdivision design should be either modified to avoid biodiversity impacts or a suitable offset should be developed in consultation with OEH. An updated search of the OEH Aboriginal Heritage Information Management System (AHIMS), and review of any more recent archaeological reports in the general vicinity of the project area, should be undertaken to ensure the predictive model of Aboriginal site locations are still current given the length of time since the previous Aboriginal Heritage assessment report was prepared. 	<p>NSW Archaeology were engaged to update the earlier assessment and have prepared an Aboriginal Heritage – Further Information report, and this forms Annexure 7 to the PPR. NSW archaeology advises as follows:</p> <ul style="list-style-type: none"> A new AHIMS site search indicates there are no sites recorded in the proposed subdivision area; An AHIMS report search indicates there are no relevant, recent reports in the general vicinity of the subdivision area; It is concluded therefore that the original assessment of the archaeological potential and status of the proposal area remains valid. <p>NSW Archaeology have made the following conclusions and recommendations:</p> <ol style="list-style-type: none"> No new AHIMS sites have been identified to be present in the subdivision area. The report search did not result in any modification of the relevant predictive model for the subdivision area. It is concluded that the original conclusions and recommendations as outlined in the South East Archaeology Pty Ltd (2008) report are sound and remain relevant. <p>It is noted that NSW OEH has made an explicit recommendation regarding the preparation and implementation of an Aboriginal Heritage Management Plan and that this should be included as a specific condition in the Statements of Commitments (set out on pages 5 – 6 of the correspondence from OEH dated 12.6.2013).</p>

Submission	Comment
<ul style="list-style-type: none"> The proponent should ensure that they have familiarised themselves with recent changes in Aboriginal heritage legislation and regulation to ensure they have satisfied all statutory obligations in relation to Aboriginal heritage matters. 	<p>The Aboriginal Heritage – Further Information assessment of NSW Archaeology includes current legislative requirements pertaining to Aboriginal cultural heritage matters in NSW.</p>
NSW EDUCATION AND COMMUNITIES	
<p>The Department has reviewed the Environmental Assessment and does not oppose this development. We understand that this development is part of a wider 720 dwellings development proposed in the Mundamia area that has been identified in the <i>Nowra Bomaderry Structure Plan</i>. The Department would appreciate being kept informed of the progress of this and other developments in the area.</p> <p>Currently, the suburb of Mundamia is serviced by Nowra Public School and Nowra High School. It is anticipated that there would be sufficient capacity at these schools, to accommodate students from this development in the future. To meet future projected student demand from the neighbouring Cabbage Tree Lane area, which is not expected to commence for at least 10 years, new educational facilities would be required. The Department requests that a voluntary planning agreement be developed which seeks a special education contribution towards the construction of these new education facilities.</p>	<p>Noted.</p> <p>No further comment required.</p> <p>The Proponent is entering into a VPA with Shoalhaven City Council in order to provide relevant facilities that have been identified.</p>
NSW DEPARTMENT OF PRIMARY INDUSTRIES	
<p><u>Comment by Crown Lands</u></p> <p>1. <u>Crown Road within subdivision layout.</u></p> <p>The proposal involves a Crown road that is proposed to be constructed and transferred to Shoal haven City Council. The Crown road is located along the eastern side of the proposed development and is variously described as “Road 6”, “part Road 1” and “Part Jonsson Road”, as shown in Figure 1 below.</p> <p>There is no approval by Crown Lands under the <i>Roads Act</i> 1993 for the construction of this Crown road.</p>	<p>Noted.</p> <p>It is standard practice that when Crown Roads are constructed to Council standards, the ownership of the road reserve is subsequently transferred from the Crown’s care and control to Council’s care and control. Shoalhaven Council has commenced formal processes in order to have the land transferred into their ownership (Annexure 11).</p>

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Submission	Comment
<p><u>Comment by Fisheries NSW</u></p> <p>Fisheries NSW notes that part of Flat Rock Creek, which drains to the Shoalhaven River, is located in the vicinity of the proposed development area and has the potential to be impacted by the proposed development.</p> <p>Fisheries NSW has no objection to approval of the proposal as outlined in the Environmental Assessment (EA) and Appendices (including Statement of Commitments and site plans) but makes the following comments and recommendations:</p> <ul style="list-style-type: none"> (i) Fisheries NSW concurs with the proposed safeguards and mitigation measures to minimise environment impacts, in particular those related to water cycle management (including stormwater) and flora and fauna detailed in sections 5.4.5 and 5.6 of the EA. (ii) All the proposed safeguards and mitigation actions listed in the EA, Statement of Commitments and Attachments (particularly Annexure 7 – Water Cycle Management Report) should be included in any project approval, and listed in the subsequent Management Plans for Construction, Environment and Vegetation Management, and fully implemented by the proponent and its contractors. 	<p>Noted and no further comments are required.</p>
<p><u>Comment by NSW Office of Water</u></p> <p>1. <u>Watercourses and riparian land</u></p> <p>The Flora and Fauna Report (F&F report) accompanying the Environmental Assessment (EA) notes a small un-named tributary of Flat Rock Creek traverses the north eastern part of the site. Based on Figures 2 and 4 in the F&F report the lower parts of the tributary will be retained in the proposed Conservation Area but the upper length is proposed for residential development.</p> <p>The F&F report notes the watercourse does not flow continuously and the upper parts of the watercourse do not constitute a 'river' as defined in the <i>Water Management Act 2000</i> (WM Act). It states it does not have a defined bed and banks other than below the proposed development area (page 31). The Office of Water has inspected the site and concurs that the upper parts of the tributary do not exhibit a defined channel and is not a 'river'.</p>	<p>These issues have been dealt by Gunningah in Annexure 10 in conjunction with the amended Flora and Fauna Assessment by SLR Consulting (Annexure 2).</p>

Submission	Comment
<p>Regardless of whether the upper parts of the tributary is a river or not, the watercourse depression is a naturally wet area and contains “wet” vegetation indicative of generally wet conditions. The depression obviously has a landscape function of conveying runoff through the site. The watercourse area has very shallow soils and shallow depth to bedrock so watertable depth is obviously shallow and runoff rates here would be high.</p> <p>The Office of Water considers the tributary exhibits good riparian values. The F&F report notes the upper parts of the watercourse support a band of Swamp Paperbark and a patch of threatened Nowra Heath Myrtle (pages 10 and 54). Given the above-mentioned functions and values of the watercourse depression, its connection to the proposed Conservation Area, and the proximity of the site to Flatrock Creek and the Shoalhaven River it is recommended the full length of the tributary is protected and excluded from development. This would also assist to maximise the buffer available to minimise water quality impacts from the development to Flatrock Creek and the River.</p> <p>The <i>Natural Resource Sensitivity – Water Map</i> (013E) in the draft Shoalhaven LEP 2013 shows the watercourse on the site is a Category 2 watercourse but the EA has not addressed this. It is recommended the riparian corridor is protected and rehabilitated along the full length of the drainage line and the riparian corridor is consistent with this Map.</p> <p>The Office of Water supports the proposed 140 metre to 300 metre native vegetation setback between Flat Rock Creek and the development area (F&F report, page 56). The riparian corridor along Flat Rock Creek provides an environmental corridor linking the Shoal haven River to remnant vegetation near Nowra Hill.</p>	
<p>2. <u>Groundwater</u></p> <p>2.1 <u>Aquifer Interference Policy</u></p> <p>The EA indicates the proposed residential development requires safeguard measures to mimic the existing stormwater characteristics by enabling the supplementary recharge of the drainage system at regular intervals and the developer is to implement the installation of stormwater infrastructure to maintain water quality, soil moisture and groundwater regimes. The EA</p>	<p>The assessment of Martens Consulting Engineers (Annexure 2) included consideration of hydrologic flows in order to minimise impacts. This review has included assessment utilising DRAINS modelling to consider volume and MUSIC modelling to examine water quality.</p> <p>This has resulted in changes to the development including the provision of detention basins to supplement the OSD proposed. Martens Consulting Engineers concluded that:</p>

Submission	Comment
<p>concludes that as a result of the implementation of the mitigation measures the proposal will not have any adverse impacts on the groundwater requirements of the Nowra Heath-Myrtle or potential habitat of the Spring Tiny Greenhood Orchid (page 132). It is noted only the potential habitat of the Spring Tiny Greenhood Orchid (Kunzea Shrubland/Heathland community) has been found on the site (page 131 of EA).</p> <p>The proposed stormwater recharge structures trigger the requirements of the Aquifer Interference Policy in regard to assessment of impacts and mitigation measures. The Aquifer Interference Policy identifies the obligations on proponents of aquifer interference activities under section 3.2. The proponent needs to demonstrate that adequate arrangements will be in place at the site to ensure minimal impact.</p> <p>As Aquifer Interference Approvals have not yet commenced, the proposal may require a licence under Part 5 of the <i>Water Act 1912</i>.</p> <p>2.2 Groundwater Dependent Ecosystems (GDE's)</p> <p>The F&F report notes Swamp Paperbark community in and adjacent to the tributary and small moss gardens within some of the Kunzea Shrubland on the eastern side of the site appear to be partially dependent on groundwater drainage and discharges (Section 9, page 41). The Hydrological Assessment also indicates the Nowra Heath Myrtle is partially dependent on groundwater.</p> <p>It is noted in Table 1 of the F&F report that the Paperbark Closed Forest only comprises 1.82% of the land (page 11) but Table 7 indicates it is proposed to remove 0.71 ha of the Swamp Paperbark and retain only 0.08 ha. The Office of Water recommends the remnant vegetation which is partially dependent on groundwater is protected at the site from development, including the Swamp Paperbark community, small moss gardens and Nowra Heath Myrtle. It is recommended the proposed subdivision design is amended to protect these areas.</p>	<ul style="list-style-type: none"> • The completed analysis indicates that, even with best practice water quality and quantity control solutions as developed in this assessment it is not feasible to achieve a post development surface water regime which exactly mimics the pre-development condition. • The proposed development does not have an adverse impact on downslope areas (in terms of increased peak discharge rates and pollutant loads) based on detailed hydrological and water quality modelling completed. <p>The recommended mitigation measures outlined by Martens Consulting Engineers (Annexure 2) have been included in the amended Statement of Commitments.</p> <p>This has been addressed in the assessment of Martens Consulting Engineers (Annexure 2) and whose recommendations have been considered by SLR Consulting in the Flora and Fauna Assessment (Annexure 3) and Gunninah response to submissions (Annexure 10).</p>

<i>Submission</i>	<i>Comment</i>
<p><u>2.3 Groundwater seepage areas</u></p> <p>The Preliminary Geotechnical and Constraints Assessment notes groundwater seepage was observed in the eastern portion of Lot 384 and Figure 1.7 of the Water Cycle management report shows a typical seepage area on the eastern side of the site (page 9). Comparing Sheet Attachment A with the proposed development footprint, the groundwater seepage area is proposed to be developed. It is unclear if the observed seepage area coincides with remnant Kunzea heath land and the Office of Water seeks clarification on this. It is recommended the proposed subdivision design is amended to protect the seepage areas, particularly as the seepage is a permanent feature.</p>	<p>Martens Consulting Engineers reviewed these comments and provided correspondence to the Department dated 19th November 2013. This is in addition to the Stormwater Management Assessment (Annexure 2).</p> <p>Having regard to dwelling foundations, Martens advise that these are ordinarily provided by way of :</p> <ul style="list-style-type: none"> • Raft slab which do not impede groundwater flows; and • Strip footings. <p>Most importantly, Martens advise that the Mundamia DCP should include controls preventing the construction of dwellings with strip footings constructed to rock. This has not been adopted by Council, and as such, it is considered that such restriction can also be imposed by way of a restriction as to user under Section 88B on each allotment.</p>
<p><u>3. The E2 Zone</u></p> <p>Section 4.5.2 of the EA indicates the E2 Zone proposes to permit with consent a range of uses such as dwelling houses, recreation areas, water recreation structures. While the E2-zoned land at the site is to be created as public reserves for dedication to Council to ensure conservation, the Office of Water has recently provided a submission on the draft Shoalhaven LEP 2013 and repeats concern that the E2 zone proposes to permit with consent the above-mentioned uses. The locating of such uses in the E2 zone appears to conflict with the <i>Standard Instrument (Local Environmental Plans) Order 2006</i>. Locating such development, for example within riparian corridors could have significant impacts on the existing and future value and function of the waterways and riparian land that are meant to be protected by the E2 Zone.</p>	<p>The E2 zoned land will be dedicated to Shoalhaven Council. There is currently no proposal to utilise this land for either a dwelling house, recreation area or water recreation structure. The identification of the zone boundary between the E2 and R2 zone followed consideration of all relevant matters.</p>
<p><u>4. Statement of Commitments</u></p> <p><u>The Water Quality Management and Soil Control – Statement of Commitment (14)</u> includes a commitment for the detailed design of the peripheral bio-retention swale system to maintain soil moisture and groundwater regimes. It is important that mitigation measures implemented at the site replicates the natural surface and groundwater flow conditions and the development maintains infiltration and the recharge of groundwater. The detailed design needs to demonstrate the proposal would not adversely impact the partially dependent ecosystems at the site or downslope of the</p>	<p>Noted and can be addressed as a condition of consent.</p>

Submission	Comment
<p>site and the proposed stormwater control measures will maintain soil moisture and groundwater regimes at the site and down-slope. The plan should be prepared in consultation with and to the satisfaction of the Department of Planning & Infrastructure (DP&I) and the Office of Water. DP&I needs to be satisfied that potential impacts can be adequately mitigated.</p> <p><u>Landscaping Plans</u> – Statement of Commitment (30) indicates the developer will use native species, endemic the locality in the preparation of landscaping plans (page 158). The use of local native plant species on this site is supported, as it would have lower water demand requirements and assist to improve local biodiversity.</p> <p><u>Ecological</u> – Statement of Commitment (36) indicates the developer will implement the installation of stormwater infrastructure to maintain water quality, soil moisture and groundwater regimes. If the proposal is approved, adequate mitigation measures need to be provided to ensure the groundwater regimes are maintained at the site and down slope of the site to protect ecosystems which are partially dependent on the groundwater.</p> <p><u>Other</u> – it is recommended a Statement of Commitment is included to monitor and manage the potential impacts of the development on the GDE's. A comprehensive monitoring and management plan needs to be prepared and implemented to monitor potential impacts on groundwater dependent ecosystems at the site and down slope of the site. Details need to be provided on the monitoring program including the key criteria to be monitored. Monitoring needs to commence prior to construction to provide baseline data and should continue during construction and the operational phase of the development.</p>	<p>Noted.</p> <p>Groundwater matters have been reconsidered by Martens Consulting Engineers (Annexure 2). Mitigation measures proposed have been included in the amended Statement of Commitments.</p> <p>This monitoring of downstream GDE's will form part of the VMP.</p>
<p>5. Recommended amendments to the development</p> <p>The following amendments to the development footprint are recommended:</p> <p>(i) The un-named tributary of Flat Rock Creek located in the north eastern part of the site is to be protected along its full length on the site. A vegetated riparian corridor is to be provided either side of the tributary (measured from top of bank) consistent with draft Shoalhaven LEP 2013.</p>	<p>This issue has been dealt by Gunninah in Annexure 10 in conjunction with the amended Flora and Fauna Assessment by SLR Consulting (Annexure 2).</p>

<i>Submission</i>	<i>Comment</i>
(ii) Vegetation partially dependent on groundwater at the site, including the Swamp Paperbark community, small moss gardens and Nowra Heath Myrtle be conserved and protected from development.	This issue has been dealt by Gunninah in Annexure 10 in conjunction with the amended Flora and Fauna Assessment by SLR Consulting (Annexure 2).
(iii) The groundwater seepage area identified in the Preliminary Geotechnical and Constraints Assessment and shown on Sheet Attachment A be conserved and protected from development.	This issue has been dealt by Gunninah in Annexure 10 in conjunction with the amended Flora and Fauna Assessment by SLR Consulting (Annexure 2).
NSW TRADE & INVESTMENT – Resources & Energy – Mineral Resources Branch (MRB)	
MRB has no concerns regarding the proposal. MRB notes however the proposed subdivision is within 1 km of an identified clay-shale resource. Flat Rock Quarry is operated on an intermittent basis by South Coast Concrete Crushing and Recycling. This resource was included in the recently completed state-wide Mineral Resource Audit. The audit data (including a report, plan and CD containing digital spatial data) for Shoalhaven LGA, was provided to Council in March 2013 under Section 117 of the EP&A Act 1979.	Noted. It is not considered that this will affect consideration of the proposal.