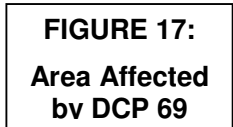


## Twynam Mundamia Pty Ltd – George Evans Road and Jonsson Road, Mundamia



AS 2021 deals with Acoustics, Aircraft noise intrusion and Building siting and construction. The Standard includes Table 2.1, a portion of which applies to residential and commercial development. Those matters applicable to the proposal are reproduced below in **Table 12**:

**Table 12**  
**Extract from AS 2021**

<b><i>Building Type</i></b>	<b><i>ANEF Zone of Site</i></b>		
	<b><i>Acceptable</i></b>	<b><i>Conditional</i></b>	<b><i>Unacceptable</i></b>
House, home, unit, flat	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Commercial building	Less than 25 ANEF	25 to 35 ANEF	Greater than 35 ANEF

The table outlines circumstances whereby residential development is either acceptable, acceptable subject to the imposition of conditions (noise attenuation measures) or is unacceptable due to the extent of aircraft noise, contingent on the Australian Noise Exposure Forecast (ANEF) contour the area is sited within. ANEF are the official forecasts of future noise exposure patterns around an airport or field. This table outlines that properties subject to less than 20 ANEF are generally acceptable for residential use, properties sited between the 20 to 25 ANEF are generally acceptable subject to conditions, whilst this sited above 25 are generally unacceptable for residential use. The subject site is located well clear of the 20 ANEF, and therefore, any future residential development will be acceptable in accordance with the requirements of AS 2021 Acoustics – Aircraft noise intrusion – Building siting and construction. Consequently, the provisions of AS 2021 would not apply to the proposal.

Given the site is not located within the area affected by the requirements of SCC's DCP No. 69, and that area mapped as being affected by aircraft noise, any future dwellings do not require the implementation of noise attenuation as required by AS 2021, and it is considered that the proposed residential allotments will not be unduly affected by aircraft noise.

#### **5.7.4 Bamarang Power Station**

The Bamarang Power Station is sited to the south-west of the subject property. Approval was issued for a Major Project application in 2007 for the following:

- Concept approval for the Bamarang Gas Turbine Facility'; and
- 'Project approval for the construction and operation of an open cycle gas-fired power station (stage one)'.

The physical works already approved include:

- Construction and operation of onsite equipment/infrastructure that would enable the power facility to operate as a peaking facility in open cycle configuration, including:
  - Two gas turbines, each with a capacity of approximately 140 megawatts,
  - Step-up transformers,
  - 132 kilovolts switchyard,
  - Installation of a fuel gas supply system,
  - Electrical and control building,
  - A single storey administration building; and
- Other on-site facilities including roads, car parking area, security and site drainage.
- A gas pipeline, approximately 900 metres in length, to connect the facility to the Eastern Gas Pipeline; and
- A 132 kilovolts electricity transmission line, approximately 7.2 kilometres in length, to connect the facility to the electricity distribution network via the existing substation located at the corner of Yalwal and Albatross Roads in West Nowra.
- Construction works (including clearing) associated with the above.

A further Major Project application (MP08\_0021) seeks project approval to Stage 2 of the Power Station. An Environmental Assessment has been prepared by GHD to assess the proposal, dated April 2008. An extract from this EA states that:

*"Delta is seeking project approval for the construction and operation of infrastructure required to enable the Bamarang gas turbine power facility to operate as a base load facility (in combined cycle configuration) and provide a constant supply of electricity. These works and infrastructure are referred to as 'the project' for the purposes of this environmental assessment and were described as 'stage two – base load facility' by the 2006 environmental assessment. It should be noted that following investigation of water supply options for water cooling of the facility, Delta has decided to implement dry cooling of the facility as it requires significantly less water than wet cooling. This has resulted in a modification of the layout of the proposed facility.*

*Approval is sought for the construction and operation of the following equipment and infrastructure:*

*Combined cycle equipment:*

- *Two heat recovery steam generators which would be connected to the approved gas turbines; and*
- *A steam turbine.*

*A cooling system including an air cooled condenser proposed as the cooling medium.*

- *Other facilities:*
  - *Water treatment plant (to treat the small amount of process water to be used in the dry cooled facility).*
  - *Piping.*
  - *Steam generator step-up transformers.*
  - *Additional electrical equipment in the switchyard; and*
  - *Water storage tanks – above ground tanks would be used to store sufficient water on site for at least two continuous days of operation.*
  - *A pipeline from the rising main that runs along the western boundary of the site (approximately 140m in length within the Delta site) to provide the water supply to meet process water requirements.”*

A Noise Assessment undertaken by Heggies Pty Ltd was included in that EA. This assessment examined the impacts of the proposal on surrounding sensitive land uses. This report has assessed the proposal and given it is intended to operate 24 hours a day, has done so using stringent night time criteria of LAeq of 35 dBA for all receivers. In the consideration of this proposal, Heggies has examined sensitive receptors, and has identified these as residences sited at Lot 22 Yalwal Road, No. 213 Gannet Road and No. 190 Bamarang Road. It is noted that these are sited in much closer proximity to the Power Station than the subject site. For example, Lot 22 Yalwal Road is located some 750 m from the Power Station, whilst the subject site is a minimum of 4.5 km away. It is also noted that this Noise Assessment did not consider the Shoalhaven Campus of the University of Wollongong as a sensitive use, and this significant facility, and sensitive land use, is sited closer to the Power Station than the subject site.

The Noise Assessment concluded that the proposed Power Station, subject to the implementation of major mitigation works, will result in the generation of noise that will only exceed the recommended 35dBA by 1dBA.

Furthermore, the Noise Assessment undertaken by Heggies has included Noise Contours (Appendix B3) which demonstrate that the noise levels fall below LAeq 35 dBA contour, approximately 1.9 km to the south west of the subject property, and therefore will not affect the proposed subdivision.

Given the subject site is located a further 2.6 km from the Bamarang Power Station than Lot 22, and well outside that area identified by Heggies Pty Ltd as being affected by the LAeq 35 dBA noise contour, it is considered that the Power Station is unlikely to generate noise that would adversely impact on the development of the subject site.

### **5.7.5 Conclusion**

The proposal has the potential to be impacted upon by road noise, noise associated with the use of HMAS Albatross, and the further development of the Bamarang Power Station.

The assessment undertaken with this EA has demonstrated that the site is remote from external noise sources such that these are unlikely to result in any noise impacts on the site or future residential development of the proposed allotments. In relation to road noise, traffic generation which is less than that identified by the RTA as being acceptable, is unlikely to be of a level that would result in amenity impacts.

As such, noise issues are unlikely to affect the proposed subdivision and no mitigation is required.

## **5.8 AVIATION ISSUES**

### **5.8.1 Introduction**

The subject property is located to the west of the Nowra Township, which is sited to the north of HMAS Albatross. The EA has been required to consider potential impacts of the proposal of the operations of HMAS Albatross and consider flight path implications from military aircraft operations on the proposal.

Noise implications are dealt with in Section 5.7 of this EA and are not addressed further in this Section, which deals with other concerns of the Department of Defence.

The Department of Defence in response to the Preliminary Assessment outlined concern with the proposal having regard to the following matters:

- The subject site is identified as being land affected by the Defence (Areas Control) Regulation for HMAS Albatross which controls the height of man made structures within 15 km of Albatross, which requires that structures in residential areas having a height greater than 45 m above natural ground level obtain approval from the Department of Defence.
- Aircraft noise impacting on future residential development, possibly leading to community complaints, and
- The subject site is over flown by military aircraft from time to time.

### **5.8.2 Height of Structures**

This Part 3A Major Project Application seeks approval to the subdivision of land only and no buildings are proposed at this time. Notwithstanding this, approval to the subdivision will, in time, result in the further construction of residential development on the resultant lots.

In relation to further residential development, SCC has a number of policies, including Development Control Plans, which imposes controls on the bulk and scale, (and overall height) of buildings. These restrict development to a maximum of 8.5 metres in height, well below the 45 m height limit that would trigger referral to the Department of Defence.

Notwithstanding this, in the extremely unlikely event that a structure of greater than 45 m in height is ultimately proposed on the resultant allotments, consideration to such an application can be given at that time, and the Department of Defence, and the relevant consent authority, can undertake an appropriate level of environmental assessment for such a proposal.

### **5.8.3 Noise**

As is outlined above, the affects of aircraft noise are dealt with in Section 5.7 of this EA.

### **5.8.4 Flight Paths**

According to the Department of Defence the subject site is over flown by military aircraft from time to time and the altitude of aircraft transiting the area generally being at 1000 feet, however may be lower dependent on operational requirements and weather conditions.

The concerns of the Department of Defence relate solely to noise levels which may disrupt and annoy future residents and these are addressed in Section 5.7 of this EA. It is noted therefore that the Department of Defence is not concerned in relation to other matters such as safety or security.

As is outlined in Section 3.4.3 of this EA, the subject site is within the Mundamia Living Area No. 5, identified in the NBSP as an area to meet the future demand for residential development. The NBSP followed a comprehensive analysis of constraints to development and was prepared by Shoalhaven City Council, which included consideration of the impacts of aircraft movements and flight paths from HMAS Albatross. Section 8 of the NBSP deals with constraints to development and includes those relating to physical, biodiversity, cultural and operational matters. Section 8.4 of the NBSP deals with the operational constraints, and includes HMAS Albatross in these considerations, principally relating to the impacts of takeoffs and flight paths.

The NBSP includes a plan identifying ANEF contours for both the periods 2006 and 2014 based on projected flight paths. This Plan (identified as Map 8.10 in the NBSP) is reproduced as **Figure 18**. The relevant contours do not affect the Mundamia Living Area, which is well to the north of affected land.

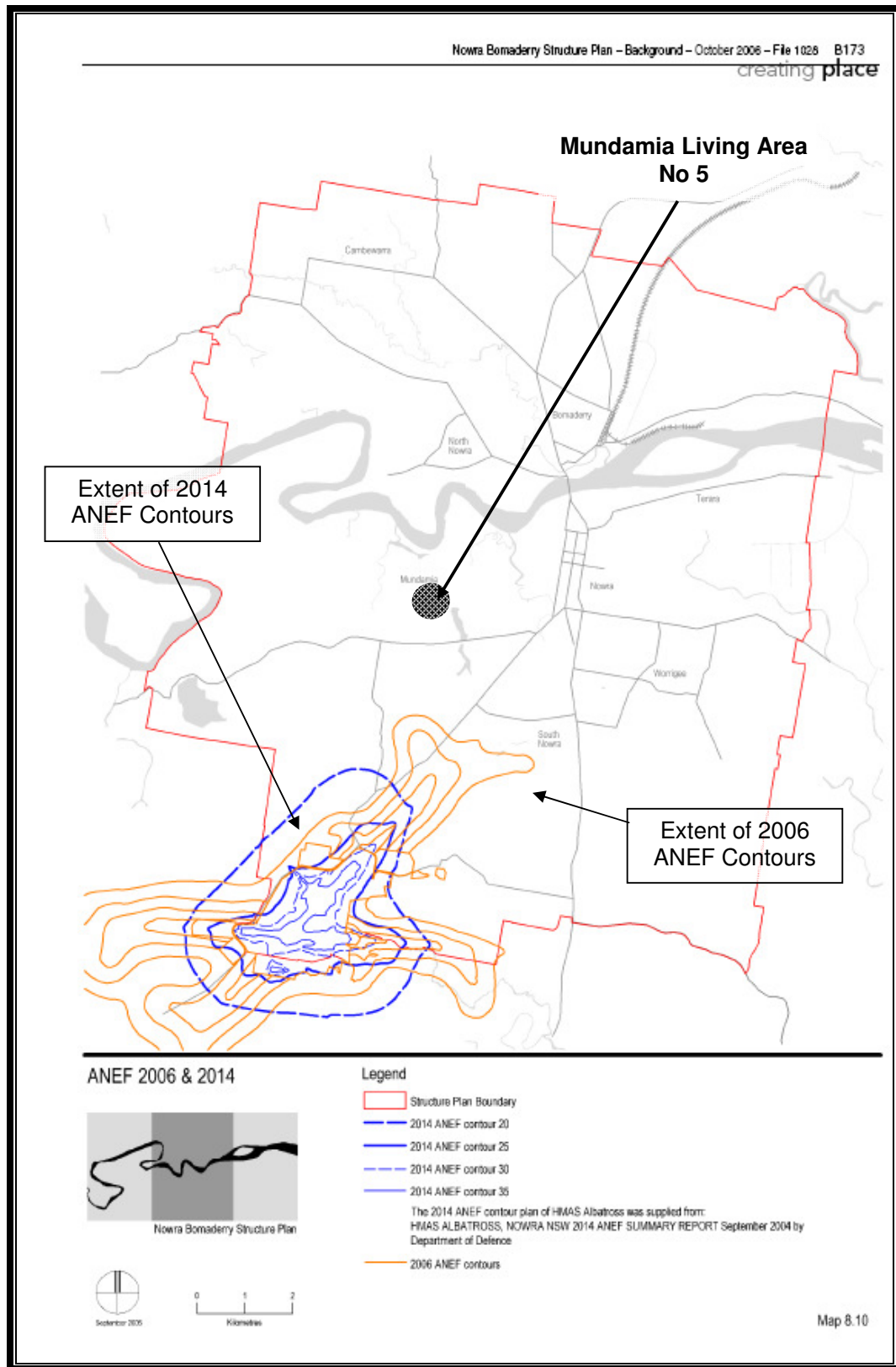


Figure 18: ANEF Contours - Extract from Nowra Bomaderry Structure Plan (map N.T.S.)

In undertaking the NBSP process, the Department of Defence were provided an opportunity to comment when the NBSP was in draft form. The Department of Defence raised concerns in regards to Area No. 6 - Cabbage Tree Lane Living Area, (according to the report prepared to Shoalhaven City Council's Policy and Planning Committee), and not the subject site or the Mundamia new living area. This is reasonable as it is the Cabbage Tree Lane living area which is most potentially affected by the impacts associated with aircraft movements emanating from HMAS Albatross rather than the subject site due to its closer proximity.

The subject site is unlikely to be significantly affected by aircraft movements associated with HMAS Albatross and mitigation is not considered necessary.

#### **5.8.5 Conclusion**

The subject site is located within the general locality of HMAS Albatross however is well clear of any area that is directly affected by a higher level of aircraft noise, or frequent aircraft movements. The nature of the proposed development is such that it does not require approval from the Department of Defence in relation to the Defence (Areas Control) Regulations due to the height of structures, whilst the subject site is not affected by unreasonable levels or frequency of noise attributed to aircraft movements.

Consequently, it is unlikely that the subject site or the proposal will be adversely impacted by the operations of HMAS Albatross.

SCC has considered the impact of HMAS Albatross in the NBSP and has not identified any constraints in relation to the development of the Mundamia Living Area or the subject site.



## **6.0 CONSULTATION**

In preparing this Environmental Assessment, the Director-General specified that “*an appropriate and justified level of consultation*” occur with a number of government agencies, SCC, Nowra Aboriginal Land Council and the community.

Having regard to the “appropriate and justified” consultation requirements, different forms of consultation where necessary based on the particular issue for consideration and the agency concerned. As such, it was considered that no one form of consultation would meet all community and agency needs. Consequently, consultation was carried out in a variety of ways, including formal written correspondence, telephone conversations and meetings, or a combination thereof. The following section details the consultation processes carried out with the relevant authorities and stakeholder groups.

### **6.1 THE COMMUNITY**

SCC officially acknowledges Principal Consultative Bodies (PCB) which are formally notified of applications and other relevant information relating to Council’s affairs. In relation to Mundamia, as the locality is newly proposed, it does not have an established PCB. Consequently, no community group is formally recognised by SCC.

The general Shoalhaven community has been consulted by Shoalhaven Council in the formulation of the NBSP, and the Draft Shoalhaven LEP 2013 which is currently being exhibited.

### **6.2 SHOALHAVEN CITY COUNCIL**

Various staff of SCC have been informed of the project throughout its evolution as follows:

- consideration of Preliminary Assessment and inclusion of its requirements in the Director General’s Environmental Assessment Requirements;
- meeting with Council’s Strategic Planners and Development Assessment Planners on 28<sup>th</sup> October 2008 to discuss the proposal;
- Various informal meetings to discuss further development and provision of infrastructure within the Mundamia living area;
- Email advising that Council is currently preparing a DCP and CP regarding public open space which will address its ongoing maintenance, a copy of which is reproduced in **Annexure 14**;

- Council at its meeting of 26<sup>th</sup> March 2013 resolved to give in principle agreement to the preparation of a planning agreement for the Mundamia Urban Release Area which will address the provision of infrastructure in the locality.

## **6.3 STATE AGENCIES**

### **6.3.1 Office of Environment & Heritage – OEH (formerly Department of Environment and Climate Change)**

Advice from the Department of Planning is that the Office of Environment & Heritage (formerly the Department of Environment and Climate Change) required consultation in relation to Climate Change and Flooding matters.

Having regard to climate change, the developable area is sited well above sea level (approximately 46 m) and existing watercourses. Consequently, the proposal is unlikely to be affected by sea level rise which has been predicted to result from climate change.

Similarly, having regard to flooding matters, the proposed development area is at least 36 metres above the PMF level.

The OEH is also the government agency responsible for threatened species. The proposal has been assessed in accordance with the relevant threatened species and Part 3A assessment guidelines prepared by OEHC.

Furthermore, the OEH will be provided with formal opportunity to comment on this EA and as such, sufficient consultation has been carried out to this point.

### **6.3.2 Department of Primary Industry (formerly Industry and Investment)**

The Department of Primary Industry is responsible for matters relating to agriculture, fishing and aquaculture, mineral resources and forests.

The subject site is not used for intensive agricultural activities, and it is not identified as being a prime crop and pasture resource.

The proposal does not impact on any watercourse or a local fish population.

The site does not contain a forest resource, nor is it identified within the Illawarra REP as containing mineral resources.

Given the above, direct consultation with the Department of Primary Industry is unnecessary.