



***MASTER PLAN ASSESSMENT:
Fern Bay Estate
No 85 Nelson Bay Road Fern Bay
Port Stephens Local Government Area***

Director-General's
Draft Master Plan Assessment Report
Clause 22 - *State Environmental Planning Policy No
71 – Coastal Protection*

June 2006

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1. EXECUTIVE SUMMARY

This report is an assessment of a draft master plan under State Environmental Planning Policy No 71 – Coastal Protection (“SEPP 71”), submitted by Fern Bay Joint Venture Winten (No 20) Pty Ltd (“the Proponent”) for Lot 16 DP 258848 Nelson Bay Road Fern Bay.

The draft master plan is for the proposed residential subdivision of the site into 947 allotments, open space lots, a community nursery, community, conservation areas, recreational and commercial facilities, new public roads, fire trails and pedestrian trails and bushfire buffer (asset protection zones). The proposal seeks to add to an existing residential subdivision approved by the Land and Environment Court of NSW and which is currently under construction (see photo below).

The Minister for Planning is the adoption authority for master plans under Part 5 of SEPP 71.

It is recommended that the draft master plan be adopted as a master plan pursuant to Clause 22(2)(b) of SEPP 71.



Existing access road (facing Nelson Bay Road) with ecological corridor on right.

2. BACKGROUND

2.1 Site Context

The site is known as Lot 16 in DP 258848 (No 85) Nelson Bay Road Fern Bay and is located within the Port Stephens local government area, approximately 18 kilometres north of the Newcastle central business district, 6 kilometres north of Stockton and 20 kilometres south of Nelson Bay. The site is located on a narrow strip of land between the Stockton Beach (Stockton Bight) to the east and Fullerton Cove to the west, which connects to the Hunter River. Residential areas in the vicinity of the site include the township of Fullerton Cove to the west and Fern Bay and Stockton to the south. Kooragang Island, Tomago and Newcastle airport are all located within close proximity to the site, providing employment opportunities within the region.

Myall Lakes National Park is located to the northeast of the site and the site is surrounded by naturally vegetated land in various ownerships including the Department of Environment and Conservation (DEC), which consists of land proposed as a Regional Park to the south and a proposed State Recreation Area to the north-east adjoining the beach. These areas form a vegetated corridor that adjoins the site and runs along Stockton Bight to Fern Bay, approximately 1 kilometre to the south of the site. Nelson Bay Road forms the north-western boundary of the site and a mobile home village (Bay View Village) adjoins the site to the southwest. Beyond Nelson Bay Road is vegetated rural zoned land. The locality is therefore largely characterised by naturally vegetated areas, with the beach system and Nelson Bay Road being other prominent features. The site context and surrounding lands are illustrated in Figures 1, 2 and 3.

Figure 1: Site Location



Figure 2: The Site and Context

(looking northeast along Nelson Bay Road – subject site on right hand side of road)



Figure 3: Adjoining land to the north (Boral Resources)



2.1 Site Features

The site consists of an area of 205 hectares and is a triangular shaped allotment. The subject site consists of large areas of natural bushland comprising key habitat and is a component of a regional corridor in the Lower Hunter region connecting the Sugarloaf Range to Stockton Bight which has been mapped in the NPWS ‘Key Habitats and Corridors Project’. The site is also part of a local corridor of native vegetation and contains key habitats for threatened species in the region.

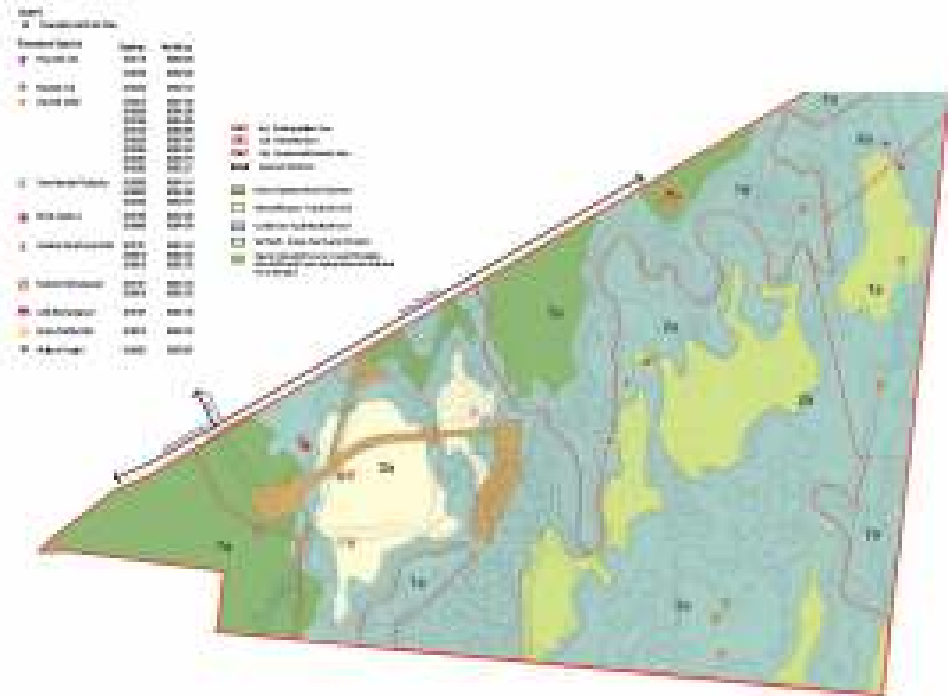
The site contains swamp forest, dry sclerophyll open forest and wet heath that supports habitat for a range of threatened species and ecological communities listed in the *Threatened Species Conservation Act 1995*, forms part of a larger fragment of coastal woodland in the Fern Bay area and adjoins the floodplain of Fullerton Cove wetlands (a SPEP 14 wetland) and conserved within the Kooragang Nature Reserve. The site is not visible from Nelson Bay Road as a result of a barrier of coastal forest while the site is also not visible from the coast due to the location of the fore dune system adjoining the site. Figure 4 illustrates the vegetation indicative of the site.

Figure 4: Vegetation on the Site
(in southeast corner of the site, adjoining the DEC land))



A total of 37 threatened species and one endangered ecological community have the potential to be impacted by the proposal based on habitat requirements and previous studies on the site (considered further in Section 6 of this report). Figure 5 illustrates the various vegetation communities and location of threatened species on the site.

Figure 5: Vegetation Communities and Threatened Species on the site



The site is located within the Newcastle Bight dune barrier system and is situated within the Holocene dune system. The transgression of dunes across the site has resulted in a series of prominent and distinct ridges and sandy knolls, principally in a north-south direction (refer to Figure 6). There are two primary drainage catchments on the site, with stormwater from the northern areas discharging to the low lying areas adjoining Nelson Bay Road while the southern area discharges to a series of perched water tables located between sand dunes at the centre of the site. The site is underlain by an unconfined aquifer that can maintain water levels in low lying areas and allows water to drain from the low lying areas and perched water travels towards Fullerton Cove and Stockton Bight. Water is lost from the soil and the aquifer via evapotranspiration.

Figure 6: Dune System within the Site
(eastern portion)



The site is subject to localised flooding, potential acid sulfate soils, dune migration and potential unexploded ordinance concerns. An electricity easement, approximately 20 metres in width, traverses the western portion of the site in a north south direction. These constraints are considered further in Section 6 of this report. A site plan is illustrated at Figure 7 and a site visit was conducted by Urban Assessments Staff, with the proponent.

Figure 7: Site Plan



2.3 Previous Development Consents

In 1997, the Land and Environment Court of New South Wales granted development consent to a 208 lot residential subdivision and school on the site. This development consent was later modified by the Court in 1999 and will require further modifications to allow for the proposed development.

This approved residential subdivision is currently being constructed in accordance with this development consent and includes the construction of roads, allotments, services and surveying work for houses on the constructed allotments (refer to Figure 8 and Figure 9). The access road into the site from Nelson Bay Road has also been constructed under this previous consent and a 'display centre/sales office' (refer to Figure 10) has been established in a temporary building in the western portion of the site. Detention basins have also been constructed as part of this previous development consent (refer to Figure 11).

The current proposal involves incorporating the majority of this existing development into the proposed subdivision, with the exception of the area immediately adjoining Nelson Bay Road. This portion of the approved subdivision will not be constructed and instead will be conserved as part of the proposed 200 metre wide ecological corridor. The existing subdivision approval is outlined in Figure 12.

Figure 8: Existing subdivision under construction



Figure 9: Surveyed Allotments ready for housing construction



Figure 10: Existing Display Centre on the site



Figure 11: Detention Basins constructed on the site



3. THE DRAFT MASTER PLAN

3.1 The Proposal

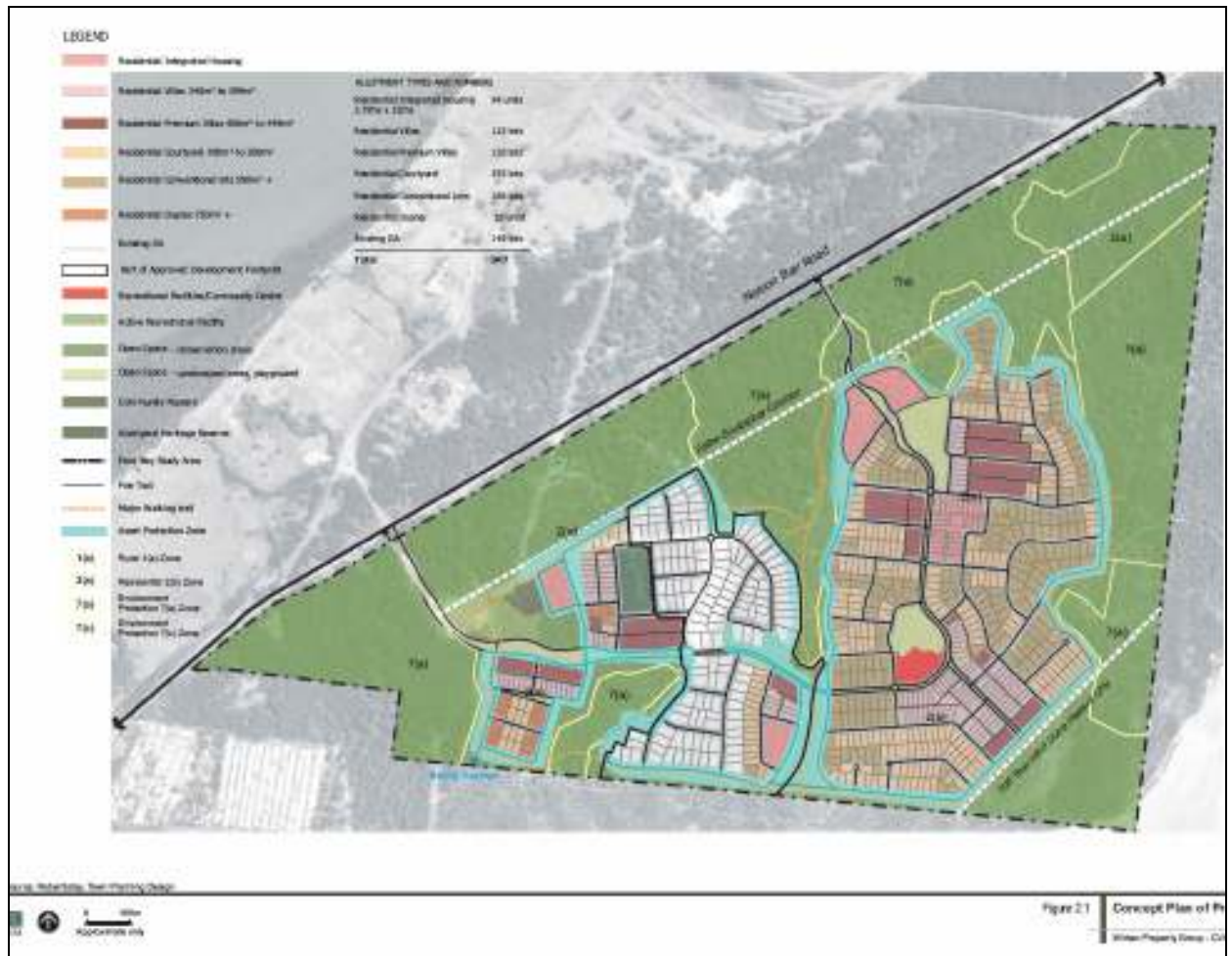
The proponent seeks adoption of a draft master plan for residential, recreation, community and commercial facilities and open space/conservation areas as outlined below:

- (a) Residential - the subdivision promotes a compact development footprint designed to conserve large areas of natural vegetation and will provide approximately 947 lots within the eastern and western precincts of the site. The estate has been designed to provide higher density residential development along main roads and around neighbourhood focal points containing community and recreational facilities with lower density residential development generally along the edges of the residential areas. Some higher densities are also proposed along these edges to benefit from a natural bushland outlook. The proposed residential lots within the estate provide housing choice to cater for varying households and include:-
 - Integrated lots (94 lots);
 - Standard villa lots ranging in size from 340m² to 399m² (123 lots);
 - Premium villa lots ranging in size from 400m² to 449m² (120 lots);
 - Courtyard lots ranging in size from 450m² to 589m² (255 lots);
 - Conventional lots 590m² and greater in size (186 lots);
 - Duplex lots 750m² and greater (20 lots); and
 - Standard residential lots that form part of the approved subdivision that consists of an area 550m² and greater (149 lots).
- (b) Commercial – a child care centre, and a convenience store are proposed in the Neighbourhood Focal Point located in the south-eastern corner of the site;
- (c) Recreational/open space – various areas of recreational open space, children's playgrounds and new fire and pedestrian trails are proposed within the site. Open space lots will include formal parks and an Aboriginal Heritage Reserve and open space to provide opportunities for passive and active recreation, stormwater management, protection of Aboriginal sites and ecological corridors;
- (d) Community – a community centre and a Community nursery are proposed which will be used for the propagation of plants for use in the landscaped areas of the site are proposed within the site;
- (e) Subdivision – Community Title Subdivision is proposed for the site to allow for a high standard of construction, amenity and environmental protection for the site, through a Community Management Statement.

The development proposed under the draft master plan, described above, is illustrated in Figure 12.

Figure 12: The Proposal

(Note: the area of the approved subdivision in white)



3.2 Additional and Amended Information

During the assessment of the draft master plan, the proponent was requested to provide additional information in relation to issues which was raised by the external agencies, the community and the Department. This additional information covered issues including ecological concerns, public access to adjoining lands and Stockton Bight, location of commercial services and adequacy of infrastructure provision (stormwater/sewerage). This information largely comprised the offset package proposed by DEC, which has been recommended to be adopted as a variation to the draft master plan in Appendix A.

These amendments differ only in minor respects from the draft master plan submitted and do not give rise to any additional impacts. Accordingly, these amendments were accepted as a replacement application and no further notification of the application was undertaken in accordance with clauses 55 and 90 of the *Environmental Planning & Assessment Regulation 2000* (the Regulations).

4. STATUTORY CONTEXT

4.1 Statement of Permissibility

The draft master plan relates to land zoned under the *Port Stephens Local Environmental Plan 2000* (the LEP) as follows:

- 1(a) Rural Agricultural Zone;
- 2(a) Residential Zone; and
- 7(a) Environment Protection Zone.

The residential development component of the draft master plan is proposed in the 2(a) land and is permissible in this zone, while only infrastructure and pedestrian trails are proposed within the rural zone and is also permissible. There is primarily no development proposed in the 7(a) zone. The development proposed in the draft master plan is permissible in the relevant zones and a zoning map for the site is illustrated in Figure 13.

The applicant intends to seek a rezoning of the land zoned 1(a) Rural Agricultural to 7(c) Environment protection (Water Catchment) zone, however, this is not required for the current proposal as the LEP does not permit subdivision in rural zones and therefore a variation to the draft master plan is not required. The current zoning of this land, being 1(a), will ensure conservation of this land, given the limited uses prohibited in the zone.

Figure 13: Zoning Plan



4.2 Instrument of consent and other relevant planning instruments

The site is not defined as a 'sensitive coastal location' under clause 3 of SEPP 71, however, subdivision into more than 25 lots is proposed and accordingly, a master plan must be adopted (or the need for a master plan waived) by the Minister pursuant to clause 18 of SEPP 71.

Pursuant to clause 22 of SEPP 71, a draft master plan may be adopted as a master plan by the Minister subject to the Minister considering the following:-

- Any written submissions made about the content of the draft master plan during the exhibition period under clause 21 – the submissions received are outlined in sections 5.1 and 6.3 of this report;
- Any written comments of the Natural Resources Commission, the relevant Council or any of the public authorities to whom the draft plan has been submitted – these comments are discussed in Section 5.2 of this report; and
- The matters for consideration set out in Part 2 (of SEPP 71) – These matters are assessed at **Appendix B**.

The relevant environmental planning instruments, draft environmental planning instruments and development control plans which may be applicable to the land to which the draft master plan relates include:-

- State Environmental Planning Policy No 71 – Coastal Protection;
- State Environmental Planning Policy No 11 – Traffic Generating Developments;
- State Environmental Planning Policy No 14 – Coastal Wetlands;
- State Environmental Planning Policy No 44 – Koala Habitat Protection;
- Hunter Regional Environmental Plan;
- Port Stephens Local Environmental Plan 2000;
- Port Stephens Comprehensive Koala Plan of Management (2001);
- Coastal Design Guidelines of NSW (2003); and
- NSW Coastal Policy, 1997.

An assessment against the general planning instruments is at **Appendix B**.

4.3 Legislative context

The future development on the site is likely to be a Major project under Part 3A of the Act, however, this is subject to the Minister's opinion being formed under Clause 6 of State Environmental Planning Policy (Major projects) 2005 [MP SEPP].

5. CONSULTATION AND ISSUES RAISED

5.1 Public consultation

The draft master plan was notified in accordance with Clause 21(1) of SEPP 71, the Regulations and *Port Stephens Council's Policy on Building Standards and Notification Procedures for Development Applications* (PS10) as follows:

Notifications – landowners/occupiers	98 letters dated 19 May 2005 were sent to adjoining and nearby property owners.
Newspaper advertisements	Advertised in <i>Port Stephens Examiner</i> on 26 May 2005
Site notices	Displayed on the site.
Exhibition dates	Start: 27 May 2005 End: 27 June 2005.
Exhibition venues	▪ DIPNR – Sydney Office (20 Lee Street Sydney); ▪ DIPNR – Hunter Regional Office (Suite 6, 464 King St Newcastle); and ▪ Port Stephens Council (116 Adelaide Street Old Pacific Highway Raymond Terrace).

Twenty nine (29) submissions were received regarding the draft master plan and a summary of submissions is at **Appendix C**. Issues are considered in Section 6.3 of this report.

5.2 External Referrals

5.2.1 Natural Resources Commission

The draft master plan was referred to the Natural Resources Commission (NRC) in accordance with clause 21(2) of SEPP 71 on 19 May 2005. The NRC provided the following comments:-

- 1) *Consult with the Department of Environment and Conservation (DEC) on issues relating to areas of high conservation value and Aboriginal issues;*
- 2) *Ensure appropriate public access is provided to the adjoining reserves;*
- 3) *Ensure that the stormwater management strategy will meet relevant State Government endorsed water quality objectives;*
- 4) *Consult with the Department of Natural Resources (DBR) regarding the appropriate distance from the transgressive dunal system;*
- 5) *Ensure the Master Plan addresses the likely impacts of climate change on the development by 2050 and 2100;*
- 6) *Ensure adequate community facilities.*

These issues are further discussed in section 6.3 of this report.

5.2.2 Port Stephens Council

The application was referred to Port Stephens Council (the Council) on 19 May 2005 in accordance with clause 21(2) of SEPP 71. The Council supported the master plan

proposal in principle and was satisfied that issues relating to traffic and access, environmental impact (flora and fauna) and archaeological heritage appear to be satisfactory.

The Council listed the following issues to be considered in the Department's assessment:-

- *Provisions of the PS LEP 2000 and relevant DCPs*
- *Suitability of the site*
- *Access*
- *Bushfire – land is bushfire prone*
- *SEPP 71 – land within area*
- *Flora & Fauna*
- *Comprehensive Koala Plan of Management*
- *Effluent disposal*
- *Drainage*
- *Construction Management Plan*
- *Waste Management (during and after construction)*
- *Sediment & Erosion Control*
- *Geotechnical site assessment as per Australian Standard (AS 2870)*
- *Public Transport Service availability*
- *Beach access – formalisation of dune/beach access from site*
- *100 year coastal hazard line*
- *S94 Contributions Attached (Recommend referring to PSC for CPI update prior to issue of Consent)*

The specific issues raised by Council included:-

- *Strategic Engineer:*
 - (i) *That a pedestrian/cycleway be included to link the residential areas of the proposed Fern Bay development with the existing pedestrian/cycleway on Nelson Bay Road which finishes at the Bayway Village;*
 - (ii) *That the open turf area for active recreation at Cabbage Tree Park (adjacent to the entry road at the beginning of the western side of the development) be extended to include a joint Community and Sporting Facility and associated sporting grounds;*
 - (iii) *That consideration be given to commercial/retail facilities at the beginning of the westernmost residential development to service both the "Fern Bay" development and the remainder of Fern Bay and surrounding Locality.*
- *Subdivision Engineer: no objection to the development in relation to road reserve profiles, drainage principles and road reserve landscaping. All of the issues relating to these topics can be resolved and addressed prior to and during the development application process.*

The draft master plan was referred back to the Council on 15 March 2006 following further consideration of the Department's issues by the applicant which resulted in additional information. The Council provided the following additional comments:-

- *Strategic Engineer - concurs with the applicant's proposal with the exception of the location of Commercial Services. While the location of the proposed*

commercial/community centre by the applicant is suitable as a secondary small corner store Council requires a substantial Commercial centre at the entrance to the development to service future population needs of the wider Fern Bay / Fullerton Cove / Stockton communities. This provides greater access to these communities and reduces traffic issues within this development. In addition, the draft master plan does not address Council's requirements to ensure these facilities are provided and are located at the entrance to the development for the above same reasons.

- *Drainage Engineer - Accurate infiltration rate measurement, use of correct factor of safety, groundwater study, use of correct stormwater model and use of appropriate construction method etc are need to be addressed properly at the planning level.*
- *Environment Officer - while the report identifies the presence of both Preferred and Supplementary Koala Habitat as being present on site (as defined by the Port Stephens CKPoM), no assessment against the Performance Criteria for Development Applications as required by the Port Stephens CKPoM has been provided. Without this information being provided, I am unable to make any accurate assessment as to the compliance of the proposed development with the CKPoM. As such, I would recommend that this information be requested of the proponent so that an assessment of the impact of the proposed development on koala habitat can be undertaken. As required by the Performance Criteria, this information should also include an overlay of the proposed development over the Koala Habitat Planning that has been prepared for the site.*

These issues have been considered in this assessment and are further discussed in Section 6.3 of this report.

5.2.3 Department of Environment and Conservation

The application was referred to the Department of Environment and Conservation (DEC) on 19 May 2005 in accordance with clause 21(2) of SEPP 71. The DEC provided the following comments:-

- *Flora and Fauna – the provision of a 200m wide vegetation corridor along Nelson Bay Road, containing most of the Swamp Sclerophyll Forest Endangered Ecological Community (EEC), and other amelioration measures proposed, including retention of large areas o vegetation, is supported. However, should the development proceed, the SIS acknowledges that the development will result in the direct loss of a significant area of habitat for both protected and threatened species and further indirect loss of habitat due to fragmentation and edge effects. It will also remove key habitat from a modelled regional corridor from the Sugarloaf Range to Stockton Bight. The DEC is concerned at the potential impacts on threatened species and populations should the proposal proceed.*
- *DEC Estate – the site shares a common boundary with land owned by DEC which is currently subject to lease negotiations with the Stockton Bight Aboriginal Negotiating Panel and the Worimi Aboriginal Land Council (LALC). It is likely that the LALC will hold title to this land in the near future. The proponent's proposed beach access is under consideration by the LALC, however, there is no guarantee such access will be provided. There should be no promotion of access from the site to the DEC lands and all existing tracks should be fenced and/or rehabilitated.*

- *Bushfire – no objections to the Fern Bay Estate Bushfire Assessment Report dated April 2005. any asset protection zone must be contained within the boundary of the subject site;*
- *Aboriginal Cultural Heritage – the outcomes of the Fern Bay Estate Aboriginal Heritage Assessment have been reviewed and constitute a valuable contribution to the understanding of Aboriginal pre-historic land use in the area and the engagement of the Aboriginal community is commended.*

DEC was requested to provide additional specific comments on the applicants Species Impact Statement, at which time the following additional comments were received in correspondence dated 27 September 2005:-

- *In spite of the Ecological Assessment Report concluding that there is likely to be a significant impact, there is no indication in the Master Plan or supporting documents that there have been any subsequent changes to the footprint to mitigate the significance of these impacts. Certainly the overall footprint illustrated in the SIS is the same as that in the initial assessment.*
- *The key fauna impacted are the Powerful Owl and possibly Masked Owls (top order predators), Squirrel Gilders (both threatened species and prey of Powerful Owl) and a number of tree-roosting bat species. Other species will also be impacted, but it is considered unlikely that local populations will be put at risk.*
- *The proposal to establish a 100m buffer around the Owl roost tree is supported but this exclusion zone does not appear to be reflected in the concept plan of the proposed subdivision.*
- *Another issue is fragmentation of the dry sclerophyll forest. Currently there appears to be about a 200m corridor. Once the allowance for the dune hazard zone is impacted by the predicted wind erosion, there is minimal connectivity between the lands owned and /or potentially under DEC management on either side of the study site. There appears no attempt to address this future, but significant, issue.*
- *Due to the impacts being largely on hollow-dependant fauna, or their prey, there is little opportunity to mitigate the impacts without substantially reducing the development footprint and this potentially affecting the financial viability of the proposed development.*
- *The mitigation measures, including the 200m corridor and rehabilitation/revegetation proposals, are useful and supported. However, should this development be approved, there remains an unavoidable loss which has not been adequately mitigated or compensated.*
- *This development does not avoid impacts to threatened species. It minimises impacts on minor issues and seeks to mitigate some losses (which are adequately addressed) but cannot mitigate others. Yet it offers insufficient compensation or “offset” for that unavoidable loss of biodiversity for which mitigation measures cannot be employed. Thus the DEC cannot support the proposed development in its current form.*

The draft master plan was referred back to the DEC on 15 March 2006 following further consideration of the Department's issues by the applicant which resulted in additional information. DEC provided the following additional comments:-

DEC have held discussions with the proponent regarding potential off-set measures and access issues and the following variations to the Master Plan have been agreed to with the proponent:

- 1. The fencing of the northern boundary of the Part 11 {adjoining DEC land} lands and the construction of a four-wheel drive track adjacent to this boundary, with associated infrastructure (hard stand, car parks, pedestrian pathway, lighting, signage etc);*
- 2. Rubbish removal (car bodies, asbestos dumps etc) and implementation of a weed control program on the Part 11 lands;*
- 3. Rehabilitation of approximately 31.7 hectares of wet heath on the Part 11 lands;*
- 4. Closure and rehabilitation of numerous tracks on the Part 11 lands in order to better protect current and future hollow bearing trees;*
- 5. Provision of funding to DEC, to maintain the rehabilitation works for at least 20 years.*

These issues have been considered in this assessment and are further discussed in Section 6.3 of this report.

5.2.4 New South Wales Rural Fire Service

The draft master plan was referred to the Rural Fire Service (RFS) in accordance with clause 21(2) of SEPP 71 on 4 November 2005 as the site is identified as being bushfire prone on the Port Stephens Bushfire Prone Land map and the proposal includes residential subdivision. The RFS supported the progression of the master plan and outlined various issues, including the requirement for Bushfire Management Plans for the proposed reserves and asset protection zones and the implementation of the recommendations of the Bushfire Assessment Report prepared by ERM dated April 2005 for any future subdivision proposals. These issues have been considered in this assessment and are further discussed in Section 6.3 of this report.

5.2.5 New South Wales Roads and Traffic Authority

The application was referred to New South Wales Roads and Traffic Authority (RTA) on 8 November 2005 in accordance with clause 21(2) of SEPP 71. The application was also referred to the Hunter Regional Development Committee (HRDC).

The RTA stated they had no objection to the master plan and provided the following comments to be included in conditions of consent:

- Concurs with the proposed new vehicular access to/from Nelson Bay Road as shown on the concept master plan as a left in/left out intersection only. This intersection shall be designed/constructed with left turn deceleration and acceleration lanes in accordance with the RTA's Road Design Guide, including a provision for on road cyclists and a central median to prevent right turn in and out movements. Intersection lighting shall be provided to Australian Standards;*
- A shared foot/cycleway shall be provided on Nelson Bay Road and all other public roads in the area;*
- All of the above shall be provided to RTA/Council requirements at full cost to the developer;*
- The proposed development shall be designed such that the road traffic noise from Nelson Bay Road is mitigated by durable materials, in accordance with EPA criteria for new residential developments (the Environmental Criteria for Road*

Traffic Noise, May 1999). The RTA's Environmental noise Management Manual provides practical advice in selecting noise mitigation treatments. Where the EPA external noise criteria would not feasibly or reasonably be met, the RTA recommends that the following noise objectives apply for all habitable rooms under ventilated conditions complying with the requirements of the Building Code of Australia: All habitable rooms other than sleeping rooms: 45dB(A) Leq (15hr) and 40 dB(A) Leq(9hr) and sleeping rooms 35dB(A) Leq(9hr).

The HRDC also expressed no objection to the master plan and provided the following comments to be included as conditions of consent:

Road Network and Access

- *The proposed intersection arrangements on Nelson Bay Road should be determined by the RTA. Some issues were raised in relation to the traffic analysis of the proposed intersection, which would be required to be addressed prior to approval of the access to the satisfaction of the RTA;*
- *The Committee considered that the intersection should be constructed upfront to RTA/Council requirements;*
- *A concrete median on Nelson Bay Road should be installed at the proposed northern access to the subdivision to prevent illegal right turns – left in/left out only.*
- *It was suggested that in the interests of providing improved circulation for traffic through the subdivision, particularly public transport, that consideration be given to the provision of a roundabout at the proposed intersection;*
- *Appropriate traffic claming/management devices should be provided on all internal roads throughout the development.*

Pedestrians/Cyclists

- *A shared foot/cycle way should be provided on Nelson Bay Road from the roundabout at Fullerton Cove Road to the bus shelter/stop at Bayway Village;*
- *Off road cycle ways should be provided throughout the development;*
- *Appropriate pedestrian/cycle links should be provided between facilities in the development.*

Public Transport

- *Bus stops/shelters should be provided with indented bus bays spaced at approximately 400 metres walking distance within the development, to bus company requirements.*

Other Issues

- *A parking/layby area should be provided in close proximity to the beach access for 4 wheel-drive vehicles.*
- *Street and intersection lighting should be provided to Australian Standards;*
- *All of the above should be to RTA/Council requirements.*

These issues have been considered in this assessment and are further discussed in Section 6.3 of this report.

5.2.6 Department of Natural Resources (then Department of Infrastructure Planning and Natural Resources)

The application was referred to the Department of Natural Resources on 19 May 2005 in accordance with clause 21(2) of SEPP 71. The following comments were received:-

- Water Management Act 2000 – the site is located within an area covered by the Water Sharing Plan (WSP) for the Tomago Tomaree Stockton Groundwater Sources. Any proposal to access waters from this course must satisfy the rules of the WSP. The aquifer interference and controlled activities provisions remain inactive and therefore any proposal to intercept groundwater across the site for purposes other than water extraction will require a licence under Part 5 of the Water Act 1912 (WA).
- Stormwater management strategy – the proposed strategy will ultimately dispose of stormwater to the underlying aquifer/s. there is no assessment of the proposed strategy in references to State groundwater policies. The DNR will require the following conditions to be met if a licence of Part 5 of the WA is required:-
 - (i) Buffer zones around dependant ecosystems;
 - (ii) Minimum distance from a connected river, creek or wetland
 - (iii) Contingency plan for adjusting access should there be any evidence of adverse impacts (changes in water quality etc)
 - (iv) Cross reference to the operational arrangements that give effect to the contingency plan (water quality monitoring bores etc)
- Dune migration – a portion of the site encroaches the mobile dune hazard line for Stockton Beach. Any development proposal at the site should consider this hazard and any mitigation or dune restoration/stabilisation measures that may be needed to be implemented.
- Flooding – proponents are required to demonstrate their development will not exacerbate local flooding and that it is designed in expectation of flooding in accordance with the State Government's Flood Policy. Any development proposal at this site would also need to be compatible with the Port Stephens Council Flood Policy and in accordance with the NSW Floodplain Development Manual 2005. Insufficient flood related information has been submitted in the draft master plan proposal to enable the proposal to be considered compatible with the flood environment.

These issues have been considered in this assessment and are further discussed in Section 6.3 of this report.

5.2.7 The Department of Defence

The application was referred to the Department of Defence on 19 May 2005 in accordance with clause 21(2) of SEPP 71 as the proposal is approximately 6 kilometres from the Williamstown RAAF Base. The following comments were provided:-

- Height restrictions – Obstruction Clearance Surfaces – the site is subject to a height limit to protect the operational air space of the Base. Any future proposed structures greater than 90 metres in height, must be referred to the Department of Defence;

- *Military Aircraft Noise – the proposed site is unaffected by the Australian Noise Exposure Forecast 2012 (ANEF 2012) for the RAAF Base Williamtown, however, this should not be interpreted that the site is not exposed to noise associated with military aircraft. The site will be subject to military aircraft noise;*
- *Unexploded Ordinance – The Fern Bay Unexploded Ordinance Management Plan has been received detailed review by Defence and contains a number of inaccuracies.*

These issues have been considered in this assessment and are further discussed in Section 6.3 of this report.

5.3 Internal Consultations

The Hunter Regional Office of the Department (then DIPNR) was consulted regarding the draft master plan and the following comments were received:-

- *Clarification of the Swamp Forest vegetation – The terminology relating to “swamp forest” should be clarified. If the vegetation community class shown as “swamp mahogany-paperbark forest” in Figure 4.2 is the same as the EEC “Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner, it should be shown as the same on the map. If it is different enough to be shown as different on the map in Fig 4.2, then it should be described separately in the text;*
- *Vegetation loss and Value of Proposed Corridor - The loss of vegetation will directly impact threatened species through the loss of foraging, nesting, roosting and breeding habitat. The loss of swamp forest, an endangered ecological community, will reduce the availability of winter forage habitat for the squirrel glider, swift parrot and regent honeyeater. To minimise the effects of habitat isolation, a consequence of the process of habitat loss and subsequent fragmentation, a 200m wide corridor has been proposed to link populations of fauna. This corridor is intended to minimise the impact of the loss of habitat used by the affected species and will protect the Endangered Ecological Community (Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner).*

On the surface, the corridor appears like a good outcome, however the issues relating to clarification of the swamp forest category and the relative ecological values of the (retained) EEC areas and the other parts of the swamp forest community (removed) needs to be assessed. Together with the 300m of existing bushland between the proposal and the cleared areas of Stockton Bight Dune system, the 200m wide corridor is the main mitigation measure. The relevant needs of the threatened species need to be further examined and an assessment made of whether the proposed corridors will accommodate their needs. The proposed corridor is vulnerable to degradation of its biodiversity value as a result of its vulnerability to weed and feral pest invasion.

The proposed corridor is currently infested with weeds and roads to be constructed across the proposed corridor will create a potential barrier to the movement of some species. The width of a gap is a primary determinant of which species will be affected and to what degree. Those species that cross have the road have the potential to be killed or injured. A community education program and speeds of 40km/h may not work given the already high road kill in many

areas. If wildlife crossings were to be constructed to facilitate fauna movement they would have to be designed for particular fauna, be large enough to accommodate targeted animals and be located in an area with minimised human noise and activity. The keeping of domestic pets is an additional threat to species such as bats, frogs and birds, some of which are threatened species. Although responsible dog and cat ownership will be promoted as part of the community education program (eg. to keep them locked up), the location of the proposed subdivision within a Key Habitat which provides a home for a number of threatened species demands either banning of pets or policing of the responsible ownership measures.

Overall, the clearing of habitat on site will increase the vulnerability of the remaining vegetation (i.e. proposed corridors) to degradation as a result of reduced size and increased isolation. The clearing and fragmentation of vegetation around the site in other developments will further increase the vulnerability of local fauna and flora populations. Reduction in the amount of habitat through clearing is the single most significant reason for the loss of biodiversity and ecosystem function. Patches need to be large enough to maintain viable populations. The proposed clearing of on site vegetation poses a threat to current viable populations of fauna species such as the squirrel glider. The rate of species decline lags behind the rate of habitat loss and so species may continue to be lost for many decades after habitat clearing has occurred. It is highly likely that species will be lost on site in the coming decades. To soften this impact, it is essential that the proposed corridors be protected and managed to control current and future weed infestations as well as feral animals such as foxes and domestic cats and dogs.

These issues have been considered in this assessment and are further discussed in Section 6.3 of this report.

6. ASSESSMENT

6.1 Requirements of a draft master plan

A draft master plan, pursuant to clause 20 of SEPP 71, must illustrate and demonstrate proposals for the following:

- a) Design principles drawn from an analysis of the site and its context

The draft master plan outlines a thorough analysis of the site and its context, resulting in a number of constraints and opportunities for development of this site which guided the design of the proposal and includes:-

- *Only 2(a) residential areas can be developed for residential purposes;*
- *The existing vegetation within the 7(a) land needs to be protected and carefully managed;*
- *Existing approval to subdivide the site;*
- *There is a 33kV electricity line bisecting the site in a north south direction;*
- *The site has sandy soils with high infiltration rates;*
- *A 100m buffer zone needs to be provided around the Powerful Owl roost tree*
- *Ecological corridors need to be maintained running northeast and southwest through the site;*
- *The site supports both preferred and supplementary koala habitat;*
- *The low ridgeline in the western part of the site should not be developed to ensure appropriate protection is given to the site's cultural significance;*
- *Flooding from the Hunter River system will be confined to the existing swamp forest areas adjacent to Nelson Bay Road;*
- *No development shall occur to the east of the 100 year hind dune hazard line;*
- *Appropriate asset protection zones need to be provided around the perimeter of any residential development proposed on the site in order to protect property and people from bushfire;*
- *Views into the site are obscured by existing vegetation and the topography of the site and surrounds.*

These design principles are sound and ensure the development proposed in the draft master plan is compatible with the natural bushland, coastal setting and the natural hazards which are known to affect the site. The draft master plan has adequately demonstrated and illustrated the design principles which have originated from the thorough analysis of the site and its context undertaken as part of the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development/project application stage.

- b) Desired future locality character

The draft master plan identifies the desired future locality character for each of the residential precincts as well as the open space areas. The vision statement for Fern Bay Estate is:

“To create a seaside village nestled within its natural setting that sets a new benchmark in the Hunter region for quality and innovation in the standards of urban design, construction and environmental management.”

The desired future character of this development is considered to be appropriate for the site and its setting and has been articulated in the draft master plan such that any future development is likely to be compatible with development which has already been approved on the site. The major theme generators for the development have originated from its coastal setting and its cultural and ecological themes.

Approximately 107 hectares of the existing vegetation will be retained which ensures the ecological themes of the site are integrated into the development. The estate will provide a variety of lot sizes and housing types to cater for different household requirements and is generally grouped into eastern and western precincts, separated by an open space corridor.

It is therefore considered that the desired future locality character has been satisfactory illustrated and demonstrated in the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development application stage.

- c) The location of any development, considering the natural features of the site, including coastal processes and coastal hazards

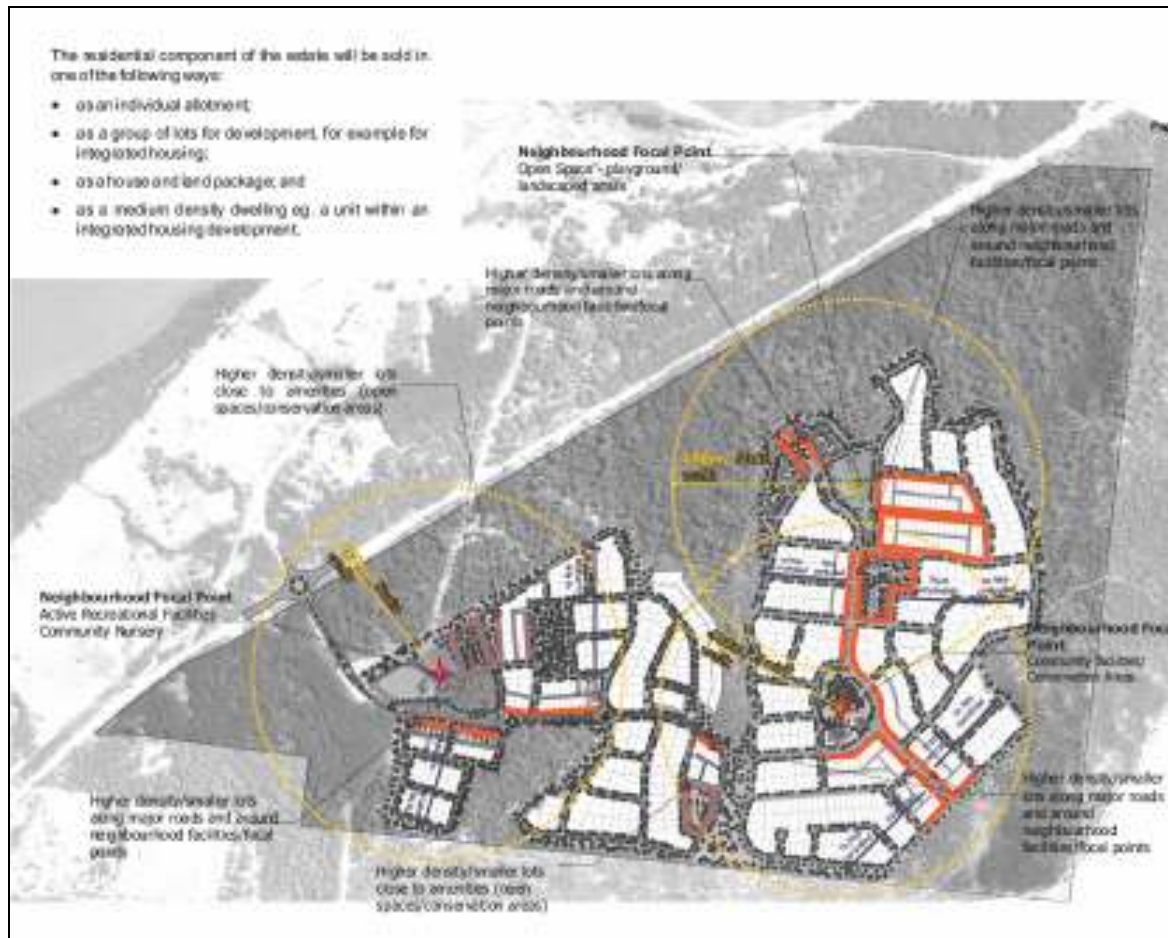
The draft master plan has satisfactorily addressed the suitability of the site for the development proposal. This assessment has included investigating issues such as land contamination, bushfire, water quality, geotechnical suitability, the presence of specific flora and fauna, archaeological matters, the dune migration hazard to the east of the site and stormwater and flooding issues. These issues are further discussed in section 6.3 of this report. It is therefore considered that this matter has been satisfactory illustrated and demonstrated in the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development/project application stage.

- d) The scale of any development and its integration with the existing landscape

The draft master plan proposes residential development which consists of a mix of integrated housing, villas, duplexes and standard dwelling house allotments. Higher density residential development will be provided around local activity centres containing a combination of recreation, community and commercial facilities as well as areas of adjoining bushland for an improved outlook.

The proposed density of the residential portion of the draft master plan is consistent with the existing residential development in the area which is largely detached single dwelling houses within the nearby suburb of Stockton. The retention of large areas of natural vegetation throughout the site and the location of open space areas throughout the estate ensures the development integrates into the low density environment. These areas are illustrated Figure 14. The draft master plan also provides for dwellings within the estate to be of a scale, height, form and design that is distinctly coastal and complements the natural setting. These dwellings have also been designed to provide solar access.

Figure14: Housing Densities



The proposed allotments have also been designed so that they respect the natural topography of the site to ensure that height is related to the surrounding ground level, minimising the bulk and scale of the development for the surrounding area and minimising the visual impact of the locality. The larger allotments are located in areas of steeper topography to minimise disruption to the natural landform.

An asset protection zone has been provided to protect the development from bushfire and allows for edge effects to be minimised to the retained vegetation from the proposed residential development.

It is considered that the scale of the development proposed in the draft master plan is compatible with its setting and that this matter has been satisfactorily illustrated and demonstrated in the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development/project application stage.

e) Phasing of development

The draft master plan outlines that the development proposed will be staged over a period of approximately 10 years, which may change subject to market demand, with

approximately 45 to 130 lots to be developed each year. The staging of the proposal is illustrated in Figure 15.

The staging of the development outlined in the draft master plan is a logical approach to construction on the site, which will generally minimise construction impacts by containing disturbance to specific areas at any one time. The staging also occurs in a logical direction, being from west to east, thereby minimising the disturbance to the community within the site and starting with the existing approved section (which has been commenced).

An area of active creation (Cabbage Tree Park) will be established in the early stages to ensure areas of open space are provided at an early stage. The staging of the development will enable the progressive establishment of infrastructure, roads and commercial and community services and open spaces areas. The staging will be contiguous which will assist in minimising the perimeter of urban development that is exposed to the bushfire hazard interface.

It is therefore considered that this matter has been satisfactory illustrated and demonstrated in the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development/project application stage.

Figure 15: Staging Plan



f) Public access to and along the coastal foreshore

The draft master plan provides the opportunity to improve beach access via a proposed four-wheel-drive track over the DEC land to the south of the site. This access would consolidate the existing trails in the area and will therefore minimise impact on the environment. This issue is further discussed in section 6.3 of this report. It is considered that this matter has been satisfactorily illustrated and demonstrated in the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development/project application stage.

g) Pedestrian and cycle access and circulation networks

The draft master plan provides the following key circulation principles which influenced the design of the estate:-

- *Provide a street network that is hierarchical, interconnected, permeable and legible, responds to the topography and creates view corridors;*
- *Provide an opportunity for street landscaping that reflects the existing character of the area;*
- *Provide both on road and off road parking areas, particularly near the community facilities;*
- *To minimise car dependency for travel within the estate;*
- *Provide convenient and safe access for pedestrians and cyclists;*
- *Provide a comprehensive network of pedestrians trails linking residential areas to open space and community/commercial facilities;*
- *Provide appropriate access for emergency and service vehicles; and*
- *Ensure that the street network can accommodate an efficient public transport system and that bus stops are located to maximise patronage.*

Following from these circulation principles, the road hierarchy includes the following:-

- *A collector road through the centre of the estate with a variable road reserve width, the minimum width being 17 metres;*
- *Perimeter roads with 20 metre road reserve widths;*
- *Neighbourhood streets with road reserve widths varying from 15 to 20 metres;*
- *Rear lanes with road reserve widths varying from 6 to 8 metres; and*
- *Fire trails with a trafficable widths of 4 metres.*

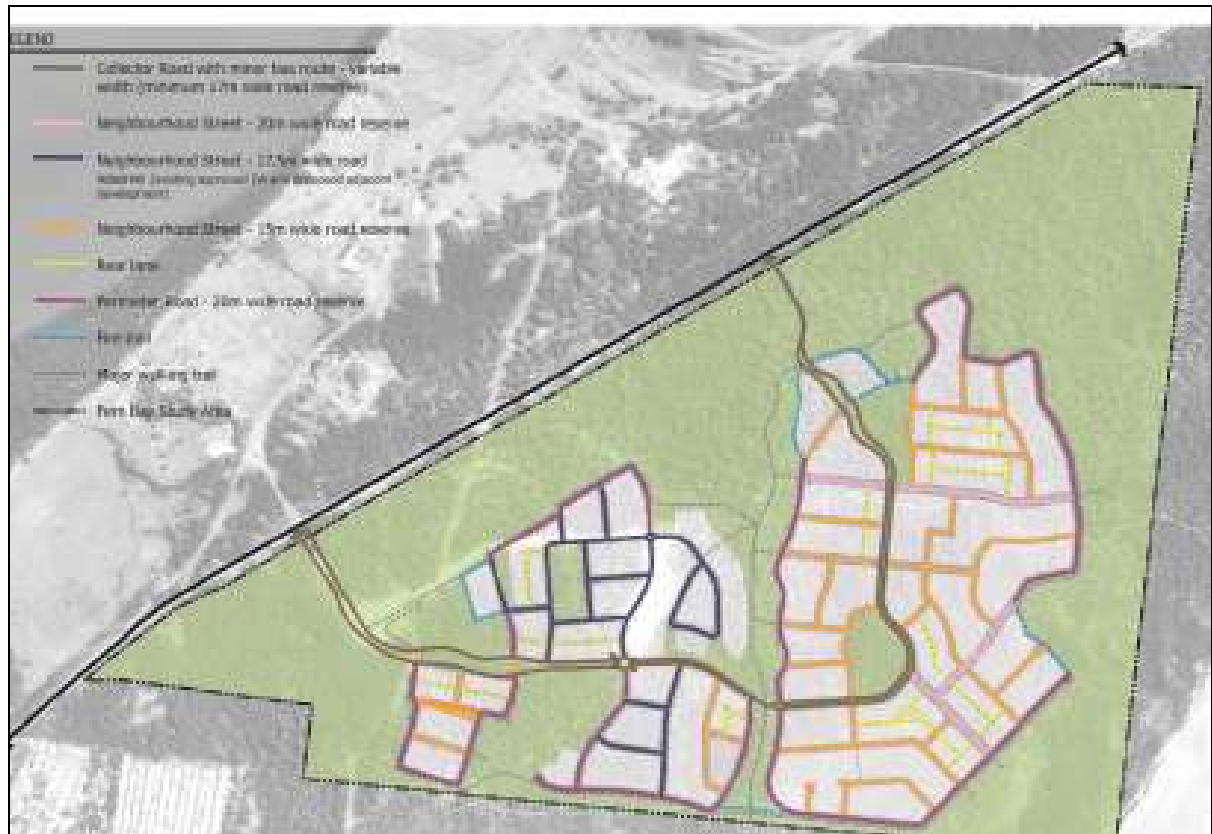
The pedestrian network includes the following:-

- *1.2 to 1.5m wide concrete footpaths adjacent to roads;*
- *Shared pedestrian/vehicular access ways within the integrated housing areas of the estate;*
- *2m wide pedestrian trails around the perimeter of the urban areas of the estate generally through the vegetated conservation reserves and other open space areas of the site. These pedestrian trails will include sections of boardwalk;*
- *The pedestrian network is designed to provide access to the site's facilities and services within walkable community catchments;*
- *The estate's roads will be cycle friendly with the low speed traffic environment allowing on-road cycle movements;*

- *The main loop road is capable of accommodating bus services in the future when required.*

These circulation routes, illustrated in Figure 16, throughout the site allow for a legible and connected system for vehicles to enter and leave the site as well as for pedestrian and cyclist movements. It is considered that this matter has generally been satisfactory illustrated and demonstrated in the draft master plan.

Figure 16: Circulation Routes



h) Subdivision pattern

The draft master plan provides an illustrative layout of the allotments proposed within the site and states that community title subdivision is proposed for the development. The subdivision pattern is outlined in section 3 of this report and illustrated in Figure 12.

The following are features of the subdivision pattern:-

- *Higher density residential development is provided for along main roads and around neighbourhood focal points containing community and recreational facilities with lower density development generally located along the edges of the residential areas.*
- *Extensive areas of open space are proposed throughout the estate including formal parks and conservation reserves;*

- *The subdivison of the estate will be carried out under Community Title. A Community Management Plan (CMP) will be prepared and a Community Association will be established to implement the plan.*

It is considered that this matter has been satisfactory illustrated and demonstrated in the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development/project application stage.

i) Infrastructure provision

The draft master plan provides an assessment of the services provided on the site and those which are required to be provided on the site. The proposal will utilise the existing electricity, gas and telecommunications services in the area and will involve construction of new water and sewerage infrastructure. This issue is further discussed in section 6.3 of this report.

It is considered that there will be adequate infrastructure provision on the site, as illustrated in Figure 17, and accordingly this matter has been satisfactory illustrated and demonstrated in the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development/project application stage.

Figure 17: Infrastructure Plan



j) Building envelopes and built form controls

The draft master plan provides urban design principles which will influence the design, construction and siting of buildings within the estate in relation to building envelopes and built form controls for future development. These principles include:-

- *Buildings will be of a scale, height, form and design that is distinctively coastal, will complement the natural setting, and will be appropriately located on the lot;*
- *Buildings will be of high quality design and provide access to natural daylight, access to natural ventilation and visual and acoustic privacy;*
- *Buildings will be designed and located to ensure amenity is maintained on public land;*
- *Buildings will be located so as to maintain consistent street setbacks, street-edge configurations and view corridors;*
- *Buildings will address the street by providing direct and on-grade entries;*
- *Urban development will have well designed and appropriately located and sized private open space which services to minimise urban runoff;*
- *Urban development will incorporate the use of water sensitive urban design; and*
- *Only community/public buildings will provide a visual focus.*

The draft master plan provides that the construction of dwellings within the Fern Bay estate will be carried out in accordance with the design guidelines contained in the Community Management Plan and relevant Council requirements. The proposed controls, including front setbacks, density controls, road widths, basic building design and heights, provide a satisfactory response to the site's setting and character, being located within a natural bushland setting in an zoned for residential development.

The building envelopes and built form controls within the draft master plan and the Design Guidelines provide for appropriate development on the site. It is considered that this matter has been satisfactory illustrated and demonstrated in the draft master plan, however, will require further assessment when detailed designs are provided at development/project application stage.

k) Heritage conservation

The draft master plan includes a report from an Archaeologist which included recommendations for the management of the Aboriginal heritage on the site and influenced the design of the development. Specific areas have been set aside on the site to conserve cultural heritage. This issue is further discussed in Section 6.3 of this report. It is therefore considered that this matter has been satisfactory illustrated and demonstrated in the draft master plan (illustrated in Figure 12).

l) Remediation of the site

The site has not been developed previously, however, some remediation may be required in relation to the unexploded ordinance and the rubbish removal on the adjoining DEC land. This issue has been satisfactorily addressed in the draft master plan.

m) Provision of public facilities and services

The draft master plan includes a network of public pedestrian areas, beach access and community facilities such as playground and parks. A network of pedestrian trails within the site is also proposed. This issue is further discussed in Section 6.3 of this report. It is therefore considered that this matter has been satisfactorily illustrated and demonstrated in the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development/project application stage.

n) Provision of open space, its function and landscaping

The draft master plan includes large areas of natural bushland to be retained as open space as well formal and informal reserves. The provision of open space and landscaping within the Fern Bay Estate is influenced by the following key principles:

- *Provide a network of open space areas that perform a number of functions including connection, movement, ecological, hydrological, archaeological and bushfire protection, passive and active recreation and children's play;*
- *Locate open space areas in central locations within the estate so they can be easily accessed by residents;*
- *Maintain ecological and view corridors through the site;*
- *Retain as much vegetation within open space areas as possible;*
- *Wherever possible retain the site's distinctively bushland and seaside character and existing topography;*
- *Protect the site's existing biodiversity;*
- *Create a sense of community ownership and participation in the natural qualities of the landscape;*
- *Plant vegetation and use construction materials that reflect the surrounding environment and the site's three distinct vegetation communities;*
- *Provide landscape treatments for road reserves that reflect the type of road;*
- *Ensure that species planted within asset protection zones are appropriate and do not increase the bushfire hazard;*
- *Use public art to reflect the site's natural qualities; and*
- *Use interpretative signage to inform residents and visitors to the estate of the site's natural features.*

The open space network within the site, illustrated in Figure 18, which will be managed by the Community Association under Community Title, consists of the following:-

- *Three main parks consisting of Cabbage Tree Park (near the entrance to the estate), Banksia Park (towards the eastern boundary of the estate) and Corymbia Park (in the northern portion of the estate);*
- *Smaller pocket parks;*
- *An Aboriginal Heritage reserve (located close to Cabbage Tree Park); and*
- *Conservation reserves (or environment protection areas) around the perimeter of the residential areas of the estate.*

There is also a comprehensive landscape plan proposed in the draft master plan. It is considered that this matter has been satisfactorily illustrated and demonstrated in the draft master plan and that there is adequate open space within the estate.

Figure 18: Open Space Plan



o) Conservation of water quality and use

The draft master plan states in the report, *Stormwater Management Strategies for the Proposed Urban Development at Fern Bay*, prepared by Urban Water Cycle Solutions (2005), the stormwater management strategy for Fern Bay Estate will incorporate the Water Sensitive Urban Design (WSUD) treatment train philosophy. The basis of the strategy is the utilisation of the high infiltration capacities displayed by the site's soils. The strategy proposes to use pipe drainage, infiltration trenches, roads within one-way cross falls, bio-retention swales, gross pollutant traps, infiltration swales and infiltration trenches to manage both stormwater quality and quantity at the site. The strategy will protect the development from flooding and will mitigate the potential stormwater impacts on receiving environments. This issue is further discussed in section 6.3 of this report.

It is considered that this matter has been satisfactory illustrated and demonstrated in the draft master plan, however, will require further assessment when detailed designs are provided at development/project application stage.

p) Conservation of animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act), and their habitats

The draft master plan provides a thorough assessment of the threatened species which may occur on the site in the *Fern Bay Estate Species Impact Statement* (ERM, 2005), *Fern Bay Estate Aquatic Assessment* (ERM, 2005), the *Fern Bay Estate Assessment of Matters of National Environmental Significance* (ERM, 2005) and the *Fern Bay Estate*

Response to the Port Stephens Comprehensive Koala Plan of Management (ERM, 2005). The location of vegetation communities and threatened species on the site is illustrated in Figure 5.

The proposal will result in the removal of approximately 70 hectares of existing vegetation (excluding the portion already approved) and will retain approximately 107 hectares (52% of site area). The following conservation measures have been incorporated into the design of the estate to minimise impacts on flora and fauna:-

- *Retaining a minimum 200m ecological corridor along the northern boundary of the site to provide a movement corridor for fauna through the swamp forest and prevent threatened species becoming isolated from the currently interconnecting areas of habitat to the south and north (part of the approved subdivision will not be built in this corridor);*
- *Retaining an ecological corridor along the eastern boundary of the site to provide a movement corridor for fauna through dry sclerophyll open forest;*
- *Retaining the majority of vegetation within the 7(a) and 1(a) zones;*
- *Maintaining a 100 metre buffer around the powerful owl roost tree;*
- *Maintaining a 50m wide buffer around the areas of swamp forest to be retained in order to minimise edge effects; and*
- *Excluding development from areas of the site where the threatened orchid *Diuris praecox* has been recorded.*

Various management initiatives are also proposed to be implemented including educating residents regarding the ecological values of the site, implementation of a Vegetation Management Plan for the ecological corridor and other open space areas, the use of only native plants indigenous to the area for landscaping, collecting seeds from local species, retaining koala habitat trees in bushfire asset protection zones where possible, conducting pre-clearance surveys of hollow-bearing trees, introducing a low speed zone for vehicles and installing koala warning signs within the subdivision.

This issue is further discussed in Section 6.3 of this report. It is considered that this matter has been satisfactorily illustrated and demonstrated in the draft master plan. This aspect will require further assessment, however, when detailed designs are provided at the development/project application stage.

- q) Conservation of fish (within the meaning of Part 7A of the *Fisheries Management Act 1994*) and marine vegetation (within the meaning of that Part), and their habitats

The *Fern Bay Estate Aquatic Assessment* (ERM 2005) concluded that the proposal will not have a significant impact on threatened species, populations and communities listed under the *Fisheries Management Act 1994*. This conclusion is supported and it is considered that the draft master plan has satisfactorily addressed this issue.

The draft master plan satisfactorily addresses the requirements of clause 20 of SEPP 71.

6.2 Section 79C of the Environmental Planning and Assessment Act

Notwithstanding that the draft master plan is not a development application, the matters for consideration under Section 79C of the Act should be considered for master plans.

These matters are considered below.

6.2.1 Section 79C (1) (a) – Environmental Planning Instruments, Development Control Plans etc

The environmental planning instruments, draft environmental planning instruments, and development control plans applicable to the land to which the draft master plan relates are assessed for general compliance in **Appendix B**.

6.2.2 Section 79C (1) (b) – the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality

The draft master plan considers the potential impacts on the development proposed on the site including impacts on the natural and built environments. These impacts are considered in detail in section 6.1 and 6.3 of this report.

6.2.3 Section 79C (1) (c) – Suitability of the Site

The draft master plan considers the suitability of the site for the development by having completed a thorough site analysis prior to designing the development. The proponent has considered the constraints of the site including mitigating the bushfire hazard, retaining areas of natural vegetation and maintaining visual amenity in the locality.

The issues relating to the site's suitability for the development proposed in the draft master plan are considered in sections 6.1 and 6.3 of this report. In general, the site is considered suitable for the development proposed. Matters of detailed design will be considered at development/project application stage.

6.2.4 Section 79C (1) (d) – Submissions

The submissions received in response to the draft master plan are considered at **Appendix C**. The submissions are considered in detail, where relevant, in Section 6.3 of the Report. The issues raised in these submissions have been considered in this assessment.

6.2.5 Section 79C (1) (e) – Public Interest

The public interest has been considered in the assessment of this draft master plan by considering the relevant planning instruments in Section 6.2 and the submissions in section 6.3 of this report. The proposal outlined in the draft master plan and as recommended to be modified by the variations in the Instrument of Adoption at **Appendix A**, is considered to be generally in the public interest as ecological offsets are proposed and other mitigation measures, infrastructure will be provided and a variety of housing will be provided to cater for varying households in an area zoned for residential development.

6.3 Issues

6.3.1 Flora and Fauna (Ecological issues)

Issue: The subject site currently contains large areas of natural bushland and is located within a regionally significant wildlife corridor and accordingly the proposal has the potential to adversely impact on flora and fauna in the area.

Raised by: DEC, Applicant, Community Submissions, Department of Planning (Regional Office), Council. NRC,

Consideration: The subject site consists of large areas of natural bushland comprising key habitat and is a component of a regional corridor in the Lower Hunter region connecting the Sugarloaf Range to Stockton Bight which has been mapped in the NPWS 'Key Habitats and Corridors Project'. The site is also part of a local corridor of native vegetation and contains key habitats for threatened species in the region. Accordingly potential impacts on flora and fauna must be considered in this assessment.

Flora and fauna and the potential impacts of the development are assessed in the *Fern Bay Estate Species Impact Statement* (ERM, 2005), the *Fern Bay Estate Aquatic Assessment Report* (ERM, 2005), the *Fern Bay Estate Response to the Port Stephens Comprehensive Koala Plan of Management* (ERM, 2005), and the *Fern Bay Estate Assessment of Matters of National Environmental Significance* (ERM, 2005). These studies were reviewed by DEC on numerous occasions throughout this assessment (see section 5.2.2 of this report).

The site contains swamp forest, dry sclerophyll open forest and wet heath that supports habitat for a range of threatened species and ecological communities listed in the *Threatened Species Conservation Act 1995* (TSC Act). The site forms part of a larger fragment of coastal woodland in the Fern Bay area and adjoins the floodplain of Fullerton Cove wetlands (a SEPP 14 wetland) and conserved within the Kooragang Nature Reserve.

The site comprises three distinct vegetation communities including:-

- Coastal sand apple Blackbutt forest
- Swamp mahogany – paper bark forest
- Wet heath – Tomago sand swamp woodland.

No threatened populations currently listed under the TSC Act and the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) have been recorded on the site. One Endangered Ecological Community (EEC), being the 'Swamp Sclerophyll Forest on coastal floodplains of the NSW north coast, Sydney basin and south east corner bioregions', is located in the swamp forest adjoining Nelson Bay Road. There are 41 threatened species listed under TSC Act that have the potential to occur within 10Km radius of the site.

A total of 37 threatened species and one endangered ecological community have the potential to be impacted by the proposal based on habitat requirements and previous studies on the site. Of these species, there were 12 species which have recently been recorded on the site

which included:-

- Newcastle Double tail orchid (*Diuris praecox*)
- Wallum froglet (*Crinia tinnula*)
- Hoary wattled bat (*Chalinolobus nigrogriseus*)
- Eastern freetail-bat (*Mormopterus norfolkensis*)
- Greater broad-nosed bat (*Scoteanax rueppellii*)
- Little bentwing-bat (*Miniopterus australis*);
- Eastern bentwing-bat (*Miniopterus schreibersii oceanensis*)
- Yellow-bellied sheat tail-bat (*Saccolaimus flaviventris*)
- Grey-headed flying-fox (*Pteropus poliocephalus*)
- Powerful owl (*Ninox strenua*)
- Masked owl (*Tyto novaehollandiae*)
- Squirrel glider (*Petaurus norfolcensis*)

The development proposes to clear 70.2 hectares of vegetation, which includes 495 habitat trees. This clearing comprises 9.7ha of swamp forest, 15ha of wet heath and 45.5ha of dry open forest from the site. The following potential impacts of the proposal were identified by the applicant in the Species Impact Statement (SIS):-

- Habitat loss
- Habitat fragmentation
- Local and regional connectivity
- Hydrology and water quality
- Road traffic
- Rubbish dumping
- Fire frequency
- Noise
- Predation by feral animals
- Weed dispersal

Of these potential impacts, the greatest impacts include habitat loss, habitat fragmentation and the potential impact on the local and regional corridor. Whilst the remainder of the impacts are important, they are addressed elsewhere in this report or application (including the Vegetation Management Plan – see below).

The SIS outlined the potential impacts of the development on the species outlined above by describing their local, regional and state conservation status, the relevant key threatening processes, any relevant recovery or threat abatement plans, and assessment of impacts. Following the SIS, several mitigation measures were proposed which included:-

- Ecological corridor - A minimum 200m wide ecological corridor between Nelson Bay Road and the proposal. This corridor will include swamp forest (including the EEC), and dry sclerophyll open forest on land zoned 2(a) and 7(a). This area will be managed and rehabilitated in accordance with the *Fern Bay Estate Vegetation Management Plan* (ERM, 2005);
- Vegetation retention - Areas of native vegetation, including swamp forest, will generally be retained in areas currently zoned 7(a) and vegetation will be retained in the 1(a) zoned land;
- Easement revegetation - The existing powerlines that traverse

the site within the proposed development footprint will be placed underground and the easement revegetated;

- Buffer zones - Inclusion of a 50m wide buffer zone around the boundary of the swamp forest community to be retained to minimise edge effects. The proposal also involves establishing a 100m buffer zone around the Owl roost tree, however, this is not shown on the master plan. This has been recommended to be imposed as a variation to the draft master plan in **Appendix A**;
- Vegetation management - The preparation of a *Fern Bay Estate Vegetation Management Plan* (ERM 2005) to enhance and protect native vegetation and fauna habitat through regeneration, reconstructive landscaping and maintenance of natural areas in all land on the site to be dedicated as parks and conservation reserves. This area constitutes 117 hectares or 57% of the site;
- Weed removal - Weed removal and treatment is required as part of restoration works within the reserves and proposed development area;
- Fauna Displacement – pre-clearance surveys of hollow-bearing trees will be conducted by a suitably qualified wildlife professional and individuals will be released in conservation reserves in the study area at appropriate times.
- Feral Animal Controls – proponent to contribute to a Management plan for feral animal control;
- Hydrology & Water Quality – a Stormwater Management Strategy to be implemented that incorporates WSUD principles (discussed in section 6.3.3 of this report);
- Road design – low speed environments along the access roads to minimise road kills and underpasses to allow for fauna connectivity under road;
- Bushfire management – bushfire mitigation measures to reduce bushfire hazard and potential impacts on flora and fauna of too frequent fire events;
- Residential property design – fencing restrictions on proposed allotments in accordance with the requirements of the Port Stephens CKPoM in relation to koala fencing;
- Species-specific mitigation measures – these measures include selective tree clearing initially to ensure gliders can relocate out of habitat trees before tree removal occurs and the collection of seeds of the *Eucalyptus parramattensis* subsp. *decadens* and re-colonisation of this species in an alternative location in the wet heath vegetation community in the 1(a) zoned land of the site;
- Landscape plan – the planting of local indigenous species within the road reserves, open space areas and private allotments (as set out in the Community Management Statement) will assist in preserving habitat on the site; and
- Approved subdivision – the portion of the approved subdivision on the site located within the 200m wide ecological corridor

along Nelson bay Road will not be constructed;

The proposal was referred to DEC to provide a review of the proposal and in particular the SIS (DEC's submissions are further outlined in section 5.2.2 of this report). DEC stated that the SIS acknowledged that the development will result in the direct loss of a significant area of habitat for both protected and threatened species and further indirect loss of habitat due to fragmentation and edge effects. It will also remove key habitat from a modelled regional corridor from the Sugarloaf range to Stockton Bight. DEC also stated that the largest percentage loss is experienced by the "wet heath" community and it is proposed to remove half of the hollow-bearing trees from the site, which will impact on any hollow-roosting or nesting species including tree-roosting bats and squirrel gliders.

DEC stated in further correspondence that the key fauna impacted are the Powerful Owl and possible Masked Owls (top order predators), Squirrel Gilders (both threatened species and prey of Powerful Owl) and a number of tree-roosting bat species. DEC also stated that while other species will be impacted, it is considered unlikely that local populations will be put at risk.

The Owl roost tree will be protected with a buffer zone, however, DEC are concerned that such protection may be of little significance if there is insufficient prey to sustain these Owl species. The forested area to the south may provide a sufficient area of forest to provide protection for the owl species.

The fragmentation of the dry sclerophyll is also of concern to DEC, in the southeast of the development footprint, due to some of this area being impacted by the dune migration hazard in this area of the site.

In summary, DEC stated whilst the mitigation measures are supported, there remains an unavoidable impact on threatened species yet offers insufficient compensation or "offset" for that unavoidable loss of biodiversity for which mitigation measures cannot be employed. Therefore DEC did not support the proposal in its original form.

Following this advice, DEC and the applicant further reviewed the proposal and potential offset measures were discussed. These offset measures, outlined in 5.2.3 of this report, include the rehabilitation of nearby habitat and access provisions, which have been agreed to by the applicant and DEC. These offset measures will assist in minimising the potential impacts on threatened species, biodiversity and corridor values.

It is acknowledged by DEC, the Department and the applicant that the proposal is likely to result in impacts on threatened species and a loss of biodiversity, however, following the preparation and consideration of the SIS and the associated mitigation measures and offsets, it is considered that the proposal can be supported. These offset measures will provide for the rehabilitation of approximately 31.7Ha of wet heath habitat, the habitat which will experience the greatest impact from the proposal. The offset measures also include the clearing up of the adjoining DEC land, the closing off of the majority of informal paths and funding to continue these rehabilitation works for at least 20 years.

These measures, combined with the mitigation measures outlined above, will minimise the impact of the proposal on the flora and fauna

Resolution: This issue has been addressed by the draft master plan and variations are required to be imposed as outlined in **Appendix A**.

6.3.2 Impact on Koala

Issue: The subject site is classified as supplementary koala habitat, preferred koala habitat, 50 metre buffer over supplementary koala habitat and a link over supplementary koala habitat under the Comprehensive Koala Plan of Management for Port Stephens (CKPoM).

Raised by: Council, Community Submissions.

Consideration: The *Fern Bay Estate Species Impact Statement* (ERM, 2005) assessed the potential impacts of the proposal on threatened species likely to occur on the site (discussed in section 6.3.1 of this report) and also included an assessment on koalas. The *Fern Bay Estate Response to the Port Stephens Comprehensive Koala Plan of Management* (ERM, 2005) ("the Koala Assessment") more specifically assess potential impacts on the koala.

The applicant's consultant carried out surveys on the site for koalas and analysed the base of preferred feed trees (Swamp Mahogany's and others), however, no evidence was found any koala activity. Therefore, whilst the swamp forest and wet heath communities support potential koala habitat, these communities do not support core koala habitat as defined in SEPP 44. The site is therefore most appropriately referred to as preferred koala habitat.

The Koala Assessment outlines the response to the performance criteria outlined in Appendix 4 of the CKPoM. This criteria is assessed below:-

Proposed development (other than agricultural activities) must:

- (a) *Minimise the removal or degradation of native vegetation within Preferred Koala Habitat or Habitat Buffers;*

The proposal will remove approximately 24.7Ha of preferred koala habitat (swamp forest and wet heath) and also the 50 metre habitat buffers surrounding this habitat will, in some cases, also be removed. Approximately 42.0Ha of preferred koala habitat and associated habitat buffers will be retained within parts of the site including within the 200 metre wide ecological corridor between Nelson Bay Road and the development and retained areas of wet heath and swamp forest in areas currently zoned 1(a), 2(a) and 7(a). The approved subdivision encroaches into this corridor and accordingly the applicant has stated that these works will not be carried out to ensure a corridor is maintained for the koala and other threatened species (see section 6.3.1 of this report) which links with land to the north and south in the locality.

The proposed development has the potential to result in degradation of the preferred koala habitat on the site through weed invasion, domestic pet attacks, habitat fragmentation and habitat

clearing, however, such effects are likely to be greatest in the habitat buffer areas rather than the preferred koala habitat. The Design Guidelines under the Community Title subdivision will also require native species in landscaping, responsible domestic animal ownership and other measures to conserve potential/future koala populations on the site.

It is therefore considered that while the proposed development is likely to impact adversely on some areas of preferred koala habitat, a large portion of this habitat will be conserved in the ecological corridor and other open space areas and the offset measures discussed with DEC will further minimise degradation of adjoining preferred koala habitat (wet heath areas). Removal of preferred koala habitat has been minimised by these measures and the prevention of building in the approved area of subdivision.

- (b) *Maximise retention and minimise degradation of native vegetation within Supplementary Koala Habitat and Habitat Linking Areas;*

The majority of the site is considered to be supplementary koala habitat, with the proposal involving the removal of approximately 45.5Ha and retention of approximately 69.5Ha of this habitat. This retention of habitat is largely within the ecological corridor and the other conservation areas to the northeast and south of the development footprint. A *Vegetation Management Plan* (see section 6.3.1 of this report) has been prepared which aims to rehabilitate these areas, including weed removal, which will minimise edge effects in these supplementary habitat areas.

- (c) *Minimise the removal of any individuals of preferred koala food trees, where ever they occur on a development site. In the Port Stephens LGA these tree species are Swamp Mahogany (*Eucalyptus robusta*), Parramatta Red Gum (*Eucalyptus parramattensis*), and Forest Red Gum (*Eucalyptus tereticornis*), and hybrids of any of these species. An additional list of tree species that may be important to koalas based on anecdotal evidence is included in Appendix 8;*

The Swamp Mahogany is the preferred koala feed tree on the site and it is proposed to minimise its removal by retaining approximately 30.5Ha of swamp forest within the 200m corridor along the front boundary of the site. Other tree species including the smooth-barked apple, the red bloodwood, white mahogany and the Blackbutt are other preferred koala feed trees which occur in the dry sclerophyll forest, of which 69.5Ha are to be retained by the proposal. Pre-clearance surveys will also be carried out on any preferred koala habitat trees to ensure there are no koalas present in these trees. It is considered that removal of individual koala trees has been minimised by retention of large areas of areas where such trees are likely to be located (wet heath and dry sclerophyll forests).

- (d) *Make provision, where appropriate, for restoration or rehabilitation of areas identified as Koala Habitat including Habitat Buffers and Habitat Linking Areas over Mainly Cleared Land. In instances where Council approves the removal of koala habitat (in accordance with dot points 1-4 of the above waive clause), and where circumstances permit, this is to include measures which result in a “net gain” of koala habitat on the site and/or adjacent land;*

Koala habitat will be restored on adjoining land through the offset measures proposed by DEC and agreed to by the applicant. These measures include rehabilitation of areas of wet heath on the adjoining DEC lands to the south which generally includes preferred koala habitat trees. It is therefore considered that adequate restoration and rehabilitation of areas of identified koala habitat (as per the CKPoM which identifies parts of this adjoining lands as preferred koala) have been provided by the draft master plan.

- (e) *Make provision for long term management and protection of koala habitat including both existing and restored habitat;*

The *Fern Bay Estate Vegetation Management Plan* (ERM, 2005) provides for the long-term management and protection of the existing preferred and supplementary koala habitat on the site, which includes all the land within the ecological corridor and other conservation areas.

- (f) *Not compromise the potential for safe movement of koalas across the site. This should include maximising tree retention generally and minimising the likelihood that the proposal would result in the creation of barriers to koala movement, such as would be imposed by certain types of fencing. The preferred option for minimising restrictions to safe koala movement is that there be no fencing (of a sort that would preclude koalas) associated with dog free developments within or adjacent to Preferred or Supplementary Koala Habitat, Habitat Buffers or Habitat Linking Areas. Suitable fencing for such areas could include:*
 - (i) *fences where the bottom of the fence is a minimum of 200 mm above ground level that would allow koalas to move underneath;*
 - (ii) *fences that facilitate easy climbing by koalas ; for example, sturdy chain mesh fences, or solid style fences with timber posts on both sides at regular intervals of approximately 20m; or*
 - (iii) *open post and rail or post and wire (definitely not barbed wire on the bottom strand).*

However, where the keeping of domestic dogs has been permitted within or adjacent to Preferred or Supplementary Koala Habitat, Habitat Buffers or Habitat Linking Areas,

fencing of a type that would be required to contain dogs (and which may also preclude koalas) should be restricted to the designated building envelope. Fences which are intended to preclude koalas should be located away from any trees which now or in the future could allow koalas to cross the fence.

Appropriate fencing restrictions have been recommended in the Koala Assessment notwithstanding that there are no known koala movement corridors on the site at present.

- (g) *Be restricted to identified envelopes which contain all buildings and infrastructure and fire fuel reduction zone. Generally there will be no clearing on the site outside these envelopes. In the case of applications for subdivision, such envelopes should be registered as a restriction on the title, pursuant to the Conveyancing Act 1919; and*

Clearing on the site is restricted to the areas as outlined as the development footprint in the draft master plan.

- (h) *Include measures to effectively minimise the threat posed to koalas by dogs, motor vehicles and swimming pools by adopting the following minimum standards.*
 - (i) *The development must include measures that effectively abate the threat posed to koalas by dogs through prohibitions or restrictions on dog ownership. Restrictions on title may be appropriate.*
 - (ii) *The development must include measures that effectively minimise the threat posed to koalas from traffic by restricting motor vehicle speeds, where appropriate, to 40 kph or less.*
 - (iii) *The development must reduce the risk of koala mortality by drowning in backyard swimming pools. Appropriate measures could include: trailing a length of stout rope (minimum diameter of 50mm), which is secured to a stable poolside fixture, in the swimming pool at all times; designing the pool in such a way that koalas can readily escape; or enclosing the pool with a fence that precludes koalas. This last option should include locating the fence away from any trees which koalas could use to cross the fence.*

These measures have been outlined in the Koala Assessment and will be further considered at the Development/Project application stage.

It is therefore considered that while the draft master plan will result in the removal of potential and preferred koala habitat, the mitigation measures proposed will minimise this impact and ensure the corridors within the locality are maintained for future populations of koalas which

may inhabit the area.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.3 Pedestrian/Cyclist Facilities

Issue: The proposed estate needs to link with existing facilities in Fern Bay to allow future residents access via walking and cycling to schools, shops etc and off-road cycleways and pedestrian paths should be provided throughout the estate.

Raised by: Council, RTA & HRDC.

Consideration: The draft master plan provides a pathway/cycleway extension from the exiting pathway which stops at the Bayway Village to the roundabout at the entrance to the estate.

The draft master plan provides for a well-connected and logical pedestrian and cyclist network throughout the estate, with the main collector road providing a 1.2 to 1.5m pedestrian pathway as well as a designated 1m wide cycleway on-road, while the neighbourhood streets generally have 1.2 to 1.5m wide pedestrian pathways. A network of walking trails has also been established in the open space areas and around the perimeter of the estate.

It is considered there are adequate pedestrian and cyclist facilities both within the proposed estate and links to other facilities within the locality.

Resolution: This issue has been satisfactorily addressed by the draft master plan and a variation to include the extension of the pedestrian/cyclist pathway from the *Bayway Village* to the existing roundabout at the entrance to the proposal is recommended to be imposed as a variation to the draft master plan as outlined in **Appendix A**.

6.3.4 Water Quality - Stormwater and Groundwater

Issue: The water quality of stormwater from the site and the quality of groundwater.

Raised by: Council, NRC, Community submissions.

Consideration: The *Stormwater Management Strategies for the Proposed Urban Development at Fern Bay* (Urban Water Cycle Solutions, 2005) report states the following in relation to stormwater runoff on the site:-

Stormwater runoff from the northern areas of the site discharges to low lying areas adjacent to Nelson Bay Road and ultimately evaporates from the low lying areas of flows via culverts under Nelson Bay Road towards Fullerton Cove. Stormwater runoff from southern and internal areas of the site discharges to a series of perched water tables located between sand dunes at the centre of the site and ultimately evaporates to the atmosphere. There may be some surface water connectivity between the internal perched water tables and the low lying areas adjacent to Nelson Bay Road. The site is underlain by an unconfined aquifer that can maintain water levels in low lying areas and allows water to drain from the low lying areas and perched water tables towards Fullerton Cove and Stockton bight. Water is also lost from the soil profile and the aquifer via evapotranspiration processes.

The topography and geology of the site indicate that stormwater should be managed in a series of small stormwater management precincts. Stormwater quality and quantity should be managed in each stormwater precinct that contains

about 50 to 100 dwellings. A WSUD stormwater treatment train philosophy should be employed within each stormwater management precinct and between the precincts.

Stormwater runoff from roofs of dwellings situated at the high side of roads will be discharged to bio-retention trenches placed under swales located in the road reserve. The grass swales within the road reserve will collect stormwater runoff from road pavements with one-way cross-falls and excess stormwater runoff from allotments. It is expected that the majority of rain falling on allotments will infiltrate to the aquifer. Stormwater runoff that concentrates in the swales will infiltrate into the bio-retention trenches below with excess stormwater conveyed to an inlet pipe.

The additional information lodged in February 2006 by Urban Water Cycle Solutions further stated that the site does not drain to the nearby SEPP 14 wetland adjoining Fullerton Cove and will not intercept or extract groundwater on the site.

It is considered that the strategy will protect the development from flooding and will mitigate the potential stormwater impacts on receiving environments. The detailed design of this system (including the concerns of Council regarding infiltration rates, groundwater study etc) can be further considered at the Development/Project application stage.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.5 Location of Commercial Facilities

Issue: Consideration should be given to locating the commercial/retail facilities at the beginning of the westernmost residential development to service both the estate and the remainder of Fern Bay. The facilities could include a service station, shopping, doctors surgery etc.

Raised by: Council.

Consideration: The applicant was requested to review the location of the commercial services within the estate in light of the Council's concerns.

It was outlined, however, that the commercial services within the estate have been located to allow for 'walkable catchments' so that the three neighbourhood focal points are within 400m of the majority of allotments. The proposed location of the community centre is within a 5 minute walk for 47% of future residents. The relocation of the commercial facilities to the estate's entrance would result in a longer walking distance for the majority of households in the estate and therefore it is likely that future residents would drive vehicles to the facilities instead of walking or cycling. The Council's proposed location of the commercial facilities would still result in these facilities being over 2.5Km from the existing Fern Bay urban area and over 3.2Km from the existing Fullerton Cove community.

It is also considered that locating the commercial facilities at the entrance to the estate may adversely affect the integrity of the 200m wide ecological corridor in this area of the site.

It is therefore considered that to ensure the maximum use of the commercial facilities by future residents of the estate and the protection of the ecological corridor, the commercial facilities should remain in their proposed locations in the neighbourhood focal points. Existing

residents of Fern Bay and Fullerton Cove can still use the facilities as it is likely that these residents would have driven to these facilities regardless of their location. There are also facilities at Fern Bay and Fullerton Cove.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.6 Access to Beach

Issue: Public access to the foreshore is one of the aims of SEPP 71 and therefore should be provided from the estate.

Raised by: Council, NRC, DEC, RTA (HRDC).

Consideration: The applicant proposed a four-wheel drive track from the southern boundary of the site towards the beach, across adjoining land owned by DEC. There are also numerous existing informal paths in the area. DEC initially raised concerns with this proposed access as this adjoining land is currently the subject of lease negotiations with the LALC.

Following further consultation with DEC, the following access provisions have been agreed to for the estate:-

- *The fencing of the northern boundary of the Part 11 (DEC) lands and the construction of a four-wheel drive track adjacent to this boundary, with associated infrastructure (hard stand, car parks, pedestrian pathway, lighting, signage, etc)*
- *Closure and rehabilitation of numerous tracks on the Part 11 lands in order to better protect current and future hollow bearing trees.*

These access provisions allow for access to the beach and as well as conservation of the ecology of this adjoining land.

Resolution: These access provisions have been recommended to be imposed as variations in the draft master plan in **Appendix A**.

6.3.7 Cultural Heritage

Issue: The site contains items of Aboriginal Heritage

Raised by: DEC, NRC.

Consideration: The *Fern Bay Estate Aboriginal Heritage Assessment Report* (ERM 2005) assessed the cultural heritage significance of the site and provided relevant management strategies. As a result, an Aboriginal Reserve has been proposed within the estate to ensure this cultural significance is preserved. DEC is satisfied with this report and the resultant preservation of the cultural significance of the site.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.8 Bushfire

Issue: The site is bushfire prone and proposes residential subdivision.

Raised by: NSW Rural Fire Service, DEC, Council.

Consideration: The *Fern Bay Estate Bushfire Hazard Assessment Report* (ERM 2005) assessed the proposal in accordance with the requirements of *Planning for Bushfire Protection* (RFS, 2001). The proposal involves the provisions of various asset protection zones, fire hydrants, construction standards, landscaping guidelines and provisions of perimeter roads and fire trails. DEC and the RFS were satisfied that these mitigation measures are adequate for the proposal.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.9 Access and Traffic Issues

Issue: Access to the site, traffic noise and the availability of public transport.

Raised by: Council, RTA, HRDC, Community submissions.

Consideration: There are two access points to the site, the southern entrance being the existing roundabout at the intersection of Nelson Bay Road and Fullerton Cove Road (approved under previous proposal) and a new intersection on Nelson Bay Road at the northern end of the estate. The RTA concurs that this northern intersection should be a left in/left out intersection as shown on the draft master plan.

The RTA also raised the issue of traffic noise for future development. The *Fern Bay Estate Noise Assessment Report* (ERM, 2005) assessed the potential sources of noise for the estate which included road noise from Nelson Bay Road, aircraft noise from Williamtown RAAF base and industrial noise sources from nearby development including sand extraction activities and industry on Kooragang Island. This report concluded that the proposed setback of more than 200m (the width of the ecological corridor along Nelson Bay Road) is sufficient to ensure the estate would not be subject to any adverse noise impacts.

The provision of public transport was also raised. The draft master plan provides a collector road through the estate which is capable of accommodating buses. A local bus company has indicated it is capable and willing to provide a bus service when required. Details regarding bus shelters and other infrastructure associated with bus routes as well as street lighting and other road-related issues (including traffic calming measures, concrete medians on Nelson Bay Road to prevent illegal traffic movements) can be provided at the Development/Project application stage.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.10 Flooding

Issue: There are portions of the site which are affected by flooding from the Hunter River.

Raised by: DNR, Community submissions.

Consideration: The area of the site adjoining Nelson Bay Road consisting of swamp forest, will be impacted by the 100 ARI flood event on the Hunter River system as culverts under Nelson Bay Road convey floodwaters to the site. The Council has established a minimum floor level requirement of

2.5 metres AHD for any habitable rooms constructed on site.

No development is proposed in the low lying areas of the site adjacent to Nelson Bay Road and all roads within the estate will be constructed at 2.1m AHD. Therefore all land within the site to be used for urban development will be above the minimum floor level.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.11 Infrastructure Provision

Issue: Adequate infrastructure provision is required for the proposal.

Raised by: Council, Community submissions.

Consideration: The estate will be serviced by existing gas, telecommunications and electricity infrastructure, however, new water and sewerage disposal facilities as well as stormwater and drainage facilities will need to be constructed. These are discussed below.

Water Supply

It is proposed to connect the estate to the existing Hunter Water Corporation (HWC) system at the eastern end of Stockton Bridge (3.3Km from the intersection of Nelson Bay Road and Fullerton Cove Road) as well as a second connection at Williamtown. This second connection would be built in 2009 and funding would be sought from HWC. The lead in mains will connect to a ring main, sub loop reticulation mains and reticulation mains within the estate.

Sewerage

Sewerage from the estate is proposed to be transferred via a rising main (to be constructed along Nelson bay Road) to the existing HWC system at the corner of Rankin Road and Nelson Bay Road. This system within the estate will consist of a combination of conventional and low pressure systems and will deliver flows that can be accommodated within the allowance provided by HWC for its transfer systems.

HWC has approved both the Water Supply and Sewerage systems.

Stormwater and Drainage

The *Stormwater Management Strategies for the Proposed Urban Development at Fern Bay* (Urban Water Cycle Solutions 2005) outlined the stormwater management strategy for the estate which will incorporate Water Sensitive Urban Design (WSUD) treatment train philosophy and will utilise the high infiltration rates of the soil on the site (the issue of water quality is discussed in section 6.3.4 of this report).

The strategy involves using pipe drainage, infiltration trenches, roads with one-way cross falls, bio-retention swales, gross pollutant traps, infiltration swales and infiltration trenches to management stormwater quality and quantity on the site. The Council were satisfied with this proposed strategy, however, required more information including a Groundwater Study, revised infiltration Rate calculations and changes to the Water Sensitive Urban Design system to involve conventional

pipes conveying stormwater to off-line treatment systems instead of infiltration/bio-trenching under the swale. The applicant provided a response from Urban Water Cycle Solutions (dated 27 February 2006) which stated that the proposed stormwater management strategy does not intercept or extract groundwater and that the proposed WSUD strategy will maintain the water balance and long-term water quality of the aquifer. It is considered that this advice satisfactorily addresses the groundwater issues, while the remaining issues relating to the minor changes in the WSUD treatment train and infiltration rate calculations can be further assessed at Development Application/Project Application stage.

The provision of infrastructure on the site is adequate for the proposal.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.12 Dune Migration Hazard

Issue: The site is affected by dune migration from the frontal dune to the east of the site.

Raised by: Regional Office, Council, NRC, Community Submissions.

Consideration: An assessment of this hazard by Australian Water and Coastal Studies in 1992 recommended that an area of 200m inland of the seaward face of the frontal dune be allocated to provide a buffer for coastal hazards including beach recession, storm cut and long term climate change. A further study carried out by Unisearch Water Research Laboratory in 1998 on behalf of the Council and recommended the dune hazard line be re-established up to 100m seaward. *The Stockton Bight Environmental Study and Management Plan* prepared by HLA Envirosiences Pty Ltd in August 1995 also addressed this issue.

The location of this line is based on an average dune progression rate of 3.2 metres per year. This line traverses the south eastern corner of the site and no development is proposed east of this line. Periodic removal of sand will be considered as a future option for managing dune migration.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.13 Built Form and Visual Amenity

Issue: Potential impact on visual amenity as a result of the proposal.

Raised by: Community submissions.

Consideration: Views into the site from Nelson Bay Road are largely restricted due to the location of the coastal forest as well as from the beach and coastal foreshore areas due to the location of the dune system.

Within the estate, view corridors have been maintained so that the majority of allotments will be able to view the open space areas and/or the conservation areas. Street tree planting further improves the visual outlook for the majority of proposed allotments.

The proposed built form controls, to be strictly controlled by the

proposed Community Management Statement (Annex G of the draft master plan), will assist in minimising adverse visual impacts in the estate by ensuring designs are compatible with the coastal and ecological setting. The retention of large areas of natural bushland, the low density nature of the development (largely confined to 2 storeys) and the provision of numerous open space areas will ensure the visual amenity of the area is retained.

The proposal is therefore considered to be appropriate in relation to visual amenity.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.14 Community Facilities

Issue: The proposal is required to provide adequate community facilities.

Raised by: NRC, Council, Community submissions.

Consideration: The Council requested that a larger area for active recreation be provided adjoining Cabbage Tree Park at the entrance to the estate and the NRC stated that adequate community facilities must be provided.

The draft master plan provides for three public open space areas, which are described as Cabbage Tree Park, Banksia Park and Corymbia Park (refer to section 6.1 of this report). Of these parks, Cabbage Tree Park provides a large turf area for active recreation, while Banksia Park is generally an 'urban park' with some areas for active recreation. Corymbia Park is primarily a children's play area and a conservation area for existing heath vegetation. These three areas also provide for other community facilities including a future child care centre, picnic areas, community nursery, shops, community centre, various areas of recreational open space, children's playgrounds and new fire and pedestrian trails are proposed within the site. Open space lots will include formal parks and an Aboriginal Heritage Reserve. Recreation, community and commercial facilities represent 3.1% of the area of the subdivision, while open space and conservation areas comprise 57.1% of the site area. It is considered that there are adequate community facilities on the site and improved pedestrian/cyclist linkages within the locality will make it easy to utilise other existing facilities in the area.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.15 Unexploded Ordinance

Issue: The *Fern Bay Local Environmental Study* prepared in 1992 on behalf of Port Stephens Council identified that the site may contain unexploded ordinance (UXO) from mortar fire existing on the site as a result of activities in the area during World War II.

Raised by: Department of Defence.

Consideration: Several reports and studies have been reviewed by the applicant in relation to this study and the conclusion was that there is no evidence,

from either historical research or physical site investigation which provides evidence of any UXO. An *Unexploded Ordinance Management Plan* (ERM, 2004) has been prepared for the site and will be implemented to ensure that any potentially hazardous items are dealt with in the appropriate manner. Apart from some inaccuracies, the Department of Defence were generally satisfied with this report.

Resolution: This issue has been satisfactorily addressed by the draft master plan and no variations are required.

6.3.16 Construction and Waste Management

Issue: Construction and Waste Management Plans are required.

Raised by: Council.

Consideration: These issues will be considered at project/development application stage.

Resolution: This matter has been considered in this assessment.

6.3.17 Need for Development – Draft Regional Strategy

Issue: The need for development and the proposals' consistency with the Draft Regional Strategy.

Raised by: Community submissions.

Consideration: The *Draft Lower Hunter Regional Strategy prepared by the Department of Planning* (2005) ("the Draft Regional Strategy") is a Strategy to ensure that adequate land is available and appropriately located to sustainably accommodate the projected housing, employment and environmental needs of the Region's population over the next 25 years.

The site is classified on the Draft Regional Strategy Map as "existing urban area". The Draft Regional Strategy estimates that approximately 60,000 dwellings are needed to house an additional 150,000 people over the next 25 years. The Draft Regional Strategy aims to facilitate containment of urban development, which will provide housing choice, maximise use of public transport, efficient use of infrastructure and which maintain the character of existing established suburbs.

In relation to biodiversity, the Strategy states it supports no net loss of biodiversity value to the region and where possible, loss of biodiversity to be offset by improvements elsewhere where existing biodiversity values can be maintained or improved.

It is considered that the proposal provides additional housing in the area which will assist with the attainment of the aim of this Draft Regional Strategy to provide housing for the estimated increases in the population, in a location which is close to Newcastle, the key regional city, close to existing services (such as schools, shops etc), close to existing infrastructure (electricity, gas, telecommunications and the proximity to reticulated water and sewerage services which only require extension and not total construction) and close to employment in the form of the nearby industrial lands and the city of Newcastle. In relation to biodiversity, the proposal will result in a loss of biodiversity, however, the offsets required by DEC (and recommended to be imposed as a

variation to the draft master plan in **Appendix A**), will ensure biodiversity elsewhere is maintained and improved. There are other mitigation measures proposed (discussed in section 6.3.1) which further assist in minimising biodiversity loss.

It is considered that there is a need for this development and is consistent with the Draft Regional Strategy given the location of the site and the “existing urban area” status of this site.

Resolution: This matter has been considered in this assessment.

6.3.18 Lack of services

Issue: There is a lack of services in the area to cater for the development.

Raised by: Community submissions.

Consideration: There are shops, schools and other facilities in Fern Bay and Stockton and higher order services such as hospitals, universities and TAFE colleges, sports grounds and facilities and emergency services in Newcastle. It is considered that these services are sufficient for the site and are located in relatively close proximity by use of future residents of the development. Public transport will be available via a bus service in the future and pedestrian/cycleways will be provided to allow easy access to existing services in the area.

Resolution: This matter has been considered in this assessment.

6.3.19 Cumulative Impact

Issue: The development proposed in the draft master plan will have an adverse cumulative impact in the area.

Raised by: Community submissions.

Consideration: The proposed development is in accordance with the aims and directions of the Draft Regional Strategy and is therefore unlikely to have an adverse cumulative impact in the area.

Resolution: This matter has been considered in this assessment.

7. CONCLUSION

7.1 Conclusion

The Minister for Planning is the consent authority.

The draft master plan has been considered in accordance with clause 22 of State Environmental Planning Policy No 71 – Coastal Protection (SEPP 71) and provides an appropriate illustration and demonstration of future development of the site. The draft master plan include a comprehensive site analysis, addresses coastal issues, built form and character controls and the statutory controls of the site.

The draft master has been notified and the relevant agencies have been consulted in accordance with clause 21 of SEPP 71. All submissions have been considered in this assessment.

Generally, it is considered that the draft master plan proposes development on the site which is compatible with the site constraints and provides for residential development in an appropriate location. The proposal involves the conservation of large areas of natural vegetation and provides for a habitat connection within the locality.

On balance, it is considered that the draft master plan is satisfactory and should be adopted as a master plan for the purposes of Part 5 of SEPP 71, subject to the variations outlined in **Appendix A**.

7.2 Consultation with the Applicant – Instrument of Adoption

In accordance with the policy of the Department, the proponent was given the opportunity to comment on the draft Instrument of Adoption on 30 May 2006. The proponent responded on 30 May 2006 stating they were satisfied with the Draft Instrument of Adoption was acceptable with some minor changes. These changes have been adopted.

8. RECOMMENDATION

It is recommended that the Minister for Planning, pursuant to Clause 22(2)(b) of State Environmental Planning Policy No 71 – Coastal Protection:

- (A) Adopt the draft master plan as a Master Plan for the purposes of development of land at Lot 16 DP 258848 (No 85) Nelson Bay Road Fern Bay, pursuant to the Instrument of Adoption (**Appendix A**); and
- (B) Authorise the Department to carry out post-determination notification.

For Ministerial Endorsement:

Prepared by:

Endorsed by

Kim Johnston
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APPENDIX A. CONDITIONS OF APPROVAL / REFUSAL

APPENDIX B. ENVIRONMENTAL PLANNING INSTRUMENTS CONSIDERATION

The aims and objectives of the relevant environmental planning instruments and development control plans are assessed below in relation to the draft master plan. The development control requirements of the planning instruments and the detailed controls of the DCP are not considered in this assessment as they will be considered at the development/project application stage.

It is generally considered that the draft master plan proposes development which is capable of satisfying the objectives of the environmental planning instruments and development control plans applicable to the site, however, a thorough analysis of any future development of the site will be carried out at the development application stage.

1. State Environmental Planning Policy No 71 – Coastal Protection (SEPP 71)

MATTERS	CONSIDERATION	COMMENT
CLAUSE 2: AIMS OF POLICY		
To protect and manage the natural, cultural, recreational and economic attributes of New South Wales coast and	√	The draft master plan generally satisfies these matters as the proposal is considered to be completing the development of the site which has been approved and partially constructed. This issue will require further assessment in future development of the site.
To protect and improve existing public access to and along coastal foreshores to the extent that it is compatible with the natural attributes of the coastal foreshore, and	√	The draft master plan provides an opportunity to enhance public access to the foreshore through the upgrading/formalising of the trail to the beach and providing further pedestrian trails through the site. This issue will require further assessment in future development of the site.
To ensure that new opportunities for public access to and along coastal foreshores are identified and realised to the extent that this is compatible with the natural attributes of the coastal foreshore, and	√	As above, public access is protected and improved without comprising the integrity of the natural bushland areas. This issue will require further assessment in future development of the site.
To protect and preserve Aboriginal cultural heritage, and Aboriginal places, values, customs, beliefs and traditional knowledge, and	√	The applicant provided an Aboriginal Archaeological assessment of the site and there were no items of heritage detected. Any future development of the site will need to be initially supervised by members of the Local Aboriginal Land Council. This matter is further discussed in section 6.3 of the report.
To ensure that the visual amenity of the coast is protected, and	√	The draft master plan generally proposes development that is not visually obtrusive from the coast. This issue will require further assessment in future development of the site. This matter is further discussed in section 6.3 of the report.

To protect and preserve beach environments and beach amenity, and	√	The draft master plan addresses general issues of water quality and stormwater runoff, however, this will need to be addressed in detail for any future development on the site. This matter is further discussed in section 6.3 of the report.
To protect and preserve native coastal vegetation, and	√	The draft master plan proposes to retain significant areas of natural vegetation and rehabilitate other areas off-site in offset measures. This issue will require further assessment for any future development of the site. This matter is further discussed in section 6.3 of the report.
To protect and preserve the marine environment of New South Wales, and	√	The draft master plan will not adversely affect the marine environment.
To protect and preserve rock platforms, and	√	The site is not likely to adversely affect any rock platforms.
To manage the coastal zone in accordance with the principles of ecologically sustainable development (within the meaning of section 6(2) of the <i>Protection of the Environment Administration Act 1991</i>), and	√	The draft master plan does not propose any development that would appear to be contrary to the principles of ecologically sustainable development, however, this will require further assessment in future development of the site.
To ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area, and	√	The draft master plan proposes development that is generally compatible with the surrounding development given the predominantly low density nature of the proposed development. This matter is further discussed in section 6.3 of the report.
To encourage a strategic approach to coastal management.	√	The draft master plan proposes development which is compatible with existing development and is located within an area zoned for residential development.
CLAUSE 8: MATTERS FOR CONSIDERATION		
The aims of this Policy set out in clause 2	√	As above.
Existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved.	√	This has been considered above and will require further assessment in future development of the site (i.e. detailed design issues).
Opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability	√	As above
The suitability of development given its type, location and design and its relationship with the surrounding area.	√	As above.

Any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant overshadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore	√	The draft master plan does not propose development which will significantly overshadow any beach area and views will be retained.
The scenic qualities of the New South Wales coast, and means to protect and improve these qualities	√	The draft master plan is unlikely to adversely affect the scenic qualities of the coast. This matter is further discussed in section 6.3 of the report.
Measures to conserve animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act) and their habitats	√	The draft master plan has considered potential impacts on flora and fauna on the site (refer section 6.3 of the report). This issue will require further assessment in future development of the site
Existing wildlife corridors and the impact of development on these corridors	√	The draft master plan provides retention of existing wildlife corridors by revegetating areas of the site and retaining a 200m wide corridor across the front of the site. In addition, rehabilitation of areas off the site are now proposed as part of an offset package provided by DEC. This is further discussed in section 6.3 and will require further assessment in future development of the site.
The likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes & hazards	√	The draft master plan concludes that there will be no impact from coastal processes.
Measures to reduce the potential for conflict between land based and water based coastal activities	√	No conflicts exist.
Measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals	√	The Aboriginal archaeological significance of the site has been studied and will be preserved in the proposed Aboriginal Reserve within the site. This issue will require further assessment in future development of the site
Likely impacts of development on the water quality of coastal water bodies	√	Discussed above and will require further assessment in future development of the site.
The conservation and preservation of items of heritage, archaeological or historic significance	√	As above.
Only in cases in which a council prepares a draft local environmental plan that applies to land to which this Policy applies, the means to encourage compact towns and cities	√	The draft master plan does not involve the preparation of a draft local environmental plan.

Only in cases in which a development application in relation to proposed development is determined the cumulative impacts of the proposed development on the environment, and measures to ensure water and energy usage by the proposed development is efficient	√	This issue has been considered in section 6.3 of this report.
CLAUSE 14: PUBLIC ACCESS		
A consent authority must not consent to development on land to which this Policy applies if, in the opinion of the consent authority, the development will, or is likely to, result in the impending or diminishing, to any extent, of the physical, land-based right of access of public to or along the coastal foreshore.	√	Outlined above.
CLAUSE 15: EFFLUENT DISPOSAL		
The consent authority must not consent to a DA to carry out development on land to which this Policy applies in which effluent is proposed to be disposed of by means of a non-reticulated system if the consent authority is satisfied the proposal will, or is likely to, have a negative effect on the water quality of the sea or any nearby beach, or an estuary, a coastal lake, a coastal creek or other similar body of water, or a rock platform.	√	The draft master plan states that the proposal will be connected to the existing reticulated sewer system, which will be extended to the master plan site. This issue will require further assessment in the future development of the site.
CLAUSE 16: STORMWATER		
The consent authority must not consent to a development application to carry out development on land to which this Policy applies if the consent authority is of the opinion that the development will, or is likely to, discharge untreated stormwater into the sea, a beach, or an estuary, a coastal lake, a coastal creek or other similar body of water, or onto a rock platform.	√	The draft master plan states that the proposal will adopt WSUD principles. This issue will require further assessment in the future development of the site.

2. STATE ENVIRONMENTAL PLANNING POLICY NO 11 – TRAFFIC GENERATING DEVELOPMENTS

Any future development will be referred to the NSW Roads and Traffic Authority for comment as Schedule 2 development and any comments must be considered in the assessment of the development application.

3. STATE ENVIRONMENTAL PLANNING POLICY NO 14 – COASTAL WETLANDS

There is a wetland in close proximity to the site which is listed as a SEPP 14 Wetland. The subject site is not subject to the provisions of SEPP 14, however, the draft master plan has demonstrated that there will be no adverse impact on this wetland since stormwater runoff will not be discharged to this wetland. This aspect will be further assessed at the development/project application stage.

4. STATE ENVIRONMENTAL PLANNING POLICY NO 44 – KOALA HABITAT PROTECTION

Port Stephens local government area is subject to the provisions of SEPP 44 and applies only to Development Applications. The issue of koala habitat protection has been assessed in section 6.3 of this report.

5. HUNTER REGIONAL ENVIRONMENTAL PLAN 1989

The proposal is generally consistent with the aims, objectives and controls of the Hunter Regional Environmental Plan 1989. The proposal provides for housing choice for a variety of households and allows for the orderly and economic use of land given existing services are to be used (and extended) and housing is to be provided in an area zoned for residential and close to existing services. The site is identified as an “investigation area” for future urban development and accordingly is considered to be consistent with the objectives of the Plan. The proposal allows for commercial and community services to be provided in close proximity to residential development and provides for improved pedestrian and cyclist linkages in the vicinity. The proposal will also allow for rehabilitation of habitat on the site and on adjoining sites. Accordingly, it is considered that the proposal in the draft master plan satisfies the aims and objectives of this Plan. A detailed assessment of the Plan’s controls will be carried out at the project/development application stage.

6. PORT STEPHENS LOCAL ENVIRONMENTAL PLAN 2000

MATTERS	CONSIDERATION	COMMENTS
PART 2 GENERAL RESTRICTIONS ON LAND		
Clause 11 Rural Zonings		
Objectives of 1(a) zone	√	The proposal complies with these objectives as the site does not contain prime agricultural land and only roads and associated infrastructure are proposed in this zone.
Clause 16 Residential Zonings		

Objectives of 2(a) zone	√	The proposal complies with these objectives as the draft master plan provides a variety of housing types, the development is compatible with existing development, the design takes account of hazards, non-residential uses are compatible with residential uses and the development proposes an ecologically sustainable approach to residential development by protecting environmental assets and providing for a more efficient use of existing infrastructure and services.
Clause 17 Subdivision in residential zones		
Consent for the subdivision of land to create an allotment with an area of less than 500m ² that is, in the opinion of the consent authority, intended to be used for the purpose of residential housing is to be granted only if consent has been granted, or is granted at the same time, for the erection the dwelling.	√	When a DA is submitted for the proposal, consent will also be sought for the erection for dwellings on the integrated housing lots which are less than 500m ² in size.
Clause 32 Environmental Protection Zonings		
Objectives of 7(a) zone	√	The proposed development satisfies the objectives of the 7(a) zone as the proposal protects significant wildlife corridors through the retention of a 200m wide corridor along the front of the site and promotes the regeneration of areas of significant vegetation and their corridors as a result of the offset measures proposed. The visual character of the area is maintained through compatible development and biodiversity is largely conserved in the ecological corridor and other natural areas retained on the site.
Clause 35 Development within all Environmental Protection Zones		
The consent authority must not grant consent within an environment protection zone unless it is satisfied that the carrying out of the proposed development will not harm or compromise ecological habitats, the land is not subject to high bushfire hazard, lots are not affected by slopes greater than 30%, building heights are not to exceed 9 metres and development must occur in an orderly and efficient manner and will not create undue demands on the provision of services and infrastructure for the locality. The land concerned must also have an adequate area of suitable soils available for on-site septic effluent disposal, located away from drainage lines and shallow or impervious soils, unless reticulated water and sewerage services are available	√	No buildings are proposed within the 7(a) zone, and the potential impacts on ecological habitats have been addressed above. The site is affected by bushfire hazard, however, this issue has also been adequately discussed and mitigated by the draft master plan.
Clause 41 Direct Access to certain roads restricted		
No new means of vehicular access shall, except with the consent of the consent authority, be opened, constructed, formed, laid out or used from any land adjacent to a boundary of, among other others, Nelson Bay Road—Main Road 108 (between the intersection of Stockton Street and Church Street, Nelson Bay, and the boundary of Port Stephens local government area at Fern Bay).	√	The main entrance at the roundabout of Fullerton Cove Road and Nelson Bay Road was approved in 1997 and has been constructed. The additional intersection is proposed approximately 1.15Km to the northeast of this intersection and will be referred to the RTA for comment at the project/development application stage. The RTA support this proposed intersection in principle.
Clause 44 Appearance of Land and Buildings		

The consent authority may consent to the development of land within view of any waterway or adjacent to any main or arterial road, public reserve or land zoned as open space, only if it takes into consideration the probable aesthetic appearance of the proposed building or work or that land when used for the proposed purpose and viewed from that waterway, main or arterial road, public reserve or land zoned as open space. The consent authority may consent to development of land on or near any ridgeline visible from a public road only if it is satisfied that the development would not be likely to detract substantially from the visual amenity of the locality. In determining whether to grant a consent, the height and location of any building that will result from carrying out the development, the reflectivity of materials to be used in carrying out the development, the likely effect of carrying out the development on the stability of the land, any bushfire hazard, whether carrying out the development is essential to the viability of the land concerned, and the likely extent and effect of carrying out the development on vegetation on the land concerned must be considered.	√	The potential visual impact of the proposal has been considered in section 6.3 (visual impact) of this report. It is considered that given the location of the dunes and coastal forest adjoining the site, the site is not clearly visible from public places. The proposal is not likely to adversely affect the visual amenity in the area as the buildings are low scale and interspersed by retained vegetation and open space areas.
Clause 47 Services		
The consent authority shall not grant its consent to the carrying out of any development on any land unless a water supply and facilities for the removal or disposal of sewage and drainage are available to that land, or arrangements satisfactory to it have been made for the provision of that supply and those facilities.	√	Arrangements have been made for the extension of the water supply and sewerage services in the area to the site for the proposal and this has been demonstrated in the draft master plan.
Clause 59 Development of Known or Potential Archaeological Sites		
The consent authority may grant consent to the carrying out of development on an archaeological site that has Aboriginal heritage significance (such as a site that is the location of an Aboriginal place or a relic, within the meaning of the National Parks and Wildlife Act 1974) or a potential archaeological site that is reasonably likely to have Aboriginal heritage significance only if it has considered an assessment of how the proposed development would affect the conservation of the site and any relic known or reasonably likely to be located at the site, being an assessment prepared in accordance with any guidelines for the time being notified to it by the Director-General of National Parks and Wildlife, and has notified the Director-General of its intention to do so and taken into consideration any comments received from the Director-General within 28 days after the notice was sent.	√	This issue has been adequately addressed in the draft master plan and is further discussed in section 6.3 of this report.
Clause 60 Development in the vicinity of heritage items, heritage conservation areas, archaeological sites or potential archaeological sites		

The consent authority must take into consideration the likely effect of the proposed development on the heritage significance of a heritage item, heritage conservation area, archaeological site or potential archaeological site, and on its setting, when determining an application for consent to carry out development on land in its vicinity.	√	See above.
Clause 62 Particular Development Permitted with Consent		
Part Lot 16, DP 258848, Nelson Bay Road, Fern Bay - Those uses permitted with or without development consent within Zone No 3 (a) (Business General "A" Zone). Not more than 1 hectare of the land is to be used.	√	This clause permits the commercial and other non-residential uses.

7. PORT STEPHENS URBAN SETTLEMENT STRATEGY

This strategy outlines Council's strategic direction for future urban development within the LGA and identifies the site as a "Future neighbourhood centre". The proposal involves subdivision of land which is zoned for residential development. It is considered that the draft master plan proposes development which is consistent with this Strategy.

8. PORT STEPHENS COMPREHENSIVE KOALA PLAN OF MANAGEMENT

The objectives and controls of this CKPoM have been addressed in the Flora and Fauna Assessment and koala assessment provided with the draft master plan. Consideration and further discussion of this issue is outlined in section 6.3 of the report.

9. COASTAL DESIGN GUIDELINES OF NSW, 2003

MATTERS	CONSIDERATION	COMMENTS
Part 1 Determining a hierarchy of settlements		
Coastal Town	√	Fern Bay, Stockton and surrounding suburbs are likely to be classified as Coastal Towns
Part 2 Design principles for coastal settlements		
Defining the footprint and boundary	√	The draft master plan reinforces and continues the urban structure of the existing development within the site and utilises the existing services, infrastructure and provides a street pattern in sympathy with the topography. The draft master plan proposes further development within an existing urban area (as defined the Draft Regional Strategy), defined by the road and existing development.
Connecting open spaces	√	The site of the draft master plan protects and enhances public access in the vicinity and use of this area is not restricted by the development. There are adequate setbacks to protect the beach system to the east and there are linkages between the foreshore, the site and surrounding areas. This is further discussed in section 6.3 of this report and will be subject to further assessment at development/project application stage.

Protecting then natural edges	√	The natural edges are protected in the draft master plan as the proposal involves retention of large areas of natural vegetation in the form of a 200 metre wide ecological corridor and other areas to be retained as natural areas.
Reinforcing the street pattern	√	The street pattern of the proposed development extends from the existing development on the site and follows the natural contours of the site. The proposed roads allow public access through the site and onto the coastal foreshore (through the offset and public access provisions outlined by DEC) without adversely affecting the natural values of the retained vegetation.
Appropriate buildings for a coastal context	√	The draft master plan proposes buildings which are of an appropriate scale for the site given the proximity of the existing residential development. This issue will require further assessment for future development of the site.

10. NSW COASTAL POLICY

MATTERS	CONSIDERATION	COMMENTS
Protecting, rehabilitating and improving the natural environment of the coastal zone.	√	The draft master plan states that there will be significant areas of the natural vegetation on the site retained as well as a revegetation and rehabilitation program is to be undertaken. The draft master plan also states that WSUD principles will be incorporated into future development on the site. Further rehabilitation and restoration works are proposed for the adjoining DEC lands to the south of the site.
Recognising and accommodating the natural processes of the coastal zone.	√	The draft master plan considers this issue in the engineering assessment (Appendix 6). This matter is considered to be addressed by the draft master plan, but will require further assessment for future development on the site.
Protecting and enhancing the aesthetic qualities of the coastal zone	√	The draft master plan proposes development which is compatible in terms of bulk and scale to surrounding development and is unlikely to adversely affect the visual amenity of the coastal zone. This issue will require further assessment for future development of the site.
Protecting and conserving the cultural heritage of the coastal zone.	√	The potential heritage and cultural significance of the site has been assessed in the draft master plan and found to not adversely affect any items of significance. This issue is discussed further in section 6.3 of the report.
Providing for ecologically sustainable development and use of resources.	√	Discussed in this assessment.

Providing for ecologically sustainable human settlement in the coastal zone.	√	Discussed in this assessment.
Providing for appropriate public access and use.	√	Discussed in this assessment
Providing information to enable effective management of the coastal zone.	√	The draft master plan considers this issue in relation to the dune migration hazard and public access to the beach system and will require further assessment for future development on the site.

APPENDIX C. RESPONSE TO SUBMISSIONS

Issues addressed in Section 6.2 of the Planning Assessment Report

No.	Date	Issues Raised	Main Issues
1	04.01.05	- Land should never have been rezoned for residential development in the first place. - The development would result in an acceptable loss of coastal native vegetation and wildlife. - The existing 200 lot should be the extent of development in the area. - The extent of vegetation that will be removed, the fragmentation of what remains, and the impact of urban development and the associated number of new residents bringing vehicles, pets, weeds, more fire risks, pollution, siltation into this fragile area far outweighs any benefit of positive design.	- Land rezoning - Impact on flora and fauna - Existing development should be extent - Proposal has more negative impacts than positives
2	01.06.05	- Benefit area by attracting at least another thousand tourists per year - Residents and visitors alike will be able to enjoy the beauty of the sea side without being overcrowded or threatening environment - Over the next 20 years this area from Kooragang Island to Tomago should add an additional 2000 employment opportunities - The development will add nice places to live and still be within easy commuting distance to work, on average 10-12 minutes drive to work and even 5 minutes from the world's biggest coal exporting port and associated employment on Kooragang Island. - All roads in the area are sound and can easily be adapted to dual carriageway, the expense of which could be recouped after 5 years. - Both residents and tourist will be able to enjoy both the designated walking tracks to the beach or the 4 wheel drive access provided to Stockton Beach. - The seaside at Newcastle Bight will be a mere 1.5km from the last street on the estate. - Rangers presently patrol the area; however a full time ranger would be of benefit as the sea side stretches for approximately 30km with no houses or buildings in sight. - The estate will have enviable recreation area, which one will be able to reside in close proximity to and yet be unseen from the beach maintaining an 'unspoilt' appearance. - Other nearby communities are maintained in a clean and tidy manner	- Tourist benefit - Employment benefits - Housing benefits - Road system adequate - Recreation areas provided
3	10.06.05	- Damaging effect on the groundwater in the Tomago-Stockton Aquifers. - Construction process will endanger the groundwater by clearing protective vegetation and flattening the undulating surface. Disturbance will cause salinity. - Exacerbate existing problems associated with run-off from hard surfaces, such as transport corridors, petrol and oil emission, chemicals from gardens and waste disposal etc. - Damage to the present rare coastal scrub with its unique flora and fauna. - Logistical problems – traffic congestion, medical, entertainment, parking and shopping facilities will be placed under severe strain.	- Impacts on groundwater - Impact on flora and fauna - Traffic generation/congestion - Lack of services
4	17.06.05	- With sand dunes and National Park/State Recreation Area on one side, a protected reserve on the other, a potable aquifer underneath and only one narrow and dangerous access road, the site is a classic planning 'hot spot'. - The area demands an overall masterplan that identifies the synergistic effects and externalities across both the	- Impacts on groundwater - Impacts on flora and fauna - Holistic approach required - Infrastructure inadequate - Impact on corridor values of site

		Port Stephens and Newcastle local government areas. - Existing infrastructure inadequate. - Existing road infrastructure inadequate. - Aquifer and sewerage – to encourage urban sprawl with overloaded sewerage will have the inevitable consequence that the river, cove and perhaps the sandbeds will become more seriously polluted. There is also the likely damage from household soaps, detergents, fertilisers and oils leaching into the RAMSAR site and marine breeding ground of Fullarton Cove, whose tidal flush is very poor. - The site at Fern Bay involves clearing valuable vegetation adjacent to a National Park / State Recreation Area and proposed Green Corridor with inevitable displacement of native species. - The mobile dunes in the vicinity of North Stockton / Fern Bay are likely to be further destabilized by increased traffic across the dunes to the beach as well as recreational vehicles breaking the thin surface crust.	- Impact on dunes - Removal of vegetation
5	17.06.05	- Many concerns including increased traffic on the sole exist road, the effect on the environment especially the sensitive sand dune area, effective elimination of sewerage and the risk to the water supply. - Concern about the cumulative impact of other nearby developments including the expansion of Bayway Village, a retirement village on Fullerton Cove Road and a Manufactured Home Estate opposite Bayway. - Developers have given the impression that the first stage of the development was going ahead with the approval of the Port Stephens Council. This is not the case. - Detrimental impact on the environment with proposed building of 4-wheel drive track to the beach with its attractive and ecologically sensitive dunes. - Proposed development would come very close to the sand dune, eliminating important wetlands. - Widespread destruction of vegetation. - Developers stressed that there would be a 200m buffer zone from the road but this has been shown as inadequate by environmental experts. An effective ecological corridor needs to be closer to 1km wide. - Concern about the potential for a concentration of fertilizers and other pollutants that will adversely affect the environment. - Potential increase of accidents on Nelson Bay Road.	- Traffic generation and safety - Adequacy of Infrastructure provision - Cumulative impact - Current approval - Public access to beach and impact on dunes - Impact on flora and fauna - Adequacy of corridor - Works under current approval - Removal of vegetation
6	17.06.05	- Conflicts with the Lower Hunter Regional Strategy. One of the strategy's aims is to avoid earmarking of any further vegetated sites in the Hunter. - The estate is wetland, and it floods on Winten's Fern Bay roadways/roundabouts. Williamtown airport is nearby. - Biodiversity constraints – the estate is meant to cater for the green corridor which is meant to be more than 1.6km wide, and yet master plan of the development allows less than the required 1.6km. - Identified corridors are not being treated as a hard constraint. - The existing 208 lots are not close to infrastructure. There are not enough doctors, shops, schools or cycle ways to cope with 1000's of people. - Inadequate transport infrastructure.	- Flooding – the estate is a wetland - Impacts on flora and fauna - biodiversity - Corridors - Lack of services - Inadequate transport infrastructure - Compliance with the Lower Hunter Regional Strategy - Proximity to airport
7	19.06.05	- Small blocks 'un-Australian'. - No storm water facilities suggest poisoning of round waters in Fullerton Cove and surrounds.	- Size of lots - Impact on Fullerton Cove
8	22.06.05	- Traffic – the addition of the proposed lots to already approved developments equate to 1500 new households, many of which of necessity will have two vehicles, feeding onto a one to two kilometre stretch of Nelson bay Road, which will significantly exacerbate the road risk. - Health Risks – Increase the mosquito health risk to the	- Traffic generation - Health risk from mosquitos - Lack of services in the area - Impacts from Boral's activities - Removal of trees from

		area, a significant problem sidelined by the proponents irrelevant testing. • The proposed provision of a doctor's surgery does nothing to guarantee medical services in the undersupplied local area, and region. • Future Risks – the Boral proposal to extract 500,000 tonnes of windblown sand per annum for 20 years on land adjacent to this development, with consequent noise, dust and truck movements, will have major negative effects on the liveability of this site and significantly increase road risks. • Social Costs – Inadequate provision of local schools, Local Government, dental and transport services. • Further deforestation of the highly mobile dune structure is liable to produce destructive and expensive consequences. • Environmental Costs – The incursion of household pets, weeds, vehicles, pollution, siltation, and fire risks will overwhelm the unique and fragile surrounds. • Destruction of the site and surrounds will have unacceptable effects on the environmental and tourism significance of the Stockton Bight, the new National/State Recreational Park estate, Fullerton Cove with its RAMSAR implications and the proposed Green Corridor. • The death of two koalas on the adjacent road, and the sighting of one on the Golf Course after initial roadwork's commenced, attest to Part Stephens Council's Koala Plan of management finding that this site contains Preferred and Supplementary habitat, despite the consultant's report. • Evidence of a significant population of bats, many of them small and insectivorous species, several of which are endangered. • The proposed environmental protection areas, particularly the major one along the main road, are totally inadequate to mitigate the effects of removed vegetation, or to optimise fragmented remnant areas.	dunes • Impacts on flora and fauna – domestic pets, weeds etc • Impacts on tourism • Potential impact on koalas • Impact on threatened species • Corridor adjoining road will not mitigate effects of habitat loss etc
9	22.06.05	• The subject land is a magnificent example of coastal forest, which provides important habitat for wild life, some already endangered and a vegetated buffer to highly mobile sand dunes, which will be eroded by the proposal. • The traffic problems on this already dangerous stretch of Nelson Bay Road will be made worse by 947 extra families trying to use it at this point, increasing problems of access to the Airport and northern neighbourhoods like Nelson Bay. • There are not enough services like doctors, for people already living in the area, and this development will only make the shortages worse. • Destruction of irreplaceable bush when there is not enough non-vegetated land available to meet dwindling demand in the State.	• Impact on flora and fauna • Traffic problems • Not enough services • Removal of bushland
10	22.06.05	• Concerned about the effect on underground water, road traffic and overloading of community facilities, doctors and shopping centre. • Concern about the health of the Hunter River if the area continues to be urbanised. Pollutants entering the Aquifer or run-off from roads must be minimised, not increased.	• Impact on groundwater • Lack of services • Impact on Hunter River from pollution
11	22.06.05	• Aquifer protection – the size of the proposed development, which must involve clearing vegetation and disturbing the surface geology and soil landscape present an unacceptable risk of contamination of the groundwater resource from surface activities. • The Stockton Aquifer has the potential to supply potable water for future generations and any proposal which places it at risk must be refused. • Cumulative effect of development in the Fern Bay area – If approved the proposed development will plus others	• Impact on groundwater • Cumulative effect • Flora and fauna impacts • Public access to beach and impact on dunes • Removal of vegetation

		planned result in over 1500 homes in an already under serviced area. • Native flora and fauna – the increased human and domestic animal populations and the decreased native vegetation will have an adverse effect on both common and endangered species. • Stockton Sand Dunes – these dunes are our buffer against rising seas and storms, the planned four-wheel drive tract to the beach will encourage more use of the dunes and result in the destruction of this protective land form.	
12	22.06.05	• Planned extension to existing subdivision seems to be of high quality • There are no other quality subdivisions between Newcastle and Nelson Bay giving such a variety of lot sizes • The planned expansion is to be completed in stages and this will minimise traffic problems • The proposed expansion of Williamtown Airport will allow service personnel and families to enjoy excellent living conditions close to a golf course and beaches. • The proposal to develop this site over approx 10 years will help settle families in an ideal location close to Newcastle and work in with Government plans for population growth. • The actual residential portion of the total land area allows for the retention of substantial natural bushland and a wooded corridor from Nelson Bay Road.	• Housing benefits • Retention of large portion of bushland • No traffic concerns
13	24.06.05	• The proposal must be looked at holistically. • Loss of habitat and biodiversity due to wholesale land clearing at Fern Bay is unacceptable. • Parts of the site are important habitat for several threatened species, koalas have been sighted and killed in this area over the years. • Approximately 5% of supplementary koala habitat in koala management unit Fullerton Cove, Stockton overlaps with land zoned residential (The Fern Bay Subdivision). The long term conservation of such patches of koala habitat and the koalas they support is endangered, because of this situation. • The problem of small lot sizes and loss of existing trees proposes a high level threat to koalas that inhabit such areas from dogs and motor vehicles. The proposed environmental protection areas are inadequate to replace habitat destroyed. • The added motor traffic from Fern Bay Subdivisions on Nelson Bay Road, already heavily utilised by Tomaree and Tilligerry Peninsulas, Commercial Airport and RAAF and tourism traffic points to future transport problems, as well as, koala deaths in this area.	• Holistic approach to proposal • Loss of habitat and biodiversity through clearing • Impact on koalas • Increased traffic generation • Removal of vegetation
14	12/06/05	• Cumulative impact of 2 other developments in the area • Strain on local infrastructure – such as road network, sewerage and water supply • Impact on green corridor from Stockton Bight to the mountains, the development will affectively isolate the Stockton area • Increase of domestic animal populations and impact on fauna • Clearing of remnant vegetation • Potential increase use of the Stockton beach	• Cumulative impact • Impact on infrastructure • Domestic pets potential impact on flora and fauna • Clearing of remnant vegetation • Increased use of Stockton Beach • Impact on corridor values of the site
15	24.06.05	• Queries whether development is necessary. • Huge tract of coastal land will be destroyed. • Existing Stockton turn off, Fullerton Road is a dangerous traffic hazard and the proposed development would exacerbate this problem.	• Need for development • Impact on coastal land • Exacerbate existing traffic problems
16	27.06.05	• The Master Plan states that EcoNetwork gave a 'qualified support' to the project – this is inaccurate as there was insufficient detail of a projected further 739 lots. Details of the whole plan were required prior to any decision on	• Incorrect view of input into plan • Warrants full conservation protection;

		EcoNetworks's behalf. • Opposition to private and corporate acquisition for purposes other than conservation. The fragile nature and sensitive ecological significance of this uniquely vegetated coastal forest area should have been fully protected and retained within the National Estate. • The Fern Bay Estate should not exceed the 208 Lots and associated works granted consent by the Land and Environment court. • The inclusion of the remaining 205 hectares within the Green Corridor would be a welcome addition to the decision of the Newcastle City Council which, in a unanimous decision in June 2004, declared its support of the proposed Stockton Bight / Watagans Corridor.	• Existing development approval sufficient • Land should remain as a corridor
17	27.06.05	• Seems to be no infrastructure in place to accommodate the sporting bodies of Stockton in regards to a decent sporting complex. Believe that the majority of children will travel just a few km south to Stockton. • Existing sports services inadequate – cannot cope with the increase that the proposed development would bring.	• Existing facilities in the area are not sufficient
18	27.06.05	• Concerned that a small development with some interesting strategies in living with the bush etc is allowed to be quadrupled before these strategies are fully developed. • Need for overall planning for Fern Bay – Fern Bay is remote from Port Stephens infrastructure and facilities. Transport, shopping, library access, fuel supplies, post office etc are all problematic for current residents, a problem that would be exacerbated by the proposal. • Nelson Bay Road is already under great pressure with some awful fatalities – 4 lane divided roads need to be continued all the way to Nelson Bay – before the dev gets underway. • Corridor zoom (nature) along Nelson Bay Road – might preserve trees, may support undergrowth in patches but wouldn't preserve fauna. Plan needs to be realistic about where animals can cross Nelson Bay road and floppy top fence may need to keep animals on the beach/national park side.	• Lack of services in the area • Will exacerbate traffic safety and generation in the area • Impact on wildlife from road
19	27.06.05	• The estate has been planned over part of Hunter Water Aquifer, an important and vital area for the Newcastle water supply – any development will add to pollution with unknown effects on a raised water table, river and bush, as well as the health and lifestyle of the local community. • There is no demand for more housing as 600 home sites have been approved across Nelson Bay Road, plus an extra 83 lots for Baywater to add to their 500 and 208 already approved for the study site. An extra 790 will be an overdevelopment. • The utilities for the area have been grossly under reported, as already local schools, medical/dental facilities, shopping centres and local government services already subject to complaints of inadequacy. • The whole area is the feeding ground for Masked Owls and many other endangered creatures. • The new roundabout being constructed is dividing a Casuarina / Melaleuca swamp into 2 parts. This is an extremely sensitive area which needs saving, for the adjoining National Park and RAMSAR corridor.	• Impacts on groundwater • No demand for housing • Lack of services in the area • Masked owl habitat will be affected • Roadwork's fragmenting swamp community
20	28.06.05	• Inadequate infrastructure for children's sport.	• Lack of facilities
21	29.06.05	• The current size of the development along with 4 other approvals in close proximity will be inadequate and the cumulative effect will bring problems. • Concern where water will go once vegetation is cleared • Increased ground water will cause the soil to lose its balance, making it difficult to grow gardens, plants etc. It will also increase the mosquito problem and the spread of diseases such as Ross River Fever.	• Cumulative impact of various proposals • Water/pollution runoff from the site • Impacts on ground water • Adequacy of infrastructure • Exacerbate existing traffic problems

		• Pollution from run off, pesticides, fertilisers, drainage etc would result in the destruction of pure aquifers under the sand dunes. • Risk of overloading the sewerage system to Shortland. • Increased traffic – with over a possible 1000 cars a day, there is no way the present road system can handle the extra volume adding to the high risk of accidents. • Existing fauna and flora is fragile and the proposal would result in its wholesale destruction.	• Impacts on flora and fauna
22	04.07.05	• The increase in traffic is likely to result in more fatalities to an already dangerous stretch of road. • The Tomago-Stockton Aquifer is in danger. Cannot afford for more waterways to become polluted.	• Exacerbate existing traffic safety problems • Impact on aquifer
23	05.07.05	• Detrimental effect on wildlife habitats including several threatened species, including koala, bats and gliders. • Proposed Environmental Protection Areas are inadequate. • Development of the site has potential to disturb acid sulphate soils leading to groundwater contamination given the sites location above Stockton Aquifer. • The site is low lying with a high water table making it susceptible to flooding. • Existing transport networks are inadequate to carry increased traffic flows resulting from the development. • There are insufficient services and facilities in the area to accommodate this both this and other large development proposals in the area.	• Impacts on flora and fauna • Adequacy of corridor • Acid sulfate soils • Flooding • Traffic generation • Inadequate infrastructure in the area • Impacts on groundwater
24	07.07.05	• The development will adversely impact upon the identified KNR Ramsar site for a number of reasons. • No assessment has been carried out in relation to the cumulative impacts of new development in the area, particularly in relation to existing ecological systems.	• Impact on wetland • Cumulative impact
25	07.07.05	• The area is high in conservation and value and is a fragile environment. • Further deforestation will produce destructive and expensive consequences. • Tourism will be badly affected. • The proposed 4 wheel drive track to the beach will help destruct existing sand dunes.	• Impacts on flora and fauna • Adverse impact on tourism • Public access to the beach may affect dunes
26	07/06/05	• Increase in traffic causing gridlock to Stockton Bridge • Increase in development in surrounding area which will provide a further 1500 new households	• Increased traffic • Cumulative increase in housing in the area
27	23/06/05	• Stockton Bight phenomenon containing aboriginal sites. • Important aquifer recharge area and has unique reversing dune field backed by old growth coastal woodland • Contamination of aquifer • Constrains areas including existing national park and SEPP 14 wetlands and SEPP 26 littoral rainforests • This development would not allow the green corridor to exist • Inadequate infrastructure & services • Increase in other developments in the area	• Aboriginal cultural heritage • Impacts on aquifer • Potential impacts on adjoining wetlands • Impact on corridor values of the site • Inadequate infrastructure and services • Cumulative impact
28	05/07/05	• Rejects the proposed 200m wide corridor currently being put forward by the proponent, due to the fact it fails to deliver ecological sustainability at the regional level. Government planning criteria stipulates that regional corridors must have a minimum width of 1.6km. The local corridor put forward will have little ecological value, is further fragmented by the subdivision's access road system and would be subject to invasive human activities under community title subdivision • We also reject the identified ecological corridor (Newcastle Port Environs Concept Proposal) across cleared farming land to the west of Nelson Bay road. This land fails even the basic ecological criteria applying to biodiversity corridors. The proponent's lack of environmental credibility is exposed by the inclusion of this "agricultural land" in its argument to justify proceeding with this high-impact	• Adequacy of corridor • Impact on corridor value of the site

		development. • The development proposal isolates a significant area of conservation zoned coastal forest located to its south; destroying this area's future ecological viability as well.	
29	13/07/05	• The area is high in conservation and value and is a fragile environment.	• Impacts on flora and fauna