



## Secretary's Environmental Assessment Requirements

### Section 5.16 of the *Environmental Planning and Assessment Act 1979*

<b>Application Number</b>	SSI 18_9714
<b>Proposal</b>	Botany Rail Duplication Duplication of the Botany Rail Line including: - Realignment of the existing track - New crossovers - Bridge works - Embankment/retaining structures - Ancillary work including signalling upgrades
<b>Location</b>	Land generally known as the Botany Line between Mascot and Botany
<b>Proponent</b>	Australian Rail Track Corporation
<b>Date of Issue</b>	21 December 2018



## 1. General Standard SEARs

Desired Performance Outcome	Requirement	Current Guidelines <sup>1</sup>
<p><b>1. Environmental Impact Assessment Process</b></p> <p>The process for assessment of the proposal is transparent, balanced, well focussed and legal.</p>	<ol style="list-style-type: none"> <li>1. The Environmental Impact Statement must be prepared in accordance with Part 3 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i> (the Regulation).</li> <li>2. It is the Proponent’s responsibility to determine whether the project needs to be referred to the Commonwealth Department of the Environment for an approval under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act). The Proponent must contact the Commonwealth Department of the Environment immediately if it is determined that an approval is required under the EPBC Act, as supplementary environmental assessment requirements may need to be issued to ensure a streamlined assessment under the Bilateral agreement can be achieved.</li> <li>3. Where the project requires approval under the EPBC Act and is being assessed under the Bilateral Agreement the EIS should address:               <ol style="list-style-type: none"> <li>(a) Consideration of any Protected Matters that may be impacted by the development where the Commonwealth Minister has determined that the proposal is a Controlled Action.</li> <li>(b) Identification and assessment of those Protected Matters that are likely to be significantly impacted.</li> <li>(c) Details of how significant impacts to Protected Matters have been avoided, mitigated and, if necessary, offset.</li> <li>(d) Consideration of, and reference to, any relevant conservation advices, recovery plans and threat abatement plans.</li> </ol> </li> <li>4. The onus is on the Proponent to ensure legislative requirements relevant to the project are met.</li> </ol>	<p><a href="#">EPBC Act Environment Assessment Process</a> (SEWPAC, 2010)</p>
<p><b>2. Environmental Impact Statement</b></p> <p>The project is described in sufficient detail to enable clear understanding that the project has been developed through an iterative process of impact identification</p>	<ol style="list-style-type: none"> <li>1. The EIS must include, but not necessarily be limited to, the following:               <ol style="list-style-type: none"> <li>(a) executive summary;</li> <li>(b) a description of the project, including all components and activities (including ancillary components and activities) required to construct and operate it including –                   <ul style="list-style-type: none"> <li>– the proposed route,</li> </ul> </li> </ol> </li> </ol>	

<sup>1</sup> Guidelines listed are the current list of guidelines that may be applicable to a SSI project. It is the Proponents responsibility to identify, and justify, which guidelines have been applied to a specific project.

Desired Performance Outcome	Requirement	Current Guidelines <sup>1</sup>
<p>and assessment and project refinement to avoid, minimise or offset impacts so that the project, on balance, has the least adverse environmental, social and economic impact, including its cumulative impacts.</p>	<ul style="list-style-type: none"> <li>– all surface road work upgrades including road widening, intersection treatments, partial or full road closures and bridges,</li> <li>– pedestrian and cyclist facilities including any temporary changes resulting from construction activities,</li> <li>– construction and operational ancillary facilities and infrastructure, and</li> <li>– the relationship of the project with existing and proposed road and freight transport services;</li> </ul> <p>(c) a statement of the objective(s) of the project;</p> <p>(d) a summary of the strategic need for the project with regard to its State significance and relevant State Government policy including the NSW Freight and Ports Plan 2018 - 2023;</p> <p>(e) an analysis of any feasible alternatives to the project.<sup>2</sup>;</p> <p>(f) a description of feasible options within the project.<sup>3</sup>;</p> <p>(g) a description of how alternatives to and options within the project were analysed to inform the selection of the preferred alternative / option. The description must contain sufficient detail to enable an understanding of why the preferred alternative to and options(s) within the project were selected;</p> <p>(h) a concise description of alternative construction methods that were analysed and preferred methods;</p> <p>(i) a concise description of the general biophysical and socio-economic environment that is likely to be impacted by the project (including offsite impacts). Elements of the environment that are not likely to be affected by the project do not need to be described;</p> <p>(j) a demonstration of how the project design has been developed to avoid or minimise likely adverse impacts;</p> <p>(k) the identification and assessment of key issues as provided in the ‘Assessment of Key Issues’ performance outcome;</p>	

<sup>2</sup> Alternatives to a project are different projects which would achieve the same project objective(s) including the consequences of not carrying out the project. For example, alternatives to a road project may be a rail project in the same area and alternate routes for the road.

<sup>3</sup> Options within the project are variations of the same project. For example, options within a road project could be staged delivery; tolls; design of an intersection; the location or design of a bridge; locations for a ventilation outlet structure.

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	<ul style="list-style-type: none"> <li>(l) a statement of the outcome(s) the proponent will achieve for each key issue;</li> <li>(m) measures to avoid, minimise or offset impacts must be linked to the impact(s) they treat, so it is clear which measures will be applied to each impact;</li> <li>(n) consideration of the interactions between measures proposed to avoid or minimise impact(s), between impacts themselves and between measures and impacts;<sup>4</sup></li> <li>(o) an assessment of the cumulative impacts of the project taking into account other projects that have been approved but where construction has not commenced, projects that have commenced construction, and projects that have recently been completed;</li> <li>(p) statutory context of the project as a whole, including:               <ul style="list-style-type: none"> <li>– how the project meets the provisions of the EP&amp;A Act and EP&amp;A Regulation;</li> <li>– a list of any approvals that must be obtained under any other Act or law before the project may lawfully be carried out;</li> </ul> </li> <li>(q) a chapter that synthesises the environmental impact assessment and provides:               <ul style="list-style-type: none"> <li>– a succinct but full description of the project for which approval is sought;</li> <li>– a description of any uncertainties that still exist around design, construction methodologies and/or operational methodologies and how these will be resolved in the next stages of the project;</li> <li>– a compilation of the impacts of the project that have not been avoided;</li> <li>– a compilation of the proposed measures associated with each impact to avoid or minimise (through design refinements or ongoing management during construction and operation) or offset these impacts;</li> <li>– a compilation of the outcome(s) the proponent will achieve; and</li> <li>– the reasons justifying carrying out the project as proposed, having regard to the biophysical, economic and social considerations, including ecologically sustainable development and cumulative impacts.</li> </ul> </li> <li>(r) relevant project plans, drawings, diagrams in an electronic format that enables integration with mapping and other technical software.</li> <li>(s) The EIS must only include data and analysis that is reasonably needed to make a decision on the proposal. Relevant information must be succinctly summarised in the EIS and included in full in</li> </ul>	

<sup>4</sup> Measures proposed to avoid or minimise one impact may cause an unintended impact on another issue. Therefore these impacts and their interactions need to be analysed and resolved where possible.

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	<p>appendices. Irrelevant, conflicting or duplicated information must be avoided.</p>	
<p><b>3. Assessment of Key Issues*</b></p> <p>Key issue impacts are assessed objectively and thoroughly to provide confidence that the project will be constructed and operated within acceptable levels of impact.</p> <p>* Key issues are nominated by the Proponent in the CSSI project application and by the Department in the SEARs. Key issues need to be reviewed throughout the preparation of the EIS to ensure any new key issues that emerge are captured. The key issues identified in this document are not exhaustive but are key issues common to most CSSI projects.</p>	<ol style="list-style-type: none"> <li>1. The level of assessment of likely impacts must be proportionate to the significance of, or degree of impact on, the issue, within the context of the proposal location and the surrounding environment. The level of assessment must be commensurate to the degree of impact and sufficient to ensure that the Department and other government agencies are able to understand and assess impacts.</li> <li>2. For each key issue the Proponent must:               <ol style="list-style-type: none"> <li>(a) describe the biophysical and socio-economic environment, as far as it is relevant to that issue;</li> <li>(b) describe the legislative and policy context, as far as it is relevant to the issue;</li> <li>(c) identify, describe and quantify (if possible) the impacts associated with the issue, including the likelihood and consequence (including worst case scenario) of the impact (comprehensive risk assessment), and the cumulative impacts;</li> <li>(d) demonstrate how options within the project potentially affect the impacts relevant to the issue;</li> <li>(e) demonstrate how potential impacts have been avoided (through design, or construction or operation methodologies);</li> <li>(f) detail how likely impacts that have not been avoided through design will be minimised, and the predicted effectiveness of these measures (against performance criteria where relevant); and</li> <li>(g) detail how any residual impacts will be managed or offset, and the approach and effectiveness of these measures.</li> </ol> </li> <li>3. Where multiple reasonable and feasible options to avoid or minimise impacts are available, they must be identified and considered and the proposed measure justified taking into account the public interest.</li> </ol>	
<p><b>4. Consultation</b></p> <p>The project is developed with meaningful and effective engagement during project design and delivery.</p>	<ol style="list-style-type: none"> <li>1. The project must be informed by consultation, including with relevant government agencies, infrastructure and service providers, special interest groups, affected landowners, businesses and the community.</li> <li>2. The Proponent must document the consultation process and demonstrate how the project has responded to the inputs received.</li> </ol>	



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	3. The Proponent must describe the timing and type of community consultation proposed during the design and delivery of the project, the mechanisms for community feedback, the mechanisms for keeping the community informed, and procedures for complaints handling and resolution.	

## 2. Key Issue Standard SEARs

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
<p><b>1. Transport and Traffic</b></p> <p>Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts.</p> <p>The safety of transport system customers is maintained.</p> <p>Impacts on network capacity and the level of service are effectively managed.</p> <p>Works are compatible with existing infrastructure and future transport corridors.</p>	<p>1. The Proponent must assess construction transport and traffic (vehicle (including freight, port and airport traffic), pedestrian and cyclists) impacts, including, but not necessarily limited to:</p> <ul style="list-style-type: none"> <li>(a) a considered approach to route identification and scheduling of transport movements, particularly outside standard construction hours;</li> <li>(b) the number, frequency and size of construction related vehicles (passenger, commercial and heavy vehicles, including spoil management movements and track machines);</li> <li>(c) construction worker parking;</li> <li>(d) the nature of existing traffic (types and number of movements rail and road) on construction access routes (including consideration of peak traffic times and sensitive road users and parking arrangements) and traffic impacts on these routes;</li> <li>(e) access constraints and impacts on public transport, pedestrians and cyclists; and</li> <li>(f) the need to close, divert or otherwise reconfigure elements of the road, rail, pedestrian and cycle network associated with construction of the project and measures to minimise any impacts and delays.</li> </ul> <p>2. The Proponent must assess the operational transport impacts of the project for both road and rail.</p>	<p>Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2007)</p> <p>Guide to Traffic Generating Developments Version 2.2 (RTA, 2002)</p> <p>Cycling Aspects of Austroads Guides (Austroads, 2014)</p> <p><a href="#">NSW Bicycle Guidelines v 1.2 (RTA, 2005)</a></p> <p>Planning Guidelines for Walking and Cycling (DIPNR, 2004)</p> <p><a href="#">NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)</a></p>
<p><b>2. Noise and Vibration - Amenity</b></p> <p>Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise</p>	<p>1. The Proponent must assess typical and realistic construction and operational noise and vibration impacts in accordance with relevant NSW noise and vibration guidelines. The assessment must take into consideration impacts to sensitive receivers and include consideration of</p>	<p>Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration (ANZECC, 1990)</p> <p>Assessing Vibration: A technical guideline (DEC, 2006)</p>

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
<p>adverse impacts on acoustic amenity.</p> <p>Increases in noise emissions and vibration affecting nearby properties and other sensitive receivers during operation of the project are effectively managed to protect the amenity and well-being of the community.</p>	<p>sleep disturbance and, as relevant, the characteristics of noise and vibration (for example, low frequency noise).</p> <p>2. The assessment of construction noise and vibration impacts must address:</p> <ul style="list-style-type: none"> <li>a) the nature of construction activities (including transport and redistribution of traffic (including local feeder roads), tonal or impulsive noise-generating works, as relevant);</li> <li>b) the intensity and duration of noise (both air and ground borne) and vibration impacts. This must include consideration of extended construction impacts associated with ancillary facilities (and the like) and construction fatigue;</li> <li>c) the identification of receivers, existing and likely, during the construction period;</li> <li>d) the nature, sensitivity and impact to receivers;</li> <li>e) the need to balance timely conclusion of noise and vibration-generating works with periods of receiver respite, and other factors that may influence the timing and duration of construction activities (such as traffic management);</li> <li>f) noise impacts of out-of-hours works and proposed activities including utility works, estimation of the number of out-of-hours activities required, timeframes and justification for these activities in terms of the Interim Construction Noise Guideline (DECCW, 2009);</li> <li>g) a cumulative noise and vibration assessment inclusive of impacts from the project (including concurrent project construction activities);</li> <li>h) a cumulative noise and vibration assessment of the impacts from the project and the construction of other relevant development in the vicinity of the proposal;</li> <li>i) details and analysis of the effectiveness of mitigation measures to adequately manage identified impacts, including cumulative</li> </ul>	<p>Interim Construction Noise Guideline (DECCW, 2009)</p> <p>Noise Policy for Industry (EPA, 2017)</p> <p>Construction Noise Strategy (TfNSW, 2012)</p> <p>NSW Road Noise Policy (DECCW, 2011)</p> <p>Development Near Rail Corridors and Busy Roads – Interim guideline (DoP, 2008)</p> <p>Noise Mitigation Guideline (RMS, 2015)</p> <p>NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)</p>



Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	<p>impacts as identified in (g) and (h) and a clear identification of residual noise and vibration following application of mitigation measures; and</p> <p>j) a description of how community preferences have been taken into account in the design of mitigation measures and consider tailored mitigation, management and communication strategies for vulnerable community members.</p> <p>3. The Proponent must demonstrate that blast impacts are capable of complying with the current guidelines, if blasting is required.</p> <p>4. The operational noise and vibration assessment must include consideration of operational plant and equipment and increases in freight rail movements.</p>	
<p><b>3. Noise and Vibration - Structural</b></p> <p>Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings and items including Aboriginal places and environmental heritage.</p> <p>Increases in noise emissions and vibration affecting environmental heritage as defined in the <i>Heritage Act 1977</i> during operation of the project are effectively managed.</p>	<p>1. The Proponent must assess construction and operational noise and vibration impacts in accordance with relevant NSW noise and vibration guidelines. The assessment must include consideration of impacts to the structural integrity and heritage significance of items (including Aboriginal places and items of environmental heritage).</p> <p>2. The Proponent must demonstrate that blast impacts are capable of complying with the current guidelines, if blasting is required.</p>	<p>German Standard DIN 4150-3: Structural Vibration - effects of vibration on structures</p> <p>Assessing vibration: A technical guideline (DEC, 2006)</p>

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<p><b>4. Heritage</b></p> <p>The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places.</p> <p>The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.</p>	<ol style="list-style-type: none"> <li>1. The Proponent must identify and assess any direct and/or indirect impacts (including cumulative impacts and visual impacts) to the heritage significance of:               <ol style="list-style-type: none"> <li>(a) Aboriginal places and objects, as defined under the <i>National Parks and Wildlife Act 1974</i> and in accordance with the principles and methods of assessment identified in the current guidelines;</li> <li>(b) Aboriginal places of heritage significance, as defined in the Standard Instrument – Principal Local Environmental Plan;</li> <li>(c) environmental heritage, as defined under the <i>Heritage Act 1977</i>;</li> <li>(d) items listed on the State, National and World Heritage lists;</li> <li>(e) heritage items and conservation areas identified in local and regional environmental planning instruments applicable to the project area</li> </ol> </li> <li>2. Where impacts to State or locally significant heritage items are identified, the assessment must:               <ol style="list-style-type: none"> <li>(a) include a significance assessment and statement of heritage impact for all heritage items including the Botany Water Reserves/Botany Wetlands and underbridges (Botany Road, O’Riordan Street and Robey Street) (including significance assessment);</li> <li>(b) consider impacts to the item of significance caused by, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment (as relevant)</li> <li>(c) outline measures to avoid and minimise those impacts in accordance with the current guidelines; and</li> <li>(d) 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> </ol> </li> </ol>	<p>Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011)</p> <p>Aboriginal Cultural Heritage Consultation requirements for proponents (DECCW, 2010)</p> <p>Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010)</p> <p>NSW Skeletal Remains: Guidelines for Management of Human Remains (Heritage Office, 1998)</p> <p>Aboriginal site recording form</p> <p>Aboriginal site impact recording form</p> <p>Aboriginal Heritage Information Management System site registration form</p> <p>Care agreement application form</p> <p>Criteria for the assessment of excavation directors (NSW Heritage Council, 2011)</p> <p>NSW Heritage Manual (Heritage Office and Department of Urban Affairs and Planning, 1994)</p> <p>Assessing Heritage Significance (NSW Heritage Office, 2001)</p>

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	<ol style="list-style-type: none"> <li>3. Where archaeological investigations of Aboriginal objects are proposed these must be conducted by a suitably qualified archaeologist, in accordance with section 1.6 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010).</li> <li>4. Where impacts to Aboriginal objects and/or places are proposed, consultation must be undertaken with Aboriginal people in accordance with the current guidelines.</li> </ol>	The Australia ICOMOS Burra Charter
<p><b>5. Biodiversity</b></p> <p>The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity.</p> <p>Offsets and/or supplementary measures are assured which are equivalent to any remaining impacts of project construction and operation.</p>	<ol style="list-style-type: none"> <li>1. The Proponent must assess biodiversity impacts in accordance with Section 7.9 of the <i>Biodiversity Conservation Act 2016</i> (BC Act), the Biodiversity Assessment Method (BAM) and be documented in a Biodiversity Assessment Report (BDAR) or a BDAR waiver sought where applicable.</li> <li>2. The BDAR must include information in the form detailed in section 6.12 of the BC Act, clause 6.8 of the Biodiversity Conservation Regulation 2017, and the BAM.</li> <li>3. The BDAR must be submitted with all digital spatial data associated with the survey and assessment as per Appendix 10 of the BAM.</li> <li>4. The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under section 6.10 of the BC Act.</li> <li>5. The BDAR must include details of the measures proposed to address offset obligations.</li> <li>6. The Proponent must assess any impacts on biodiversity values not covered by the BAM. This includes a threatened aquatic species assessment (Part 7A <i>Fisheries Management Act 1994</i> – FM Act) to address whether there are likely to be any significant impacts on listed threatened species, populations or ecological communities listed under the FM Act.</li> <li>7. The Proponent must identify whether the project as a whole, or any component of the project, would be classified as a Key Threatening</li> </ol>	<p>Biodiversity Assessment Method (OEH, 2017)</p> <p>Policy and Guidelines for Fish Habitat Conservation and Management – Update 2013 (DPI, 2013)</p> <p>Threatened Species Survey and Assessment Guidelines</p> <p>Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries, 2003)</p> <p>NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)</p> <p>Aquatic Ecology in Environmental Impact Assessment – EIA Guideline (Marcus Lincoln Smith, 2003)</p>

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	<p>Process (KTP) in accordance with the listings in the BC Act, FM Act and <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act).</p>	
<p><b>6. Flooding</b></p> <p>The project minimises adverse impacts on existing flooding characteristics.</p> <p>Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure.</p>	<ol style="list-style-type: none"> <li>1. The Proponent must assess and (model where required) the impacts on flood behaviour during construction and operation for a full range of flood events up to the probable maximum flood (taking into account sea level rise and storm intensity due to climate change) including:               <ol style="list-style-type: none"> <li>(a) any increases in the potential flood affectation of other properties, assets and infrastructure;</li> <li>(b) consistency (or inconsistency) with applicable Council floodplain risk management plans and Rural Floodplain Management Plans;</li> <li>(c) compatibility with the flood hazard of the land;</li> <li>(d) compatibility with the hydraulic functions of flow conveyance in flood ways and storage areas of the land;</li> <li>(e) adverse effects to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the project;</li> <li>(f) downstream velocity and scour potential;</li> <li>(g) impacts the development may have upon existing community emergency management arrangements for flooding. These matters must be discussed with the State Emergency Services and Council; and</li> <li>(h) any impacts the development may have on the social and economic costs to the community as consequence of flooding.</li> </ol> </li> <li>2. The assessment should take into consideration any flood studies undertaken by local government councils and State government agencies.</li> <li>3. The EIS must include maps illustrating the following features relevant to flooding as described in the NSW Floodplain Development Manual (2005):</li> </ol>	<p>NSW Government's Floodplain Development Manual (Department of Natural Resources, 2005)</p> <p><a href="#">PS 07-003 New guideline and changes to section 117 direction and EP&amp;A Regulation on flood prone land</a></p> <p><a href="#">Practical Consideration of Climate Change - Flood risk management guideline (DECC, 2007)</a></p>

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	<ul style="list-style-type: none"> <li>(a) flood prone land;</li> <li>(b) flood planning areas and any areas below the flood planning level;</li> <li>(c) hydraulic categorisation (floodways and flood storage areas); and</li> <li>(d) flood hazard.</li> </ul> <p>4.</p>	
<p><b>7. Water - Hydrology</b></p> <p>Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised.</p> <p>The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved).</p> <p>Sustainable use of water resources.</p>	<ul style="list-style-type: none"> <li>1. The Proponent must describe (and map) the existing hydrological regime for any surface and groundwater resource (including reliance by users and for ecological purposes) likely to be impacted by the project, including stream orders.</li> <li>2. The Proponent must assess (and model if appropriate) the impact of the construction and operation of the project and any ancillary facilities (both built elements and discharges) on surface and groundwater hydrology in accordance with the current guidelines, including: <ul style="list-style-type: none"> <li>(a) natural processes within rivers, wetlands, estuaries, marine waters and floodplains that affect the health of the fluvial, riparian, estuarine or marine system and landscape health (such as modified discharge volumes, durations and velocities), aquatic connectivity and access to habitat for spawning and refuge;</li> <li>(b) impacts from any permanent and temporary interruption of groundwater flow, including the extent of drawdown, barriers to flows, implications for groundwater dependent surface flows, ecosystems and species, groundwater users and the potential for settlement;</li> <li>(c) minimising the effects of proposed stormwater and wastewater management during construction and operation on natural hydrological attributes (such as volumes, flow rates,</li> </ul> </li> </ul>	<p>Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008)</p> <p>NSW Aquifer Interference Policy (DPI, 2012)</p> <p>NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)</p> <p>Risk assessment Guidelines for Groundwater Dependent Ecosystems (Office of Water, 2012)</p> <p>Guidelines for Controlled activities on Waterfront Land (NRAR, 2018)</p>

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	<p>management methods and re-use options) and on the conveyance capacity of existing stormwater systems where discharges are proposed through such systems; and</p> <p>(d) water take (direct or passive) from all surface and groundwater sources with estimates of annual volumes during construction and operation.</p> <p>3. The Proponent must identify any requirements for baseline monitoring of hydrological attributes.</p> <p>4. The assessment must include details of proposed surface and groundwater monitoring.</p>	
<p><b>8. Water - Quality</b></p> <p>The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine waters (if applicable).</p>	<p>1. The Proponent must:</p> <ul style="list-style-type: none"> <li>(a) describe the background conditions for any surface and groundwater resources likely to be affected by the proposal;</li> <li>(b) state the ambient NSW Water Quality Objectives (NSW WQO) and environmental values for the receiving waters relevant to the project, including the indicators and associated trigger values or criteria for the identified environmental values;</li> <li>(c) identify and estimate the quality and quantity of all pollutants that may be introduced into the water cycle by source and discharge point and describe the nature and degree of impact that any discharge(s) may have on the receiving environment, including consideration of all pollutants that pose a risk of non-trivial harm to human health and the environment;</li> <li>(d) identify the rainfall event that the water quality protection measures will be designed to cope with;</li> <li>(e) assess the significance of any identified impacts including consideration of the relevant ambient water quality outcomes;</li> </ul>	<p>NSW Water Quality and River Flow Objectives at <a href="http://www.environment.nsw.gov.au/ieo/">http://www.environment.nsw.gov.au/ieo/</a></p> <p>Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006)</p> <p>Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ ARMCANZ, 2000)</p> <p>Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DECC, 2008)</p> <p>Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008)</p>

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	<p>(f) demonstrate how construction and operation of the project will, to the extent that the project can influence, ensure that:</p> <ul style="list-style-type: none"> <li>– where the NSW WQOs for receiving waters are currently being met they will continue to be protected; and</li> <li>– where the NSW WQOs are not currently being met, activities will work toward their achievement over time;</li> <li>– justify, if required, why the WQOs cannot be maintained or achieved over time;</li> <li>– demonstrate that all practical measures to avoid or minimise water pollution and protect human health and the environment from harm are investigated and implemented;</li> <li>– identify sensitive receiving environments (which may include estuarine and marine waters downstream) and develop a strategy to avoid or minimise impacts on these environments; and</li> <li>– identify proposed monitoring locations, monitoring frequency and indicators of surface and groundwater quality.</li> </ul> <p>2. The assessment should consider the results of any current water quality studies, as available, for the catchment areas traversed by the proposal</p>	
<p><b>9. Soils</b></p> <p>The environmental values of land, including soils, subsoils and landforms, are protected.</p> <p>Risks arising from the disturbance and excavation of land and disposal of soil are</p>	<p>1. The Proponent must assess the potential for contamination and any impacts associated with the management of contaminated soils and water resources including, but not limited to:</p> <ul style="list-style-type: none"> <li>(a) a detailed assessment of the extent and nature of any contamination of the soil, groundwater and soil vapour;</li> <li>(b) an assessment of potential risks to human health and the environmental receptors in the vicinity of the site;</li> </ul>	<p>Acid Sulfate Soils Assessment Guidelines (DoP, 2008)</p> <p>Acid Sulfate Soils Manual (Acid Sulfate Soils Management Advisory Committee, 1998)</p> <p>Managing Land Contamination: Planning Guidelines SEPP 55 –Remediation of Land, (DUAP &amp; EPA, 1998)</p>



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<p>minimised, including disturbance to acid sulfate soils and site contamination.</p>	<ul style="list-style-type: none"> <li>(c) a description and appraisal of any mitigation and monitoring measures; and</li> <li>(d) consideration of whether the site is suitable for the proposed development.</li> </ul> <ol style="list-style-type: none"> <li>2. Any assessment of contamination must be in accordance with relevant guidelines produced or approved under the <i>Contaminated Land Management Act 1997</i>;</li> <li>3. The Proponent must identify if remediation of the land is required, having regard to the ecological and human health risks posed by the contamination in the context of past, existing and future land uses. Where remediation is required, the Proponent must document how the assessment and/or remediation would be undertaken in accordance with current guidelines.</li> </ol>	<p>Guidelines for Consultants Reporting on Contaminated Sites (OEH, reprinted 2011)</p> <p>Guidelines for the NSW Site Auditor Scheme (DEC, 2006)</p> <p>Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (EPA, 2015)</p> <p>Urban and regional salinity – guidance given in the Local Government Salinity Initiative booklets (<a href="http://www.environment.nsw.gov.au/salinity/solutions/urban.htm">http://www.environment.nsw.gov.au/salinity/solutions/urban.htm</a>) which includes Site Investigations for Urban Salinity (DLWC, 2002)</p> <p>Landslide risk management guidelines presented in Australian Geomechanics Society (2007)</p> <p>Soil and Landscape Issues in Environmental Impact Assessment (DLWC 2000)</p> <p>Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008)</p> <p>Other guidelines made or approved under section 105 of the Contaminated Land Management Act 1997</p>
<p><b>10. Air Quality</b></p> <p>The project is designed, constructed and operated in a manner that minimises air quality impacts (including nuisance dust and</p>	<ol style="list-style-type: none"> <li>1. The Proponent must undertake an air quality impact assessment (AQIA) for construction and operation (from increases in freight rail movements) of the project in accordance with the current guidelines.</li> <li>2. The Proponent must ensure the AQIA also includes the following:</li> </ol>	<p>Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (EPA, 2016)</p> <p>Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC, 2007)</p>



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<p>odour) to minimise risks to human health and the environment to the greatest extent practicable.</p>	<ul style="list-style-type: none"> <li>(a) Identification of all receivers (including residential and commercial);</li> <li>(b) demonstrated ability to comply with the relevant regulatory framework, specifically the <i>Protection of the Environment Operations Act 1997</i> and the Protection of the Environment Operations (Clean Air) Regulation (2010);</li> <li>(c) the identification of potential sources of air pollution (including odour sources and from the disturbance of contaminated land) during construction and operation;</li> <li>(d) any proposed air quality monitoring; and</li> <li>(e) a cumulative local and regional air quality impact assessment.</li> </ul>	<p>Technical Framework - Assessment and Management of Odour from Stationary Sources in NSW (DEC, 2006)</p>
<p><b>11. Health and Safety</b></p> <p>The project avoids or minimises any adverse health impacts arising from the project.</p> <p>The project avoids, to the greatest extent possible, risk to public safety.</p>	<ul style="list-style-type: none"> <li>1. The Proponent must assess the potential health impacts of the project, in accordance with the current guidelines.</li> <li>2. The assessment must: <ul style="list-style-type: none"> <li>a. describe the current known health status of the affected population;</li> <li>b. assess health risks associated with exposure to environmental hazards;</li> <li>c. assess the effect of the project on other relevant determinants of health such as the level of physical activity and access to social infrastructure;</li> <li>d. assess opportunities for health improvement;</li> <li>e. assess the distribution of the health risks and benefits; and</li> <li>f. discuss how, in the broader social and economic context of the project, the project will minimise negative health impacts while maximising the health benefits.</li> </ul> </li> </ul>	<p>Environmental Health Risk Assessment, Guidelines for assessing human health risks from environmental hazards, Commonwealth of Australia (enHealth, 2012)</p> <p><a href="#">Methodology for Valuing the Health Impacts of Changes in Particle Emissions (EPA, 2013)</a></p> <p><a href="#">Health Impact Assessment: A practical guide</a> (NSW Health, 2007)</p> <p>Health Impact Assessment Guidelines, Commonwealth Department of Health and Aged Care (enHealth, 2001)</p> <p>SEPP No. 33 - Hazardous and Offensive Development</p>

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	<p>3. The Proponent must assess the likely risks of the project to public safety, paying particular attention to pedestrian safety, the handling and use of dangerous goods.</p>	
<p><b>12. Hazards and Risks</b></p> <p>The project avoids or minimises any adverse impacts arising from the use or proximity to hazardous goods.</p> <p>The project avoids, to the greatest extent possible, risk to public safety.</p>	<p>1. The Environmental Impact Statement must:</p> <ol style="list-style-type: none"> <li>report on the consultation outcomes with all operators of high pressure dangerous goods (HPDG) pipelines within or in the vicinity of the proposal with regards to <i>Australian Standard AS 2885 Pipelines – Gas and liquid petroleum</i>;</li> <li>demonstrate that, during construction and operation phases of the proposal, the proposal would not lead to non-compliance of the existing HPDG pipelines with the current edition of <i>AS 2885 - Pipelines—Gas and liquid petroleum</i>; and,</li> <li>include a preliminary risk screening completed in accordance with <i>State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011)</i>, with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the proposal during construction and operation phase. Should preliminary screening indicate that the development is "potentially hazardous," during construction and or operation phase, a Preliminary Hazard Analysis (PHA) must be prepared in accordance with <i>Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis (DoP, 2011)</i> and <i>Multi-Level Risk Assessment (DoP, 2011)</i>.</li> </ol> <p>2. The Environmental Impact Statement must outline the impacts to the operation of the airport, including encroachment into the prescribed airspace, potential impacts to airport Communication, Navigation and</p>	<p>Australian Standard AS 2885 Pipelines – Gas and liquid petroleum</p> <p>State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011)</p> <p>Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011).</p>

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	Surveillance Systems, light spill and landscaping associated with the construction and operation of the project.	
<p><b>13. Socio-economic, Land Use and Property</b></p> <p>The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities.</p> <p>The project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure.</p>	<ol style="list-style-type: none"> <li>1. The Proponent must assess social and economic impacts in accordance with the current guidelines.</li> <li>2. The Proponent must assess impacts from construction and operation on potentially affected properties, infrastructure, businesses, recreational users and land and water users, including utility operations, property acquisitions/adjustments, access, amenity and relevant statutory rights.</li> </ol>	Social Impact Assessment Guideline (DPE, 2017)
<p><b>14. Sustainability</b></p> <p>The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources.</p> <p>Conservation of natural resources is maximised.</p>	<ol style="list-style-type: none"> <li>1. The Proponent must assess the sustainability of the project in accordance with the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability Rating Tool and recommend an appropriate target rating for the project.</li> </ol>	<p>NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)</p> <p>Infrastructure Sustainability Rating Tool Scorecard relating to energy and carbon for large infrastructure projects, ISCA</p>
<p><b>15. Waste</b></p>	<ol style="list-style-type: none"> <li>1. The Proponent must assess predicted waste generated from the project during construction and operation, including:</li> </ol>	Waste Classification Guidelines – Part 1: Classification of Waste (EPA 2014)

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<p>All wastes generated during the construction and operation of the project are effectively stored, handled, treated, reused, recycled and/or disposed of lawfully and in a manner that protects environmental values.</p>	<ol style="list-style-type: none"> <li>a) classification of the waste in accordance with the current guidelines;</li> <li>b) estimates / details of the quantity of each classification of waste to be generated during the construction of the project, including bulk earthworks and spoil balance;</li> <li>c) handling of waste including measures to facilitate segregation and prevent cross contamination;</li> <li>d) management of waste including estimated location and volume of stockpiles;</li> <li>e) waste minimisation and reuse;</li> <li>f) lawful disposal or recycling locations for each type of waste; and</li> <li>g) contingencies for the above, including managing unexpected waste volumes.</li> </ol> <p>2. The Proponent must assess potential environmental impacts from the excavation, handling, storage on site and transport of the waste particularly with relation to sediment/leachate control, noise and dust.</p>	<p>NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014)</p> <p>NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)</p> <p>Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008)</p>
<p><b>16. Climate Change Risk</b></p> <p>The project is designed, constructed and operated to be resilient to the future impacts of climate change.</p>	<ol style="list-style-type: none"> <li>1. The Proponent must assess the risk and vulnerability of the project to climate change in accordance with the current guidelines.</li> <li>2. The Proponent must quantify specific climate change risks with reference to the NSW Government's climate projections at 10km resolution (or lesser resolution if 10km projections are not available) and incorporate specific adaptation actions in the design.</li> </ol>	<p>Australian Government's Climate Change Impacts and Risk Management – A Guide for Business and Government (2006)</p> <p>AS/NZS 3100:2009 Risk Management – Principles and Guidelines</p> <p>Technical Guide for Climate Change Adaptation for the State Road Network (RMS, in draft)</p>