NSW GOVERNMENT | Environment, Climate Change & Water

PCU018340

Your reference: 10/22887
Our reference: Doc10/53168; Fil10/14856
Contact: Robert Gibson, 4908 6851

NSW Government Planning
GPO Box 39
SYDNEY NSW 2001
Attention: Ms Jane Flanagan

Dear Ms Flanagan

RE: REQUEST FOR AGENCY INPUT FOR DIRECTOR GENERAL REQUIREMENTS – 50-BERTH MARINA AND CAR PARKING AT LOT 159 DP729020, 19 BRISBANE WATER DRIVE, KOOLEWONG (MP 10_0209)

Reference is made to your letter dated 23 November 2010 (received on 25 November 2010), seeking assessment requirements and any key issues for the proposed 50-berth marina into Murphy's Bay in Brisbane Water and car parking on Lot 519 in Deposited Plan (DP) 729020 at 19 Brisbane Water Drive, Koolewong in the Gosford local government area. This proposed development is also known as MP10-0290.

The Department of Environment, Climate Change and Water (DECCW) understands that the development proposal is for the development of a 50-berth marina and reconfiguration of an existing car park on Lot 519 DP 729020.

DECCW has considered the details of the proposal as provided in the Preliminary Environmental Assessment and has identified the information it requires to be addressed in the Environmental Assessment (EA) to make a reliable appraisal of the proposals impacts. The main issues of interest to DECCW are:

- impacts on threatened species, populations, ecological communities and their habitat;
- any impacts on Aboriginal cultural heritage values;
- water quality and quantity impacts, and
- impacts on noise amenity.

Attachment A presents a more detailed explanation of DECCW's main issues regarding the proposed development.

In carrying out the assessment the applicant should refer to the relevant guidelines in **Attachment B** and also any industry codes of practice and best environmental management practice guidelines. The proponent should be aware that any commitments made in the EA may be formalised as licence or approval conditions. Consequently, pollution control or conservation measures should not be proposed if they are impractical, unrealistic or beyond the financial viability of the development. It is important that all conclusions are supported by adequate data.

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117 Bull Street, Newcastle West NSW 2302
Tel: (02) 4908 6800 Fax (02) 4908 6810
ABN 30 841 387 271
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DECCW requests that the Department of Planning provide **three (3) printed copies and one electronic copy (***Note: The electronic copy should be contained as separate files for each section***)** of the EA and any supporting or background reports to DECCW. These documents should be lodged with the Department of Environment, Climate Change and Water, PO Box 488G, Newcastle NSW 2300.

If you require any further information regarding this matter please contact Robert Gibson on (02) 4908 6851.

Yours sincerely

23 DEC 2010

MARK HARTWELL
Head Regional Operations Unit
Hunter Region
Environment Protection and Regulation

Enclosed: Attachment 'A' – Director General's Requirements
Attachment 'B' – Guidance Material

ATTACHMENT A

THE DEPARTMENT OF ENVIRONMENT CLIMATE CHANGE AND WATER RECOMMENDATIONS FOR INCLUSION IN DIRECTOR-GENERAL'S REQUIREMENTS FOR THE PROPOSED 50-BERTH MARINA AND CAR PARKING AT 19 BRISBANE WATER DRIVE, KOOLEWONG (MP 10_0209).

GENERAL INFORMATION

The following information should be provided in the Environmental Assessment (EA) to enable DECCW to accurately assess the environmental implications of the proposed activity. The EA should adequately describe the development proposal and the existing environment including air, noise, waters, soils, flora and fauna characteristics and Aboriginal cultural heritage.

THE PROPOSAL

The objectives of the proposal should be clearly stated and refer to:

- The size and type of the operation,
- The nature of the processes and the products, by-products and wastes produced;
- The use or disposal of products;
- The anticipated level of performance in meeting required environmental standards and cleaner production principles;
- The staging and timing of the proposal; and
- The proposal's relationship to any other industry or facility.

THE PREMISES

The EA should fully identify all of the processes and activities intended for the site and during the life of the project. This will include details of:

- A site and locality plan that includes the lot and DP number of the site;
- The location of the proposal and details of the surrounding environment;
- The proposed layout of the site;
- All equipment proposed for use at the site;
- Appropriate landuse zoning;
- Ownership and/or land use details of any premises and land likely to be affected by the proposed development;
- Maps/diagrams showing the location of residences and properties likely to be affected and other developments in the locality that may be affected by the facility;
- Topography, vegetation, location of utilities and services;
- The location of residences and properties that may be impacted by the operation;
- The location of any environmentally sensitive areas such as conservation areas, wetlands (including saltmarsh), creeks or streams, watercourses and stormwater systems;
- Surface water management systems;
- Chemicals, including fuel, used on the site and proposed methods for their transportation, storage, use and emergency management;
- Waste generation and disposal;
- Methods to mitigate any expected environmental impacts of the development;

NOISE IMPACT ASSESSMENT

The Environment Assessment (EA) shall undertake an assessment of noise impacts associated with the construction and operation of the facility. In relation to construction DECCW recommends the assessment be in accordance with "*NSW Interim Construction Noise Guidelines, DECC 2009*" and for operational noise "*NSW Industrial Noise Policy, January 2000*".

WASTE AND CHEMICALS

The EA must provide details of the quantity and type of any waste that is generated, received, handled, processed or disposed of at the premises. Waste must be classified according to DECCW's Waste Classification Guidelines (2008).

The EA must provide details of all waste management at the facility, including:

a) the transportation, assessment and handling of waste arriving at or generated at the site

b) the end use or disposal method for all wastes or recovered materials at the facility

WATER QUALITY ASSESSMENT

The proposal should clearly identify how it will meet the requirements set out in section 120 of the *Protection of The Environment Operations Act 1997* (POEO) prohibiting pollution of waters. Assessment of all water pollution control associated with the construction and operation of the facility should reference "*NSW* Managing Urban Stormwater: Soils and Construction guidelines".

AIR QUALITY ASSESSMENT

The PEA does not identify any potential emissions into the atmosphere from the proposal. Based on this PEA, DECCW has not provided Air Quality Impact Assessment criteria.

CONTAMINATED LAND

The EA must determine whether contaminated soils are likely to be disturbed during the proposed works. If contaminated soils are likely to be disturbed, the EA should detail the measures to be adopted to protect human health and the environment, and if necessary remediate or dispose of the contaminated material. The following guidelines may be helpful in assessing any actions required in respect of the proposed works:

- Contaminated Sites - Guidelines for Consultants Reporting on Contaminated Sites (EPA 1997);
- Contaminated Sites - Guidelines for the NSW Site Auditor Scheme (EPA 1998); and
- Contaminated Sites - Sampling Design Guidelines (EPA 1995).

ABORIGINAL CULTURAL HERITAGE

A review of the available documentation was undertaken by PAHS (NE) to assess the potential impacts of the proposal on Aboriginal Cultural Heritage values. PAHS (NE) recommends that the following key issues be addressed by the proponent in preparing the EA.

Existing ACH values:

DECCW notes the existence of numerous registered Aboriginal sites in the immediate locality. These include middens, rock art, artefact scatters, isolated finds and burials. We recommend the proponent consider any potential impacts of the proposal on these known sites, the sensitivity and significance of these sites to the traditional Aboriginal custodians and any relationship that may exist between these sites and any Aboriginal cultural heritage values of the project area.

Impacts of the project on Aboriginal cultural heritage values:

Standard requirements:

1. The Environmental Assessment (EA) must address and document the information requirements set out in the draft "*Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation' (*Department of Environment and Conservation 2005). This document is available from the DECCW and DoP upon request.

2. The EA must include surveys by suitably qualified archaeological consultants in consultation with all of the local Aboriginal knowledge holders.

3. The EA should identify the nature and extent of impacts on Aboriginal cultural heritage values across the project area and clearly articulate strategies proposed to avoid/minimise these impacts. If impacts are proposed as part of the final development, clear justification for such impacts should be provided.

4. The EA must assess and document the archaeological and Aboriginal significance of the site's Aboriginal cultural heritage values.

5. Describe the actions that will be taken to avoid or mitigate impacts of the project on Aboriginal cultural heritage values. This must include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented. Any proposed methodology for Aboriginal cultural heritage investigation should reflect best practice standards recommended by DECCW in the '*Code of Practice for Archaeological Investigations of Objects in New South Wales (2010)*'.

6. The EA must provide documentary evidence to demonstrate that effective community consultation with Aboriginal communities has been undertaken in assessing impacts, developing protection and mitigation options and making final recommendations. DECCW supports broad-based Aboriginal community consultation and as a guide DECCW's '*Aboriginal cultural heritage consultation requirements for proponents 2010*' provides a useful model to follow. This requirement is available on DECCW's website at: http://www.environment.nsw.gov.au/licences/consultation.htm.

7. If impacts on Aboriginal cultural heritage values are proposed as part of the final development, an assessment of the proposed impacts in the context of '*inter generational equity*' and cumulative impact must be undertaken. This assessment must examine both cultural and archaeological perspectives equally at both the local and regional levels, with consideration given to the site level and broader landscape level.

Note: If the EA is relying on past surveys it is critical to confirm that the surveys are consistent with the requirements of the above Part 3A guidelines. Further, whilst there is no requirement for obtaining an Aboriginal Heritage Impact Permit (AHIP) under Part 6 of the *National Parks and Wildlife Act 1974*, as amended (NPW Act) for projects approved under Part 3a of the EPA Act, the remainder of Part 6 remains valid. This includes the requirement to obtain a Care Agreement for salvaged objects (Section 85) and reporting to DECCW on the status of new or impacted Aboriginal sites (Section 89A).

If any new sites or objects are located, they must be recorded on DECCW site cards and registered on DECCW's Aboriginal Heritage Information Management System (AHIMS). For site updates for impacted sites it is a requirement to use the Aboriginal Site Impact Recording form and registered on AHIMS. Both forms are located at: http://www.environment.nsw.gov.au/licences/DECCAHIMSSiteRecordingForm.htm. The contact details for the AHIMS are: Phone: (02) 9585 6470, address: Lvl 6, 43 Bridge Street, Hurstville, NSW, 2220, e-mail: ahims@environment.nsw.gov.au.

THREATENED SPECIES AND BIODIVERSITY ISSUES

DECCW notes that the proposed development site comprises about 0.25 ha of land on Lot 519 DP 729020 and about 0.7 ha of Murphy's Bay; the former is already developed with small areas of vegetation, and the latter partly includes seagrass beds..

The EA must:

- document all the known and likely threatened species, populations and ecological communities on the study area, including their habitats. This should not be restricted to those on the subject site but include such species / populations / communities that may be indirectly impacted upon;
- provide a detailed assessment of the direct and indirect impacts of the proposal. Indirect impacts should include (but are not limited to): - adverse hydrological impacts, both surface and groundwater, downstream impacts, increased nutrient / pollution loads, fragmentation, loss of connective links and impacts on wildlife corridors, impacts of bushfire asset protection zones, noise and dust impacts, light pollution (i.e. increasing skyglow from uncontrolled uplight from the proposal), weed infestation (including in the Brisbane Water estuary) and feral animal implications, and increased human visitation (including litter and boat-strike);
- as the proposal involves the clearing of vegetation and/or removal / damage to habitat the EA must clearly articulate the size of this impact, and where applicable delineate this on the basis of vegetation / habitat type;
- provide a general baseline flora and fauna survey (including appropriate targeted surveys for threatened species) for the subject site, describing the vegetation communities, habitat types and species assemblages present;
- detail the actions that will be taken to avoid or mitigate impacts on threatened species, their habitats, populations and ecological communities; and in instances where impacts can not be avoided provide appropriate details on offset / compensatory habitat packages or strategies, habitat enhancement features and proposed management plans.

To address likely impacts (both direct and indirect) on threatened species, populations and ecological communities (including their habitat), the proponent will need to engage a suitably qualified and experienced environmental consultant(s) to conduct an appropriate flora and fauna survey of the subject site / study area, and provide an assessment report.

Surveys

Survey procedures and assessment of results should be consistent with those procedures and assessment approaches contained within the DECCW publications:

- the *Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna -Amphibians* (DECCW, 2009a)
- *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (DEC, 2004), and
- Threatened species survey and assessment guideline information on: http://www.environment.nsw.gov.au/threatenedspecies/surveyassessmentgdlns.htm

A general baseline fauna and flora survey must be conducted on the subject site and/or study area to provide details of the vegetation communities, habitat types and species assemblages present. Details of prevailing weather conditions, any analyses used and copies of all field data sheets must be provided. Additional targeted surveys will be required for all likely threatened species, populations and/or ecological communities that are not easily detected using general survey methodologies.

Surveys must be undertaken at the time of year when the subject species are most likely to be detected (e.g. targeted threatened flora should be carried out when a species is flowering and/or fruiting, as these features are typically required to positively identify species, and fauna surveys should be undertaken when animals are active and/or breeding).

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

Previous Surveys

Recent (less than 5 years old) surveys and assessments may be used, but surveys greater than five years will not be accepted. Previous surveys (less than 5 years old) should not be used if they have:

- been undertaken in seasons, weather conditions or following extensive disturbance events when the target subject species are unlikely to be detected or present (e.g. outside known flowering / fruiting periods, adverse drought conditions, flooding, bushfire, slashing and overgrazing etc.); or
- utilised methodologies, survey sampling intensities, timeframes or baits that are not the most appropriate ones 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.

Documenting survey effort

The time invested in each survey technique applied must be summarised (preferably in tabular format) in the EA (e.g. - number of person hours per transect / quadrat, duration of call playback, number of nights traps set etc...). It is not sufficient to aggregate all time spent on all survey techniques. Effort must be expressed for each separate survey technique and each separate vegetation community. Survey, quadrat and transect sites must be schematically shown on a geo-referenced map and/or photograph. Targeted surveys also need to specify method adopted (e.g. random meander [Cropper 1993]), habitats searched (e.g. type / features), duration, effort, prevailing weather conditions and location. Environmental conditions during the survey should be noted at the commencement of each survey technique.

Personnel details including name of all surveyor(s), contact phone number and relevant experience should be provided. The person who identified records (e.g. Anabat, hair tubes, and scat analysis) must be identified.

Biobanking Assessment Methodology

If the proponent is proposing to conduct a biodiversity assessment using BioBanking Assessment Methodology, as outlined in the '*BioBanking Assessment Methodology and Credit Calculator Operational Manual*' (DECC 2009b), then it is advantageous that during the survey component of the EA that the relevant data is collected in the appropriate format for the Biometric tool (i.e. BioBanking Credit Calculator) (*Note: this may reduce duplication or further surveying at a later date). Under this scenario all vegetation types in the study area should be identified and matched to a DECCW BioMetric vegetation type. Please note there is no formal requirement to use BioBanking under Part 3A of the *Environmental Planning and Assessment (EP&A) Act 1979*, but the process can, if the proponent wishes, provide guidance in determining the level and adequacy of an offset required to compensate the loss of vegetation / habitat (if applicable). Furthermore, conducting a biodiversity assessment does not negate the need to comply with the full survey requirements.

For details on the use of BioBanking tools see http://www.environment.nsw.gov.au/biobanking/

Subject Species

In determining potential threatened species (the subject species), populations and/or ecological communities for the site, consideration must be given to the vegetation / habitat types present within the study area, recent and historic records of threatened species or populations in the locality and the known distribution of threatened species, populations and/or ecological communities.

Databases such as DECCW *Atlas of NSW Wildlife*, *BioBanking Credit Calculator, Australian Museum and Royal Botanic Gardens* should be consulted to assist in compiling the list. Other databases must also be consulted to create a comprehensive list of subject species. Vegetation mapping for the region may assist in identifying potential ecological communities.

DECCW notes the following known threatened species, populations and ecological communities (based on DECCW *Atlas of NSW Wildlife* database, vegetation mapping and potential habitat) which have broad habitat matches to that of the site occur on or nearby (approx. 10 km radius) to the proposal and these should be targeted during surveying (but not be limited to just these):

(i) FAUNA

Amphibians:
Green and Golden Bell Frog *Litoria aurea* *

Reptiles
Loggerhead Turtle *Caretta caretta* *
Green Turtle *Chelonia mydas* *
Leathery Turtle *Dermochelys coriacea* *

Birds:
Regent Honeyeater *Anthochaera phrygia* *^
Bush Thick-knee *Burhinus grallarius* ^
Glossy Black Cockatoo *Calyptorhynchus lathami*
Lesser Sand Plover *Charadrius mongolus*
Varied Sittella *Daphoenositta chrysoptera*
White-fronted Chat *Epthianura albifrons*
Little Lorikeet *Glossopsitta pusilla*
Sooty Oyster-catcher *Haematopus fuliginosus*
Pied Oyster-catcher *Haematopus longirostris*
Black-breasted Buzzard *Hamirostra melanosternon*
Little Eagle *Hieraaetus morphnoides*
Black Bittern *Ixobrychus flavicollis*
Swift Parrot *Lathamus discolor* *^
Black-tailed Godwit *Limosa limosa*
Square-tailed Kite *Lophoictinia isura*
Southern Giant Petrel *Macronectes giganteus* *
Barking Owl *Ninox connivens*
Powerful Owl *Ninox strenua*
Osprey *Pandion haliaetus*
Gould's Petrel *Pterodroma leucoptera leucoptera* *
Flesh-footed Shearwater *Puffinus carneipes*
Little Tern *Sterna albifrons*
Masked Owl *Tyto novaehollandiae*
Sooty Owl *Tyto tenebricosa*
Terek Sandpiper *Xenus cinereus*

Mammals:
New Zealand Fur Seal *Arctocephalus forsteri*
Australian Fur Seal *Arctocephalus pusillus doriferus*
Eastern Pygmy Possum *Cercartetus nanus*
Large-eared Pied-Bat *Chalinolobus dwyeri* *
Dugong *Dugong dugon*
Eastern False Pipistrelle *Falsistrellus tasmaniensis*
Little Bentwing-bat *Miniopterus australis*
Eastern Bent-wing Bat *Miniopterus schreibersii* subsp. *oceanensis*
Eastern Freetail bat *Mormopterus norfolkensis*
Large-footed Myotis *Myotis macropus*
Squirrel Glider *Petaurus norfolcensis*

Eastern Chestnut Mouse *Pseudomys gracilicaudatus*
Grey-headed Flying-fox *Pteropus poliocephalus*
Yellow-bellied Sheathtail-bat *Saccolaimus flaviventris*
Greater Broad-nosed Bat *Scoteanax rueppellii*

ENDANGERED POPULATIONS
White-fronted Chat *Epthianura albifrons* (Jardine & Selby, 1828) in the Sydney Metropolitan Catchment Management Authority area

(ii) ENDANGERED ECOLOGICAL COMMUNITIES

The following endangered ecological communities are known to occur on the subject land or within the nearby vicinity, and as such have potential to occur given similarities in habitat requirements:

- Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions,
- River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions,
- Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions,
- Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions, and
- Sydney Freshwater Wetlands in the Sydney Basin Bioregion

NOTES:
^ = threatened species noted for the Brisbane Water Important Bird Area (IBA) and
* = a species or vegetation community also listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The above lists of species, populations and ecological communities are not necessarily exhaustive. The applicant must carry out their own process of determining the subject species. This process should incorporate consideration of:

- the vegetation communities present within the study area;
- the presence, quantity, quality and degree of fragmentation of likely habitat for individual threatened species;
- recent (within the last ten years) records of threatened species, populations and ecological communities in the locality; and
- the known distribution of threatened species, populations and ecological communities.

DECCW *Atlas of NSW Wildlife*, Threatened species website, *Australian Museum and Royal Botanic Gardens* databases, the *Birds Australia and NSW Bird Atlas* databases (for birds), Important Bird Areas (IBA) (see http://www.birdata.com.au/iba.vm) and other relevant databases, vegetation mapping and literature should be used to assist in compiling or assessing the list. The Data Licensing Officer at DECCW Head Office should be contacted on (02) 9585 6684 to obtain information on the NSW Wildlife Atlas database.

For convenience, a copy of the above list of threatened species, populations and communities is also provided in Appendix 1.

Compensatory strategies

DECCW's 'offset provision' principles state that impacts must be avoided first by using prevention and mitigation measures (DECC 2007a). Where significant modification of the proposal to minimise impacts is not possible then compensatory strategies should be considered. These should include on or offsite proposals that contribute to long term conservation of affected threatened species, populations or ecological communities. If compensatory habitat is not considered appropriate, justification must be provided. Where a proposal involves the clearing of threatened species habitat then appropriate offsets which compensate for the clearing of the habitat should be provided. In this

instance the proposal should clearly indicate the scale / size of the impact so that appropriate comparisons can be made to any offset packages.

Justification for any area(s) proposed as compensatory habitat / offsets must include an assessment of the threatened species / biodiversity values impacted on by the proposed works (i.e. those of the subject site) and a comparison of whether the proposed offset area(s) provides equivalent or greater values – "improve or maintain important biodiversity values".

To determine the adequate biodiversity offset either one of the following methodologies are to be used as a guide:

- DECCW 'offsetting principles', as outlined on the Departments website: *Principles for the use of biodiversity offsets in NSW* (DECCW 2008 website - http://www.environment.nsw.gov.au/biocertification/offsets.htm) can be used as general guide for offsetting and compensatory habitat requirements,
- a biodiversity assessment using BioBanking Assessment Methodology under Biodiversity Banking and Offsets Scheme, as outlined in the '*BioBanking Assessment Methodology and Credit Calculator Operational Manual*' (DECC 2009b). This would provide a quantitative assessment of the required ecosystem and species (threatened) credits that need to be retired to offset the impacts of the development.

DECCW is of the opinion that a biodiversity assessment using BioBanking Assessment Methodology under Biodiversity Banking and Offsets Scheme, would provide a transparent framework and a quantitative alternative to the principles-based approach (i.e. 'offset provision' principles as outlined in the biodiversity certification guideline - DECC 2007a). DECCW acknowledges that this is a voluntary process and not a requirement under Part 3A, but believes it provides a valuable insight and quantitative appraisal into what would be an acceptable offset package to compensate the likely impacts of the development.

Offsets will require the proponent to consider adequate conservation in perpetuity, appropriate management regimes, and financial security with respect to ongoing management.

The following principles are relevant to areas without an existing biodiversity offsets program. Offsets will require the proponent to consider adequate conservation in perpetuity, appropriate management regimes (including other habitat enhancement or mitigation measures) and financial security with respect to ongoing management. DECCW would typically consider suitable measures to ensure conservation in perpetuity, such as (but not limited to):

- The establishment of biobanking sites with biobanking agreements under the *Threatened Species Conservation Act 1995* (TSC Act)
- The dedication of land under the *National Parks and Wildlife Act 1974* (NPW Act).
- A Conservation Agreement under the NPW Act;
- A Trust Agreement under the *Nature Conservation Trust Act 2001*;
- A Planning Agreement under s 93F (soon to be s116T) of the EP&A Act.
- A public positive covenant under s88E of the *Conveyancing Act 1919*

To appropriately manage any proposed compensatory offsets, DECCW will require that an appropriate Management Plan (such as vegetation or habitat) be developed. These plans should be prepared prior to any potential approval of the development. The management plan should clearly document how the offset area, any retained vegetated areas or habitat features and proposed habitat management within the development footprint (e.g. buffer zones, habitat trees and nest boxes) will be managed and implemented with respect to long-term conservation and viability, including clear details on how they will be funded. The plan should cover, but not be limited to, the following issues:

- weed management (both control and suppression) and monitoring,
- management of retained native vegetation and habitat (including buffer zones),
- feral animal control,
- fire management (including asset protection zones [APZs]),

- public access (including restriction of, increased traffic, and associated impacts, such as increased refuse and pets),
- size and management of buffer zones,
- minimisation of edge effects and fragmentation,
- stormwater control and changes to hydrology (including stormwater / runoff control and sediment / erosion control measures),
- management of specific habitat enhancement measures (e.g. hollow / habitat trees, animal fencing to facilitate movement, artificial hollows and nest boxes etc.),
- fauna displacement and if appropriate translocation (including any licence requirements),
- proposed surveys, such as pre-extraction baseline, pre-clearance and rehabilitation surveys,
- details of long-term monitoring (including proposed timing),
- details of any rehabilitation program, including details of timing (including proposed staging details), rehabilitation measures (including details of proposed revegetation and species mix), and post-rehabilitation monitoring,
- measures to ensure conservation in perpetuity (e.g. transfer to DECCW estate, conservation agreements or covenants), and
- funding details of long-term financial commitment to any proposed conservation measures, including any mechanisms to be implemented to achieve this.

Report

The general report structure should be consistent with the information presented in Table 3.4 of DEC (2004). In addition the following is required:

- a geo-referenced map / aerial photograph (or equivalent) of the subject site and study area indicating their location and regional context;
- details of the survey design and methodologies / techniques used for both flora and fauna (including details of prevailing weather conditions, any analyses used and copies of all field data sheets);
- a detailed description of all vegetation communities / types (both undisturbed and disturbed) on the site and study area (and if applicable DECCW BioMetric vegetation types), including a geo-referenced map / aerial photograph (or equivalent) showing their location. The descriptions should include: a general description, characteristic features (e.g. lacks a mid-storey, restricted to a particular geomorphic / edaphic feature etc.), their distribution and size, their vegetation structure (including cover), their condition, key diagnostic species, relationship to other communities, species richness and any significant species present (e.g. threatened species, ROTAP [Briggs & Leigh 1996], regionally significant taxa);
- identification of the classification system used in the vegetation descriptions (e.g. Specht *et.al.* 1974, Hnatiuk *et al.* 2009 [Note: the classification must have regard to both structural and floristic elements]),
- details of how the vegetation classification for the site was developed, including details and associated products (e.g. dendrogams / two-way tables) of any analyses used;
- a full floristic list in tabular format of all taxa (both native and exotic) recorded on the subject site, indicating which vegetation communities they occur in, their cover / abundance, and conservation (including taxa of conservation significance);
- a full list of fauna (both native and exotic) in tabular format recorded on the subject site, indicating which vegetation communities / habitat types they occurred in;
- a geo-referenced map / aerial photograph (or equivalent) showing all threatened species, populations and ecological communities recorded on the site during surveying (*Note: records obtained from the "*Atlas of NSW Wildlife*" database can be used in determining likely habitat, but they are not to be schematically mapped in the EA, as this is considered a breach of licence conditions for such records);
- all habitat features / types should be detailed and mapped (where appropriate), such as frequency and location of stags, hollow bearing trees (including size), mature / old growth trees, culverts, rock shelters, rock outcrops, presence of feed tree / shrub / groundcover species (e.g. winter-flowering eucalypts, *Acacia* and *Banksia* trees, *Casuarina / Allocasuarina* and areas of native grasses], crevices, caves, drainage lines, soaks etc; and

- details of how the proposal will impact (both directly and indirectly) and affect known and potential threatened species, populations an ecological communities (including their habitat), including any assessment of significance.
- details of how the proposal may impact on corridors, connective links and fragmentation.
- details of mitigation and offset / compensatory habitat measures.

References

Cropper, S. (1993) *Management of Endangered Plants.* CSIRO: Australia.

DEC (2004) *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities.* Working Draft. November 2004. Department of Environment and Conservation (NSW) http://www.environment.nsw.gov.au/resources/nature/TBSAGuidelinesDraft.pdf

DECC (2007a) *Biodiversity Certification of Environmental Planning Instruments: Working Draft.* April 2007. Department of Environment and Climate Change (NSW). http://www.environment.nsw.gov.au/biocertification/biocertepis.htm

DECC (2007b) *Threatened Species Assessment Guidelines: The Assessment of Significance.* August 2007. Department of Environment and Climate Change (NSW). http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf

DECC (2009a) *Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna – Amphibians.* April 2009. Department of Environment and Climate Change (NSW), Goulburn Street, Sydney. http://www.environment.nsw.gov.au/resources/threatenedspecies/09213amphibians.pdf

DECC (2009b) *BioBanking Assessment Methodology and Credit Calculator Operational Manual.* Department of Environment and Climate Change NSW, Sydney.

Hnatiuk, R.J., Thackway, R. and Walker, J. (2009) Vegetation. In The National Committee on Soil and Terrain *Australian Soil and Land Survey Field Handbook.* Third Edition, Australian Soil and Land Survey Handbooks Series 1, CSIRO Publishing, Melbourne.

Specht, R.L., Roe, E.M., and Boughton, V.H. (1974) Conservation of major plant communities in Australia and Papua New Guinea. *Australian Journal of Botany.* Supplementary Series No. 7.

Department of Environment, Climate Change and Water
December 2010

ATTACHMENT B

DECCW GENERAL GUIDANCE MATERIAL

Assessing Environmental Impacts

Information requirements described in **Attachment A** should be assessed in accordance with the following legislative requirements and guidelines. In particular the requirements of Section 45 of the *Protection of the Environment Operations Act 1997* should be addressed.

Air Quality

- Protection of the Environment Operations (Clean Air) Regulation 2002.
- Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (2006).
- Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (2005).
- Assessment and Management of Odour from Stationery Sources in NSW (November, 2006).

Noise and Vibration

- Construction noise should be assessed using DECC's "Interim Construction Noise Guideline" (DECC 2009) available electronically at http://www.environment.nsw.gov.au/noise/constructnoise.htm
- Operational noise should be assessed in accordance with the *NSW Industrial Noise Policy (EPA, 2000)* and *Industrial Noise Policy Application Notes.* http://www.environment.nsw.gov.au/noise/industrial.htm
- Operational vibration should be assessed in accordance with *DECCW's Environmental Noise Management – Assessing Vibration: a technical guideline (DEC, 2006).* http://www.environment.nsw.gov.au/noise/vibrationguide.htm
- Traffic noise should be assessing using the *Environmental Criteria for Road Traffic Noise* (EPA, 1999) http://www.environment.nsw.gov.au/noise/traffic.htm
- If blasting is required for any reasons, 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

Water

Water Quality

- National Water Quality Management Strategy: Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000).
- NWQMS Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC 2000).

Stormwater

- Managing Urban Stormwater: Soils and Construction (Landcom, 2004).
- Managing Urban Stormwater: Installation and Services (DECCW 2008)
- Managing Urban Stormwater: Mines and Quarries (DECCW 2008)
- Managing Urban Stormwater: Source Control (EPA 1998).
- Managing Urban Stormwater: Treatment Techniques (EPA 1998).

Groundwater

- State Groundwater Policy Framework Document (DLWC 1997).
- NSW State Groundwater Quality Protection Policy (DLWC 1998).
- (Draft) NSW State Groundwater Quantity Management Policy.
- NSW State Groundwater Dependent Ecosystems Policy (DLWC, 2002).

- National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ & ANZECC, 1995).

Waste Water

- National Water Quality Management Strategy: Guidelines for Sewerage Systems - Effluent Management (ARMCANZ/ANZECC 1997).
- National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC 2000).
- Environmental Guidelines for the Utilisation of Treated Effluent by Irrigation (NSW DEC 2004).

Waste and Chemicals

- *Protection of the Environment Operations Act 1997* – Schedule 1
- Waste Classification Guidelines, Part 1: Classification of Waste (DECC, 2008)
- Environmental Compliance Report: Liquid Chemical Storage, Handling and Spill Management Part B Review of Best Practice and Regulation (DEC, 2005) http://www.environment.nsw.gov.au/resources/licensing/ecrchemicalsb05590.pdf
- Storing and Handling Liquids: Environmental Protection Participants Manual (DECC, 2007) http://www.environment.nsw.gov.au/resources/sustainbus/2007210liquidsManual.pdf
- Waste Exemption Guidelines http://www.environment.nsw.gov.au/waste/RegulateWaste.htm

Contaminated Land

- Contaminated Sites - Guidelines for Consultants Reporting on Contaminated Sites (EPA 1997);
- Contaminated Sites - Guidelines for the NSW Site Auditor Scheme (EPA 1998); and
- Contaminated Sites - Sampling Design Guidelines (EPA 1995).

Aboriginal Cultural Heritage Impacts

- Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation – (DEC, 2005) Available from the Department of Planning website.
- Part 3A EP&A Act Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation' (Department of Planning and DEC 2007). Available from DECC and Department of Planning on request.
- '*Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010)

Threatened Species Impacts

- Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (DEC November 2004) http://www.environment.nsw.gov.au/resources/nature/TBSAGuidelinesDraft.pdf).

  (*Note: Section 6.1 *Assessment of Significance* has now been amended by DECC [2007b]).

- Threatened species survey and assessment guidelines: field survey methods for fauna – Amphibians (DECC April 2009) http://www.environment.nsw.gov.au/resources/threatenedspecies/09213amphibians.pdf

(Note: DECC has recently produced new survey guidelines to cover Amphibians (frogs), which replaces the amphibian section in the DEC (2004) guidelines. However, the survey requirements for all other species (flora and fauna) are still found in the DEC (2004) guidelines).

- Threatened Species Assessment Guidelines – The Assessment of Significance (DECC 2007b).
- Principles for the use of Biodiversity Offsets in NSW (DECC October 2008). http://www.environment.nsw.gov.au/biocertification/offsets.htm
- The BioBanking Assessment Methodology. Further information can be found on the DECC website at: http://www.environment.nsw.gov.au/biobanking/assessmethodology.htm.

- Consideration for assessment of the proposal through the NSW Government's Biodiversity Banking and Offset Scheme (BioBanking). BioBanking is a voluntary process which provides a systematic and consistent framework for counterbalancing (offsetting) the impacts of development to achieve and improve or maintain outcome for biodiversity values. Further information is available at: http://www.environment.nsw.gov.au/biobanking/index.htm

Department of Environment, Climate Change and Water
December 2010

APPENDIX ONE

Threatened species and vegetation communities for consideration in the DGRs for the proposed 50-berth marina and car park at 19 Brisbane Water Drive, Koolewong.

Amphibians:
Green and Golden Bell Frog *Litoria aurea* *

Reptiles
Loggerhead Turtle *Caretta caretta* *
Green Turtle *Chelonia mydas* *
Leathery Turtle *Dermochelys coriacea* *

Birds:
Regent Honeyeater *Anthochaera phrygia* *
Bush Thick-knee *Burhinus grallarius*
Glossy Black Cockatoo *Calyptorhynchus lathami*
Lesser Sand Plover *Charadrius mongolus*
Varied Sittella *Daphoenositta chrysoptera*
White-fronted Chat *Epthianura albifrons*
Little Lorikeet *Glossopsitta pusilla*
Sooty Oyster-catcher *Haematopus fuliginosus*
Pied Oyster-catcher *Haematopus longirostris*
Black-breasted Buzzard *Hamirostra melanosternon*
Little Eagle *Hieraaetus morphnoides*
Black Bittern *Ixobrychus flavicollis*
Swift Parrot *Lathamus discolor* *^
Black-tailed Godwit *Limosa limosa*
Square-tailed Kite *Lophoictinia isura*
Southern Giant Petrel *Macronectes giganteus* *
Barking Owl *Ninox connivens*
Powerful Owl *Ninox strenua*
Osprey *Pandion haliaetus*
Gould's Petrel *Pterodroma leucoptera leucoptera* *
Flesh-footed Shearwater *Puffinus carneipes*
Little Tern *Sterna albifrons*
Masked Owl *Tyto novaehollandiae*
Sooty Owl *Tyto tenebricosa*
Terek Sandpiper *Xenus cinereus*

Mammals:
New Zealand Fur Seal *Arctocephalus forsteri*
Australian Fur Seal *Arctocephalus pusillus doriferus*
Eastern Pygmy Possum *Cercartetus nanus*
Large-eared Pied-Bat *Chalinolobus dwyeri* *
Dugong *Dugong dugon*
Eastern False Pipistrelle *Falsistrellus tasmaniensis*
Little Bentwing-bat *Miniopterus australis*
Eastern Bent-wing Bat *Miniopterus schreibersii* subsp. *oceanensis*
Eastern Freetail bat *Mormopterus norfolkensis*
Large-footed Myotis *Myotis macropus*
Squirrel Glider *Petaurus norfolcensis*
Eastern Chestnut Mouse *Pseudomys gracilicaudatus*
Grey-headed Flying-fox *Pteropus poliocephalus*
Yellow-bellied Sheathtail-bat *Saccolaimus flaviventris*
Greater Broad-nosed Bat *Scoteanax rueppellii*

Endangered Populations
White-fronted Chat *Epthianura albifrons* (Jardine & Selby, 1828) in the Sydney Metropolitan Catchment Management Authority area

Endangered Ecological Communities

The following endangered ecological communities are known to occur within the vicinity of the subject land, and as such have potential to occur given similarities in habitat requirements:

- Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions,
- River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions,
- Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions,
- Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions, and
- Sydney Freshwater Wetlands in the Sydney Basin Bioregion

* = EPBC listed species

Please note this list is provided as a guide only. The proponent is expected to conduct their own searches of available information to compile a list of threatened species, populations and communities for consideration for biodiversity survey of the proposed development site.