



**Office of
Environment
& Heritage**

Your reference MP10_0229
Our reference: DOC11/45470 & DOC11/45827-01
Contact Richard Bonner: 9995 6833

Michael Woodland
Director – Metropolitan & Regional Projects South
Department of Planning & Infrastructure
GPO Box 39
Sydney NSW 2001

Attn: Mark Brown

Dear Mr Woodland,

I refer to your letter forwarded to the Office of Environment and Heritage (OEH) Wollongong office and received on 4 October 2011 inviting comments on the environmental assessment (EA) of the concept plan for the Cronulla Sharks Development at 461 Captain Cook Drive, Woollooware (MP10_0229) by 21 November 2011. A separate invitation forwarded to OEH's Hurstville Office inviting comments on same by 5 December 2011 was also received on 30 September 2011.

OEH has previously provided input in March and August 2011 to the Director General Environmental Assessment Requirements (DGRs) and the Test of Adequacy Assessment of the EA. These responses are attached for your information. In its submission of 22 August 2011, OEH raised issues with regard to biodiversity, Aboriginal cultural heritage, flooding and acid sulphate soils.

OEH has reviewed the publicly exhibited EA, the issues raised its August submission and provides the following comments.

Biodiversity

OEH considers the EA does not adequately address the DGRs. As a consequence any approval that may be granted will be based on insufficient ecological information about the importance of the adjoining mangroves and mudflats as habitat for threatened species or ecological communities. In addition, the likely impacts of the proposed redevelopment on these habitats and other significant habitat surrounding Woollooware Bay (Towra Point Nature and Aquatic Reserves, the Taren Point Shorebird Endangered Ecological Community and the Towra Point Ramsar site) have not been adequately considered.

OEH notes the Ecological Assessment is primarily based on a desktop analysis which acknowledges the need for further assessment to accurately determine the potential impacts on adjacent habitats resulting from light spill, increased access (e.g. rubbish dumping, trampling, weeds), noise, and stormwater runoff (altered hydrology and water quality). It is proposed additional assessment be deferred to the detailed design phases of the project when identified impacts will be mitigated via a series of management plans, yet to be developed.

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In the absence of adequate information about the ecological values impacted, OEH recommends the following conditions be considered for incorporation in any approval that may be granted. These recommended conditions are in addition to those proposed in the EA draft Statement of Commitments:

1. Baseline surveys of the adjacent estuarine areas along the northern boundary of the site and Woollooware Bay be undertaken over a period of 12 months using OEH's recommended survey methodologies to determine whether they serve as roosting, breeding or foraging habitat for threatened birds and microbats and to ascertain if they have a role as a movement corridor for these or other threatened fauna. The surveys should be completed prior to the submission of further development applications for the Cronulla Sharks redevelopment.
2. If baseline surveys indicate there is habitat for threatened fauna in the adjacent estuarine areas, targeted surveys for these threatened fauna be undertaken to determine how they use the habitat and the likely impacts of the development on these areas. This information will inform any adaptive management plans recommended below or in the draft Statement of Commitments, as well as the final design of each stage of the development.
3. Material (e.g. seed or cuttings) for future revegetation works should be collected on-site and propagated well before the clearing of any vegetation.
4. Revegetation should not rely on the collection of propagation material from off-site endangered ecological communities (e.g. Coastal Saltmarsh and Swamp Oak Floodplain Forest). The collection of any off-site propagation material would require approval from OEH which may not be provided.
5. Barriers must be constructed to prevent the access of humans and domestic animals during and post construction into mangroves and adjacent estuarine areas. Barriers should not impede the movement of any threatened fauna that use these areas as habitat.
6. Board walks and cycle paths must be designed and constructed to avoid impacts on mangroves and adjoining estuarine areas.
7. A stormwater management plan (SMP) must be prepared detailing how all stormwater runoff will be collected and treated. The SMP should include:
 - a program to measure and monitor pre and post development changes to the quantity and quality of stormwater runoff into adjacent estuarine vegetation;
 - baseline data and fine scale mapping showing the current extent and condition of the adjoining estuarine vegetation communities; and
 - contingency actions to be funded by the proponent should impacts on adjoining estuarine vegetation communities be detected.
8. A noise management plan (NMP) must be prepared to investigate the likely impacts of construction and ongoing operational noise on fauna using the adjacent estuarine areas as habitat. The NMP should:
 - outline management actions that will be undertaken to minimise noise impacts; and
 - include a monitoring program to ascertain the efficacy of actions and any modifications that may be required.
9. A lighting management plan (LMP) must be prepared to investigate and minimise the impacts of light spill on threatened fauna using the adjacent estuarine areas as roosting and foraging habitat. The LMP should include:
 - lighting design criteria that must be met during the construction and operation of the proposed development to avoid impacts on threatened fauna;
 - a program to monitor the impacts of light spill on threatened fauna; and
 - additional measures to reduce light spill impacts on threatened fauna.

10. A bird management plan (BMP) must be prepared to investigate the potential for bird strike from reflective surfaces associated with the development. The BMP should describe the construction materials and design methods that will be used to avoid or minimise the likelihood of bird strike.

Adjacent Towra Point Nature Reserve – Ramsar Wetland Site

The nearby OEH managed Towra Point Nature Reserve (TPNR) includes extensive areas of wetlands listed under the Ramsar convention on Wetlands of International Importance. OEH's general guidelines for development adjoining OEH managed land and water should be reviewed to ensure all relevant issues have been adequately addressed. A copy of these guidelines are available at the following link: <http://www.environment.nsw.gov.au/resources/protectedareas/10509devadjdeccw.pdf>

In particular, stormwater run-off from the site during and post development has the potential to increase litter, sediment, nutrients, pesticides, heavy metals and other pollutants into the TPNR wetlands.

OEH notes a stormwater management plan (SMP) has not been prepared for the development. It is therefore recommended the following conditions be considered for incorporation in any approval that may be granted. These conditions specifically relate to the protection of wetlands in TPNR. They are additional to condition 7 recommended above and are largely based on issues included in the SMEC Stormwater Drainage and Water Quality Strategy (Appendix K):

11. Stormwater from the site cannot be discharged directly into Woollooware Bay. The stormwater drainage system must intercept all surface run off and convey it away from Woollooware Bay.
12. A detailed flood study must be prepared prior to development that details potential impacts on Towra Point Nature Reserve (TPNR) in the event of a flood and includes strategies for preventing impacts.
13. A leachate management plan must be prepared and implemented to ensure that no leachate from the landfill on the site is exported to the TPNR wetlands.
14. An Acid Sulphate Soil Management Plan (ASSMP) must be prepared and implemented (see comments below).

Acid Sulphate Soils

The site is classified as being of "high probability" of Acid Sulphate Soil (ASS) occurrence at or near the ground surface in the area immediately north of the site exists but no ASS tests have been carried out elsewhere on the site which has been mapped as "disturbed terrain", to determine acid sulphate soil conditions.

In its response to the Test of Adequacy of the EA prior to public exhibition, OEH recommended the preparation of an ASSMP – this was also included as a DGRs. It is noted an ASSMP has not been prepared with the EA indicating ASSMPs will be prepared in accordance with the *Acid Sulphate Soils Assessment Guidelines* (ASSMAC 1998) and submitted with future applications for development. OEH considers deferment of an ASSMP to the development application stage inappropriate. As there is a significant environmental risk associated with the "high probability" classification if ASS materials are disturbed by activities such as shallow drainage, excavation or clearing, OEH again recommends an ASSMP be prepared. This is to ensure that potential impact on building materials and infrastructure as well as potential run-off of acid into sensitive environments is managed and avoided at the planning stage.

Flooding

In its response of 22 August 2011 to the EA Test of Adequacy, OEH raised concerns that the proposal as presented may be impacted by flooding and may adversely impact on flooding in adjacent properties. These concerns were detailed in the environmental assessment requirements provided by OEH in its response of 25 March 2011. OEH requirements were not fully presented in the final DGRs.

The DGRs require the EA to provide an assessment of any flood risk on site in consideration of any relevant provisions of the NSW Floodplain Development Manual (2005) including the potential effect of climate change, sea level rise and expected increases in rainfall intensity and address measures to be taken to render the site suitable for high density residential development free from flooding.

Suitable arrangements for floodwater and overland flow need to be considered from the earliest stages of the design process, particularly when the site is identified as being on a floodplain. Without this adverse effects on flood behaviour might prove difficult to rectify. While the EA's Draft Statement of Commitments identifies the need for a detailed flood assessment in future applications for the development, the flood assessments should be undertaken at the initial conceptual stage. On this basis, it is not possible for OEH to adequately review the impact of flooding on the development or the mitigation options presented.

OEH's flood concerns raised in its letter of 25 March 2011 are therefore still valid and will form the basis of its review of the future detailed flood modelling. OEH recommends the following condition be considered for incorporation in any approval that may be granted:

15. A detailed flood study must be completed prior to the development stage which includes:
 - A description of flood behaviour and flood hazards at the site.
 - An assessment of cumulative impact of all proposed development on flood behaviour both upstream and downstream of the site.
 - An assessment of the impact of flooding on the proposed development for a range of Annual Exceedance Probability (AEPs) to the Probable Maximum Flood (PMF).
 - An assessment of the impact on flood levels due to climate change from increased sea levels and rainfall.
 - Recommended flood risk strategies for the development which may include a flood warning system, safe flood evacuation, on site refuge and provisions to minimise any impacts on the effectiveness of flood evacuation of existing communities, noting that access along Captain Cook Drive during a flood may not be available.
 - Underground car parking should not be considered unless appropriate flood risk management measures can be implemented to ensure safe operation for a full range of flooding.

Aboriginal Cultural Heritage

As part of the EA, an assessment of the Aboriginal heritage was prepared by Godden MacKay Logan in August 2011. This report notes that no Aboriginal sites have been registered with OEH, within a 1km radius of the development site. However, the wider Kurnell Peninsular area is known for its extensive middens, burials and other evidence of Aboriginal occupation. It should be noted that there are no surveys recorded for the Cronulla area.

The evidence of the development history is augmented by photographs and cadastral maps from as early as the 1860's. These show that the edge of the shoreline has not changed substantially since early settlement and much of the development land is likely to be located on/over original dunes. This landform is a highly sensitive part of the landscape and is highly likely to be associated with evidence of Aboriginal occupation.

The report notes that the area of the development has been covered with between 1.1 and 8.6m of fill deposits and playing fields have been established on the surface of the fill. It is also stated that "natural ground levels are likely to have remained intact under and sealed beneath the introduced material" (p.29). The geotechnical testing referred to in the report provides the information on the depths of the introduced fill but no reference is made to what lies beneath, which could be dunes or mangroves or both. The drawing of the land for the first land grants shows that this land is beyond the mangrove area. If the original surface is dunes, then the potential for Aboriginal objects to be associated with those deposits is high, if the

underlying levels are swamp lands then the potential for associated Aboriginal objects is negligible. This requires further clarification.

A site inspection of the development site confirmed that there is no possibility for any Aboriginal objects to be detected because of the extensive cover of the fill. The assessment reports that there are high levels of disturbance, but this appears to be disturbance of the fill layer where no Aboriginal objects would be expected to occur. The report concludes that the land surface below the fill is likely to be intact. Therefore, if the original land surface is in fact dunes, and would be affected by the proposed development, then there is a high probability that harm to objects could occur.


No assessment of the cultural values is included in the report, though there is a note (section 5.2.3) to the effect that the *"area may hold cultural significance to the Aboriginal people"* (p.32).

OEHL recommends incorporation of the conditions be considered for incorporation in any approval that may be granted to confirm no Aboriginal objects, especially burials, are located on the site:

16. An evaluation of the geotechnical testing results to confirm the nature of the deposits below the introduced fill¹.
17. Mapping of the distribution of any original land surface area below the fill to determine whether there are likely to be any areas where Aboriginal objects could occur.
18. Profiling of the old land surface below the fill to show whether the landform adjacent to the swamp lands was suitable for occupation in the past.
19. A cultural assessment of the area by the Aboriginal community.

If you have any queries regarding any of the above matters, please contact Richard Bonner on 9995 6833.

Yours sincerely

 22/11/2011

GISELLE HOWARD
Director Metropolitan
Environment Protection and Regulation
Office of Environment and Heritage
Department of Premier and Cabinet

1. If the geotechnical testing does not provide detailed information establishing the nature of the underlying deposits, then additional geotechnical testing and/or archaeological testing may be warranted to confirm that the natural land surface below the fill is swamp land and therefore no Aboriginal objects are likely to occur.

Your reference : MP10_0229 and MP10_0230
Our reference : DOC11/13648
Contact : Liz Peterson 9995 6841

Mr Michael Woodland
Director, Metropolitan and Regional Projects South
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attention: Andrew Smith

Dear Mr Woodland

Re: 461 Captain Cook Drive, Woollooware – Concept Plan and Stage 1 Project Application (MP10_0229 and MP10_0230)

I refer to your letter dated 15 March 2011 inviting the Department of Environment, Climate Change and Water (DECCW) to provide any key issues and assessment requirements for the above project proposal.

DECCW has considered the details provided by DoP and has identified the information it requires to assess the project proposal (see Attachment 1). The proponent should ensure that the EA is sufficiently comprehensive to enable DECCW to determine the extent of impact(s) of the project proposal.

The key issues requiring assess for this project are:

1. Impacts on biodiversity, native vegetation, threatened species and their habitat, particularly on remnants of the Swamp Oak Floodplain Forest EEC and Coastal Saltmarsh EEC, threatened species (including shorebirds) that use these EECs as well as the mangrove habitat along the foreshore of Woollooware Bay;
2. Impacts on the adjoining Towra Point Aquatic Reserve under the *Fisheries Management Act 1994* (FM Act).
3. Impacts on Aboriginal Cultural Heritage values;
4. Assessment of the Floodplain Risk Management Aspects;
5. Other broad environment protection or conservation issues of concern; including noise and vibration, waste and acid sulphate soils;
6. Actions that will be taken to avoid or mitigate impacts or compensate for unavoidable impacts identified in 1-5.

In carrying out the assessment, the proponent should refer to the relevant guidelines as listed in **Attachment 2** and any relevant industry codes of practice and best practice management guidelines.

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If you have any queries regarding this matter please contact Liz Peterson, Senior Regional Operations Officer, on 9995 6841.

Yours sincerely

G Howard 25/3/11

GISSELLE HOWARD
Director, Metropolitan Branch
Environment Protection and Regulation

Attachment 1

DECCWs Recommended Environmental Assessment Requirements for the Concept Plan and Stage 1 Project Application (MP10_0229 and MP10_0230)

1. Impacts related to the following environmental issues need to be assessed, quantified and reported on:

- Aboriginal cultural heritage
- Acid sulfate soils
- Biodiversity
- DECCW Estate – Towra Point Aquatic Reserve
- Floodplain Risk Management
- Noise and vibration
- Waste

Environmental assessments (EAs) should address the specific requirements outlined under each heading below and assess impacts in accordance with the relevant guidelines mentioned. A full list of guidelines is at **Attachment 2**.

Aboriginal cultural heritage

The EA report should contain:

1. A description of the Aboriginal objects and declared Aboriginal places located within the area of the proposed development.
2. A description of the cultural heritage values, including the significance of the Aboriginal objects and declared Aboriginal places, that exist across the whole area that will be affected by the proposed development, and the significance of these values for the Aboriginal people who have a cultural association with the land.
3. A description of how the requirements for consultation with Aboriginal people as specified in clause 80C of the National Parks and Wildlife Regulation 2009 have been met.
4. The views of those Aboriginal people regarding the likely impact of the proposed development on their cultural heritage. If any submissions have been received as a part of the consultation requirements, then the report must include a copy of each submission and your response.
5. A description of the actual or likely harm posed to the Aboriginal objects or declared Aboriginal places from the proposed activity, with reference to the cultural heritage values identified.
6. A description of any practical measures that may be taken to protect and conserve those Aboriginal objects or declared Aboriginal places.
7. A description of any practical measures that may be taken to avoid or mitigate any actual or likely harm, alternatives to harm or, if this is not possible, to manage (minimise) harm.
8. A specific Statement of Commitment that the proponent will complete an Aboriginal Site Impact Recording Form and submit it to the Aboriginal Heritage Information Management System (AHIMS) Registrar, for each AHIMS site that is harmed through the proposed development.
9. In addressing these requirements, the proponent must refer to the following documents:
 - a) *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Planning, 2005). These guidelines identify the factors to be considered in Aboriginal cultural heritage assessments for development proposals under Part 3A of the EP&A Act.
 - b) *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010) - <http://www.environment.nsw.gov.au/licences/consultation.htm>. This document further explains the consultation requirements that are set out in clause 80C of the National Parks and Wildlife Regulation 2009. The process set out in this document must be followed and documented in the Environmental Assessment Report.

- c) *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010) - <http://www.environment.nsw.gov.au/licences/archinvestigations.htm>. The process described in this Code should be followed and documented where the assessment of Aboriginal cultural heritage requires an archaeological investigation to be undertaken.

Notes:

1. An Aboriginal Site Impact Recording Form (<http://www.environment.nsw.gov.au/licences/DECCAHIIMSSiteRecordingForm.htm>) must be completed and submitted to the Aboriginal Heritage Information Management System (AHIMS) Registrar, for each AHIMS site that is harmed through archaeological investigations required or permitted through these environmental assessment requirements.
2. Under section 89A of the *National Parks and Wildlife Act 1974*, it is an offence for a person not to notify DECCW of the location of any Aboriginal object the person becomes aware of, not already recorded on the Aboriginal Heritage Information Management System (AHIMS). An AHIMS Site Recording Form should be completed and submitted to the AHIMS Registrar (<http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm>), for each Aboriginal site found during investigations.

Acid Sulfate Soils

DECCW recommends that the DGRs include a requirement for the EA to:

1. Assess the potential impacts of the development on acid sulfate soils in accordance with the relevant guidelines in the *Acid Sulfate Soils Manual* (Stone *et al.* 1998) and the *Acid Sulfate Soils Laboratory Methods Guidelines* (Ahern *et al.* 2004).
2. Describe mitigation and management options that will be used to prevent, control, abate or minimise potential impacts from the disturbance of acid sulfate soils associated with the project and to reduce risks to human health and prevent the degradation of the environment. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

Biodiversity

The EA should include a detailed biodiversity assessment, including assessment of impacts on threatened biodiversity, native vegetation and habitat. This assessment should address the following matters.

1. A field survey of the site should be conducted and documented in accordance with relevant guidelines (see Attachment 2).

If a proposed survey methodology is likely to vary significantly from the above methods, the proponent should discuss the proposed methodology with DECCW prior to undertaking the EA, to determine whether DECCW considers that it is appropriate.

Recent (less than five years old) surveys and assessments may be used. However, previous surveys should not be used if they have:

- been undertaken in seasons, weather conditions or following extensive disturbance events when the subject species are unlikely to be detected or present, or
- utilised methodologies, survey sampling intensities, timeframes or baits that are not the most appropriate for detecting the target subject species,

unless these differences can be clearly demonstrated to have had an insignificant impact upon the outcomes of the surveys. If a previous survey is used, any additional species listed under the *Threatened Species Conservation Act 1995* since the previous survey took place, must be surveyed for.

2. an assessment of impacts (due to noise, lighting and increased access, as well as changes to hydrology) on:

- a) remnants of the Swamp Oak Floodplain Forest EEC that run along the northern boundary of the site between the proposed development and the mangrove community along the edge of Woollooware Bay and any remnants of the Coastal Saltmarsh EEC;
 - b) threatened species who use the EECs identified in a) above, as well as mangrove habitat along the foreshore of Woollooware Bay, including shorebirds that form part of the EEC at Taren Point, the White-fronted Chat population at Towra Point and species who have been recorded in the area such as the Australasian Bittern.
3. The EA should include the following information as a minimum:
 - a. The requirements set out in the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005).
 - b. Description and geo-referenced mapping of study area (and spatial data files), e.g. overlays on topographic maps, satellite images and /or aerial photos, including details of map datum, projection and zone, all survey locations, vegetation communities (including classification and methodology used to classify), key habitat features and reported locations of threatened species, populations and ecological communities present in the subject site and study area.
 - c. Description of survey methodologies used, including timing, location and weather conditions.
 - d. Details, including qualifications and experience of all staff undertaking the surveys, mapping and assessment of impacts as part of the EA.
 - e. Identification of national and state listed threatened biota known or likely to occur in the study area and their conservation status.
 - f. Description of the likely impacts of the proposal on biodiversity and wildlife corridors, including direct and indirect and construction and operation impacts. Wherever possible, quantify these impacts such as the amount of each vegetation community or species habitat to be cleared or impacted, or any fragmentation of a wildlife corridor.
 - g. Identification of the avoidance, mitigation and management measures that will be put in place as part of the proposal to avoid or minimise impacts, including details about alternative options considered and how long term management arrangements will be guaranteed.
 - h. Description of the residual impacts of the proposal. If the proposal cannot adequately avoid or mitigate impacts on biodiversity, then a biodiversity offset package is expected (see the requirements for this at point 6 below).
 - i. Provision of specific Statement of Commitments relating to biodiversity.
4. An assessment of the significance of direct and indirect impacts of the proposal must be undertaken for threatened biodiversity known or considered likely to occur in the study area based on the presence of suitable habitat. This assessment must take into account:
 - a. the factors identified in s.5A of the EP&A Act, and
 - b. the guidance provided by *The Threatened Species Assessment Guideline – The Assessment of Significance* (DECCW, 2007) which is available at: <http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf>
5. Where an offsets package is proposed by a proponent for impacts to biodiversity (and a BioBanking Statement has not been sought) this package should:
 - a) Meet DECCW's *Principles for the use of biodiversity offsets in NSW*, which are available at: www.environment.nsw.gov.au/biocertification/offsets.htm.

- b) Identify the conservation mechanisms to be used to ensure the long term protection and management of the offset sites.
 - c) Include an appropriate Management Plan (such as vegetation or habitat) that has been developed as a key amelioration measure to ensure any proposed compensatory offsets, retained habitat enhancement features within the development footprint and/or impact mitigation measures (including proposed rehabilitation and/or monitoring programs) are appropriately managed and funded.
6. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

Note: in addition to the RAMSAR trigger in the Draft DGRs (Item 13), there are a number of migratory bird species that may use habitat in the vicinity of the site which would also trigger referral to the Commonwealth.

Floodplain Risk Management Aspects

The EA should include an assessment of the following referring to the relevant guidelines in Attachment 2:

1. The potential effect of coastal processes and coastal hazards including potential impacts of climate change such as sea level rise:
 - on the proposed development; and
 - arising from the proposed development.
2. Whether the proposal is consistent with any coastal zone management plans.
3. Whether the proposal is consistent with any floodplain risk management plans.
4. Whether the proposal is compatible with the flood hazard of the land.
5. Whether the proposal will significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties.
6. Whether the proposal will significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.
7. Whether the proposal incorporates appropriate measures to manage risk to life from flood.
8. Whether the proposal is likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

Sutherland Shire Council proposes to undertake the Woollooware Bay Flood Study which will provide detailed knowledge of the extent of the flood hazard in Woollooware Bay. The area has a history of flooding in its low lying industrial and foreshore areas and major roads that connect to Kurnell.

In May 2004, Sutherland Shire Council prepared the Initial Assessment of Major Flooding Report (Bewsher Consulting) which provided a preliminary indication of the likely areas affected by the 100 year and extreme floods for the assessed drainage systems in Sutherland Shire. The report identifies parts of the proposed development site as likely to be flooded by the 100yr and extreme floods. It also identifies two flood flow paths that pass through and adjacent to the development site that have 98 flood prone properties in the 100 year flood and 141 flood prone properties in the extreme flood upstream of the development site.

DECCWs notes that Requirement 6 of the Draft DGRs require the preparation of a Flooding Report - prepared by a recognised professional which assesses pre and post development

flooding implications and mitigation measures in accordance with the NSW Floodplain Development Manual (2005).

A detailed flood study will be required which includes:

- Description of flood behaviour and flood hazards at the site;
- Assessment of cumulative impact of all proposed development on flood behaviour both upstream and downstream of the site;
- Assessment of impact of flooding on the proposed development for a range of Annual Exceedance Probability (AEPs) up to the Probable Maximum Flood (PMF);
- Assessment of the impact on flood levels due to climate change from increased sea levels and rainfall; and
- Recommended flood risk management strategies for the development which may include a flood warning system, safe flood evacuation, on site refuge and provisions to minimise any impacts on the effectiveness flood evacuation of existing communities, noting that access along Captain Cook Drive during a flood may not be available.

Underground carparking should only be considered if appropriate floodplain risk management measures can be implemented to ensure safe operation for the full range of flooding.

Noise and Vibration

In relation to noise and vibration, the EA should.

1. Assess the construction noise associated with the proposed development using the *Interim Construction Noise Guideline* (DECC, 2009) <http://www.environment.nsw.gov.au/noise/constructnoise.htm>
2. Assess the impacts of road traffic noise on the project proposal using the guidelines contained in the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). <http://www.environment.nsw.gov.au/noise/traffic.htm>
3. Assess noise on public roads from increased road traffic generated by the project proposal using the guidelines contained in the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). <http://www.environment.nsw.gov.au/noise/traffic.htm>
4. Assess the vibration from all activities (including construction and operation) using the guidelines contained in the *Assessing Vibration: a technical guideline* (DEC, 2006). <http://www.environment.nsw.gov.au/noise/vibrationguide.htm>
5. If blasting is required for any reasons during the construction or operational stage of the proposed development, blast impacts should be demonstrated to be capable of complying with the guidelines contained in *Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (ANZEC, 1990). <http://www.environment.nsw.gov.au/noise/blasting.htm>

Towra Point Aquatic Reserve

The proposed development adjoins Towra Point Aquatic Reserve. DECCW manages declared aquatic reserves under the *Fisheries Management Act 1994* and requests that the DGRs undertake an assessment of the potential impacts on the adjoining aquatic reserve.

The EA should include:

1. A description of mitigation and management options that will be used to prevent, control, abate or minimise identified impacts on Towra Point Aquatic Reserve associated with the project. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.
2. Consideration of the objects of the *Fisheries Management Act 1994* and any permissible uses in the reserve (including any zoning or management plan requirements).

To assist in this assessment a copy of DECCW's *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (June 2010), available at:

<http://www.environment.nsw.gov.au/resources/protectedareas/10509devadjdeccw.pdf>

Waste

The EA should:

1. Include a detailed plan for in-situ classification of waste material, including the sampling locations and sampling regime that will be employed to classify the waste, particularly with regards to the identification of contamination hotspots.
2. Identify, characterise and classify all waste that will be generated onsite through excavation, demolition or construction activities, including proposed quantities of the waste.

Note: All waste must be classified in accordance with *DECCW's Waste Classification Guidelines*.

3. Identify, characterise and classify all waste that is proposed to be disposed of to an offsite location, including proposed quantities of the waste and the disposal locations for the waste. This includes waste that is intended for re-use or recycling.
4. Include a commitment to retaining all sampling and classification results for the life of the project to demonstrate compliance with *DECCW's Waste Classification Guidelines*.
5. Provide details of how waste will be handled and managed onsite to minimise pollution, including:
 - a) stockpile location and management, and
 - b) erosion, sediment and leachate control including measures to be implemented to minimise erosion, leachate and sediment mobilisation at the site during works. The EA should show the location of each measure to be implemented.
6. Provide details of how the waste will be handled and managed during transport to a lawful facility. If the waste possesses hazardous characteristics, the Proponent must provide details of how the waste will be treated or immobilised to render it suitable for transport and disposal.
7. Include details of all procedures and protocols to be implemented to ensure that any waste leaving the site is transported and disposed of lawfully and does not pose a risk to human health or the environment.
8. Include a statement demonstrating that the Proponent is aware of DECCW's requirements with respect to notification and tracking of waste.
9. Include a statement demonstrating that the Proponent is aware of the relevant legislative requirements for disposal of the waste, including any relevant Resource Recovery Exemptions, as gazetted by DECCW from time to time.
10. Outline contingency plans for any event that affects operations at the site that may result in environmental harm, including: excessive stockpiling of waste, volume of leachate generated exceeds the storage capacity available on-site etc.

END OF ATTACHMENT 1

Attachment 2 – Guidance Material

Title	Web address
<u>Aboriginal Cultural Heritage</u>	
Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (2005)	Available from DoP
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	http://www.environment.nsw.gov.au/licences/consultation.htm
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	http://www.environment.nsw.gov.au/licences/archinvestigations.htm
Aboriginal Site Impact Recording Form	http://www.environment.nsw.gov.au/licences/DECCA_HIMSSiteRecordingForm.htm
Aboriginal Heritage Information Management System (AHIMS) Registrar	http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
<u>Biodiversity</u>	
Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna -Amphibians (DECCW, 2009)	http://www.environment.nsw.gov.au/resources/threatenedspecies/09213amphibians.pdf
Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft (DEC, 2004)	http://www.environment.nsw.gov.au/resources/nature/TBSAGuidelinesDraft.pdf
Guidelines for Threatened Species Assessment (Department of Planning, July 2005)	Draft available from DoP
DECCW Threatened Species website	http://www.environment.nsw.gov.au/threatenedspecies/
Atlas of NSW Wildlife	http://wildlifeatlas.nationalparks.nsw.gov.au/wildlifeatlas/watlas.jsp
Vegetation Types databases	http://www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm
PlantNET	http://plantnet.rbgsyd.nsw.gov.au/
Online Zoological Collections of Australian Museums	http://www.ozcam.org/
Threatened Species Assessment Guideline - The Assessment of Significance (DECCW, 2007)	http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf
Principles for the use of biodiversity offsets in NSW	http://www.environment.nsw.gov.au/biocertification/offsets.htm

Title	Web address
<u>DECCW Estate</u>	
Aquatic Reserves	
Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010)	http://www.environment.nsw.gov.au/resources/protectedareas/10509devadjdeccw.pdf
<u>Noise and Vibration</u>	
Interim Construction Noise Guideline (DECC, 2009)	http://www.environment.nsw.gov.au/noise/constructnoise.htm
Assessing Vibration: a technical guideline (DEC, 2006)	http://www.environment.nsw.gov.au/noise/vibrationguide.htm
Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZEC, 1990)	http://www.environment.nsw.gov.au/noise/blasting.htm
Environmental Criteria for Road Traffic Noise (EPA, 1999)	http://www.environment.nsw.gov.au/noise/traffic.htm
Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects (DECC, 2007)	http://www.environment.nsw.gov.au/noise/railinfranoise.htm
Environmental assessment requirements for rail traffic-generating developments	http://www.environment.nsw.gov.au/noise/railnoise.htm
Waste	
Waste Classification Guidelines (DECC, 2008)	http://www.environment.nsw.gov.au/waste/envguidlins/index.htm
Acid sulphate soils	
Acid Sulfate Soils Planning Maps	http://canri.nsw.gov.au/download/
Acid Sulfate Soils Manual (Stone et al. 1998)	Manual available for purchase from: http://www.landcom.com.au/whats-new/the-blue-book.aspx Chapters 1 and 2 are on DoP's Guidelines Register at: Chapter 1 Acid Sulfate Soils Planning Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf Chapter 2 Acid Sulfate Soils Assessment Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Assessment%20Guidelines.pdf

Title	Web address
Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004)	http://www.derm.qld.gov.au/land/ass/pdfs/lmg.pdf This replaces Chapter 4 of the Acid Sulfate Soils Manual above.
Flooding and Coastal Erosion	
Reforms to coastal erosion management	http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm
Floodplain development manual	http://www.dnr.nsw.gov.au/floodplains/manual.shtml
Coastline management manual	http://www.environment.gov.au/coasts/publications/nswmanual/index.html Note: To be replaced by the Guidelines for preparing coastal zone management plans, due for release by end of 2010. This document will be available on DECCW's website – draft currently available at http://www.environment.nsw.gov.au/coasts/coastalmgtdocs.htm .
Estuary management manual	Available on request from DECCW or on interlibrary loan Note: To be replaced by the Guidelines for preparing coastal zone management plans, due for release by end of 2010. This document will be available on DECCW's website – draft currently available at http://www.environment.nsw.gov.au/coasts/coastalmgtdocs.htm .

END OF ATTACHMENT 2



Office of
Environment
& Heritage

Our reference:
Our contact:

DOC11/37417
Liz Peterson, 9995 6841

Mr Michael Woodland
Director
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Mr Woodland

Re: Test of Adequacy Assessment – Concept Plan for Mixed Use Development of 461 Captain Cook Drive, Woollooware (MP10_0229)

I refer to your letter dated 15 August 2011 seeking the Office of Environment and Heritage Office's (OEH) review of the Environmental Assessment (EA) and comment on whether an adequate level of assessment has been undertaken to address the Director General's Environmental Assessment Requirements (DGR's) prior to the proposal being placed on public exhibition.

Please note that the submission dated 25 March 2001 from the then Department of Environment, Climate Change and Water included a request for an assessment of the impacts on the adjoining Towra Point Aquatic Reserve under the *Fisheries Management Act 1994*. Aquatic reserve management responsibilities under the *Fisheries Management Act* have been transferred to the Department of Trade and Investment, Regional Infrastructure and Services, and this matter will not be specifically commented on by OEH.

OEH has reviewed the information and has found that the draft EA does not currently contain adequate information about; flora and fauna, Aboriginal cultural heritage, flooding, and Acid Sulphate Soils.

OEH considers the additional information outlined in Attachment 1 needs to be addressed in the final EA before it goes to public exhibition.

OEH will undertake a detailed review of the EA during the exhibition period. OEH cannot exclude the possibility that issues might be identified in any detailed review, that are additional to the issues raised in these preliminary comments.

If you have any queries regarding this matter please contact Liz Peterson, Senior Regional Operations Officer, on 9995 6841 or email liz.peterson@environment.nsw.gov.au

Yours sincerely

G Howard 26/8/11

GISELLE HOWARD
Director, Metropolitan Branch
Environment Protection and Regulation
Office of Environment and Heritage
Department of Premier and Cabinet

Encl.

The Department of Environment, Climate Change and Water is now known as the Office of Environment and Heritage, Department of Premier and Cabinet

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Attachment 1 – OEH comments on the draft environmental assessment for Cronulla Sharks

1. Biodiversity

OEH has undertaken a review of the Concept Plan Environmental Assessment and Appendix T *Ecological Assessment* (Ecological Australia) and is of the view that the EA does not adequately address the DGRs in relation to addressing impacts on Flora and Fauna.

a. Fauna Surveys

The DGRs require a detailed survey of the migratory bird habitat, to determine whether and how they are using the site and adjoining areas, and to assess any potential impact or threats to the population. The EA is inadequate in relation to assessing the potential impacts on threatened fauna likely to use the mangrove habitat directly adjacent to the site and Woollooware Bay, because no fauna surveys were undertaken in this area. There is little existing information available about shorebird use of Woollooware Bay because it is not surveyed as part of the regular NSW Waders Study Group Shorebird Count. The lack of survey for this proposal is of particular concern.

A field inspection to identify flora species was undertaken in the middle of winter on a very cold day (10°C) so any incidental sightings of fauna were likely to be minimal. The report is primarily a desktop assessment based on the outcomes of previous surveys, most of which were undertaken more than 5 years ago in winter when the majority of the shorebirds likely to use the area would have been at their breeding grounds in the northern hemisphere. OEH notes that the DGRs only refer to the *Threatened Species Assessment Guidelines 2007*. As previously advised in our correspondence dated 25 March 2011, which we provided input to the Draft Director Generals Assessment Requirements, OEH requested surveys be undertaken in accordance with OEH's *2009 Threatened Species Survey and Assessment guidelines: Field Survey Methods for Fauna – Amphibians* and the *2004 Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities Working Draft*. The survey methodologies used in the proponent's surveys are not described, so it is unclear whether they were consistent with OEH's survey and assessment guidelines.

b. Impact assessment

The EA outlines the likely impacts of the development on the Swamp Oak Forest EEC remnant and the adjacent mangrove habitat as well as Woollooware Bay and recommends measures to mitigate these impacts. It acknowledges that further assessment will be needed at the detailed design and management planning stages to determine the actual impacts on the adjacent mangroves and shorebirds using Woollooware Bay resulting from changes in hydrology/water quality, lighting, overshadowing, construction and operational noise, increased access and new large areas of reflective glass in the multi-storeyed residential and commercial buildings. However, without a proper understanding of the importance of the adjacent mangrove habitat and Woollooware Bay for threatened fauna, it is difficult to judge the extent of the likely impacts and whether the proposed mitigation measures would be adequate to address them.

c. Mitigation measures and offsets

There is insufficient information in the EA about the mitigation measures proposed to offset the loss of the Swamp Oak Forest EEC and any impacts on fauna habitat in the adjacent mangroves and Woollooware Bay. The EA states that, where possible, existing native vegetation will be retained and protected but detail on how this will be achieved is not included. Revegetation using local provenance species is recommended to offset any losses of the Swamp Oak Forest EEC and to recreate estuarine vegetation communities, however there is no detail provided on the source of local provenance plants, which are part of the Saltmarsh and Swamp Oak Forest EEC.

OEH does not wish to be placed in a situation where it has to provide a third party approval in the form of a s. 91 licence, for the translocation of plant material from EEC remnants at Kurnell to the Cronulla Sharks site.

There are some very general recommendations in the Ecological Assessment about how the impacts of light spill, shadowing, increased access to the mangroves and large reflective surfaces could be dealt with, but these measures have not been translated in the EA.

OEH notes that the Statement of Commitments includes two recommendations to offset the impacts of the development on foreshore vegetation - revegetation with local provenance estuarine vegetation, which is likely to require a third party approval from OEH, and the preparation of a Vegetation Management Plan for the foreshore and riparian areas to be submitted with future development applications. More detailed information about how impacts will be offset is deferred to the development of detailed landscape and stormwater designs and noise and vibration/vegetation management plans during any subsequent development application stage.

It is OEH's view that the DGRs in relation to flora and fauna have not being adequately addressed if assessment of these matters is deferred to a later project application stage.

2. Aboriginal Cultural Heritage

OEH notes that Appendix A of the DGR's requires the EA to address 'relevant EPI's policies and Guidelines' including the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010). OEH notes that the EA is accompanied by An Archaeological Assessment undertaken by Godden Mackay (Appendix U) and has been prepared in accordance with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Planning, 2005) but has not considered the DECCW 2010 guidelines. It is therefore OEH's view that appropriate consultation required by the DGR's has not been undertaken.

3. Flooding

As detailed in the then Department of Environment, Climate Change and Water's letter dated 25 March 2011, OEH is concerned that the proposal as presented may be impacted by flooding and may adversely impact on flooding in adjacent properties.

Suitable arrangements for floodwater and overland flow need to be considered from the earliest stages of the design process, particularly when the site is identified as being on a floodplain. Otherwise adverse effects on flood behaviour might prove difficult to rectify.

Whilst the Environmental Assessment's Draft Statement of Commitments identifies the need for a detailed flood assessment in future applications for the development, the flood assessments should be undertaken at the initial conceptual stage. On this basis, it is not possible for OEH to state that the presented Environmental Assessment adequately addresses the Director General's Environmental Assessment Requirements and OEH would need to repeat these concerns already raised if the proposal is placed on public exhibition at this time.

4. Acid Sulphate Soils

OEH notes the DGR for the EA to 'provide an Acid Sulphate Soils Management Plan prepared in accordance with the manual produced by the Acid Sulphate Soil Management Advisory Committee'. An acid sulphate soil management plan has not been provided with the EA and the Statement of Commitments proposes to defer the provision of an Acid Sulphate Soils Management Plan until the relevant application and therefore this requirement has not been addressed.