



Appendix A

Director-General's Requirements



NSW GOVERNMENT

Department of Planning

Contact: Glenn Snow
Phone: (02) 9228 6352
Fax: (02) 9228 6355
Email: glenn.snow@planning.nsw.gov.au

Our ref: S08/00278-1

Mr Martin Hicks
Manager Environmental Planning and Services
GHD Pty Ltd
PO Box 5403
Hunter Regional Mail Centre NSW 2310

Attention: Shaun Taylor

Dear Mr Hicks

Director General's Requirements for the Environmental Assessment of the Proposed Minimbah Bank Third Track (MP 08_0060)

The Department has received your application for the proposed Minimbah Bank Third Track.

I have attached a copy of the Director-General's requirements (DGRs) for the environmental assessment of the Project. These requirements have been prepared following consultation with the relevant government agencies.

It should be noted that the Director-General's requirements have been prepared based on the information provided to date. Under section 75F(3) of the Act, the Director-General may alter or supplement these requirements if necessary and in light of any additional information that may be provided prior to the proponent seeking approval for the Project.

I would appreciate it if you could contact the Department at least two weeks before you propose to submit the Environmental Assessment for the Project to determine:

- the fees applicable to the application;
- relevant land owner notification requirements;
- consultation and public exhibition arrangements that will apply;
- options available in publishing the Environmental Assessment via the Internet; and
- number and format (hard-copy or CD-ROM) of the Environmental Assessment that will be required.

Prior to exhibiting the Environmental Assessment, the Department will review the document to determine if it adequately addresses the DGRs. The Department may consult with other relevant government agencies in making this decision. If the Director-General considers that the Environmental Assessment does not adequately address the DGRs, the Director-General may require the proponent to revise the Environmental Assessment to address the matters notified to the proponent. Following this review period the Environmental Assessment will be made publicly available for a minimum period of 30 days.

If your proposal includes any actions that could have a significant impact on matters of National Environmental Significance, it will require an additional approval under the Commonwealth *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act). This approval would be in addition to any approvals required under NSW legislation and it is your responsibility to contact the Department of Environment, Water, Heritage and the Arts if an approval under the EPBC Act is required for your proposal (6274 1111 or <http://www.environment.gov.au>).

Please note that the Commonwealth Government has accredited the NSW environmental assessment process for assessing impacts on matters of National Environmental Significance.

As a result, if it is determined that an approval is required under the EPBC Act, please contact the Department immediately as supplementary Director-General's requirements will need to be issued.

If you have any enquiries about these requirements, please contact Glenn Snow, Senior Environmental Planning Officer, Major Infrastructure Assessments on 02 9228 6352 or via email (glenn.snow@planning.nsw.gov.au).

Yours sincerely



18.4.08

Chris Wilson
Executive Director
Major Project Assessments
As delegate for the Director-General

Director-General's Requirements

Section 75F of the *Environmental Planning and Assessment Act 1979*

Application	08_0060
Project	A third track adjacent to the existing Up main line at a revised grade of 1:100 in comparison to the grade of the existing main line of 1:80. The major elements of the third track include approximately 10.8km of track and earthworks, 3 new rail under bridges, grade separation of Range Road level crossing, replacement and realignment of the Golden Highway overbridge, services relocation, signalling works and property acquisition.
Location	Minimbah, approximately 16 km south of Singleton and north for approximately 10.8km to an area known as Whittingham.
Proponent	Australian Rail Track Corporation
Date issued	18 April 2008
Expiry date	18 April 2010
General requirements	The Environmental Assessment (EA) must include the following: 1. an executive summary. 2. a detailed description of the Project including (but not limited to): ▪ location, corridor, and planning context; ▪ project components and design elements (including rail infrastructure; ancillary facilities and interactions with utilities); ▪ construction and operational characteristics (including site compounds); and ▪ project staging and timing. 3. an assessment of the key issues, with the following aspects described and addressed for each key issue (where relevant): ▪ the significance of the existing environment; ▪ the potential impacts of the proposal at construction and operation stages. Direct, indirect and cumulative impacts must be considered; ▪ relevant planning, land use and development matters (including relevant strategic and statutory matters) considered in the impact assessment and/or in developing management/ mitigation measures; and ▪ measures to be implemented to avoid, minimise, manage, mitigate, offset and/or monitor the impacts of the project; and ▪ any residual impacts. 4. a draft Statement of Commitments (SoC). The SoC must incorporate or otherwise capture measures to avoid, minimise, manage, mitigate, offset and/or monitor impacts identified in the impact assessment sections of the EA and ensure that the wording of the SoC clearly articulates the desired environmental outcome of the commitment. The SoC must be achievable, measurable (with respect to compliance), and time specific. 5. certification by the author of the Environment Assessment that the information contained in the Assessment is neither false nor misleading.
Key issues	Strategic and Project Justification – strategically justify the project taking into consideration the objects of the <i>Environmental Planning and Assessment Act 1979</i>, the projects consistency with the aims and objectives of relevant State policies (<i>State Plan</i>, <i>State Infrastructure Strategy</i>) and the project objectives. Ecology - including but not limited to: ▪ flora, fauna and habitat, with specific consideration of the Hunter lowland red gum forest, River-flat eucalypt forest and Swamp oak floodplain forest communities, and associated threatened and endangered populations and species, including <i>Eucalyptus glaucina</i>, and <i>Eucalyptus camaldulensis</i>; ▪ habitat fragmentation, foraging, roosting and nesting habitat loss, and rail traffic strikes; ▪ taking into account of the <i>Draft Guidelines for Threatened Species Assessment (DEC)</i>, <i>Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (DEC)</i>, <i>Guidelines for the Assessment of Aquatic Ecology in EIA (DoP)</i> and <i>Fish Passage Requirements for Waterway Crossings (NSW Fisheries)</i>.

	Cultural Heritage - including but not limited to: - Indigenous Heritage – objects, places of significance, natural and landscape values of the corridor and surrounding area, taking into account the <i>Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation</i> (DEC). Land Use and Access - including but not limited to: - access to, within and across the corridor (road and rail); - transport infrastructure (interaction with existing and proposed rail, road and air infrastructure), taking into account of <i>Road Design Guide</i> (RTA) and relevant Austroads guidelines and Australian Standards; - traffic movement and management (haulage routes, traffic control and safety); and - land use and property (interaction with the proposed Whittingham industrial area, acquisition, access, business and infrastructure impacts). Noise and Vibration - including but not limited to: - noise and vibration impacts on receivers, taking into account Chapter 171 of the <i>Environmental Noise Control Manual, Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects</i> (DECC/DoP), and <i>Environmental Noise Management Assessing Vibration: a technical guide</i> (DEC). Hydrology – including but not limited to: - effects of flooding on the project, and project effects on flood characteristics (on surrounding land, property and infrastructure). A range of flood events (including the PMF) shall be assessed in all flood prone areas within and adjoining the corridor; - water and stormwater (use, receiving water bodies and creek crossings, water quality and drainage systems,), taking into account the <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom) guidelines; and - groundwater resources (characteristics, users, interception, use and groundwater dependent ecosystems). Soils and Geology – including but not limited to: - bulk earthworks (excavations, resource conservation and spoil balance, embankments and retaining structures); and - soil characteristics and land contamination (including a Remedial Action Plan, if required), taking into account the <i>Managing Land Contamination Guidelines</i> (DUAP).
Environmental Risk Analysis	Notwithstanding the above key assessment requirements, the EA must include an environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of this additional key environmental impact must be included in the EA.
Consultation	You should undertake an appropriate and justified level of consultation with relevant parties during the preparation of the EA, including (but not limited to): - local, State or Commonwealth government authorities including: Department of Environment and Climate Change, Department of Primary Industries, Department of Water and Energy, Singleton Council; - service and infrastructure providers including: Roads and Traffic Authority, RailCorp and Rail Infrastructure Corporation; - specialist interest groups including Local Aboriginal Land Councils; and - the public, including adjoining and affected landowners and businesses and the Department of Defence. The EA must describe the consultation process undertaken and identify the issues raised (including where these have been addressed in the EA).

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08/708
JH



Director, Major Infrastructure Assessments
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Glenn Snow

PROPOSED MINIMBAH BANK THIRD TRACK PROJECT – DIRECTOR GENERAL'S REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

Dear Mr Snow

I refer to your letter of 26 March 2008 (Your reference: S08/00278-1) requesting the Roads and Traffic Authority (RTA) to provide details of key issues and assessment requirements for the above development proposal, which may be included in the Directors General's Environmental Assessment requirements.

The RTA's primary interests are in the road network, traffic and broader transport issues, particularly in relation to the efficiency and safety of the classified road system, the security of property assets and the integration of land use and transport.

In accordance with the Roads Act 1993, the RTA has powers in relation to road works, traffic control facilities, connections to roads and other works on the classified road network. New England Highway, part of the National Network, and the Golden Highway are classified (State) roads and RTA concurrence is required for connections to classified roads with Council consent, under Section 138 of the Roads Act. RTA consent is required for traffic control facilities under Section 87, and road works under Section 61 of the Act. Council is the roads authority for all public roads in the area.

The RTA has had numerous discussions with the applicant's consultant GHD Pty Ltd with regard to the proposed design of the third track project and associated impact on New England Highway and Golden Highway. In addition to these discussions, the RTA reviewed the proposed concept plans of the development and provided comments to GHD Pty Ltd in a letter of 18 February 2008 (attached).

In preparing the Environmental Impact Statement (EIS), reference should be made to the issues raised in the RTA's previous letter of 18 February 2008.

Further to the above, the EIS shall address the traffic impact of both proposed road projects associated with the track development and in preparing the traffic report reference should be made to Section 2 of the RTA's Guide to Traffic Generating Developments. In addition, a 'Construction Traffic Management Plan' shall be prepared for both road work projects and provided to RTA and Council for review.



Please contact me on (02) 4924 0240 if you require further advice.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'Dave Young', with a stylized flourish extending from the bottom right.

Dave Young
Manager, Land Use Development
Hunter Operations & Engineering Services

14 April 2008

Cc Mr Mark Ihlein
Singleton Council

402.564;2
07/2390, 07/2329
NW



FILE COPY

GHD Pty Ltd
PO Box 5403
HUNTER REGION MAIL CENTRE NSW 2310

Attention: Mr Stephen Burns / Mr Simon Page

**MINIMBAH BANK THIRD TRACK – PROPOSED REALIGNMENT AND ROAD WORKS
ON GOLDEN HIGHWAY AND RANGE ROAD, WHITTINGHAM**

Dear Mr Burns / Mr Page

I refer to your email sent 16 and 26 November 2007 (Your reference TRANSMIT 117 & 123) regarding the subject proposal referred to the RTA for comment.

The RTA's primary interests are in the road network, traffic and broader transport issues particularly the efficiency and safety of the classified road network, the security of property assets and the integration of land use and transport.

In accordance with the *Roads Act 1993*, the RTA has powers in relation to road works, traffic control facilities, connections to roads and other works on the classified road network. The New England Highway (H 9), part of the National Network, and the Golden Highway (H 27) are classified roads and RTA concurrence is required for connections to classified roads with Council consent, under section 138 of the Act. RTA consent is required for traffic control facilities under section 87, and road works under section 61 of the Act. Council is the roads authority for all public roads in the area.

The RTA has reviewed the information provided and would have no objection to the proposed development subject to the following being included in conditions of development consent:

- The proposed New England Highway / Range Road intersection shall be, as a minimum, an RTA Type CHR/CHL intersection, with a left turn acceleration lane, replacing the existing intersection. The intersection shall be designed and constructed in accordance with the current requirements of the RTA's *Road Design Guide*, relevant Austroads guidelines and Australian Standards.
- The existing New England Highway / Range Road intersection shall be removed to RTA requirements when the new intersection is operational. Access to Neotsfield Lane opposite Range Road shall be maintained and line marking changed to provide a right turn lane at this intersection.
- The proposed realignment of the Golden Highway shall be designed and constructed in accordance with the RTA's *Road Design Guide*, relevant Austroads guidelines and Australian Standards. The works shall be designed for the current speed limit and tie-in appropriately with the existing Golden Highway and the intersection with the New England Highway.

- The proposed bridge shall conform to the requirements of the RTA's *Road Design Guide* and AS-5100 for road lanes and shoulder widths, and bridge barriers.
- A Traffic Management Plan (TMP) for both road work projects shall be developed and provided to the RTA and Council for review. Both the New England Highway and the Golden Highway must remain open and provide a level of serviceability to the satisfaction of RTA and Council.
- Access to all existing properties shall be maintained.
- All works, including the removal of redundant infrastructure, shall be undertaken to RTA and Council requirements at full cost to the developer.
- The required property acquisition shall be undertaken at no cost to RTA or Council. All costs associated with the subdivision and dedication as public road shall be at full cost to the developer.

Please note that the above requirements are the RTA's minimum requirements for consent to works associated on the New England Highway and Golden Highway, for the subject development. A *Works Authorisation Deed* with the RTA will need to be executed to enable review of the proposed design and construction works. In this regard, detailed design plans and all relevant additional information, as may be required in the RTA's *Works Authorisation Deed* documentation, for each specific change to state road network for the RTA's assessment and final decision concerning the work.

Singleton Council should also be consulted with respect to the proposed works as Council is the roads authority for these roads.

Notwithstanding the above, the RTA has undertaken a preliminary review of the concept design and provides the following comments:

Range Road

- To allow for the future duplication of the New England Highway, the realigned Range Road shall be designed and constructed such that the road level at the property boundary is similar to the existing edge line of the New England Highway.

Comment

The proposed new Range Road cross sections adjacent to the New England Highway shall include the full width highway carriageway and northern property boundary.

- The road embankment of the proposed Range Road shall be located outside of the New England Highway road reserve. This shall include the proposed rail access track.

Comment

The alignment of the existing fence is historical and does not reflect the current property line.

- The New England Highway cross section should be 3.5 metre wide lanes with 3 metre shoulders generally, with 1 metre rounding.
- The length of the proposed left and right turn lanes, and left turn acceleration lane shall be in accordance with the RTA's *Road Design Guide*.

Golden Highway

- The proposed alignment has an undesirable combination of three horizontal curves combined with one vertical curve. (See attached alternate alignment)

Comment

The current design creates minimum distance between superelevation transition points and subsequently undesirable superelevation transitions on the bridge deck.

An alternative alignment is a single large curve tangential to the existing curve at the start of the works. This curve will be in excess of 3000 metres radius and eliminates the need for superelevation transitions (bridge deck) and is contained in the vertical alignment. Consideration will need to be given to the tie-in with the existing New England Highway / Golden Highway intersection.

- The Golden Highway cross section should be 3.5 metre wide lanes with 3.0 metre shoulders and 1.0 metre rounding.
- The vertical grade of the proposed new road may require an auxiliary climbing lane in accordance with the RTA's *Road Design Guide*.
- The proposed bridge cross section should comply with the RTA's *Road Design Guide* and AS-5100. Consideration should be given to matching the bridge width and the approach road width.

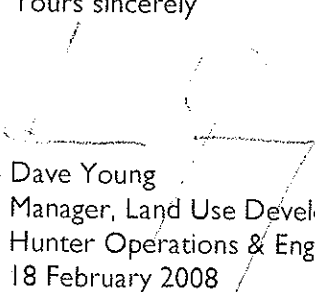
Future design plans (for both Range Road and Golden Highway works) should show the extent of existing road for a sufficient distance to examine the design relationship between the existing and proposed road alignments, such as sight distance and curved alignments. Road boundaries and utility locations shall be included in future submissions.

I also refer to preliminary discussions regarding the location of the third rail line adjacent to the New England Highway. The RTA requires that the proposed rail works be kept clear of the New England Highway road reserve. The existing road corridor must be retained. Should the rail works require part of the road reserve, appropriate compensatory acquisition would be required on the northern side of the highway at full cost to the developer, to maintain the existing road reserve width. Alternatively, retaining walls should be used in lieu of batters to maintain the current road reserve.

Please note the above comments are preliminary only and subject to further review as part of the WAD process.

Please contact me on (02) 4924 0240 if you have any queries.

Yours sincerely


Dave Young
Manager, Land Use Development
Hunter Operations & Engineering Services
18 February 2008

Cc Mr Gary Woodman
Singleton Council

Cc Mr Gerard Withford
ARTC



NSW Government

DEPARTMENT OF WATER AND ENERGY

Your Ref: S08/00278-1
Our Ref: ER7636



10 April 2008

Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attention: Glenn Snow

Dear Sir

**Request for Key Issues and Assessment Requirements
Proposed Minimbah Bank Third Track Project (ARTC)
Singleton Local Government Area**

I refer to your letter of 26 March 2008 requesting key issues and assessment requirements for the project proposal. The Department of Water and Energy (DWE) provides the following advice for consideration:

Relevant Legislation

The assessment is required to take into account the objectives and regulatory requirements of the following legislation, as applicable:

- *Water Act 1912*
- *Water Management Act 2000 (WMA)*

Note: If works are proposed in a *declared floodplain* consent under section 256 of the *WMA* maybe required. Consents under section 256 of the *WMA* are administered by the Coast and Floodplain Unit within the NSW Department of Environment and Climate Change (DECC) [Greg Bernard, Floodplain Manager, DECC – Locked Bag 1002, Dangar NSW 2309].

Water Sharing Plans

Gazetted Water Sharing Plans (WSPs) prepared under the provisions of the *WMA* establish rules for access to, and the sharing of water between the environmental needs of the surface or groundwater source and water users. If the proposal is within a gazetted WSP area the assessment is required to demonstrate consistency with the rules of the WSP. Refer to: <http://www.dnr.nsw.gov.au/water/plans.shtml>

Relevant Policies

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

- NSW Groundwater Policy Framework Document - General
- NSW Groundwater Quantity Management Policy
- NSW Groundwater Quality Protection Policy
- NSW Groundwater Dependent Ecosystem Policy
- NSW State Rivers and Estuaries Policy
- NSW Sand and Gravel Extraction Policy for Non-Tidal Rivers
- NSW Wetlands Management Policy
- NSW Farm Dams Policy
- NSW Weirs Policy

Guidelines

The assessment is required to take into account the following DWE Guidelines for Controlled Activities (February 2008), as applicable:

- Riparian corridors (and associated Vegetation Management Plans)
- Watercourse crossings
- Laying pipes and cables in watercourses
- Outlet structures
- In-stream works

Refer to: http://www.dnr.nsw.gov.au/water/controlled_activity.shtml

Groundwater

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

Groundwater Source

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

- Details of the predicted highest groundwater table at the development site.
- Details of any works likely to intercept, connect with or infiltrate the groundwater sources.
- Details of any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.
- Describe the flow directions and rates and the physical and chemical characteristics of the groundwater source.
- Details of the predicted impacts of any final landform on the groundwater regime.
- Details of the existing groundwater users within the area (including the environment) and include details of any potential impacts on these users.
- Assessment of the quality of the groundwater for the local groundwater catchment.
- Details of how the proposed development will not potentially diminish the current quality of groundwater, both in the short and long term.
- Details on preventing groundwater pollution so that remediation is not required.
- Details on protective measures for any groundwater dependent ecosystems (GDEs).
- Details of proposed methods of the disposal of waste water and approval from the relevant authority.
- Assessment of the need for an Acid Sulfate Management Plan (prepared in accordance with ASSMAC guidelines).
- Assessment of the potential for saline intrusion of the groundwater and measures to prevent such intrusion into the groundwater aquifer.
- Details of the results of any models or predictive tools used.

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

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

Licensing

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

Groundwater Dependent Ecosystems

The assessment is required to identify any impacts on GDEs.

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

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

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

The NSW Groundwater Dependent Ecosystem Policy provides guidance on the protection and management of GDEs. It sets out management objectives and principles to:

- Ensure the most vulnerable and valuable ecosystems are protected.
- Manage groundwater extraction within defined limits thereby providing flow sufficient to sustain ecological processes and maintain biodiversity.
- Ensure sufficient groundwater of suitable quality is available to ecosystems when needed.
- Ensure the *precautionary principle* is applied to protect GDEs, particularly the dynamics of flow and availability and the species reliant on these attributes.

A number of gazetted WSP list and map priority GDEs and set out the management strategies and actions for sharing and protecting groundwater quality, quantity and dependent ecosystems.

Surface Waters

DWE is responsible for the sustainable management of rivers, estuaries, wetlands and adjacent riverine plains.

Watercourse/Riparian

The assessment is required to consider the impact of the proposal on the watercourses and associated riparian vegetation within the site and provide the following:

- Identify the sources of surface water.
- Details of stream order (using the Strahler System).
- Details of any proposed surface water extraction, including purpose, location of existing pumps, dams, diversions, cuttings and levees.
- Detailed description of any proposed development or diversion works including all construction, clearing, draining, excavation and filling.
- An evaluation of the proposed methods of excavation, construction and material placement.
- A detailed description of all potential environmental impacts of any proposed development in terms of vegetation, sediment movement, water quality and hydraulic regime.
- A description of the design features and measures to be incorporated into any proposed development to guard against long term actual and potential environmental disturbances, particularly in respect of maintaining the natural hydrological regime and sediment movement patterns and the identification of riparian buffers. (See note below)

- Details of the impact on water quality and remedial measures proposed to address any possible adverse effects.

The *Rivers and Foreshores Improvement Act 1948 (RFIA)* has now been repealed and the controlled activity provisions in the *WMA* have commenced. The provisions relating to controlled activities replaced the *RFIA* from 4 February 2008.

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

Although Part 3A Major Projects are exempt from requiring a controlled activity approval (s91 of *WMA*), the assessment is required to take into account the objectives and provisions of relevant legislation and guidelines.

Note: Recommended Core Riparian Zones (as applicable):

- Minimum of 10m for any intermittently flowing 1st order watercourse;
- 20m for any permanently flowing 1st order watercourse or any 2nd order watercourse;
- 20m – 40m (merit based assessment) for any 3rd order or greater watercourse.

[Refer to DWE Guidelines for Controlled Activities (February 2008) – Riparian Corridors].

Water Management Structures/Dams

DWE is responsible for the management and licensing of these structures under water legislation.

If the proposal includes existing or proposed water management structures/dams, the assessment is required to provide information on the following:

- Date of construction (for existing structure/s).
- Details of the legal status/approval for existing structure/s.
- Details of any proposal to change the purpose of existing structure/s.
- Details if any remedial work is required to maintain the integrity of the existing structure/s.
- Clarification if the structure/s is on a watercourse.
- Details of the purpose, location and design specifications for the structure/s.
- Size and storage capacity of the structure/s.
- Calculation of the Maximum Harvestable Right Dam Capacity (MHRDC).
- Details if the structure/s is affected by flood flows.
- Details of any proposal for shared use, rights and entitlement of the structure/s.
- Details if the proposed development/subdivision has the potential to bisect the structure/s.

DWE's Farm Dams Assessment Guide provides details on harvestable rights and the calculation of the MHRDC. Refer to:

http://www.naturalresources.nsw.gov.au/water/farm_dams/index.shtml

Basic Landholder Rights

The *WMA* identifies Basic Landholder Rights (BLRs) for access to water whereby landholders over an aquifer or with river or lake frontage can access water for domestic (household) purposes or to water stock without the need for a water licence (although a works approval may still be required). This has the potential to impact inequitably on existing licensed water users (under a WSP) in the case where riparian frontage continues to be subdivided, creating new basic rights for water extraction.

If this is an issue for the proposal the assessment should identify any potential for creation of new BLRs along the frontage to major waterways or over any sensitive aquifers. For those subdivisions fronting rivers/lakes, innovative subdivision design which allows the creation of additional lots without direct river/lake frontage or utilises collective or community title to manage the use of any existing BLR could provide a satisfactory way of managing this issue whilst still allowing for subdivision. Subdivisions over a sensitive aquifer however, may be more limited in using this approach.

Sustainable Water Supply

The assessment is required to address the issue of provision of a sustainable water supply for any project proposal. The assessment should include Water Management Plans detailing how a

sustainable and efficient water supply can be sourced and implemented with minimal reliance on accessing valuable surface and groundwater resources.

Through the implementation of BASIX, Integrated Water Cycle Management and Water Sensitive Urban Design, any proposed development must also be able to exhibit high water use efficiency.

Should there be any further enquiry in this matter, please contact me on 4904 2538.

Yours sincerely



Peter Johns
Project Officer
Major Projects and Planning
Newcastle



NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Our ref: CF08-059
Your ref: S08/0278-1

9 April 2008

Mr Scott Jeffries
NSW Department of Planning
GPO Box 39
SYDNEY NSW 2001



Dear Scott

Re: Director-General requirements and environmental assessment requirements for proposed Minimbah third track project

Thank you for your letter requesting Director-General and environmental assessment requirements from the NSW Department of Primary Industries relating to Fisheries issues, for the proposal cited above. The information listed below and in the attachment may be of some assistance in the preparation of the environmental assessment for this proposal.

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

Yours sincerely

James Sakker
Conservation Manager

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.

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 recommended 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.

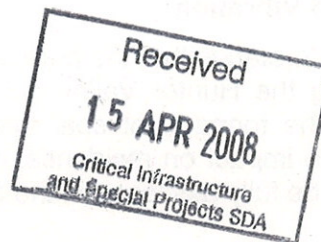
In the event of a request for concurrence or consultation of the Director of NSW Department of Primary Industries, one (1) copy of the EIS should be provided to NSW Department of Primary Industries in order for the request to be processed.

It should be noted that the NSW Department of Primary Industries 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, NSW Department of Primary Industries 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.

Your reference : S08/00278-1
Our reference : DOC08/13965, FIL06/927-02 Part 3A
Contact : Rebecca Akhurst, (02) 49086850



Director - Major Infrastructure Assessments
Department of Planning
GPO Box 39
SYDNEY NSW 2001

11 APR 2008

Attention: Glenn Snow

Dear Sir

**PROPOSED MINIMBAH BANK THIRD TRACK PROJECT – REQUEST FOR DIRECTOR
GENERAL'S REQUIREMENTS FOR ENVIRONMENTAL ASSESMENT**

I refer to your letter dated 26 March 2008 seeking comment from the Department of Environment and Climate Change (DECC) regarding the Director-General's Environmental Assessment Requirements (DG EARs) for the above proposal.

DECC has reviewed the details of the project as provided in the Australian Rail Track Corporation's preliminary assessment report titled Minimbah Third Track Project Application Report and considers that the key environmental aspects of this proposal are:

- Potential impacts threatened species and endangered ecological communities
- Aboriginal cultural heritage impacts
- Noise and vibration impacts on sensitive receivers

Threatened species

Initial flora and fauna investigations indicate the presence of two threatened flora species (slaty red gum *Eucalyptus glaucina* and river red gum *Eucalyptus camaldulensis*) and two Endangered Ecological Communities (*Hunter lowland red gum forest* and *swamp-oak floodplain forest*) in the study area and potentially in the project area. DECC recommends that the proponent undertake an assessment of threatened species along the route of the proposed third track to enable the evaluation, avoidance or mitigation of any adverse impacts.

Aboriginal cultural heritage

Records indicate 58 previously recorded Aboriginal heritage sites within four kilometres of the proposed project route and there is potential for Aboriginal sites to be present within existing undisturbed topsoil along the proposed project route.

The Department of Environment and Conservation NSW is now known as
the Department of Environment and Climate Change NSW

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

Department of **Environment and Conservation** NSW



Noise and Vibration

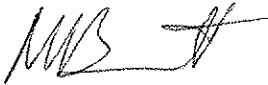
DECC understands that the purpose of the proposed development is to increase the movement of coal along the Hunter Valley rail corridor. Off-site rail noise associated with the proposal to increase the tonnage of coal that will be transported along the existing rail corridor has the potential to impact on residential communities and other sensitive receivers. It is important that this issue be fully assessed in the EA.

Please find attached DECC's Environmental Assessment Requirements in relation to these issues (Attachment A).

The DECC requests that four (4) copies of the EA be provided for assessment to the Regional Manager Hunter, PO Box 488G, Newcastle 2300.

If you require any further information on this matter please contact Rebecca Akhurst on (02) 4908 6850.

Yours sincerely

A handwritten signature in black ink, appearing to read 'MB', followed by a stylized flourish or checkmark.

MITCHELL BENNETT
Head Regional Operations Unit – Hunter Region
Environment Protection and Regulation

Enclosure: Attachment 'A' – DECC Environmental Assessment Requirements

ATTACHMENT A - DECC ENVIRONMENTAL ASSESSMENT REQUIREMENTS

Executive summary

The executive summary should include a brief discussion of the extent to which the proposal achieves identified environmental outcomes.

General Information

The following information must be provided in the Environmental Assessment (EA) to enable the DECC to accurately assess the environmental implications of the proposed Minimbah Third Track. The EA must adequately describe the development proposal and the existing environment including air, noise, waters, soils, flora and fauna characteristics and Aboriginal cultural heritage. The EA should describe mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project.

The Proposal

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

- the size and type of the operation;
- the anticipated level of performance in meeting required environmental standards;
- the staging and timing of the proposal; and
- the proposal's relationship to any other industry or facility.

The Site

The EA 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 works/route and details of the surrounding environment;
- The proposed sequence of works;
- Appropriate landuse zoning;
- Ownership details of any residence and/or land likely to be affected by the proposal;
- Maps/diagrams showing the location of residences and properties likely to be affected and other land uses, roads, waterways, etc in the locality that may be affected by the proposal;
- 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;
- Waste generation and disposal;
- Methods to mitigate any expected environmental impacts of the development;

KEY ISSUES

Threatened Species

A key issue for this proposal is the potential impact on threatened species slaty red gum *Eucalyptus glaucina* and river red gum *Eucalyptus camaldulensis* and Endangered Ecological Communities *Hunter lowland red gum forest* and *swamp-oak floodplain forest*.

A flora and fauna assessment should be undertaken as early as possible in the project planning process so that information regarding threatened species, populations and communities can be considered and incorporated into decisions made regarding route alignment, and overall design.

The EA should identify opportunities to minimise and mitigate impacts on biodiversity conservation values.

The EA should detail the existing environment including discussion on flora and fauna characteristics. If any species requiring consideration under the Commonwealth legislation, the *Environment Protection and Biodiversity Conservation Act 1999* may be affected by the proposal, approval for the works may also be required from the Commonwealth Department of Environment.

Flora

The EA should include:

- A field survey and assessment to determine the presence or absence and condition of threatened flora.
- Targeted surveys of threatened flora and endangered ecological communities that are likely to be impacted by the proposal in accordance with the Draft Guidelines for Threatened Species Assessment (DECC and Department of Primary Industries, July 2005).
- A comprehensive description of the vegetation of the subject site including the condition and size of the plant communities present, the designation of conservation significance at a local, regional and State level, and an assessment of the likely occurrence of any threatened species, populations and / or ecological communities listed under Schedules 1 or 2 of the *Threatened Species Conservation Act 1995* and any Rare or Threatened Australian Plant (ROTAP) species.
- A plan showing the distribution of any threatened or ROTAP species and the vegetation communities on the subject site, and the extent of vegetation proposed to be cleared. This plan should be at the same scale as the plan of the area subject to development, and preferably showing the footprint of the proposed development superimposed on the vegetation, in order to assist in the assessment of impacts on existing vegetation.
- Where threatened species, populations or their habitats, or endangered ecological communities exist on or are in close proximity to the subject site, the effect of the proposed development should be determined by an assessment pursuant to Section 5A of the *Environmental Planning and Assessment Act 1979*. An assessment of the impact of the development on the plant communities and / or ROTAP species should also be provided.
- A description of the measures proposed to mitigate and / or ameliorate the impact of the development on the plant communities, threatened and ROTAP species.
- Where necessary the proponent should develop in consultation with DECC, appropriate biodiversity offsets in accordance with *Principles for the use of biodiversity offsets in NSW* which forms part of the DECC's *Guidelines for Biodiversity Certification of Environmental Planning Instruments - Working draft* (April 2007) where necessary.

Fauna

The EA should include:

- A fauna survey to identify the distribution and abundance of fauna species known or likely to use the subject site. This should include a description of available fauna habitats and an assessment of the conservation status of each of the faunal components at a local, regional and State level.
- Targeted surveys of threatened flora, fauna and endangered populations that are likely to be impacted by the proposal in accordance with the Draft Guidelines for Threatened Species Assessment (DECC and Department of Primary Industries, July 2005).

- A plan showing the results of the above surveys. The plan should be at the same scale as (or as an overlay to) the plan of the development footprint and overall site, to assist in the assessment of potential impacts of the proposal on fauna.
- An assessment of the potential impact of the development on fauna.
- An assessment of the occurrence or likely occurrence of threatened species or populations, or their habitats, on the subject land. Where the assessment concludes that threatened species or populations, or their habitats, exist on or in close proximity to the subject site, the effect of the proposal should be determined in accordance with an assessment pursuant to Section 5A of the *Environmental Planning and Assessment Act 1979*.
- A description of the measures proposed to mitigate and/or ameliorate the impact of the development on fauna.
- Where necessary the proponent should develop in consultation with DECC, appropriate biodiversity offsets in accordance with *Principles for the use of biodiversity offsets in NSW* which forms part of the DECC's *Guidelines for Biodiversity Certification of Environmental Planning Instruments - Working draft* (April 2007) where necessary.

Surveys and Assessments

The DECC can provide records of flora and fauna held in:

The Wildlife Atlas <http://wildlifeatlas.nationalparks.nsw.gov.au/wildlifeatlas/watlas.jsp>

- Rare or Threatened Australian Plants (ROTAP) database.
- Threatened Species, Populations & Ecological Communities of NSW Catchments
www.threatenedspecies.environment.nsw.gov.au

It should be noted that these databases are not comprehensive, should only be used as a guide and do not negate the need for specific site investigations.

Fauna, flora, vegetation and cultural heritage surveys should be undertaken by suitably qualified persons and the qualifications and experience of the persons undertaking the work should be provided. Surveys and assessments should not be confined to the immediate development footprint, but also include any areas where ancillary works may be undertaken, for example, any upgrade in site access roads or other supporting infrastructure.

Dates and times, site locations, survey design and methodology, analysis techniques and weather conditions at the time of the assessments and surveys must be provided. The limitations of surveys should be identified and the results interpreted accordingly.

Conclusions drawn in surveys and assessments should be substantiated by evidence resulting from those surveys and assessments. The document being supported by the surveys and assessments should reflect the conclusions and clearly state where recommendations of the survey and assessments have been incorporated in the proposal

Aboriginal and Cultural Heritage

General Issues

For the purpose of these guidelines Aboriginal heritage is considered to include "Aboriginal objects" and places of significance to Aboriginal communities.

Under the *National Parks and Wildlife Act 1974* (NP&W Act), an "Aboriginal object" is defined as any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of the area by persons of non-Aboriginal extraction, and

includes Aboriginal remains. Aboriginal objects are confined to physical evidence. Aboriginal objects are sometimes referred to as Aboriginal sites.

An "Aboriginal place" is a place which has been declared so by the Minister for the Environment because s/he believes that the place is or was of special significance to Aboriginal culture. It may or may not contain physical Aboriginal objects.

It should also be noted that there are places in the landscape which have particular meaning for Aboriginal people, for example, spiritual areas or natural mythological areas. Although these areas are not protected under the NP&W Act, unless they contain physical remains of Aboriginal occupation or have been declared an "Aboriginal place", it is recommended that the potential impact of proposals on such places also be considered in the assessment process.

Should any Aboriginal archaeological sites be present in the study area, the requirements of the NP&W Act with respect to Aboriginal objects should also be considered. Under s.90 of the NP&W Act, it is an offence to knowingly damage deface or destroy Aboriginal objects without prior permission of the Director-General of the DEC.

Assessment requirements

A comprehensive assessment should be undertaken as early as possible in the project planning process so that information regarding Aboriginal cultural heritage values, both cultural and archaeological, can be considered and incorporated into decisions made regarding route alignment and overall design. Significant sites should be identified, and avoided where possible. Proposed impacts will need to be adequately justified and appropriate mitigation measures developed prior to the commencement of construction.

The EA should:

- Undertake a comprehensive assessment of Aboriginal cultural heritage consistent DECC Guidelines For Aboriginal Cultural Heritage Impact Assessment and Community Consultation. (July 2005) and Identify the presence or absence of Aboriginal objects and the significance of the area to the local Aboriginal community. A search of the Aboriginal Heritage Information Management System (AHIMS) should be conducted.
- An assessment of the archaeological sensitivity of areas of the subject site and identification of significance of the site to the local Aboriginal community should be undertaken by an appropriately qualified person in consultation with the local Aboriginal community. This may require field survey.
- Identify priority areas for conservation (if applicable) and zones of archaeological sensitivity or potential for archaeological deposits along the proposed route.
- Aboriginal objects and places of significance to the Aboriginal community should be detailed on a plan. This plan should be at the same scale as that of the subject site and development footprint, to assist in the assessment of the impact of the proposal on the identified cultural components.
- Report on the results of survey(s) and consultation, and a description of the actions that will be taken to avoid or mitigate impacts or offset unavoidable impacts of the project on Aboriginal cultural heritage values.
- Clearly demonstrate and document that effective community consultation with Aboriginal community groups has been undertaken in determining and assessing impacts, developing options and making final recommendations.

Noise and Vibration

The EA should:

- include a comprehensive noise and vibration assessment of the existing environment, potential impacts and proposed noise amelioration measures. The *Interim Guidelines for the Assessment of Noise from Rail Infrastructure Projects* (DECC, 2007), the *NSW Industrial Noise Policy* (EPA, 1999), including recently published Application Notes and environmental guidelines *Assessing Vibration: a technical guideline* (DEC, 2006) provide a guide to the methodology and assessment criteria preferred by the DEC to determine noise levels.
- Consider the construction and operational phases of the proposal over the “operating” hours proposed and take into account adverse weather conditions including temperature inversions.
- Identify any noise sensitive locations likely to be affected by activities at the site, such as residential properties, schools and churches. These should be represented on a map.
- Identify the project duration, normal construction hours and parts of the project likely to involve significant periods of works outside of normal construction hours, especially any evening and night-time work.
- Determine noise and vibration levels likely to be received at the most sensitive locations (these may vary for different activities at each phase of the development) from construction and operational activities including increased rail movements to meet predicted increases in coal export capacity.
- Potential impacts should be determined for any identified significant adverse meteorological conditions. Predicted noise levels under calm conditions may also aid in quantifying the extent of impact where this is not the most adverse condition.
- Sound power levels measured or estimated for all plant and equipment should be clearly stated and justified. The expected noise level and noise character (e.g.: tonality, impulsiveness, vibration, etc) likely to be generated from noise sources during site establishment, construction, operation, transport including traffic noise generated by the proposal and other services should be determined.
- Identify feasible and reasonable noise and vibration mitigation measures including, but not necessarily limited to design options, different types of track and construction methods, alternative equipment or construction methods, timing of construction activities, and consideration of respite periods/ curfew times for works involving high noise or vibration impacts.
- Include an assessment of cumulative noise impacts, having regard to existing developments and developments which have received development consent in the area but which have not commenced.

OTHER ISSUES

Air

The EA must:

- Outline control measures to be implemented to minimize dust generation during construction activities.
- Include details of any air quality monitoring program to determine effectiveness of mitigation and to verify predictions, including provision for investigations in response to complaints.

Water

The EA must:

- Provide sufficient information to demonstrate that the proposed development can be operated whilst complying with the *Protection of the Environment Operations Act* (1997),

in particular, the protection of water quality, including ground water, during construction and operation.

- Document and justify the methodology, data and assumptions used to design any pollution control works and assess the potential impact of the proposal on water quality.
- Identify erosion and sediment mitigation and management measures proposed to be used to prevent, control, abate or minimise erosion and impacts on water quality associated with the project.
- Detail measures to segregate contaminated water from non-contaminated water, prevent wet weather overflows of contaminated stormwater by collection and reuse or treatment of contaminated first flush stormwater; control spillage controls e.g. bunding and prevent soil and groundwater contamination;

Guidance is provided in the following documents:

- Managing Urban Stormwater: Soils and Construction (NSW Landcom, 2004)
- Managing Urban Stormwater: Source Control (EPA, 1998)
- Managing Urban Stormwater: Treatment Techniques (EPA, 1998).

Contaminated Land

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

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

Fuel and Chemicals Storage

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

Waste Management

The EA should:

- Provide details and classification of wastes generated from the process and their disposal options. Classification and management of waste should be in accordance with the DEC's *Environmental Guidelines: Assessment Classification & Management of Liquid & Non-Liquid Wastes* (EPA:1999).
- Outline measures to avoid the generation of waste and promote the re-use, recycling and reprocessing of any waste.
- Outline measures to support any approved regional or industry waste plans.

Energy consumption and greenhouse gas emissions

The EA should:

- Identify and assess options to minimise energy consumption and greenhouse gas emissions (particularly during the construction phase).

- Assess and report on the proposals predicted greenhouse gas emissions (tCO₂e). The emissions associated with the project should include direct emissions, indirect emissions and should be estimated using an appropriate methodology.