NSW GOVERNMENT | Office of Water

Mr Michael Woodland
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22 December 2009

Our ref: ER20900
Your ref: MP09-0162
File:

Attention: Mr Andrew Smith

Dear Mr Woodland

MP09_0162 – Residential Development – 14-18 Boondah Road, Warriewood – Director General Requirements – Pittwater Council

Thank you for your letter of 10 December 2009 seeking key issues and assessment requirements from the NSW Office of Water (NOW) for the project proposal.

The NOW notes that no Preliminary Environmental Assessment has been provided with this proposal.

Please note, technical officers from the former DIPNR have previously inspected the Boondah site. In addition DIPNR and the former DWE have provided advice to both Pittwater Council and Meriton in relation to riparian land issues adjacent to Fern Creek and the Warriewood Wetland at this site.

Key issues of NOW's response are outlined in Attachment A and include:

- the protection and rehabilitation of Fern Creek to mimic a natural system;
- the protection and rehabilitation of riparian land adjacent to Fern Creek;
- the protection and rehabilitation of riparian land adjacent to the Warriewood wetlands;
- groundwater and groundwater dependent ecosystems
- water licensing requirements under the Water Act 1912.

I trust the attached comments are of assistance to the Department of Planning.

Contact Details:

Should you have any queries in respect to this matter, please do not hesitate to contact me on (02) 9895 7651.

Yours sincerely

Janne Grose

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ATTACHMENT A

Specific Comments from the DECCW (Office of Water)

Residential Development – 14-18 Boondah Road, Warriewood

Director-General's Environmental Assessment Requirements

Relevant Legislation

The NSW Office of Water (NOW) is responsible for administering the Water Act 1912 and the Water Management Act 2000 (WMA) which manage and regulate the use of surface water and groundwater resources. The Environmental Assessment (EA) is required to take into account the objectives and regulatory requirements of these Acts, as applicable.

Relevant Policies

The EA is required to take into account the following NSW Government policies, as applicable:

- NSW Groundwater Policy Framework Document - General
- NSW Groundwater Quantity Management Policy
- NSW Groundwater Quality Protection Policy
- NSW Groundwater Dependent Ecosystem Policy
- NSW State Rivers and Estuaries Policy
- NSW Wetlands Management Policy
- NSW Farm Dams Policy

Protection and rehabilitation of riparian land

The former DIPNR and DWE have previously provided advice to both Pittwater Council and Meriton in relation to the riparian land issues at the Boondah site.

The width of the Core Riparian Zone along the foreshore area of the Warriewood Wetland should be no less than 25 m (measured from top of bank) and the Vegetated Buffer should be no less than 10 m.

The width of the riparian zone along Fern Creek should be no less than 25 m along both sides

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of the creek. The NOW generally requires riparian setbacks to be measured from top of bank, however in accordance with Pittwater Council's DCP, the riparian width is to be measured from the centreline of the creek along both sides of the creek.

The NOW would also be supportive of wider riparian widths to incorporate any remnant native vegetation outside the riparian zone.

The Framework Plan (CD01) shows a road (type A) is proposed to be located within the 25 private dense planting zone along Fern Creek. It is recommended the development footprint is amended to locate the road outside of the private dense planting.

The Framework Plan (CD01) also shows a bioretention basin is proposed to be located within the 10 m wide Buffer Zone and the Concept Plan (CD03) shows a pathway is located within the buffer adjacent to Warriewood wetland. The Vegetated Buffer should remain, or become vegetated, with fully structured local native vegetation (trees, shrubs and groundcover species) at a density that would occur naturally and the bioretention basin and pathway should be located outside the VB. The pathways could be located within the APZ area.

The EA needs to clearly identify on a scaled plan details on the location of:

a. all waterways (watercourses, creeks, rivers and wetlands) on the site or potentially affected by the proposal
b. the centreline of Fern Creek and the top of bank of the wetland
c. riparian land (measured from top of bank or top of shore), including the Core Riparian Zone (CRZ) and Vegetated Buffer (VB)
d. the extent of existing native vegetation adjacent to Fern Creek and surrounding Warriewood Wetland and the areas proposed to be protected and /or rehabilitated and any areas proposed to be disturbed or removed
e. any Asset Protection Zone requirements
f. the footprint of the proposal in relation to waterways and riparian lands and any areas of disturbance,

The EA should address and incorporate the following riparian outcomes:

(a) the CRZ width along the Warriewood wetland is to be measured from top of bank and the CRZ along Fern Creek is to be measured from centreline

(b) The riparian land should be for the protection and/or rehabilitation of riparian vegetation. The CRZ and VB is to remain, or become vegetated, with fully structured local native vegetation (trees, shrubs and groundcover species) at a density that would occur naturally. Details are required on the proposed revegetation of the riparian land

(c) Any Asset Protection Zone (APZ) requirement must be located outside both the CRZ or VB. The EA needs to provide details on the proposed revegetation of the APZ. The former DWE and DIPNR sought details on the clumps of vegetation that were proposed to be established in the APZ and requested details on the size of the potential clumps (width and length), the distance between the clumps and an indication of the plant species that can be planted in the clumps. The clumps of vegetation must consist of local provenance species. The EA should include details on this.

(d) Any requirement for the placement of fill on the site must be located outside the CRZ and VB. Any placement of fill must not disturb or compromise existing native riparian vegetation, or the rehabilitation of riparian vegetation. The EA needs to provide representative cross sections along the boundary of the site and show the extent of the area proposed to be filled and the location of the fill batter in relation to the riparian land.

(d) All development associated with the proposal should be located outside the riparian land (both the CRZ and VB) including infrastructure, roads, pathways and access tracks etc, water quality treatment measures and flood mitigation works. Only the following uses should be permitted within the riparian lands: environmental protection works and crossings (roads/pathways). Any new underground infrastructure should also be located outside the riparian land. Underground infrastructure should not be permitted to be located in riparian land if it adversely impacts any existing native riparian vegetation, particularly threatened species or community, either during the construction phase or requires areas to be permanently cleared for the locating of above-ground facilities, maintenance and access to these points.

(f) Fern Creek must remain and/or be rehabilitated to emulate a naturalised creek system for aquatic and terrestrial environments.

Surface Water and Groundwater

The EA needs to provide adequate details to assess the impact of the proposal on surface water and groundwater resources. Sufficient detail needs to be provided in the EA for the NOW to assess any water licensing requirements under the Water Act 1912. The EA needs to provide details on:

- any existing surface water and groundwater licences under the Water Act 1912 on the subject land
- the purpose of the existing licences.
- the source(s) of a sustainable water supply for the proposal
- any proposed surface water extraction for the proposal, including purpose, location of any existing and proposed pumps, dams,
- any proposed groundwater extraction related to the project,
- volumes of water to be used
- the function and location of all existing and proposed storages/ponds on the subject land
- the design, layout, pumping and storage capacities, all associated earthworks and infrastructure works must be clearly shown and explained.

Water Management Structures/Dams

If the proposal includes water management structures/dams, the EA needs to provide details on the following:

- any existing structure/s (date of construction, location, purpose, size and capacity, the legal status/approval for existing structure/s).
- any proposal to change the purpose of existing structure/s.
- if any remedial work is required to maintain the integrity of the existing structure/s.

- the purpose, location and design specifications for any proposed structure/s.
- size and storage capacity of the structure/s.
- calculation of the Maximum Harvestable Right Dam Capacity (MHRDC).
- if the structure/s is affected by flood flows.
- any proposal for shared use, rights and entitlement of the structure/s.
- if the proposed development has the potential to bisect the structure/s.

The NOW's Farm Dams Assessment Guide provides details on Harvestable Rights and the calculation of the Maximum Harvestable Right Dam capacity (MHRDC). Dams capturing up to the harvestable right capacity are not required to be licensed. Harvestable Right dams can be located on hillsides, gullies and minor watercourses that do not have permanently flowing waters and which are first and second order watercourses in accordance with the Strahler system of stream ordering. The Strahler system of stream ordering of watercourses is based on 1:25 000 scale topographic maps. Please refer to: http://www.naturalresources.nsw.gov.au/water/farm_dams/index.shtml.

The Harvestable Right gives landholders the right to capture and use for any purpose 10 % of the average annual runoff from their property. The Harvestable Right has been defined in terms of an equivalent dam capacity called the Maximum Harvestable Right Dam Capacity (MHRDC). The MHRDC is determined by the area of the property (in hectares) and a site-specific run-off factor.

The MHRDC includes the capacity of all existing dams on the property that do not have a current surface water licence. The location and estimated capacity of every dam must be shown. Any capacity of the total of all the dams on the property greater than the MHRDC may require a licence.

There are exemptions for dams related to the Harvestable Right. These include:

- Dams to control or prevent soil erosion;
- Dams to contain effluent and sediment;
- Flood detention basins;
- Dams built for environmental reasons (eg aesthetics, nutrient control, wildlife etc); and
- Dams which don't harvest runoff (eg. turkeys nest dams, ring tanks).

These exemptions are only applicable to the end use of the dam, even if the initial use is one of the above.

Groundwater

The NOW is responsible for the management of the groundwater resources. The proposal needs to protect groundwater resources in accordance with NSW State groundwater policy, enhance groundwater quality and protect groundwater dependent ecosystems (GDEs).

The EA should identify groundwater issues and potential degradation to the groundwater source and provide the following details:

- the predicted highest groundwater table at the site.
- any works likely to intercept, connect with or infiltrate the groundwater sources.
- any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.
- a description of the flow directions and rates and physical and chemical characteristics of the groundwater source.
- the predicted impacts of any final landform on the groundwater regime.
- the existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.
- an assessment of the quality of the groundwater for the local groundwater catchment
- an assessment of groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).
- how the proposed development will not potentially diminish the current quality of groundwater, both in the short and long term.
- measures for preventing groundwater pollution so that remediation is not required.
- protective measures for any groundwater dependent ecosystems (GDEs).
- proposed methods of the disposal of waste water and approval from the relevant authority.
- the results of any models or predictive tools used.

Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on:

- any proposed monitoring programs, including water levels and quality data
- reporting procedures for any monitoring program including mechanism for transfer of information.
- an assessment of any groundwater source/aquifer that may be sterilised from future use as a water supply as a consequence of the proposal.
- identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).
- description of the remedial measures or contingency plans proposed.
- any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.

Licensing

The Meriton letter to DOP (dated 19 August 2009) indicates that basement car parking is required beneath each residential flat building. If the proposal is likely to intercept or use

groundwater a Licence under Part V of the *Water Act 1912* is required in relation to this development. All proposed groundwater works including bores for the purpose of investigation, extraction, dewatering, testing or monitoring must be identified and approval obtained from NOW prior to their installation. The NOW will assess the need for a water licence once more detailed project information is available.

The applicant needs to be advised that the NOW will not allow any proposal that requires permanent or semi-permanent pumping/extraction of the groundwater to protect the building. Therefore the proposal must ensure it will not require this style of facility or activity.

The construction of any structure that may be impacted by groundwater, will require a water proof retention system (i.e. a fully tanked structure) with an adequate provision for future fluctuations of the watertable level.

Groundwater Dependent Ecosystems

The EA should provide details on the presence and distribution Groundwater Dependent Ecosystems (GDEs) in the vicinity of the land affected by the proposal and identify any potential impacts on GDEs as a result of the proposal.

GDEs are ecosystems which have their species composition and natural ecological processes wholly or partially determined by groundwater. GDEs represent a vital component of the natural environment and can vary in how they depend on groundwater, from having occasional or no apparent dependence through to being entirely dependent. GDEs occur across both the surface and subsurface landscapes ranging in area from a few metres to many kilometres. Surface and groundwaters are often interlinked and aquatic ecosystems may have a dependence on both.

Ecosystems that can depend on groundwater and that may support threatened or endangered species, communities and populations, include:

- Terrestrial vegetation that show seasonal or episodic reliance on groundwater.
- River base flow systems which are aquatic and riparian ecosystems in or adjacent to streams/rivers dependent on the input of groundwater to base flows.
- Aquifer and cave ecosystems.
- Wetlands
- Estuarine and near-shore marine discharge ecosystems.
- Fauna which directly depend on groundwater as a source of drinking water or live within water which provide a source.