



## Secretary's Environmental Assessment Requirements

### Appendix B



Appendix B — Secretary's Environmental Assessment Requirements

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# B



Mr Greig Duncan  
Hume Coal Pty Ltd  
Unit 7-8  
9 Clarence Street  
MOSS VALE NSW 2577

Dear Mr Duncan

**Berrima Rail Project (SSD 7171)  
Environmental Assessment Requirements**

I have attached the environmental assessment requirements for the preparation of an Environmental Impact Statement (EIS) for the Berrima Rail Project.

These requirements are based on the information you have provided to date, and have been prepared in consultation with the relevant government agencies. The agencies' comments are attached for your information (see Attachment 2).

Please note that the Department may alter these requirements at any time, and that you must consult further with the Department if you do not lodge a development application and EIS for the project within the next two years.

If your proposal contains any actions that could have a significant impact on matters of National Environmental Significance, then it will also require approval under the Commonwealth's *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act). This approval is in addition to any approvals required under NSW legislation. If you have any questions about the application of the EPBC Act to your proposal, you should contact the Department of the Environment in Canberra (6274 1111 or [www.environment.gov.au](http://www.environment.gov.au)).

Please contact the Department at least two weeks before you plan to submit the development application and EIS for the project. This will enable the Department to:

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

It is important for you to recognise that the Department will review the EIS for the project before putting it on public exhibition. If it fails to adequately address these requirements, you will be required to submit an amended EIS.

Yours sincerely

Mike Young  
Director  
Resource Assessments  
as nominee of the Secretary

20.8.15.

# Environmental Assessment Requirements

## State Significant Development

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

<b>Application Number</b>	SSD 7171
<b>Proposal</b>	<p>The Berrima Rail Project, which includes:</p> <ul style="list-style-type: none"> <li>• upgrading the Berrima Branch Line and using it to transport coal from the Hume Coal Project;</li> <li>• constructing a rail loop extension to the Hume Coal Project site;</li> <li>• constructing a railway bridge over Berrima Road;</li> <li>• decommissioning the existing rail connection to the Berrima Cement Works and constructing a new rail connection into the Berrima Cement Works from the new railway bridge;</li> <li>• upgrading the intersection of the Berrima Branch Line and Main Southern Railway; and</li> <li>• any necessary upgrades at the intersection between the Berrima Branch Line and Main Southern Line.</li> </ul>
<b>Location</b>	Approximately 4 km north-west of Moss Vale, extending from the existing Berrima Branch Line to west of the Hume Highway at New Berrima.
<b>Applicant</b>	Hume Coal Pty Ltd
<b>Date of Issue</b>	20 August 2015
<b>General Requirements</b>	<p>The Environmental Impact Statement (EIS) for the development must comply with the requirements in Clauses 6 and 7 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>In particular, the EIS must include:</p> <ul style="list-style-type: none"> <li>• a full description of the development, including the likely interactions between the development and any other existing, approved or proposed development in the vicinity of the site, particularly the Hume Coal Project;</li> <li>• a list of any approvals that must be obtained before the development may commence;</li> <li>• an assessment of the likely impacts of the development on the environment, focusing on the specific issues identified below, including:             <ul style="list-style-type: none"> <li>– a description of the existing environment likely to be affected by the development, using sufficient baseline data;</li> <li>– an assessment of the likely impacts of all stages of the development, including any cumulative impacts, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice;</li> <li>– a description of the measures that would be implemented to mitigate and/or offset the likely impacts of the development, and an assessment of:                 <ul style="list-style-type: none"> <li>○ whether these measures are consistent with industry best practice, and represent the full range of reasonable and feasible mitigation measures that could be implemented;</li> <li>○ the likely effectiveness of these measures, including performance measures where relevant; and</li> <li>○ whether contingency plans would be necessary to manage any residual risks;</li> </ul> </li> <li>– a description of the measures that would be implemented to monitor and report on the environmental performance of the development if it is approved;</li> </ul> </li> <li>• a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; and</li> </ul>

	<ul style="list-style-type: none"> <li>the reasons why the development should be approved having regard to environmental, economic and social considerations, including the principles of ecologically sustainable development.</li> </ul> <p>While not exhaustive, Attachment 1 contains a list of some of the environmental planning instruments, guidelines, policies, and plans that may be relevant to the environmental assessment of this development.</p> <p>In addition to the matters set out in Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i>, the development application must be accompanied by a signed report from a suitably qualified and experienced person that includes an accurate estimate of the capital investment value (as defined in Clause 3 of the <i>Environmental Planning and Assessment Regulation 2000</i>) of the development, including details of all the assumptions and components from which the capital investment value calculation is derived.</p>
<p><b>Specific Issues</b></p>	<p>The EIS must address the following specific issues:</p> <ul style="list-style-type: none"> <li><b>Biodiversity</b> – including: <ul style="list-style-type: none"> <li>an assessment of the likely biodiversity impacts of the development, in accordance with the Framework for Biodiversity Assessment, by a person accredited in accordance with s142(B)(1)(c) of the <i>Threatened Species Conservation Act 1995</i>, and having regard to OEH's and DPI's requirements and recommendations (see Attachment 2); and</li> <li>a strategy to offset any residual impacts of the development in accordance with the NSW Biodiversity Offsets Policy for Major Projects;</li> </ul> </li> <li><b>Noise and Vibration</b> – including: <ul style="list-style-type: none"> <li>an assessment of the likely rail noise and vibration impacts of the development under the <i>Rail Infrastructure Noise Guideline</i> (EPA, 2013) and <i>Assessing Vibration a Technical Guideline</i> (2006), and having regard to EPA's requirements (see Attachment 2);</li> <li>an assessment of the noise associated with the rail facilities under the <i>NSW Industrial Noise Policy</i>, if such an assessment is not undertaken as part of the Hume Coal Project;</li> <li>if a claim is made for specific construction noise criteria for certain activities, then this claim must be justified and accompanied by an assessment of the likely construction noise impacts of these activities under the <i>Interim Construction Noise Guideline</i> (2009);</li> </ul> </li> <li><b>Heritage</b> – including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, having regard to OEH's requirements (see Attachment 2);</li> <li><b>Water</b> – including: <ul style="list-style-type: none"> <li>an assessment of the likely impacts of the development on the quantity and quality of the region's surface and groundwater resources, having regard to the EPA's, DPI's and Water NSW's requirements and recommendations (see Attachment 2);</li> <li>an assessment of the likely impacts of the development on aquifers, watercourses, riparian land, water-related infrastructure, and other water users; and</li> <li>an assessment of the likely flooding impacts of the development;</li> </ul> </li> <li><b>Transport</b> – including: <ul style="list-style-type: none"> <li>an assessment of the likely transport impacts of the development on the capacity, condition, safety and efficiency of the local and State road network, and the rail network, having regard to Transport for NSW's and RMS's requirements (see Attachment 2);</li> </ul> </li> <li><b>Air</b> – including: <ul style="list-style-type: none"> <li>an assessment of the likely air quality impacts of the development in accordance with the <i>Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW</i> and the EPA's additional requirements (see Attachment 2); and</li> <li>an assessment of the likely greenhouse gas impacts of the development, having regard to the EPA's requirements (see</li> </ul> </li> </ul>

	<p>Attachment 2); and</p> <ul style="list-style-type: none"> <li>• <b>Social &amp; Economic</b> – including: <ul style="list-style-type: none"> <li>- an assessment of the likely social impacts of the development; and</li> <li>- an assessment of the likely economic impacts of the development, paying particular attention to the economic benefits of the project for the State and region and the demand for the provision of local infrastructure and services.</li> </ul> </li> </ul>
<p><b>Consultation</b></p>	<p>During the preparation of the EIS, you must consult with relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners.</p> <p>The EIS must describe the consultation that was carried out, identify the issues raised during this consultation, and explain how these issues have been addressed in the EIS.</p>

## ATTACHMENT 1

### Environmental Planning Instruments, Policies, Guidelines & Plans

#### Land

Agfact AC25: Agricultural Land Classification (NSW Agriculture)  
 Interim Protocol for Site Verification & Mapping of Biophysical Strategic Land (OEH)  
 Soil and Landscape Issues in Environmental Impact Assessment (NOW)  
 State Environmental Planning Policy No. 55 – Remediation of Land  
 Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)

#### Water

##### Water Sharing Plans

Greater Metropolitan Region Unregulated River Water Sources

##### Groundwater

NSW State Groundwater Policy Framework Document (NOW)  
 NSW State Groundwater Quality Protection Policy (NOW)  
 NSW State Groundwater Quantity Management Policy (NOW)  
 NSW Aquifer Interference Policy 2012 (NOW)  
 Australian Groundwater Modelling Guidelines 2012 (Commonwealth)  
 National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)  
 Guidelines for the Assessment & Management of Groundwater Contamination (EPA)  
 NSW State Rivers and Estuary Policy (NOW)  
 NSW Government Water Quality and River Flow Objectives (EPA)  
 Using the ANZECC Guideline and Water Quality Objectives in NSW (EPA)  
 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)  
 Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA)  
 Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries (DECC)  
 Managing Urban Stormwater: Treatment Techniques (EPA)  
 Managing Urban Stormwater: Source Control (EPA)  
 Technical Guidelines: Bunding & Spill Management (EPA)  
 Environmental Guidelines: Use of Effluent by Irrigation (EPA)  
 A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)  
 NSW Guidelines for Controlled Activities (NOW)

##### Flooding

Floodplain Development Manual (OEH)  
 Floodplain Risk Management Guideline (OEH)

**Biodiversity**

Framework for Biodiversity Assessment (OEH)  
NSW Biodiversity Offsets Policy for Major Projects (OEH)  
Threatened Species Assessment Guidelines (OEH)  
Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (Fisheries NSW)  
NSW State Groundwater Dependent Ecosystem Policy (NOW)  
Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW)  
State Environmental Planning Policy No. 44 – Koala Habitat Protection

**Heritage**

The Burra Charter (The Australia ICOMOS charter for places of cultural significance)  
Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DP&E)  
Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (OEH)  
Code of Practice for Archaeological Investigations of Objects in NSW (OEH)  
Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (OEH)  
NSW Heritage Manual (OEH)  
Statements of Heritage Impact (OEH)

**Noise**

NSW Industrial Noise Policy  
Interim Construction Noise Guideline (EPA)  
NSW Road Noise Policy (EPA)  
Rail Infrastructure Noise Guideline (EPA)  
Assessing Vibration: a Technical Guideline (EPA)

**Air**

Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW (EPA)  
Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA)  
Generic Guidance and Optimum Model Settings for the CALPUFF Modelling System for Inclusion in the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)  
National Greenhouse Accounts Factors (Commonwealth)

**Transport**

Guide to Traffic Generating Development (RTA)  
Road Design Guide (RMS) & relevant Austroads Standards

**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

**Waste**

Waste Classification Guidelines (EPA)

**Rehabilitation**

Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth)  
Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth)  
Strategic Framework for Mine Closure (ANZMEC-MCA)

**Environmental Planning Instruments - General**

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State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

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State Environmental Planning Policy (State and Regional Development) 2011

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State Environmental Planning Policy (Infrastructure) 2007

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Wingecarribee Local Environment Plan 2010

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**ATTACHMENT 2**

**AGENCIES' CORRESPONDENCE**



4<sup>th</sup> August 2015

Anna Timbrell  
Planning Officer – Resource Assessments  
Department of Planning & Environment  
22-33 Bridge Street  
Sydney NSW 2000

Emailed: [Anna.Timbrell@Plannimng.nsw.gov.au](mailto:Anna.Timbrell@Plannimng.nsw.gov.au)

Your Reference: SSD7171  
Our Reference (TRIM): OUT15/19385

Dear Ms Timbrell

**Re: Hume Coal Project (SSD 7172) and Berrima Rail Project (SSD 7171)  
– Request for SEARs input**

Thank you for the opportunity to provide advice on the above matter. This is a response from NSW Department of Industry – Geological Survey of New South Wales (GSNSW).

**Specific Issues**

The following advice is specific for SEARs advice regarding the Berrima Rail Project (SSD 7171). Please be advised that the SEARs advice for the Hume Coal Project (SSD 7172) will be provided by NSW Department of Industry - Resource and Energy – Industry Coordination Unit.

The proposed Rail Project will traverse through an identified resource associated with the Berrima Blue Shale Quarry operated by Boral Pty Ltd. GSNSW have consulted with Boral Pty Ltd regarding the potential for the project to affect the quarry operations in terms of resource extraction or sterilisation. Boral have advised GSNSW that the proposed rail line will not adversely affect future extraction or sterilise any targeted blue shale resource and so GSNSW has no SEARs to issue for SSD 7171 – Berrima Rail Project.

Queries regarding the above information, and future requests for advice in relation to this matter, should be directed to the GSNSW Land Use team at [landuse.minerals@trade.nsw.gov.au](mailto:landuse.minerals@trade.nsw.gov.au).

Yours sincerely

Cressida Gilmore  
Team Leader - Land Use

## Anna Timbrell

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**From:** Wayne Jones <wayne.jones@dpi.nsw.gov.au>  
**Sent:** Wednesday, 5 August 2015 3:31 PM  
**To:** Anna Timbrell  
**Subject:** Hume Coal and Berrima Rail Projects SEARs (SSD\_7172 and SSD\_7171)

Hi Anna

Please see following draft DPI comments on the above projects. Formal letter will follow asap.

Regards  
Wayne

Wayne Jones | Land Use Planning Coordinating Officer  
Department of Primary Industries  
Level 48, MLC Centre, 19 Martin Place Sydney NSW 2000  
T:02 9338 6867 | E: [wayne.jones@dpi.nsw.gov.au](mailto:wayne.jones@dpi.nsw.gov.au)

OUT15/20111

Ms Anna Timbrell  
Resource Assessments  
NSW Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

[Anna.Timbrell@planning.nsw.gov.au](mailto:Anna.Timbrell@planning.nsw.gov.au)

Dear Ms Timbrell,

**Hume Coal and Berrima Rail Projects (SSD\_7172 and SSD\_7171)  
Request for input into Secretary's Environmental Assessment Requirements**

I refer to your email dated 23 July 2015 to the Department of Primary Industries in respect to the above matter.

Comment by Agriculture NSW – Rail Project

Agriculture NSW has noted that the following issues were raised by EMGA Mitchell McLennan in their letter to David Kitto, Director, Major Project Assessments-Mining, dated 17 July 2015. Those issues are proposed to be included for investigation as part of the EIS for the project and include:

- Impacts on surrounding visual receptors
- Surface water changes

The impacts of surface water changes should include the potential for flooding adjacent to the railway embankment and its impacts on grazing land usability including mitigation measures. The impacts on existing dam levels should also be assessed to ensure surface water flowing into dams is not impacted.

As the railway traverses paddocks it will be important to ensure that access for livestock is not hindered, particularly for grazing, watering and to move livestock to undertake general farming practices (ie for worming, tagging, branding, yarding for sale etc).

The EIS should assess the above impacts during construction and following construction.

The guideline “Infrastructure Proposals on Rural Land” provides further information on the issues and information to be included in an EIS for infrastructure proposals and can be accessed at: <http://www.dpi.nsw.gov.au/agriculture/resources/lup/development-assessment/infrastructure-proposals>.

For further information please contact Wendy Goodburn, Resource Management Officer (Goulburn Office) on 4828 6635 or at [wendy.goodburn@dpi.nsw.gov.au](mailto:wendy.goodburn@dpi.nsw.gov.au).

#### Comment by Fisheries NSW – Hume Coal Mine

Fisheries NSW is responsible for ensuring that fish stocks are conserved and that there is no net loss of key fish habitats upon which they depend. To achieve this, Fisheries NSW ensures that developments comply with the requirements of the *Fisheries Management Act 1994* (namely the aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A of the Act, respectively), and the associated *Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (1999)*. In addition, Fisheries NSW is responsible for ensuring the sustainable management of commercial, recreational and Aboriginal cultural fishing, aquaculture and marine protected areas within NSW.

We note that the proposal site is crossed by Wells Creek, Oldbury Creek, Medway Rivulet, Belangelo Creek, Fire Dam Creek, Knapsack Gully, Planting Spade Creek, Red Arm Creek and Longacre Creek and their associated tributaries and drainage lines. The potential impacts, especially downstream impacts upon water quality and aquatic habitats within the proposal site are of particular interest to this agency in relation to this proposal.

#### **Key Issues**

The key issues of concern to Fisheries NSW in relation to this State Significant Development are:

- Direct impacts on aquatic environments and key fish habitat (including riparian vegetation, instream aquatic vegetation and large woody debris) from the surface and underground construction and ongoing operation of the proposed coal mine.
- Impacts on water quality during all surface and underground construction activities and from ongoing operation of the proposed mine, processing plant, and associated infrastructure of the proposed coal mine.

Impacts on water quality and flow from subsidence and groundwater interactions resulting from surface and underground construction and ongoing operation of the coal mine.

#### **Environmental Assessment Requirements**

Fisheries NSW advises that the Environmental Impact Statement (EIS) for the proposed development should include information on the following:

- Location of works (including site map and photos).
- Name of adjacent waterway(s).
- Description of works to be undertaken.
- Timing and duration of works.
- Identification of Key Fish Habitat within the proposal area.
- Description of aquatic and riparian environments in the vicinity of the development, particularly extent and condition of riparian vegetation and instream aquatic vegetation, water depth, and permanence of water flow and snags (large woody debris) within the footprint of the proposal area.

- Analysis of any interactions of the proposed development with water quality and aquatic and riparian environments (including fish and aquatic and riparian vegetation) and predictions of any impacts upon those environments.
- Analysis of impacts of subsidence upon water flow within and downstream of all waterways within the proposal area
- Analysis of impacts of groundwater interference and drawdown on water quality, water flow, and aquatic and riparian environments within and downstream of all waterways within the proposal area
- Plan of proposed underground mine design overlaid with waterways.
- Safeguards to mitigate any impacts upon water quality, water flow and aquatic and riparian environments within and downstream of all waterways within the proposal area during construction and ongoing operation of the proposed coal mine. In particular, provide details on proposals for erosion and sediment control (to be incorporated into a Construction Environmental Management Plan - CEMP) and proposed stormwater and ongoing drainage management measures. Water quality management for the project should be designed to achieve no net increase in pollutant run-off to receiving waters within the proposal site.
- Details of ongoing monitoring programs to assess any impacts upon water quality, water flow and aquatic and riparian environments within and downstream of all waterways within the proposal area.

Fisheries NSW recommend the use of best practice sediment and erosion control, and water quality and stormwater management provisions to safeguard and mitigate impacts on water quality at the site and downstream. The Department also recommends inclusion of appropriate riparian corridors to provide a buffer between the development areas and adjacent waterways or natural drainage lines to provide protection to riparian and aquatic habitats.

The design and construction of any watercourse crossings on the site should be undertaken in accordance with the Department's *Policy and Guidelines for Fish Friendly Waterway Crossings* (2004) and *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (2004). These documents are available on our website [www.dpi.nsw.gov.au](http://www.dpi.nsw.gov.au), under 'Aquatic Habitats' and 'Publications'.

Please ensure a copy of the Secretary's Environmental Assessment Requirements and the subsequent EIS provided by the proponent for this development are provided to Fisheries NSW for review and further comment.

For further detailed advice on Fisheries NSW aquatic habitat requirements, please refer the applicant to the *Department's Policy and Guidelines for Fish Habitat Conservation and Management* (2013) available on our website at [www.dpi.nsw.gov.au](http://www.dpi.nsw.gov.au)

#### Comment by Fisheries NSW – Berrima Rail Project

We note that the proposed rail line crosses Stony Creek along with numerous tributaries and drainage lines. The potential impacts, especially upon downstream water quality and aquatic habitats in Stony Creek are of particular interest to this Department.

#### **Key Issues**

Key issues of concern to Fisheries NSW in relation to this State Significant Development are:

- Direct impacts on aquatic environments and key fish habitat (including riparian vegetation, instream aquatic vegetation and large woody debris) from the rail project construction.
- Impacts on water quality during all road construction activities and from stormwater runoff and road drainage during the ongoing use of the rail project.

#### **Environmental Assessment Requirements**

It is important that the Environmental Impact Statement (EIS) assesses the full extent of potential impacts to the aquatic environment within the development area. Proposed measures to mitigate, rehabilitate or compensate for such impacts are to be detailed in accordance with the Department's Policy and Guidelines, referenced above to ensure that there is no net loss of aquatic habitats.

Fisheries NSW advises that the EIS for the proposed development should include information on the following:

- Description of aquatic and riparian environments in the vicinity of the development, – particularly extent and condition of riparian vegetation and instream aquatic vegetation, water depth, and permanence of water flow and snags (large woody debris) within the footprint of the proposed rail project.
- Analysis of any interactions of the proposed rail project with aquatic and riparian environments and predictions of any impacts upon aquatic and riparian environments (including fish and aquatic and riparian vegetation) from the rail project (both temporary and permanent). This should include assessment of both direct impacts (removal, disturbance, smothering) and indirect impacts (e.g. shading, permanent loss of habitat).
- Description of proposed environmental compensation measures to offset the permanent loss of riparian habitats in Stony Creek (e.g. funding for aquatic rehabilitation works, such as removal of fish passage barriers, elsewhere in the catchment as outlined in the Department's Policy and Guidelines).
- Description of potential impediments to fish passage as a result of the works (e.g. temporary coffer dams, instream bunds or work platforms) and possible mitigation measures to be employed to negate these impacts.
- Predictions of impacts upon water quality of the proposed rail project, including in Stony Creek, both during the construction and operational phases.
- Safeguards to mitigate any impacts upon aquatic species and environments and water quality during construction and operation of the rail project. In particular, provide details on proposed revegetation of riparian areas, proposals for erosion and sediment control (to be incorporated into a Construction Environmental Management Plan - CEMP) and proposed stormwater and ongoing drainage management measures. Water quality management for the rail project should be designed to achieve no net increase in pollutant run-off to Stony Creek.

Fisheries NSW recommends the use of best practice sediment and erosion control, and water quality and stormwater management provisions to safeguard and mitigate impacts on water quality at the site and downstream. The Department also recommends inclusion of appropriate riparian corridors to provide a buffer between the development areas and adjacent waterways or natural drainage lines to provide protection to riparian and aquatic habitats.

The design and construction of any watercourse crossings on the site should be undertaken in accordance with the Department's *Policy and Guidelines for Fish Friendly Waterway Crossings* (2004) and *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (2004). These documents are available on our website [www.dpi.nsw.gov.au](http://www.dpi.nsw.gov.au), under 'Aquatic Habitats' and 'Publications'.

Please ensure a copy of the Secretary's Environmental Assessment Requirements and the subsequent EIS provided by the proponent for this development are provided to Fisheries NSW for review and further comment.

For further detailed advice on Fisheries NSW aquatic habitat requirements, please refer the applicant to the *Department's Policy and Guidelines for Fish Habitat Conservation and Management* (2013) available on our website at [www.dpi.nsw.gov.au](http://www.dpi.nsw.gov.au)

For further information please contact Jillian Reynolds, Regional Assessment Officer, [Huskisson office] on 4428 3406 or at [jillian.reynolds@dpi.nsw.gov.au](mailto:jillian.reynolds@dpi.nsw.gov.au).

Comment by DPI Water – Hume Coal Mine

DPI Water has reviewed the supporting documentation accompanying the request for Secretary's Environmental Assessment Requirements (SEARs) and provides the comments below, and further detail in **Attachment A**.

It is recommended that the EIS be required to include:

Annual volumes of surface water and groundwater proposed to be taken by the activity (including through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan.

Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).

The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.

A detailed and consolidated site water balance.

A detailed assessment against the NSW Aquifer Interference Policy (2012) using DPI Water's assessment framework.

Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, wetlands, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.

Full technical details and data of all surface and groundwater modelling, and an independent peer review of the groundwater model.

Proposed surface and groundwater monitoring activities and methodologies.

Proposed management and disposal of produced or incidental water.

Details of the final landform of the site, including final void management (where relevant) and rehabilitation measures.

Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts.

Consideration of relevant policies and guidelines.

Assessment of whether the activity may have a significant impact on water resources, with reference to the Commonwealth Department of Environment Significant Impact Guidelines.

If the activity may have a significant impact on water resources, then provision of information in accordance with the Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals, including completion of the information requirements checklist.

A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).

The proponent's attention is drawn to the 'Key Relevant Legislative Instruments' of Attachment A, as section 4.3.4 of the preliminary environmental assessment incorrectly states that section 89K of the *Environmental Planning and Assessment Act 1979* (EP&A Act) applies to water access licences and aquifer interference approvals, and this is not the case. No exemptions or restrictions on water access licences or aquifer interference activities are contained in the EP&A Act, although aquifer interference approvals have not yet commenced.

Should you require further information please contact John Galea, Water Regulation Officer on 8838 7520 or at [john.galea@dpi.nsw.gov.au](mailto:john.galea@dpi.nsw.gov.au).

#### Comment by DPI Water – Berrima Rail

DPI Water has reviewed the supporting documentation accompanying the request for Secretary's Environmental Assessment Requirements (SEARs) and provides the comments below, and further detail in **Attachment B**.

It is recommended that the EIS be required to include:

Annual volumes of surface water and groundwater proposed to be taken by the activity (including through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan.

Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).

The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.

A detailed and consolidated site water balance.

Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.

An assessment of impediment to surface or groundwater flow, and potential flood impacts.

Full technical details and data of all surface and groundwater modelling.

Proposed surface and groundwater monitoring activities and methodologies.

Proposed management and disposal of produced or incidental water.

Details of the final landform of the site, including final void management (where relevant) and rehabilitation measures.

Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts.

Consideration of relevant policies and guidelines.

A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).

### ***Project specific notes***

#### **Protection of Waterways and Riparian Corridors**

The proponent is requested to undertake detailed assessment of riparian and watercourse impacts, particularly with respect to watercourse crossings. The project should be designed to minimise impacts on watercourses and riparian land, and must have regard to the Department of Primary Industries' *Guidelines for Controlled Activities on Waterfront Land* – in particular the guideline on watercourse crossings.

For further information please contact Janne Grose, Planning and Assessment Coordinator (Penrith office) on 8838 7505 or at [janne.grose@dpi.nsw.gov.au](mailto:janne.grose@dpi.nsw.gov.au).

Yours sincerely

Kristian Holz  
**Director Policy, Legislation and Innovation**

## Attachment A

### Hume Coal Project (SSD\_7172) Request for Input into Secretary's Environment Assessment Requirements DPI Water General Assessment Requirements for Coal and Petroleum projects

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The following detailed assessment requirements are provided to assist in adequately addressing the assessment requirements for this proposal.

For further information visit the DPI Water website, [www.water.nsw.gov.au](http://www.water.nsw.gov.au)

#### Key Relevant Legislative Instruments

This section provides a basic summary to aid proponents in the development of an Environmental Impact Statement (EIS), and should not be considered a complete list or comprehensive summary of relevant legislative instruments that may apply to the regulation of water resources for a project.

The EIS should take into account the objects and regulatory requirements of the *Water Act 1912* (WA 1912) and *Water Management Act 2000* (WMA 2000), and associated regulations and instruments, as applicable.

#### *Water Management Act 2000 (WMA 2000)*

Key points:

Volumetric licensing in areas covered by water sharing plans.

Works within 40m of waterfront land.

SSD & SSI projects are exempt from requiring water supply work approvals and controlled activity approvals as a result of the *Environmental Planning & Assessment Act 1979 (EP&A Act)*.

No exemptions for volumetric licensing apply as a result of the *EP&A Act*.

Basic landholder rights, including harvestable rights dams.

Aquifer interference activity approval and flood management work approval provisions have not yet commenced and are regulated by the *Water Act 1912*.

Maximum penalties of \$2.2 million plus \$264,000 for each day an offence continues apply under the *WMA 2000*.

#### *Water Act 1912 (WA 1912)*

Key points:

Volumetric licensing in areas where no water sharing plan applies.

Monitoring bores.

Aquifer interference activities that are not regulated as a water supply work under the *WMA 2000*.

Flood management works.

No exemptions apply to licences or permits under the *WA 1912* as a result of the *EP&A Act*.

Regulation of water bore driller licensing.

#### *Water Management (General) Regulation 2011*

Key points:

Provides various exemptions for volumetric licensing and activity approvals

Provides further detail on requirements for dealings and applications.

*Water Sharing Plans* – these are considered regulations under the *WMA 2000*

*Access Licence Dealing Principles Order 2004*

*Harvestable Rights Orders*

#### Water Sharing Plans

It is important that the proponent understands and describes the ground and surface water sharing plans, water sources, and management zones that apply to the project. The relevant water sharing plans can be

determined spatially at [www.ourwater.nsw.gov.au](http://www.ourwater.nsw.gov.au). Multiple water sharing plans may apply and these must all be described.

The *Water Act 1912* applies to all water sources not yet covered by a commenced water sharing plan.

The EIS is required to:

Demonstrate how the proposal is consistent with the relevant rules of the Water Sharing Plan including rules for access licences, distance restrictions for water supply works and rules for the management of local impacts in respect of surface water and groundwater sources, ecosystem protection (including groundwater dependent ecosystems), water quality and surface-groundwater connectivity.

Provide a description of any site water use (amount of water to be taken from each water source) and management including all sediment dams, clear water diversion structures with detail on the location, design specifications and storage capacities for all the existing and proposed water management structures.

Provide an analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant WSP, including:

- Sufficient market depth to acquire the necessary entitlements for each water source.
- Ability to carry out a “dealing” to transfer the water to relevant location under the rules of the WSP.
- Daily and long-term access rules.
- Account management and carryover provisions.

Provide a detailed and consolidated site water balance.

Further detail on licensing requirements is provided below.

## **Relevant Policies and Guidelines**

The EIS should take into account the following policies (as applicable):

- NSW Guidelines for Controlled Activities on Waterfront Land (NOW, 2012)
- NSW Aquifer Interference Policy (NOW, 2012)
- Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW, 2012)
- Australian Groundwater Modelling Guidelines (NWC, 2012)
- Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals (IESC, 2014)
- Significant Impact Guidelines 1.3: Coal seam gas and large coal mining developments - impacts on water resources (Australian Govt. 2014)
- NSW State Rivers and Estuary Policy (1993)
- NSW Wetlands Policy (2010)
- NSW State Groundwater Policy Framework Document (1997)
- NSW State Groundwater Quality Protection Policy (1998)
- NSW State Groundwater Dependent Ecosystems Policy (2002)
- NSW Water Extraction Monitoring Policy (2007)
- Groundwater Monitoring and Modelling Plans - Information for prospective mining and petroleum exploration activities (NOW, 2014)
- NSW Code of Practice for Coal Seam Gas Well Integrity (DTIRIS 2012)
- NSW Code of Practice for Coal Seam Gas Fracture Stimulation (DTIRIS 2012)

DPI Water policies can be accessed at the following links:

<http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/default.aspx>

<http://www.water.nsw.gov.au/Water-licensing/Approvals/Controlled-activities/default.aspx>

An assessment framework for the NSW Aquifer Interference Policy can be found online at: <http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/Aquifer-interference>.

## Licensing Considerations

The EIS is required to provide:

Identification of water requirements for the life of the project in terms of both volume and timing (including predictions of potential ongoing groundwater take following the cessation of operations at the site – such as evaporative loss from open voids or inflows).

Details of the water supply source(s) for the proposal including any proposed surface water and groundwater extraction from each water source as defined in the relevant Water Sharing Plan/s and all water supply works to take water.

Explanation of how the required water entitlements will be obtained (i.e. through a new or existing licence/s, trading on the water market, controlled allocations etc).

Information on the purpose, location, construction and expected annual extraction volumes including details on all existing and proposed water supply works which take surface water, (pumps, dams, diversions, etc).

Details on all bores and excavations for the purpose of investigation, extraction, dewatering, testing and monitoring. All predicted groundwater take must be accounted for through adequate licensing.

Details on existing dams/storages (including the date of construction, location, purpose, size and capacity) and any proposal to change the purpose of existing dams/storages.

Details on the location, purpose, size and capacity of any new proposed dams/storages.

Applicability of any exemptions under the *Water Management (General) Regulation 2011* to the project.

Water allocation account management rules, total daily extraction limits and rules governing environmental protection and access licence dealings also need to be considered.

The Harvestable Right gives landholders the right to capture and use for any purpose 10% of the average annual runoff from their property. The Harvestable Right has been defined in terms of an equivalent dam capacity called the Maximum Harvestable Right Dam Capacity (MHRDC). The MHRDC is determined by the area of the property (in hectares) and a site-specific run-off factor. The MHRDC includes the capacity of all existing dams on the property that do not have a current water licence. Storages capturing up to the harvestable right capacity are not required to be licensed but any capacity of the total of all storages/dams on the property greater than the MHRDC may require a licence.

For more information on Harvestable Right dams, including a calculator, visit:

<http://www.water.nsw.gov.au/Water-licensing/Basic-water-rights/Harvesting-runoff/Harvesting-runoff>

## Dam Safety

Where new or modified dams are proposed, or where new development will occur below an existing dam, the NSW Dams Safety Committee should be consulted in relation to any safety issues that may arise. Conditions of approval may be recommended to ensure safety in relation to any new or existing dams.

See [www.damsafety.nsw.gov.au](http://www.damsafety.nsw.gov.au) for further information.

## 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 features including watercourses, wetlands and floodplains transected by or adjacent to the proposed project.

Identification of all surface water sources as described by the relevant water sharing plan.

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.

Description of all works and surface infrastructure that will intercept, store, convey, or otherwise interact with surface water resources.

Assessment of predicted impacts on the following:

flow of surface water (including floodwater), sediment movement, channel stability, and hydraulic regime,  
water quality,  
flood regime,  
dependent ecosystems,  
existing surface water users, and  
planned environmental water and water sharing arrangements prescribed in the relevant water sharing plans.

## **Groundwater Assessment**

To ensure the sustainable and integrated management of groundwater sources, the EIS needs to include adequate details to assess the impact of the project on all groundwater sources including:

The known or predicted highest groundwater table at the site.

Works likely to intercept, connect with or infiltrate the groundwater sources.

Any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.

Bore construction information is to be supplied to DPI Water by submitting a "Form A" template. DPI Water will supply "GW" registration numbers (and licence/approval numbers if required) which must be used as consistent and unique bore identifiers for all future reporting.

A description of the watertable and groundwater pressure configuration, flow directions and rates and physical and chemical characteristics of the groundwater source (including connectivity with other groundwater and surface water sources).

Sufficient baseline monitoring for groundwater quantity and quality for all aquifers and GDEs to establish a baseline incorporating typical temporal and spatial variations.

The predicted impacts of any final landform on the groundwater regime.

The existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.

An assessment of groundwater quality, its beneficial use classification and prediction of any impacts on groundwater quality.

An assessment of the potential for groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).

Measures proposed to protect groundwater quality, both in the short and long term.

Measures for preventing groundwater pollution so that remediation is not required.

Protective measures for any groundwater dependent ecosystems (GDEs).

Proposed methods of the disposal of waste water and approval from the relevant authority.

- 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:

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 from future use as a water supply 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.

### **Groundwater Dependent Ecosystems**

The EIS must consider the potential impacts on any Groundwater Dependent Ecosystems (GDEs) at the site and in the vicinity of the site and:

Identify any potential impacts on GDEs as a result of the proposal including:

the effect of the proposal on the recharge to groundwater systems;

the potential to adversely affect the water quality of the underlying groundwater system and adjoining groundwater systems in hydraulic connections; and

the effect on the function of GDEs (habitat, groundwater levels, connectivity).

Provide safeguard measures for any GDEs.

### **Watercourses, Wetlands and Riparian Land**

The EIS should address the potential impacts of the project on all watercourses likely to be affected by the project, existing riparian vegetation and the rehabilitation of riparian land. It is recommended the EIS provides details on all watercourses potentially affected by the proposal, including:

- Scaled plans showing the location of:

wetlands/swamps, watercourses and top of bank;

riparian corridor widths to be established along the creeks;

existing riparian vegetation surrounding the watercourses (identify any areas to be protected and any riparian vegetation proposed to be removed);

the site boundary, the footprint of the proposal in relation to the watercourses and riparian areas; and

proposed location of any asset protection zones.

Photographs of the watercourses/wetlands and a map showing the point from which the photos were taken.

A detailed description of all potential impacts on the watercourses/riparian land.

A detailed description of all potential impacts on the wetlands, including potential impacts to the wetlands hydrologic regime; groundwater recharge; habitat and any species that depend on the wetlands.

A description of the design features and measures to be incorporated to mitigate potential impacts.

Geomorphic and hydrological assessment of water courses including details of stream order (Strahler System), river style and energy regimes both in channel and on adjacent floodplains.

### **Drill Pad, Well and Access Road Construction**

Any construction activity within 40m of a watercourse, should be designed by a suitably qualified person, consistent with the NSW *Guidelines for Controlled Activities on Waterfront Land* (July 2012).

Construction of all wells must be undertaken in accordance with the *Minimum Construction Requirements for Water Bores in Australia* (3rd edition 2012) by a driller holding a bore drillers' licence valid in New South Wales.

The length of time that a core hole is maintained as an open hole should be minimised.

Construction, suspension and abandonment of wells for petroleum projects should be carried out in accordance with the NSW *Code of Practice for Coal Seam Gas Well Integrity* (DTIRIS 2012).

### **Landform rehabilitation (including final void management)**

Where significant modification to landform is proposed, the EIS must include:

Justification of the proposed final landform with regard to its impact on local and regional surface and groundwater systems;

A detailed description of how the site would be progressively rehabilitated and integrated into the surrounding landscape;

Outline of proposed construction and restoration of topography and surface drainage features if affected by the project;

Detailed modelling of potential groundwater volume, flow and quality impacts of the presence of an inundated final void (where relevant) on identified receptors specifically considering those environmental systems that are likely to be groundwater dependent;

An outline of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation; and

The measures that would be established for the long-term protection of local and regional aquifer systems and for the ongoing management of the site following the cessation of the project.

### **Consultation and general enquiries**

General licensing enquiries can be made to Advisory Services: [water.enquiries@dpi.nsw.gov.au](mailto:water.enquiries@dpi.nsw.gov.au), 1800 353 104.

Assessment or state significant development enquiries, or requests for review or consultation should be directed to the Strategic Stakeholder Liaison Unit, [water.referrals@dpi.nsw.gov.au](mailto:water.referrals@dpi.nsw.gov.au).

A consultation guideline and further information is available online at:  
[www.water.nsw.gov.au/water-management/law-and-policy/planning-and-assessment](http://www.water.nsw.gov.au/water-management/law-and-policy/planning-and-assessment)

**End Attachment A**

## Attachment B

### Berrima Rail Project (SSD\_7171) Request for Input into Secretary's Environment Assessment Requirements DPI Water General Assessment Requirements for linear infrastructure projects

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The following detailed assessment requirements are provided to assist in adequately addressing the assessment requirements for this proposal.

For further information visit the DPI Water website, [www.water.nsw.gov.au](http://www.water.nsw.gov.au)

#### Key Relevant Legislative Instruments

This section provides a basic summary to aid proponents in the development of an Environmental Impact Statement (EIS), and should not be considered a complete list or comprehensive summary of relevant legislative instruments that may apply to the regulation of water resources for a project.

The EIS should take into account the objects and regulatory requirements of the *Water Act 1912* (WA 1912) and *Water Management Act 2000* (WMA 2000), and associated regulations and instruments, as applicable.

#### *Water Management Act 2000 (WMA 2000)*

Key points:

- Volumetric licensing in areas covered by water sharing plans
- Works within 40m of waterfront land
- SSD & SSI projects are exempt from requiring water supply work approvals and controlled activity approvals as a result of the *Environmental Planning & Assessment Act 1979 (EP&A Act)*.
- No exemptions for volumetric licensing apply as a result of the *EP&A Act*.
- Basic landholder rights, including harvestable rights dams
- Aquifer interference activity approval and flood management work approval provisions have not yet commenced and are regulated by the *Water Act 1912*
- Maximum penalties of \$2.2 million plus \$264,000 for each day an offence continues apply under the *WMA 2000*

#### *Water Act 1912 (WA 1912)*

Key points:

- Volumetric licensing in areas where no water sharing plan applies
- Monitoring bores
- Aquifer interference activities that are not regulated as a water supply work under the *WMA 2000*.
- Flood management works
- No exemptions apply to licences or permits under the *WA 1912* as a result of the *EP&A Act*.
- Regulation of water bore driller licensing.

#### *Water Management (General) Regulation 2011*

Key points:

- Provides various exemptions for volumetric licensing and activity approvals
- Provides further detail on requirements for dealings and applications.

*Water Sharing Plans* – these are considered regulations under the *WMA 2000*

*Access Licence Dealing Principles Order 2004*

*Harvestable Rights Orders*

#### Water Sharing Plans

It is important that the proponent understands and describes the ground and surface water sharing plans, water sources, and management zones that apply to the project. The relevant water sharing plans can be

determined spatially at [www.ourwater.nsw.gov.au](http://www.ourwater.nsw.gov.au). Multiple water sharing plans may apply and these must all be described.

The *Water Act 1912* applies to all water sources not yet covered by a commenced water sharing plan.

The EIS is required to:

Demonstrate how the proposal is consistent with the relevant rules of the Water Sharing Plan including rules for access licences, distance restrictions for water supply works and rules for the management of local impacts in respect of surface water and groundwater sources, ecosystem protection (including groundwater dependent ecosystems), water quality and surface-groundwater connectivity.

Provide a description of any site water use (amount of water to be taken from each water source) and management including all sediment dams, clear water diversion structures with detail on the location, design specifications and storage capacities for all the existing and proposed water management structures.

Provide an analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant WSP, including:

- Sufficient market depth to acquire the necessary entitlements for each water source.
- Ability to carry out a “dealing” to transfer the water to relevant location under the rules of the WSP.
- Daily and long-term access rules.
- Account management and carryover provisions.

Provide a detailed and consolidated site water balance.

Further detail on licensing requirements is provided below.

## **Relevant Policies and Guidelines**

The EIS should take into account the following policies (as applicable):

- NSW Guidelines for Controlled Activities on Waterfront Land (NOW, 2012)
- NSW Aquifer Interference Policy (NOW, 2012)
- Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW, 2012)
- Australian Groundwater Modelling Guidelines (NWC, 2012)
- NSW State Rivers and Estuary Policy (1993)
- NSW Wetlands Policy (2010)
- NSW State Groundwater Policy Framework Document (1997)
- NSW State Groundwater Quality Protection Policy (1998)
- NSW State Groundwater Dependent Ecosystems Policy (2002)
- NSW Water Extraction Monitoring Policy (2007)

DPI Water policies can be accessed at the following links:

<http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/default.aspx>  
<http://www.water.nsw.gov.au/Water-licensing/Approvals/Controlled-activities/default.aspx>

An assessment framework for the NSW Aquifer Interference Policy can be found online at: <http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/Aquifer-interference>.

## **Licensing Considerations**

The EIS is required to provide:

Identification of water requirements for the life of the project in terms of both volume and timing (including predictions of potential ongoing groundwater take following the cessation of operations at the site – such as evaporative loss from open voids or inflows).

Details of the water supply source(s) for the proposal including any proposed surface water and groundwater extraction from each water source as defined in the relevant Water Sharing Plan/s and all water supply works to take water.

Explanation of how the required water entitlements will be obtained (i.e. through a new or existing licence/s, trading on the water market, controlled allocations etc).

Information on the purpose, location, construction and expected annual extraction volumes including details on all existing and proposed water supply works which take surface water, (pumps, dams, diversions, etc).

Details on all bores and excavations for the purpose of investigation, extraction, dewatering, testing and monitoring. All predicted groundwater take must be accounted for through adequate licensing.

Details on existing dams/storages (including the date of construction, location, purpose, size and capacity) and any proposal to change the purpose of existing dams/storages

Details on the location, purpose, size and capacity of any new proposed dams/storages.

Applicability of any exemptions under the *Water Management (General) Regulation 2011* to the project.

Water allocation account management rules, total daily extraction limits and rules governing environmental protection and access licence dealings also need to be considered.

The Harvestable Right gives landholders the right to capture and use for any purpose 10% of the average annual runoff from their property. The Harvestable Right has been defined in terms of an equivalent dam capacity called the Maximum Harvestable Right Dam Capacity (MHRDC). The MHRDC is determined by the area of the property (in hectares) and a site-specific run-off factor. The MHRDC includes the capacity of all existing dams on the property that do not have a current water licence. Storages capturing up to the harvestable right capacity are not required to be licensed but any capacity of the total of all storages/dams on the property greater than the MHRDC may require a licence.

For more information on Harvestable Right dams, including a calculator, visit:

<http://www.water.nsw.gov.au/Water-licensing/Basic-water-rights/Harvesting-runoff/Harvesting-runoff>

## **Dam Safety**

Where new or modified dams are proposed, or where new development will occur below an existing dam, the NSW Dams Safety Committee should be consulted in relation to any safety issues that may arise. Conditions of approval may be recommended to ensure safety in relation to any new or existing dams.

See [www.damsafety.nsw.gov.au](http://www.damsafety.nsw.gov.au) for further information.

## **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 features including watercourses, wetlands and floodplains transected by or adjacent to the proposed project.

Identification of all surface water sources as described by the relevant water sharing plan.

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.

Description of all works and surface infrastructure that will intercept, store, convey, or otherwise interact with surface water resources.

Assessment of predicted impacts on the following:

- flow of surface water, sediment movement, channel stability, and hydraulic regime,
- water quality,
- flood regime,
- dependent ecosystems,

existing surface water users, and

planned environmental water and water sharing arrangements prescribed in the relevant water sharing plans.

## **Groundwater Assessment**

To ensure the sustainable and integrated management of groundwater sources, the EIS needs to include adequate details to assess the impact of the project on all groundwater sources including:

The known or predicted highest groundwater table at the site.

Works likely to intercept, connect with or infiltrate the groundwater sources.

Any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.

Bore construction information is to be supplied to DPI Water by submitting a "Form A" template. DPI Water will supply "GW" registration numbers (and licence/approval numbers if required) which must be used as consistent and unique bore identifiers for all future reporting.

A description of the watertable and groundwater pressure configuration, flow directions and rates and physical and chemical characteristics of the groundwater source (including connectivity with other groundwater and surface water sources).

Sufficient baseline monitoring for groundwater quantity and quality for all aquifers and GDEs to establish a baseline incorporating typical temporal and spatial variations.

The predicted impacts of any final landform on the groundwater regime.

The existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.

An assessment of groundwater quality, its beneficial use classification and prediction of any impacts on groundwater quality.

An assessment of the potential for groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).

Measures proposed to protect groundwater quality, both in the short and long term.

Measures for preventing groundwater pollution so that remediation is not required.

Protective measures for any groundwater dependent ecosystems (GDEs).

Proposed methods of the disposal of waste water and approval from the relevant authority.

- 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:

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 from future use as a water supply 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.

## **Groundwater Dependent Ecosystems**

The EIS must consider the potential impacts on any Groundwater Dependent Ecosystems (GDEs) at the site and in the vicinity of the site and:

Identify any potential impacts on GDEs as a result of the proposal including:

- the effect of the proposal on the recharge to groundwater systems;
- the potential to adversely affect the water quality of the underlying groundwater system and adjoining groundwater systems in hydraulic connections; and
- the effect on the function of GDEs (habitat, groundwater levels, connectivity).

Provide safeguard measures for any GDEs.

## **Watercourses, Wetlands and Riparian Land**

The EIS should address the potential impacts of the project on all watercourses likely to be affected by the project, existing riparian vegetation and the rehabilitation of riparian land. It is recommended the EIS provides details on all watercourses potentially affected by the proposal, including:

- Scaled plans showing the location of:
  - wetlands/swamps, watercourses and top of bank;
  - riparian corridor widths to be established along the creeks;
  - existing riparian vegetation surrounding the watercourses (identify any areas to be protected and any riparian vegetation proposed to be removed);
  - the site boundary, the footprint of the proposal in relation to the watercourses and riparian areas; and
  - proposed location of any asset protection zones.

Photographs of the watercourses/wetlands and a map showing the point from which the photos were taken.

A detailed description of all potential impacts on the watercourses/riparian land.

A detailed description of all potential impacts on the wetlands, including potential impacts to the wetlands hydrologic regime; groundwater recharge; habitat and any species that depend on the wetlands.

A description of the design features and measures to be incorporated to mitigate potential impacts.

Geomorphic and hydrological assessment of water courses including details of stream order (Strahler System), river style and energy regimes both in channel and on adjacent floodplains.

## **Landform rehabilitation**

Where significant modification to landform is proposed, the EIS must include:

Justification of the proposed final landform with regard to its impact on local and regional surface and groundwater systems;

A detailed description of how the site would be progressively rehabilitated and integrated into the surrounding landscape;

Outline of proposed construction and restoration of topography and surface drainage features if affected by the project; and

An outline of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation.

## **Consultation and general enquiries**

General licensing enquiries can be made to Advisory Services: [water.enquiries@dpi.nsw.gov.au](mailto:water.enquiries@dpi.nsw.gov.au), 1800 353 104.

Assessment or state significant development enquiries, or requests for review or consultation should be directed to the Strategic Stakeholder Liaison Unit, [water.referrals@dpi.nsw.gov.au](mailto:water.referrals@dpi.nsw.gov.au).

A consultation guideline and further information is available online at:  
[www.water.nsw.gov.au/water-management/law-and-policy/planning-and-assessment](http://www.water.nsw.gov.au/water-management/law-and-policy/planning-and-assessment)

**End Attachment B**

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This message is intended for the addressee named and may contain confidential information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of their organisation.



Date: 6 August 2015  
Your reference: SSD 7171  
Our reference: DOC15/300655  
Contact: Calvin Houlison  
4224 4179

Anna Timbrell  
Planning Officer, Resource Assessments  
Department of Planning & Environment  
23-33 Bridge Street  
SYDNEY NSW 2000  
E-mail: [anna.timbrell@planning.nsw.gov.au](mailto:anna.timbrell@planning.nsw.gov.au)

Dear Ms Timbrell

**RE: Request for SEARs – Berrima Rail Project (SSD 7171)**

Thank you for your request dated 15 April 2015 inviting input from the Office of Environment & Heritage (OEH) for the Secretary's Environmental Impact Assessment Requirements (SEARs) for the abovementioned proposal.

We note that the project will be assessed as State Significant Development (SSD) under Part 4 Division 4.1 of the *Environmental Planning & Assessment Act 1979*.

We recommend that the Environmental Impact Statement (EIS) appropriately addresses the following:

1. Biodiversity and offsetting
2. Aboriginal Cultural Heritage
3. Historic heritage
4. Flooding
5. Water and soils

The EIS should include an appropriate assessment of the potential impact on biodiversity, including threatened species, populations, ecological communities, or their habitats likely to occur within or near the subject site. Please note that the NSW Biodiversity Offsets Policy for Major Projects is now being implemented.

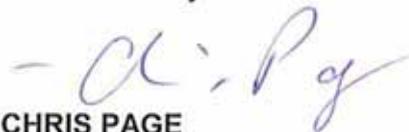
Impacts to biodiversity should be assessed in accordance with the Framework for Biodiversity Assessment (FBA) by a person accredited in accordance with s142B(1)(c) of the Threatened Species Conservation Act 1995. The offset strategy will be required to meet the minimum requirements outlined in the FBA. Given this is a new assessment procedure, the project team is welcome to contact OEH with any questions regarding the methodology.

The proposed rail project is located on land at Stony Creek within the Wingecarribee River Flood Study study area, prepared by Wingecarribee Shire Council. We recommend that, in addition to the attached flood-related recommended SEARs, the proponent have regard to the findings of this study.

The full list of standard and project specific OEH requirements to be addressed in the EIS is provided at **Attachments A and B**. In preparing the EIS, the proponent should refer to the relevant guidance material listed in **Attachment C**.

If you have any further queries in relation to this matter, please contact Calvin Houlison, Conservation Planning Officer, on 4224 4179 or [calvin.houlison@environment.nsw.gov.au](mailto:calvin.houlison@environment.nsw.gov.au).

Yours sincerely

A handwritten signature in blue ink that reads "Chris Page". The signature is written in a cursive style with a horizontal line above the first name.

**CHRIS PAGE**  
**Senior Team Leader, Planning (Illawarra)**  
**South Branch**

Enclosures:

Attachment A – Standard Environmental Assessment Requirements

Attachment B – Project Specific Requirements

Attachment C – Guidance Material

## Attachment A – Standard Environmental Assessment Requirements

<p><b>Biodiversity</b></p> <p>1. Biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the <a href="#">Framework for Biodiversity Assessment</a>, unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the <i>Threatened Species Conservation Act 1995</i>.</p>
<p><b>Aboriginal cultural heritage</b></p> <p>2. The EIS must identify and describe the tangible and intangible Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the <a href="#">Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011)</a> and consultation with OEH regional officers.</p> <p>3. Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the <a href="#">Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW)</a>. The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.</p> <p>4. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.</p>
<p><b>Historic heritage</b></p> <p>5. The EIS must provide a heritage assessment including but not limited to an assessment of impacts to <i>State and local heritage</i> including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:</p> <ol style="list-style-type: none"> <li>outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996),</li> <li>be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria),</li> <li>include a statement of heritage impact for all heritage items (including significance assessment),</li> <li>consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and</li> <li>where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical</li> </ol>

archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.

#### **Water and soils**

6. The EIS must map the following features relevant to water and soils including:
  - a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map).
  - b. Rivers, streams, wetlands, estuaries (as described in Appendix 2 of the [Framework for Biodiversity Assessment](#)).
  - c. Groundwater.
  - d. Groundwater dependent ecosystems.
  - e. Proposed intake and discharge locations.
7. The EIS must describe background conditions for any water resource likely to be affected by the development, including:
  - a. Existing surface and groundwater.
  - b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations.
  - c. Water Quality Objectives (as endorsed by the NSW Government <http://www.environment.nsw.gov.au/ieo/index.htm>) including groundwater as appropriate that represent the community's uses and values for the receiving waters.
  - d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the [ANZECC \(2000\) Guidelines for Fresh and Marine Water Quality](#) and/or local objectives, criteria or targets endorsed by the NSW Government.
8. The EIS must assess the impacts of the development on water quality, including:
  - a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction.
  - b. Identification of proposed monitoring of water quality.
9. The EIS must assess the impact of the development on hydrology, including:
  - a. Water balance including quantity, quality and source.
  - b. Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas.
  - c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems.
  - d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (eg river benches).
  - e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water.
  - f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods

and re-use options.

- g. Identification of proposed monitoring of hydrological attributes.

### **Flooding and coastal erosion**

10. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:
- a. Flood prone land
  - b. Flood planning area, the area below the flood planning level.
  - c. Hydraulic categorisation (floodways and flood storage areas).
11. The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 1 in 10 year, 1 in 100 year flood levels and the probable maximum flood, or an equivalent extreme event.
12. The EIS must model the effect of the proposed development (including fill) on the flood behaviour under the following scenarios:
- a. Current flood behaviour for a range of design events as identified in 8) above. The 1 in 200 and 1 in 500 year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.
13. Modelling in the EIS must consider and document:
- a. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood.
  - b. Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories.
  - c. Relevant provisions of the NSW Floodplain Development Manual 2005.
14. The EIS must assess the impacts on the proposed development on flood behaviour, including:
- a. Whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure.
  - b. Consistency with Council floodplain risk management plans.
  - c. Compatibility with the flood hazard of the land.
  - d. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.
  - e. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.
  - f. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.
  - g. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council.
  - h. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the SES and Council.
  - i. Emergency management, evacuation and access, and contingency measures for the development considering the full range of flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and

have the support of Council and the SES.

- j. Any impacts the development may have on the social and economic costs to the community as consequence of flooding.

## Attachment B – Project Specific Requirements

- A. Impacts on the following populations will require further consideration and provision of the information specified in s9.2 of the Framework for Biodiversity Assessment:
  - *Eucalyptus aggregata*
- B. The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the EIS.
- C. The EIS must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the development to formulate appropriate measures to manage unforeseen impacts.
- D. The EIS must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material.

## Attachment C – Guidance material

Title	Web address
<b><u>Relevant Legislation</u></b>	
<i>Coastal Protection Act 1979</i>	<a href="http://www.legislation.nsw.gov.au/maintop/view/inforce/act+13+1979+cd+0+N">http://www.legislation.nsw.gov.au/maintop/view/inforce/act+13+1979+cd+0+N</a>
<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	<a href="http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/">http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/</a>
<i>Environmental Planning and Assessment Act 1979</i>	<a href="http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N">http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N</a>
<i>Fisheries Management Act 1994</i>	<a href="http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N">http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N</a>
<i>Marine Parks Act 1997</i>	<a href="http://www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N">http://www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N</a>
<i>National Parks and Wildlife Act 1974</i>	<a href="http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N">http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N</a>
<i>Protection of the Environment Operations Act 1997</i>	<a href="http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N">http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N</a>
<i>Threatened Species Conservation Act 1995</i>	<a href="http://www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N">http://www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N</a>
<i>Water Management Act 2000</i>	<a href="http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N">http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N</a>
<i>Wilderness Act 1987</i>	<a href="http://www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N">http://www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N</a>
<b><u>Biodiversity</u></b>	
NSW Biodiversity Offsets Policy for Major Projects (OEH, 2013)	<a href="http://www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf">http://www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf</a>
Framework for Biodiversity Assessment (OEH, 2013)	<a href="http://www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf">http://www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf</a>
Fisheries NSW policies and guidelines	<a href="http://www.dpi.nsw.gov.au/fisheries/habitat/publications/policies,-guidelines-and-manuals/fish-habitat-conservation">http://www.dpi.nsw.gov.au/fisheries/habitat/publications/policies,-guidelines-and-manuals/fish-habitat-conservation</a>
List of national parks	<a href="http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx">http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx</a>
Revocation, recategorisation and road adjustment policy (OEH, 2012)	<a href="http://www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm">http://www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm</a>
Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010)	<a href="http://www.environment.nsw.gov.au/resources/parks/policyRevocations.pdf">http://www.environment.nsw.gov.au/resources/parks/policyRevocations.pdf</a>
<b><u>Heritage</u></b>	
The Burra Charter (The Australia ICOMOS charter for places of cultural significance)	<a href="http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf">http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf</a>
Statements of Heritage Impact 2002 (HO & DUAP)	<a href="http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf">http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf</a>

Title	Web address
NSW Heritage Manual (DUAP) (scroll through alphabetical list to 'N')	<a href="http://www.environment.nsw.gov.au/Heritage/publications/index.htm#M-O">http://www.environment.nsw.gov.au/Heritage/publications/index.htm#M-O</a>
<b>Aboriginal Cultural Heritage</b>	
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	<a href="http://www.environment.nsw.gov.au/resources/cultureheritage/comconsultation/09781ACHconsultreq.pdf">http://www.environment.nsw.gov.au/resources/cultureheritage/comconsultation/09781ACHconsultreq.pdf</a>
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	<a href="http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf">http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf</a>
Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)	<a href="http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf">http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf</a>
Aboriginal Site Recording Form	<a href="http://www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf">http://www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf</a>
Aboriginal Site Impact Recording Form	<a href="http://www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf">http://www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf</a>
Aboriginal Heritage Information Management System (AHIMS) Registrar	<a href="http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm">http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm</a>
Care Agreement Application form	<a href="http://www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf">http://www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf</a>
<b>Water and Soils</b>	
<b>Acid sulphate soils</b>	
Acid Sulfate Soils Planning Maps via 'The NSW Natural Resource Atlas'	<a href="http://www.nratlas.nsw.gov.au/">www.nratlas.nsw.gov.au/</a>
Acid Sulfate Soils Manual (Stone et al. 1998)	<p>Manual available for purchase from:  <a href="http://www.landcom.com.au/whats-new/the-blue-book.aspx">http://www.landcom.com.au/whats-new/the-blue-book.aspx</a></p> <p>Chapters 1 and 2 are on DPI's Guidelines Register at:            Chapter 1 Acid Sulfate Soils Planning Guidelines:  <a href="http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf">http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf</a></p> <p>Chapter 2 Acid Sulfate Soils Assessment Guidelines:  <a href="http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Assessment%20Guidelines.pdf">http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Assessment%20Guidelines.pdf</a></p>
Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004)	<a href="http://www.advancedenvironmentalmanagement.com/Reports/Savannah/Appendix%2015.pdf">http://www.advancedenvironmentalmanagement.com/Reports/Savannah/Appendix%2015.pdf</a> This replaces Chapter 4 of the Acid Sulfate Soils Manual above.
<b>Flooding and Coastal Erosion</b>	
Reforms to coastal erosion management	<a href="http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm">http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm</a>
Floodplain development manual	<a href="http://www.environment.nsw.gov.au/floodplains/manual.htm">http://www.environment.nsw.gov.au/floodplains/manual.htm</a>
Guidelines for Preparing Coastal Zone Management Plans	Guidelines for Preparing Coastal Zone Management Plans <a href="http://www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf">http://www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf</a>
NSW Climate Impact Profile	<a href="#">NSW Climate Impact Profile</a>
Climate Change Impacts and Risk	<a href="#">Climate Change Impacts and Risk Management: A Guide for Business and Government. AGIC Guidelines for Climate Change</a>

Title	Web address
Management	<a href="#">Adaptation</a>
<b>Water</b>	
Water Quality Objectives	<a href="http://www.environment.nsw.gov.au/ieo/index.htm">http://www.environment.nsw.gov.au/ieo/index.htm</a>
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	<a href="http://www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1">www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1</a>
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	<a href="http://deccnet/water/resources/AWQGuidance7.pdf">http://deccnet/water/resources/AWQGuidance7.pdf</a>
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	<a href="http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf">http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf</a>



Transport  
for NSW

Anna Timbrell  
Planning Officer – Resource Assessments  
Department of Planning & Environment  
GPO Box 39  
SYDNEY NSW 2001

Dear Ms Timbrell

**Notice of Request for Secretary's Environmental Assessment Requirements (SEARs) for Berrima Rail Project (SSD 7171) and Hume Coal Project (SSD 7172), Wingecarribee LGA**

Thank you for your email dated 24 July 2015 inviting Transport for NSW (TfNSW) comments on the subject proposals. Roads and Maritime Services will be submitting a separate response.

Transport for NSW has reviewed the proposed developments and recommends that the following requirements be incorporated in the SEARs for each proposal under the relevant Transport and Accessibility section.

Proposed assessment requirements for SSD 7171, Berrima Rail Project are provided in **Attachment A**, while proposed requirements for SSD 7172, Hume Coal project are provided in **Attachment B**.

Transport for NSW further recommends consultation with Roads and Maritime Services (Southern Region) and the Australian Rail Track Corporation (ARTC), in preparation of documentation for the Environmental Impact Statement.

Should you have any questions or require more information, please contact Robert Rutledge on 8202 2203 or email [Robert.rutledge@transport.nsw.gov.au](mailto:Robert.rutledge@transport.nsw.gov.au).

Yours sincerely



Mark Ozinga  
Manager, Land Use Planning & Development  
Planning

4/8/15

CD15/13445

## **Attachment A – SSD 7171 Berrima Rail Project proposed SEARs**

### **Transport and Accessibility**

- Detailed design and engineering drawings of the proposed rail spur, rail overbridges, rail loop, potential upgrades to Berrima Junction and other associated infrastructure, including staging likely works of construction, operation and decommissioning (of existing Berrima Cement Works rail line);
- Details of train operating plans for existing and new users, including likely rail routes and destinations, train size and configuration, service frequency, anticipated train path requirements, expected ramp up periods and peak demand;
- Demonstrated engagement with and confirmation from all relevant rail network owners and coal terminals regarding train path availability and future network enhancements which may be required to support the proposed operations and maintain sufficient capacity for other rail network users over the life of the project;
- Detailed assessment of the proposed project on the capacity, efficiency and safety of the rail networks, including level crossings. The assessment is to consider the cumulative impacts to network users (including and beyond that of the branch line) and recommend mitigation measures in response;
- Demonstrated engagement with the relevant road authority/ies for the development of interface agreements for proposed road over rail bridges and details of traffic management during construction of the proposed overbridges; and
- Engagement with TfNSW and the relevant rail network owners in the development of methodology for assessing noise impacts associated with the proposed rail operations, in line with relevant NSW noise guidelines and details of noise mitigation strategies.

## **Attachment B – SSD 7172 Hume Coal Project proposed SEARs**

### **Transport and Accessibility**

#### Traffic Generation and Roads

A traffic impact study prepared in accordance with the methodology set out in Section 2 of the RTA's Guide to Traffic Generating Developments and include the following details:

- Accurate daily and peak traffic forecasts generated by the project during construction and operation, including details of transport routes, types of vehicles likely to be used and expected ramp up periods. Forecasts are to include anticipated service vehicle movements, including vehicle type and arrival and departure times;
- Details of the proposed staging of the project covering construction and operational stages;
- Details of the proposed access to the site from the road network during construction and operation of the project, including hours of operation, days of construction and operation for each stage of the project, intersection location, design and sight distances;
- Detailed assessment of the impact of the proposed project on the capacity, efficiency and safety of the road networks during construction and operation. The assessment should consider the cumulative impacts of the project on current road users and should also include the contribution of mining inputs, having regard to the transportation of dangerous goods (explosives, fuel and chemicals) to be utilised during the construction and operational phases of the project. A risk assessment should be undertaken to identify management measures that will be implemented to ensure that dangerous goods are safely transported;
- Any oversize and over-mass vehicles and loads expected for the construction, operation or decommissioning of the project should be identified, including the shortest and least trafficked route having been given priority for the movement of construction materials and machinery to minimise the risk and impact to other motorists;
- A description of the measures that would be implemented to maintain and/or improve the capacity, efficiency and safety of the road network for the construction and over the life of the project; and
- Detailed plans of the proposed layout of the internal access roads and on-site parking in accordance with the relevant Australian standards.



Our reference: EF14/17:DOC15/279794:ATC  
Contact: Andrew Couldridge (02) 4224 4100

Ms Anna Timbrell  
Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Dear Ms Timbrell

**REQUEST FOR SEARS**  
**BERRIMA RAIL PROJECT AND HUME COAL PROJECT**

I am writing in reply to your request dated 23 July 2015 to provide for input into drafting the Secretary's Environmental Assessment Requirements (SEARs) for the following two development proposals:

1. Berrima Rail Project (SSD 7171); and
2. Hume Coal Project (SSD 7172).

The Environment Protection Authority (EPA) has reviewed the preliminary environmental assessments for the projects submitted by the proponent Hume Coal Pty Ltd.

The EPA recommends that the Department of Planning and Environment base its SEARS on the latest version of the guideline document, "*Standard Secretary's Environmental Assessment Requirements (SEARs) for State Significant Mining Developments*". The guideline has been extensively reviewed by Government agencies including the EPA and provides the current best available summation of potential environmental impacts that should be examined in an Environmental Impact Statement (EIS) for new coal mines.

The EPA has also attached some additional issues specific to the proposal (Attachment A) where the proponent should provide further explanation and assessment in the EIS.

If you have questions regarding the above, please phone the contact officer on (02) 4224 4100.

Yours sincerely

 7/8/15  
**PETER BLOEM**  
**Manager Illawarra**  
**Environment Protection Authority**

Att:

## **ATTACHMENT A**

### ***Feasibility***

The proposal appears to include several innovative elements intended to lower environmental impacts. These include:

- pine feather mining techniques to minimise subsidence and impacts on aquifers
- underground waste reject backfilling to avoid waste emplacement; and
- covering of coal wagons to minimise dust emissions.

Whilst these approaches have the potential to significantly minimise impacts on the environment, some of the methods are still relatively new to mining in NSW. The proponent should give examples of equivalent current use, available expertise for implementation and how they will be specifically adapted for use in the project to demonstrate technical feasibility and long term economic feasibility. The proponent should also include several sources of cost estimates for the techniques in the financial feasibility assessment for the project.

### ***Water Quality Assessment***

EPA acknowledges the priority to be given to surface and groundwater in the EIS (table 6.1, page 53). This recognises that the project area drains to natural areas of medium-high quality riparian vegetation in the lower reaches of Medway Rivulet and Oldbury Creek.

It is noted that on page 63, the proposed water quality assessment includes evaluation against neutral and beneficial effect (NOBE) criteria in accordance with State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011.

However, water management should also be assessed using approaches outlined in the National Water Quality Management Strategy, ANZECC 2000. These are described in more detail in the standard SEARS, but in summary the EIS should:

- Identify relevant Water Quality Objectives (WQO) for surface and groundwater, including indicators and associated trigger values or criteria, in accordance with National Water Quality Management Strategy Guidelines. Reference the water quality objectives for the Wingecarribee River catchment in the "NSW Healthy Rivers Commission of Inquiry into the Hawkesbury Nepean Catchment". Identify any downstream users and uses of the discharged water classified in accordance with relevant ANZECC 2000.
- Estimate the chemical composition and load of chemical and physical stressors and toxicants in any discharge of mine water. Compare the level of physical and chemical stressors in any discharge with ANZECC 2000 trigger values for the various environmental values for the waterway.
- Investigate options to reduce the levels of pollutants in the discharge of water to protect the environment from harm as a result of that pollution. Identify all practical measures to control or reduce pollutants in the surface or groundwater discharges. Identify preferred measures and their justification.
- If WQO's cannot be met for the project, demonstrate that all practical options to avoid water discharge have been implemented and outline any measures taken to reduce the pollutant loads where a discharge is necessary. Where a discharge is proposed, analyse the expected discharges in terms of impact on the receiving environment, including consideration of all pollutants that pose a risk of non-trivial harm.

The EIS must address the following specific matters:

#### Noise and Vibration

- Noise and vibration impacts from construction activities and operational sources including train movement and rail maintenance;
- The nature, sensitivity and impact to potentially affected receivers and structures (including heritage items);
- A strategy for managing construction noise and vibration and out of hours activities, with a particular focus placed on those activities having the greatest potential for adverse noise or vibration impacts;
- Noise and vibration impacts along the corridor due to changed rail operations from the upgraded track between the main southern line to Boral Cement.
- Details of any change in industrial noise levels likely as a result of improved rail access to industries including Hume Coal, Boral, Inghams and Omya.
- Noise and vibration impacts from areas proposed to be utilised for during coal loading operations and from idling locomotives during 'parking' interaction with passenger services.
- Assessment of all reasonable and feasible options to mitigate the impacts of operational rail noise, with particular focus on source control;
- Taking into account *the Interim Construction Noise Guideline (2009)*, *Rail Infrastructure Noise Guidelines (2013)*, and *Assessing Vibration: A Technical Guideline (2006)*.

#### Air Quality

- Description of air pollutants from the project including assessment of pollutants of concern for local and regional air quality for both construction and operation of the project;
- Assessment of particulates (dust deposition, TSP, PM10, PM2.5) and NO2 emitted from coal train loading and movement. Assessment should be made of emissions from locomotives as well as coal carriages.
- Results of dispersion modelling should be presented showing the geographic extent of maximum pollutant concentrations (incremental and cumulative);
- List of control factors and their justification, including methods used to achieve best management practice (e.g. speed limits on vehicles, watering rates, use of chemical suppressants etc.); and
- Reference should be made to procedures outlined in Coal Mine Particulate Matter Control Best Practice - Site-specific determination guideline (OEH November 2011) [www.environment.nsw.gov.au/resources/air/20110813coalmineparticulate.pdf](http://www.environment.nsw.gov.au/resources/air/20110813coalmineparticulate.pdf);
- Include air dispersion modelling in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC 2005) <http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf>

#### Water

- Surface water and stormwater management, including consideration of water quality and local receiving environments;
- Control of clean water including details of any construction and operational clean water diversion structures;
- During construction; details of erosion & sediment control, and water treatment facilities including water flows, sediment dam volume estimates and fit-for-purpose water reuse;

- Identification of discharge points, anticipated frequency, volume and characterisation of water discharged (including pollutants).
- Procedures for responding to incidents, including identification of trigger values;
- In developing a stormwater management plan reference should be made to: the following guidelines Managing Urban Stormwater: Volume 1 - Blue Book. Volume 2A: Installation of services. Volume 2D: Main road construction. Volume 2E: Mines and quarries  
<http://www.environment.nsw.gov.au/stormwater/publications.htm>
- Details of the integration of post construction surface and stormwater management from the railway with industries serviced by the railway including Hume Coal, Boral, Inghams and Omya.
- Describe the measures proposed to alter or amend flow or course of local creeks and rivers (such as through bridges or channelization) and measures taken to minimise long term impacts on geomorphic characteristics.

7 August 2015

Anna Timbrell  
Department of Planning & Environment  
GPO Box 39  
Sydney NSW 2001

**SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS (SEARS):**  
**- SSD7171 BERRIMA RAIL PROJECT**  
**- SSD7172 HUME COAL PROJECT**

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Dear Anna,

Roads and Maritime Services (RMS) refers to your letter dated 23 July 2015 regarding the subject SEAR's.

RMS has reviewed the information provided and considers that the following information should be addressed in the Environmental Assessment (EA):

RMS acknowledges that the information provided states that detailed assessments will be conducted. In addition to and more specifically, RMS requires that the following also be assessed as part of the EA:

The impacts of traffic generated by the subject developments, including:

- A traffic impact study (TIS) is required. As a guide Table 2.1 of the RTA Guide to Traffic Generating Developments outlines the key issues that may be considered in preparing a TIS;
- The effects on traffic volumes and roadway configurations associated with entry to and exit from the mine and rail line during construction and operation from vehicles associated with the mine. RMS will not accept any direct access to the Hume Highway. If significant road works are proposed to accommodate any changes to the traffic regime, then the EA will need to be expanded to address these proposals;
- The movement of overweight and oversize vehicles on the Hume Highway associated with the mine;
- The visual amenity impact of the mine works with regard to driver behaviour;
- The impact of dust pollution on the travelling public;
- The impact of dust pollution or the depositing of fines on the functioning of reflective signs, pavement markers and pavement line marking.

**Roads & Maritime Services**

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The impacts of noise and vibration of the mine, including;

- Undermining or de-stabilisation of the Hume Highway through coal extraction operations or otherwise;
- Vibration impacts on the Hume Highway through mine construction and mine operation.

The impacts of noise and vibration of the rail line, including;

- Effects of renewing and using the train line that passes under the Hume Highway. Impacts such as:
  - Undermining/destabilising of the existing bridge foundation and structure;
  - Vibration effect of train movements;
  - Pollution impacts on road users.

The impacts on the groundwater flows, including;

- Changes in the water table configuration through such things as new dam construction, re-routing of water ways, groundwater behavioural changes, and changes to the catchment areas that feed to or away from the Hume Highway. Any change in the water table has the potential to affect the structural integrity of the Hume Highway.

Should you require any clarification on this matter please call Kendrick Westlake on 02 4221 2771.

Yours faithfully

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

Chris Millet  
Manager Land Use  
Southern Region

Ref: D2015/091229

Paul Freeman  
Senior Planner - Resource Assessments  
NSW Department of Planning & Environment  
GPO Box 39  
SYDNEY NSW 2001

Dear Mr Freeman

**Berrima Rail Project (SSD 15\_7171)  
Request for Input into Secretary's Environmental Assessment Requirements**

I refer to your email received 14 August 2015 seeking WaterNSW's inputs into the Secretary's Environmental Assessment requirements (SEARs) for the Berrima Rail Project. WaterNSW appreciates the opportunity and offers the following comments for consideration.

The subject land is located in the Warragamba catchment which forms part of Sydney's water supply. Stony and Oldbury Creeks run through or are adjacent the site and flow to Wingecarribee River which is located approximately 5km to the north.

The impact of the proposed development on water quality and quantity are of concern to WaterNSW. The EIS will need to demonstrate that the proposal will have no impact on water quality within Warragamba catchment. To address above issues WaterNSW recommends the following be included in the SEARs.

- As the development is located in the Sydney drinking water catchment clauses 9 (1) and (2) and 10(1) of State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 apply. The EIS should specifically address these clauses. In particular the EIS must describe and justify how the development would have a neutral or beneficial effect on water quality.
- The detailed assessment of the development on water resources should also consider the design, construction, operational and decommissioning phases and have regard for operation during periods of wet weather and include:
  - details of the measures to manage site water associated with the rail line likely to affect water quality at the site, and how neutral or beneficial effect on water quality (NorBE) principles will be assessed and applied
  - pre-development and post development run off volumes and pollutant loads from the site
  - the principles outlined in the 'Managing Urban Stormwater – Soils and Construction Volume 1 (2004).
- The EIS should provide concept plans/protocols/procedures for the following:
  - Environmental Management Plan
  - Soil and Water Management Plan
  - Procedures for managing incidents and spills

- Rehabilitation Plan

It is requested that WaterNSW be included as a stakeholder for the proposal and that a copy of this letter be attached to the SEARs. If a Planning Focus meeting is held WaterNSW would like to be invited. Further, WaterNSW would appreciate being notified when the Department has issued the SEARs.

If you wish to discuss this matter further please contact Neil Cowley on 48886 9417



**MALCOLM HUGHES**  
**Senior Manager Planning and Environment**

18/2/15

BERRIMA RAIL PROJECT

Environmental Assessment Requirements

Agency	Requirement	Technical team	Where addressed in EIS
DP&E	A full description of the development, including the likely interactions between the development and any other existing, approved or proposed development in the vicinity of the site, particularly the Hume Coal Project.		Chapter 2, and Sections 2.2 and 6.5
DP&E	A list of any approvals that must be obtained before the development may commence.		4.8
DP&E	An assessment of the likely impact of the development on the environment, focusing on the specific issues identified below, including:		
DP&E	- a description of the existing environment likely to be affected by the development, using sufficient baseline data;		Chapter 6
DP&E	- an assessment of the likely impacts of all stages of the development, including any cumulative impacts, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice;		Chapters 7 to 16
DP&E	- a description of the measures that would be implemented to mitigate and/or offset the likely impacts of the development, and an assessment of: * whether these measures are consistent with industry best practice, and represent the full range of reasonable and feasible mitigation measures that could be implemented; * the likely effectiveness of these measures, including performance measures where relevant; and * whether contingency plans would be necessary to manage any residual risks.		Chapters 7 to 16
DP&E	- a description of the measures that would be implemented to monitor and report on the environmental performance of the development if it is approved.		Chapters 7 to 16
DP&E	A consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS.		Chapter 17
DP&E	The reasons why the development should be approved having regard to environmental, economic and social considerations, including the principles of ecologically sustainable development.		Chapter 18
DP&E	The development application must be accompanied by a signed report from a suitably qualified and experienced person that includes an accurate estimate of the capital investment value (as defined in Clause 3 of the Environmental Planning and Assessment Regulation 2000) of the development, including details of all the assumptions and components from which the capital investment value calculation is derived.		Provided in a separate quantity surveyor's report directly to DP&E
DP&E	An assessment of the likely biodiversity impacts of the development, in accordance with the Framework for Biodiversity Assessment, by a person accredited in accordance with s142(B)(1)(c) of the <i>Threatened Species Conservation Act 1995</i> , and having regard to OEH's and DPI's requirements and recommendations.	Ecology	The biodiversity assessment was prepared in accordance with the SEARS by Katie Whiting of EMM, accredited assessor number 196.  Chapter 12
DP&E	A strategy to offset any residual impacts of the development in accordance with the NSW Biodiversity Offsets Policy for Major projects.	Ecology	Section 12.7
DP&E	An assessment of the likely rail noise and vibration impacts of the development under the <i>Rail Infrastructure Noise Guideline</i> (EPA 2000) and <i>Assessing Vibration a Technical Guideline</i> (2006), and having regard to EPA's requirements.	Noise	Chapter 7, Sections 7.3.2, 7.5.3, 7.5.4 and 7.5.5
DP&E	An assessment of the noise associated with the rail facilities under the NSW <i>Industrial Noise Policy</i> , if such an assessment is not undertaken as part of the Hume Coal Project.	Noise	Section 7.5.2 and the Hume Coal Project EIS
DP&E	If a claim is made for specific construction noise criteria for certain activities, then this claim must be justified and accompanied by an assessment of the likely construction noise impacts of these activities under the <i>Interim Construction Noise Guideline</i> (2009).	Noise	Sections 7.3.1 and 7.5.1
DP&E	An assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, having regard to OEH's requirements.	Heritage	Chapter 10 Chapter 11
DP&E	An assessment of the likely impacts of the development on the quantity and quality of the region's surface and groundwater resources, having regard to the EPA's, DPI's and Water NSW's requirements and recommendations.	Water	Chapter 13, Section 13.5  The project will not intersect or take groundwater from underlying systems and there will be no
DP&E	An assessment of the likely impacts of the development on aquifers, watercourses, riparian land, water-related infrastructure, and other water users.	Water	Impacts on watercourses and water users are
DP&E	An assessment of the likely flooding impacts of the development.	Water	Section 13.2
DP&E	An assessment of the likely transport impacts of the development on the capacity, condition, safety and efficiency of the local and State road network, and the rail network, having regard to Transport for NSW's and RMS's requirements.	Traffic	Chapter 9, Sections 9.4.1, 9.4.2, 9.5.1 and 9.5.2
DP&E	An assessment of the likely air quality impacts of the development in accordance with the <i>Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW</i> and the EPA's additional requirements.	Air	Chapter 8, Sections 8.2, 8.4 and 8.6
DP&E	An assessment of the likely greenhouse gas impacts of the development, having regard to the EPA's requirements.	Air	Chapter 8, Section 8.7
DP&E	An assessment of the likely social impacts of the development.	Social	Section 18.3
DP&E	An assessment of the likely economic impacts of the development, paying particular attention to the economic benefits of the project for the State and region and the demand for the provision of local infrastructure and services.	Economics	Section 18.4

BERRIMA RAIL PROJECT  
Environmental Assessment Requirements

Agency	Requirement	Technical team	Where addressed in EIS
DP&E	Consultation with relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. The EIS must describe the consultation that was carried out, identify the issues raised during this consultation, and explain how these issues have been addressed in the EIS.	General	Chapter 5
Agriculture NSW	Consideration of the potential for flooding adjacent to the railway embankment and its impacts on grazing land usability, including mitigation measures.	Water	Section 13.2
Agriculture NSW	An assessment of the impacts on existing dam levels from surface water flows.	Water	There will be no impacts to dams as surface water flows will not be impacted by the project. The Berrima Rail Project will not involve the take of
Agriculture NSW	Consideration of impacts to livestock access and movement from construction of the railway.	Agriculture	Section 14.5.5
Agriculture NSW	Consideration of the <i>Infrastructure Proposals on Rural Land</i> Guideline to assess impacts.	Agriculture	Sections 14.4.2 vii, 14.5.4 I, 14.5.6 and 2.6
NSW Fisheries	Assess the full extent of potential impacts to the aquatic environment within the development area. Detail proposed measures to mitigate, rehabilitate or compensate for such impacts in accordance with the Department's Policy and Guidelines to ensure there is not net loss of aquatic habitats.	Aquatic ecology	Section 12.4.3
NSW Fisheries	Description of aquatic and riparian environments in the vicinity of the development, – particularly extent and condition of riparian vegetation and instream aquatic vegetation, water depth, and permanence of water flow and snags (large woody debris) within the footprint of the proposed rail project.	Aquatic ecology	Section 12.4.3
NSW Fisheries	Analysis of any interactions of the proposed rail project with aquatic and riparian environments and predictions of any impacts upon aquatic and riparian environments (including fish and aquatic and riparian vegetation) from the rail project (both temporary and permanent). This should include assessment of both direct impacts (removal, disturbance, smothering) and indirect impacts (e.g. shading, permanent loss of habitat).	Aquatic ecology/Ecology	Section 12.4.3
NSW Fisheries	Description of proposed environmental compensation measures to offset the permanent loss of riparian habitats in Stony Creek (e.g. funding for aquatic rehabilitation works, such as removal of fish passage barriers, elsewhere in the catchment as outlined in the Departments Policy and Guidelines).	Aquatic ecology	Section 12.4.3 - Riparian vegetation is absent from the project area and therefore will not be directly
NSW Fisheries	Description of potential impediments to fish passage as a result of the works (e.g. temporary coffer dams, instream bunds or work platforms) and possible mitigation measures to be employed to negate these impacts.	Water	Section 13.4
NSW Fisheries	Predictions of impacts upon water quality of the proposed rail project, including in Stony Creek, both during the construction and operational phases.	Water	Section 13.5
NSW Fisheries	Safeguards to mitigate any impacts upon aquatic species and environments and water quality during construction and operation of the rail project. In particular, provide details on proposed revegetation of riparian areas, proposals for erosion and sediment control (to be incorporated into a Construction Environmental Management Plan - CEMP) and proposed stormwater and ongoing drainage management measures. Water quality management for the rail project should be designed to achieve no net increase in pollutant run-off to Stony Creek.	Aquatic ecology	Section 13.5
NSW Fisheries	Fisheries NSW recommend the use of best practice sediment and erosion control, and water quality and stormwater management provisions to safeguard and mitigate impacts on water quality at the site and downstream. They also recommend inclusion of appropriate riparian corridors to provide a buffer between the development areas and adjacent waterways or natural drainage lines to provide protection to riparian and aquatic habitats.	Water	Sections 13.3 and 13.5
NSW Fisheries	Design and construction of any watercourse crossings on the site should be undertaken in accordance with the Departments <i>Policy and Guidelines for Fish Friendly Waterway Crossings</i> (2004) and <i>Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings</i> (2004).	Water	Section 13.5
DPI Water	Annual volumes of surface water and groundwater proposed to be taken by the activity (including through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan.	Water	the project will not take surface water or groundwater
DPI Water	Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).	Water	No water licences are required (Section 4.4.6)
DPI Water	The identification of an adequate and secure water supply for the life of the project.	Water	A water supply is not required for the project
DPI Water	Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.	Water	As above
DPI Water	A detailed and consolidated site water balance.	Water	The Berrima Rail Project will not involve the take of surface water or groundwater during
DPI Water	Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.	Water	Sections 13.2 and 13.5
DPI Water	An assessment of impediment to surface or groundwater flow, and potential flood impacts.	Water	Section 13.2
DPI Water	Full technical details and data of all surface and groundwater modelling.	Water	The Berrima Rail Project will not involve the take of water during construction, operation or
DPI Water	Proposed surface and groundwater monitoring activities and methodologies.	Water	Section 13.5
DPI Water	Proposed management and disposal of produced or incidental water.	Water	The management of runoff during construction is
DPI Water	Details of the final landform of the site, including final void management (where relevant) and rehabilitation measures.	Rehabilitation	Sections 2.6.2 and 2.6.3. Final void manament is
DPI Water	Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts.	Water	Section 13.2
DPI Water	Consideration of relevant policies and guidelines.	Water	Chapters 4 and 13
DPI Water	A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).	Water	Appendix B (this table)

BERRIMA RAIL PROJECT  
Environmental Assessment Requirements

Agency	Requirement	Technical team	Where addressed in EIS
DPI Water	A detailed assessment of riparian and watercourse impacts, particularly with respect to watercourse crossings. The project should be designed to minimise impacts on watercourses and riparian land, and must have regard to the Department of Primary Industries' Guidelines for Controlled Activities on Waterfront Land – in particular the guideline on watercourse crossings.	Water	Section 12.4.3 - Riparian vegetation is absent from the project area and therefore will not be directly impacted by the proposed development
DPI Water	The EIS should take into account the objects and regulatory requirements of the Water Act 1912 (WA 1912) and Water Management Act 2000 (WMA 2000), and associated regulations and instruments, as applicable.	Water	Section 4.4.6
DPI Water	Describe the ground and surface water sharing plans, water sources, and management zones that apply to the project. Multiple water sharing plans may apply and these must all be described.	Water	Section 4.4.6
DPI Water	Demonstrate how the proposal is consistent with the relevant rules of the Water Sharing Plan including rules for access licences, distance restrictions for water supply works and rules for the management of local impacts in respect of surface water and groundwater sources, ecosystem protection (including groundwater dependent ecosystems), water quality and surface-groundwater connectivity.	Water	Section 4.4.6 The project does not involve the take of water and no water access licences are required.
DPI Water	Provide a description of any site water use (amount of water to be taken from each water source) and management including all sediment dams, clear water diversion structures with detail on the location, design specifications and storage capacities for all the existing and proposed water management structures.	Water	The Berrima Rail Project will not involve the take of water and will not impede the flow of water as culvert structures will be constructed where the rail crosses waterways.
DPI Water	Provide an analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant WSP, including: - Sufficient market depth to acquire the necessary entitlements for each water source. - Ability to carry out a "dealing" to transfer the water to relevant location under the rules of the WSP. - Daily and long-term access rules. - Account management and carryover provisions.	Water	Section 4.4.6 The Berrima Rail Project will not involve the take of water
DPI Water	Provide a detailed and consolidated site water balance.	Water	The Berrima Rail Project will not involve the take of surface water during construction, operation or
DPI Water	The EIS should take into account the following policies (as applicable): · NSW Guidelines for Controlled Activities on Waterfront Land (NOW, 2012) · NSW Aquifer Interference Policy (NOW, 2012) · Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW, 2012) · Australian Groundwater Modelling Guidelines (NWC, 2012) · NSW State Rivers and Estuary Policy (1993) · NSW Wetlands Policy (2010) · NSW State Groundwater Policy Framework Document (1997) · NSW State Groundwater Quality Protection Policy (1998) · NSW State Groundwater Dependent Ecosystems Policy (2002) · NSW Water Extraction Monitoring Policy (2007)	Water	The Berrima Rail Project does not involve an aquifer interference activity.  The project will not intersect or take groundwater from underlying systems and there will be no impact to groundwater levels or flow as a result of the project.
DPI Water	Identification of water requirements for the life of the project in terms of both volume and timing (including predictions of potential ongoing groundwater take following the cessation of operations at the site – such as evaporative loss from open voids or inflows)	Water	Surface water flows will not be impacted by the project. The Berrima Rail Project will not involve the take of water and will not impede the flow of water as culvert structures will be constructed where the rail crosses waterways.
DPI Water	Details of the water supply source(s) for the proposal including any proposed surface water and groundwater extraction from each water source as defined in the relevant Water Sharing Plan/s and all water supply works to take water.	Water	The Berrima Rail Project will not involve the take of water.
DPI Water	Explanation of how the required water entitlements will be obtained (i.e. through a new or existing licence/s, trading on the water market, controlled allocations etc).	Water	No water licences will be required for the project.
DPI Water	Information on the purpose, location, construction and expected annual extraction volumes including details on all existing and proposed water supply works which take surface water, (pumps, dams, diversions, etc).	Water	The Berrima Rail Project will not involve the take of water.
DPI Water	Details on all bores and excavations for the purpose of investigation, extraction, dewatering, testing and monitoring. All predicted groundwater take must be accounted for through adequate licensing.	Water	The project will not intersect or take groundwater from underlying systems and there will be no

BERRIMA RAIL PROJECT  
Environmental Assessment Requirements

Agency	Requirement	Technical team	Where addressed in EIS
DPI Water	Details on existing dams/storages (including the date of construction, location, purpose, size and capacity) and any proposal to change the purpose of existing dams/storages.	Water	There will be no impacts to dams as surface water flows will not be impacted by the Project. The Berrima Rail Project will not involve the take of
DPI Water	Details on the location, purpose, size and capacity of any new proposed dams/storages.	Water	There will be no new dams/storages as part of the
DPI Water	Applicability of any exemptions under the Water Management (General) Regulation 2011 to the project.	Water	Not applicable
DPI Water	Consideration of water allocation account management rules, total daily extraction limits and rules governing environmental protection and access license dealings.	Water	Surface water flows will not be impacted by the project. The Berrima Rail Project will not involve the take of water and will not impede the flow of water as culvert structures will be constructed where the rail crosses waterways.
	Identification of all surface water features including watercourses, wetlands and floodplains transected by or adjacent to the proposed project.	Surface water	Section 13.2.2
DPI Water	Identification of all surface water sources as described by the relevant water sharing plan.	Surface water	Sections 6.2.4 and 13.2.2
DPI Water	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.	Surface water	Section 12.4.3vi. There will be no impacts to dependent ecosystems or existing surface water users. The Berrima Rail Project will not involve the
DPI Water	Description of all works and surface infrastructure that will intercept, store, convey, or otherwise interact with surface water resources.	Surface water	Section 13.2.1
DPI Water	Assessment of predicted impacts on the following: - flow of surface water, sediment movement, channel stability, and hydraulic regime, - water quality, - flood regime, - dependent ecosystems, - existing surface water users, and - planned environmental water and water sharing arrangements prescribed in the relevant water sharing plans.	Surface water	Sections 13.3, 13.5 and 13.2 There will be no impacts to dependent ecosystems or existing surface water users. The Berrima Rail Project will not involve the take of water and will not impede the flow of water as culvert structures
DPI Water	The known or predicted highest groundwater table at the site.	Groundwater	Refer to Appendix E of the Hume Coal Project EIS.
DPI Water	Works likely to intercept, connect with or infiltrate the groundwater sources.	Groundwater	The project will not intersect or take groundwater from underlying systems and there will be no
DPI Water	Any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.	Groundwater	The project will not intersect or take groundwater from underlying systems and there will be no
DPI Water	Bore construction information is to be supplied to DPI Water by submitting a "Form A" template. DPI Water will supply "GW" registration numbers (and licence/approval numbers if required) which must be used as consistent and unique bore identifiers for all future reporting.	Groundwater	The project will not intersect or take groundwater from underlying systems and there will be no
DPI Water	A description of the watertable and groundwater pressure configuration, flow directions and rates and physical and chemical characteristics of the groundwater source (including connectivity with other groundwater and surface water sources).	Groundwater	The project will not intersect or take groundwater from underlying systems and there will be no
DPI Water	Sufficient baseline monitoring for groundwater quantity and quality for all aquifers and GDEs to establish a baseline incorporating typical temporal and spatial variations.	Groundwater	The project will not intersect or take groundwater from underlying systems and there will be no impact to groundwater levels or flow as a result of
DPI Water	The predicted impacts of any final landform on the groundwater regime.	Groundwater	The project will not intersect or take groundwater from underlying systems and there will be no
DPI Water	The existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.	Groundwater	The project will not intersect or take groundwater from underlying systems and there will be no
DPI Water	An assessment of groundwater quality, its beneficial use classification and prediction of any impacts on groundwater quality.	Groundwater	The project will not intersect or take groundwater from underlying systems and there will be no
DPI Water	An assessment of the potential for groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).	Groundwater	The project will not intersect or take groundwater from underlying systems. An assessment of the
DPI Water	Measures proposed to protect groundwater quality, both in the short and long term.	Groundwater	The project will not intersect or take groundwater from underlying systems. Construction will be
DPI Water	Measures for preventing groundwater pollution so that remediation is not required.	Groundwater	The project will not intersect or take groundwater from underlying systems. Construction will be

BERRIMA RAIL PROJECT  
Environmental Assessment Requirements

Agency	Requirement	Technical team	Where addressed in EIS
DPI Water	Protective measures for any groundwater dependent ecosystems (GDEs).	Groundwater/Ecology	on groundwater availability or groundwater dependent ecosystems. Construction will be managed
DPI Water	Proposed methods of the disposal of waste water and approval from the relevant authority.	Groundwater	There will be no waste water resulting from the project. Management of erosion and sedimentation
DPI Water	The results of any models or predictive tools used.	Groundwater	Chapter 13
DPI Water	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: - 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 from future use as a water supply 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.	Groundwater	Chapter 13
DPI Water	Identify any potential impacts on GDEs as a result of the proposal including: - the effect of the proposal on the recharge to groundwater systems; - the potential to adversely affect the water quality of the underlying groundwater system and adjoining groundwater systems in hydraulic connections; and - the effect on the function of GDEs (habitat, groundwater levels, connectivity).	Aquatic ecology	Section 12.4.3
DPI Water	Provide safeguard measures for any GDEs.	Aquatic ecology	Section 12.4.3 - The project will not result in any changes or impacts on groundwater availability or
DPI Water	Address the potential impacts of the project on all watercourses likely to be affected by the project, existing riparian vegetation and the rehabilitation of riparian land	Surface water	Sections 12.4.3, 13.3, 13.4 and 13.5
DPI Water	Scaled plans showing the location of: - wetlands/swamps, watercourses and top of bank; - riparian corridor widths to be established along the creeks; - existing riparian vegetation surrounding the watercourses (identify any areas to be protected and any riparian vegetation proposed to be removed); - the site boundary, the footprint of the proposal in relation to the watercourses and riparian areas; and - proposed location of any asset protection zones.	Surface water	There is no riparian vegetation or wetlands in the project area. Watercourses and the site boundary are illustrated in the figures Chapter 13
DPI Water	Photographs of the watercourses/wetlands and a map showing the point from which the photos were taken.	Surface water	Section 13.3.2
DPI Water	A detailed description of all potential impacts on the watercourses/riparian land.	Surface water	Sections 13.3.2, 13.3.3, 13.3.4 and 13.3.5
DPI Water	A detailed description of all potential impacts on the wetlands, including potential impacts to the wetlands hydrologic regime; groundwater recharge; habitat and any species that depend on the wetlands.	Surface water	There are no wetlands in the project area
DPI Water	A description of the design features and measures to be incorporated to mitigate potential impacts.	Surface water	Sections 13.2.6, 13.3.6, 13.4 and 13.5
DPI Water	Geomorphic and hydrological assessment of water courses including details of stream order (Strahler System), river style and energy regimes both in channel and on adjacent floodplains.	Surface water	Section 13.3.2
DPI Water	Justification of the proposed final landform with regard to its impact on local and regional surface and groundwater systems.	Rehabilitation/Water	Section 2.6
DPI Water	A detailed description of how the site would be progressively rehabilitated and integrated into the surrounding landscape.	Rehabilitation	Sections 2.6.2 and 14.5.6
DPI Water	An outline of proposed construction and restoration of topography and surface drainage features if affected by the project.	Rehabilitation	Sections 2.4 and 2.6
DPI Water	An outline of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation.	Rehabilitation	Section 14.4.2 v
OEH	Assessment of the potential impact on biodiversity, including threatened species, populations, ecological communities, or their habitats likely to occur within or near the subject site.	Ecology	Section 12.4
OEH	Have regard to the findings of the Wingecarribee River Flood Study, prepared by Wingecarribee Shire Council.	Surface water	n 13.2.1 describes the assessment methodology and
OEH	Biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the Framework for Biodiversity Assessment, unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the Threatened Species Conservation Act 1995.	Ecology	requirements of the FBA by Katie Whiting, accredited assessor 196.

BERRIMA RAIL PROJECT  
Environmental Assessment Requirements

Agency	Requirement	Technical team	Where addressed in EIS
OEH	The EIS must identify and describe the tangible and intangible Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional officers.	Aboriginal heritage	Sections 10.6 to 10.14
OEH	Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.	Aboriginal heritage	Section 10.4
OEH	Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.	Aboriginal heritage	Section 10.15
OEH	The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall: a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996), b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), c. include a statement of heritage impact for all heritage items (including significance assessment), d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to	Historic heritage	Chapter 10 Chapter 11  a. Section 11.8 b. This report has been prepared by a suitably qualified heritage consultant c. Section 11.7 d. Section 11.7 e. Areas of historical archaeological sensitivity have been identified within the project area; the remnants of a timber rail bridge over Stony Creek
OEH	The EIS must map the following features relevant to water and soils including: a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map). b. Rivers, streams, wetlands, estuaries (as described in Appendix 2 of the Framework for Biodiversity Assessment). c. Groundwater. d. Groundwater dependent ecosystems. e. Proposed intake and discharge locations.	Water and soils	a. There are no acid sulfate soils (Section 14.3.2) b. Refer to Figures 1.2 and 6.2 and Plates 12.1 to 12.5 c/d/e. The project will not intersect or take groundwater from underlying systems and there will be no impact to groundwater levels or flow as
OEH	The EIS must describe background conditions for any water resource likely to be affected by the development, including: a. Existing surface and groundwater. b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations. c. Water Quality Objectives (as endorsed by the NSW Government <a href="http://www.environment.nsw.gov.au/ieo/index.htm">http://www.environment.nsw.gov.au/ieo/index.htm</a> ) including groundwater as appropriate that represent the community's uses and values for the receiving waters. d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government.	Water	Section 6.2 and Chapter 12
OEH	The EIS must assess the impacts of the development on water quality, including: a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction. b. Identification of proposed monitoring of water quality.	Water	Section 13.5

BERRIMA RAIL PROJECT  
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Agency	Requirement	Technical team	Where addressed in EIS
OEH	<p>The EIS must assess the impact of the development on hydrology, including:</p> <ol style="list-style-type: none"> <li>Water balance including quantity, quality and source.</li> <li>Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas.</li> <li>Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems.</li> <li>Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (eg river benches).</li> <li>Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water.</li> <li>Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options.</li> <li>Identification of proposed monitoring of hydrological attributes.</li> </ol>	Water	<p>a. The Berrima Rail Project will not involve the take of surface water during construction, operation or rehabilitation. A site water balance is therefore not required for the Project.</p> <p>b/c/d. Sections 12.3.4 and 12.4.3</p> <p>e. Surface water flows will not be impacted by the project.</p> <p>The project will not intersect or take groundwater from underlying systems and there will be no impact to groundwater levels or flow as a result of</p>
OEH	<p>The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:</p> <ol style="list-style-type: none"> <li>Flood prone land</li> <li>Flood planning area, the area below the flood planning level.</li> <li>Hydraulic categorisation (floodways and flood storage areas).</li> </ol>	Water	Section 13.2
OEH	The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 1 in 10 year, 1 in 100 year flood levels and the probable maximum flood, or an equivalent extreme event.	Water	Design flows have been modelled for the 1 in 5 year, 1 in 20 year and 1 in 100 year ARI flood
OEH	<p>The EIS must model the effect of the proposed development (including fill) on the flood behaviour under the following scenarios:</p> <ol style="list-style-type: none"> <li>Current flood behaviour for a range of design events as identified above. The 1 in 200 and 1 in 500 year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.</li> </ol>	Water	Section 13.2
OEH	<p>Modelling in the EIS must consider and document:</p> <ol style="list-style-type: none"> <li>The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood.</li> <li>Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories.</li> <li>Relevant provisions of the NSW Floodplain Development Manual 2005.</li> </ol>	Water	Section 13.2
OEH	<p>The EIS must assess the impacts on the proposed development on flood behaviour, including:</p> <ol style="list-style-type: none"> <li>Whether there will be detrimental increases in the potential flood affection of other properties, assets and infrastructure.</li> <li>Consistency with Council floodplain risk management plans.</li> <li>Compatibility with the flood hazard of the land.</li> <li>Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.</li> <li>Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.</li> <li>Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.</li> <li>Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council.</li> <li>Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the SES and Council.</li> <li>Emergency management, evacuation and access, and contingency measures for the development considering the full range of flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the SES.</li> </ol>	Water	Section 13.2
OEH	<p>Impacts on the following populations will require further consideration and provision of the information specified in s9.2 of the Framework for Biodiversity Assessment:</p> <ul style="list-style-type: none"> <li><i>Eucalyptus aggregata</i></li> </ul>	Ecology	12.4.2
OEH	The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the EIS.	Aboriginal heritage	Sections 10.9 and 10.10 (survey) Sections 10.11, 10.12 and 10.13 (archaeological test excavation)
OEH	The EIS must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the development to formulate appropriate measures to manage unforeseen impacts.	Aboriginal heritage	Section 10.19

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Agency	Requirement	Technical team	Where addressed in EIS
OEH	The EIS must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material.	Aboriginal heritage	Section 10.19
Transport for NSW	Detailed design and engineering drawings of the proposed rail spur, rail overbridges, rail loop, potential upgrades to Berrima Junction and other associated infrastructure, including staging likely works of construction, operation and decommissioning (of existing Berrima Cement Works rail line).	Traffic	Conceptual design drawings of project components are provided in Chapter 2 (project
Transport for NSW	Details of train operating plans for existing and new users, including likely rail routes and destinations, train size and configuration, service frequency, anticipated train path requirements, expected ramp up periods and peak demand.	Traffic	Anticipated train path requirements are also discussed in Section 9.4.3.
Transport for NSW	Demonstrated engagement with and confirmation from all relevant rail network owners and coal terminals regarding train path availability and future network enhancements which may be required to support the proposed operations and maintain sufficient capacity for other rail network users over the life of the project.	Traffic	ARTC, Boral and other existing users of the Berrima Branch Line have been consulted about operating requirements.
Transport for NSW	Detailed assessment of the proposed project on the capacity, efficiency and safety of the rail networks, including level crossings. The assessment is to consider the cumulative impacts to network users (including and beyond that of the branch line) and recommend mitigation measures in response.	Traffic	Sections 9.4.3 and 9.7
Transport for NSW	Demonstrated engagement with the relevant road authority/ies for the development of interface agreements for proposed road over rail bridges and details of traffic management during construction of the proposed overbridges.	Traffic	Chapter 5; Construction traffic management plans will be
Transport for NSW	Engagement with TfNSW and the relevant rail network owners in the development of methodology for assessing noise impacts associated with the proposed rail operations, in line with relevant NSW noise guidelines and details of noise mitigation strategies.	Noise and vibration	Chapter 5; Consultation undertaken with relevant rail network
EPA	Identify relevant water quality objectives for surface and groundwater, including indicators and associated trigger values or criteria, in accordance with National Water Quality Management Strategy Guidelines. Reference the water quality objectives for the Wingecarribee River catchment in the "NSW Healthy Rivers Commission of Inquiry into the Hawkesbury Nepean Catchment". Identify any downstream users and uses of the discharged water classified in accordance with relevant ANZECC 2000.	Water	Section 13.5
EPA	Estimate the chemical composition and load of chemical and physical stressors and toxicants in any discharge with ANZECC 2000 trigger values for the various environmental values of the waterway.	Water	Section 13.5
EPA	Investigate options to reduce the levels of pollutants in the discharge of water to protect the environment from harm as a result of that pollution. Identify all practical measures to control or reduce pollutants in the surface or groundwater discharges. Identify preferred measures and their justification.	Water	Section 13.5
EPA	If WQO's cannot be met for the project, demonstrate that all practical options to avoid water discharge have been implemented and outline any measures taken to reduce the pollutant loads where a discharge is necessary. Where a discharge is proposed, analyse the expected discharges in terms of impact on the receiving environment, including consideration of all pollutants that pose a risk of non-trivial harm.	Water	Section 13.5
EPA	Noise and vibration impacts from construction activities and operational sources including train movement and rail maintenance.	Noise and vibration	Section 7.5
EPA	The nature, sensitivity and impact to potentially affected receivers and structures (including heritage items).	Noise and vibration	Section 7.5
EPA	A strategy for managing construction noise and vibration and out of hours activities, with a particular focus placed on those activities having the greatest potential for adverse noise or vibration impacts.	Noise and vibration	Section 7.6.2
EPA	Noise and vibration impacts along the corridor due to changed rail operations from the upgraded track between the main southern line to Boral Cement.	Noise and vibration	Section 7.5.3
EPA	Details of any change in industrial noise levels likely as a result of improved rail access to industries including Hume Coal, Boral, Inghams and Omya.	Noise and vibration	Assessment of industrial noise levels from Hume Coal is included in the Hume Coal Project EIS. Improved rail access is for the purpose of the
EPA	Noise and vibration impacts from areas proposed to be utilised for during coal loading operations and from idling locomotives during 'parking' interaction with passenger services.	Noise and vibration	Section 7.5.3 Note: Noise and vibration impacts from coal loading operations, including locomotives on the
EPA	Assessment of all reasonable and feasible options to mitigate the impacts of operational rail noise, with particular focus on source control.	Noise and vibration	Section 7.6
EPA	Taking into account the Interim Construction Noise Guideline (2009), Rail Infrastructure Noise Guidelines (2013), and Assessing Vibration: A Technical Guideline (2006).	Noise and vibration	Chapter 7 and, more specifically, Section 7.1.2
EPA	Description of air pollutants from the project including assessment of pollutants of concern for local and regional air quality for both construction and operation of the project.	Air	Sections 8.4 and 8.5
EPA	Assessment of particulates (dust deposition, TSP, PM10, PM2.5) and NO2 emitted from coal train loading and movement. Assessment should be made of emissions from locomotives as well as coal carriages.	Air	Sections 8.5 and 8.6
EPA	Results of dispersion modelling should be presented showing the geographic extent of maximum pollutant concentrations (incremental and cumulative).	Air	Sections 8.6.2 and 8.6.3 Figures 8.2 and 8.3
EPA	List of control factors and their justification, including methods used to achieve best management practice (e.g. speed limits on vehicles, watering rates, use of chemical suppressants etc.).	Air	Chapter 17

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Agency	Requirement	Technical team	Where addressed in EIS
EPA	Reference should be made to procedures outlined in Coal Mine Particulate Matter Control Best Practice - Site-specific determination guideline (OEH November 2011).	Air	Chapter 8
EPA	Include air dispersion modelling in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC 2005).	Air	Section 8.2
EPA	Surface water and stormwater management, including consideration of water quality and local receiving environments.	Water	Section 13.5.7
EPA	Control of clean water including details of any construction and operational clean water diversion structures.	Water	Section 13.3
EPA	During construction; details of erosion & sediment control, and water treatment facilities including water flows, sediment dam volume estimates and fit-for-purpose water reuse.	Water	Sections 13.3.6, 13.5.7 and 14.5.2
EPA	Identification of discharge points, anticipated frequency, volume and characterisation of water discharged (including pollutants).	Water	Erosion and control measures to be used during
EPA	Procedures for responding to incidents, including identification of trigger values.	Water	Section 13.5.7
EPA	In developing a stormwater management plan reference should be made to: the following guidelines Managing Urban Stormwater: Volume 1 - Blue Book. Volume 2A: Installation of services. Volume 2D: Main road construction. Volume 2E: Mines and quarries.	Water	Sections 13.3 and 13.5
EPA	Details of the integration of post construction surface and stormwater management from the railway with industries serviced by the railway including Hume Coal, Boral, Inghams and Omya.	Water	Section 13.5.7
EPA	Describe the measures proposed to alter or amend flow or course of local creeks and rivers (such as through bridges or channelization) and measures taken to minimise long term impacts on geomorphic characteristics.	Water	Section 13.3
RMS	A traffic impact study prepared in accordance with the RTA Guide to Traffic Generating Development.	Traffic	Sections 9.4.1, 9.4.2, 9.5.1 and 9.5.2
RMS	The effects on traffic volumes and roadway configurations associated with entry to and exit from the mine and rail line during construction and operation from vehicles associated with the mine. RMS will not accept any direct access to the Hume Highway. If significant road works are proposed to accommodate any changes to the traffic regime, then the EIS will need to be expanded to address these proposals.	Traffic	Sections 9.4.1, 9.4.2, 9.5.1 and 9.5.2 No direct access is proposed to the Hume Highway for the project.
RMS	The movement of overweight and oversize vehicles on the Hume Highway associated with the mine.	Traffic	This will be determined by the project's
RMS	The visual amenity impact of the mine works with regard to driver behaviour.	Visual	The potential impact on views from the Hume Highway and otehr major roads around the project
RMS	The impact of dust pollution on the travelling public.	Air	Chapter 8.
RMS	The impact of dust pollution or the depositing of fines on the functioning of reflective signs, pavement markers and pavement line marking.	Air	Chapter 8.
RMS	The impacts of noise and vibration of the rail line, including: - undermining/destabilising of the existing bridge foundation and structure; - vibration effect of train movements; and - pollution impacts on road users.	Noise and vibration	Section 7.5
RMS	The impacts of groundwater flows, including changes in the water table configuration through such things as new dam construction, re-routing of waterways, groundwater behavioural changes, and changes to the catchment areas that feed to or away from the Hume Highway. Any change in the water table has the potential to affect the structural integrity of the Hume Highway	Groundwater	The project will not intersect or take groundwater from underlying systems and there will be no impact to groundwater levels or flow as a result of
WaterNSW	Demonstrate that the proposal will have no impact on water quality within Warragamba catchment.	Water	Section 13.5
WaterNSW	Specifically address clauses 9(1) and (2) and 10(1) of State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011. In particular, the EIS must describe and justify how the development would have a neutral or beneficial effect on water quality.	Water	Section 13.5
WaterNSW	A detailed assessment of the development on water resources which considers the design, construction, operational and decommissioning phases and has regard for operation during periods of wet weather and include: - details of the measures to manage site water associated with the rail line likely to affect water quality at the site, and how neutral or beneficial effect on water quality (NorBE) principles will be assessed and applied - pre-development and post development run off volumes and pollutant loads from the site - the principles outlines in the 'Managing Urban Stormwater - Soils and Construction Volume 1' (2004).	Water	Sections 13.3.6 and 13.5

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Agency	Requirement	Technical team	Where addressed in EIS
WaterNSW	Provide concept plans/protocols/procedures for the following: -Environmental Management Plan - Soil and Water Management Plan - Procedures for managing incidents and spills - Rehabilitation plan	General	Section 14.5.4 includes the procedures for topsoil management that will be incorporated into the Soil and Water Management Plan.  Section 13.5.7 includes the mitigation and management measures to be implement to avoid impacts on surface water quality.  Section 14.5.3 includes the mangement practices that will be implemented to prevent spills during