



## Office of Water

Major Development Assessments  
Department of Planning  
GPO Box 39  
SYDNEY NSW 2001

17 March 2011

c: Jodie Dabovic  
t: 02 4904 2571  
f: 02 4904 2501  
e: jodie.dabovic@water.nsw.gov.au

Our ref : ER214422  
Your ref: 10/06910

**Attention: Andrew Hartcher**

**SUBJECT: TOMAGO CABLE MANUFACTURING PROJECT, PORT STEPHENS  
(MP10\_0039)**

The NSW Office of Water (NOW) has reviewed the Preliminary Environmental Assessment for the Tomago Cable Manufacturing Project. NOW provides the following advice including **Attachment A** for consideration in the preparation of the environmental assessment:

NOW requires the Environmental Assessment (EA) for the proposal to demonstrate the following:

1. Identification of site water demands in terms of both volume and timing for life of project. This is to also include details of any water reticulation infrastructure/vehicles that supply water to the site.
2. Adequate and secure water supply is available for life of project. Confirmation that water supplies for construction and operation of the mine and associated activities are sources from an appropriately authorised and reliable supply.
3. Existing and proposed water licensing requirements are in accordance with the *Water Act 1912*, *Water Management Act 2000* and *Water Sharing Plan for the Tomago Tomaree Stockton Groundwater Sources 2003*.
4. Baseline monitoring/data (minimum of fortnightly data) of all surface and groundwater sources and dependent ecosystems within and adjacent to the manufacturing project for a minimum of two years.
5. An assessment of impact of the development on adjacent licensed water users, basic landholder rights, surface and groundwater sources and groundwater-dependent ecosystems. This is to meet the requirements of the NSW State groundwater Policy Framework Documents in addition to the *Water Act 1912* and *Water Management Act 2000*.
6. Adequate mitigating and monitoring requirements to address surface and groundwater impacts.

An expanded list of the key issues to be addressed in the environmental assessment is provided in Attachment A.

The Department has provided this information to assist in the development of a comprehensive environmental assessment of the proposed development. If you require further information please contact Jodie Dabovic on 4904 2571.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'm. mignanelli', with a stylized flourish at the end.

**Mark Mignanelli**  
**Manager Major Projects and Assessment**

## **TOMAGO CABLE MANUFACTURING PROJECT, PORT STEPHENS**

### **1. Legislation**

The assessment is required to take into account the objects and regulatory requirements of the *Water Act 1912* and *Water Management Act 2000* (WMA 2000) administered by NOW, as applicable.

### **2. Water Sharing Plans**

Gazetted water sharing plans (WSP) prepared under the provisions of the WMA 2000 establish rules for access to and the sharing of water between the environmental needs of the surface or groundwater source and water users. If the proposal is within a gazetted WSP area the assessment is required to demonstrate how the proposal is consistent with the relevant access and trading rules of the WSP.

### **3. State Government Technical and Policy Documents**

The proposal must address the NSW State Government natural resource management policies, as applicable. Policies to include but not to be limited to:

- a) NSW Inland Groundwater Shortage Zones Order No. 2 (2008)
- b) NSW State Groundwater Policy Framework Document (1997)
- c) NSW State Groundwater Quantity Management Policy (1998)
- d) NSW State Groundwater Quality Protection Policy (1998)
- e) NSW State Groundwater Dependent Ecosystems Policy (2002)
- f) Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
- g) Australian and New Zealand Guidelines for Water Quality Monitoring and Reporting (2000)
- h) Guidelines for the Assessment and Management of Groundwater Contamination (2007)
- i) Guidelines for Groundwater Protection in Australia (1995)

### **4. Groundwater**

NOW is responsible for the management of the groundwater resources so they can sustain environmental, social and economic uses for the people of New South Wales.

#### **a) Licensing**

All proposed groundwater works, including bores and excavations for the purpose of investigation, extraction, dewatering, testing or monitoring must be identified in the proposal and an approval obtained from NOW prior to undertaking such works.

#### **b) Groundwater Source**

The assessment is required to identify groundwater issues and potential degradation to the groundwater source and provide the following:

- Details on the groundwater sources which will be intersected during the industrial estate development.
- Details of any works likely to intersect connect with or result in pollutants infiltrating into the groundwater sources.

- Details of the existing groundwater users within the area (including the environment) and include details of any potential impacts on these users.
- Baseline monitoring or data for a minimum of 2 years fortnightly sampling for groundwater quantity and quality.
- Describe the flow directions and rates and the physical and chemical characteristics of the groundwater source.
- Details on preventing groundwater pollution so that remediation is not required.
- Details of the predicted impacts of any final landform on the groundwater regime.
- Details of the results of any models or predictive tools used to predict groundwater drawdown, inflows into the site and impacts on affected water sources.
- Determine critical thresholds for negligible impacts to groundwater sources.

### **c) Groundwater Dependent Ecosystems**

The NSW Groundwater Dependent Ecosystem Policy provides guidance on the protection and management of GDE and sets out objectives and principles. The assessment is required to identify any impacts on GDEs and address the following:

- i) Identification of potential GDEs within the study area.
- ii) Current GDE condition, water quantity and quality required by the ecosystems (minimum 2 year fortnightly baseline data).
- iii) Flora and fauna assessment for all ecosystems which includes macroinvertebrate and macrophyte diversity and abundance assessments within all water courses within and adjacent to the development area.
- iv) Determine critical thresholds for negligible impacts.
- v) Ensure sufficient groundwater of suitable quality is available to ecosystems when needed.
- vi) Ensure the precautionary principle is applied to protect GDE, particularly the dynamics of flow and availability and the species reliant on these attributes.
- vii) Details on protective measures to minimise any impacts on groundwater dependent ecosystems (GDEs) which will be monitored and protected.

## **5. Watercourse Protection**

The EA must include an assessment of the impact of the proposal on the watercourses and associated riparian vegetation within the site and provide the following:

- i) Identify the sources of surface water within and adjacent to the development area.
- ii) Details of stream order (using the Strahler System).
- iii) Geomorphical assessment of any water course.
- iv) Details of any proposed surface water extraction, including purpose, location of existing pumps, dams, diversions, cuttings and levees.
- v) Detailed description of any proposed development or diversion works including all construction, clearing, draining, excavation and filling.
- vi) Baseline monitoring or data for a minimum of 2 years fortnightly sampling for surface water quantity and quality for all water courses within and adjacent to the development area.
- vii) A detailed description of all potential environmental impacts of any proposed development in terms of vegetation, sediment movement, channel stability, water quality and hydraulic regime.
- viii) A description of the design features and measures to be incorporated into any proposed development to guard against long term actual and potential

environmental disturbances, particularly in respect of maintaining the natural hydrological regime and sediment movement patterns and the identification of riparian buffers.

- ix) Details of the impact on water quality and remedial measures proposed to address any possible adverse effects.
- x) Determine critical thresholds for negligible impacts to water sources.

#### **a) Riparian Protection**

Riparian corridors form a transition zone between terrestrial and aquatic environments and perform a range of important environmental functions. The protection or restoration of vegetated riparian areas is important to maintain or improve the geomorphic form and ecological functions of watercourses through a range of hydrologic conditions.

Although Part 3A Major Projects are exempt from requiring a controlled activity approval (s75U of the EPAA 1979) assessment of the proposal is required to take into account the requirements of relevant water related legislation and the Guidelines for Controlled Activities (August 2010). The guidelines recommend the following minimum Core Riparian Zone (CRZ) widths:

- i) **CRZ of 10 metres** (on both sides of the watercourse) for:
  - o Any first order watercourse where there is a defined channel where water flows intermittently;
- ii) **CRZ of 20 metres** (on both sides of the watercourse) for:
  - o Any permanently flowing first order watercourse, or
  - o Any second order watercourse where there is a defined channel where water flows intermittently or permanently;
- iii) **CRZ of 20 - 40 metres** (on both sides of the watercourse) for:
  - o Any third order or greater watercourse where there is a defined channel where water flows intermittently or permanently. Includes estuaries, wetlands and any parts of rivers influenced by tidal waters – (merit assessment based).

In addition to the above recommended CRZ widths an additional **vegetated buffer of 10 metres** should be provided on both sides of the watercourse measured from the outer edge of the CRZ to allow for edge effects.

The asset protection zone is not to form part of the CRZ or vegetated buffer.

*Note:* Watercourse order as classified under the Strahler System.

#### **b) Contingency Measures**

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

- i) Details of any proposed monitoring programs, including flow rates and quality data.
- ii) Reporting procedures for any monitoring program including mechanism for transfer of information to NOW.
- iii) An assessment of any surface water source that may be sterilised as a consequence of the proposal.
- iv) Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).

- v) Description of the remedial measures or contingency plans proposed.

#### **6. Stormwater Control and Treatment**

NOW requires that all structural works including works for stormwater capture and treatment are located outside any riparian buffers. However, consideration may be given to the construction of on-line works on minor streams with adequate justification.

Any stormwater management plan for the site must maintain environmental flows and inundation patterns in the watercourse so that post development flow match or better pre-development flows.

**End Attachment A**  
**17 March 2011**



Ms Felicity Greenway  
Team Leader – Industry  
Major Development Assessment  
Planning NSW  
23-33 Bridge St  
SYDNEY NSW 2000

Dear Ms Greenway

**Ref 10/06910 – Tomago Cable Manufacturing Project, Port Stephens (MP 10\_0039)**

I refer to your request for comment from Industry & Investment NSW on the above application. Midal Cables Pty Ltd (Midal) proposes to develop an aluminium rod and cable manufacturing plant at Tomago, in the Hunter region. The company plans to take molten aluminium from the neighbouring Tomago smelter and provide immediate value-adding of the product for the local and international market.

Industry & Investment NSW has been working closely with Midal and supports the proposal. The project as proposed would create 290 new jobs in a region where unemployment is currently above the State average and has been above the State average for many years.

The project would also bring \$30 million in foreign investment to the area and is estimated to contribute \$369 million to Gross State Product over the first five years of operation. By processing the aluminium locally, the project will also replace imports and provide increased export opportunities for the region.

If you require further information on this project from Industry & Investment NSW, please do not hesitate to contact me at [anne.glover@business.nsw.gov.au](mailto:anne.glover@business.nsw.gov.au) or by phone on 9338 6774.

Yours sincerely

*A. Glover 24/3/11*

Anne Glover  
A/Executive Director  
Investment Attraction Branch  
**Industry & Investment NSW**



## Environment, Climate Change & Water

Your reference: 10/06910  
Our reference: DOC11/13235  
File No. FIL11/2964  
Contact: Peter Jamieson  
(02) 4908 6818

Major Development Assessments  
Department of Planning  
GPO Box 39  
SYDNEY NSW 2001

Attention: Mr Andrew Hartcher

Dear Mr Hartcher

### **MIDAL TOMAGO CABLE MANUFACTURING PROJECT (10\_0039) DIRECTOR GENERALS REQUIREMENTS**

Reference is made to your letter dated 10 March 2011 (received 17 March 2011) to the Department of Environment, Climate Change and Water (DECCW) seeking environmental assessment requirements and any key issues for the proposed Midal Tomago Cable Manufacturing Project (MP10\_0039), located off School Drive, Tomago, NSW; in the Port Stephens local government area.

DECCW understands that the development proposal will process 50,000 tpa of molten aluminium transported from the Tomago Aluminium Smelter to produce aluminium rod, wire and conductors. The facility will operate 24 hours a day, employing about 119 employees, and will include:

- A dedicated haul road from the Tomago Aluminium Smelter;
- A gas fired furnace and rolling mill for the manufacture of aluminium rod;
- Cooling towers;
- Wire drawing machines;
- Detention and nutrient control facilities associated with water recycling; and
- On site sewage treatment plant.

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 air quality;
- impacts on noise amenity;
- water quality and quantity impacts;
- wastewater management;
- managing possible existing site contamination;
- impacts on threatened species, populations, ecological communities and their habitat; and
- any impacts on Aboriginal cultural heritage values.

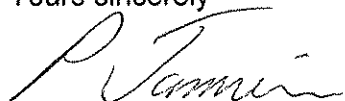
**Attachment A** presents a more detailed explanation of DECCW's main issues regarding the proposed development. Please note that the issuing of DGRs is a statutory requirement for DECCW and should not be construed as support or endorsement of the proposed development.

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.

DECCW requests that the applicant provide **three (3) printed copies and one electronic copy (i.e. \*.pdf format)** of the EA and any supporting or background reports when lodging application with 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 Peter Jamieson on (02) 4908 6818.

Yours sincerely

 29-3-11

**PETER JAMIESON**

**Head Regional Operations Unit – Hunter Region**  
**Environment Protection and Regulation**

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

## **ATTACHMENT A**

### **DEPARTMENT OF ENVIRONMENT, CLIMATE CHANGE AND WATER DIRECTOR-GENERAL'S REQUIREMENTS FOR THE PROPOSED MIDAL TOMAGO CABLE MANUFACTURING PROJECT**

The Department of Environment, Climate Change and Water (DECCW) has been approached by the Department of Planning (DoP) to draft Director General Environmental Assessment Requirements (DG EARs) in preparation of the Environmental Assessment (EA) for the proposed Midal Cable Manufacturing Project located in the Tomago area, NSW. This project application will be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* (EPA Act).

#### **GENERAL INFORMATION**

The following information must be provided in the Environmental Assessment (EA) to enable DECCW to accurately assess the environmental implications of the proposed activity. The EA must 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 will need to 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 proposed facility and details of the surrounding environment;
- The proposed layout of the site;
- All equipment proposed for use at the site;
- Appropriate land use 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 industrial developments, conservation areas, wetlands, etc 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, 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;
- Site rehabilitation following termination of the development.

## AIR QUALITY

The EA must include an Air Quality Impact Assessment (AQIA). The AQIA must identify and describe in detail all possible sources of air pollution and activities/processes with the potential to cause air pollutants including odours and fugitive dust emissions beyond the boundary of the development site. This should cover both the construction and operational phases of the development.

The AQIA should include cumulative impacts associated with existing developments and any developments that have been granted development consent but which have not commenced. For this site and this area sulphur dioxide (SO<sub>2</sub>) impacts will be particularly important. The Proponent should note that air quality in this local area is in exceedance of National Environment Protection Measure (NEPM) standards for SO<sub>2</sub> levels in ambient air on some occasions and DECCW will expect tight controls for SO<sub>2</sub>.

The EA should demonstrate that the facility will operate within DECCW's objectives which are to minimise adverse effects on the amenity of local residents and sensitive land uses and to limit the effects of emissions on local, regional and inter-regional air quality.

The EA must describe in detail the measures proposed to mitigate the impacts and quantify the extent to which the mitigation measures are likely to be effective in achieving the relevant environmental outcomes.

The AQIA must be prepared in accordance with the DECCW's *Approved Methods and Guidance for the Modelling & Assessment of Air Pollutants in NSW*. This publication is available from the DECCW's website at <http://www.environment.nsw.gov.au/air/>. The AQIA must describe the methodology used and any assumptions made to predict the impacts. Air pollutant emission rates, ambient air quality data and meteorological data used in the assessment must be clearly stated and justified.

## NOISE AND VIBRATION IMPACTS

The EA must include a noise assessment of the existing environment, potential impacts and proposed noise amelioration measures. DECCW's *New South Wales Industrial Noise Policy* (EPA, 2000) provides a guide to the methodology and assessment criteria used by DECCW to determine noise planning levels.

The evaluation should take into account the construction and ground-based operational phases of the development over the "operating" hours proposed and take into account adverse weather conditions including temperature inversions. Sound power levels measured or estimated for all plant and equipment should be clearly stated and justified.

The EA should include an assessment of cumulative noise impacts, having regard to existing developments and developments which have received development consent in the area but which have not commenced.

The EA must identify the transport route(s) to be used, the hours of operation and quantify the noise impacts. The DECCW publication *Environmental Criteria for Road Traffic Noise* (EPA, 1999) describes the methods generally used by the DECCW to determine noise planning levels for road traffic noise in locations of varying sensitivity.

## WATER MANAGEMENT

The EA must provide sufficient information to demonstrate that the proposed development can be operated whilst complying with the *Protection of the Environment Operations Act 1997*, in particular, the protection of water quality during construction and operation of the proposed facility.

The methodology, data and assumptions used to design any pollution control works and assess the potential impact of the proposal on water quality (ground and surface waters), must be fully documented and justified.

The EA must identify any fuel or chemical storage areas to be established on the site and describe the measures proposed to minimise the potential for leakage or the migration of pollutants into the soil/waters or from the site.

## **WASTEWATER MANAGEMENT**

The EA should describe the sewage treatment and effluent management processes proposed to be used on site.

Given that on site effluent management is proposed and the site will house a large workforce the EA will need to clearly document the methods of treatment and disposal of wastewater and any environmental impacts associated with the proposed effluent management regime. An assessment of the wastewater management regime using the guidance shown at Attachment B should be undertaken.

The EA should also detail when reticulated sewerage will likely be available to this site.

## **DANGEROUS GOODS and CHEMICAL TRANSPORT, STORAGE and HANDLING**

The EA must outline all details regarding the transport, handling, storage and use of dangerous goods, chemicals and products, including fuel, both on site and with ancillary activities and describe the measures proposed to minimise the potential for leakage or the migration of pollutants into the soil/waters or from the site.

## **MONITORING PROGRAMS**

The EA should include a detailed assessment of any noise, air quality, water quality or waste monitoring required during the construction phase and on-going operation of the facility to ensure that the development achieves a satisfactory level of environmental performance. The evaluation should include a detailed description of the monitoring locations, sample analysis methods and the level of reporting proposed.

## **EPA STATUTORY REQUIREMENTS**

The EA should identify whether the proposed activity is listed in Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act) and will therefore require an Environment Protection Licence (EPL) from DECCW.

General information on licence requirements can also be obtained from DECCW's Environment Line on 131 555 during office hours, or can be found at the DECCW web site at:

<http://www.environment.nsw.gov.au/licensing/>

## **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

### Existing ACH values:

DECCW notes the existence of registered Aboriginal sites in the general locality. DECCW recommends 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 ACH values of the project area.

### Standard requirements:

1. The Environmental Assessment (EA) should 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 the Department of Planning upon request.
2. The EA should include surveys by suitably qualified archaeological consultants in consultation with traditional Aboriginal custodians.
3. The EA should identify the nature and extent of impacts on ACH values across the project area and the 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 should assess the archaeological and Aboriginal significance of the site's ACH values.
5. Describe the actions that will be taken to avoid or mitigate impacts of the project on ACH values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.
6. The EA needs to clearly demonstrate that effective community consultation with Aboriginal communities has been undertaken in assessing impacts, developing 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.
7. If impacts on ACH values are proposed as part of the final development, an assessment of the regional significance of the values to be impacted, the extent to which these values are protected elsewhere in the landscape and consideration of the proposed impacts in the context of 'inter generational equity' should be undertaken.

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. Furthermore, if any new sites or objects are located, they should be recorded on NPWS site cards and registered on DECCW's Aboriginal Heritage Information Management System (AHIMS). AHIMS contact details: Phone: (02) 9585 6470, address: Lvl 6, 43 Bridge Street, Hurstville, NSW, 2220, e-mail: [ahims@environment.nsw.gov.au](mailto:ahims@environment.nsw.gov.au).

## THREATENED SPECIES AND BIODIVERSITY ISSUES

Based on the Preliminary EA and desktop analysis of the local environs, the site is known to be regionally important to a number of threatened species, as such 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. The accompanying report must provide 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);
- provide a detailed assessment of the direct and indirect impacts of the proposal. Indirect impacts should include, where applicable (but are not limited to): - adverse hydrological impacts, both surface and ground water, 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, weed infestation and feral animal implications, and increased human visitation (including litter). If 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;
- address measures to protect and manage riparian corridors, if impacted upon; and
- detail any impacts on adjacent or nearby DECCW conservation estate and provide mitigation or avoidance measures for any adverse impacts.

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: [www.environment.nsw.gov.au/threatenedspecies/surveyassessmentgdlns.htm](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 the 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. However, 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 Biometric, 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):

## **Flora**

For targeted surveys of relevant flora which have suitable habitat available on site please note the following known flowering / fruiting times for each species. These should be used as a guide to time surveys appropriately. Surveying at these times is recommended for species with suitable habitat available that are not readily detectable all year round (e.g. annual species, species cryptic in nature etc) and for species where flowers and/or fruits are necessary for their positive identification. If targeted flora surveys for these species are conducted outside its known phenology then justification must be provided as to why; if this is not provided or considered inappropriate, then all such species will be considered to be present on all available habitat and in viable numbers. For species which do not require flowers / fruits for positive identification (e.g. large trees / shrubs, species readily identifiable from vegetative features etc), then survey as appropriate (\*though please provide justification).

**Netted Bottle Brush (*Callistemon linearifolius*)** – flowers spring to summer (Harden 2002), though Benson & McDougall (1998) note predominantly October to November.

**Leafless Tongue Orchid (*Cryptostylis hunteriana*)\*** – in NSW flowering occurs from December to February (Nicholls 1938, Jones 1993, Harden 1993) though Bell (2001) states that the Central Coast populations (i.e. Freeman's Waterhole, Vales Point and Wyee) flower in November.

**Sand Doubletail (*Diuris arenaria*)** – flowers in August to September (Espallargas 2005).

**Rough Doubletail (*Diuris praecox*)\*** – has a short flowering season, restricted to August to September, and usually no more than 2 weeks (Benson & McDougall 2005), but Espallargas (2005) has recorded 3-4 weeks on Tomaree Peninsula.

**Camfield's Stringybark (*Eucalyptus camfieldii*)** – flowering period November to December (Brooker & Kleinig 1999).

**Parramatta Red Gum (*Eucalyptus parramattensis* subsp. *decadens*)\*** – flowering typically occurs between November to January (Bell 2006).

**Tangled Bedstraw (*Galium australe*)** – poorly recorded in NSW; most flowering collections have been made in late spring to early autumn, potentially overlooked due to its small size and cryptic nature, fruits required to separate genera *Asperula* and *Galium* (Harden 1992); flowers spring – summer (Thompson 2009).

**Small-flower Grevillea (*Grevillea parviflora* subsp. *parviflora*)\*** – flowers from July to December (Benson & McDougall 2000, Makinson 2000, Harden 2002, Fairley 2004)

**Dwarf Kerrawang (*Rulingia prostrata*)\*** – flowers late spring, though mainly between October and November; fruits in summer (Harden 2001).

**Black-eyed Susan (*Tetradlea juncea*)\*** – flowers predominantly November to February, though known to flower early from June onwards (Harden 1992, Driscoll 2003).

## **Fauna**

### **Birds:**

Bush Stone-curlew (*Burhinus grallarius*)

Glossy Black Cockatoo (*Calyptorhynchus lathami*)

Spotted Harrier (*Circus assimilis*)

Varied Sittella (*Daphoenositta chrysoptera*)

White-fronted Chat (*Ephianura albifrons*)

Black-necked Stork (*Ephipporhynchus asiaticus*)\*

Little Lorikeet (*Glossopsitta pusilla*)

Little Eagle (*Hieraaetus morphnoides*)

Swift Parrot (*Lathamus discolor*)\*

Square-tailed Kite (*Lophoictinia isura*)

Turquoise Parrot (*Neophema pulchella*)

Barking Owl (*Ninox connivens*)

Powerful Owl (*Ninox strenua*)

Osprey (Previously *Pandion haliaetus* now *Pandion cristatus*)

Scarlet Robin (*Petroica boodang*)

Grey-crowned Babbler (eastern subspecies) (*Pomatostomus temporalis* subsp. *temporalis*)

Speckled Warbler (*Pyrholaemus sagittatus*)

Rose-crowned Fruit-dove (*Ptilinopus regina*)

Superb Fruit-dove (*Ptilinopus superbus*)

Diamond Firetail (*Stagonopleura guttata*)  
 Red-backed Button-quail (*Tumix maculosa*)  
 Grass Owl (Previously *Tyto capensis* now *Tyto longimemberis*)  
 Masked Owl (*Tyto novaehollandiae*)  
 Regent Honeyeater (Previously *Xanthomyza phrygia* now *Anthochaera phrygia*)\*

#### **Mammals:**

Large-eared Pied Bat (*Chalinolobus dwyeri*)\*  
 Spotted-tailed Quoll (*Dasyurus maculatus*)\*  
 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 adversus*)  
 Squirrel Glider (*Petaurus norfolkensis*)  
 Brush-tailed Phascogale (*Phascogale tapoatafa*)  
 Koala (*Phascolarctos cinereus*)  
 Eastern Chestnut Mouse (*Pseudomys gracilicaudatus*)  
 Grey-headed Flying-fox (*Pteropus poliocephalus*)\*  
 Yellow-bellied Sheath-tail-bat (*Saccolaimus flaviventris*)  
 Greater Broad-nosed Bat (*Scoteanax rueppellii*)

### **Endangered Populations**

- Emu population in the NSW North Coast Bioregion and Port Stephens LGA.

\* indicates species that are listed on 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) 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 Atlas database.

The Preliminary EA indicates two threatened species (i.e. Varied Sittella and Glossy Black Cockatoo) were opportunistically sighted on site. DECCW is of the opinion all these species will need to be targeted in any survey (including other likely species filtered from the subject species list), and included in the assessment of threatened species for the proposal.

### **Habitat Corridors**

The potential fragmentation of and/or indirect impacts on the various corridor links in which the proposal lies or is within close proximity to, needs to be assessed. DECCW notes that the vegetation on the subject site is not mapped within a Regional Corridor, but occurs just south of the Richardson Road Corridor which facilitates movement and conservation of threatened species assemblages (as per Scotts 2003). Given that the vegetation on the subject site is part of a contiguous patch of vegetation which includes the Regional Corridor the EA will need to assess indirect impacts (if applicable) on this regional corridor).

Regional Corridors are landscape corridors designed to provide potential residential and dispersal habitat for threatened faunal assemblages (as described in Scotts 2003), and supplementary habitat for other taxa. Typically corridors are schematic representations and are in the order of kilometres

wide to maintain habitat and to facilitate movement between areas of significant intact habitat. Although they may be discontinuous, due to fragmentation by clearing or degraded through logging and/or agricultural activities, they must still maintain their overall landscape connectivity. DECCW is of the opinion regardless of the patchiness and discontinuous nature associated with parts of these corridors, they still represent an important habitat, nodes and movement linkage for locally occurring threatened species, of which some are highly mobile and can move across gaps in habitat. Fragmentation may impede the movement opportunities for some of the known threatened species of the subject site, and hence impacts on such corridors need to be carefully assessed and documented in the EA.

### 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. DECCW recommends to the proponent any offset proposal must be in accordance with the Department's offset guidelines as outlined below.

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. The document "DECCW Interim Policy On Assessing and Offsetting Biodiversity Impacts of Part 3A Developments" may also be useful in determining an offset / compensatory package in this instance.

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 [e.g. Koala 'floppy-top fencing'], 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.

### **DECCW Conservation Estate**

Likely impacts on any adjoining and/or nearby DECCW estate under the *National Parks and Wildlife Act 1974*, must be assessed, evaluated and reported on. DECCW notes the following conservation estate which contain threatened species in the vicinity (5 km radius) of the proposed development that may be affected or impacted upon either directly or indirectly (e.g. fragmentation or reduction of corridor links): - Hunter Wetland National Park and Tilligerry State Conservation Area.

The assessment should focus on impacts on threatened species (including populations and ecological communities), their habitat, biodiversity in general and landscape / amenity values, but include indirect impacts such as increased surface runoff, changes to hydrology, downstream impacts, loss of connective links and impacts on wildlife corridors, noise and dust impacts, pollution, increased nutrient loads, weed infestation, feral animals and increased physical human impacts, but not be limited to these.

The EA should describe mitigation and management options that will be used to prevent the identified impacts 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.

## 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. dendrograms / 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 and 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 how the proposal will impact (both directly and indirectly) on adjacent DECCW conservation estate
- details of mitigation and offset / compensatory habitat measures.

## References

Bell, S. (2001) Notes on population size and habitat of the vulnerable *Cryptostylis hunteriana* (Orchidaceae) from the Central Coast of New South Wales. *Cunninghamia*, 7(2): 195-204.

Bell, S.A.J. (2006) *Eucalyptus parramattensis* subsp. *decadens*: Status, distribution and habitat. Unpublished report for Department of Environment and Conservation, Newcastle; Eastcoast Flora Survey, Kotara Fair, NSW.

- Benson, D. and McDougall, L. (1998) Ecology of Sydney plant species - Part 6: Dicotyledon family Myrtaceae. *Cunninghamia*, **6**(2): 402-509.
- Benson, D. and McDougall, L. (2000) Ecology of Sydney plant species: Part 7b Dicotyledon families – Proteaceae to Rubiaceae. *Cunninghamia*, **6**(4): 1017-1202.
- Benson, D. and McDougall, L. (2005) Ecology of Sydney plant species - Part 10: Monocotyledon families Lemnaceae to Zosteraceae. *Cunninghamia*, **9**(1): 16-212.
- Briggs, J.D. and Leigh, J.H. (1996) *Rare or Threatened Australian Plants*. 5th Revised Edition. Australian Nature Conservation Agency / CSIRO Publishing, Collingwood.
- Brooker, M.I.H. and Kleinig, D.A. (1999) *Field Guide to Eucalypts: Volume 1 – South-eastern Australia*. Blooming Books, Australia.
- 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)
- DECC (2007a) *Biodiversity Certification of Environmental Planning Instruments: Working Draft*. April 2007. Department of Environment and Climate Change (NSW).
- DECC (2007b) *Threatened Species Assessment Guidelines: The Assessment of Significance*. August 2007. Department of Environment and Climate Change (NSW).
- 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.
- DECC (2009b) *BioBanking Assessment Methodology and Credit Calculator Operational Manual*. Department of Environment and Climate Change NSW, Sydney.
- DECCW (2010) DECCW Interim Policy On Assessing and Offsetting Biodiversity Impacts of Part 3A Developments. Department of Environment, Climate Change and Water NSW, Sydney, November 2010.
- Driscoll, C. (2003) Pollination ecology of *Tetratheca juncea* (Tremandaceae): finding the pollinators. *Cunninghamia*, **8**(1): 133-140.
- Espallargas, N. (2005) *The Distribution and Threatening Processes of Diuris praecox and Diuris arenaria on the Tomaree Peninsula*. Unpublished report to Port Stephens Council.
- Fairley, A. (2004) *Seldom Seen – Rare Plants of Greater Sydney*. New Holland Publishers (Australia) Pty Ltd, Sydney.
- Harden, G.J. (ed.) (1990-2002) *Flora of New South Wales: Volumes 1 - 4*. New South Wales University Press, Kensington.
- 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.
- Jones, D.L. (1993) *Native orchids of Australia* Reed Books: Sydney.
- Makinson, R.O. (2000) 41. Grevillea. In A.J.G Wilson (volume ed.) *Flora of Australia: Volume 17A – Proteaceae 2: Grevillea*. CSIRO Publishing, Melbourne.
- Nicholls, W.H. (1938) A new species of the genus *Cryptostylis* R.Br. *Victorian Naturalist* **54**: 182–183.
- Scotts, D. (2003) *Key Habitats and Corridors for Forest Fauna*. NPWS Occasional Paper 32, National Parks and Wildlife Service, Hurstville, NSW.
- 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.
- Thompson, I.R. (2009) A revision of *Asperula* and *Galium* (Rubiaceae: Rubiaceae) in Australia. *Muelleria*, **27**(1): 36-112.

## **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).

#### **Impacts on Greenhouse Gas Emissions**

- The Greenhouse Gas Protocol: Corporate Standard, World Council for Sustainable Business Development & World Resources Institute  
<http://www.ghgprotocol.org/standards/corporate-standard>
- National Greenhouse Accounts (NGA) Factors, Australian Department of Climate Change (Latest release), <http://www.climatechange.gov.au/publications/greenhouse-acctg/national-greenhouse-factors.aspx>
- National Greenhouse and Energy Reporting System, Technical Guidelines (latest release) <http://www.climatechange.gov.au/en/government/initiatives/national-greenhouse-energy-reporting/tools-resources.aspx>
- National Carbon Accounting Toolbox  
<http://www.climatechange.gov.au/government/initiatives/ncat.aspx>
- Australian Greenhouse Emissions Information System (AGEIS)  
<http://ageis.climatechange.gov.au/>

#### **Noise and Vibration**

- Construction noise should be assessed using DECC's "Interim Construction Noise Guideline" 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 assessed 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: 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.
- Interim Community Consultation Requirements for Applicants (DECCW 2004)
- 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**  
**March 2011**

30 march 2011

DEPARTMENT OF PLANNING  
MINING & INDUSTRY PROJECTS  
GPO Box 39  
SYDNEY NSW 2001

Dear Sir/Madam,

Re: **Proposed:** Tomago Cable Manufacturing Project (MP10\_0039)  
**Property:** LOT: 5 DP: 270328  
21E School Drive TOMAGO

---

Reference is made to the above mentioned application currently being considered by your Department, and your correspondence dated 10 March 2011 seeking comments in relation to Director-General requirements for this proposal.

### **Town Planning Matters**

The key area of comment at this stage in the process are provided below to be considered in the development of an Environmental Assessment Report (EAR) for the proposed site.

1. The land is zoned within Port Stephens Council LEP 2000 as Zone No 4 (a)—Industrial General "A" Zone, and the relevant objectives of this zone are to be considered.
2. The applicant must give consideration to the Port Stephens Local Environmental Plan 2000, and the provisions of Port Stephens Development Control Plan 2007 – B5 Industrial Development within the Environmental Assessment. The proposed cable manufacturing facility and associated buildings should be designed in accordance with the provisions of Council's local plans and policies. Deviation from Councils policies should be adequately justified within the applicants supporting documentation.
3. Buildings and car parking associated with the proposed development should be designed with consideration to the general principles and objectives of Crime Prevention through Environmental Design. In this regard clear lines of sight should be provided between the buildings and car parking, and security lighting should be provided throughout the complex. The applicant should address matters relating to the safety and security of those individuals utilising the site, within the Assessment provided with the application.



4. The subject site is bush fire prone. Any future development of the site should be in accordance with *Planning for Bush Fire Protection 2006*. In this regard appropriate access is to be provided to the site, to ensure that emergency evacuation of the site can be achieved in a bush fire event.
5. The proposed development will attract a Section 94 contribution under Council's Section 94 Contribution Plan. The Department of Planning should ensure that any consent issued is appropriately conditioned to ensure that these fees are made payable to Council. At such time that the application is nearing determination, please Contact Council for detail in response to the correct Section 94 fees payable.
6. Council would seek adequate provision of sewage services for the proposed use. The proposal suggests provision for on-site sewage treatment, in the event the applicant proceeds with this option a s68 application under the *Local Government Act 1993* may be applicable. Council notes the project is located within close proximity, to the North, of the Westrac Development currently under construction, approved with sewer infrastructure. The applicant may wish to explore whether an opportunity exists to incorporate this existing infrastructure into the proposal.

#### **Engineering matters**

7. Port Stephens Council requires that a traffic study be prepared in accordance with the Road & Traffic Authorities (RTA) Guide to Traffic Generating Developments and is to include (but not be limited to) the following:
  - Assessment of all relevant vehicular traffic routes and intersections for access to/from the subject area during the construction and operational phases
  - Current traffic counts for all of the traffic routes and intersections
  - The anticipated additional vehicular traffic generated from the proposed development and the associated trip distribution on the road network during both the construction and operational phases
  - Consideration of the traffic impacts on existing and proposed intersections and the capacity of the local and classified road network to safely cater for the additional traffic generated by the proposed development. The traffic impact shall also include the cumulative traffic impact of other proposed developments in the area including the Westrac development and the neighbouring Northbank proposal.
  - Identify the necessary road network infrastructure upgrades that are required to maintain existing levels of service on both the local and classified road network. In this regard, concept drawings shall be submitted with the Environmental Assessment for any identified road infrastructure upgrades. However, it should be noted that any identified road infrastructure upgrades will need to be to the satisfaction of Council/RTA

- Intersection analysis (such as SIDRA) shall be submitted to determine the need for intersection and road capacity upgrades. The intersection analysis shall include (but not be limited to) the following:
  - Current traffic counts and 10 year traffic growth projections
  - 95th percentile back of queue lengths
  - Delays and level of service on all legs for the relevant intersections
  - Electronic data to be submitted for Council review
- Impact of construction traffic on the road network in the vicinity of the development and measures to minimise any identified impact.

### **Environmental Comments**

8. The Preliminary Environmental Assessment identifies the key environmental issues for the proposed works. Council suggests the full Environmental Assessment should ensure the following:
  - Lower Hunter & Central Coast Regional Environmental Management Strategy (LHCCREMS) flora and fauna survey guidelines are used as a minimum during the ecological assessment.
  - Impacts on the Hunter River estuary and in particular the downstream Ramsar listed wetlands are addressed.
  - Stormwater discharge or waste water from the development should not enter the Hunter River, Council is aware that many premises in the Tomago industrial area do discharge into the river, however, past practices should not be the template for future developments, especially when better options are available and more information is available about the potential impacts from such practices.
  - Port Stephens CKPoM should be considered as it is noted this document replaces State Environmental Planning Policy (SEPP) 44 within in the Port Stephens Council Local Government Area.
  - An Acid Sulfate Soil (ASS) assessment should be undertaken. The Preliminary Environmental Assessment discussed the site as being mapped as 'Class 4 – potential ASS'. It should be noted that work being undertaken in an area close by to this proposal has found ASS within 2m of the surface. As such, a full ASS investigation should be undertaken and if ASS's are found then an ASS Plan of Management in accordance with the ASS Manual should be prepared.

The following comments are a review of the Preliminary – Environmental Assessment Report and the issues that require further clarification in the full EAR.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Rachel Pleasant', with a long horizontal flourish extending to the right.

**Rachel Pleasant | Development Planner | Port Stephens Council**  
**P (02) 49800 378 (9.00am – 12.00 noon)**  
**Email: [rachel.pleasant@portstephens.nsw.gov.au](mailto:rachel.pleasant@portstephens.nsw.gov.au)**

362DA146; I  
11/389  
BK



Major Development Assessments  
Department of Planning  
GPO Box 39  
SYDNEY NSW 2001

**Attention: Mr Andrew Hartcher**

**TOMAGO ROAD (MR302): TOMAGO CABLE MANUFACTURING PROJECT –  
REQUEST FOR DIRECTOR GENERAL'S REQUIREMENTS FOR ENVIRONMENTAL  
ASSESSMENT (MP 10\_0039)**

Dear Mr Hartcher,

I refer to your letter dated 10 March 2011 (Your reference: 10/06910), received on 16 March 2011, requesting the provision of key issues which the Roads and Traffic Authority (RTA) believes should form part of the Director-Generals Environmental Assessment Requirements (DGR's) for the subject proposal.

The Environmental Assessment (EA) should refer to the following guidelines with regard to the traffic and transport impacts of the proposed development:

- Department of Planning EIS Guidelines
  - *Road and Related Facilities*
- Roads and Traffic Authority's *Guide to Traffic Generating Developments*
  - *Section 2 Traffic Impact Studies*

The traffic and transport study shall be prepared in accordance with the RTA's *Guide to Traffic Generating Developments* and is to include (but not be limited to) the following:

- Assessment of all relevant vehicular traffic routes and intersections for access to/from the subject area during the construction and operational phases.
- Current traffic counts for all of the traffic routes and intersections.
- The anticipated additional vehicular traffic generated from the proposed development and associated trip distribution on the road network during both the construction and operational phases.

**Roads and Traffic Authority**

- Consideration of the traffic impacts on existing and proposed intersections and the capacity of the local and classified road network to safely and efficiently cater for the additional vehicular traffic generated by the proposed development. The study shall also give consideration to the cumulative traffic impacts of other proposed and approved developments in the area.
- Identify the necessary road network infrastructure upgrades that are required to maintain existing levels of service on both the local and classified road network. In this regard, preliminary concept drawings shall be submitted with the EA for any identified road infrastructure upgrades. However, it should be noted that any identified road infrastructure upgrades will need to be to the satisfaction of the RTA and Council.
- Intersection analysis (such as SIDRA) shall be submitted to determine the need for intersection and road capacity upgrades. The intersection analysis shall include (but not be limited to) the following:
  - Current traffic counts and 10 year traffic growth projections
  - 95<sup>th</sup> percentile back of queue lengths
  - Delays and level of service on all legs for the relevant intersections
  - Electronic data for RTA review.
- Consideration of the impacts of construction traffic on the road network in the vicinity of the development and measures to minimise any identified impacts.

In addition to the above, the developer should take into account Section 117 (2) direction 3.4 (*Integrating Land Use Development and Transport*) under the *Environmental Planning and Assessment Act 1979*, in relation to the provision of adequate access to public transport, and opportunities for pedestrian and cyclist connections to the surrounding area should be considered.

It is recommended that proponent discuss the project with the RTA prior to commencing preparation of the traffic and transport study.

The RTA will provide further comment on the subject project on receipt of the required traffic and transport study and more detailed information referred as part of the project application process.

Port Stephens Council should also be consulted regarding requirements for assessment of Traffic and Transport conditions.

Please contact me on (02) 4924 0420, if you require further advice.

Yours sincerely,



Dave Young  
Manager, Land Use Development  
Infrastructure Services  
Hunter Region

1 April 2011

Cc General Manager  
Port Stephens Council