

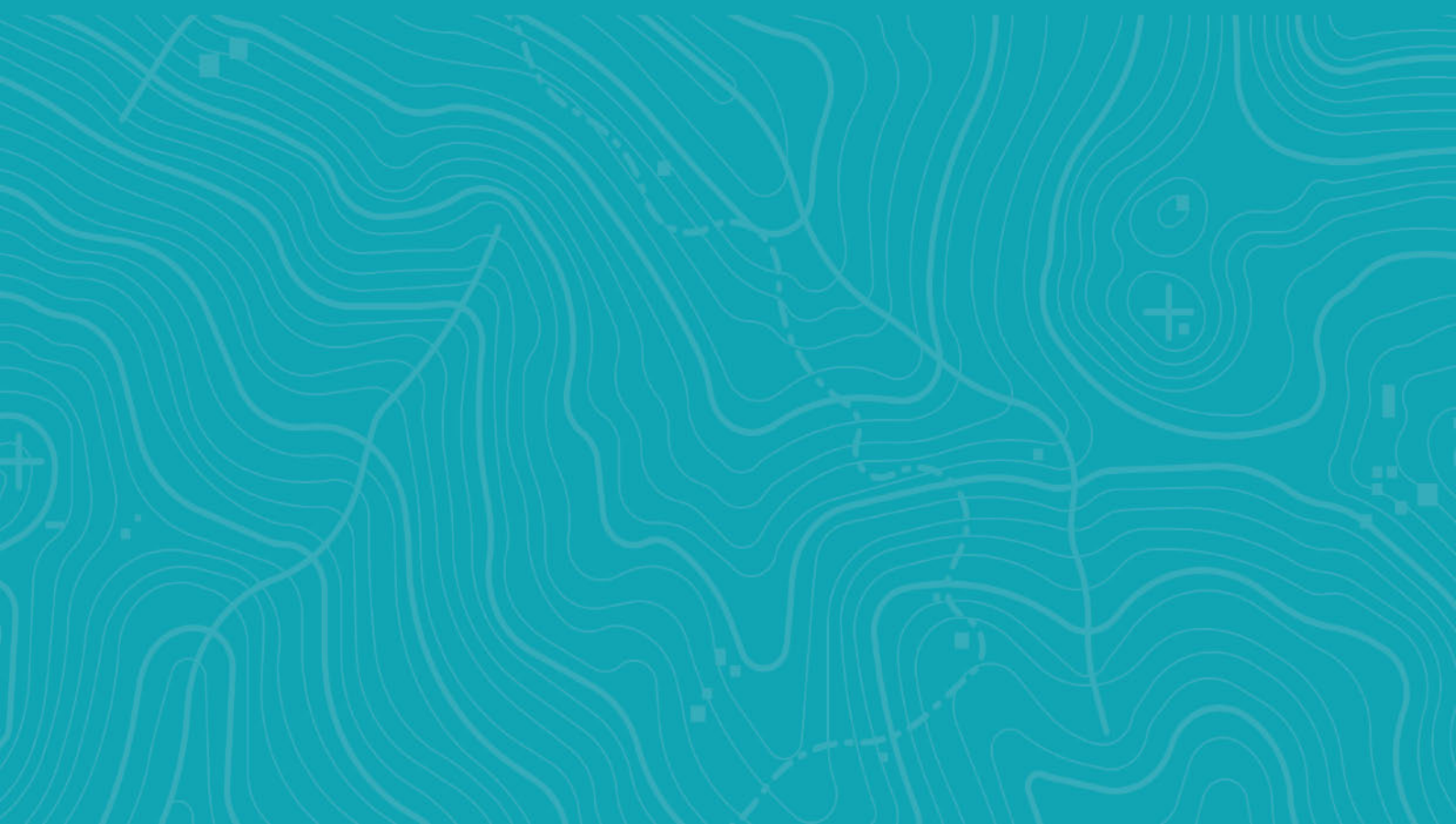
**APPENDIX**

# **B**

**Lachlan River Bridge Modification Project**

# **Outline Environmental Management Plan**

**STOCKINBINGAL TO PARKES REVIEW OF ENVIRONMENTAL FACTORS**



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# Appendix B Outline Environmental Management Plan

## B.1 Context

Inland Rail operates within the broader ARTC Environmental Management System. ARTC manages its environmental responsibilities and environmental performance by implementing an Environmental Management System that is consistent with the principles contained within the ISO 14000 series and standards. The Inland Rail Environment and Sustainability Policy guides the planning, design and implementation of the Inland Rail Program. It outlines the organisation's commitment to effectively manage any risks that may lead to an impact on the environment during construction and operation of Inland Rail. Consistent with this policy, ARTC has developed a Construction Environmental Management Framework to provide for a high standard of environmental performance during construction of all Inland Rail projects. In accordance with the framework, contractors will be required to develop, implement and maintain a Construction Environmental Management Plan (CEMP) that meets the requirements of the respective contract, the Construction Environmental Management Framework and the REF. Construction is required to be completed in accordance with the most recent version of the CEMP approved by the relevant administering authority (where required). The relationship between the Construction Environmental Management Framework, ARTC's and Inland Rail's corporate and program-level environmental documentation, and the CEMP is shown by Figure B.1.

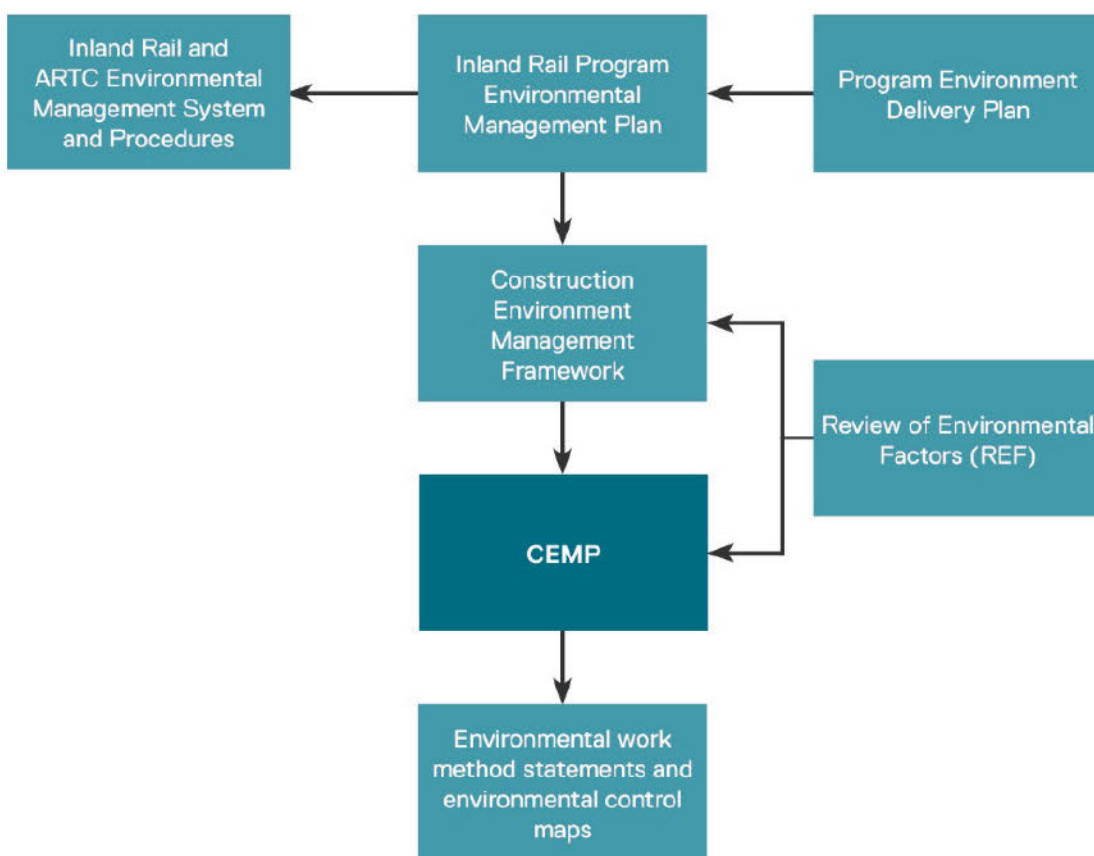


FIGURE B.1 ENVIRONMENTAL MANAGEMENT HIERARCHY

## B.2 Outline of Environmental Management Plan

The management of environmental impacts during construction would be documented in the CEMP, to be prepared by the construction contractors. The CEMP would provide a centralised mechanism through which all potential construction-related environmental impacts will be managed. It would also provide the overall framework for the system and procedures to ensure that environmental impacts are minimised, and that legislative and approval requirements are fulfilled.

- ▶ Environmental obligations
- ▶ Required licences and permits

- ▶ All applicable environmental assessment mitigation measures
- ▶ Environmental aspects and impacts associated with project scopes of work
- ▶ Allocation and statement of ARTC and contractor obligations
- ▶ Environmental management roles and responsibilities
- ▶ Coverage of identified risks by environmental controls and mitigations
- ▶ Environmental training needs
- ▶ Obligations of reporting to ARTC
- ▶ Emergency response incident management and non-compliance processes
- ▶ Hold-point list, as supplied by ARTC
- ▶ Complaints and enquiries procedure
- ▶ Incident and emergencies procedure
- ▶ Document change/version control for the CEMP.

Contractors would develop and document a process of periodically reviewing the CEMP. The process would focus on identifying opportunities for continual improvement of processes and practices to ensure that the CEMP is relevant to contractors' activities. The process would address how legislative changes and environmental incident corrective actions will be addressed via an update to the CEMP. Any changes to the CEMP would be reported as part of contractors' monthly environmental reports.

### **B.3 Environmental performance**

The management measures detailed in the CEMP would be monitored during construction to confirm their effectiveness and whether any additional measures are required. Site inspections would be regularly undertaken to check and update erosion and sediment control measures as necessary. Environmental site monitoring would also be undertaken to confirm project impacts and existing environmental values in accordance with monitoring commitments made in this document. The CEMP would provide for an internal compliance monitoring program where the construction contractors would periodically monitor and report on project performance against the mitigation measures of the REF. Independent external audits would also be carried out in accordance with *ISO 19011:2003—Guidelines for Quality and/or Environmental Management Systems Auditing* every six months.

### **B.4 Non-conformance and corrective action**

For any environmental issues that arise, corrective and preventative actions must be implemented. Corrective and preventative actions might be developed to address issues or initiate environmental management improvement opportunities identified as a result of incidents, inspections and monitoring, and audit findings and other reviews.

The CEMP would document the corrective and preventative action procedures that will be implemented during construction of the project.

### **B.5 Outline of CEMP plans**

The CEMP would comprise a main CEMP document, issue-specific plans, activity-specific procedures and strategies, and site-based control maps. The CEMP, issue-specific plans and strategies/plans proposed to manage the impacts identified in the REF (in accordance with the mitigation measures) are shown in Figure B.2.

Construction Environmental Management Plan	Other strategies and plans to be implemented during construction		
Biodiversity Management Plan	Rehabilitation Strategy	Inland Rail NSW Construction Noise and Vibration Management Framework	Inland Rail Communications and Engagement Strategy
Flood and Emergency Response Plan			
Soil and Water Management Plan			
Contamination and Hazardous Materials Plan	Out-of-hours work protocol	Inland Rail Noise and Vibration Strategy	Unexpected Finds Procedure
Communication Management Plan			
Heritage Management Plan			
Noise and Vibration Management Plan	Inland Rail Sustainable Procurement Policy	Complaints Management Procedure	Inland Rail Sustainability Strategy
Marine Transport Management Plan			
Traffic, Transport and Access Management Plan			
Waste Management Plan			

FIGURE B.2 CONSTRUCTION PLANS AND STRATEGIES

An outline of the required plans, and a guide to the general construction management measures required in each, is in Table B. 1. The requirement to prepare these plans is specified by the mitigation measures in relevant REF chapters.

TABLE B. 1 OUTLINE OF CEMP PLANS

Plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
Biodiversity management	The Biodiversity Management Plan would detail how construction impacts on aquatic and terrestrial flora and fauna would be mitigated, managed and monitored.	Vegetation management	Employee education and training, including inductions for staff, contractors and visitors to the site would include the biodiversity issues present at the site and so they know their role and responsibilities in relation to the protection and/or minimisation of impacts to native biodiversity. The CEMP and construction plans would clearly document the location and full extent of clearing required.
		Management of trees to be retained	The management of trees in the vicinity of the construction zone would be consistent with the <i>AS 4970-2009 Protection of trees on development sites</i> .
		Pre-clearance surveys—native vegetation	Pre-clearance surveys would be implemented within areas of native vegetation that are to be cleared. Pre-clearance surveys will be undertaken by suitably qualified and experienced ecologists and involve the following: <ul style="list-style-type: none"> <li>▶ The demarcation of areas approved for clearing to reduce risk of accidental clearing/disturbance of surrounding native vegetation</li> <li>▶ The likely habitat resources and habitat trees would be identified and marked— habitat trees are those containing hollows, cracks or fissures and spouts, active nests, dreys or other signs of recent fauna usage. Other habitat features to be identified include fallen timber/hollow logs and burrows</li> <li>▶ The potential presence of threatened flora and fauna species, endangered populations and threatened ecological communities (TECs) would be identified</li> <li>▶ The identification of species or habitat features that are suitable for translocation or salvage.</li> </ul>
		Weed management	Weeds would be managed and disposed of in accordance with the requirements of the <i>Biosecurity Act 2015 (NSW)</i> . Weed control mitigation and management strategies would be documented and implemented as follows: <ul style="list-style-type: none"> <li>▶ Vehicles or equipment being brought onto the proposal site and/or travelling around the site must be inspected and cleaned prior to commencing work, to limit the spread of seeds and plant material</li> <li>▶ Regular inspections to monitor the spread of weed species</li> <li>▶ Training of environmental personnel on the identification of target weed species.</li> </ul> Weed control and eradication techniques may include: <ul style="list-style-type: none"> <li>▶ Spraying with herbicides</li> <li>▶ Physical removal, e.g. chipping</li> <li>▶ Minimisation of area available for weed infestation, through prompt revegetation of bare areas</li> <li>▶ Site hygiene and waste-management protocol to deter pest species.</li> </ul>

Plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
Noise and vibration	<p>The Noise and Vibration Management Plan would detail how potential noise and vibration impacts would be mitigated and managed during construction. The plan would include the listed management measures.</p> <p>Where the noise and vibration levels are predicted to exceed the criteria after implementation of the general work practices, the additional mitigation measures detailed in the Construction Noise Strategy would be implemented.</p> <p>The requirements of relevant standards and guidelines, including <i>AS 2436-2010 and the Interim Construction Noise Guideline</i> (Department of Environment and Climate Change, 2009) would be addressed.</p> <p>The plan would also include reference to the working hours protocol and the complaints management procedures specified in the Communication Management Plan.</p>	Notification and behaviour	<p>Notification undertaken during construction would inform relevant stakeholders of the work locations and timing, and the potential for noise impacts.</p> <p>Construction sites and compounds located within 200 m of sensitive receivers would be managed to minimise noise-generating activities, including unnecessary shouting, loud stereos/radios, dropping of materials from height, throwing of metal items, and slamming of doors, particularly at the start and end of shifts.</p>
		Construction hours and scheduling	The relevant noise and vibration criteria would be defined and reference to obligations to EPL3142 (see condition O9.1 to 9.6).
		Equipment and plant	<p>Quieter and less vibration emitting construction methods would be used where reasonable and feasible</p> <p>The noise levels of plant and equipment would have operating sound power or sound pressure levels that comply with the required criteria</p> <p>Simultaneous operation of noisy plant within range of sensitive receivers would be avoided</p> <p>The offset distance between noisy plant and adjacent sensitive receivers would be maximised</p> <p>Plant used intermittently would be throttled down or shut down</p> <p>Noise-emitting plant would be directed away from sensitive receivers</p> <p>Stationary noise sources would be enclosed or shielded while ensuring that the health and safety of workers is maintained</p> <p>Consider site topography when situating plant and use structures (such as site shed placement, earth bunds, fencing, noise barriers) to shield receivers from noise.</p>
		Traffic flow and deliveries	<p>Loading and unloading of materials/deliveries would occur as far as possible from sensitive receivers, and preferably during standard construction hours.</p> <p>Site access points and roads would be selected to minimise impacts on sensitive receivers.</p> <p>Where practicable, delivery vehicles would be fitted with straps rather than chains for unloading.</p>
		Measuring and monitoring	Vibration and noise monitoring may be required in response to complaints.
Heritage	<p>The potential impacts on heritage would be mitigated and managed during construction. The CEMP would incorporate the results of the Due Diligence Assessment and comply with relevant regulatory requirements and state or Commonwealth guidelines.</p>	General	<p>This plan should include appropriate criteria, directives and processes on:</p> <ul style="list-style-type: none"> <li>▶ Requirements and protocols for heritage clearances</li> <li>▶ Unexpected finds procedure</li> <li>▶ Requirements for inspections and corrective actions during construction and other activities in vicinity of heritage items</li> <li>▶ Heritage management actions to be undertaken by suitably qualified persons</li> <li>▶ Requirements for training, inspections, corrective actions, notification and classification of incidents, record keeping, monitoring and performance objectives for handover on completion of construction</li> <li>▶ Any necessary regulatory requirements.</li> </ul>



Plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Unexpected finds	<p>An unexpected finds procedure would be developed and included in the CEMP to provide a consistent method for managing any unexpected heritage items (both Aboriginal and non-Aboriginal heritage items) discovered during construction, including potential heritage items or objects, and human skeletal remains.</p> <p>Procedures and notification requirements for potential human remains in accordance with relevant guidelines.</p>
Flood and emergency response plan	Potential impact from flooding and other emergencies, such as bushfire, would be addressed	Emergency incident	<p>The plan would include measures, process and responsibilities to minimise the potential impacts of construction activities on flood behaviour as far as practicable. It would also include measures to manage flood risks during construction and address flood recovery during construction.</p> <p>Evacuation protocols and monitoring for emergency events in the region would be detailed.</p>
Soil and water	<p>The Soil and Water Management Plan would detail how potential impacts on soils, erosion, sedimentation, watercourses and water quality (surface and groundwater) would be mitigated and managed during construction.</p> <p>The plan would consider site-specific conditions including dispersive soils and potential treatment options during construction.</p> <p>The plan would provide for incident management in relation to potential water quality contamination incidents.</p> <p>The plan would include procedures to manage the impact of the proposal on flooding, and would take into account the requirements of relevant guidelines, including:</p> <ul style="list-style-type: none"> <li>▶ <i>Managing Urban Stormwater: Soils and Construction Volume 1</i> (Landcom, 2004)</li> <li>▶ <i>Managing Urban Stormwater: Soils and Construction Volume 2A: Installation of Services</i> (Department of Environment and Climate Change (DECC), 2008)</li> </ul>	Erosion of exposed soils and sediment management	<p>Sediment and erosion control devices would be installed to minimise mobilisation and transport of sediment in accordance with <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom, 2004).</p> <p>Maintenance and checking of the erosion and sedimentation controls would be undertaken on a regular basis and any subsequent records retained. Sediment would be cleared from behind barriers/sandbags on a regular basis as required and all controls would be managed to ensure they work effectively at all times.</p> <p>The area of exposed surfaces would be minimised. Disturbed areas would be stabilised progressively to ensure that no areas remain unstable for any extended length of time.</p> <p>Soil and sediment that accumulates in erosion and sediment control structures would be reused where practicable during site reinstatement, unless it is contaminated or otherwise inappropriate for reuse.</p> <p>Work would cease where practicable during heavy rainfall events when there is a risk of sediment loss off site or ground disturbance due to waterlogged conditions.</p> <p>Equipment, plant and materials would be placed in designated lay-down areas where they are least likely to cause erosion.</p> <p>Erosion control devices would be removed as part of the final site clean-up. This would include removing any sediment in drainage lines that has been trapped by erosion control devices, and restoring disturbed areas.</p> <p>Exposed surfaces would be stabilised, and final rehabilitation implemented, as soon as practicable.</p> <p>Containment of any lead paint.</p>

Plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
	<ul style="list-style-type: none"> <li>▶ <i>Managing Urban Stormwater: Soils and Construction Volume 2C: Unsealed roads</i> (DECC, 2008)</li> <li>▶ <i>Erosion and sediment control on unsealed roads</i> (Office of Environment and Heritage (OEH, 2012)</li> <li>▶ <i>Technical Guideline: Temporary stormwater drainage for road construction</i> (RMS, 2011)</li> <li>▶ <i>Waste Classification Guidelines</i> (EPA, 2014).</li> </ul>	Spill/incident management	<p>Spill kits would be maintained onsite at all times.</p> <p>Machinery would be checked daily to ensure that no oil, fuel or other liquids are leaking.</p> <p>Refuelling of plant and equipment would be undertaken within designated areas with appropriate controls.</p> <p>Visual monitoring of local water quality (such as turbidity, hydrocarbon spills/slicks) would be undertaken on a regular basis to identify any potential spills.</p>
Waste	<p>The Waste Management Plan would detail how waste would be managed during construction to minimise the potential for significant impacts.</p> <p>The plan would include disposal requirements, measures to reduce, re-use or recycle wastes, where possible. It would set targets for waste diversion, demonstrate how targets can be achieved, and outline how waste diversion would be tracked and reported.</p> <p>The plan would be prepared in accordance with the <i>Waste Classification Guidelines</i> (EPA, 2014).</p>	Waste management	<p>Resource management hierarchy principles would be followed:</p> <ul style="list-style-type: none"> <li>▶ Avoid unnecessary resource consumption as a priority</li> <li>▶ Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery)</li> <li>▶ Disposal is undertaken as a last resort.</li> </ul> <p>Waste material, including soil and spoil to be taken offsite, would be classified and managed in accordance with the <i>Waste Classification Guidelines</i> (EPA, 2014) and would be disposed of in accordance with the <i>Protection of the Environment Operations Acts 1997</i> (NSW) (POEO Act).</p> <p>All waste documentation would be collated and maintained on file in accordance with these guidelines.</p> <p>Waste material is not likely to be left onsite once the works have been completed.</p> <p>Working areas would be maintained, kept free of rubbish, and cleaned up at the end of each working day.</p> <p>Any waste material identified as being contaminated would be managed in accordance with the <i>Contaminated Land Management Act 1997</i> (NSW) and other relevant legislation and guidelines.</p> <p>The removal, handling and disposal of any asbestos-containing materials would be undertaken by an appropriately licensed contractor, and in accordance with:</p> <ul style="list-style-type: none"> <li>▶ <i>Code of Practice—How to Safely Remove Asbestos 2019</i></li> <li>▶ <i>Code of Practice—How to Manage and Control Asbestos in the Workplace 2019</i></li> </ul>

Plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
Communication Management Plan	<p>The Communication Management Plan would provide guidance for the management of communication and consultation during the construction period, including objectives of consultation, stakeholders, contact mechanisms and protocols.</p> <p>The plan would be consistent with the consultation plan developed by ARTC, as described in Chapter 4. The plan would also include implementation and maintenance of a complaints register and complaints handling and escalation procedures, consistent with ARTC requirements.</p>	Communication and complaints	<p>Contact details for a 24-hour project response line and email address would be provided for ongoing stakeholder contact throughout the construction period.</p> <p>Provision of accurate public information signs while work is in progress.</p> <p>Staging of works would be undertaken to minimise disruption, in consultation with relevant stakeholder groups, to minimise impacts to community activities and functions.</p> <p>Relevant stakeholders would be notified regarding service disruptions in accordance with the communication management plan.</p> <p>Complaints would be managed according to the following procedure:</p> <ul style="list-style-type: none"> <li>▶ Details of all complaints received would be recorded</li> <li>▶ A detailed written response would be provided to the complainant within 14 calendar days.</li> </ul>