



Transport  
Roads & Maritime  
Services

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# **ADDITIONAL CROSSING OF THE CLARENCE RIVER AT GRAFTON**

Appendix A – Director-General's  
requirements and checklist

AUGUST 2014



# Appendix A – Director-General’s environmental assessment requirements and checklist

Director-General’s environmental assessment requirements	Where addressed in the EIS
<b>General requirements</b>	
<p>The Environmental Impact Statement (EIS) must be prepared in accordance with, and meet the minimum requirements of, Part 3 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (the Regulation), including:</p> <ol style="list-style-type: none"> <li>1. the information required under clause 6 of Schedule 2 of the Regulation.</li> <li>2. the content listed in clause 7 of Schedule 2 of the Regulation, including but not limited to:</li> </ol>	<p>Certification page Throughout the EIS</p>
<ul style="list-style-type: none"> <li>• a statement of the objectives of the project, including a description of the strategic need, justification, objectives and outcomes for the project, taking into account existing and proposed transport infrastructure and services within the adjoining subregions, and as relevant the outcomes and objectives of relevant strategic planning and transport policies, including, but not limited to, NSW 2021, NSW Government State Infrastructure Strategy, and the Mid North Coast Regional Strategy;</li> </ul>	<p>Chapter 3, Section 3.1, Section 3.2, Section 3.3, Section 3.4 and Section 12.1</p>
<ul style="list-style-type: none"> <li>• an analysis of feasible alternatives to the carrying out of the project and project justification, including: <ul style="list-style-type: none"> <li>○ an analysis of alternatives/options considered having regard to the project objectives (including an assessment of the environmental costs and benefits of the project relative to alternatives and the consequences of not carrying out the project), and the provision of a clear discussion of the route development and selection process, the suitability of the chosen alignment and whether or not the project is in the public interest, and</li> <li>○ justification for the preferred project taking into consideration the objects of the Environmental Planning and Assessment Act 1979;</li> </ul> </li> </ul>	<p>Chapter 4</p> <p>Section 4.1 Section 4.2 Section 12.3</p> <p>Chapter 12</p>

Director-General's environmental assessment requirements	Where addressed in the EIS
<ul style="list-style-type: none"> <li>• a detailed description of the project, including: <ul style="list-style-type: none"> <li>○ proposed route, and local road network treatments,</li> <li>○ bridge design, and road user, pedestrian and cyclist facilities (including street furniture and lighting),</li> <li>○ land use changes, including resumption of residential and rural lands and vegetation clearing,</li> <li>○ location and operational requirements of construction compounds, and</li> <li>○ relationship and/or interaction with existing public and freight transport services (including rail, bus and water-based traffic, and rail and bus stops);</li> </ul> </li> </ul>	Chapter 5 and Chapter 6
<ul style="list-style-type: none"> <li>• an analysis of the project including an assessment, with a particular focus on the requirements of the listed key issues, in accordance with clause 7(1)(d) of Schedule 2 of the Regulation (where relevant), including an identification of how relevant planning, land use and development matters (including relevant strategic and statutory matters) have been considered in the impact assessment (direct, indirect and cumulative impacts) and/or in developing management/ mitigation measures;</li> </ul>	Chapter 8, Section 9.4, Chapter 10 and Chapter 12
<ul style="list-style-type: none"> <li>• detail how the principles of ecologically sustainable development will be incorporated in the design, construction and ongoing operation phases of the project.</li> </ul>	Section 12.5
<ul style="list-style-type: none"> <li>• Notwithstanding the key issues specified below, the EIS must include an environmental risk analysis to identify the potential environmental impacts associated with the project.</li> </ul>	Chapter 11
<ul style="list-style-type: none"> <li>• Where relevant, the assessment of key issues below, and any other significant issues identified in the risk assessment, must include: <ul style="list-style-type: none"> <li>○ adequate baseline data;</li> <li>○ consideration of the potential cumulative impacts due to other development in the vicinity; and</li> <li>○ measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment.</li> </ul> </li> </ul>	Chapter 8 and Chapter 9 Section 9.4 Chapter 8, Chapter 9 and Chapter 10

Director-General's environmental assessment requirements	Where addressed in the EIS
<p><b>Key issues</b></p> <p><b>The EIS must also address the following specific matters:</b></p>	
<p><b>Traffic and transport</b> — including but not limited to:</p>	
<ul style="list-style-type: none"> <li>• details of how the following meet the traffic and transport objectives of the project, taking into account future growth areas and traffic (vehicular, cyclist and pedestrian) needs: <ul style="list-style-type: none"> <li>○ the preferred bridge alignment and design,</li> <li>○ the proposed intersection of the Pacific Highway, Spring Street, and the southern approach road,</li> <li>○ the proposed widening of the Gwydir Highway between the Pacific Highway and Bent Street, and intersection treatment at the intersection of the Gwydir Highway and Bent Street, and</li> <li>○ associated bridge approaches and local road network treatments at Grafton and South Grafton;</li> </ul> </li> </ul>	<p>Appendix D, Chapter 5 and Section 8.1.4</p>
<ul style="list-style-type: none"> <li>• operational traffic and transport impacts on the local and regional road network, with reference to access to adjoining residential, commercial and industrial land uses;</li> </ul>	<p>Section 8.1.4</p>
<ul style="list-style-type: none"> <li>• details of the bridge clearance, with reference to the proposed minimum vertical and horizontal clearances for the navigable channel;</li> </ul>	<p>Section 5.2</p>
<ul style="list-style-type: none"> <li>• safety of navigation on the Clarence River for water based traffic;</li> </ul>	<p>Section 5.2, Section 8.1.3 and Section 8.1.4</p>
<ul style="list-style-type: none"> <li>• construction traffic and transport impacts of the project (including ancillary facilities) and associated management measures, in particular: <ul style="list-style-type: none"> <li>○ impacts to the road network (including safety and level of service),</li> <li>○ pedestrian and cyclist access, and</li> <li>○ disruption to public transport services and access to properties, having reference to the cumulative construction impacts taking into account other infrastructure preparing for or commencing construction;</li> </ul> </li> </ul>	<p>Section 8.1.3</p>
<ul style="list-style-type: none"> <li>• impacts of the project (construction and operational) on existing and future maritime and recreational use.</li> </ul>	<p>Section 8.1.3 and Section 8.1.4</p>

Director-General's environmental assessment requirements	Where addressed in the EIS
<b>Visual Amenity, Built Form and Urban Design</b> — including but not limited to:	
<ul style="list-style-type: none"> <li>• an assessment of the visual and amenity impacts of the project (height, scale and lighting) on the local and regional area, particularly on: <ul style="list-style-type: none"> <li>○ the existing State Heritage listed Grafton Bridge (SHR 01036) and local heritage items,</li> <li>○ any adjoining land owners and land owners along the foreshore of the Clarence River,</li> <li>○ existing and future residential properties in Grafton and South Grafton,</li> <li>○ the southern 'town entry',</li> <li>○ use of the Clarence River, and</li> <li>○ significant vantage points in the public domain;</li> </ul> </li> </ul>	<p>Appendix J and Section 8.8.5 and Section 8.8.6</p> <p>Section 8.5.3, Section 8.4.3, and Section 8.8.6</p> <p>Section 8.4.3, Section 8.4.4, Section 8.7.3, Section 8.7.4, Section 8.8.5 and Section 8.8.6</p> <p>Section 8.1.3, Section 8.1.4, Section 8.4.3, Section 8.4.4, Section 8.7.3, Section 8.7.4, Section 8.8.5, Section 8.8.6, Section 8.12.3 and 8.12.4</p> <p>Section 8.8.4</p> <p>Section 8.1.3, Section 8.1.4, Section 8.7.3, Section 8.7.4, Section 8.8.5, Section 8.8.6 and Section 8.8.7</p> <p>Section 8.8.6</p>
<ul style="list-style-type: none"> <li>• overshadowing impacts of the bridge structure, embankments and ramps on existing and proposed public domain, open space, foreshore areas and residential uses;</li> </ul>	<p>Appendix J and Section 8.8.7</p>
<ul style="list-style-type: none"> <li>• integration of the bridge with existing and future pedestrian and cycle network in the local, regional and metropolitan context;</li> </ul>	<p>Appendix J, Section 5.2.5, Section 8.1.4 and Section 8.8.4</p>
<ul style="list-style-type: none"> <li>• consideration of design, and safety measures for pedestrian and cycle access on the bridge;</li> </ul>	<p>Appendix J, Section 5.2.5, Section 8.1.4 and Section 8.8.4</p>
<ul style="list-style-type: none"> <li>• development of urban design objectives for the new bridge, approaches and local road network treatments;</li> </ul>	<p>Appendix J and Section 8.8.3</p>

Director-General's environmental assessment requirements	Where addressed in the EIS
<ul style="list-style-type: none"> <li>• rationale for the overall design (length, height, width and appearance) and an assessment of the built form (materials and finishes) and urban design (bulk and scale) of the bridge, including: <ul style="list-style-type: none"> <li>○ justification for the proposed width of the bridge based on shared use by pedestrians, cyclists and public transport,</li> <li>○ details of pedestrian and cyclist access (dedicated or shared-use), and public transport and emergency vehicle access,</li> <li>○ design details such as lighting, balustrades, street furniture and their integration generally,</li> <li>○ design relationship to the existing Grafton and South Grafton built forms and streetscapes, including the existing State Heritage listed Grafton Bridge,</li> <li>○ views to and from the bridge, and</li> <li>○ wind and wind-wash effects on the bridge and bridge users.</li> </ul> </li> </ul>	<p>Appendix D, Appendix J, Section 5.2 and Section 8.8.4</p> <p>Section 5.2.1 and Section 12.1.2</p> <p>Section 5.2.5, Section 5.2.13, Section 8.1.3, Section 8.1.4, Section 8.2.4 and Section 8.7.4</p> <p>Section 5.2 and Section 8.8.4</p> <p>Section 8.5.3, Section 8.8.4 and Section 8.8.6</p> <p>Section 8.8.2 and Section 8.8.6</p> <p>Section 8.13</p>

Director-General's environmental assessment requirements	Where addressed in the EIS
<b>Soils, Sediments and Water</b> — including but not limited to:	
<ul style="list-style-type: none"> <li>• an assessment of construction and operation erosion and sediment and water quality impacts on the Clarence River and Alipou Creek, including details of: <ul style="list-style-type: none"> <li>○ existing surface and groundwater quality,</li> <li>○ impacts to water quality, considering potential changes to hydrologic flow regimes; dispersal of water pollutants; and erosion, siltation, destruction of riparian vegetation or reduction in the stability of river bank or watercourses; taking into account the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Australian and New Zealand Environment and Conservation Council/Agriculture and Resource Management Council of Australia and New Zealand 2000),</li> <li>○ impacts to (quality or quantity of) groundwater sources, including details of whether the project would intercept groundwater, and impacts on groundwater dependent ecosystems, adjacent licensed water users and basic landholder rights,</li> <li>○ mitigation measures to prevent and manage impacts to water quality, including proposed erosion and sediment controls (eg. locations of sediment basins); storm water management system and management measures for the containment of pollutants; management of and disposal strategies for acid sulfate soils, in accordance with the <i>Acid Sulfate Soils Manual</i> (Acid Sulfate Soils Management Advisory Committee); and waste and chemical handling and transport;</li> </ul> </li> </ul>	<p>Section 8.10.3 and Section 8.10.4</p> <p>Section 8.10.2, Section 8.10.3 and Section 8.10.4</p> <p>Section 8.10.3 and Section 8.10.4</p> <p>Section 8.9.3, Section 8.10.3 and Section 8.10.4</p> <p>Section 5.2.8 and Section 8.10.5</p>
<ul style="list-style-type: none"> <li>• an assessment of impacts on significant mineral resources, including consideration of: <ul style="list-style-type: none"> <li>○ operating mines, extractive industries or known mineral or petroleum resources (including, where relevant, the quality and quantity of local fluvial sand and gravel resources proposed for use in construction of the project), and</li> <li>○ current exploration activities (and maintenance of access for future exploration) in the vicinity of the project;</li> </ul> </li> </ul>	<p>Section 8.11</p> <p>Section 8.11.3</p> <p>Section 8.11.2 and Section 8.11.3</p>
<ul style="list-style-type: none"> <li>• impacts from construction activities on contaminated land, including a description of proposals for site remediation with reference to the contaminated land planning guidelines.</li> </ul>	<p>Section 8.10.3, Section 8.10.4 and Section 8.10.5</p>
<b>Hydrology</b> — including but not limited to:	
An assessment, in accordance with the <i>Floodplain Development Manual</i> (Department of Natural Resources 2005), of:	Appendix E and Section 8.2



<b>Director-General's environmental assessment requirements</b>	<b>Where addressed in the EIS</b>
<ul style="list-style-type: none"> <li>changes to existing flood regimes (including riverine, overland, and internal levee ponding) in Grafton and South Grafton, with reference to modelling for a range of flood events (including the 1, 2 and 5 ARI events, and the probable maximum flood (PMF)) and across a range of flood characteristics (including changes in depth, velocity, direction, hazard, frequency or duration of inundation),</li> </ul>	Section 8.2.3 and Section 8.2.4
<ul style="list-style-type: none"> <li>consistency with relevant floodplain risk management plans,</li> </ul>	Section 8.2.4
<ul style="list-style-type: none"> <li>impacts to existing receivers and infrastructure, the future development potential of affected land (including areas outside the existing levee system) and planned infrastructure (including the project),</li> </ul>	Section 8.2.3 and Section 8.2.4
<ul style="list-style-type: none"> <li>identifying the potential impacts on flow velocities and directions, and impacts on the bed and bank stability, as a result of construction of the new bridge,</li> </ul>	Section 8.2.4
<ul style="list-style-type: none"> <li>details of any proposed mitigation measures, including, where required, upgrade of the Grafton, South Grafton and other rural levee systems, evacuation routes, riverbank protection assets, and drainage assets, and</li> </ul>	Section 8.2.5
<ul style="list-style-type: none"> <li>an assessment of the effects of sea level rise as a result of climate change on the project.</li> </ul>	Appendix E and Section 8.3

Director-General's environmental assessment requirements	Where addressed in the EIS
<b>Heritage</b> – including but not limited to:	
<ul style="list-style-type: none"> <li>• an assessment of impacts to State and local historic heritage (including heritage items, and maritime and terrestrial archaeology), in particular, impacts on the Grafton Bridge, should be assessed. Where impacts to State or locally significant historic heritage items are identified, the assessment shall: <ul style="list-style-type: none"> <li>○ outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the guidelines in the <i>NSW Heritage Manual</i> (Heritage Office and Department of Urban Affairs and Planning, 1996),</li> <li>○ be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations and maritime surveys are proposed the relevant consultant must meet the NSW Heritage Council's <i>Excavation Director criteria</i>),</li> <li>○ include a statement of heritage impact for all heritage items (including significance assessment),</li> <li>○ consider impacts from vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment, and</li> <li>○ develop an appropriate archaeological assessment methodology, including research design, in consultation with the Department and the Heritage Council of New South Wales, to guide physical archaeological test excavations (terrestrial and maritime) and include the results of these excavations;</li> </ul> </li> </ul>	<p>Appendix G and Section 8.5</p> <p>Section 8.5.4</p> <p>Section 8.5.1</p> <p>Section 8.5.2 and Section 8.5.3</p> <p>Section 8.1.3, Section 8.1.4, Section 8.4.3, Section 8.4.4, Section 8.5.3, Section 8.8.5 and Section 8.8.6</p> <p>Section 8.5.1 and Section 8.5.2</p>

Director-General's environmental assessment requirements	Where addressed in the EIS
<ul style="list-style-type: none"> <li>• an assessment of impacts to Aboriginal heritage (including cultural and archaeological significance), in particular impacts to Aboriginal objects and potential archaeological deposits (PAD), should be assessed. Where impacts are identified, the assessment shall: <ul style="list-style-type: none"> <li>○ outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the measures) generally consistent with the <i>Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation</i> (Department of Environment and Conservation, 2005),</li> <li>○ be undertaken by a suitably qualified heritage consultant(s),</li> <li>○ demonstrate effective consultation with Aboriginal communities in determining and assessing impacts and developing and selecting options and mitigation measures (including the final proposed measures),</li> <li>○ assess and document the archaeological and cultural significance of cultural heritage values of affected sites, and</li> <li>○ develop an appropriate assessment methodology, including research design, in consultation with the Department and the Office of Environment and Heritage, to guide physical archaeological test excavations of the sites and areas of PAD identified in a manner that establishes the full spatial extent and significance of any archaeological evidence across each site/area of PAD, and include the results of these excavations.</li> </ul> </li> </ul>	<p>Appendix H and Section 8.6</p> <p>Section 8.6.4</p> <p>Section 8.6.1</p> <p>Section 7.4 and Section 8.6.1</p> <p>Section 8.6.2 and Section 8.6.3</p> <p>Chapter 7, Section 8.6.1 and Section 8.6.2</p>
<b>Noise and Vibration</b> — including but not limited to:	
<ul style="list-style-type: none"> <li>• an assessment of the noise impacts of the project during operation, consistent with the <i>Road Noise Policy</i> (Environment Protection Authority, 2011). The assessment must include specific consideration of impacts to receivers (dwellings, child care centres, educational establishments, hospitals, motels, nursing homes, or places of worship), as relevant and identify feasible and reasonable mitigation measures;</li> </ul>	<p>Appendix F, Section 8.4.3 and Section 8.4.4</p>
<ul style="list-style-type: none"> <li>• an assessment of construction noise and vibration impacts, consistent with the <i>Interim Construction Noise Guideline</i> (Department of Environment, Climate Change and Water, 2009) and <i>Assessing Vibration: a technical guideline</i> (Department of Environment and Conservation, 2006).</li> </ul>	<p>Appendix F and Section 8.4.3</p>

Director-General's environmental assessment requirements	Where addressed in the EIS
<b>Biodiversity</b> — including but not limited to:	
<ul style="list-style-type: none"> <li>• an assessment of the potential (direct and indirect) ecological impacts of the project, with specific reference to vegetation and habitat clearing, connectivity, edge effects, riparian and aquatic habitat impacts and soil and water quality impacts. The assessment of these impacts must: <ul style="list-style-type: none"> <li>○ detail the existing environment, including discussion of flora and fauna characteristics to be affected by the proposal,</li> <li>○ make specific reference to impacts on threatened species, populations and endangered ecological communities, and any Rare or Threatened Australian Plant species,</li> <li>○ consider impacts to the receiving environment, including adjoining waterways, riparian vegetation and aquatic habitats. This must include consideration of water quality, marine vegetation, fish passage, soil types (including salinity), erosion and sedimentation, weed management and ongoing water management,</li> <li>○ identify appropriate avoidance, mitigation and management measures, including details of alternative options considered, and proposed arrangements for long term management,</li> <li>○ take into account the draft Guidelines for Threatened Species Assessment (Department of Environment and Conservation/Department of Primary Industries 2005), Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (Department of Environment and Conservation 2004), and the Guidelines for Aquatic Habitat Management and Fish Conservation (Department of Primary Industries 1999), and</li> <li>○ include details of any offset of ecological impacts and native vegetation clearing, taking into account the <i>Principles for the use of biodiversity offsets in NSW</i> (Department of Environment, Climate Change and Water 2008).</li> </ul> </li> </ul>	<p>Appendix L and Section 8.9</p> <p>Section 8.9.2</p> <p>Section 8.9.2</p> <p>Section 8.9.3 and Section 8.9.4</p> <p>Section 8.9.5</p> <p>Section 8.9.1</p> <p>Section 8.9.3</p>
<b>Air quality</b> — including but not limited to:	
<ul style="list-style-type: none"> <li>• an assessment of the potential for impacts on local and regional air quality</li> <li>• details of the proposed mitigation measures to prevent the generation and emission of dust.</li> </ul>	<p>Section 8.12.3 and Section 8.12.4</p> <p>Section 8.12.5</p>
<b>Social and economic</b> — including, but not limited to:	
<ul style="list-style-type: none"> <li>• an assessment of social and economic impacts on the local community and community facilities directly impacted by the project;</li> </ul>	<p>Appendix I, Section 8.7.3 and Section 8.7.4</p>

<b>Director-General's environmental assessment requirements</b>	<b>Where addressed in the EIS</b>
<ul style="list-style-type: none"> <li>• an assessment of impacts on:               <ul style="list-style-type: none"> <li>○ access and use of the Clarence River and its banks, including fisheries, tourism, and recreational use,</li> <li>○ regionally significant farmland, and</li> <li>○ Crown land;</li> </ul> </li> </ul>	<p>Appendix I</p> <p>Section 8.1.3, Section 8.1.4, Section 8.7.3 and Section 8.7.4</p> <p>Section 8.7.3</p> <p>Section 8.7.3</p>
<ul style="list-style-type: none"> <li>• a draft Community Consultation Strategy identifying relevant stakeholders, procedures for distributing information and receiving/responding to feedback and procedures for resolving community complaints. Key issues that should be addressed in the draft Strategy should include:               <ul style="list-style-type: none"> <li>○ traffic management (including property access, pedestrian access),</li> <li>○ landscaping/urban design matters,</li> <li>○ construction activities including out of hours work, and</li> <li>○ noise and vibration mitigation and management.</li> </ul> </li> </ul>	<p>Appendix C and Section 7.7.3</p>
<p>Environmental Risk Analysis</p>	
<p>notwithstanding the above key assessment requirement, the EIS must include an environmental risk analysis to identify potential environmental impacts associated with the infrastructure (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of this additional key environmental impact must be included in the EIS.</p>	<p>Chapter 11</p>

Director-General's environmental assessment requirements	Where addressed in the EIS
Consultation	
<p>During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners.</p> <ul style="list-style-type: none"> <li>• local, State and Commonwealth government authorities, including the: <ul style="list-style-type: none"> <li>○ Environment Protection Authority,</li> <li>○ Office of Environment and Heritage (including Heritage Division),</li> <li>○ The Heritage Council of NSW,</li> <li>○ Department of Primary Industries,</li> <li>○ NSW Office of Water, and</li> <li>○ Clarence Valley Council;</li> </ul> </li> <li>• specialist interest groups, including Local Aboriginal Councils, Aboriginal stakeholders;</li> <li>• utilities and service providers;</li> <li>• the public, including community groups and adjoining and affected landowners.</li> </ul>	<p>Section 7.4.3 and Section 7.6.1</p> <p>Section 7.4.1, Section 7.4.2 and Section 7.6.2</p> <p>Section 7.4.3 and Section 7.6.1</p> <p>Section 7.4.1, Section 7.4.2 and Section 7.6.2</p>
<ul style="list-style-type: none"> <li>• The EIS must describe the consultation process and the issues raised, and identify where the design of the project has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.</li> </ul>	<p>Section 7.3, Section 7.4 and Section 7.5</p>