



Appendices

INLAND RAIL—NARROMINE TO NARRABRI
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX



A

Secretary's Environmental Assessment Requirements

NARROMINE TO NARRABRI ENVIRONMENTAL IMPACT STATEMENT



The Australian Government is delivering
Inland Rail through the Australian
Rail Track Corporation (ARTC), in
partnership with the private sector.

APPENDIX A Secretary's Environmental Assessment Requirements

Table A.1 General standard SEARs

| ITEM | REQUIREMENT | WHERE ADDRESSED |
|--|--|--|
| 1. Environmental Impact Assessment Process | 1. The Environmental Impact Statement must be prepared in accordance with Part 3 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (the Regulation). | Certification page, section A1.4 and Appendix B |
| | 2. The project will impact matters of national environmental significance (MNES) protected under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) and will be assessed under an Accredited Assessment. The Proponent must assess impacts to MNES protected under the EPBC Act. The assessment must be in accordance with the requirements listed in Attachment A. | Sections A3.5, B1.3.2 and B1.3.3 (summary of results), section 10 of Technical Report 1 (detailed assessment) |
| | 3. The onus is on the Proponent to ensure legislative requirements relevant to the project are met. | Chapter A3 |
| 2. Environmental Impact Statement | 1. The EIS must include, but not necessarily be limited to, the following: (a) Executive summary | Executive summary |
| | (b) A description of the project, including: - all components and activities (including ancillary components, borrow sites, construction camps and rail sidings) required to construct and operate it; - additionally, in relation to borrow sites: ▪ the amount, type and composition of the resource to be extracted; ▪ the extraction and production process and processing activities, including the in-flow and out-flow materials and points of discharge to the environment; ▪ decommissioning, remediation and rehabilitation of the borrow sites; and ▪ details of any previous quarrying on the site(s). | Chapter A7 describes the components required to operate the proposal. Chapter A8 describes the activities required to construct the proposal. Sections A8.9.1 and C3.1 C3.1.2 Sections A8.9.1 and C3.1.3 Section C3.1.2 |
| | (c) A statement of the objective(s) of the project. | Section A1.3 |
| | (d) A summary of the strategic need for the project regarding its State significance and relevant State Government policy. | Section A5.3, Appendix D |
| | (e) An analysis of any feasible alternatives to the project. | Sections A6.1 and A6.2 |
| | (f) A description of feasible options within the project. | Section A6.3 |
| | (g) A description of how alternatives to and options within the project were analysed to inform the selection of the preferred alternative / option, including options of maintaining the alignment within the existing corridor where possible, and maximising separation distances between the rail line and main roads, agricultural enterprises and dwellings. | Sections A6.1.3, A6.2.3, A6.2.4 and A6.3 |
| | (h) The description must contain sufficient detail to enable an understanding of why the preferred alternative to and options(s) within the project were selected. | Chapter A6 |
| | (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. | Section A2.3 |

| ITEM | REQUIREMENT | WHERE ADDRESSED |
|------|---|--|
| | (j) A demonstration of how the project design has been developed to avoid or minimise likely adverse impacts. | Section A7.2 |
| | (k) The identification and assessment of key issues as provided in the 'Assessment of Key Issues' performance outcome. | Chapter A9 and chapters in parts B and C |
| | (l) A statement of the outcome(s) the proponent will achieve for each key issue. | Section D5.5 |
| | (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. | Section D5.3 |
| | (n) Consideration of the interactions between measures proposed to avoid or minimise impact(s), between impacts themselves and between measures and impacts. | Mitigation measure sections of chapters in Part B |
| | (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. | Chapter D1 |
| | (p) Statutory context of the project as a whole, including: <ul style="list-style-type: none"> - how the project meets the provisions of the EP&A Act and EP&A Regulation; - a list of any approvals that must be obtained under any other Act or law before the project may lawfully be carried out. | Section A3.2, Appendix B Sections A3.4 and 3.5 |
| | (q) A chapter that synthesises the environmental impact assessment and provides: <ul style="list-style-type: none"> - a succinct but full description of the project for which approval is sought; - 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; - a compilation of the impacts of the project that have not been avoided; - 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; - a compilation of the outcome(s) the proponent will achieve, and - 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. | Section D6.1 Section D5.4 Section D5.1 Section D5.3 Section D5.5 Section D6.2 |
| | (r) Relevant project plans, drawings, diagrams in an electronic format that enables integration with mapping and other technical software. | Throughout the EIS, maps in Part E |
| | (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 appendices. Irrelevant, conflicting or duplicated information must be avoided. | Detailed findings are provided in appendices and technical reports. |

| ITEM | REQUIREMENT | WHERE ADDRESSED |
|-----------------------------|---|---|
| 3. Assessment of key issues | 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. | Chapters in parts B and C |
| | 2. For each key issue the Proponent must: (a) describe the biophysical and socio-economic environment, as far as it is relevant to that issue; | A general description of the biophysical and socio-economic environment is provided in section A2.2. Further detail is provided in the existing environment section in the chapters in parts B and C. |
| | (b) describe the legislative and policy context, as far as it is relevant to the issue; | Legislation and policy sections in Part B chapters |
| | (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; | Chapter A9, chapters in parts B and C, and Appendix E (environmental risk assessment) |
| | (d) demonstrate how potential impacts have been avoided (through design, or construction or operation methodologies); | Sections A7.2 and A8.1 (summary) and chapters in Part B |
| | (e) 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 | Mitigation and management sections of chapters in parts B and C |
| | (f) detail how any residual impacts will be managed or offset, and the approach and effectiveness of these measures. | Residual impacts sections of chapters in Part B |
| | 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. | Technical reports 1 to 15 |
| 4. Consultation | 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. The consultation process must be undertaken in accordance with the current guidelines. | Section A4.1, Appendix C |
| | 2. The Proponent must document the consultation process, and demonstrate how the project has responded to the inputs received. | Sections A4.2 and A4.3, Appendix C |
| | 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. | Section A4.4, Appendix C |
| | 4. Where the Proponent establishes a Community Consultative Committee (CCC) for the project, the establishment and operation of the CCC must be in accordance with the Department's <i>Community Consultative Guidelines State Significant Projects</i> (2016). The CCC must not be the only or primary method of engagement with the community on the project. | Section A4.2, Appendix C |

Table A.2 Key issue requirements

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|--|--|---|
| 5. Socio-economic, land use and property | 1. The Proponent must assess social and economic impacts in accordance with the current guidelines. | Chapter B14 |
| | 2. The Proponent must assess agricultural land use impacts in accordance with the current guidelines, including: | |
| | (a) Current and potential Important Agricultural Land within the project and surrounding locality, including land capability and agricultural productivity. | Section B12.2.2 |
| | (b) Division or fragmentation of property and changes to property management, which could lead to the loss of viability. | Sections B12.3.3, B12.3.6, B12.4.2, B12.4.3 and B12.4.6 |
| | (c) Process for the amalgamation or subdivision of land affected by the rail corridor, taking into account council zoning and minimum lot size requirements for subdivisions and dwellings. | Section B12.4.3 |
| | (d) Property access and the efficient and safe crossing of the rail corridor by vehicles, machinery and livestock, with consideration of grade separated access. | Sections A7.3.7 and A7.3.8 (proposed corridor crossings), sections B12.3.3 to B12.3.6 and sections B12.4.3 to B12.4.6 (property access impacts) |
| | (e) Connectivity of property infrastructure severed by the rail corridor. | Sections B12.3, B12.3.6, B12.4.1, B12.4.5 and B12.4.6 |
| | (f) Livestock exclusion/management and rail corridor protection measures to minimise harm and losses. | Section A7.3.8 (proposed fencing), sections B12.4.2, B12.4.6 (impact assessment) and B12.5.2 (mitigation measures) |
| | 3. The Proponent must assess impacts from construction and operation on potentially affected properties, businesses, recreational users and land and water users (for example, recreational and commercial fishers, including property acquisitions/adjustments, access, amenity and relevant statutory rights). | Sections B14.3 and B14.4 (socio-economic impacts, including impacts on community infrastructure including recreation facilities), sections B12.3 and B12.4 (land use and property impacts) and section B12.5.1 (acquisition process/statutory rights) |
| | 4. The Proponent must consider the capacity for communities along or near the rail corridor to house construction workers in existing accommodation. Where temporary accommodation for construction workers (construction camps) is proposed, the Proponent must assess their social and economic impact on local communities. | Sections B14.3.2 (capacity of communities) and C2.3.11 (socio-economic impacts of temporary workforce accommodation) |
| | 5. The Proponent must identify opportunities and processes to prioritise local participation practices to source construction and operation employment, goods and services from communities along or near the rail alignment. | Sections B14.3.6 and B14.5.2 |
| | 6. The Proponent must assess biosecurity risks and identify management measures to minimise the spread of pests, diseases or weeds along the rail corridor (including residual lands), in accordance with the 'general biosecurity duty' under the Biosecurity Act 2015. | Sections B1.3.5, B1.4, B12.3.3 and B12.4.2 (biosecurity risks and potential impacts), sections B1.5.2 and B12.5.2 (mitigation measures) |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|----------------------------------|--|---|
| | 7. The proponent must assess the impact of the project on significant mineral and extractive resources, including: (a) Any operating mines, extractive industries or known mineral extractive or petroleum resources; (b) Exploration activities in the vicinity of the proposed development; and (c) Access for future exploration in the area. | Sections B12.3.5 and B12.4.5 |
| | 8. The Proponent must identify encroachments into adjoining road reserves, travelling stock routes, Crown land and paper roads. | Sections B12.3.5 and B12.4.5 |
| 6. Biodiversity | 1. The Proponent must assess biodiversity impacts in accordance with s7.9 of the <i>Biodiversity Conservation Act 2016</i> (BC Act), the Biodiversity Assessment Method (BAM), and be documented in a Biodiversity Development Assessment Report (BDAR). | The BDAR (Technical Report 1) was prepared in accordance with the <i>Biodiversity Conservation Act 2016</i> and the Biodiversity Assessment Method. |
| | 2. The BDAR must include information in the form detailed in s6.12 of the BC Act, cl6.8 of the <i>Biodiversity Conservation Regulation 2017</i> and the BAM. | Section B1.1.2 Section 3 of Technical Report 1 |
| | 3. The BDAR must be submitted with all digital spatial data associated with the survey and assessment as per Appendix 10 of the BAM. | Digital spatial data has been provided to the Department of Planning, Industry and Environment. |
| | 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 s6.10 of the BC Act. | The BDAR was prepared by accredited assessors (refer to section 1.4 of Technical Report 1). |
| | 5. The BDAR must include details of the measures proposed to address offset obligations. | The proposed measures are described in section B1.5. |
| | 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>) to address whether there are likely to be any significant impact on listed threatened species, populations or ecological communities listed under the <i>Fisheries Management Act 1994</i> (FM Act). | Sections B1.3.4 and B1.4. |
| | 7. The Proponent must identify whether the project, or any component of the project, would be classified as a Key Threatening Process (KTP) in accordance with the listings in the BC Act, FM Act and the <i>Environmental Protection and the Biodiversity Conservation Act 2000</i> (EPBC Act). | Section B1.3.6 |
| 7. Protected and sensitive lands | 1. The Proponent must assess the impacts of the project on environmentally sensitive land and processes (and the impact of processes on the project) including, but not limited to: (a) Protected areas (including land and water) managed by OEH and/or DPI Fisheries under the <i>National Parks and Wildlife Act 1974</i> and the <i>Marine Estate Management Act 2014</i> ; | Sections B1.2.7 and B1.3.8 |
| | (b) Key Fish Habitat as mapped and defined in accordance with the FM Act; | Sections B1.2.7 and B1.3.8 |
| | (c) Waterfront land as defined in the <i>Water Management Act 2000</i> ; | Sections B2.3.2 (construction impacts) and B2.4.2 (operation impacts) |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|--------------------------|---|--|
| | (d) Land or waters identified as Critical Habitat under the BC Act, FM Act or EPBC Act; and | As noted in section B1.2.7 no land or waters identified as critical habitat / areas of outstanding biodiversity value under the BC Act, FM Act or EPBC Act are located in the proposal site. |
| | (e) Biobank sites, private conservation lands and other lands identified as offsets. | Sections B1.2.7 and B1.3.8 |
| 8. Transport and traffic | 1. The Proponent must assess construction transport and traffic (vehicle, pedestrian and cyclists, bus services, and train operation) impacts, including, but not necessarily limited to: | |
| | (a) A considered approach to route alignment identification and scheduling of transport movements; | Section A8.11 |
| | (b) The number, frequency and size of construction related vehicles (passenger, commercial and heavy vehicles, including spoil management movements and track machines); including those related to the establishment and operation of borrow sites and haulage to and from borrow sites; | Section A8.11 |
| | (c) The nature of existing traffic (types and number of movements) on construction access routes (including consideration of peak traffic times and sensitive road users and parking arrangements) and assessment of traffic impacts on these routes including identifying traffic management measures to mitigate any impacts; | Sections B11.2.2 (existing volumes), B11.3.1 and B11.3.2 (construction traffic impacts) and B11.5 (mitigation measures) |
| | (d) The closure, diversion or reconfiguration of elements of the road network associated with the construction of the project; and | Sections A7.4 (proposed closures and realignments), B11.3.1 (impacts during construction of rail infrastructure) and B11.3.2 (impacts during construction of road infrastructure) |
| | (e) Safe access and egress to/from the classified road network. | Sections B11.3.1 (impacts during construction of rail infrastructure) and B11.3.2 (impacts during construction of road infrastructure) |
| | 2. The Proponent must assess (and model) the operational transport impacts of the project, including: | |
| | (a) The performance of key level crossings and intersections; | Section B11.4.1 (assessment of the busiest road that is proposed to have a level crossing) |
| | (b) Wider transport interactions (local and regional roads, cycling, public and freight transport and the broader NSW rail network); and | Sections B11.4.1 (during operation of the rail infrastructure) and 11.4.2 (during operation of the road infrastructure) |
| | (c) Identification of traffic and transport measures, including grade separation of rail/road interfaces to mitigate any impacts. | Sections A7.3.4 (grade separation of rail/road interfaces) and B11.5 (traffic and transport mitigation measures) |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|---------------------|--|---|
| | 3. The Proponent must assess the feasibility of level crossings (existing and proposed) and justify the safety and operational impacts and/or benefits of the proposed crossing type, taking into account the classification of the road. | Section A6.3.3 |
| | 4. In the assessment of level crossings, the EIS must take into account: (a) The NSW Government's <i>Construction of New Level Crossings Policy</i> ; | Section A6.3.3 and section 5.1.1 of Technical Report 10 |
| | (b) Level crossing ALCAM assessments for public crossings and site-specific risk assessments. The Proponent must demonstrate how it has reduced risks identified So Far As Is Reasonably Practicable (SFAIRP); | Section A6.3.3 and section 5.1.1 of Technical Report 10 |
| | (c) Consistency with any Interface Agreements and related Safety Management Plans, including draft Interface Agreements and draft Safety Management Plans; | Section B11.4.1 and section 5.1.1 of Technical Report 10 |
| | (d) The practice of upgrading active public level crossings to boom gates and flashing lights as adopted by the NSW Level Crossing Improvement Program (LCIP); | There are no existing active level crossings within the proposal site. |
| | (e) The rationalisation of private and public level crossings in line with the NSW Government's Level Crossing Closures Policy; | There is proposed to be no changes to existing level crossings within the study area, therefore the rationalisation of level crossing closures is not considered within this EIS. |
| | (f) The closure of public roads and the provision of alternative road routes, taking into consideration the existing and proposed traffic volumes and intersection performance, and the condition of the alternative roads, and any necessary road upgrades (including stormwater drainage systems) to accommodate increased traffic volumes; and | Section A7.4.1 (proposed changes to public roads and the required alternate routes), section B11.4.2 (impacts on existing conditions from the proposed changes) |
| | (g) Operation of level crossings with regard to road and rail travel speeds, vehicle types, train lengths, train numbers, road and rail traffic volumes, vehicle queuing and sight distance. | Section B11.4.1 (assessment of the busiest road that is proposed to have a level crossing) and section 6.2.1 of Technical Report 10 (assumptions associated with the level crossing assessment) |
| 9. Water - flooding | 1. The Proponent must describe the existing flooding characteristics and assess flooding impacts on property and public safety. The assessment must include, but not necessarily be limited to: (a) The location and size of all existing and proposed pipes, culverts, viaducts and bridges, and the locations and annual exceedance probabilities (AEPs) of flows that overtop the existing formation and rail; | Section B3.2.2 and sections 3.5.2 and Appendix A of Technical Report 3 |
| | (b) The existing and proposed topography in all flood prone areas, including the indicative locations, and typical horizontal and vertical dimensions of spoil mounds. Where there is uncertainty about the total spoil volume, upper and lower bounds must be estimated; | Sections 3.3.3 and 3.5.1 of Technical Report 3 |
| | (c) Describe and justify the proposed flood planning level (FPL) for the project including the AEP of the flood which will overtop the formation and rail. The FPL must consider adjacent infrastructure such as road crossings whose flood immunity is determined by the project's FPL; | Section 3.2.1 of Technical Report 3 |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|-----------|--|--|
| | (d) Assess the existing hydrology, geomorphology and flooding characteristics of all watercourses within and adjacent to the project area. This includes locating and assessing flowpaths emanating from existing culverts, pipes and bridges under the rail formation, or from overtopping of the existing formation in large storms; | Sections B3.2.1 and B3.2.2 |
| | (e) Develop and justify quantitative design limits on potential adverse flooding, hydrological and geomorphological impacts resulting from the project. These are to consider land use and include afflux, velocity, extent, duration, hazard, scour potential, etc; | Section 3.2.2 of Technical Report 3 |
| | (f) Carry out geotechnical and geomorphological investigations to assess the propensity for scour, erosion and geomorphological changes to occur within any watercourses or overland flowpaths affected by the project; | Sections B3.2.1, B3.3.2 and B3.4.2 |
| | (g) Consider the impacts of floods up to the probable maximum flood including consideration of flood risks to people and property resulting from failure of the rail formation or washouts of ballast; | Sections B3.2.2, B3.3.1 and B3.4.1 |
| | (h) Prepare preliminary engineering designs of the velocity dissipation or other mitigation works that are proposed to avoid adverse offsite scouring or geomorphological impacts on the adjoining land downstream of the project area, adjacent to locations where pipes, culverts or bridges are proposed or where the rail formation may be overtopped; | Section 7.1.7 of Technical Report 3 |
| | (i) At locations along the rail route, identify the width of land between the toe of the formation and the downstream boundary of the project area, that is available for the construction of these mitigation works; and | Section 7.1.7 of Technical Report 3 |
| | (j) Where there is insufficient width of project land available for these works, clearly identify the extent of additional land beyond the project boundary that may be required, including the locations where easements over land or acquisition of land may be required. | Section 7.1.7 of Technical Report 3 |
| | 2. The Proponent must model the impacts of the project on flood behaviour, including the existing, during construction and post construction (ie Operational) flooding conditions for a full range of flood events up to and including the probable maximum flood. The assessment must include consideration of the impacts of climate change and differing storm durations, and include but not necessarily be limited to: (a) Utilising hydrologic and hydraulic models that are consistent with current best practice and utilise topographic and infrastructure data that is of sufficient spatial coverage and accuracy to ensure the resultant models can accurately assess existing and proposed water flow characteristics; | Sections 3.4.1 and 3.4.2 of Technical Report 3 |
| | (b) Having these models independently peer-reviewed with the review findings published in the EIS; | Section 3.8 and Appendix B of Technical Report 3 |
| | (c) Assessing any detrimental increases in the potential flood affectation, scouring or geomorphological changes to other properties, assets and infrastructure, over a full range of flood durations and flood frequencies; | Sections B3.3 and B3.4 |
| | (d) The extent to which the project alleviates or exacerbates the flood impact the existing rail infrastructure has on property or people; | Sections B3.3.1 and B3.4.1 |
| | (e) An assessment of the consistency (or inconsistency) with the applicable Council or OEH floodplain management plans. The requirements of these plans must be discussed with OEH and the Council; | Section B3.4.1 |
| | (f) Assessing whether each component of the project is compatible with the flood hazard of the land and the hydraulic functions of flow conveyance, floodway and flood storage; | Section B3.4.1 |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|-----------------------|---|--|
| | (g) Assessing existing upstream and downstream flow, level, velocity, hazard and scour potential, and changes following the decommissioning of the borrow pits and downstream flowpaths (location, discharges and velocities); | Section C3.3.3 |
| | (h) Quantifying and evaluating changes in flood safety risks on private and public land including roads and pathways; | Sections B3.3.1 and B3.4.1 |
| | (i) Assessing any impacts that the project may have upon existing community emergency management arrangements for flooding. These matters must be discussed with the State Emergency Service and applicable Council; and | Section B3.4.1 |
| | (j) Evaluating any social and economic impacts that the project may have on the community as a consequence of changes to flooding, hydrology and geomorphology. | Section B3.4.1 |
| 10. Water - resources | 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, as per the BAM. | Section B2.2 |
| | 2. The Proponent must prepare a conceptual water balance for ground and surface water including indicative locations for proposed intake and discharge locations, volume, frequency and duration, potential sources, security and licensing requirements. | Sections B2.3.2 and B2.4.2 (construction and operation water balance) and section B2.3.4 (security and licensing requirements during construction.). No water take is proposed during operation. |
| | 3. 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: | |
| | (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; | Sections B2.3.2 and B2.4.2 (surface water hydrology), sections B2.3.3 and B2.4.3 (groundwater hydrology), section B1.3.4 (aquatic connectivity and access to habitat for spawning) |
| | (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; | Sections B2.3.3 and B2.4.3 |
| | (c) Changes to environmental water availability and flows, both regulated/licensed and unregulated/rules-based sources; | Section B2.3.4. No water take is proposed during operation. |
| | (d) Direct or indirect increases in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses; | Sections B2.3.2 and B2.4.2 (erosion and siltation), section B1.3.4 (destruction of riparian vegetation) and sections B3.3.2 and B3.4.2 (reduction in stability) |
| | (e) Minimising the effects of proposed stormwater and wastewater management during construction and operation on natural hydrological attributes (such as volumes, flow rates, management methods and re-use options) and on the conveyance capacity of existing stormwater systems where discharges are proposed through such systems; and | Sections B2.3.5 and B2.4.4 |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|---------------------|--|--|
| | (f) Water take (direct or passive) from all surface and groundwater sources with estimates of annual volumes during construction and operation. | Sections B2.3.2 and B2.4.2 |
| | 4. The Proponent must identify any requirements for baseline monitoring of hydrological attributes. | Section B2.5.1 (groundwater monitoring) and section B5.5.1 (surface water monitoring) |
| 11. Water - quality | 1. The Proponent must: (a) 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; | Section B5.1.2 |
| | (b) 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; | Sections B5.3.6 and B5.4.1 |
| | (c) Identify the rainfall event that the water quality protection measures will be designed to cope with; | Section B5.5.1 |
| | (d) Assess the significance of any identified impacts including consideration of the relevant ambient water quality outcomes; | Sections B5.3 and B5.4 |
| | (e) Demonstrate how construction and operation of the project will, to the extent that the project can influence, ensure that: - where the NSW WQOs for receiving waters are currently being met they will continue to be protected; and - where the NSW WQOs are not currently being met, activities will work toward their achievement over time; | Sections B5.3.6 and B5.4 |
| | (f) Justify, if required, why the WQOs cannot be maintained or achieved over time; | Sections B5.3.6 and B5.4 |
| | (g) Demonstrate that all practical measures to avoid or minimise water pollution and protect human health and the environment from harm are investigated and implemented; | Section B5.5 |
| | (h) 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 | Sections B5.2.2 (identification of sensitive receiving environments) and B5.5 (strategy to minimise impacts) |
| | (i) Identify proposed monitoring locations, monitoring frequency and indicators of surface water quality. | Surface water monitoring is discussed in section B5.5.1. Groundwater monitoring, to inform extraction of groundwater for construction use, is discussed in section B2.5.1. |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|-----------------|--|--|
| 12. Soils | 1. The Proponent must assess whether the land is likely to be contaminated and 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 assessment and/or remediation is required, the Proponent must document how the assessment and/or remediation would be undertaken in accordance with current guidelines. | The potential for contamination is considered in section B4.2.3. The need for remediation is considered in section B4.3.2. The need for remediation would be confirmed as an outcome of the more detailed contamination assessment to be undertaken for the detailed design, as described in sections B4.3.2 and B4.5.1. |
| | 2. The Proponent must assess whether salinity is likely to be an issue and if so, determine the presence, extent and severity of soil salinity within the project area. | Sections B4.2.2 (presence, extent and severity), B4.3.1 (potential construction impacts) and B4.4.1 (potential operation impacts) |
| | 3. The Proponent must assess the impacts of the project on soil salinity and how it may affect groundwater resources and hydrology. | Sections B4.3.1 (potential construction impacts) and B4.4.1 (potential operation impacts) |
| | 4. The Proponent must assess the impacts on soil and land resources (including erosion risk or hazard). Particular attention must be given to soil erosion and sediment transport consistent with the practices and principles in the current guidelines. | Sections B4.2.1 (existing slope stability), B4.2.2 (existing erosion risk/hazard), B4.3.1 (construction impacts) and B4.4.1 (operation impacts) |
| 13. Air quality | 1. The Proponent must undertake an air quality impact assessment (AQIA) for the establishment and operation of the borrow sites and road haulage in accordance with the current guidelines, with a particular focus on dust emissions, including PM _{2.5} and PM ₁₀ . | Chapter B10 (proposal as a whole) and section C3.3.6 (potential air quality impacts associated with the establishment and operation of the borrow sites and associated road haulage) |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|--------------|--|---|
| | 2. The Proponent must ensure the AQIA also includes the following: (a) Demonstrated ability to comply with the relevant regulatory framework, specifically the <i>Protection of the Environment Operations Act 1997</i> and the <i>Protection of the Environment Operations (Clean Air) Regulation (2010)</i> , and | Air quality criteria have been developed with consideration of the POEO Act and the Protection of the Environment Operations (Clean Air) Regulation 2010 (see section B10.1.2). Potential air quality impacts of constructing rail and road infrastructure are described in sections B10.3 and B10.4. Potential air quality impacts of key construction infrastructure are described in sections C1.3.4, C2.3.8 and C3.3.6. |
| | (b) A cumulative local and regional air quality impact assessment. | As described in section B10.1.2 the assessment has assumed that where the predicted cumulative impacts comply with criteria at a local level, the cumulative local and regional impacts would also comply. Impacts are considered in sections B10.3 and B10.4. |
| 14. Heritage | 1. The Proponent must identify and assess any direct and/or indirect impacts (including cumulative impacts) to the heritage significance of: (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; | Sections B6.2.2 and B6.3 |
| | (b) Aboriginal places of heritage significance, as defined in the Standard Instrument – Principal Local Environmental Plan; | Sections B6.2.2 and B6.3 |
| | (c) Environmental heritage, as defined under the <i>Heritage Act 1977</i> ; and | Sections B7.3 and B7.4 |
| | (d) Items listed on the National and World Heritage lists. | No items listed on National and World Heritage lists were identified in the study area. |
| | 2. 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 <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW</i> (DECCW 2010). | Sections B6.1.2 and B6.5.2 |
| | 3. Impacts to Aboriginal objects and/or places must be assessed and documented in an <i>Aboriginal Cultural Heritage Assessment Report</i> (ACHAR). Consultation must be undertaken with Aboriginal people in accordance with the <i>Aboriginal Cultural Heritage Consultation requirements for proponents</i> (DECCW, 2010). The ACHAR must document the outcomes of consultation with Aboriginal people and outline measures proposed to mitigate impacts. The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR. | Section B6.1.2 |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|--------------------------------------|---|--|
| | 4. Where impacts to State or locally significant heritage items are identified, the assessment must: | |
| | (a) Include a statement of heritage impact for all heritage items (including significance assessment); | Summary provided in sections B7.2.2 and B7.2.3. Full statement of heritage impact provided in chapter 6 of Technical Report 7. |
| | (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); | Sections B7.3 and B7.4 |
| | (c) Outline measures to avoid and minimise those impacts in accordance with the current guidelines; and | Sections B7.1.4 and B7.5.1 |
| | (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). | The assessment was undertaken by qualified heritage consultants (see section 1.4 of Technical Report 7). |
| 15. Noise and vibration - amenity | 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 sensitive receivers including small businesses, and include consideration of sleep disturbance and, as relevant, the characteristics of noise and vibration (for example, low frequency noise). | Sections B8.1.1, B9.1.1, B8.4, B9.4, C1.3.3, C2.3.4 and C3.3.5 |
| | 2. The Proponent's assessment of construction and operational noise and vibration impacts must consider activities within the proposed corridor, activities at ancillary sites, including but not limited to borrow sites, and vehicle movements associated with the proposal, including haulage vehicles. | Sections B8.4, B9.4, C1.3.3, C2.3.4 and C3.3.5 |
| | 3. The Proponent must demonstrate that blast impacts are capable of complying with the current guidelines, if blasting is required. | Section C3.3.5 |
| 16. Noise and vibration - structural | 1. The Proponent must assess construction and operation noise and vibration impacts (including impacts of construction traffic) 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). | Sections B8.1.1, B9.1.1, B8.4 and B9.4 |
| | 2. The Proponent must demonstrate that blast impacts are capable of complying with the current guidelines, if blasting is required. | Section C3.3.5 |
| 17. Rehabilitation | 1. The Proponent must provide a rehabilitation strategy for the borrow sites having regard to: | Section C3.1.3 |
| | (a) Rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria; | Section C3.1.3 |
| | (b) Nominated final land use and landform having regard to any relevant strategic land use planning or resource management plans or policies; and | Section C3.1.3 |
| | 2. The potential for integrating this strategy with other rehabilitation and / or offset strategies in the region. | Section C3.1.3 |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|--------------------|--|---|
| 18. Visual amenity | 1. The Proponent must assess the visual impact of the project (including permanent spoil mounds, borrow sites, rail formation, bridges, viaducts, and over or underpasses) and any ancillary infrastructure on: <ul style="list-style-type: none"> (a) Views and vistas; (b) Streetscapes, key sites and buildings; (c) Heritage items including Aboriginal places and environmental heritage; and (d) Private landowners and the local community. | <p>Chapter B13 (potential impacts of rail and road infrastructure), sections C1.2.7, C2.2.7 and C3.2.7 (potential impacts of multi-function compounds, temporary workforce accommodation and borrow pits)</p> <p>Sections 13.3 and 13.4</p> <p>Sections B6.3.1, B7.3.1 and B7.3.2</p> <p>Sections B13.3, B13.4, B14.3.3 and B14.4.2</p> |
| | 2. The Proponent must provide artist impressions and perspective drawings of the project to illustrate how the project has responded to the visual impact through urban design and landscaping. | Section B13.4.3 |
| 19. Waste | 1. The Proponent must assess predicted waste generated from the project during construction and operation, including: <ul style="list-style-type: none"> (a) Classification of the waste in accordance with the current guidelines; | Sections D2.2.2 and D2.3.3 |
| | (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; | Section D2.2.2 |
| | (c) Handling of waste including measures to facilitate segregation and prevent cross contamination; | Sections D2.2.4 and D2.3.3 |
| | (d) Management of waste including estimated location and volume of stockpiles; | Section D2.2.4 (construction). Any waste generated during operation (maintenance activities) would be managed in accordance with ARTC's existing management and maintenance procedures. |
| | (e) Waste minimisation and reuse; | Sections D2.2.4 and D2.3.3 |
| | (f) Lawful recycling or disposal locations for each type of waste; and | Section D2.2.4 (construction) |
| | (g) Contingencies for the above, including managing unexpected waste volumes. | Sections D2.2.4, D2.3.3 and D2.4.1 |
| | 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. | Sections D2.2.3 and D2.3.2 |

| KEY ISSUE | REQUIREMENT | WHERE ADDRESSED |
|-------------------------|---|--|
| 20. Climate change risk | 1. The Proponent must assess the risk and vulnerability of the project to climate change in accordance with the current guidelines. | Sections D4.1.2, D4.3 and Appendix H |
| | 2. The Proponent must quantify specific climate change risks with reference to the NSW Government's climate projections at 10 km resolution (or lesser resolution if 10 km projections are not available) or equivalent projection tool (such as Climate Futures Tool from CSIRO and BoM (attenuated for projection region)) and incorporate specific adaptation actions in the design. | Sections D4.1.2, D4.2 and Appendix H |
| 21. Sustainability | 1. The Proponent must assess the sustainability of the project in accordance with the Infrastructure Sustainability Council of Australia (ISCA) <i>Infrastructure Sustainability Rating Tool</i> and recommend an appropriate target rating for the project, including targets and strategies to improve Government efficiency in use of water, energy and transport. | Sections D3.1.3, D3.2.1 and Appendix G |