Development Assessment Systems and Approvals
Mining Projects
Phone: (02) 9228 6310
Fax: (02) 9228 6466
Email: brendan.liew@planning.nsw.gov.au
23-33 Bridge Street
GPO Box 39
SYDNEY NSW 2001

Mr Leo Sprague
Ammos Resource Management Pty Ltd
26 Glenhaven Road
GLENHAVEN NSW 2156

Dear Mr Sprague

State Significant Development - Director-General's Requirements
Bobs Farm Sand Project (SSD-6395)

The Director General's environmental assessment requirements (DGRs) for the preparation of an Environmental Impact Statement (EIS) for the proposed Bobs Farm Sand Project are attached.

These requirements are based on the information you have provided to date and have been prepared in consultation with relevant Government agencies and Port Stephens Council. Their comments, which you should address appropriately in preparing the EIS, are also attached (see Attachment 2). Please note that Planning and Infrastructure (P&I) may alter these requirements at any time, and that you must consult further with P&I if you do not lodge a development application and EIS for the project within two years of the date of issue of these DGRs. P&I will review the EIS for the project carefully before putting it on public exhibition, and will require you to submit an amended EIS if it does not adequately address the DGRs.

I would particularly like to encourage you to consult broadly during the preparation of the EIS. Clear evidence must be presented to demonstrate that all issues raised during consultation (particularly issues raised by the community) have been addressed in the EIS.

Your development may require separate approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). P&I encourages you to confirm whether such an approval will be required as soon as possible (http://www.environment.gov.au or 6274 1111). If an EPBC Act approval is required, I would appreciate it if you would advise P&I accordingly, as the Commonwealth approval process may be integrated into the NSW approval process, and supplementary DGRs may need to be issued.

I would appreciate it if you would contact P&I at least two weeks before you propose to submit the development application and EIS for your project. This will enable P&I to:

- confirm the applicable fee (see Division 1AA, Part 15 of the *Environmental Planning and Assessment Regulation 2000*); and
- determine the number of copies (hard-copy and CD-ROM) of the EIS required for review.

If you have any enquiries about these requirements, please contact Brendan Liew at the details listed above.

Yours sincerely

21/3/14

David Kitto
Director, Mining
as delegate for the Director-General

Director General's Environmental Assessment Requirements

Section 78A(8A) of the *Environmental Planning and Assessment Act 1979*

State Significant Development

Application Number	SSD-6395
Development	Bobs Farm Sand Project, which includes: • establishment of a quarry to extract and process sand at a rate of approximately 750,000 tonnes per annum, from a total sand resource of 10 million tonnes; • construction of extractive materials processing and transport infrastructure; • transportation of extractive materials off-site via roads; and • rehabilitating the site.
Location	Adjacent to Nelson Bay Road, Bobs Farm, approximately 15 kilometre southwest of Nelsons Bay
Applicant	Ammos Resource Management Pty Ltd
Date of Issue	21 March 2014
General Requirements	The Environmental Impact Statement (EIS) for the development must meet the form and content requirements in Clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*. In addition, the EIS must include a: • detailed description of the development, including: – need for the proposed development; – alternatives considered; – likely components and staging of the development - including construction, operational stage/s and rehabilitation; and – plans of any proposed building works; • consideration of all relevant environmental planning instruments, including identification and justification of any inconsistencies with these instruments; • a risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment; • detailed assessment of the key issues specified below, and any other significant issues identified in this risk assessment, which includes: – a description of the existing environment, using sufficient baseline data; – an assessment of the potential impacts of all stages of the development, including any cumulative impacts, taking into consideration relevant guidelines, policies, plans and statutes; and – a description of the measures that would be implemented to avoid, minimise and if necessary, offset the potential impacts of the development, including proposals for adaptive management and/or contingency plans to manage any significant risks to the environment; and • a statement of commitments, outlining all the proposed environmental management and monitoring measures included in the EIS. The EIS must be accompanied by a report from a qualified quantity surveyor providing: • a detailed calculation of the capital investment value (as defined in clause 3 of the *Environmental Planning and Assessment Regulation 2000*) of the proposal, including details of all the assumptions and components from which the CIV calculation is derived; • a close estimate of the jobs that will be created by the development during the construction and operational phases of the development; and • certification that the information provided is accurate at the date of preparation.

Key Issues	The EIS must address the following specific issues: • **Land Resources** – including a detailed assessment of the potential impacts on: - soils (including any acid sulfate soils) and land capability (including land contamination); - landforms and topography; - land use, including conservation and recreational use; - extractive material resources, including assessment of the size and quality of the resource and description of the methods used to assess the resource and its suitability for the intended applications; and - agricultural resources and/or enterprises in the local area, including: o any change in land-use arising from requirements for biodiversity offsets; and o a detailed description of the measures that would be implemented to avoid and/or minimise the potential impacts of the project on agricultural resources and/or enterprises; • **Water Resources** – including: - detailed assessment of potential impacts on the quality and quantity of existing surface and ground water resources including: o impacts on the existing sand aquifer; o impacts groundwater and surface water resources; o detailed modelling of potential groundwater impacts; o impacts on existing user entitlements; and o impacts on groundwater-dependent and riparian ecology; - a detailed assessment of the potential impacts of the project on: o the quantity and quality of regional water supplies; o regional water supply infrastructure; and o affected licensed water users and basic landholder rights; - a detailed site water balance, including a description of site water demands, water disposal methods (inclusive of volume and frequency of any water discharges), water supply infrastructure and water storage structures; - a detailed consideration of maintenance of an adequate buffer between all excavations and the highest predicted groundwater table; - identification of any licensing requirements or other approvals under the *Water Act 1912* and/or *Water Management Act 2000*; - demonstration that water for the construction and operation of the development can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plan (WSP) or water source embargo; - a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant WSP and the *Hunter Water Regulation 2000*; and - a detailed description of the proposed water management system (including upgraded sewage system), water monitoring program and other measures to mitigate surface and groundwater impacts; • **Biodiversity** – including: - a detailed description of the measures taken to avoid, reduce or mitigate impacts on biodiversity; - accurate estimates of proposed vegetation clearing and impacts on regional significant remnant vegetation, or vegetation corriders; - a detailed assessment of potential impacts of the development on any: o terrestrial or aquatic threatened species or populations and their habitats, endangered ecological communities and groundwater dependent ecosystems; o migratory bird species listed under CAMBA, JAMBA and/or ROKAMBA; and o regionally significant remnant vegetation, or vegetation corridors; - a comprehensive offset strategy to ensure the development maintains or improves the terrestrial and aquatic biodiversity values of the region in the medium to long term; • **Heritage** – including: - an Aboriginal cultural heritage assessment (including both cultural and archaeological significance) which must:

	o demonstrate effective consultation with Aboriginal communities in determining and assessing impacts, and developing and selecting mitigation options and measures; and o outline any proposed impact mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures); and - a Historic heritage assessment (including archaeology) which must: o include a statement of heritage impact (including significance assessment) for any State significant or locally significant historic heritage items; and o outline any proposed impact mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures); • **Traffic & Transport** – including: - accurate predictions of project-related traffic and a detailed assessment of the potential impacts of project-related traffic on the capacity, safety and efficiency of road networks; and - a detailed description of the measures that would be implemented to upgrade and/or maintain the capacity, efficiency and safety of effected roads and intersections over the life of the project; • **Air Quality** – including a quantitative assessment of potential: - construction and operational impacts; - reasonable and feasible mitigation measures to minimise dust emissions; and - monitoring and management measures, in particular real-time air quality monitoring; • **Greenhouse Gases** – including: - a quantitative assessment of potential Scope 1, 2 and 3 greenhouse gas emissions; - a qualitative assessment of the potential impacts of these emissions on the environment; and - an assessment of reasonable and feasible measures to minimise greenhouse gas emissions and ensure energy efficiency; • **Noise** – including a quantitative assessment of potential: - construction, operational and transport noise impacts; - off-site road noise impacts; - reasonable and feasible mitigation measures, including evidence that there are no such measures available other than those proposed; and - monitoring and management measures, in particular real-time and attended noise monitoring; • **Visual** – including: - a detailed assessment of the: o changing landforms on site during the various stages of the project; and o potential visual impacts of the project on private landowners in the surrounding area as well as key vantage points in the public domain; and - a detailed description of the measures that would be implemented to minimise the potential visual impacts of the project; • **Waste** – including: - accurate estimates of the quantity and nature of the potential waste streams of the proposal; and - a description of measures that would be implemented to minimise production of other waste, and ensure that that waste is appropriately managed; • **Hazards –** paying particular attention to public safety, and including bushfires; • **Social & Economic** – including an assessment of the: - potential impacts on local and regional communities, including impacts on social amenity; - a detailed description of the measures that would be implemented to minimise the adverse social and economic impacts of the project, including any infrastructure improvements or contributions and/or voluntary planning agreement or similar mechanism; and - a detailed assessment of the costs and benefits of the development as

	a whole, and whether it would result in a net benefit for the NSW community; and • **Rehabilitation** – including the proposed rehabilitation strategy for the site, having regard to the key principles in the *Strategic Framework for Mine Closure*, including: - rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria; - nominated final land use, having regard to any relevant strategic land use planning or resource management plans or policies; and - the potential for integrating this strategy with any other rehabilitation and/or offset strategies in the region.
Plans and Documents	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the *Environmental Planning and Assessment Regulation 2000*. These documents should be included as part of the EIS rather than as separate documents.
Consultation	During the preparation of the EIS, you must consult with relevant local, State and Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with the: • Commonwealth Department of the Environment; • Office of Environment and Heritage (including the Heritage Branch); • Environment Protection Authority; • Division of Resources and Energy within P&I of Trade and Investment, Regional Infrastructure and Services; • Department of Primary Industries (including the NSW Office of Water, NSW Forestry, Agriculture and Fisheries sections, Catchments and Lands (Crown Lands Division); • NSW Health; • Transport for NSW (including the Centre for Transport Planning, Roads and Maritime Services); • Hunter Local Land Services; • Hunter Water; and • Port Stephens Council. The EIS must: • describe the consultation process used and demonstrate that effective consultation has occurred; • describe the issues raised by public authorities, service providers, community groups and landowners; • identify where the design of the development has been amended in response to issues raised; and • otherwise demonstrate that issues raised have been appropriately addressed in the assessment.
Further consultation after 2 years	If you do not lodge a DA and an EIS for the development within 2 years of the issue date of these DGRs, you must consult further with the Director-General in relation to the requirements for lodgement.
References	The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. While not exhaustive, Attachment 1 contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this development.

ATTACHMENT 1
Technical and Policy Guidelines

The following guidelines may assist in the preparation of the Environmental Impact Statement. This list is not exhaustive and not all of these guidelines may be relevant to your proposal.

Many of these documents can be found on the following websites:
http://www.planning.nsw.gov.au
http://www.bookshop.nsw.gov.au
http://www.publications.gov.au

Policies, Guidelines & Plans

Risk Assessment	
	AS/NZS 4360:2004 Risk Management (Standards Australia)
	HB 203: 203:2006 Environmental Risk Management – Principles & Process (Standards Australia)
Land Resources	
	Draft Agricultural Impact Assessment Guidelines 2011 (DP&I)
	Agfact AC25: Agricultural Land Classification (NSW Agriculture)
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)
Water Resources	
Surface Water	National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC)
	Using the ANZECC Guideline and Water Quality Objectives in NSW (DEC)
	State Water Management Outcomes Plan
	Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009
	NSW Government Water Quality and River Flow Objectives (DECC)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC)
	Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries.
	Managing Urban Stormwater: Treatment Techniques (DECC)
	Managing Urban Stormwater: Source Control (DECC)
	Floodplain Development Manual (DIPNR)
	Floodplain Risk Management Guideline (DECC)
	A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)
	Technical Guidelines: Bunding & Spill Management (DECC)
	Environmental Guidelines: Use of Effluent by Irrigation (DECC)
	Office of Water Guidelines for Controlled Activities (2012)
Groundwater	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	NSW State Groundwater Policy Framework Document (DLWC, 1997)
	NSW State Groundwater Quality Protection Policy (DLWC, 1998)
	NSW State Groundwater Quantity Management Policy (DLWC, 1998)
	Murray-Darling Basin Groundwater Quality. Sampling Guidelines. Technical Report No 3 (MDBC)
	Murray-Darling Basin Commission. Groundwater Flow Modelling Guideline (Aquaterra Consulting Pty Ltd)
	Guidelines for the Assessment & Management of Groundwater Contamination (DECC, 2007)

	Any relevant Water Sharing Plan for groundwater and surface water resources
	NSW Aquifer Interference Policy (2012)
Biodiversity	
	Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna – Amphibians (DECCW 2009)
	Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DECC 2004)
	Guidelines for Threatened Species Assessment (DoP 2005)
	BioBanking Assessment Methodology and Credit Calculator Operational Manual (DECCW 2008)
	The Threatened Species Assessment Guideline – The Assessment of Significance (DECC 2007)
	NSW State Groundwater Dependent Ecosystem Policy (DLWC)
	Policy & Guidelines - Aquatic Habitat Management and Fish Conservation (NSW Fisheries)
	State Environmental Planning Policy No. 44 – Koala Habitat Protection
	Principles for the Use of Biodiversity Offsets in NSW (OEH)
Heritage	
Aboriginal	Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DEC 2005)
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
Historic	NSW Heritage Manual (NSW Heritage Office)
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
Traffic & Transport	
	Guide to Traffic Generating Development (RTA)
	Road Design Guide (RTA)
Air Quality	
	Protection of the Environment Operations (Clean Air) Regulation 2002
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC)
Greenhouse Gases	
	National Greenhouse Accounts Factors (Australian Department of Climate Change (DCC))
	Guidelines for Energy Savings Action Plans (DEUS)
Noise	
	NSW Industrial Noise Policy (DECC)
	Environmental Noise Management – Assessing Vibration: a technical guide (DEC)
	NSW Road Noise Policy (DECCW)
	Interim Guidelines for the Assessment of Noise From Rail Infrastructure Projects (DECC)
Waste	
	Waste Classification Guidelines (DECC)
Hazards	
	State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
	Hazardous and Offensive Development Application Guidelines - Applying SEPP 33
	Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis

Rehabilitation	
	Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia)
	Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia)
	Strategic Framework for Mine Closure (ANZMEC-MCA)
Socio-Economic	
	Draft Economic Evaluation in Environmental Impact Assessment (DoP)
	Techniques for Effective Social Impact Assessment: A Practical Guide (Office of Social Policy, NSW Government Social Policy Directorate)
	NSW Government Guidelines for Economic Appraisal

ATTACHMENT 2
Agency Input into Key Assessment Issues

Trade & Investment
Resources & Energy

12th February 2014

Carl Dumpleton
Senior Planner, Mining Projects
NSW Department of Planning & Infrastructure
GPO Box 39
Sydney NSW 2001

Emailed
Your Reference: SSD tba
Our Reference: OUT14/5153

Dear Mr Dumpleton,

Re: Request for Director General Requirements
Bobs Farm Sand Project

Thank you for the opportunity to provide advice on the subject proposal.

This is a response from NSW Trade & Investment, incorporating advice from its Agriculture, Fisheries, and Mineral Resources Branches. Specific Fisheries or Forests issues arising may be provided in separate correspondence.

Mineral Resources Issues
Sand is not a prescribed mineral under the Mining Act, 1992. Therefore, DTIRIS – Mineral Resources Branch has no statutory role in authorising or regulating the extraction of this commodity, apart from its role under the *Work Health & Safety Act 2011* and associated regulations and the Mine Health and Safety Act 2004 and associated regulations, for ensuring the safe operations of mines and quarries.

All environmental reports (EISs or similar) accompanying Development Applications for extractive industry lodged under the Environmental Planning & Assessment Act 1979 should include a resource assessment (as detailed in Attachment A) which:

- Documents the size and quality of the resource and demonstrates that both have been adequately assessed; and
- Documents the methods used to assess the resource and its suitability for the intended applications.

Applications to modify, expand, extend or intensify an existing consent that has already been adequately reported using the above protocol in publicly available documents, may restrict detailed documentation to the additional resources to be used, if accompanied by a summary of past resource assessments and of past production.

DTIRIS - Mineral Resources Branch collects data on the quantity and value of construction materials produced annually throughout the State. Forms are sent to all operating quarries at the end of each financial year for this purpose. The statistical data thus collected is of great value to Government and industry in planning and resource management, particularly as a basis for analysing trends in production and for

estimating future demand for particular commodities or in particular regions. In order to assist in the collection of construction material production data, the proponent should be required to provide annual production data for the subject site to DTIRIS - Mineral Resources Branch as a condition of any new or amended development consent.

Queries regarding the above information, and future requests for advice in relation to this matter, should be directed to the MRB Land Use team at landuse.minerals@industry.nsw.gov.au.

Agricultural Issues for Extractive Industries (Quarries)

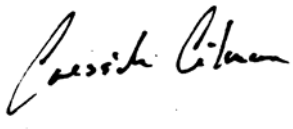
The relevant agricultural issues to consider when preparing and also when assessing extractive industry proposals are set out in the Departments' Guideline: *Agricultural issues for Extractive Industries* available on our website; http://www.dpi.nsw.gov.au/environment/landuse-planning/agriculture/extractive-industries. The guideline also documents recommended project design and mitigatory responses.

The guideline is part of a series designed to help consent authorities identify potential agricultural impacts, and assess whether such proposals can avoid conflict with existing agricultural developments; and protect valuable food and fibre production resources. The guidelines can similarly help consultants and proponents and are available from the Department of Primary Industries land use planning web portal: http://www.dpi.nsw.gov.au/environment/landuse-planning/agriculture .

Fisheries Issues

General issues are summarised in Attachment B.

Yours sincerely



Cressida Gilmore
Team Leader Land Use

Encl. Attachments "A to B"

ATTACHMENT A

TRADE & INVESTMENT NSW
RESOURCES & ENERGY DIVISION (Mineral Resources Branch)

ENVIRONMENTAL and WORK HEALTH & SAFETY ASSESSMENT REQUIREMENTS FOR CONSTRUCTION MATERIAL QUARRY PROPOSALS

It is in the best interests of both the proponent and the community to fully assess the resources which are to be extracted. This means that a thorough geological assessment should be undertaken to determine the nature, quality and extent of the resource. Failure to undertake such an assessment could lead to operational problems and possibly even failure of the proposal.

The following issues need to be addressed when preparing an environmental assessment (EA) or environmental impact statement (EIS) for a proposed construction materials (extractive materials) quarry:

Resource Assessment

1. A summary of the regional and local geology including information on the stratigraphic unit or units within which the resource is located.

2. The amount of material to be extracted and the method or methods used to determine the size of the resource (e.g. drilling, trenching, geophysical methods). Plans and cross-sections summarising this data, at a standard scale, showing location of drillholes and/or trenches, and the area proposed for extraction, should be included in the EA or EIS. Relevant supporting documentation such as drill logs should be included or appended. Major resource proposals should be subject to extensive drilling programs to identify the nature and extent of the resource.

3. Characteristics of the material or materials to be produced:
   a) For structural clay/shale extraction proposals, ceramic properties such as plasticity, drying characteristics (e.g. dry green strength, linear drying shrinkage), and firing characteristics (e.g. shrinkage, water absorption, fired colour) should be described.
   b) For sand extraction proposals, properties such as composition, grainsize, grading, clay content and contaminants should be indicated. The inclusion of indicative grading curves for all anticipated products as well as the overall deposit is recommended.
   c) For hard rock aggregate proposals, information should be provided on properties such as grainsize and mineralogy, nature and extent of weathering or alteration, and amount and type of deleterious minerals, if any.

d) For other proposals, properties relevant to the range of intended uses for the particular material should be indicated.

Details of tests carried out to determine the characteristics of the material should be included or appended. Such tests should be undertaken by NATA registered testing laboratories.

4. An assessment of the quality of the material and its suitability for the anticipated range of applications should be given.

5. The amount of material anticipated to be produced annually should be indicated. If the proposal includes a staged extraction sequence, details of the staging sequence needs to be provided. The intended life of the operation should be indicated.

6. If the proposal is an extension to an existing operation, details of history and past production should be provided.

7. An assessment of alternative sources to the proposal and the availability of these sources. The impact of not proceeding with the proposal should be addressed.

8. Justification for the proposal in terms of the local and, if appropriate, the regional context.

9. Information on the location and size of markets to be supplied from the site.

10. Route(s) used to transport quarry products to market.

11. Disposal of waste products and the location and size of stockpiles.

12. Assessment of noise, vibration, dust and visual impacts, and proposed measures to minimise these impacts.

13. Proposed rehabilitation procedures during, and after completion of, extraction operations, and proposed final use of site.

14. Assessment of the ecological sustainability of the proposal.

Health and Safety Issues

In relation to the health & safety of mining and quarrying operations, the following issues should be addressed:

1. All operations are to comply with the following Acts & Regulations
   a. *Work Health & Safety Act 2011*
   b. Work *Health & Safety Regulations 2011*
   c. *Mine Health & Safety Act 2004*
   d. *Mine Health & Safety Regulations 2007*

2. The mine holder must nominate the mine operator in writing on the prescribed form to the Chief Inspector as required by the *Mine Health & Safety Act 2004* Section 22 prior to the commencement of extraction.

3. The operator of the mine must appoint a production manager as required by the *Mine Health & Safety Regulation 2007* Clause 16 and the operator must notify the Chief Inspector of the appointment in writing as required by the *Mine Health & Safety Regulation 2007* Clause 18 prior to the commencement of extraction.

4. Any blasting operations carried out by the mine operator must comply with the *Explosives Act 2003* and the *Explosives Regulations 2005*.

Mineral Ownership

The *Mining Act 1992* applies to those commodities prescribed by the regulations of the Act (Schedule 2, Mining Regulation 2003). Most construction materials are not prescribed minerals under the *Mining Act 1992*. In general terms, this means these materials are owned by the Crown where they occur on Crown land and by the landowner in the case of freehold land. A Mining Title is not required for their extraction although a Crown Lands licence is required where they occur on Crown land.

Construction materials such as *sand (other than marine aggregate), loam, river gravel, and coarse aggregate materials such as basalt, sandstone, and granite* are not prescribed minerals under the *Mining Act 1992*. Therefore, Trade & Investment NSW has no statutory responsibility for authorising or regulating the extraction of these commodities, apart from its role under the *Mine Health and Safety Act 2004* with respect to the safe operation of mines and quarries. However, the Department is the principal government authority responsible for assessing the State's resources of construction materials and for advising State and local government on their planning and management.

Some commodities, notably *structural clay (ie clay for brick, tile and pipe manufacture), dimension stone (except for sandstone), quartzite, kaolin, limestone and marine aggregate* are prescribed minerals under the *Mining Act 1992*. Minerals which are prescribed as minerals under the terms of the Mining Act may, in some cases belong either to the Crown or to the landowner, depending on a number of factors including the date on which the mineral was proclaimed and the date of alienation of the land. The proponent needs to determine whether the material is privately owned or Crown mineral (publicly owned). If it is privately owned, then either a notification under Section 8 of the Mining Act 1992 or, alternatively, a mining lease or mineral claim would be required. If it is a Crown mineral, an application for a mining lease or mineral claim will have to be lodged.

If you are unsure whether a mining title is required for your proposal you should contact NSW Trade & Investment, Resources & Energy Division.

ATTACHMENT B

Primary Industries Division - Aquatic Habitat Protection Requirements

Matters to be Addressed

Definitions

The definitions given below are relevant to these requirements:

Fish means any part of marine, estuarine or freshwater fish or other aquatic animal life at any stage of their life history (whether alive or dead). This includes aquatic molluscs, crustaceans, echinoderms, worms, aquatic insect larvae and other macroinvertebrates .

Marine vegetation means any species of plant that at any time in its life must inhabit water (other than fresh water).

Waters refers to all waters including tidal waters as well as flowing streams, irregularly flowing streams, gullies, rivers, lakes, coastal lagoons, wetlands and other forms of natural or man made water bodies on both private and public land.

1. General Requirements

- Area which may be affected either directly or indirectly by the development or activity should be identified and shown on an appropriately scaled map (1:25000) and aerial photographs.
- All waterbodies and waterways within the proposed area of development are to be identified.
- Description and maps of aquatic vegetation, snags, gravel beds and any other protected, threatened or dominant habitats should be presented. Description should include area, density and species composition.
- A survey of fish species should be carried out and results included. Existing data should be used only if collected less than 5 years previously.
- Identification of recognised recreational and commercial fishing grounds, aquaculture farms and/or other waterways users.
- Details of the location of all component parts of the proposal, including any auxiliary infrastructure, timetable for construction of the proposal with details of various phases of construction
- Aspects of the management of the proposal, both during construction and after completion, which relate to impact minimisation and site rehabilitation eg Environment Management Plans, Rehabilitation Plans, Compensatory offsets
- For each freshwater body identified on the plan, the plan should include, either by annotation or by an accompanying table, hydrological and stream morphology information such as: flow characteristics, including any seasonal variations, bed substrate, and bed width
- For each marine or estuarine area identified on the plan, the plan should include, either by annotation or by an accompanying table, hydrological and stream morphology information such as: tidal characteristics, bed substrate, and depth contours

DREDGING AND RECLAMATION ACTIVITIES

- Purpose of works
- Type(s) and distribution of marine vegetation in the vicinity of the proposed works
- Method of dredging to be used

- Timing and Duration of works
- Dimension of area of works including levels and volume of material to be extracted or placed as fill
- Nature of sediment to be dredged, including Acid Sulphate Soil, contaminated soils etc
- Method of marking area subject to works
- Environmental safeguards to be used during and after works
- Measures for minimising harm to fish habitat under the proposal
- Spoil type and source location for reclamation activities
- Method of disposal of dredge material
- Location and duration of spoil stockpiling, if planned

ACTIVITIES THAT DAMAGE MARINE VEGETATION

- Type of marine vegetation to be harmed
- Map and density distribution of marine vegetation
- Reasons for harming marine vegetation
- Methods of harming marine vegetation
- Construction details
- Duration of works/activities
- Measures for minimising harm to marine vegetation under the proposal and details of compensatory habitat development to replace lost vegetation.
- Method and location of transplanting activities or disposal of marine vegetation

ACTIVITIES THAT BLOCK FISH PASSAGE

- Type of activity eg works in a stream that change flow or morphological characteristics of the stream, including culvert and causeway construction, sediment and erosion control measures, stormwater diversion structures.
- Length of time fish passage is to be restricted, whether permanent or temporary
- Timing of proposed restriction. Should be timed to avoid interfering with migratory movements of fish.
- Remediation or compensatory works to offset any impacts

THREATENED SPECIES

- Threatened aquatic species assessment (Section 5c, EP&A Act 1979). This must be addressed even if there are no Threatened Species present on the site.
- Seven Part Test

FISHING AND AQUACULTURE

- Outline and document commercial, recreational and indigenous fishing activities that may be affected by the activity, including regular commercial fishing grounds, popular recreational fishing sites, recognised indigenous harvesting sites.
- Will the activity interfere with or cause an impact on the continuing operation and viability of nearby aquaculture or mariculture ventures.

2. Initial Assessment

A list of threatened species, endangered populations and endangered ecological communities must be provided. In determining these species, consideration must be given to the habitat types present within the study area, recent records of threatened species in the locality and the known distributions of these species.

In describing the locality in the vicinity of the proposal, discussion must be provided in regard to the previous land and water uses and the effect of these on the proposed site. Relevant historical events may include land clearing, agricultural activities, water

abstraction/diversion, dredging, de-snagging, reclamation, siltation, commercial and recreational activities.

A description of habitat including such components as stream morphology, in-stream and riparian vegetation, water quality and flow characteristics, bed morphology, vegetation (both aquatic and adjacent terrestrial), water quality and tide/flow characteristics must be given. The condition of the habitat within the area must be described and discussed, including the presence and prevalence of introduced species. A description of the habitat requirements of threatened species likely to occur in the study area must be provided.

In defining the proposal area, discussion must be provided in regard to possible indirect effects of the proposal on species/habitats in the area surrounding the subject site: for example, through altered hydrological regimes, soil erosion or pollution. The study area must extend downstream and/or upstream as far as is necessary to take all potential impacts into account.

Please Note: Persons undertaking aquatic surveys may be required to hold or obtain appropriate permits or licences under relevant legislation. For example:

Fisheries Management Act 1994
- Permit to take fish or marine vegetation for research or other authorised purposes (Section 37)
- Licence to harm threatened (aquatic) species, and/or damage the habitat of a threatened species (Section 220ZW).

Animal Research Act 1985:
- Animal Research Authority to undertake fauna surveys.

It is recommend that, prior to any field survey activities taking place, those persons proposing to undertake those activities give consideration to their obligation to obtain appropriate permits or licences which may be required in the specific context of the proposed survey activities.

3. Assessment of Likely Impacts

The EIS must:
- describe and discuss significant habitat areas within the study area;
- outline the habitat requirements of threatened species likely to occur in the study area;
- indicate the location, nature and extent of habitat removal or modification which may result from the proposed action;
- discuss the potential impact of the modification or removal of habitat;
- identify and discuss any potential for the proposal to introduce barriers to the movement of fish species; and
- describe and discuss any other potential impacts of the proposal on fish species or their habitat.

For all species likely to have their lifecycle patterns disrupted by the proposal to the extent that individuals will cease to occupy any location within the subject site, the EIS must describe and discuss other locally occurring populations of such species. The relative significance of this location for these species in the general locality must be discussed in terms of the extent, security and viability of remaining habitat in the locality.

4. Ameliorative Measures

The EIS must consider how the proposal has been or may be modified and managed to conserve fisheries habitat on the subject site and in the study area.

In discussing alternatives to the proposal, and the measures proposed to mitigate any effects of the proposal, consideration must be given to developing long term management strategies to protect areas within the study area which are of particular importance for fish species. This may include proposals to restore or improve habitat.

Any proposed pre-construction monitoring plans or on-going monitoring of the effectiveness of the mitigation measures must be outlined in detail, including the objectives of the monitoring program, method of monitoring, reporting framework, duration and frequency.

In the event of a request for concurrence or consultation of the Director of Industry & Investment NSW, one (1) copy of the EIS should be provided to Industry & Investment NSW in order for the request to be processed.

It should be noted that Industry & Investment NSW has no regulatory or statutory role to review draft EISs unless they are accompanied by or are requested as part of a licence application under Part 7A of the FM Act. However, Industry & Investment NSW is available to provide advice to consent and determining authorities regarding Fisheries' opinion as to whether the requirements have been met if requested, pending the availability of resources and other statutory priorities.

Useful Information

To help you in the preparation of an EIS, the publication "*Guidelines for the Assessment of Aquatic Ecology in EIA"* (Draft 1998) produced by the Department for Urban Affairs and Planning may prove useful in outlining appropriate procedures and methodologies for conducting aquatic surveys.

Should you require any further information on these requirements please contact the Aquatic Habitat Protection Office at Port Stephens on 4916 3931.

Department of Primary Industries

OUT14/6325

Mr Carl Dumpleton
Mining Projects
NSW Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

26 FEB 2014

Carl.Dumpleton@planning.nsw.gov.au

Dear Mr Dumpleton,

Bobs Farm Sand Quarry (SSD 14_6395)
Request for input into Director General Requirements

I refer to your email dated 6 February 2014 to the Department of Primary Industries in respect to the above matter.

Comment by Fisheries NSW
Fisheries NSW express some concerns about the proposal to extract sand from below the water table. As such the proponent would need to demonstrate that there would be no adverse impacts on nearby waterways or aquaculture ventures. This would include; drawdown of water table, salinisation of groundwater, any discharge of water from the site (including volumes and quality).

The EIS will need to consider SEPP 62 - Sustainable Aquaculture and will need to demonstrate that there will be no impacts on water quality in Port Stephens that will adversely affect the local oyster industry. There are numerous Priority Oyster Aquaculture Areas in Port Stephens. The NSW Oyster Industry Sustainable Aquaculture Strategy (OISAS) sets out the location of these, along with water quality guidelines. OISAS can be accessed at:
http://www.dpi.nsw.gov.au/fisheries/aquaculture/publications/general/industry-strategy.

For further information please contact Scott Carter, Senior Conservation Manager, (Port Stephens Office) on 4916 3931, or at scott.carter@dpi.nsw.gov.au

Comment by NSW Office of Water
NSW Office of Water requires the EIS for the proposal to demonstrate the following:

1. An assessment of potential impacts to groundwater resources, groundwater dependent ecosystems and existing groundwater users and measures

proposed to avoid or mitigate potential impacts, both during and post-operations. The EIS will need to address the requirements of relevant policy including the Aquifer Interference Policy.

2. Details of proposed water management on site including groundwater extraction volumes and surface water capture, water use, management structures and disposal/retention methods.

3. Proposed water licensing requirements in accordance with the *Water Management Act 2000* and relevant water sharing plans. The proponent will be required to ensure they hold adequate licensed entitlement commensurate with the anticipated volume of groundwater take and surface water take prior to this take occurring. This includes incidental take during operations and any ongoing take post-operations.

4. Preparation of a surface water management plan and groundwater management plan to identify adequate monitoring and mitigation requirements to address surface water and groundwater impacts and to integrate the proposed water balance and management for the site.

It is highly recommended that the proponents liaise with the Office of Water during development of the EIS to ensure adequate assessment of potential impacts to water resources.

Additional detailed comment is provided in Attachment A.

Comment by Office of Agricultural Sustainability and Food Security
In accordance with arrangements for mining proposals that affect agricultural land, the Office of Agricultural Sustainability and Food Security will respond separately to your Department.

For further information please contact Robert Williamson, Leader Regional Services (Orange office) on 6391 3166, or at: robert.williamson@dpi.nsw.gov.au.

Yours sincerely

Kristian Holz
Director, Policy Coordination, Corporate Planning & Governance

Attachment A

Bobs Farm Sand Quarry (SSD 14_6395)
Request for Input into Director General Requirements
Additional Comment by NSW Office of Water

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1. Legislation

The Environmental Impact Statement (EIS) is required to demonstrate that the proposed project complies with the relevant requirements of the *Water Management Act 2000* (WMA 2000) including the objects and water management principles of the WMA 2000.

For further information, see http://www.water.nsw.gov.au/Water-management/Law-and-Policy/default.aspx.

2. Water Sharing Plans

Water sharing plans are legally enforceable statutory plans under the WMA 2000. Water sharing plans provide rules for the sharing of water between the environment and water users, and also between different types of water users such as town water supply, rural domestic supply, stock watering, industry and irrigation.

The proposed project is under the *Water Sharing Plan for the Karuah River Water Source 2003* (surface water) and the Stockton Groundwater Source under the *Water Sharing Plan for the Tomago Tomaree Stockton Groundwater Sources 2003* (groundwater). The EIS is required to demonstrate how the proposed project is consistent with the rules in these plans.

3. Policies and Guidelines

The EIS is required to identify water management policies and guidelines that are relevant to the proposed project. The EIS should detail the extent to which the proposed project is consistent with relevant policies and guidelines, and justify any inconsistencies.

The following water management policies and guidelines may be relevant to the proposed project:

- *NSW Aquifer Interference Policy* (2012),
- *The NSW State Groundwater Policy Framework Document* (1997) and its component policies, consisting of:
    - *The NSW Groundwater Quality Protection Policy* (1998), and
    - *The NSW State Groundwater Dependent Ecosystems Policy* (2002),
- *NSW Water Extraction Monitoring Policy* (2007),
- *NSW Guidelines for Controlled Activities*, consisting of:
    - *Guidelines for in-stream works on waterfront land* (2012),
    - *Guidelines for laying pipes and cables in watercourses on waterfront land* (2012),
    - *Guidelines for outlet structures on waterfront land* (2012),
    - *Guidelines for riparian corridors on waterfront land* (2012),
    - *Guidelines for vegetation management plans on waterfront land* (2012), and
    - *Guidelines for water crossings on waterfront land* (2012),
- *NSW Water Conservation Strategy* (2000),
- *Australian Groundwater Modelling Guidelines (2012),*

- *National Water Quality Management Strategy*, including:
    - *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2000),
    - *Australian and New Zealand Guidelines for Water Quality Monitoring and Reporting* (2000), and
    - *Guidelines for Groundwater Protection in Australia* (1995).

These policies and guidelines are available at: http://www.water.nsw.gov.au/Water-Management/Law-and-Policy/Key-policies/default.aspx and http://www.water.nsw.gov.au/Water-Licensing/Approvals/Controlled-activities/default.aspx.

4. Water requirements and water licences

The EIS should include a detailed assessment of water requirements for the proposed project. The EIS should demonstrate the following:

- An adequate and secure water supply is available for the life of the proposed project.
- Water supplies will be taken from an appropriately authorised and reliable supply.
- Any incidental take of water will be appropriately authorised.
- Any water licences required to authorise the taking of water can be obtained through application and/or trade.

To demonstrate the above, the following information is essential for inclusion in the EIS:

- Identification of water requirements for the life of the proposed project in terms of both volume and timing.
- For all proposed surface and groundwater extraction, details of: extraction location, method of extraction, expected annual extraction volumes, and identification of the water source(s) that water will be taken from.
- Identification of any proposed use of new or existing dams, and calculation of the maximum harvestable right dam capacity for the site - see http://www.water.nsw.gov.au/Water-licensing/Basic-water-rights/Harvesting-runoff/default.aspx.
- Identification of any requirements (including potential requirements) to intercept or extract groundwater and details of predicted dewatering volumes.
- Analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of the water sharing plans.

5. Impacts on water sources

The EIS should include a detailed assessment of the potential impact of the proposed project on the water sources of the State. This assessment should include the following:

- Description of the surrounding environment including surface water catchments, groundwater systems, dependent ecosystems and existing water users.
- Identification of all existing and proposed works to take or manage water (i.e. water management works[1]) including monitoring bores, and details of consistency with approval requirements.
- Identification of all proposed controlled activities and aquifer interference activities, and details of consistency with relevant policies and guidelines.

[1] As defined in the *Water Management Act 2000*, Dictionary section.

- Predictive assessment of the impact of the proposed project on the following:
    - surface water sources, floodplains, surface water dependent ecosystems and existing surface water users – see section 5.1,
    - groundwater sources, groundwater dependent ecosystems and existing groundwater users – see sections 5.2 and 5.3.
- Details of critical thresholds for negligible impacts to surface and groundwater sources and dependent ecosystems.
- A commitment to adequate ongoing monitoring of surface and groundwater sources and dependent ecosystems within and adjacent to the proposed project area to verify predictive assessments.
- Analysis of options for the proposed project in terms of avoiding impacts on surface and groundwater sources, floodplains, dependent ecosystems, basic landholder rights to water and adjacent/downstream licensed water users. If the options analysis cannot demonstrate avoidance, then mitigation, remediation and rehabilitation options should be examined.
- Contingency strategies linked to monitoring results and rehabilitation programs, including:
    - reporting procedures for ongoing monitoring programs, including mechanism for transfer of information to the Office of Water,
    - identification of any nominal thresholds as to the level of impact beyond which contingency strategies would be initiated,
    - detailed description of the contingency strategies proposed, and
    - any funding assurances covering the anticipated post development maintenance cost, for example, rehabilitation maintenance, ongoing monitoring.
- A commitment to restore any land, water sources and dependent ecosystems which are degraded by the proposed project.

5.1 Surface water assessment

The predictive assessment of the impact of the proposed project on surface water sources should include the following:

- Identification of all surface water sources including watercourses and wetlands transected by or adjacent to the proposed project.
- Detailed description of dependent ecosystems and existing surface water users within the area, including basic landholder rights to water and adjacent/downstream licensed water users.
- Baseline monitoring at an appropriate frequency and scale and over a sufficient period of time to adequately characterise all surface water sources and dependent ecosystems within and adjacent to the project area.
- Assessment of predicted impacts on the following:
    - flow of surface water, sediment movement, channel stability, and hydraulic regime,
    - water quality,
    - dependent ecosystems,
    - existing surface water users, and
    - planned environmental water and water sharing arrangements prescribed in the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009*.

5.2 Groundwater assessment

The predictive assessment of the impact of the proposed project on groundwater sources should include the following:

- Identification of groundwater sources which may be impacted upon as a result of the proposed project.
- Detailed description of groundwater dependent ecosystems and existing groundwater users within the area, including basic landholder rights to water and adjacent licensed water users.
- Baseline monitoring at an appropriate frequency and scale and over a sufficient period of time to adequately characterise all groundwater sources and dependent ecosystems within and adjacent to the project area.
- Description of groundwater flow directions and rates, physical and chemical characteristics, and highest predicted groundwater level at the site.
- Details of any potential works likely to result in pollutants infiltrating into the groundwater.
- Details of proposed methods of waste water disposal and approval from the relevant authority.
- Assessment of predicted impacts on the following:
    - yield of groundwater,
    - water quality,
    - groundwater dependent ecosystems – see section 5.3, and
    - existing groundwater users.
- Identification of any groundwater source or aquifer that may be sterilised as a consequence of the proposed project.
- Details of the predicted impacts of any final landform on the groundwater regime.
- Justification of criteria regarding completion of any rehabilitation program and the final landform, and details of management arrangements for post-operational phases of the proposed project – see section 5.4.

5.3 Groundwater Dependent Ecosystems

Groundwater dependent ecosystems (GDEs) rely on groundwater for their species composition and their natural ecological processes. Examples of ecosystems which depend on groundwater are wetlands, terrestrial vegetation such as red gum forests, ecosystems in streams fed by groundwater (gaining streams), aquifer and cave ecosystems, springs, and hanging valleys and swamps.

For GDEs (including potential GDEs) identified within the area, the EIS should provide the following:

- Details of current GDE condition, and groundwater quality and quantity requirements.
- Assessment of predicted impacts on GDEs.
- Detailed description of any measures to be incorporated into the proposed project to avoid or minimise long-term actual and potential impacts on GDEs, including measures to:
    - maintain natural patterns of groundwater flow,
    - avoid disrupting groundwater levels that are critical for ecosystems,
    - avoid pollution or causing adverse changes in groundwater quality, and
    - rehabilitate degraded groundwater systems where practical.

5.4 Rehabilitation and Final Landform Management

The EIS should provide the following:

- Details of proposed rehabilitation measures to restore any land, water sources and dependent ecosystems which are degraded by the proposed project.
- Justification of criteria regarding completion of any rehabilitation program.
- Details of the measures to be undertaken to ensure that sufficient resources are available to implement the proposed rehabilitation program.
- Justification of the proposed final landform with regard to minimising impacts on local and regional surface and groundwater sources, floodplains, dependent ecosystems, basic landholder rights to water and adjacent/downstream licensed water users.
- Details of measures for the ongoing management of the site following the cessation of the proposed project.

End Attachment A

NSW GOVERNMENT | Department of Primary Industries

OUT14/4745

21 FEB 2014

Mr Carl Dumpleton
Senior Planner - Mining Projects
NSW Department of Planning & Infrastructure
GPO Box 39
SYNDEY NSW 2001

Dear Mr Dumpleton

Thank you for your letter of 6 February 2014 concerning Ammos Resource Management Pty Ltd, request for Director Generals Requirements (DGRs) for the Bobs Farm Sand Project (SSD 6395).

The Office of Agricultural Sustainability & Food Security (O AS&FS) has reviewed the various documents provided from the proponent (received by email from NSW Department of Planning and Infrastructure dated 6 February and 17 February 2014) and requests that an Agricultural Impact Statement is included in the EA/EIS. Specific guidance on satisfying the requirements for the AIS should be taken from the associated Department of Primary Industries, Agricultural Impact Statement Technical Notes which are available at: http://www.dpi.nsw.gov.au/agriculture/resources/lup/development-assessment

The DGRs should specifically include:

- the requirement of an Agricultural Impact Statement, and
- Information regarding the projects impact on groundwater.

This advice from the Office of Agricultural Sustainability & Food Security is forwarded direct to the Department of Planning & Infrastructure in accordance with agreed arrangements for mining applications that affect agricultural land.

Additional advice from the other divisions within the Department of Primary Industries may be forwarded by separate letter.

If you wish to discuss the issue further please call Rob Williamson on telephone 02 6391 3166 or by email robert.williamson@dpi.nsw.gov.au

Yours sincerely

Dr Regina Fogarty
Director Office of Agricultural Sustainability & Food Security

Locked Bag 21, Orange NSW 2800 (161 Kite Street, Orange NSW 2800)
Tel: 02 6391 3223 | Fax: 02 6391 3551 | www.dpi.nsw.gov.au | ABN: 72 189 919 072

NSW EPA

Our reference: DOC14/12442-01; EF14/611
Contact Steve Clair (02) 4908 6850

Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Attn: Carl Dumpleton

Dear Mr Dumpleton

BOB'S FARM SAND PROJECT, AMMOS RESOURCES MANAGEMENT PTY LTD,
(SSD NUMBER TBA)
DIRECTOR – GENERAL'S REQUIREMENTS (DGR'S)

Reference is made to your request for the Environment Protection Authority's (EPA's) requirements for the Environmental Impact Statement (EIS) for the above proposal pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* and received by the EPA on 6 February 2014. The EPA notes the proposal is for the establishment of a sand quarry at Nelson Bay Road, Bob's Farm, Port Stephens Local Government Area and if approved the premises will require an Environment Protection Licence.

The EPA understands that the proposal includes a yearly production rate of up to 750,000 tonnes/year depending on the approved extraction depth.

The EPA has considered the proposal given the limited information provided and has identified the information it requires to assess the project. This information is provided in **Attachment 1**. The proponent should ensure that the EIS is sufficiently comprehensive to enable the EPA to determine the extent of the impacts of the proposal.

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

The EPA note that the proposal includes mining to a depth below the water table. The EPA is aware through sand mining operations in the general area that pyrite (iron sulphide, FeS_2) and other metal sulphides are present in both the basal sands and coffee rock in this general area. Mobilisation of iron and other metals (manganese, arsenic and to a lesser extent chromium, cobalt and zinc) has been observed in connection with heavy mineral sand mining from these layers. The EPA understands mobilisation of metals and sulphides is most apparent when mining disturbs the basal grey sands, which have the highest sulphide content and the lowest natural redox potential. Additionally potential acid sulphate soils in the area may also be present in the proposed mining footprint. It is for this reason that sand mining proposals approved in recent years have been restricted to extraction at a height above the water table. Accordingly the EIS will need to provide a very detailed assessment of potential impacts on both groundwater and surface waters (given the closeness to Tilligerry Creek).

PO Box 488G Newcastle NSW 2300
117 Bull Street, Newcastle West NSW 2302
Tel: (02) 4908 6800 Fax: (02) 4908 6810
ABN 43 692 285 758
www.epa.nsw.gov.au

The proponent should be aware that any commitments made in the EIS may be formalised as approval and subsequently environment protection licence conditions. Pollution control 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.

The EPA requests **one electronic copy in parts not greater than 10 megabytes and one hard copies of the EIS** for assessment. These documents should be provided to Regional Manager (Hunter), Environment Protection Authority, PO Box 488G NEWCASTLE NSW 2300. Please also send an electronic copy to our referral mailbox – planning.matters@environment.nsw.gov.au.

If project approval is granted, the proponent will need to make a separate application to the EPA for an Environment Protection Licence prior to undertaking any on site works.

Please contact Steve Clair on (02) 4908 6850 if you require any further information regarding this matter.

Yours sincerely

P. Jamieson 20-2-14

PETER JAMIESON
Head Regional Operations Unit – Hunter
Environment Protection Authority

Encl: **Attachment 1:** EPA's Recommended Director Generals Requirements – Bob's Farm Sand Project

Attachment 2: Guidance Material

ATTACHMENT 1

EPA's Recommended Director Generals Requirements (DGRs)
Bob's Farm Sand Project, Ammos Resources Management Pty Ltd
(SSD TBA)

TABLE OF CONTENTS

Environmental impacts of the project

1. Impacts related to the following environmental issues need to be assessed, quantified and reported on:
   - Air Issues
   - Noise and vibration
   - Waste and chemicals
   - Water and Soils
     - Soil
     - Water quality

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

General

1. 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.

2. The Premises

The EIS will need to fully identify all of the processes and activities intended for the site over the life of the development. This will include details of:

- The location of the proposed facility and details of the surrounding environment;
- The proposed layout of the site;
- Appropriate landuse zoning;
- Ownership details of any residence and/or land likely to be affected by the proposed facility;
- 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;
- All equipment proposed for use at the site;
- Chemicals, including fuel, used on the site and proposed methods for their transportation, storage, use and emergency management;

- Surface water management systems;
- Waste generation and disposal;
- Methods to mitigate any expected environmental impacts of the development;
- Site rehabilitation following termination of the development

3. Consultation

Noting the potential Hunter Water Corporation groundwater bores in the area, and the close proximity of the proposed quarry site to HWC catchment areas, the EPA recommends HWC be included in the consultation list.

Licensing requirements

Should project approval be granted, the proponent will need to make a separate application to the EPA for an Environment Protection Licence prior to undertaking any on site works. Additional information is available through EPA's *Guide to Licensing* document:
http://www.epa.nsw.gov.au/licensing/licenceguide.htm

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

http://www.epa.nsw.gov.au/licensing/

SPECIFIC ISSUES

Air issues

The EIS should include a detailed air quality impact assessment (AQIA). The AQIA should:

1. Assess the risk associated with potential discharges of fugitive and point source emissions for all stages of the proposal. Assessment of risk relates to environmental harm, risk to human heath and amenity.

2. Justify the level of assessment undertaken on the basis of risk factors, including but not limited to:
    a. proposal location;
    b. characteristics of the receiving environment; and
    c. type and quantity of pollutants emitted.

3. Describe the receiving environment in detail. The proposal must be contextualised within the receiving environment (local, regional and inter-regional as appropriate). The description must include but need not be limited to:
    a. meteorology and climate;
    b. topography;
    c. surrounding land-use; receptors; and
    d. ambient air quality.

4. Include a detailed description of the proposal. All processes that could result in air emissions must be identified and described. Sufficient detail to accurately communicate the characteristics and quantity of all emissions must be provided. Identification and location of all fixed and mobile sources of dust/air emissions from the development, including rehabilitation, needs to be provided. The location of all emission sources should be clearly marked on a plan for key years of the quarry development. The EIS needs to identify all pollutants of concern and estimate emissions by quantity (and size for particles), source(s) and discharge point(s).
   Note: emissions can be classed as either:
   a. point (eg emissions from stack or vent), or
   b. fugitive (from wind erosion, leakages or spillages associated with loading or unloading, crushing/screening, plant and yard operation, vehicle movements [dust from road, exhausts, loss from load], land clearing and construction works).

5. Include a consideration of 'worst case' emission scenarios and impacts at proposed emission limits.

6. Account for cumulative impacts associated with existing emission sources as well as any currently approved developments.

7. Include air dispersion modelling where there is a risk of adverse air quality impacts, or where there is sufficient uncertainty to warrant a rigorous numerical impact assessment. Air dispersion modelling must be conducted in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2005) http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf.

   This assessment should include the following parameters:
   a. dust deposition;
   b. total suspended particles; and
   c. PM_{10} particulate matter.

8. Demonstrate the proposal's ability to comply with the relevant regulatory framework, specifically the *Protection of the Environment Operations (POEO) Act (1997)* and the *POEO (Clean Air) Regulation (2010)*.

9. Provide an assessment of the project in terms of the priorities and targets adopted under the NSW State Plan 2010 and its implementation plan Action for Air.

10. Detail emission control techniques/practices that will be employed by the proposal.

11. The proponent should be made aware that EPA is moving away from dust deposition monitoring due to issues with this monitoring method and the fact that results are only produced monthly, well after the actual time of monitoring. The EPA is moving towards PM_{10} monitoring for quarries and the EIS should therefore explore a monitoring network based on PM_{10}. The EIS should also examine the most appropriate method of monitoring PM_{10} and in particular compare the costs / benefits of using high volume sampler technology (which will produce a result every six days and has a delay for sample analysis) verses using technology

such as a Tapered Element Oscillating Microbalance (TEOM) (which will give daily instantaneous results).

Noise and vibration

In relation to noise, the following matters should be addressed (where relevant) as part of the Environmental Assessment.

General

1. Construction noise associated with the proposed development should be assessed using the guidelines contained in the *Interim Construction Noise Guidelines* (DECC, 2009) and *Industrial Noise Policy Application Notes.*
   http://www.environment.nsw.gov.au/resources/noise/09265cng.pdf

2. Vibration from all activities (including construction and operation) to be undertaken on the premises should be assessed using the guidelines contained in the *Assessing Vibration: a technical guideline* (DEC, 2006).
   http://www.environment.nsw.gov.au/resources/noise/vibrationguide0643.pdf

3. Operational noise from all industrial activities (including private haul roads) to be undertaken on the premises should be assessed using the guidelines contained in the *NSW Industrial Noise Policy* (EPA, 2000) and *Industrial Noise Policy Application Notes*
   http://www.environment.nsw.gov.au/resources/noise/ind_noise.pdf

   http://www.epa.nsw.gov.au/noise/applicnotesindustnoise.htm

Road

4. Noise on public roads from road traffic generated by the quarry should be assessed using the guidelines contained in the *Environmental Criteria for Road Traffic Noise* (EPA, 1999).
   http://www.epa.nsw.gov.au/noise/traffic.htm

5. Noise from new or upgraded public roads should be assessed using the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). http://www.epa.nsw.gov.au/noise/traffic.htm

Waste and chemicals

The EIS should:

1. Identify, characterise and classify all waste that will be generated onsite through excavation, demolition or construction activities, including proposed quantities of the waste.
   Note: All waste must be classified in accordance with *EPA's Waste Classification Guidelines.*

2. Identify, characterise and classify all waste that is proposed to be disposed of to an offsite location, including proposed quantities of the waste and the disposal locations for the waste. This includes waste that is intended for re-use or recycling.
   Note: All waste must be classified in accordance with *EPA's Classification Guidelines*.

3. Include details of all procedures and protocols to be implemented to ensure that any waste leaving the site is transported and disposed of lawfully and does not pose a risk to human health or the environment.

4. Include a statement demonstrating that the Proponent is aware of the relevant legislative requirements for disposal of the waste, including any relevant Resource Recovery Exemptions, as gazetted by EPA from time to time.

Water and soils

Soil

The EA should include:

1. An assessment of potential impacts on soil and land resources should be undertaken, being guided by *Soil and Landscape Issues in Environmental Impact Assessment* (DLWC 2000). The nature and extent of any significant impacts should be identified. Particular attention should be given to:
   a. Soil erosion and sediment transport - in accordance with *Managing urban stormwater: soils and construction,* vol. 1 (Landcom 2004) and vol. 2 E. Mines and quarries (DECC 2008).
   b. Mass movement (landslides) – in accordance with *Landslide risk management* guidelines presented in Australian Geomechanics Society (2007).
   c. Urban and regional salinity – guidance given in the Local Government Salinity Initiative booklets which includes *Site Investigations for Urban Salinity* (DLWC, 2002).

2. A description of the mitigation and management options that will be used to prevent, control, abate or minimise identified soil and land resource 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.

Water

Describe Proposal

1. Describe the proposal including position of any intakes and discharges, volumes, water quality and frequency of all water discharges.

2. Demonstrate that all practical options to avoid discharge have been implemented and environmental impact minimised where discharge is necessary.

3. Where relevant include a water balance for the development including water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options.

4. Confirmation that the proposal complies with any requirements, restrictions and/or conditions of the *Hunter Water Regulation 2010*.

Background Conditions

5. Describe existing surface and groundwater quality. An assessment needs to be undertaken for any water resource likely to be affected by the proposal.

6. State the Water Quality Objectives for the receiving waters relevant to the proposal. These refer to the community's agreed environmental values and human uses endorsed by the NSW Government as goals for ambient waters (http://www.environment.nsw.gov.au/ieo/index.htm). Where groundwater may be impacted the assessment should identify appropriate groundwater environmental values.

7. State the indicators and associated trigger values or criteria for the identified environmental values. This information should be sourced from the ANZECC (2000) Guidelines for Fresh and Marine Water Quality (http://www.environment.gov.au/water/publications/quality/pubs/nwqms-guidelines-4-vol1.pdf)

8. State any locally specific objectives, criteria or targets which have been endorsed by the NSW Government.

Impact Assessment

9. Describe the nature and degree of impact that any proposed discharges will have on the receiving environment.

10. Assess impacts against the relevant ambient water quality outcomes. Demonstrate how the proposal will be designed and operated to:
    - protect the Water Quality Objectives for receiving waters where they are currently being achieved; and
    - contribute towards achievement of the Water Quality Objectives over time where they are not currently being achieved.

11. Where a discharge is proposed that includes a mixing zone, the proposal should demonstrate how wastewater discharged to waterways will ensure the ANZECC (2000) water quality criteria for relevant chemical and non-chemical parameters are met at the edge of the initial mixing zone of the discharge, and that any impacts in the initial mixing zone are demonstrated to be reversible.

12. Assess impacts on groundwater and groundwater dependent ecosystems.

13. Describe how stormwater will be managed.

14. Describe in detail any water storage ponds, or basins, proposed to be constructed during the whole quarry operational life. Provide location of the proposed storage(s), estimated volume capacities and expected water quality.
15. Provide detailed assessments of the presence of and potential impacts on both groundwater and surface waters including Tilligerry Ck from the proposal at all extraction depths that includes but need not be limited to the following:
    - Pyrite (iron sulphide, FeS_2) and other metal sulphides present in both the basal sands and coffee rock in this general area;
    - Mobilisation of iron and other metals (manganese, arsenic and to a lesser extent chromium, cobalt and zinc), and
    - Acid sulphate soils.

Monitoring Programs

The EIS 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 site 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.

NSW EPA

ATTACHMENT 2

Guidance Material

Title	Web address
Relevant Legislation	
Protection of the Environment Operations Act 1997	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
Protection of the Environment Operations (Clean Air) Regulation 2010	http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+428+2010+cd+0+N
Hunter Water Regulation 2010	http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+477+2010+cd+0+N
Licensing	
Guide to Licensing	http://www.epa.nsw.gov.au/licensing/licenceguide.htm
Air Issues	
Air Quality	
Approved methods for modelling and assessment of air pollutants in NSW (2005)	http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf
POEO (Clean Air) Regulation 2010	http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+428+2010+cd+0+N
Noise and Vibration	
Interim Construction Noise Guideline (DECC, 2009)	http://www.environment.nsw.gov.au/resources/noise/09265cng.pdf
Assessing Vibration: a technical guideline (DEC, 2006)	http://www.environment.nsw.gov.au/resources/noise/vibrationguide0643.pdf
Industrial Noise Policy Application Notes	http://www.epa.nsw.gov.au/noise/applicnotesindustnoise.htm
Environmental Criteria for Road Traffic Noise (EPA, 1999)	http://www.epa.nsw.gov.au/noise/traffic.htm
Waste and Chemicals	
Waste	
Waste Classification Guidelines (DECC, 2008)	http://www.epa.nsw.gov.au/resources/waste/091216classifywaste.pdf
Resource recovery exemption	http://www.epa.nsw.gov.au/waste/RRecoveryExemptions.htm
Water and Soils	
Soils – general	
Soil and Landscape Issues in	http://www.dnr.nsw.gov.au/care/soil/soil_pubs/pdfs/tech_rep_34_n

PO Box 488G Newcastle NSW 2300
117 Bull Street, Newcastle West NSW 2302
Tel: (02) 4908 6800 Fax: (02) 4908 6810
ABN 43 692 285 758
www.epa.nsw.gov.au

Title	Web address
Environmental Impact Assessment (DLWC 2000)	ew.pdf
Managing urban stormwater: soils and construction, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; B Waste landfills; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC 2008)	Vol 1 - Available for purchase at http://www.landcom.com.au/whats-new/publications-reports/the-blue-book.aspx Vol 2 - http://www.environment.nsw.gov.au/stormwater/publications.htm
Landslide risk management guidelines	http://www.australiangeomechanics.org/resources/downloads/
Site Investigations for Urban Salinity (DLWC, 2002)	http://www.environment.nsw.gov.au/resources/salinity/booklet3siteinvestigationsforurbansalinity.pdf
Water	
Water Quality Objectives	http://www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	http://www.environment.gov.au/water/publications/quality/pubs/nwqms-guidelines-4-vol1.pdf and http://www.environment.gov.au/water/publications/quality/nwqms-guidelines-4-vol1.html
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf

NSW GOVERNMENT | Office of Environment & Heritage

Your reference: SSD-TBA
Our reference: DOC14/12504; FIL14/1226
Contact: Steve Lewer, 4908 6814

Mr Carl Dumpleton
Senior Planner, Mining Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Mr Dumpleton

RE: DIRECTOR-GENERAL'S REQUIREMENTS FOR PROPOSED BOBS FARM SAND PROJECT

I refer to your e-mail dated 6 February 2014 seeking input into the Department of Planning and Infrastructure Director General's Requirements (DGRs) for the proposed Bobs Farm Sand Project, a proposed State Significant Development project (SSD–TBA), located in the Port Stephens local government area.

The Office of Environment and Heritage (OEH) has considered the details of the proposal and has identified the information it requires to assess the proposal (see **Attachment 1**). The proponent should ensure that the environmental assessment is sufficiently comprehensive to enable OEH to determine the extent of the impact(s) of the proposal. In carrying out the assessment, the proponent should refer to the relevant guidelines as listed in **Attachments 2 and 3** and relevant best practice management guidelines.

OEH requests one hard and one electronic (CD) copies of the EIS for assessment. These documents should be sent to: Mr Richard Bath, Senior Team Leader – Planning, Office of Environment and Heritage, PO Box 488G, NEWCASTLE NSW 2300.

If you have any questions concerning this advice, please contact Steve Lewer, Regional Biodiversity Conservation Officer, on 4908 6814.

Yours sincerely

24 FEB 2014

RICHARD BATH
Senior Team Leader Planning, Hunter Central Coast Region
Regional Operations

Enclosures: Attachments 1-3

PO Box 488G Newcastle NSW 2300
117 Bull Street, Newcastle West NSW 2302
Tel: (02) 4908 6800 Fax: (02) 4908 6810
ABN 30 841 387 271
www.environment.nsw.gov.au

ATTACHMENT 1

OEH RECOMMENDED DIRECTOR GENERALS REQUIREMENTS FOR PROPOSED BOBS FARM SAND PROJECT (SSD – TBA)

TABLE OF CONTENTS

1 Environmental impacts of the project

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

- Flooding
- Aboriginal cultural heritage
- Biodiversity (including threatened species, populations ecological communities and their habitat)
- National Park estate.

The Environmental Impact Statement (EIS) should address the specific requirements outlined below and assess impacts in accordance with the relevant guidelines mentioned. A full list of guidelines is at **Attachment 2**.

2 The Proposal

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

- the size, scale and type of the activity / development;
- all anticipated environment impacts, both direct and indirect, including level of vegetation / habitat clearing;
- threatened species, populations, ecological communities and / or habitats impacted upon;
- the staging and timing of the proposal; and
- the proposal's relationship to any other proposal and/or developments.

SPECIFIC ISSUES

3 Flooding

The EIS should include an assessment of the following (where applicable) referring to the guidelines in Attachment 2:

Assessment of existing flood behaviour and impact of Sea Level Rise and Climate Change

Provide an assessment of all flood risks on the site (for the full range of floods including events greater than the 1 in 100 year design flood up to the probable maximum flood) from all the flood mechanisms acting singly or in combination and having consideration of any relevant provisions of the NSW Floodplain Development Manual 2005. The assessment should include the flood levels, velocities, the hydraulic categories and flood hazards. Tidal inundation, hazard and hydraulic category mapping should be provided. The assessment should be undertaken under current sea level conditions and with a projected sea level rise (SLR) of 0.90m. A sensitivity assessment to assess the impact of an increase in rainfall intensity of 10%, 20% and 30% due to climate change for the 1 in 100 year event with the projected SLR should be undertaken.

Assessment of potential impacts of the proposed development

The EIS needs to provide full details of the flood assessment and modelling undertaken in determining any design flood levels (if applicable), including the 1 in 100 year flood levels. As such

the EIS must provide an assessment to determine the potential impacts of the proposed development (including fill) on the flood behaviour at the site and any impacts on adjacent land (for the full range of floods including events greater than the 1 in 100 year design flood up to the probable maximum flood) based on the current sea level and with a projected SLR of 0.9m. This shall include any impacts on drainage (at the site and on adjacent land) and redirection of flow, velocities, flood levels, hazards and hydraulic categories. A sensitivity assessment should be undertaken to assess the impact of the development with an increase in rainfall intensity of 10%, 20% and 30% due to climate change and with SLR for the 1 in 100 year flood event.

The potential impacts of the development on flooding should take into consideration any potential ecological changes/ impacts on adjacent areas.

Emergency management measures and evacuation

Address emergency management, evacuation and access, including contingency measures for floods greater than the 1 in 100 year flood event. These matters are to be discussed with and have concurrence of Council and the SES. Additionally, the assessment will need to indicate whether the proposal is likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

Sea Level Rise and Ecosystem Migration

Having regard to the existing and proposed topography of the land, assess the impact of the proposed development on the capacity for ecosystem migration for mean sea levels of up to 0.9m above 1990 levels.

Additional Information

The assessment will also need to address:

1. Whether the proposal is consistent with any floodplain risk management plans.

2. Whether the proposal is compatible with the flood hazard of the land.

3. Whether the proposal will significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.

4 Aboriginal Cultural Heritage

OEH recommends that the following Aboriginal cultural heritage issues be addressed by the proponent in preparing the EIS.

Existing Aboriginal cultural heritage values

OEH acknowledges the existence of numerous registered Aboriginal sites in the associated locality. These include middens, isolated finds, camp sites, artefact scatters, resource and gathering areas, burials, ceremonial places and potential artefact scatters. It is also acknowledged that the project area contains landforms which have yielded a significant volume of evidence of Aboriginal occupation, in particular *in-situ* Pleistocene dune systems with confirmed evidence of Pleistocene Aboriginal occupation of the region. It is therefore recommended that the proponent consider any potential impacts of the proposal on these known Aboriginal sites/objects, the sensitivity and significance of these sites to the traditional Aboriginal knowledge holders and any relationship that may exist between these sites and any Aboriginal cultural heritage values of the project area. It is also recommended that the proponent carry out appropriate assessments to determine the likely existence of Pleistocene aged landforms within the project area to further

inform the level of assessment necessary to adequately characterise the archaeological record of traditional Aboriginal occupation and subsistence within the project area.

Potential impacts of the project on Aboriginal cultural heritage values

Standard requirements:

1. The EIS must address and document the information requirements set out in the '*Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*' (Office of Environment and Heritage 2011). This document is available from Office of Environment and Heritage upon request or on OEH's website at: www.environment.nsw.gov.au/licences/investassessreport.htm .

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

3. The EIS should identify the nature and extent of foreseeable 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 EIS must assess and document the archaeological and Aboriginal significance of the project area'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 OEH in the '*Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (2010)*' and the '*Code of Practice for Archaeological Investigations of Objects in New South Wales (2010)*'.

6. The EIS 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. OEH supports broad-based Aboriginal community consultation and as a guide OEH's '*Aboriginal cultural heritage consultation requirements for proponents 2010*' provides a useful model to follow. This requirement is available on OEH's website at: 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 EIS is relying on past surveys it is critical to confirm that the surveys are consistent with the requirements of the above State Significant Development project application guidelines. Further, whilst there may be no requirement for obtaining an Aboriginal Heritage Impact Permit (AHIP) under Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act) for state significant development projects approved under the provisions of the *Environmental Planning and Assessment Act 1979* (EP&A Act), there are other sections of the NPW Act which remain valid. This includes the requirement to obtain a Care Agreement for salvaged objects (Section 85) and reporting to OEH on the status of new or impacted Aboriginal sites (Section 89A).

5 Biodiversity

OEH notes that the proposed Bobs Farm Sand Project in an area of remnant vegetation connected to the Worimi National Park, which has a concentration of threatened biodiversity, including significant populations of the endangered orchid *Diuris arenaria*, a Port Stephens / Tomaree endemic, and known breeding habitat for a variety of threatened fauna. Therefore it is likely that any development of the site would likely have a direct impact on threatened species, populations, communities or their habitats. OEH recommends that any likely impacts on threatened biodiversity are given full consideration in any resulting Environmental Impact Statement prepared for this development given the high incidence of threatened biodiversity on this site.

OEH's requirements on assessing the biodiversity at the development site and how to appropriately offset harm to threatened biota are provided below.

Biodiversity impacts can be assessed using **either** the BioBanking Assessment Methodology (scenario 1) or a detailed biodiversity assessment (scenario 2). The requirements for each of these approaches are detailed below.

The BioBanking Assessment Methodology can be used **either** to obtain a BioBanking statement, or to assess impacts of a proposal and to determine required offsets without obtaining a statement. In the latter instances, if the required credits are not available for offsetting, appropriate alternative options may be developed in consultation with the OEH and in accordance with OEH policy.

Scenario 1 - Where a proposal is assessed using the BioBanking Assessment Methodology (BBAM DECC 2008):

1. Where a BioBanking Statement is being sought under Part 7A of the *Threatened Species Conservation Act 1995* (TSC Act), the assessment must be undertaken by an accredited BioBanking assessor (as specified under Section 142B (1)(c) of the TSC Act) and done in accordance with the BioBanking Assessment Methodology (DECC 2008) utilising both the (i) '*BioBanking Assessment Methodology and Credit Calculator Operational Manual*' (DECC 2009a; located at: www.environment.nsw.gov.au/resources/biobanking/09181bioopsman.pdf), and (ii) '*Assessors' guide to using the BioBanking Credit Calculator v.2*' (OEH 2012; located at www.environment.nsw.gov.au/resources/biobanking/120182AssessGdeBBCC.pdf). To qualify for a BioBanking Statement a proposal must meet the improve or maintain standard.

1a. The EIS should include a specific Statement of Commitments that reflects all requirements of the BioBanking Statement including the number of credits required and any DG approved variations to impact on Red Flags.

2. Where the BioBanking Assessment Methodology is being used to assess impacts of a proposal and to determine required offsets, and a BioBanking Statement is not being obtained, the EIS should contain a detailed biodiversity assessment and all components of the assessment must be undertaken in accordance with the *BioBanking Assessment Methodology and Credit Calculator Operational Manual* (DECC 2009a) and the *Assessors' guide to using the BioBanking Credit Calculator v.*' (OEH 2012).

2a. The EIS should include a specific Statement of Commitments which:

- is informed by the outcomes of the proposed BioBanking assessment offset package;
- sets out the ecosystem and species credits required by the BioBanking Assessment Methodology and how these ecosystem and/or species credits will be secured and obtained;

- if the ecosystem or species credits cannot be obtained, provides appropriate alternative options to offset expected impacts, noting that an appropriate alternative option may be developed in consultation with OEH officers and in accordance with OEH policy;
- demonstrates how all options have been explored to avoid red flag areas;
- submission of credit calculator files for both the development and biobank sites as outlined in **Attachment 3**,
- all appropriate BioBanking assessment files (including all reports, underlying assumptions [particularly in the selection of vegetation types from the vegetation types database, placement of assessment circles, connectivity assessment etc], associated maps, field sheets etc), and any relevant expert reports (if applicable). **Attachment 2** is a checklist of information required when utilising the BioBanking Assessment Methodology and can be used as a guide to the relevant information required,
- all appropriate GIS shape files (e.g. maps, plots and transects, assessment circles, species polygons, vegetation communities),
- geo-referenced map(s) showing the locality of the offset lands, relevant vegetation zones and management areas (if applicable),
- legible copies of all field plot / transect data sheets for all plots entered into the credit calculator. This is the primary source of information OEH utilises to assess biometric vegetation types chosen, habitat preferences and site condition, and
- with respect to the use of the offset policy (OEH 2011, as described below), the level or tier of offset achieved must be clearly stated and explained, and any credit variation rules which have been applied must be justified.

3. Where the '*NSW OEH interim policy on assessing and offsetting biodiversity impacts of Part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects*' (OEH 2011) is being used then the proponent must stipulate which level(s) of offset is being offered. In accordance with the interim policy, justification must be provided as to why it is appropriate to apply the Tier 2 ('no net loss') or Tier 3 ('mitigated net loss') outcomes. In considering whether the mitigated net loss standard is appropriate, justification must be provided on: (i) whether the credits required by the calculator are available on the market; (ii) whether alternative offset sites (other than credits) are available on the market; and (iii) the overall cost of the offsets and whether these costs are reasonable given the circumstances'. This must be to satisfaction of and in consultation with OEH. Tier 2 and Tier 3 offset proposals will likely require a larger area of remnant vegetation to be offered in the offset package than if Tier 1 ('improve or maintain') had been met.

4. Where appropriate, likely impacts (both direct and indirect) on any adjoining and/or nearby OEH estate reserved under the NPW Act or any marine and estuarine protected areas under the *Fisheries Management Act 1994* or the *Marine Parks Act 1997* should be considered. Please refer to the *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (DECCW 2010). OEH notes that the proposal is immediately adjacent to Worimi National Park.

5. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify and assess any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

Scenario 2 - Where a proposal is assessed outside the BioBanking Assessment Methodology:

1. The EIS should include a detailed biodiversity assessment, including assessment of impacts on threatened biodiversity, native vegetation and habitat. This assessment should address the matters included in the following sections.

2. A field survey of the site should be conducted and documented in accordance with relevant guidelines, including:

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

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

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

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

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

   Determining the list of potential threatened species for the site must be done in accordance with the *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (DEC, 2004) and the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005). The OEH Threatened Species website www.environment.nsw.gov.au/threatenedspecies/ and the *Atlas of NSW Wildlife* database must be the primary information sources for the list of threatened species present. The BioBanking Threatened Species Database, the Vegetation Types databases (available on DECCW website at www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm, respectively) and other data sources (e.g. PlantNET [http://plantnet.rbgsyd.nsw.gov.au/floraonline.htm], Online Zoological Collections of Australian Museums [www.ozcam.org/Australian-Museum-Collection-Search]), previous or nearby surveys etc.) may also be used to compile the list.

3. OEH notes the following known and/or predicted threatened species, populations and ecological communities (based on OEH *Atlas of NSW Wildlife* database, vegetation mapping and potential habitat) which have broad habitat matches to that of the site occur on or areas nearby (approx. 10-20 km radius) to the proposal. These should be targeted during surveying (but not be limited to just these):

   * indicates species that are listed on the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

   FLORA

   Note: For targeted surveys please note the following known flowering / fruiting times for each species to time surveys appropriately. Surveying at these times is required for species that are not readily detectable (and/or are cryptic), where flowers and/or fruits are necessary for their positive identification. If targeted flora surveys for these species are conducted outside a species 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 habitats and in viable numbers. For species which do not require flowers / fruits for positive identification (e.g. large trees / shrubs), then survey as appropriate (though please provide justification).

Charmhaven Apple (*Angophora inopina*)* – flowers principally between mid-December and mid-January, and also sporadically at other times outside of this period (Bell 2001a); *Angophora inopina* has been confused and probably wrongly determined in many cases as *Angophora floribunda*, principally due to both species possessing rough, fibrous bark, and appearing superficially similar in flower and fruit morphology (Bell 2001a), it may be distinguished by its broad, coriaceous leaves with short, broad petioles (Bell 2001a).

Trailing Woodruff (*Asperula asthenes*)* – flowers and fruits in spring (Thompson 2009); fruits are required to separate genera *Asperula* and *Galium* (Harden 1992).

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

Sand Spurge (*Chamaesyce psammogeton*) – flowers during the summer (Harden 2001).

Red Helmet Orchid (*Corybas dowlingii*) – flowers June to August (Jones 2004); *Corybas dowlingii* and *C. barbarae* (a more common related taxon) occur sympatrically, with the former species flowering as *C. barbarae* is finishing (Jones 2004); in Stoney Ridge Reserve (Soldiers Point) the species is known to flower from mid to late-July (Okada 2006).

Leafless Tongue Orchid (*Cryptostylis hunteriana*)* – in NSW flowering occurs from December to February (Nicholls 1938, Jones 1993, Harden 1993) though Bell (2001b) 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); fruits autumn.

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).

Bauer's Midge Orchid (*Genoplesium baueri*) – flowers December to May (Harden 1993, Bishop 2000, Benson & McDougall 2005); previously known from Port Stephens area.

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

Biconvex Paperbark (*Melaleuca biconvexa*)* - flowering occurs over just 3 to 4 weeks in September and October (OEH – Threatened species profile database, accessed October 2010), though Harden (2002) notes generally summer.

Villous Mint-bush (*Prostanthera densa*)* - flowering has been observed flowering throughout the year, however, the species is considered a 'fire obligate' generally regenerating from rootstock after fire and flowering within the first year or two after disturbance (Fairley & Moore 2000).

Eastern Australia Underground Orchid (Rhizanthella slateri)* – flowers in October and November (Harden 1993).

Dwarf Kerrawang (*Rulingia prostrata*) – this species flowers spring, between October and December (Walsh & Entwisle 1996, Benson & McDougall 2001, Carter & Walsh 2010); this species appears to rely on disturbance such as fire or flooding for seed germination, with large increases in numbers noted at some populations after these events (Fox 2006); in NSW, it appears to be a successional species, occurring in sub-climax communities regenerating after fire or clearing (Fox 2006).

Coast Groundsel (*Senecio spathulatus*) – flowers most of the year (Harden 1992; Thompson 2005).

Magenta Lilly Pilly (*Syzygium paniculatum*)* - flowers December to January / March (Harden 2002, Benson & McDougall 1998), though mature fruits are required to positively identify this species, which mature in May (Payne 1997).

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

FAUNA

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

Reptiles:
Pale-headed Snake (*Hoplocephalus bitorquatus*)
Stephen's Banded Snake (*Hoplocephalus stephensii*)

Birds:
Bush Stone-curlew (*Burhinus grallarius*)
Gang-gang Cockatoo (*Callocephalon fimbriatum*)
Glossy Black Cockatoo (*Calyptorhynchus lathami*)
Spotted Harrier (*Circus assimilis*)
Brown Treecreeper (*Climacteris picumnus* subsp. *victoriae*)
Barred Cuckoo-shrike (*Coracina lineata*)
Varied Sittella (*Daphoenositta chrysoptera*)
White-fronted Chat (*Epthianura albifrons*)
Black-necked Stork (*Ephipporhynchus asiaticus*)
Black Falcon (*Falco subniger*)
Little Lorikeet (*Glossopsitta pusilla*)
Little Eagle (*Hieraaetus morphnoides*)
Swift Parrot (*Lathamus discolor*)*
Square-tailed Kite (*Lophoictinia isura*)
Black-chinned Honeyeater (eastern subspecies) (*Melithreptus gularis* subsp. *gularis*)
Hooded Robin (*Melanodryas cucullata*)
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*)
Wompoo Fruit-dove (*Ptilinopus magnificus*)
Rose-crowned Fruit-dove (*Ptilinopus regina*)
Superb Fruit-dove (*Ptilinopus superbus*)
Speckled Warbler (*Pyrrholaemus sagittatus*)
Diamond Firetail (*Stagonopleura guttata*)
Red-backed Button-quail (*Turnix maculosa*)
Grass Owl (*Tyto capensis*)
Masked Owl (*Tyto novaehollandiae*)
Regent Honeyeater (*Xanthomyza phrygia*)*

Mammals:
Rufous Bettong (*Aepyprymnus rufescens*)
Eastern Pygmy-possum (*Cercartetus nanus*)
Large-eared Pied Bat (*Chalinolobus dwyeri*)
Spotted-tailed Quoll (*Dasyurus maculatus*) *
Eastern False Pipistrelle (*Falsistrellus tasmaniensis*)
Golden-tipped Bat (*Kerivoula papuensis*)
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 norfolcensis*)
Brush-tailed Phascogale (*Phascogale tapoatafa*)
Koala (*Phascolarctos cinereus*)

Long-nosed Potoroo (*Potorous tridactylus*)
Eastern Chestnut Mouse (*Pseudomys gracilicaudatus*)
Grey-headed Flying-fox (*Pteropus poliocephalus*)*
Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*)
Greater Broad-nosed Bat (*Scoteanax rueppellii*)
Eastern Cave Bat (*Vespadelus troughtoni*)

Endangered Populations

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

Endangered ecological communities

- River-flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions – potentially on-site.
- Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions – potentially on-site.
- Swamp Oak Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions.

4. The EIS should contain the following information as a minimum:

   a. The requirements set out in the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005).
   b. Description and geo-referenced mapping of study area (and spatial data files), e.g. overlays on topographic maps, satellite images and /or aerial photos, including details of map datum, projection and zone, all survey locations, all vegetation communities, key habitat features and reported locations of threatened species, populations and ecological communities present in the subject site and study area.
   c. Description of survey methodologies used, including timing, location and weather conditions.
   d. Details, including qualifications and experience of all staff undertaking the surveys, mapping and assessment of impacts as part of the EIS.
   e. Detailed description of all vegetation communities (both forested and non-woody [e.g. derived grasslands], including classification and methodology used to classify) and including all plot data. Plot data should be supplied to the OEH in electronic format (e.g. MS-Excel) and organised by vegetation community. Copies of all plot data (quadrat / transect) sheets should also be provided.
   f. Identification of national and state listed threatened biota known or likely to occur in the study area and their conservation status.
   g. Description of the likely impacts of the proposal on biodiversity and wildlife corridors, including direct and indirect and construction and operation impacts. Wherever possible, quantify these impacts such as the amount of each vegetation community or species habitat to be cleared or impacted, or any fragmentation of a wildlife corridor.
   h. The proposal should provide an assessment of the cumulative impacts of the proposal in relation to other nearby developments.
   i. Identification of the avoidance, mitigation and management measures that will be put in place as part of the proposal to avoid or minimise impacts, including details about alternative options considered and how long term management arrangements will be guaranteed.
   j. Description of the residual impacts of the proposal. If the proposal cannot adequately avoid or mitigate impacts on biodiversity, then a biodiversity offset package is expected (see the requirements for this at point 6 below).
   k. Provision of specific Statement of Commitments relating to biodiversity.

5. An assessment of the significance of direct and indirect impacts of the proposal must be undertaken for threatened biodiversity known or considered likely to occur in the study area based on the presence of suitable habitat. This assessment must take into account:

   a. the factors identified in s.5A of the EP&A Act, and
   b. the guidance provided by *The Threatened Species Assessment Guideline – The Assessment of Significance* (DECC 2007) which is available at: www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf

6. Where an offsets package is proposed by a proponent for impacts to biodiversity (and a BioBanking Statement has not been sought) this package should:

   a. Meet either the requirements of the (i) BioBanking Assessment Methodology (DECC 2008) utilising the (A) '*BioBanking Assessment Methodology and Credit Calculator Operational Manual*' (DECC 2009a; located at: www.environment.nsw.gov.au/resources/biobanking/09181bioopsman.pdf), and (B) '*Assessors' guide to using the BioBanking Credit Calculator v.2*' (OEH 2012; located at www.environment.nsw.gov.au/resources/biobanking/120182AssessGdeBBCC.pdf); or (ii) OEH's *NSW offset principles for major projects (state significant development and state significant infrastructure)*, which are available at: www.environment.nsw.gov.au/biocertification/offsets.htm).

   b. Identify the conservation mechanisms to be used to ensure the long term protection and management of the offset sites.

   c. Include an appropriate Management Plan (such as vegetation or habitat) that has been developed as a key amelioration measure to ensure any proposed compensatory offsets, retained habitat enhancement features within the development footprint and/or impact mitigation measures (including proposed rehabilitation and/or monitoring programs) are appropriately managed and funded.

Where the BioBanking Assessment Methodology is being used to assess impacts of a proposal and to determine required offsets and a BioBanking Statement is not being obtained, the proponent must provide a detailed biodiversity assessment to OEH and all components of the assessment must be undertaken in accordance with in accordance with the *BioBanking Assessment Methodology and Credit Calculator Operational Manual* (DECC 2009a), the *Assessors' guide to using the BioBanking Credit Calculator v.*' (OEH 2012) and *NSW OEH interim policy on assessing and offsetting biodiversity impacts of Part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects*' (OEH 2011).

With respect to managing and conserving a proposed offset in perpetuity, OEH considers and supports the following as appropriate conservation mechanisms:

- 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), providing prior consultation with the National Parks and Wildlife Service;
- A Trust Agreement under the *Nature Conservation Trust Act 2001*; or
- A Planning Agreement under s 93F of the *Environmental Planning and Assessment Act 1979.*

Note:

- OEH no longer supports public positive covenant under s88E of the *Conveyancing Act 1919* as an appropriate conservation mechanism to secure and/or manage biodiversity offsets.

- OEH has previously supported the use of conservation agreements under the NPW Act as one of the acceptable offsetting mechanisms. However, it should be noted that OEH's position on the use of conservation agreements for State Significant Projects is

currently under review and this approach may no longer be an acceptable conservation outcome for this project. The Conservation Partners Program section of OEH administer the use of conservation agreements and have recently advised that for commercial developments, the preferred method of securing an offset is under the BioBanking provisions of the Threatened Species Conservation Act 1995 (i.e. a registered BioBanking Agreement site). This is consistent with the recently revised NSW offset principles for major projects (state significant development and state significant infrastructure - www.environment.nsw.gov.au/biocertification/offsets.htm), in particular Offset Principle 5 which states 'for terrestrial offsets, a BioBanking Agreement or addition to the NSW national parks system are the preferred mechanisms for securing an offset site'. OEH recommends that the proponent either consider the use of a BioBanking Agreement or contact OEH's Conservation Partners Program group to determine whether or not the use of a conservation agreement for the proposed biodiversity offset area would be supported.

7. Where appropriate, likely impacts (both direct and indirect) on any adjoining and/or nearby National Parks and Wildlife Service estate reserved under the *National Parks and Wildlife Act 1974* or any marine and estuarine protected areas under the *Fisheries Management Act 1994* or the *Marine Parks Act 1997* should be considered. Refer to the *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (DECCW 2010). The OEH notes Worimi National Park represents part of the eastern boundary of the proposal, and as such any direct or indirect impacts need to be documented and assessed.

8. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

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ATTACHMENT 2 – GUIDANCE MATERIAL

Title	Web address
Relevant Legislation	
Commonwealth Environment Protection and Biodiversity Conservation Act 1999	www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
Environmental Planning and Assessment Act 1979	www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
National Parks and Wildlife Act 1974	www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
Threatened Species Conservation Act 1995	www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N
Aboriginal Cultural Heritage	
Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (2005)	Available from DoP.
Aboriginal Cultural Heritage Consultation Requirements for Proponents (EPA, 2010)	www.environment.nsw.gov.au/licences/consultation.htm
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (EPA, 2010)	www.environment.nsw.gov.au/licences/archinvestigations.htm
Aboriginal Site Impact Recording Form	www.environment.nsw.gov.au/licences/DECCAHIMSSiteRecordingForm.htm
Aboriginal Heritage Information Management System (AHIMS) Registrar	www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
Biodiversity	
BioBanking Assessment Methodology (DECC, 2008)	www.environment.nsw.gov.au/biobanking/index.htm
BioBanking Assessment Methodology and Credit Calculator Operation Manual (DECC, 2009a)	www.environment.nsw.gov.au/resources/biobanking/09181bioopsman.pdf
Assessors' Guide To Using The BioBanking Credit Calculator V2 (OEH, 2012)	www.environment.nsw.gov.au/resources/biobanking/120182AssessGdeBBCC.pdf
Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna -Amphibians (EPA, 2009)	www.environment.nsw.gov.au/resources/Threatenedspecies/09213amphibians.pdf
Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft (DEC, 2004)	www.environment.nsw.gov.au/resources/nature/TBSAGuidelinesDraft.pdf
Guidelines for Threatened Species Assessment (Department of Planning, July 2005)	Draft available from DP&I

Title	Web address
OEH Threatened Species website	www.environment.nsw.gov.au/Threatenedspecies/
Atlas of NSW Wildlife	www.environment.nsw.gov.au/wildlifeatlas/about.htm
BioBanking Threatened Species Database	www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm
Vegetation Types databases	www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm
PlantNET	http://plantnet.rbgsyd.nsw.gov.au/floraonline.htm
Online Zoological Collections of Australian Museums	www.ozcam.org/Australian-Museum-Collection-Search
Threatened Species Assessment Guideline - The Assessment of Significance (EPA, 2007)	www.environment.nsw.gov.au/resources/Threatenedspecies/tsaguide07393.pdf
NSW offset principles for major projects (state significant development and state significant infrastructure)	www.environment.nsw.gov.au/biocertification/offsets.htm
OEH Estate	
Land reserved or acquired under the NPW Act	
List of national parks	www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
Guidelines for developments adjoining land and water managed by the Office of Environment and Heritage (DECCW, 2010)	www.environment.nsw.gov.au/resources/protectedareas/10509devadjdeccw.pdf

ATTACHMENT 3

Checklist of information required when utilising the Biobanking Assessment Methodology and Submitting BioBanking assessments to OEH using the BioBanking Credit Calculator v.2.0

The 'Assessors' Guide to Using the BioBanking Credit Calculator v.2.0' has been finalised and it is now available for download from the Office of Environment and Heritage (OEH) website www.environment.nsw.gov.au/resources/biobanking/120182AssessGdeBBCC.pdf. The guide provides information on the operation and use of the web-based BioBanking Credit Calculator v.2.0.

To summit your assessment to OEH, open your assessment in *Edit* mode. Navigate to the *Assessment details* page and select the *Submit* button in the top right hand corner. A *Submit the assessment for approval* box will appear (Figure 1), where you can confirm submission (*OK* button) or cancel submission (*Cancel* button). Once a case has been submitted to OEH, the status of the case will change in your *My work* tab from *Work in progress (WIP)* to *submitted*. Please note that you cannot make any edits to an assessment that has been submitted, although you will be able to view the assessment.

Figure 1: Submitting an assessment

The following documentation must be submitted with your Environmental Impact Statement or Environmental Assessment report (in hard copy and soft copy):

- BioBanking Assessment Report including a list of dominant indigenous species for overstorey, mid-storey and ground cover for each vegetation type and, where required:
  - local benchmark data,
  - request for increase in gain of site value,
  - a description of the proposed development,
  - measures to avoid and mitigate the impacts of development,
  - an assessment of indirect impacts,
  - a statement of onsite measures,
  - a description of the application of the BioBanking Assessment Methodology, including details of and assumptions made in utilising the methodology, such as (but not limited to) placement of assessment circles, remnant value, connectivity and reasoning behind selection of vegetation types in the Biometric Vegetation Type database,
  - plot and transect values including a list of the indigenous plant species identified in each of the plots,
  - a description of targeted threatened flora and fauna surveys, and any general baseline surveys (incl. vegetation specific surveys). These should be also be provided schematically, and

  Where required, the BioBanking Assessment Report should also include:
  - expert reports,
  - an application for a determination on red flag areas,
  - more appropriate use of local data for vegetation types, benchmarks or threatened species,
  - environmental contributions accompanied by a BioBanking Agreement Credit Report (if applicable), and
  - application for deferred retirement arrangements (if applicable).

- Copies of completed field data sheets, and updated with correct plant taxonomy in instances where field names have been used.

- Maps (soft copy as A4 jpgs) of:
  - offset site / BioBanking Agreement boundary or development footprint
  - vegetation zones
  - management zones
  - and where required:
    - existing waste
    - existing erosion
    - existing structures (in waterways)

- Separate shape files should be supplied for all the maps mentioned above plus:
  - plots and transects
  - assessment circles
  - species polygons
  - polygons for adjacent remnant area
  - the location or habitat area of sensitive species, and the management area related to that sensitive species (as this information cannot be displayed publicly).

All maps must include:

- a title (as per the names above)
- the site's name, location and lot/DP numbers
- the scale
- the date it was prepared
- a legend.

Boundaries and zones must be confirmed on the site using a GPS. This information should be digitised onto an ortho-rectified aerial photo or SPOT-5 image. Maps must be easily readable and submitted to OEH as a Geographic Information System (GIS) file that is ESRI compatible. Shape files must use GDA94 datum. Name each shape file as: 'biobank site name_descriptor'. For example, 'Hill Farm_photo points' or 'Hill Farm_management zones'.

Photo points should be named A, B, C, D, E, F, G, etc. Photo points should be located in areas where change is expected (i.e. where replanting, natural regeneration, intensive weeding or other active management actions are to be carried out). As a rough guide, include at least one photo point in each management zone where active management actions will be undertaken. Boundaries and zones must be confirmed on the site using a GPS. This information should be digitised onto an ortho-rectified aerial photo or SPOT-5 image. Maps must be easily readable and submitted to OEH as a Geographic Information System (GIS) file that is ESRI compatible.

Shape files must use GDA94 datum. Name each shape file as: 'biobank/development site name_descriptor'. For example, 'Hill Farm_photo points' or 'Hill Farm_management zones'.

Additional requirements for offset sites that may be required (based on liaison with OEH):

- completed biobanking agreement management action template (provided in Word format), and
- Biodiversity Credits Pricing Spreadsheet

Once the case has been received OEH will review the data entered, and any supporting documentation. For State Significant Development (SSD), State Significant Infrastructure and residual Part 3A (under the *Environmental Planning and Assessment Act 1979*) this review will take place during the assessment of the Environmental Impact Statement or Environmental Assessment report (for Part 3A matters).

Brendan Liew - Re: Bobs Farm Sand Project - SDD Number TBA - DGRS input request

Subject: Re: Bobs Farm Sand Project - SDD Number TBA - DGRS input request
From: Liane Corocher <liane.corocher@lls.nsw.gov.au>
To: Brendan Liew <Brendan.Liew@planning.nsw.gov.au>
Date: 14/03/2014 4:19:51 PM
CC:
Attachments:

Dear Brendan

My apologies for the delay in getting back to you on this development.

Hunter Local Land Services is a new organisation commencing on 1 January 2014. Our organisation provides advice to land managers who wish to improve their land or water management. Apart from operating under the Local Land Services Bill, our organisation is also responsible for administering the Native Vegetation Act and assessing clearing applications.

This proposed application needs to consider the Native Vegetation Act and contact Local Land Services if the development is affected by the Act. I also recommend that Hunter Water Corporation be contacted to determine any potential impacts on groundwater supplies as the Tomago Sandbeds provides water for Hunter Water's reservoirs.

The Office of Environment and Heritage should also be contacted regarding legislation they administer which would be relevant for this proposed development.

Regards

Liane

Telephone inquiries
Tom Croft
Development Assessment & Compliance
Please quote Parcel No: 38360

12 March 2014

NSW Planning & Infrastructure
Att: Carl Dumpleton
Via email: carl.dumpleton@planning.nsw.gov.au

Dear Sir,

Re: Bobs Farm Sand Project, Request for Input into DGRs
PT: 254 DP: 753204, 3631 Nelson Bay Road BOBS FARM 2316
Lot 51 DP 10156713631 Nelson Bay Road BOBS FARM 2316
Lot 10 DP 1071458. 3721 Nelson Bay Road BOBS FARM 2316

Council refers to your advice of 6 February 2014 requesting input into the DGRs for the proposed Sand Mining Project at the above properties. The following planning, engineering and ecology comment is provided.

Planning

With reference to Port Stephens Local Environmental Plan 2013 the site is zones RU2 Rural Landscape. Extractive industries are a permissible land use in the zone.

The site has the following general environmental constraints that should be addressed in any proposal:

- Bushfire Prone Land
- Acid Sulphate Soils – Class 3 and 4 (Works beyond 1 and 2m below natural ground surface, respectively)

Appropriate Aboriginal archaeological assessment should be requested, and with consultation with the Worimi Aboriginal Land Council and with reference to relevant legislation. It is also noted that the Worimi Aboriginal Land Council is the owner of the land opposite the site on the southern side of Nelson Bay Road.

Appropriate assessment of noise and air quality is also required with consideration to neighbouring dwellings and land uses.

It is also noted that the southern side of Nelson Bay Road is within the Hunter Water Special Area (Drinking Water Catchment) which should be addressed in any proposal.

Engineering

All entry and exit movements resulting from this application must be to and from Nelson Bay Rd directly and not Marsh Rd, this is due to:
Marsh Rd is low lying and frequently overtopped in times of rain and high tides (also at risk of the impacts of climate change); Marsh Rd is considered structurally inadequate by council to carry large volumes of heavy vehicles due to poor/saturated sub-grade conditions (natural material underneath Marsh is of a swamp/bog/saturated nature, council has had severe problems in the past when maintaining this road); The proposed exit route to Nelson Bay Rd via Marsh Rd passes through a School Zone for a Primary School aged children, it is considered unsafe and inappropriate to have large volumes of heavy vehicles in the vicinity of young children when there is adequate opportunity (U-Turn Facility) for those vehicles to enter and exit from the proponents frontage to Nelson Bay Rd.

A Traffic Impact Assessment should be prepared in accordance with the RMS 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.
- 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 Impact Statement 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/RMS
- 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.

Ecology

Relevant Site Background

Prior to 2002 the landholder, Patra Holdings Pty Ltd, made an application to clear 14ha of vegetation to the Catchment Management Authority under the Native Vegetation Act 1997. The Catchment Management Authority refused the application due to impacts on threatened species, land and water degradation potential, aboriginal heritage values, and lack suitability of the site to grow olives.

Patra Holdings Pty Ltd then applied to Port Stephens Council for a development application to clear 1.95ha of vegetation which was refused by staff due to similar concerns held by the CMA. The development application was subsequently called to Council were it was approved in October 2002.

In January 2010 council staff received a complaint regarding illegal land clearing. Council staff investigated the matter and concluded that 4.68ha of vegetation had been removed without consent sometime between 2002 and 2004.

During Councils investigation is become clear that DECC were aware of the illegal clearing however decided not to pursue the matter and did not report the clearing to Council. Under section 127(5) of the EP&A Act Council has only 2 years to commence proceedings after the offence was alleged to be committed.

Site Characteristics

The site has considerable environmental values and the ongoing development in the area is considered to be creating an adverse cumulative impact on native vegetation. In particular the site is:

- classed as supplementary koala habitat under the Port Stephens Council Comprehensive Koala Plan of Management (CKPoM), requiring its protection to assist the long term conservation of the koalas of Port Stephens
- an excellent example of the old growth coastal sands blackbutt association with many unique habitat features, that is in good condition despite some disturbance. It should be noted that not much old growth forest of this vegetation community still exists in Port Stephens due to clearing and past sand mining.
- important for connectivity and clearing the area under application would fragment an important corridor of the native vegetation
- considered to have high biological diversity in all structural layers of forest, providing habitat for a wide range of native fauna and flora
- Provides an important source of food in the winter on account of the winter flowering vegetation.
- Contains habitat for several threatened species including (but not limited to)
    - Squirrel Gliders
    - Diuris arenaria and Diuris praecox
    - Swamp Sclerophyll Forest (EEC)

- River Flat Eucalypt Forest (EEC) – One of only 2 known sites in the LGA.
- Several threatened microbat species

Council therefore requests the DGRs to include the requirement to:

- Undertake spotlighting, echolocation and stag watching in addition to call playback for a variety of threatened fauna including owls, plus trapping for gliders and New Holland Mouse should be undertaken in accordance with the LHCCREMS Flora and Fauna Survey Guidelines 2002.
- Address the PSC CKPoM and include search for searches for scats and scratches
- Undertake an Assessment of Significance for all known or possible threatened species in the locality
- Undertake an assessment regarding the habitat value of the site and the abundance of ecologically mature hollow-bearing trees and the impact of the loss of these hollows
- Undertake targeted survey for orchids in the appropriate flowering periods.
- Undertake an assessment to determine an appropriate buffer to ensure neighbouring properties do not experience wind blown sand. NB It is likely that a 15m buffer will not stop wind blown sand as the southerly winds can be very strong.
- Address aboriginal heritage values

Thank you for the opportunity to provide comment on this proposal. Should you require any further information in relation to this letter please contact the undersigned.

Yours faithfully

Tom Croft
Senior Development Planner
DEVELOPMENT ASSESSMENT & COMPLIANCE

Transport
Roads & Maritime
Services

13 March 2014

SF2014/019270
CR2014/001281
KM

Senior Planner, Mining Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Carl Dumpleton

NELSON BAY ROAD (B63): PROPOSED SAND QUARRY – LOT 254 DP 753204, LOT 51 DP 1015671 & LOT 10 DP 1071458, NELSON BAY ROAD, BOBS FARM – DIRECTOR GENERAL'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS (SSD TBA)

Dear Mr Dumpleton,

I refer to the Department's email dated 6 February 2014 requesting the provision of key issues which Roads and Maritime Services believes should form part of the Director General's environmental assessment requirements (DGRs) for the subject proposal.

Transport NSW and RMS' primary interests are in the road network, traffic and broader transport issues. In particular, the efficiency and safety of the classified road network, the security of property assets and the integration of land use and transport.

Roads and Maritime has reviewed the preliminary information, prepared by Tattersalls and Landers dated 19 December 2013, for the subject project and provide the following comments.

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
- RMS *Guide to Traffic Generating Developments*
    - Section 2 Traffic Impact Studies

Roads & Maritime Services

59 Darby Street, Newcastle NSW 2300 | Locked Bag 2030 Newcastle NSW 2300 DX7813 Newcastle
T 02 4924 0688 | **F** 02 4924 0342 | **E** Ashish.Tamhane@rms.nsw.gov.au **www.rms.nsw.gov.au | 13 22 13**

A traffic and transport study shall be prepared in accordance with the RMS *Guide to Traffic Generating Developments 2002* and is to include, but not be limited to, the following:

- Identify all relevant vehicular traffic routes and intersections for access to/from the subject site.

- Current traffic counts for all of the above traffic routes and intersections.

- The anticipated additional vehicular traffic generated from both the construction and operational stages.

- The distribution on the road network of the trips generated by the proposed development. It is requested that the predicted traffic flows are shown diagrammatically to a level of detail sufficient for easy interpretation.

- 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 during the construction and operational stages. The study shall also give consideration to the cumulative traffic impacts of other proposed and approved developments in the area.

- Traffic analysis of any major / relevant intersections, using SIDRA or similar traffic model, including:

    - Current traffic counts and 10 year traffic growth projections, allowing a 2% background growth on the classified road network
    - With and without development scenarios considered
    - 95th percentile back of queue lengths
    - Delays and level of service on all legs for the relevant intersections
    - Use of SIDRA or similar traffic model
    - Electronic input/output data files for RMS review

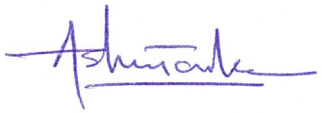
- Any other impacts on the regional and state road network including consideration of pedestrian, cyclist and public transport facilities and provision for service vehicles.

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

Port Stephens Council should also be consulted regarding requirements.

Please contact me on 4924 0688 if you require further advice.

Yours sincerely,



Ash Tamhane
A/Manager, Land Use
Hunter Region

Cc General Manager
Port Stephens Council

Cc Carl Dumpleton
Department of Planning and Infrastructure