Your reference: MP09_0162
Our reference: DOC10/16135
Contact: Rachel Lonie, 9995 6837

Mr Michael Woodland
Director Metropolitan Projects
NSW Department of Planning
23- 33 Bridge St,
Sydney NSW 2000

Dear Mr Woodland

Re: Environmental Assessment for Concept Plan and Stage 1 Project Application for the construction of a Residential Development at 14-18 Boondah Rd, Warriewood Valley (MP09_0162)

I refer to the Project Application, Environmental Assessment (EA) and accompanying information provided for the above proposal received by the Department of Environment, Climate Change and Water (DECCW) on 14 April 2010.

DECCW has reviewed the EA and has identified a number of issues with some elements of the proposal. These include:

- The adequacy of biodiversity and environmental impact assessment; and
- Potential impacts on threatened species and their habitat

The attached document details these issues and provides recommendations on how they may be addressed through additional assessment or modifications to the proposal.

Should you have any queries regarding this matter please contact Rachel Lonie on 9995 6837.

Yours sincerely

G Howard

GISELLE HOWARD
Director Metropolitan
Environment Protection and Regulation
16 June 2010

The Department of Environment and Climate Change is now known as the Department of Environment, Climate Change and Water

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Attachment 1

DECCW Detailed Issues with the Concept Plan and Stage 1 Project Application for Residential Development at 14-18 Boondah Rd, Warriewood Valley (MP09_0162)

1.0 Biodiversity Issues

DECCW considers that the Environmental Assessment (EA) needs to adequately describe, map and assess the impacts on threatened fauna and vegetation communities on, and adjacent to, the site. To address biodiversity impacts, the EA relies on the Flora and Fauna (F&F) Report by Total Earth Care 2010 (Appendix H of the EA).

1.1 Threatened Fauna

From the F&F Report it is noted that:

- The threatened Powerful Owl (*Ninox strenua*) and one of its prey species (Common Ringtail Possum) have been recorded on the site;
- The site has a moderate to high foraging capacity and a moderate to high roosting habitat potential for the threatened Barking Owl (*Ninox connivens*) which has been recorded in the grounds of the nearby sewerage treatment plant;
- The trees proposed for removal are '*...significant for arboreal species, particularly the prey items, gliders and possums'* and have '*the potential to reduce foraging opportunities in the area with the displacement of its prey items and foraging substrata*'.
- Portions of the site have been mapped by Pittwater Council as part of a Wildlife Corridor. The adjacent Warriewood Wetlands is mapped as a 'major habitat area' and this classification crosses into the adjacent site.
- There is potential foraging and roosting habitat on site for microbats such as the Eastern Freetail Bat, *Myotis macropus* and the Eastern Bentwing-Bat and for a number of threatened birds such as the Swift Parrot and Black Bittern.

The proposed clearing and resulting loss of habitat trees is likely to impact on the above threatened fauna, particularly through the loss of hollow bearing trees. Forty poplar trees marked for removal in the Arboricultural Assessment/Vegetation Management Report (Appendix G) were assessed as supporting significant hollows, cavities or cracks and could potentially be deemed as "*adequate substitute*" habitat trees. As noted above, these may be suitable habitat for the Barking Owl and for prey species for large forest owls. Many microbats are also hollow dependant. Whilst the proposed revegetation and rehabilitation of the Fern Creek riparian area will result in more native trees over time, this area will have limited habitat value due to the need to maintain most of it as an Inner Protection Area as discussed below.

Due to the large number of hollow bearing trees to be removed and the associated impacts on fauna it is recommended:

- That consideration be given to greater retention of a larger number of hollow bearing/habitat trees;
- That removal of hollow bearing trees that cannot be retained be staged and occur after nest boxes are in place;
- That nest boxes be suitably designed for target species (such as microbats, large forest owls) and installed by an ecologist with appropriate knowledge and experience.
- That the F&F Report be modified to state how many nest boxes will be installed, identify their target species and include a requirement for a monitoring program for the installed nest boxes for a period of at least 10 years to ensure that adequate habitat is retained over time.

1.2 Endangered Ecological Communities

DECCW requirements for the EA (23 December 2009) included the need to assess the impacts on two Endangered Ecological Communities (EECs) on the site, these being Bangalay Sand Forest (BSF) and Swamp Sclerophyll Forest on Coastal Floodplains.

The occurrence of these EECs is based on draft vegetation mapping prepared by DECCW on behalf of the Sydney Metropolitan Catchment Management Authority (CMA) (DECCW 2009). While the F&F Report acknowledges the mapping of BSF, its presence is dismissed although no evidence to substantiate this decision is provided. In addition, no floristic survey data to support the distribution of the plant communities delineated in Map 2 of the F&F Report is provided. Instead, the F&F Report relies on previous surveys (TEC 2004 and 2006) which identified the vegetation communities as being an intergrade between Swamp Oak Forest (SOF) and Swamp Sclerophyll Forest (SSF). The F&F Report also refers to and maps the SOF and SSF EECs collectively as a single 'Swamp Oak Forest' vegetation community despite being distinct entities under the *Threatened Species Conservation Act 1995.* There is also an inconsistency in Section 7.12 of the EA which acknowledges the presence of only *one* EEC.

The F&F Report fails to quantify the area of EEC to be removed compared to the total area present on the site and in the locality. Reference is instead made to a "*small portion*" or "*a narrow strip*" along the southern boundary of the site and adjacent to Boondah Road that will be directly impacted through clearing for construction of an entranceway, roads and dwellings. In the absence of this data it is difficult to understand how it has been concluded that the development is unlikely to have a significant effect on the EECs present.

The Arboricultural Assessment/Vegetation Management Report (Appendix G) states that "*most of section A, B and C (She-Oak Forest) will require removal to enable roadway construction and flood storage areas*". Of a total of 714 trees identified for removal are 43 *Casuarina glauca,* 3 *Angophora costata* and one *Eucalyptus botryoides.*

DECCW calculates that most of the area (approximately 0.35 hectares) mapped as BSF EEC will be cleared or significantly impacted. This EEC has not previously been identified in the Pittwater LGA and as this mapping is draft, consideration of its extent and potential impacts cannot be fully evaluated until the mapping is finalised and DECCW has fully considered the implications for revised vegetation community distributions. However, even if the vegetation on site constitutes SSF or SOF, or a combination, instead of BSF, all of these EECs, along with all other forested and wetland communities on the coastal floodplains of NSW, are listed as endangered under the TSC Act. The NSW Scientific Committee has determined that these ecological communities face a very high risk of extinction in NSW in the near future unless the circumstances and factors threatening its survival or evolutionary development cease to operate. Given this, DECCW considers the loss of any of the endangered ecological communities likely to occur on the site in this locality to be a significant impact.

It is strongly recommended the impacts of the proposal on each EEC be separately assessed and that detailed floristic evidence be provided to justify the conclusions made.

1.3 Loss of Habitat as a Result of Asset Protection Areas and Flood Management Works

DECCW considers all vegetation to be retained (other than that contained in the agreed Core Riparian Zone - also referred to as the Riparian Protection Zone) will be significantly impacted as a result of the buildings, associated infrastructure (the bio-retention pond, contouring for flood retention and bicycle path) or in complying with the required Asset Protection Zone (APZ). This includes vegetation within the 'wetland buffer strip' which the F&F Report states will form a '*vegetated link between the wetlands to the south and Boondah Road*" that is proposed to be retained as a stepping stone corridor linkage.

The F&F Report states that the remainder of the native vegetation on site will be preserved inside the proposed buffer areas. However, the EA shows that the 10-metre buffer zone actually forms part of the 25-metre APZ which will require substantial modification to ensure an understorey of *'managed grasslands, low growing shrubs and groundcovers'* and a reduced tree canopy cover of no more than 30%. It is also noted a bio-retention pond and elevated bicycle track are located within this 10 metre buffer area in the location where the EECs are mapped. The Stormwater Management Plan (Appendix J Figure A5) also shows considerable earthworks and site re-contouring.

The F&F Report maps and describes public, private and core riparian zones and a wetland buffer zone (Map 3) however other consultant reports and associated requirements/recommendations are not consistent with the protection of these areas. The smaller bio-retention pond, for example, is located both within the wetland buffer and the Inner APZ. In addition, the earthworks required for the flood management zone and bio-retention ponds will result in the loss of vegetation in the core riparian zone. The Landscape Masterplan also describes more landscaping than is possible with the need to maintain the 15 metre Inner Protection Area according to the Bushfire Risk Assessment requirements.

1.4 Adequacy of Environmental Assessment and Recommendations

The environmental assessment in the F&F Report contains a number of inconsistencies that need to be addressed. For example, it includes the statement that *'habitat requirements (*for the Barking Owl*) were not identified within the subject site'* despite earlier reference to such habitat. It also justifies a number of development impacts rather than assess the impacts and then propose mitigation measures. In a response to the question about whether an area of EEC will become fragmented or isolated as a result of the proposed actions it states that the proposed roadway will divide the community into three separate stands. However, it concludes that this will only slightly increase the fragmentation of the community and that the EEC is already at risk of extinction and that therefore the proposed development will not have a substantial or adverse effect on its local occurrence.

DECCW considers there will be direct and indirect impacts on the EECs due to increased fragmentation resulting in edge effects and the works required for the flood storage and bio-retention areas.

The F&F Report makes no assessment nor advocates measures based on the avoid–mitigate–compensate (offset) approach as requested in DECCW's recommended EARs. Rather, impacts are justified as being unavoidable and discussion of possible mitigation measures are mixed into the assessment of impacts. The result is no clear identification of the likely impacts or the type and extent of mitigation being considered to ameliorate these impacts. For example, against question 4 of the assessment of significance for the Swamp Oak Forest and Swamp Sclerophyll Forest EECs, in considering whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, no indirect impacts on the EECs are expected *'with the implementation of appropriate mitigation measures and proposed buffer widths'*.

The F&F Report also fails to adequately address the DGRs including assessing the offsite impacts of the proposal on the regionally significant Warriewood Wetlands.

The F&F Report recommendations are adopted in the draft Statement of Commitments (SOCs) . However, these relate only to actions to be undertaken before and during construction. The draft SOCs should be more precise and less open to discretion. The SOCs should also include commitments for environmental measures post construction and more clearly define what measures are to be undertaken for each stage of the development.

DECCW recommends the following in order to give greater clarity to the environmental protection measures:

- The F&F Report recommendations be amended to include environmental management measures to be implemented before, during *and after* construction.
- The recommendations also be amended to more clearly delineate what environmental protection measures will be undertaken for each stage of the development.
- The commitment to undertake the ecological restoration works is supported but these are not satisfactorily documented in the Staging Plan contained in Appendix A currently referenced in the SOC. Reference should be made instead to '*implement the Vegetation Management Plan prepared by Total Earth Care (Appendix AA)*'.
- The SOC should be revised in light of the updated Bushfire Risk Assessment Report (discussed below).

2.0 Riparian Buffer Zones and Landscaping of Open Space Areas

Fern Creek and Warriewood Wetlands are significant and important riparian and ecological features in the Warriewood Valley. The EARs required the EA demonstrate the implementation of measures to protect and rehabilitate the adjoining Fern Creek, the Warriewood Wetland area and riparian corridors in accordance with the 'Guidelines for Controlled activities in riparian corridors'. Additionally, the EARs recommended by the NSW Office of Water (in Appendix X) clearly stated that the riparian zone should be for the protection and/or rehabilitation of riparian vegetation. Despite this, the proposal includes works in the Fern Creek riparian corridor (Public Riparian Zone), in the 20-metre Core Riparian Zone (CRZ, also referred to as the Riparian Protection Zone in parts of the EA), and in the 10-metre 'buffer zone'.

The stated purposes of these works are to protect these features. For example:

- Section 4.8 states that '*substantial reconstruction of the creek profile, the construction of new creek banks and possibly re-alignment of the creek*' will be carried out by Pittwater Council in the Public Riparian Zone.
- Landscape plans show that the raised pedestrian/cycle path will be partially located within the Public Riparian Zone and even the CRZ.
- Landscape plans show that the smaller of the bio-retention ponds and associated earthworks and the bicycle track will be partially located within the 10-metre so-called 'buffer zone' and also encroach into the CRZ for the wetlands.
- Stormwater management plans show that considerable earth works will be required to create the Flood Storage Area which encompasses a considerable part of the 10-metre 'buffer zone' as well as parts of the CRZ.
- The Bushfire Risk Management report (Appendix C) indicates that '*the 20 metre vegetation buffer strip along the southern boundary [i.e. the CRZ] and other vegetation buffer strips*' are to be maintained bushfire Inner Protection Areas with their vegetation maintained in a highly modified and unnatural form.

DECCW considers that these uses, with their attendant vegetation clearing or intensive modification of vegetation, are inconsistent with protecting riparian and ecological values of the waterways and wetland.

3.0 Bushfire Asset Protection Zones and Riparian/Corridor Areas

The Bushfire Risk Assessment (Appendix C) was prepared for an earlier proposal comprising 140 single dwellings rather than the current proposal for 600 units within 16 residential blocks. This earlier assessment concluded that the proposed development for 140 residential lots could be contained on the site given vegetation management and Asset Protection Zones (APZs). Appendix C includes undated correspondence from the consultant that states that *"From a Bushfire Risk Assessment point of view it appears that new plans for the Boondah Road site only change the building styles and leave the approved Bushfire Protection Measures, as outlined in the original report in place...Thus the current approval by council and the RFS will be valid.*"

Given the substantial increase in development footprint and number of residents, it is recommended that the Bushfire Risk Assessment be updated to assess the current proposal and increased residential densities and commercial facilities including the childcare centre. Should an increase in the extent of APZs be required further environmental assessment would be required.

4.0 Floodplain Risk Management Aspects

Under the Government's Flood Prone Land Policy and related Floodplain Development Manual (2005), including the Section 117 Direction (4.3 Flood Prone Land), Councils have prime responsibility for floodplain risk management within their local area. The NSW Government, through DECCW, provides technical and financial support for studies and works. On this basis it is expected that Council has the lead responsibility to assess the floodrisk of this particular proposal and to consider the range of other flood related studies for the area.

The site is relatively low lying and adjacent to the Warriewood Wetlands, which drains to Mullet Creek, a tributary of Narrabeen Lagoon. As a result, flooding of the site would be from short duration local catchment flooding, Narrabeen Lagoon (ocean / total catchment induced) flooding and a combination of both forms of flooding. The management of the risks to both people and property from these forms of flooding is an important consideration for the proposed residential development. Because of the short flood warning time in the area, the need for vertical flood evacuation and associated flood proofing of building structures is one such consideration.

4.1 Proposed Earthworks Strategy

Page 5 of the Stormwater and Environmental Management Plan refers to the provision of balanced floodplain storage to avoid flood impacts. This strategy alone does not guarantee that there will be no impacts over the full range of flood events. It is not clear from the report that the flood impacts over a full range of flooding has been assessed. It is noted, however, that the assessed flood impacts have been derived by application of SOBEK hydrodynamic model, which should be adequate for the flood impact assessment task.

It is noted that an increase of up to 0.02 m due to the proposed development has been detected with the flood model (p.6). The acceptability of any assessed impact from the proposed development is properly a matter for Pittwater Council. It should be noted that some communities and/or individual property owners may not accept any increase to flood levels due to a development.

4.2 Flood Evacuation

It is noted the primary flood evacuation strategy identified for the site, is vertical evacuation (p.7). However, to ensure that people are safe from rising floodwaters, flood proofing of residential housing structures up to the PMF level will be required. It should be noted that 'exceptional circumstances' approval would normally be required from the Director Generals of DoP and DECCW before any residential development controls could be applied above the flood planning level (FPL).

4.3 Proposed Minimum Floor level

It would appear that even with potential climate change impacts included, the estimated flood level plus freeboard, is below the proposed minimum floor level of 4.5 m AHD (p.8). However, it is recommended, confirmation be obtained from the Consultant and/or Council that any potential pit/pipe and culvert blockages due to debris will not cause flood levels to exceed the proposed minimum floor level.

It is also recommended that DoP be satisfied that:

- the existing versus development Mannings "n" roughness values used in the RAFTS modelling (Pages 20 and 22) is an appropriate basis for determining the detention basin sizes; and
- the basins will have a spillway system to safely pass floods larger than from the 100 year design flood event.

5.0 Potential land use conflict arising from odour issue

Historically, intensification of residential development within the 400m buffer zone of the Warriewood STP has not been supported, due to potential odour impacts on the residential receivers. DECCW is aware that Sydney Water finalised a range of odour management works at the STP in late 2009 to reduce odour emissions. These works were a result of a 2006 civil action Meriton initiated against Sydney Water in the Land and Environment Court (LEC) over the costs of odour mitigation works at the STP. These works allow for a potential change of development controls for residential development within the buffer zone. It is important to note, however, the LEC decision that led to the now completed works, legitimised planning controls on development within the buffer zone. Importantly, these controls included no high/medium density development in close proximity to the STP.

DECCW is concerned the EA has not addressed the potential land use conflicts that could arise through the siting of medium to high density residential development adjacent to the STP.

Advice provided by Sydney Water (included as Appendix L) outlines that a preliminary assessment of the predicted odour impacts of the Warriewood STP after commissioning and operation of the Stage A odour control works has been undertaken. Sydney Water further advise that the results of this assessment indicate the required odour reductions had been achieved. However, no details are provided by Sydney Water on these results, the required odour reductions, or on whether the assessment was undertaken in accordance with the DECCW guideline *"Technical Framework: assessment and management of odour from stationary sources in NSW"* (2006).

Sydney Water undertook further detailed study of the odour impacts of the STP in the summer of 2009/2010. This study should demonstrate that STP odours have been reduced to 2 odour units at the boundary. DECCW has recently been provided with a copy of the study but has not had the opportunity undertake a detailed review. This study is crucial to assessing the relevance of odour issues from the STP for this proposal and should be considered by DoP in the assessment process.

6.0 Construction noise

DECCW notes that the EA has not considered the impacts of noise and vibration from the construction phase. Should the development proceed, a noise and vibration assessment should be conducted prior to any works commencing, in accordance with DECCW's 'Interim Construction Noise Guideline'.

DECC recommends that a noise and vibration assessment be conducted prior to any works commencing, in accordance with DECCW's 'Interim Construction Noise Guideline'.

7.0 Waste management

DECCW notes that the EA does not include a waste management plan for the demolition and construction phase of the project. DECCW recommend that this be included as a condition of project approval. All wastes generated on site should be assessed and managed in accordance with DECCW's 'Waste Classification Guidelines'.

DECC recommends that a waste management plan for the demolition and construction phase of the project be prepared.