
Country Regional Network – Operations and Maintenance Deed – Exhibit A

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NSW Country Regional Network



Scope of Work and Technical Criteria



Contents

1	GENERAL	1
1.1	Purpose	1
1.2	Objectives	1
1.3	Scope of Work	1
2	PROJECT AND BUSINESS MANAGEMENT	2
2.1	Contractor’s Organisation Structure	2
2.2	Management of the Delivery of Services	2
2.3	Work Breakdown Structure	2
2.4	Business Risk and Issues Management Activities	2
2.5	Implementation of Business Management Systems	3
2.6	Development, Maintenance and Implementation of Management Plans	5
2.7	Documents and Information Deliverables	6
2.8	Document Management and Control	6
2.9	Data Records	6
2.10	Revenue Collection Management	6
2.11	Financial Management	7
2.12	Contract Management	8
2.13	Provision of Reciprocal Support to Enable Effective O&M Deed Management by CRIA	9
2.14	Maintenance of Stakeholder Relationships and Management of Communications	10
2.15	Local Industry Participation	12
2.16	Indigenous Employment	13
2.17	Quality Management	13
2.18	Industrial Relations	15
2.19	Intellectual Property	16
2.20	Fraud and Corruption	16
3	PERFORMANCE MEASUREMENT	17
3.1	Establishment of Performance Measurement Systems	17
3.2	Performance Measurement and Analysis	17
3.3	Reporting	17
3.4	Review of Measurement and Incentive Systems	18
3.5	Whole of Life Benefit	18
4	ASSET MANAGEMENT SERVICES	19
4.1	Asset Management System	19
4.2	Contractor’s Asset Management Implementation Plan	20
4.3	Asset Registers	20
4.4	CRN Asset Management Plan	21
4.5	Property Management Plan	22
4.6	Property Information	22

5	ENGINEERING SERVICES	23
5.1	General	23
5.2	Provision of Services to Support Rail Infrastructure Maintenance	24
5.3	Decommissioning of Surplus and/or Obsolete Assets and Equipment	28
5.4	Configuration Management	28
5.5	Maintenance of Standards and Codes	28
6	INTEGRATED LOGISTICS SUPPORT	30
6.1	Integrated Logistics Support Plan	30
6.2	ILS Systems, Processes and Activities	30
6.3	Spare Parts and Materials Provisioning and Procurement	31
6.4	Warehousing, Storage and Distribution of Spares, Materials and Repairable Items	31
6.5	Interfaces with CRN Configuration Management System	31
6.6	Management of ILS Documentation and Technical Data	32
6.7	Management of Specialised Tools, Test and Support Equipment	32
6.8	Plant and Equipment	33
6.9	Workforce Development	33
6.10	Review of ILS Effectiveness	33
6.11	Disposal of Assets, Non-Repairable Items and Surplus Material	33
7	NETWORK OPERATIONS	34
7.1	Rail Network Management Plan	34
7.2	Network Access	34
7.3	Billing and Revenue Reporting	36
7.4	Network Management and Train Control	36
8	RAIL INFRASTRUCTURE MAINTENANCE	39
8.1	General	39
8.2	Routine Maintenance (RM)	39
8.3	Major Periodic Maintenance (MPM)	40
8.4	Emergency Works	41
8.5	Enhancement Works	42
8.6	Maintenance of the CRIA Non-operational Network	42
8.7	Asset Condition Report	42
9	PROPERTY MANAGEMENT SERVICES	43
9.1	General Requirements	43
9.2	Management of Agreements, Tenancies and Other Property-Related Business	43
9.3	Management of Maintenance of the CRIA Property Portfolio	44
9.4	Maintenance of Property-Related Standards and Codes	44
9.5	Management of Property Sales and Acquisitions	44
9.6	Management of Property-Related Heritage Issues	45
9.7	Planning and Development Applications	45
9.8	Management of Adjoining Land Development Applications	46
9.9	Management of Land Contamination Issues	46

9.10	Areas of Archaeological Significance	46
9.11	Management of Level Crossing Closures and Road Closures	46
9.12	Fire Fighting Infrastructure	46
9.13	Road and Property Access	46
9.14	Advertising	46
9.15	Property Enhancement Works	47
9.16	Management of Third Party Access to Rail Corridor	47
10	SAFETY MANAGEMENT	48
10.1	Introduction	48
10.2	Safety Policy	48
10.3	Rail Safety Accreditation	48
10.4	Safety Management System	48
10.5	Occupational Health and Safety	49
10.6	Safety Risk Management	49
10.7	Response to Incidents	50
10.8	Safety Interface Requirements	51
10.9	Access to Rail Corridor and Other CRIA Sites	51
11	ENVIRONMENTAL MANAGEMENT AND SUSTAINABILITY	52
11.1	Environmental Management Plan	52
11.2	Environmental Licence for the CRIA Assets	52
11.3	Environmental Management System	52
11.4	Key Environmental Management Activities	52
11.5	Environmental Approvals	53
11.6	Environmental Impact Statements	53
11.7	Response to Incidents	53
11.8	Restoration, Regeneration and Planting	53
11.9	Cultural Heritage Management Plan	54
11.10	Pest and Vermin Control	54
11.11	Provision for Sustainability Reporting	54
11.12	Fire Management and Fire Hazard Reduction	54
12	TRANSITION MANAGEMENT	56
12.1	Transition Management Plan	56
12.2	Transition Management Team	56
12.3	Transition Phases	56
12.4	Key Tasks During Transition	59
12.5	Handover Package	59
12.6	Disengagement Plan	60
12.7	Disengagement Management Team	60

Appendices

APPENDIX 1	WORK BREAKDOWN STRUCTURE
APPENDIX 2	CRN ASSET MANAGEMENT PLAN
APPENDIX 3	PASSENGER, FREIGHT, GRAIN AND NON-OPERATIONAL LINES
APPENDIX 4	PROPERTY ASSETS
APPENDIX 5	UNDERBRIDGES AND OVERBRIDGES
APPENDIX 6	MISCELLANEOUS ASSETS
APPENDIX 7	CONTRACTOR'S ORGANISATION STRUCTURE AFTER TRANSITION PHASE
APPENDIX 8	QUALITY
APPENDIX 9	INTEGRATED LOGISTICS SUPPORT
APPENDIX 10	ENGINEERING SERVICES
APPENDIX 11	REQUIREMENTS FOR MANAGEMENT PLANS
APPENDIX 12	CRIA STANDARDS AND DOCUMENTS
APPENDIX 13	CONTRACT DOCUMENT REQUIREMENTS LIST
APPENDIX 14	HANDOVER PACKAGE
APPENDIX 15	REQUIREMENTS FOR REPORTS
APPENDIX 16	PERFORMANCE MEASURES

Glossary

Terms used specifically in this SWTC are defined in the Glossary. Other defined terms that are used in this SWTC are defined in the O&M Deed and shall be given the same meaning as in the O&M Deed.

Asset Management	Means the systematic and coordinated activities and practices through which an organisation optimally manages its assets and their associated performance, risk and expenditures over their life cycle, for the purpose of achieving the organisation’s strategic plan.
Asset Management Services	Means all asset management activities required to undertake the CRN Asset Management Plan, and as described in this SWTC.
Backlog	Means maintenance work that has been approved and scheduled but not yet completed.
Earned Value Management	Means the project management system defined in <i>AS4817-2006 Project performance measurement using Earned Value</i> or <i>ANSI/EIA-748-B-2007 Earned Value Management Systems</i> .
Engineering Asset Register	Means a register containing a list of all assets together with all required asset management details in order to comply with the requirements of this SWTC.
Engineering Services	Means all engineering activities required to support the work under the O&M Deed including but not limited to design, construction, commissioning, planning, decommissioning, maintenance, logistics, components selection, training, preparing manuals and documents, quality assurance, inspection, safety and environmental as defined in this SWTC.
Financial Auditor	Means an external financial auditor with relevant expertise notified to the Contractor by CRIA’s Representative from time to time.
Fixed Asset	Means an item of property, plant or equipment where the item is expected to have a useful life of more than one year, the cost can be measured reliably and the cost of the item exceeds the capitalisation thresholds as detailed in CRIA’s <i>FIN-PRC-013 Fixed Asset Register Procedure</i> .
Fixed Asset Register	Means a register containing a list of all Fixed Assets together with financial details required by CRIA.
Information Management Systems	Means the information management systems to be implemented in accordance with section 2.5 of this SWTC.
Integrated Logistics Support	Means the systems, processes and activities required to ensure that the Scope of Work is adequately supported, as defined in this SWTC.
Major Periodic Maintenance	Means maintenance activities that are cyclical in nature and with a cycle typically greater than one year as described in the AMP.



Management Plans	Means the plans identified in SWTC Appendix 11 and any other plan dealing with those matters which a prudent, experienced and competent operations and maintenance contractor exercising Good Operating Practice would anticipate would be required to be dealt with by way of a management plan having regard to the Services and the Contractor's obligations under the O&M Deed.
NSW Government Total Asset Management Guidelines	Means NSW Treasury's <i>TAM 06-3 Total Asset Management Guideline - Asset Maintenance Strategic Planning</i> and <i>TPP 08-2 Total Asset Management (TAM)</i> requirements for updating the NSW State Infrastructure Strategy (SIS).
NSW Rail Access Undertaking	Means the undertaking made in accordance with Schedule 6AA of the <i>Transport Administration Act 1988</i> for provision of third party access to the NSW rail network.
Property Management Services	Means the management, maintenance and operation of all CRIA-owned land and buildings as defined in this SWTC.
Proposal	Means the proposal dated 23 July 2010 submitted by John Holland Pty Ltd to CRIA further to (and as amended in accordance with) the request for proposal process, in accordance with which the Contractor was selected to carry out the Services under the O&M Deed.
Protocol	Means any protocol issued by CRIA's Representative from time to time relating to the day-to-day management of the relevant part of the Services.
Rolling Stock Operator	Refer to section 4 of the <i>Rail Safety Act 2008</i> .
Routine Maintenance	Means day-to-day activities needed to ensure that the railway is fit for its intended function as described in the AMP.
Safety Management System	Means rail safety and OH&S related policies, procedures, guidelines and instructions and how they are planned, integrated, implemented and approved as defined in the Act.
Scope of Work	Means the work to be undertaken in accordance with the O&M Deed, as described in this SWTC.
Standard Working Timetable	Means the timetable which documents the train paths that have been authorised for operation on the network.
State Owned Corporation	Means a corporation or company specified in the <i>State Owned Corporations Act 1989 (NSW)</i> .
Track Occupancy Authority	Means the authority granted by the network operator to occupy a defined portion of track within specified limits for an agreed period.
Train Control	Means the planning, programming and control of train movements, management of the train control centres, train operations, scheduling, monitoring train movements and network performance and daily train plans.

<p>Train Control Systems</p>	<p>Means the systems and equipment that control and manage continuity and safe working of train services and all operational matters incidental to that control, and includes:</p> <ul style="list-style-type: none"> • telemetry systems to communicate with signal equipment; • computer-based display and control panels for the real time monitoring of signal equipment status including track; • points and signal status; • recording and reporting of events and alarms; • audio equipment facilities for communication with regional signallers; • computer-based display and control panels to manage the selection and establishment of communication conversations with signallers, drivers, safe workers, maintainers and emergency personnel; • recording facilities required to record conversations with signallers, drivers, safe workers, maintainers and emergency personnel; and • monitoring equipment.
<p>Whole of Life Benefit</p>	<p>Means the net benefit of the services to CRIA over the Term of the O&M Deed that includes consideration of:</p> <ul style="list-style-type: none"> • capital costs of RM, MPM and Enhancement Works; • the operating costs of the CRN; • the income derived from the operation of the CRN; • any other costs incurred in the operation and maintenance of the CRIA Assets, including the CRN; and • the residual value and condition of the CRIA Assets, including the CRN, at the completion of the Term.



List of Abbreviations

Abbreviations used specifically in this SWTC are defined in the list of abbreviations. Other abbreviations that are used in this SWTC are defined in the O&M Deed and shall be given the same meaning as in the O&M Deed.

AHD	Australian Height Datum
AHIP	Aboriginal Heritage Impact Permit
AMP	Asset Management Plan
ANRP	Australian National Rules and Procedures
ARTC	Australian Rail Track Corporation
AWP	Annual Works Plan
CDRL	Contract Document Requirements List
CRIA	Country Rail Infrastructure Authority
CWR	Continuous Welded Rail
DECCW	Department of Environment, Climate Change and Water
EAR	Engineering Asset Register
EMS	Environmental Management System
EVM	Earned Value Management
FAR	Fixed Asset Register
GIS	Geographical Information System
HAZOP	Hazard and Operability
ILS	Integrated Logistics Support
IMS	Information Management Systems
IP	Intellectual Property
IR	Industrial Relations
IT	Information Technology
ITSR	Independent Transport Safety Regulator



KPI	Key Performance Indicator
KRA	Key Result Area
MCOS	Minimum Conditions of Satisfaction
MGA	Map Grid of Australia
MPM	Major Periodic Maintenance
NATA	National Association of Testing Authorities
NSW	New South Wales
NSWFB	New South Wales Fire Brigade
NSWRFS	New South Wales Rural Fire Service
O&M	Operations and Maintenance
OH&S	Occupational Health and Safety
QMS	Quality Management System
RIM	Rail Infrastructure Manager
RISSB	Rail Industry Safety Standards Board
RM	Routine Maintenance
RSO	Rolling Stock Operator
RTO	Rail Transport Operator
SFAIRP	So Far As Is Reasonably Practicable
SMS	Safety Management System
SWTC	Scope of Work and Technical Criteria
SWTT	Standard Working Timetable
TOA	Track Occupancy Authority
TRIM	Total Records and Information Management
WBS	Work Breakdown Structure
WTSA	Welded Track Stability Analysis

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1 General

1.1 Purpose

1.1.1 The purpose of this Scope of Work and Technical Criteria (**SWTC**) document is to state Country Rail Infrastructure Authority's (**CRIA's**) requirements for the Contractor to carry out work under the Operations and Maintenance (**O&M**) Deed to manage, operate, maintain, and upgrade CRIA Assets, including the Country Regional Network (**CRN**).

1.2 Objectives

1.2.1 The Objectives are defined in the O&M Deed. The Contractor must perform all activities necessary to support achievement of these Objectives.

1.3 Scope of Work

1.3.1 The Contractor must provide, as a minimum, the following Services as described in this document:

- (a) project and business management;
- (b) performance measurement;
- (c) Asset Management Services;
- (d) Engineering Services;
- (e) Integrated Logistics Support (**ILS**);
- (f) network management;
- (g) rail infrastructure maintenance;
- (h) Property Management Services;
- (i) safety management;
- (j) environmental management and sustainability; and
- (k) transition management.

1.3.2 The Scope of Work is summarised in the Work Breakdown Structure (**WBS**) shown in SWTC Appendix 1, and is further detailed in section 2 to section 12 of this document.

1.3.3 The Scope of Work in relation to rail infrastructure maintenance is detailed in the CRN Asset Management Plan included at SWTC Appendix 2, and is to be carried out in accordance with CRIA and other Standards and Codes including, but not limited to, those listed in SWTC Appendix 12.

1.3.4 The CRIA Assets include:

- (a) passenger and freight lines including CountryLink passenger services and freight services - see SWTC Appendix 3;
- (b) grain lines, which predominantly service grain movements - see SWTC Appendix 3;
- (c) non-operational lines that have had services withdrawn and are not maintained as operational lines - see SWTC Appendix 3;
- (d) property - see SWTC Appendix 4;
- (e) rail bridges (underbridges) - see SWTC Appendix 5;
- (f) road over rail bridges (overbridges) - see SWTC Appendix 5; and
- (g) other miscellaneous assets - see SWTC Appendix 6.

2 Project and Business Management

2.1 Contractor's Organisation Structure

- 2.1.1 The Contractor must ensure that sufficient competency and capability is available to manage, operate, maintain and upgrade the CRIA Assets, including the CRN, in order to achieve the Objectives of the O&M Deed. In doing so, the Contractor must recruit all necessary staff, develop training programs as required, and implement an appropriate organisation structure.
- 2.1.2 The Contractor must also establish an initial organisation structure to ensure the effective transfer of responsibilities to the Contractor during the Mobilisation Stage.
- 2.1.3 The Contractor's proposed organisation structure following the Mobilisation Stage is defined in SWTC Appendix 7.
- 2.1.4 The Contractor must notify CRIA of any material changes to its organisation structures in writing, in its Monthly Progress Report.

2.2 Management of the Delivery of Services

- 2.2.1 The Contractor must develop and maintain a Management Services Plan in accordance with SWTC Appendix 11.
- 2.2.2 The Management Services Plan shall be the overarching plan that defines the Contractor's approach to carrying out the Services. The Management Services Plan is the equivalent of a project management plan.
- 2.2.3 The Contractor must implement the Management Services Plan.

2.3 Work Breakdown Structure

- 2.3.1 The minimum activities required to operate, maintain and support the CRIA Assets, including the CRN, are defined in the WBS included at SWTC Appendix 1.
- 2.3.2 The Contractor must maintain and update the WBS to reflect the scope of activities necessary to support the management, operations, maintenance and upgrade of the CRIA Assets.
- 2.3.3 The Contractor must notify CRIA of any material changes to the WBS.

2.4 Business Risk and Issues Management Activities

- 2.4.1 The Contractor must implement processes to manage risks that could adversely affect the CRIA Assets, including the CRN, or jeopardise compliance with the O&M Deed. This includes the development and implementation of risk management strategies. The risk management strategies shall be described in the risk management section of the Management Services Plan as per requirements listed in SWTC Appendix 11.
- 2.4.2 The Contractor must, as a minimum, identify, assess, control, monitor and review risks in each of the following categories:
 - (a) safety;
 - (b) operations;

- (c) environmental; and
 - (d) business.
- 2.4.3 The Contractor's risk management processes must be compliant with *AS/NZS 4360 Risk Management*, and risk tolerability criteria will be consistent with those described in *RIC GEN STD 001 Risk Management*.
- 2.4.4 The Contractor must maintain a risk register that details all identified risks, their assessed levels, the progress of control actions, and persons responsible for control of each risk. This shall include all categories of risk as identified in paragraph 2.4.2.
- 2.4.5 The Contractor must, as a minimum, conduct risk workshops on a quarterly basis, to which it will invite CRIA representatives to participate in the review of risks.
- 2.4.6 The Contractor must conduct other risk reviews at a frequency to be stated in the risk management section of the Management Services Plan.
- 2.4.7 Refer to section 10.6 for safety risk management requirements.
- 2.4.8 The Contractor must manage issues that arise in the course of carrying out the Services to ensure that issues are dealt with in a timely manner.

2.5 Implementation of Business Management Systems

Information Management Systems

- 2.5.1 The Contractor must establish and maintain all necessary Information Management Systems (**IMS**) to support the operation and maintenance of the CRIA Assets, including the CRN.
- 2.5.2 The Contractor must, as a minimum, provide and operate integrated or stand-alone IMS to manage the following systems or capabilities:
- (a) financial management system;
 - (b) human resources and payroll;
 - (c) resource costing system;
 - (d) cost management system;
 - (e) document management system;
 - (f) Quality Management System (**QMS**);
 - (g) Safety Management System (**SMS**);
 - (h) failure management system;
 - (i) network management system;
 - (j) Asset Management system;
 - (k) maintenance management system;
 - (l) project scheduling and reporting system;
 - (m) Integrated Logistics Support (**ILS**) management system;
 - (n) community and stakeholder management system;
 - (o) procurement and local industry participation system;
 - (p) property management systems including the Geographical Information System (**GIS**); and
 - (q) information technology (**IT**) and support systems.
- 2.5.3 The systems must provide all the capabilities necessary for the Contractor to manage, operate, maintain and upgrade the CRIA Assets to comply with the O&M Deed, including this SWTC.
- 2.5.4 Where necessary for the efficient performance of Services, the IMS should allow remote access.

- 2.5.5 The Contractor's management systems must allow CRIA online access to information, subject to any agreed upon restrictions.
- 2.5.6 The IMS shall have high availability and reliability, including the capacity to recover from a major fault in less than 24 hours.
- 2.5.7 The IMS must have the capability to send automatic notifications to all users in the case of major system changes or news.

IMS Training

- 2.5.8 The Contractor must provide IMS training to CRIA personnel, or whoever CRIA designates, on an annual basis or as required. The level of training provided must be sufficient to provide personnel with adequate skills to effectively utilise the IMS.
- 2.5.9 The Contractor must provide all IMS training manuals and user operational manuals to CRIA, with updates as required.
- 2.5.10 The Contractor must ensure CRIA is provided with any manual updates as soon as practicable after they become available and also provide additional training if required.
- 2.5.11 The Contractor must provide help desk support to Contractor and CRIA IMS users.
- 2.5.12 The Contractor shall provide adequate support to install and configure IMS applications on CRIA-designated computers.

Information System Security

- 2.5.13 The Contractor must implement security measures for all of its information systems that comply with the requirements of *ISO/IEC 27001 Information technology – Security techniques – Information security management systems – Requirements* and *ISO/IEC 27002 Information technology – Security techniques – Code of practice* for information security management, including but not limited to:
 - (a) access control, such that only authorised users have access to commercial in confidence and other sensitive data;
 - (b) antivirus protection that automatically updates and protects systems from viruses, spyware and other malware;
 - (c) anti-intrusion and detection systems to prevent access to systems from internal and external unauthorised users and to automatically alert system administrators when unauthorised access attempts are made; and
 - (d) servers that provide services to external users must be installed in a secured zone.
- 2.5.14 The Contractor must keep its information system security measures up-to-date and review them for adequacy on a regular basis. The Contractor must demonstrate its compliance to this requirement through regular status reporting in the Monthly Progress Report and shall allow review by CRIA or CRIA's nominated auditor.
- 2.5.15 The Contractor must establish backup arrangements that allow recovery of all critical data. Backup must occur at least once every 24 hours.
- 2.5.16 The Contractor must establish uninterruptible power supplies for critical IMS hardware.
- 2.5.17 The Contractor must establish redundancy for critical IMS.

- 2.5.18 The Contractor must implement, or ensure its subcontractor/s (if applicable) implements high availability systems for train control.

Information Technology and Software Support

- 2.5.19 The Contractor must provide, as a minimum, the following IT and software support services:
- (a) maximise the availability of its IMS;
 - (b) provide support and advice services to users;
 - (c) manage the distribution, modification and repair of all hardware and software systems; and
 - (d) manage the configuration of its IMS, including both hardware and software.

Business Continuity Planning

- 2.5.20 The Contractor must develop and implement a business continuity plan, as described in the appropriate section of the Management Services Plan, in accordance with SWTC Appendix 11.
- 2.5.21 The business continuity plan must comply with *HB221 Business Continuity Management*.

2.6 Development, Maintenance and Implementation of Management Plans

- 2.6.1 The Contractor must develop, maintain and implement all Management Plans in accordance with SWTC Appendix 11 and SWTC Appendix 13.
- 2.6.2 The Contractor must manage the work under the O&M Deed in accordance with the Management Plans.
- 2.6.3 CRIA may review and comment on Management Plans as indicated in SWTC Appendix 13.
- 2.6.4 The Contractor acknowledges that:
- (a) an intended purpose of each Management Plan is for the Contractor to provide a detailed description of how the Contractor intends to carry out the Services (and any work to be undertaken in the Mobilisation Stage or during any disengagement) in accordance with the requirements of the O&M Deed with respect to the subject matter of each Management Plan; and
 - (b) each Management Plan will require ongoing development, amendment and updating throughout the duration of the Services (and any work to be undertaken in the Mobilisation Stage or during any disengagement) by the times required by the SWTC and otherwise to take account of:
 - (i) Variations;
 - (ii) changes in Law; and
 - (iii) any other events or circumstances which occur or come into existence and which have, or may have, any effect on the manner in which the Contractor carries out the Services.
- 2.6.5 The Contractor must:
- (a) in respect of the Annual Works Plan and AWP Budget, prepare and revise the Annual Works Plan and AWP Budget in accordance with the Commercial Framework; and
 - (b) in respect of all other Management Plans, prepare and revise those Management Plans in accordance with SWTC Appendix 11.
- 2.6.6 Where a Management Plan requires approval in accordance with SWTC Appendix 13, that Management Plan shall not be deemed to be approved unless the Contractor receives written notice from CRIA expressly approving that Management Plan.

- 2.6.7 Unless otherwise agreed by CRIA in writing, where the Proposal contains any Management Plans in complete or outline form, then:
- (a) where complete Management Plans have been provided, those Management Plans will be deemed to be the initial Management Plans for the purposes of the SWTC; and
 - (b) where outlines of Management Plans have been provided, the Management Plans to be prepared by the Contractor shall be prepared in accordance with the SWTC on the basis of the outlines provided, and shall fully implement the concepts outlined in those outlines.

2.7 Documents and Information Deliverables

- 2.7.1 The Contractor must submit documents and information deliverables at the times indicated in the Contract Document Requirements List (**CDRL**) in SWTC Appendix 13.
- 2.7.2 When SWTC Appendix 13 requires the Contractor to submit documents and information deliverables to CRIA for comment, CRIA must provide comments within the time frame nominated in SWTC Appendix 13. The Contractor must consider CRIA's comments and, where appropriate, amend the documents or information deliverables. If, after due consideration, the Contractor does not incorporate CRIA's comments, the Contractor must provide CRIA with the reasons why the comments have not been incorporated.
- 2.7.3 CRIA may not reject documents or information deliverables for minor omissions or defects.

2.8 Document Management and Control

- 2.8.1 The Contractor must establish and maintain a document management system. Processes for operation of the document management system shall be described in the document and data management section of the Management Services Plan as indicated in SWTC Appendix 11.
- 2.8.2 The Contractor must provide CRIA with access to the document management system.

2.9 Data Records

- 2.9.1 The Contractor must maintain records, including State Records, as required by the O&M Deed.
- 2.9.2 The Contractor must provide CRIA with access to data records relevant to the CRIA Assets, and submit records to CRIA as requested from time to time.

2.10 Revenue Collection Management

- 2.10.1 The Contractor must manage collection of revenue from the operation and utilisation of CRIA Assets, and the transfer of any money to CRIA as defined in the O&M Deed. Revenue may include income from:
- (a) network access;
 - (b) disposal of material;
 - (c) property leases and licences;
 - (d) property disposal;
 - (e) advertising;
 - (f) Government rebates; and
 - (g) other asset disposals.
- 2.10.2 The Contractor must manage and lodge, on behalf of CRIA, applications for any Government rebate which may apply including but not limited to the Diesel Fuel Rebate Scheme.

- 2.10.3 In relation to the Diesel Fuel Rebate Scheme, the Contractor is to provide monthly advice to CRIA that the funds have been received and transferred to CRIA.

2.11 Financial Management

- 2.11.1 The Contractor must implement a financial management information system to plan, monitor, control and report on the financial status of carrying out the Services.
- 2.11.2 The financial management information system must meet the open book requirements of the O&M Deed.
- 2.11.3 The Contractor's financial management information system must allow the planning and measurement of work using Earned Value Management (**EVM**). The EVM system must be in accordance with *AS 4817-2006 Project performance measurement using Earned Value* or *ANSI/EIA-748-B-2007 Earned Value Management Systems*.

AWP Budgeting and Forecasting

- 2.11.4 The Contractor must prepare a detailed AWP Budget as required by the Commercial Framework and SWTC Appendix 11.
- 2.11.5 The Contractor must prepare a detailed annual cash flow forecast.
- 2.11.6 The Contractor must, on a rolling monthly basis, update the cash flow forecasts for the next 12 months.
- 2.11.7 The Contractor must prepare and maintain forecast estimates of PSGS Amounts and Contractor's Bonus.
- 2.11.8 The Contractor must assist CRIA in reviewing cash flow forecasts and calculation of PSGS Amounts and Contractor's Bonus in order to reallocate work in the maintenance program. Work may either be brought forward or deferred depending on the financial status of the annual program of work as measured against the AWP Budget.
- 2.11.9 The Contractor must implement a reporting system which must, as a minimum, provide monthly financial status of the delivery of the Services. This information must be presented in the Monthly Progress Report. The requirements for the content of the Monthly Progress Report are defined in SWTC Appendix 15.

Audit of Financial Performance and Records

- 2.11.10 The Contractor must allow and arrange for independent audits of its books of account and financial records as required by the O&M Deed. Audits must be undertaken at least annually. The auditor's report shall be made available to CRIA.
- 2.11.11 The Contractor must arrange for CRIA, or CRIA's nominated representative, to have access to the Contractor's books of account and financial records and, where required, those of its parent company or subcontractors, for audit purposes.
- 2.11.12 The Contractor must allow the Financial Auditor access for the purposes referred to in section 2.11.11.

2.12 Contract Management

Contract Management

- 2.12.1 The Contractor shall be responsible for the safe, effective and efficient utilisation of resources, employees and subcontractors.
- 2.12.2 The Contractor's contract management activities must include, but not be limited to:
- (a) planning work;
 - (b) procurement services including tender processes, to ensure that subcontractors have the required competence, capacity, systems and processes as required to undertake the work;
 - (c) contracting of subcontractors to undertake specified work over specified time periods;
 - (d) effective management and monitoring of subcontractors to ensure compliance with quality, safety, environmental and other legislative requirements;
 - (e) payment of subcontractors for services delivered;
 - (f) resolution of any claims or other disputes;
 - (g) safety inductions and other familiarisation training related to work practices or other site-specific requirements;
 - (h) implementation of corrective actions to address any deviations from their specified performance requirements;
 - (i) development and/or update of all drawings or other technical data to maintain the integrity of the Contractor's configuration management system; and
 - (j) inspections of work sites upon vacating to ensure completion of any site clean-up or other remediation work.
- 2.12.3 The Contractor must ensure that all employees and subcontractors hold all necessary engineering and other relevant accreditations, certificates and authorisations or approvals to undertake the work for which they are employed or contracted.
- 2.12.4 The Contractor shall establish a competence management system for subcontractors which shall include:
- (a) a process for the assessment of applications and the assessment of competence;
 - (b) a register of competent subcontractors which identifies the individual people who have the required level of competence in any specified area;
 - (c) a system of review and re-assessment or other follow-up; and
 - (d) any other information required to meet the requirements of the Act in relation to rail safety worker competence.
- 2.12.5 The Contractor must ensure procurement activities comply with industry participation requirements.
- 2.12.6 The Contractor shall maintain a register of contracts and subcontracts which must be accessible to CRIA either online or upon request.

Subcontractors

- 2.12.7 If the Contractor engages subcontractors as per the O&M Deed provisions, the Contractor shall be responsible for the safe, effective and efficient utilisation of the subcontractors.
- 2.12.8 The Contractor must ensure that subcontractors comply with any relevant requirements of this SWTC.

Project Control Group (PCG) Meetings

- 2.12.9 The Contractor must attend monthly Project Control Group (**PCG**) meetings as required by the O&M Deed.
- 2.12.10 The Contractor shall provide all required reports one week prior to the PCG meeting.

Reporting

- 2.12.11 The Contractor must provide to CRIA all reports identified in SWTC Appendix 13 and SWTC Appendix 15.
- 2.12.12 The Contractor must provide to CRIA an Annual Contract Report relating to its delivery of the Services. These must include a summary of the revenue earned and the costs incurred in relation to the performance of the Services for the preceding period of July to June in comparison with the requirements of the CRN Asset Management Plan, the Annual Works Plan and the AWP Budget. CRIA may provide comments to the Contractor in response. The requirements for this report are defined in SWTC Appendix 13 and SWTC Appendix 15.
- 2.12.13 The Contractor must prepare Monthly Progress Reports, including detailed monthly progress reports on the progress and the financial status of the Services, in accordance with the requirements provided in SWTC Appendix 13 and SWTC Appendix 15.
- 2.12.14 At the beginning of each week, the Contractor shall provide advice to CRIA in relation to revenue-related account transfers expected to occur by the end of that week which will facilitate managing CRIA revenue related weekly payments.
- 2.12.15 The Contractor must also provide ad hoc financial and performance reporting when requested by CRIA.
- 2.12.16 The Contractor must provide a cost-benefit analysis, if appropriate, for any proposed safety or process improvements that may arise during the Term.
- 2.12.17 The Contractor must, if requested, assist CRIA in the interpretation of the detailed financial reports.

2.13 Provision of Reciprocal Support to Enable Effective O&M Deed Management by CRIA

- 2.13.1 The Contractor must assist CRIA with management of the O&M Deed through the establishment of a contract management framework, and the implementation of appropriate contract management policies and procedures. This process shall include, but not be limited to:
 - (a) implementing a transparent approach to managing the O&M Deed;
 - (b) implementing procedures to provide CRIA with visibility into the status of contractual issues;
 - (c) proactively engaging with CRIA to identify potential issues, including disputes, as early as possible;
 - (d) resolving any issues expeditiously and in a cooperative manner;
 - (e) responding positively and proactively to requests by CRIA for information and assistance;
 - (f) providing reports and additional information when requested including ad hoc reports; and
 - (g) managing O&M Deed administration task workload in a manner that allows CRIA to meet its obligations.
- 2.13.2 The transparency and health of the contract management relationship are important features of the Contractor's approach to stewardship.

2.14 Maintenance of Stakeholder Relationships and Management of Communications

Stakeholder Relationships

- 2.14.1 The Contractor must manage relationships with relevant stakeholders in accordance with the community and stakeholder management provisions of the Management Services Plan (refer SWTC Appendix 11).
- 2.14.2 Key stakeholders with whom the Contractor must engage shall include, but are not limited to: ITSR, above-rail operators, adjacent rail network operators, NSW Department of Transport and Infrastructure, unions, other contractors and members of the public and community.
- 2.14.3 The Contractor must be responsible for the management and coordination of community involvement, consultation and communications related to its activities on the CRIA Assets, including the CRN.
- 2.14.4 The Contractor shall be proactive in keeping the community informed during all work that has the potential to impact the local community.
- 2.14.5 The Contractor must, through a commitment to communication and community relations, minimise inconvenience to the community by providing timely and regular information about disruptions to traffic, public transport services and any other impacts.
- 2.14.6 The Contractor must ensure that its staff and the staff of its subcontractors are made aware of the Contractor's community relations obligations through inductions and other appropriate methods.
- 2.14.7 In line with CRIA's objective to exhibit a sense of social responsibility by having regard to the interests of the communities in which it operates, the Contractor must provide opportunities, when relevant and appropriate, for the local community to have input into various aspects of the maintenance, operation and development of the CRN, such as the development of detailed design elements and construction impact management strategies.
- 2.14.8 The Contractor must promptly notify CRIA in writing if any complaint is made or any proceedings are instituted or threatened, letter of demand issued or any order or direction is made by anyone (including ITSR, the RTA or any other Authority) or any land owner, lessee or licensee near the CRN against it, or its Agents, in respect of any aspect of the CRN or the carrying out of the Services including:
- (a) Contamination arising out of or in any way in connection with the Services or the CRIA Assets, including the CRN;
 - (b) any non-compliance with any Law regarding the environment or any condition of any environmental licence;
 - (c) the Contractor's use or occupation of the CRIA Assets; and
 - (d) under or in respect of any Relevant Documents or any Interface Agreements.
- 2.14.9 The Contractor must:
- (a) deal proactively with any complaint, proceedings, letter of demand, order or direction referred to in clause 2.14.8;
 - (b) take reasonable measures to resolve those matters as soon as possible; and

- (c) keep a register of complaints, proceedings, letters of demand, orders and directions referred to in clause 2.14.8 which:
 - (i) contains full details of each complaint, proceedings, letter of demand, order and direction and the action taken by the Contractor with respect to each complaint, proceeding, letter of demand, order and direction;
 - (ii) is promptly updated to take into account any developments with respect to any complaint, proceedings, letter of demand, order or direction; and
 - (iii) may be inspected by CRIA, or any person authorised by CRIA, whenever they reasonably require.

Management of Communications

- 2.14.10 The Contractor must manage communications, both internally and externally, with relevant stakeholders.
- 2.14.11 The Contractor must manage communications with stakeholders on key issues including, but not limited to:
 - (a) safety and risk management;
 - (b) access management;
 - (c) train planning and scheduling;
 - (d) train control and signalling;
 - (e) land and lease management;
 - (f) Interface Agreements;
 - (g) CRIA industrial agreements;
 - (h) potential impacts on training requirements;
 - (i) transition to a new form of contract;
 - (j) environment and conservation;
 - (k) native title and cultural heritage;
 - (l) local transport impacts;
 - (m) social and urban development; and
 - (n) local neighbouring residential and business community impact.
- 2.14.12 The Contractor must communicate and consult with CRIA Assets stakeholders through a variety of means, ranging from informal conversations to formal risk assessments, design reviews, access agreements and deeds of consent.
- 2.14.13 The Contractor must, in consultation with CRIA, determine the most appropriate method and medium for communications and identify key personnel for such communications, taking into account considerations such as:
 - (a) safety implications;
 - (b) level of urgency;
 - (c) communication effectiveness;
 - (d) target audience; and
 - (e) community or political sensitivity.
- 2.14.14 For larger scale MPM or Enhancement Works, the Contractor must consider a range of approaches to public consultation, including:
 - (a) public displays;
 - (b) site inspections by visitors; and
 - (c) other means of dissemination of information to the public through print and electronic media, site signage or community forums.

- 2.14.15 The Contractor must set up appropriate internal procedures for the handling of media enquiries and enquiries from elected representatives, which must be documented in the Stakeholder Engagement and Communications Plan.
- 2.14.16 All media enquiries and enquiries from elected representatives related to work on the CRIA Assets must be referred to CRIA's Representative as soon as practicable.
- 2.14.17 The Contractor must ensure that all employees and subcontractors understand that media enquiries and enquiries from elected representatives must be immediately referred to CRIA. The Contractor must supply CRIA with sufficient factual briefing material to respond to the query.
- 2.14.18 The Contractor must identify opportunities for media releases and events, and facilitate these in cooperation with CRIA.

Material for Publication and Public Distribution

- 2.14.19 The Contractor must liaise with CRIA during the development and distribution of public information and material.
- 2.14.20 All proposed material, including work notifications, consultation material, marketing and branding campaigns, must be submitted to CRIA in final draft format for review and approval at least 10 days prior to distribution or publication.

Complaints Management

- 2.14.21 The Contractor must develop, implement, operate and maintain a stakeholder management system for the purpose of recording and tracking all contact with stakeholders. This system shall, as a minimum, record the time and duration of any interaction with stakeholders, all responses issued by the Contractor and the resolution of issues raised.
- 2.14.22 The stakeholder management system must have the capability to manage historical data.
- 2.14.23 The report of monthly stakeholder issues required by section 2.14.24 below shall include a report on all contacts logged in the Contractor's stakeholder management system.

Reporting Requirements

- 2.14.24 The Contractor must include a section on stakeholder issues in its Monthly Progress Report to CRIA that, as a minimum, addresses all items indicated in SWTC Appendix 15.
- 2.14.25 The Contractor must also advise CRIA of any community or stakeholder complaints, or issues which have the potential to have an adverse effect upon communities, community members or stakeholders, within 24 hours of receipt of the complaint or awareness of the potential issue.

2.15 Local Industry Participation

- 2.15.1 The Contractor must detail its strategy for local industry participation in the relevant section of the Management Services Plan in accordance with SWTC Appendix 11.
- 2.15.2 The Contractor must implement the agreed-upon local industry participation strategy, prepare and submit local industry participation progress reports, as required from time to time, as part of the Monthly Progress Report in accordance with SWTC Appendix 15.

2.16 Indigenous Employment

- 2.16.1 The Contractor must comply with NSW policies on the employment of Aboriginal people including the *Aboriginal Participation in Construction Guidelines*.

2.17 Quality Management

Quality Management System

- 2.17.1 The Contractor must implement and maintain a Quality Management System (**QMS**).
- 2.17.2 The QMS must be certified to *ISO 9001 Quality management systems - Requirements*.
- 2.17.3 All QMS records and any other records relating to the quality of the work must be freely accessible to CRIA.

Quality Assurance Plan

- 2.17.4 The Contractor must develop and implement a Quality Assurance Plan, which documents the QMS referred to in paragraphs 2.17.1 to 2.17.3 above.
- 2.17.5 The Quality Assurance Plan must comply with the requirements described in SWTC Appendix 10.

Quality Certificates

- 2.17.6 The Contractor must provide CRIA with annual certification that the Contractor's QMS is implemented in accordance with the Quality Assurance Plan.

Non-Conformances

- 2.17.7 The Contractor must establish and implement a system to identify and manage non-conformances.
- 2.17.8 CRIA may advise the Contractor of apparent non-conformances. In this event, the Contractor must treat the matter as a non-conformance to be addressed within the Contractor's QMS.
- 2.17.9 The Contractor must identify, review and analyse the cause of all non-conformances, and develop and implement a plan of corrective action to minimise the likelihood of recurrence. Details of such corrective action must be recorded in a non-conformance report or corrective action request as appropriate; and such reports must be provided to CRIA, normally as part of the Monthly Progress Report.
- 2.17.10 The Quality Assurance Plan must make specific provision for reporting to CRIA non-conformances that may impact the future durability or performance of any element of the CRIA Assets, including the CRN.
- 2.17.11 Proposals for rectification work in response to non-conformances shall be reviewed by the relevant design authority, taking into account the relevant durability and performance requirements. Proposals for rectification of non-conformances which alter the configuration of the CRIA Assets must be submitted to CRIA prior to implementation of the rectification work.
- 2.17.12 Minor non-conformances may be managed through an engineering waiver process. The Contractor shall perform a safety and risk assessment prior to accepting minor non-conformances and/or granting any engineering waiver.

Engineering Waivers

- 2.17.13 The Contractor must maintain and manage the existing engineering waiver register.
- 2.17.14 The engineering waiver register must be available online and accessible to CRIA.
- 2.17.15 The engineering waiver register must be updated, as required, to reflect the agreed waiver status.

Quality Records

- 2.17.16 The Quality Assurance Plan shall include provision for the management of quality records in accordance with any relevant legislative requirements.
- 2.17.17 CRIA shall have the right to audit any of the Contractor's quality records in relation to its management, operations, maintenance and upgrade of the CRIA Assets.

Quality Audit Program

- 2.17.18 At the beginning of each Contract Year the Contractor must provide CRIA with an annual quality audit program which shall indicate all the planned audit activity on a monthly basis for the year including the due date for reporting.
- 2.17.19 The Contractor must provide quality audit program monthly reports as defined in SWTC Appendix 13 and SWTC Appendix 15.
- 2.17.20 The annual quality audit program must, as a minimum, address the areas as per Table 2-1 below. The Contractor shall engage a suitably qualified external independent auditor where indicated.
- 2.17.21 The Contractor must provide the draft audit program, for the following Contract Year, to CRIA for review and endorsement, no later than 30th March.
- 2.17.22 Table 2-1 provides a minimum list of audit requirements. In some cases, multiple audits may be required in order to cover the full scope of the listed activity.
- 2.17.23 The Contractor must provide written audit reports within 60 days of the scheduled date nominated in the annual audit program.
- 2.17.24 The report shall include as a minimum the following:
 - (a) activity audited;
 - (b) auditor details;
 - (c) period audited;
 - (d) audit scope;
 - (e) audit methodology;
 - (f) summary report including outcome and non conformances;
 - (g) recommendations;
 - (h) persons or parties responsible for corrective actions;
 - (i) audit disclosures and qualifications; and
 - (j) deadlines and priorities to rectify non-conformances.

Table 2-1: Minimum List of Audit Requirements

Document/Activity	SWTC Reference	Contractor	Independent Auditor
Asset Management Implementation Plan	4.2.5	✓	✓
Financial management, including financial accounts and procedures	2.11.10	✓	✓
Fraud and corruption prevention	2.20	✓	✓
Property Services	9.1.5	✓	
Engineering Services	5.1.6/5.2.46	✓	
Quality Assurance Plan and records	2.17.2	✓	✓
Network management and train control	7.4	✓	✓
Occupational Health & Safety	10.5.2	✓	✓
Rail Safety Management	10.4.5	✓	✓
Environmental Management including Licence Conditions	11.5.2	✓	✓
Information Systems Security	2.5.14	✓	
Engineering Asset Register	4.3.4	✓	

2.17.25 The Contractor shall manage all non-conformances as per the requirements defined in the Quality Assurance Plan.

2.17.26 The Contractor must also provide a report of completion of the annual audit program not later than the 31st August, including a summary of all major findings and recommendations. The annual period will be aligned with the CRIA financial year which ends on the 30th June each year.

2.18 Industrial Relations

2.18.1 The Contractor must manage the work under the contract in accordance with all legislative and O&M Deed Industrial Relations (**IR**) requirements.

2.18.2 The Contractor must develop the IR section of the Management Services Plan as per requirements listed in SWTC Appendix 11.

2.18.3 The Contractor must keep CRIA informed on the status of IR within its own workforce as well as those of its subcontractors.

2.18.4 The Contractor must notify CRIA of any potential IR issues as soon as practicable.

2.19 Intellectual Property

- 2.19.1 The Contractor must develop and implement systems and processes for the effective management of Intellectual Property (**IP**) in accordance with the requirements of the IP section of the Management Services Plan as identified in SWTC Appendix 11, and the O&M Deed, and provide updates as required in SWTC Appendix 13.
- 2.19.2 The Contractor must maintain up-to-date IP records.
- 2.19.3 The Contractor must prepare and submit IP progress reports on a quarterly basis. These reports shall be included with the Monthly Progress Report when due.
- 2.19.4 The Contractor must facilitate an annual IP review with CRIA to verify compliance with the Management Services Plan. The first review shall occur on or about the anniversary of the Commencement Date, or as otherwise agreed with CRIA. Verification may include site visits to the Contractor's facilities and to its subcontractors' facilities as necessary.

2.20 Fraud and Corruption

- 2.20.1 The Contractor must implement policies and procedures to address the prevention of fraud and corruption.
- 2.20.2 Issues associated with the prevention of fraud and corruption must be reported to CRIA as soon as reasonably practicable and the status of any issues must be reported in the Monthly Progress Report.

3 Performance Measurement

3.1 Establishment of Performance Measurement Systems

- 3.1.1 The Contractor must establish and implement systems and procedures to measure performance as required by the O&M Deed and the SWTC.
- 3.1.2 The Contractor must establish and implement the performance incentive system defined in the Commercial Framework.
- 3.1.3 Minimum performance levels for the incentive system are defined in the Commercial Framework.
- 3.1.4 Minimum levels of acceptable performance for other reported performance measures are listed in SWTC Appendix 16.
- 3.1.5 The Contractor must establish any other performance measurement support systems that it believes are necessary to ensure the Services are effectively carried out.

3.2 Performance Measurement and Analysis

- 3.2.1 The Contractor must continuously measure its performance in carrying out the Services.
- 3.2.2 The Contractor must provide to CRIA the performance measurement information required by the Commercial Framework and by SWTC Appendix 16.
- 3.2.3 The Contractor must analyse performance outcomes to identify:
 - (a) positive performance, and the causes;
 - (b) negative performance, and the causes; and
 - (c) trends (positive or negative).
- 3.2.4 Where negative performance or trend is identified, the Contractor must develop and implement corrective actions.
- 3.2.5 Analysis of performance and identification of corrective action should be done cooperatively with CRIA. The Contractor must also independently develop and implement corrective actions that are in the best interests of the CRIA Assets, including the CRN, keeping in mind CRIA's stewardship objectives.
- 3.2.6 Where positive performance or trend is identified, the Contractor must take steps to reinforce the positive performance.

3.3 Reporting

- 3.3.1 Formal reporting of the Contractor's performance must be provided monthly in accordance with SWTC Appendix 15.
- 3.3.2 Informal and *ad hoc* reports must be made available to CRIA as necessary to provide visibility into emerging issues, including where these may not be captured by existing performance indicators, and the effectiveness of corrective actions.

3.4 Review of Measurement and Incentive Systems

- 3.4.1 The Contractor must implement policies and procedures to continually review the effectiveness of the performance measurement and incentive systems.
- 3.4.2 The Contractor must, where appropriate, make recommendations to CRIA to modify, amend or change the performance measurement regime to:
 - (a) improve the efficiency of the measurement process; or
 - (b) implement revised performance measures which provide better alignment with the Objectives.

3.5 Whole of Life Benefit

- 3.5.1 The Contractor must undertake an annual assessment of the Whole of Life Benefit to the CRIA Assets, including the CRN, of the Contractor's Services. This assessment must be reported in the June Monthly Progress Report.
- 3.5.2 When relevant, the Contractor must identify changes to the methods and means for carrying out the Services that improve the Whole of Life Benefit.

4 Asset Management Services

4.1 Asset Management System

- 4.1.1 The Contractor must establish and maintain an Asset Management system and processes to manage, operate, maintain and upgrade the assets comprising the CRIA Assets, including the CRN, in a safe, reliable and sustainable manner in accordance with the O&M Deed and the terms and conditions of its Rail Safety Accreditation.
- 4.1.2 The Contractor must implement an integrated approach to the management of CRIA Assets in order to:
- (a) ensure rail operations are safe;
 - (b) maximise the long-term sustainability and utilisation of the CRIA Assets;
 - (c) achieve value for money with respect to the utilisation of CRIA's annual operations and maintenance budget; and
 - (d) maximise the Whole of Life Benefit of the Services to the CRIA Assets.
- 4.1.3 The Contractor's Asset Management system must provide, as a minimum, the following services:
- (a) forecasts of expected future demands on the assets comprising the CRN and other CRIA Assets;
 - (b) collection and management of data related to train operations, maintenance operations, inventory levels and asset condition to enable effective, ongoing operation of the CRN;
 - (c) collection and management of maintenance records;
 - (d) configuration management (refer also to section 5.4 and further detail in SWTC Appendix 11);
 - (e) data and trend analysis in relation to usage levels on the CRN, and other CRIA Assets, expected wear rates and future maintenance requirements;
 - (f) risk identification, treatment selection and monitoring;
 - (g) maintenance treatment selection and design;
 - (h) management of asset disposals;
 - (i) management of environmental issues;
 - (j) management of heritage issues; and
 - (k) costing and evaluation of strategies for future operation and development of the assets comprising the CRN, and other CRIA Assets.
- 4.1.4 The Contractor must ensure that its Asset Management system and processes are generally in accordance with:
- (a) NSW Government *Total Asset Management Guidelines*;
 - (b) the Asset Management Council's *Asset Management Process Model* and/or *PAS 55-1 Specification for the optimised management of physical assets* and/or *ISO/IEC 15288 System Life Cycle Processes*; and
 - (c) CRIA's *Statement of Corporate Intent* or *Statement of Business Intent*;
- 4.1.5 The Contractor must provide asset management planning advice to CRIA based on the outputs from the services described in paragraph 4.1.3 above.

- 4.1.6 The Contractor must provide, as a minimum, configuration management services for the CRIA Assets including:
- (a) establishment and maintenance of configuration management systems and processes that are compliant with *AS/NZS 3907 Quality management - Guidelines for configuration management*;
 - (b) maintenance of the Engineering Asset Register (**EAR**), and the associated functional and physical data;
 - (c) input data to enable the maintenance of the Fixed Asset Register (**FAR**) by CRIA;
 - (d) maintenance of a complete set of updated drawings for the assets comprising the CRIA Assets; and
 - (e) maintenance of all other technical data to ensure configuration of the CRN is fully documented following any Routine Maintenance (**RM**), Major Periodic Maintenance (**MPM**), or other work.
- 4.1.7 The Contractor must provide inventory maintenance services for spares and equipment required in the maintenance and repair of the assets comprising the CRIA Assets.
- 4.1.8 The Contractor must provide CRIA with real-time access to the Contractor's Asset Management system and other information relating to the CRIA Assets.

4.2 Contractor's Asset Management Implementation Plan

- 4.2.1 The Contractor must develop and maintain an Asset Management Implementation Plan, which defines the Asset Management system and processes to be used to implement the CRN Asset Management Plan and the Property Management Plan.
- 4.2.2 The Contractor may propose changes to the CRN Asset Management Plan to identify opportunities for improvements. Such opportunities generally are those technical and managerial changes that might include:
- (a) bringing forward or delaying work;
 - (b) introduction of technical innovations;
 - (c) improved management information systems; and
 - (d) improved management and operating systems.
- 4.2.3 The Contractor must review and update the Asset Management Implementation Plan on an annual basis, notifying CRIA of any changes.
- 4.2.4 The Asset Management Implementation Plan must include processes to undertake a risk based assessment of proposed changes to asset management processes and to monitor and report in the effectiveness of any changes implemented. In the Monthly Progress Report the Contractor should include information on the outcomes of Asset Management process changes and realised benefits.
- 4.2.5 The Contractor shall arrange for an independent audit of its Asset Management Implementation Plan. Audits shall be undertaken at least annually. The auditor's report shall be made available to CRIA by 31st January each year. Where such an audit identifies improvements and/or weaknesses, the Contractor must implement any corrective action required.

4.3 Asset Registers

- 4.3.1 The EAR is for engineering management, operations, maintenance and upgrade purposes, and shall be maintained by the Contractor.
- 4.3.2 The FAR is for financial and accounting purposes and shall be maintained by CRIA with input provided by the Contractor.

- 4.3.3 The EAR shall detail the physical location of the assets comprising the CRIA Assets, including the CRN, and provide traceability and historical data. The system shall comply with best practice industry standards, such as *AS/NZS 3907 Quality Management - Guidelines for Configuration Management*.
- 4.3.4 The EAR shall be audited on an annual basis.
- 4.3.5 The EAR shall be integrated with the AWP reporting system and have a simple and reliable way of identifying works on specific sections of rail track.
- 4.3.6 The EAR shall be consistent with NSW rail coding requirements and must be compatible with RIC-approved track and infrastructure codes. The Contractor shall liaise with other NSW rail stakeholders and update this coding system on a regular basis.
- 4.3.7 The EAR and the inputs provided by the Contractor to CRIA for the FAR shall contain information relevant to the type of asset being described, including, as appropriate:
 - (a) functional data;
 - (b) physical data;
 - (c) derived data;
 - (d) maintenance data;
 - (e) cost data;
 - (f) accounting data;
 - (g) asset management data;
 - (h) asset disposal;
 - (i) asset management historical data; and
 - (j) risk data.
- 4.3.8 The requirements for the FAR inputs table are defined in CRIA management protocols *FIN-PRC-013 Fixed Asset Register Procedure* and *FIN-PRC-016 Capitalisation Procedure*.

4.4 CRN Asset Management Plan

- 4.4.1 The Contractor must develop and implement a CRN Asset Management Plan for the provision of Asset Management Services for the CRN. The CRN Asset Management Plan shall comply with the requirements stated in SWTC Appendix 11.
- 4.4.2 The CRN Asset Management Plan shall describe the Scope of Work and Services to be undertaken in relation to Asset Management of the CRN.
- 4.4.3 The Contractor must review, revise, update and maintain the CRN Asset Management Plan for the operation and maintenance of the CRIA Assets, including the CRN.
- 4.4.4 The Contractor must provide the updated CRN Asset Management Plan to CRIA no later than the 30th of September each year. The updated CRN Asset Management Plan shall include:
 - (a) detailed Services and plans for the next 2 years of work; and
 - (b) projected work program for the next 15 years.
- 4.4.5 The Contractor must implement the latest version of the CRN Asset Management Plan, as agreed upon by CRIA and the Contractor.

4.5 Property Management Plan

- 4.5.1 The Contractor must develop and implement a Property Management Plan for the provision of Property Management Services. The Property Management Plan shall comply with the requirements stated in SWTC Appendix 11.
- 4.5.2 The Contractor shall advise on the most effective way of delivering the Property Management Services under the O&M Deed.
- 4.5.3 The Contractor must provide Property Management Services to protect, preserve and maintain all listed heritage assets, including indigenous heritage, in accordance with its Cultural Heritage Management Plan, the requirements for which are described in SWTC Appendix 11.
- 4.5.4 The Contractor must ensure that Property Management Services are conducted in accordance with relevant Standards and Codes.
- 4.5.5 The Contractor must regularly review property rental returns and compare them with market conditions. The Contractor must maximise rental returns consistent with market conditions and CRIA's objectives.

4.6 Property Information

- 4.6.1 The Contractor must review, revise, update and maintain the GIS and the CRIA register of property agreements, ensuring that any change to the data is updated within thirty (30) days.
- 4.6.2 Notwithstanding the current content of the GIS and the CRIA register of property agreements, the Contractor must maintain all of the following information for each of CRIA's property assets:
 - (a) a unique and meaningful identifier;
 - (b) the titleholder and form of ownership;
 - (c) heritage details for all CRIA's property assets listed on the NSW heritage list or are considered to have local significance;
 - (d) a statement of the property's location and boundaries;
 - (e) qualitative assessment of property asset condition;
 - (f) property photographs;
 - (g) information on current tenant/s or other occupiers or users of the land and/or buildings comprising the property asset;
 - (h) tenancy agreement details;
 - (i) status of lease payments, if applicable;
 - (j) other relevant land lease arrangements, if applicable;
 - (k) contaminated land and property;
 - (l) property improvements; and
 - (m) other property-related information that will assist in establishing the current extent and condition of CRIA's property asset portfolio.
- 4.6.3 The Contractor may maintain the above information through:
 - (a) development of the GIS;
 - (b) development of the CRIA register of property agreements; and/or
 - (c) the use of an additional register or other tool to ensure the capture and currency of the information specified.

5 Engineering Services

5.1 General

- 5.1.1 The Contractor must provide an Engineering Services Management Plan which describes how the Contractor shall meet the requirements detailed in this section. The Engineering Services Management Plan must address all items listed in SWTC Appendix 11.
- 5.1.2 The Contractor must provide Engineering Services as required under the O&M Deed and in accordance with CRIA and other Standards and Codes including, but not limited to, those listed in SWTC Appendix 12.
- 5.1.3 The Contractor must ensure that only appropriately experienced, competent and accredited personnel are authorised to provide the Engineering Services.
- 5.1.4 The Contractor must develop an Engineering Services Management Plan which describes the organisation structure for employees responsible for carrying out the Engineering Services. In the Engineering Services Management Plan, the Contractor must also identify the relationship between this organisation structure and the general organisation structure described in section 2.1.
- 5.1.5 The Contractor must ensure that the provision of Engineering Services meets all relevant Standards and Codes.
- 5.1.6 The Contractor must ensure that all Engineering Services undertaken are properly reviewed and audited by accredited organisations or personnel as required by relevant Standards and Codes and the O&M Deed.
- 5.1.7 Engineering Services shall include coordination and management of interfaces with other parties, as required.
- 5.1.8 The Contractor must use its best endeavours to ensure that all Engineering Services undertaken proximate to an interface are done to the satisfaction of the other party to the interface.
- 5.1.9 The Contractor must ensure all Engineering Services activities are delivered and optimised considering:
- (a) safety and risk;
 - (b) design requirements;
 - (c) operations and maintenance requirements;
 - (d) cost;
 - (e) time to deliver;
 - (f) durability;
 - (g) reliability;
 - (h) sustainability;
 - (i) environmental impacts and carbon emissions;
 - (j) Whole of Life Benefit;
 - (k) failure modes analysis;
 - (l) certification and validation requirements;
 - (m) decommissioning work;
 - (n) security;
 - (o) aesthetics; and
 - (p) any other requirements of the O&M Deed.

5.2 Provision of Services to Support Rail Infrastructure Maintenance

5.2.1 The Contractor must provide Engineering Services to support rail infrastructure maintenance as described in the AWP.

5.2.2 The Contractor shall proactively seek to continuously improve the efficiency and effectiveness of all Engineering Services required to support rail infrastructure maintenance.

5.2.3 Engineering Services to support rail infrastructure maintenance will include, as a minimum, the following:

- (a) Interface Agreement management;
- (b) investigations including geotechnical investigations;
- (c) inspections and condition surveys;
- (d) drafting of inspection and survey reports;
- (e) general surveys;
- (f) site investigations;
- (g) design, planning, estimating and programming;
- (h) obtaining relevant approvals;
- (i) development and review of rail infrastructure maintenance processes and identification of potential safety improvements;
- (j) right of way management;
- (k) organisation and scheduling of track possessions and isolations;
- (l) managing corridor inquiries and third party relationships;
- (m) managing external party work;
- (n) administering third party compliance with rules and procedures for the control of third party activities in the vicinity of the infrastructure;
- (o) accurate, timely and comprehensive reporting of key asset and operational information, particularly in relation to safety and reliability;
- (p) Incident response, investigation and reporting;
- (q) defect recording and management;
- (r) failure management;
- (s) community and other stakeholder liaison where required (refer also section 2.14);
- (t) temporary work required to support maintenance work e.g. accommodation, road works, utilities or other temporary site facilities or infrastructure;
- (u) project management of work, including possession planning and scheduling;
- (v) management of MPM and Enhancement Works on site;
- (w) environmental safeguards, monitoring, mitigation, or other management (refer also section 11);
- (x) testing and commissioning, and independent verification, where required, of completed work;
- (y) update of drawings and other technical information to maintain integrity of configuration management system (refer also section 5.4);
- (z) maintenance of signalling plans, circuit books and other relevant signalling documents;
- (aa) management of site remediation upon completion of work;
- (bb) manage equipment type approval;
- (cc) regular reporting on maintenance activities and issues; and
- (dd) incorporation of any other relevant project and business management services as detailed in section 2, where relevant.

5.2.4 Additional detail in relation to some of the above Engineering Services is provided in paragraphs 5.2.5 to 5.2.42 below.

Interface Agreement Management

- 5.2.5 The Contractor must ensure that all relevant engineering considerations are addressed in the establishment and operation of any Interface Agreement to ensure there is no gap in Standards and Codes and/or safety across any interface.

Conduct Investigations

- 5.2.6 The Contractor must conduct engineering investigations as required to clarify the scope of MPM activities and Enhancement Works, determine the cause/s of defects, and/or develop suitable repair schemes.

Inspections and Condition Surveys

- 5.2.7 The Contractor must carry out inspections and condition surveys of rail infrastructure, before or upon completion of maintenance as required, and must ensure the works are performed according to the O&M Deed requirements.
- 5.2.8 The Contractor is to report the completion of all programmed safety-critical inspections to CRIA on a monthly basis, as part of the Monthly Progress Report.
- 5.2.9 The Contractor must ensure any relevant safety critical issues found during the development of any inspection and condition survey are addressed in a timely manner and any recommendations are implemented in a timely manner.

Welded Track Stability Analysis

- 5.2.10 The Contractor must perform a Welded Track Stability Analysis (**WTSA**) on a yearly basis and provide a written report to CRIA not later than the 14th December of any year.
- 5.2.11 The Contractor must implement processes and address any issue/s found during the development of the WTSA in a timely manner.

Drafting of Inspection and Survey Reports

- 5.2.12 The Contractor must draft reports for completed inspections and surveys as required.

General Surveys

- 5.2.13 The Contractor must undertake:
- (a) all site investigations, and property and land surveys; and
 - (b) ground and infrastructure condition surveys,
- as required to comply with the SWTC.
- 5.2.14 The Contractor must promptly provide CRIA with copies of all site investigation reports, property and land surveys, and ground and infrastructure condition surveys, including progressive copies of such documents, as each is developed over a period of time.

Site Investigations

- 5.2.15 Geotechnical site investigation work must be undertaken in accordance with *AS1726 Geotechnical Site Investigation* and all other relevant standards.
- 5.2.16 The Contractor must maintain records of all tests, investigations, calculations and other related geotechnical reports.

- 5.2.17 The Contractor shall maintain a list of critical geotechnical sites, establish a monitoring program and report outcomes, including suggested actions, for each of these sites on a regular basis.
- 5.2.18 The Contractor must update the list of critical geotechnical sites at least on an annual basis, and include further sites if required as an outcome of any risk analysis or engineering investigations.

Survey Requirements

- 5.2.19 The Contractor must verify survey control for all activities, maintain up-to-date records and ensure that the Engineering Asset Register is up to date.
- 5.2.20 The Contractor’s attention is directed to the possible existence of established survey marks within or in the vicinity of the work sites.
- 5.2.21 All survey levels must refer to Australian Height Datum (**AHD**). All survey coordinates must refer to a plane rectangular grid with the origin based on Map Grid of Australia (**MGA**).
- 5.2.22 The Contractor must ensure that qualified surveyors who are eligible for membership of the Institution of Surveyors Australia, or the Institution of Engineering and Mining Surveyors Australia, take responsibility for all surveying control of the works under the O&M Deed.

Manage and/or Undertake Design

- 5.2.23 The Contractor must manage and/or undertake design as required to support MPM activities or Enhancement Works.
- 5.2.24 The Contractor must describe how design is to be managed and/or undertaken in the appropriate section of the Engineering Services Management Plan, the requirements for which are detailed in SWTC Appendix 11.

Manage and/or Undertake Asset Type Approval

- 5.2.25 The Contractor must manage and/or undertake design, testing or any other activities as required to manage asset type approvals for new equipment or systems to be introduced in the CRN and ensure they satisfy all relevant SWTC, regulatory, technical, safety and legal requirements.
- 5.2.26 The Contractor must ensure the process is coordinated with all other state and federal rail asset management providers.
- 5.2.27 The asset type approval register documents shall be available in the IMS system online and accessible to CRIA and other stakeholders.
- 5.2.28 The Contractor must ensure that asset designs meet the design life criteria defined in SWTC Appendix 10.

Development and Review of Rail Infrastructure Maintenance Processes and Identification of Potential Safety Improvements

- 5.2.29 The Contractor must review all maintenance activities, prepare process and safety improvements and implement them if they are cost-effective. The Asset Management Implementation Plan processes should be used for this purpose. The Contractor is to propose to CRIA a risk-based plan for the undertaking of a review of all maintenance activities.



- 5.2.30 The Contractor must consider maintenance process and safety improvements proposed by CRIA and prepare, as a minimum, technical, safety, operations, implementation, and cost-benefit reports for CRIA's consideration.
- 5.2.31 The Contractor must produce technical bulletins or similar as required to ensure all safety and process improvements issues are implemented effectively and consistently. The technical bulletins shall be distributed to all relevant stakeholders and subcontractors.
- 5.2.32 The Contractor must facilitate meetings with CRIA on a quarterly basis to review proposed safety and process improvements and to ensure that maintenance activities are being delivered according to technological, engineering and safety best practices, as well as incorporating innovations developed during the Term of the O&M Deed.

Project Management of Work

- 5.2.33 The Contractor must program all rail infrastructure maintenance activities and supporting Engineering Services to ensure that work is effectively and efficiently planned, scheduled and resourced.
- 5.2.34 The Contractor must provide Engineering Services to ensure rail infrastructure maintenance is effectively and efficiently delivered and in accordance with all relevant Standards and Codes.

Management of MPM and Enhancement Works

- 5.2.35 The Contractor must manage MPM and Enhancement Works.
- 5.2.36 Enhancement Works must only proceed beyond the concept or feasibility stage with written agreement from all stakeholders.
- 5.2.37 The Contractor must manage all approvals, planning, programming, design, construction, certification, commissioning and any other activities required to deliver MPM activities and Enhancement Works. This shall include the management of all relevant interfaces, and liaison and communications with stakeholders.
- 5.2.38 The Contractor must ensure all MPM activities and Enhancement Works are delivered in accordance with the O&M Deed.
- 5.2.39 The Contractor must manage all temporary work required to deliver the MPM activities and Enhancement Works.

Testing, Commissioning, and Independent Verification of Completed Work

- 5.2.40 The Contractor must manage all systems tests, including certification, validation, integration, and any other activity that may be required.
- 5.2.41 The Contractor must record the results of all test activities.
- 5.2.42 The Contractor must manage the commissioning of any infrastructure upon completion of MPM or Enhancement Works as required. This shall include liaison and coordination with other operators, authorities, regulators and any other relevant stakeholders as required.
- 5.2.43 The Contractor must ensure only suitably accredited and qualified organisations and individuals are engaged for verification and validation activities.
- 5.2.44 The Contractor must ensure all relevant certificates are maintained in the Asset Management system and regularly updated as per regulatory, CRIA and other relevant authority requirements.



5.2.45 The Contractor must ensure that the Quality Assurance Plan describes all verification and validation processes required prior to commissioning and system operation. The Contractor must ensure that these processes have been implemented for all RM, MPM and Enhancement Works and signed off prior to making the system fully operational.

5.2.46 The Contractor must provide Engineering Services to ensure that all Rail Safety Accreditation verification and validation activities are completed and audited as required.

5.3 Decommissioning of Surplus and/or Obsolete Assets and Equipment

5.3.1 The Contractor must provide Engineering Services to support, plan and execute decommissioning work and/or the disposal of assets.

5.3.2 The Contractor must ensure an efficient and cost-effective recycling, repair and disposal strategy is implemented in order to maximise the Whole of Life Benefit to CRIA.

5.3.3 The Contractor must ensure competitive tenders and rates are obtained for disposable material that may be of commercial value to CRIA.

5.3.4 The Contractor must provide detailed asset disposal management information including revenue data in the Monthly Progress Report.

5.3.5 The Contractor shall provide information to CRIA prior to asset disposal including physical location of the asset, the reason for the proposed disposal, and all other relevant asset management information that may be required by CRIA.

5.3.6 The Contractor shall record information about assets disposed including location, quantities and other relevant information that may be required by CRIA.

5.3.7 The Contractor must ensure that all regulatory approvals required for disposal or decommissioning work are obtained, and that all relevant OH&S, environmental and any other relevant local authority requirements in relation to disposal or decommissioning work are met.

5.4 Configuration Management

5.4.1 The Contractor must provide all necessary Engineering Services to maintain configuration identification and control of all CRIA Assets, including the CRN.

5.4.2 The Contractor must describe how configuration management shall be undertaken in the relevant section of the Engineering Services Management Plan as detailed in SWTC Appendix 11.

5.5 Maintenance of Standards and Codes

5.5.1 The Contractor must develop, maintain and update the full set of CRIA Standards and Codes so far as is required to ensure all legislative, safety, design, technology, operations, maintenance, sustainability and other relevant requirements are satisfied.

5.5.2 The Contractor must review and update all Standards and Codes after the Commencement Date to ensure they comply with the requirements of paragraph 5.5.1.

5.5.3 The Contractor must ensure other rail asset owners and operators are involved in the review process to ensure there is a harmonised and rational use of materials, processes and policies.

- 5.5.4 The Contractor must also maintain other relevant Standards and Codes applicable to the Scope of Work so far as is required to ensure all legislative, safety, design, technology, operations, maintenance, sustainability and other relevant requirements are satisfied.
- 5.5.5 The Contractor must maintain all relevant Standards and Codes in its document management system to ensure they are accessible to all relevant stakeholders, including subcontractors.

6 Integrated Logistics Support

6.1 Integrated Logistics Support Plan

6.1.1 The Contractor must develop and implement an Integrated Logistics Support (**ILS**) Plan to ensure the Scope of Work can be achieved for the Term of the O&M Deed.

6.1.2 The ILS Plan shall describe the ILS systems, processes and activities required to ensure that the Scope of Work is adequately supported and that all contractual support requirements are met throughout the Term of the O&M Deed. The ILS systems, processes and activities shall include, but not be limited to:

- (a) spare parts and materials provisioning and procurement;
- (b) warehousing, storage and distribution of spares, materials and repairable items;
- (c) interfaces with CRN configuration management system;
- (d) management of ILS documentation and technical data;
- (e) management of repairable items;
- (f) management of specialised tools and test equipment;
- (g) provision and management of plant and equipment required to carry out operations and maintenance;
- (h) provision of ongoing training to staff and subcontractors;
- (i) processes for review of ILS effectiveness; and
- (j) management of the disposal of assets, non-repairable items and surplus material.

6.1.3 For each of these areas, the ILS Plan shall define:

- (a) the systems and processes to support each area;
- (b) the activities to be undertaken;
- (c) any special methodologies used;
- (d) relevant compliance obligations; and
- (e) responsibilities and organisation.

6.2 ILS Systems, Processes and Activities

6.2.1 The Contractor shall provide, operate and maintain the ILS systems and processes in accordance with the ILS Plan.

6.2.2 The Contractor must manage and execute the activities described in the ILS Plan so as to maximise the Whole of Life Benefit to CRIA. The ILS Plan shall include provisions to demonstrate that potential or actual costs are not shifted to a time frame beyond the term of the O&M Deed, e.g. through the deferral of purchase of parts or materials.

6.2.3 If the Contractor sets up its ILS system or systems using a software package, the Contractor must provide all necessary programs, licences and training, upon request, to enable CRIA to efficiently access the ILS information.

6.2.4 The Contractor must make the ILS Plan and all associated plans, processes, procedures, instructions and data supporting the ILS system available to CRIA upon request.

6.3 Spare Parts and Materials Provisioning and Procurement

- 6.3.1 The Contractor must procure, store, and maintain adequate stocks of the spare parts and materials required to maintain the CRIA Assets, including the CRN, in accordance with the Standards and Codes as specified in SWTC Appendix 12.
- 6.3.2 The Contractor must consider and propose to CRIA a recommended list of minimum spare parts to be procured as part of the Annual Works Plan. Development of the recommended spares list should include consideration of:
- (a) planned and unplanned maintenance;
 - (b) estimated delivery times;
 - (c) asset failure history;
 - (d) reliability and track usage factors including track service conditions for the year;
 - (e) cost-benefit analysis;
 - (f) time to repair;
 - (g) current inventory including physical location; and
 - (h) other relevant asset management information.
- 6.3.3 The ILS system shall record all required procurement information including, as a minimum:
- (a) part numbers;
 - (b) modification states;
 - (c) estimated delivery times;
 - (d) details of suppliers (preferably more than one supplier for each part);
 - (e) lot sizes (if applicable); and
 - (f) discount structure.
- 6.3.4 Procurement planning shall take account of lead times (particularly long lead items) to ensure that stock levels do not fall below the minimum levels required to ensure the safe, ongoing operation of the CRIA Assets to the required performance levels as specified in the relevant performance measures.

6.4 Warehousing, Storage and Distribution of Spares, Materials and Repairable Items

- 6.4.1 Spares, materials and repairable items shall be warehoused and/or otherwise stored in conditions that prevent their deterioration or spoilage.
- 6.4.2 Spares, materials and repairable items shall be stored either centrally or distributed to locations specified in the ILS Plan to optimise their availability for use or consumption.

6.5 Interfaces with CRN Configuration Management System

- 6.5.1 The Contractor must maintain interfaces with the CRN configuration management system and Asset Management Implementation Plan to ensure the currency and integrity of information describing the configuration of the assets comprising the CRN.

6.6 Management of ILS Documentation and Technical Data

6.6.1 ILS documentation and technical data shall meet the requirements of SWTC Appendix 9.

Operation and Maintenance Manuals

6.6.2 The Contractor must maintain operation and maintenance manuals to enable the safe, effective and efficient operation and maintenance of all CRIA Assets, including the CRN. Where original manuals have not been provided and a need is identified, the Contractor must draft or otherwise provide the required operation and maintenance manuals.

As-Built Drawings

6.6.3 Where as-built drawings for infrastructure elements comprising the CRIA Assets are commonly used in hard copy, electronic files of these drawings must also be maintained by the Contractor in accordance with relevant CRIA and other Standards and Codes as described in SWTC Appendix 12.

Use of Other Media and Devices

6.6.4 Operation and maintenance manuals, other ILS documentation, maintenance records, and technical data may be stored and used in other media and devices such as electronic books, hand-held devices and rugged computers. In such cases, the Contractor must make provision for the storage, backup and maintenance of such information.

Management of Repairable Items

6.6.5 The Contractor must establish processes for the effective management of repairable items. Key processes shall include, but not be limited to:

- (a) the assessment of repairable items, to determine the feasibility and cost-effectiveness of repair;
- (b) packaging and labelling prior to dispatch;
- (c) identification of authorised repairers;
- (d) dispatch and progress tracking; and
- (e) receipt, inspection and storage of the repaired item.

6.7 Management of Specialised Tools, Test and Support Equipment

6.7.1 The Contractor must provide and maintain all specialised tools and test and support equipment required to carry out the Scope of Work.

6.7.2 The Contractor must maintain an equipment calibration register for all specialised tools and test and support equipment requiring calibration, and must provide CRIA with access to the equipment calibration register upon request.

6.7.3 The Contractor must ensure that specialised tools and test and support equipment requiring calibration are calibrated by an organisation accredited by the National Association of Testing Authorities (**NATA**) for the class of testing appropriate to the equipment, and in accordance with the equipment's documentation.

6.7.4 The Contractor is responsible for the maintenance, repair, calibration, modification, upgrade and replacement of Contractor-owned specialised tools, test and support equipment.

6.7.5 The Contractor must test all equipment regularly, ensure compliance with all relevant safety standards, and ensure all equipment is adequately tagged.

6.8 Plant and Equipment

6.8.1 The Contractor must provide, operate and maintain all plant and equipment required to undertake the Scope of Work.

6.9 Workforce Development

6.9.1 During the transition period, the Contractor must ensure that sufficient competency and capacity is available to conduct activities relating to the Scope of Work. The Contractor must ensure that all necessary training, including training in relevant information systems and any other systems or processes nominated in the Contractor's Transition Management Plan, is completed.

6.9.2 Following the transition period, the Contractor must ensure, on an ongoing basis, that all employees and subcontractors have the competency and capacity required to operate and maintain the CRIA Assets throughout the Term of the O&M Deed.

6.9.3 The Contractor must assess the competency and capacity of all employees and subcontractors upon contract commencement and conduct periodic reviews thereafter.

6.9.4 Where gaps in competency or other needs are identified, the Contractor must provide training to employees and/or subcontractors to address these needs.

6.10 Review of ILS Effectiveness

6.10.1 The Contractor must conduct an annual review of the effectiveness of its ILS systems and processes.

6.10.2 The Contractor must facilitate a meeting with CRIA every year to present the results of its ILS reviews.

6.10.3 These meetings shall:

- (a) discuss the Contractor's performance in relation to the requirements of the O&M Deed;
- (b) discuss the Contractor's performance in relation to the ILS performance indicators;
- (c) identify and determine actions arising from the Contractor's performance in the previous period; and
- (d) identify and determine actions for longer-term ILS and related logistics planning.

6.11 Disposal of Assets, Non-Repairable Items and Surplus Material

6.11.1 The Contractor must implement processes for the disposal of assets, non-repairable items and surplus material such that:

- (a) the residual value of any item or material is realised;
- (b) environmental, heritage, and stakeholder requirements are addressed; and
- (c) compliance obligations are met.

7 Network Operations

7.1 Rail Network Management Plan

- 7.1.1 The Contractor must develop and implement a Rail Network Management Plan which describes how the Contractor shall meet the requirements specified in this section 7.
- 7.1.2 The Contractor must manage all CRN network interfaces and liaise with all CRN network stakeholders.
- 7.1.3 A high-level view of rail network management, relevant interfaces and processes is provided in Figure 7-1 below.

7.2 Network Access

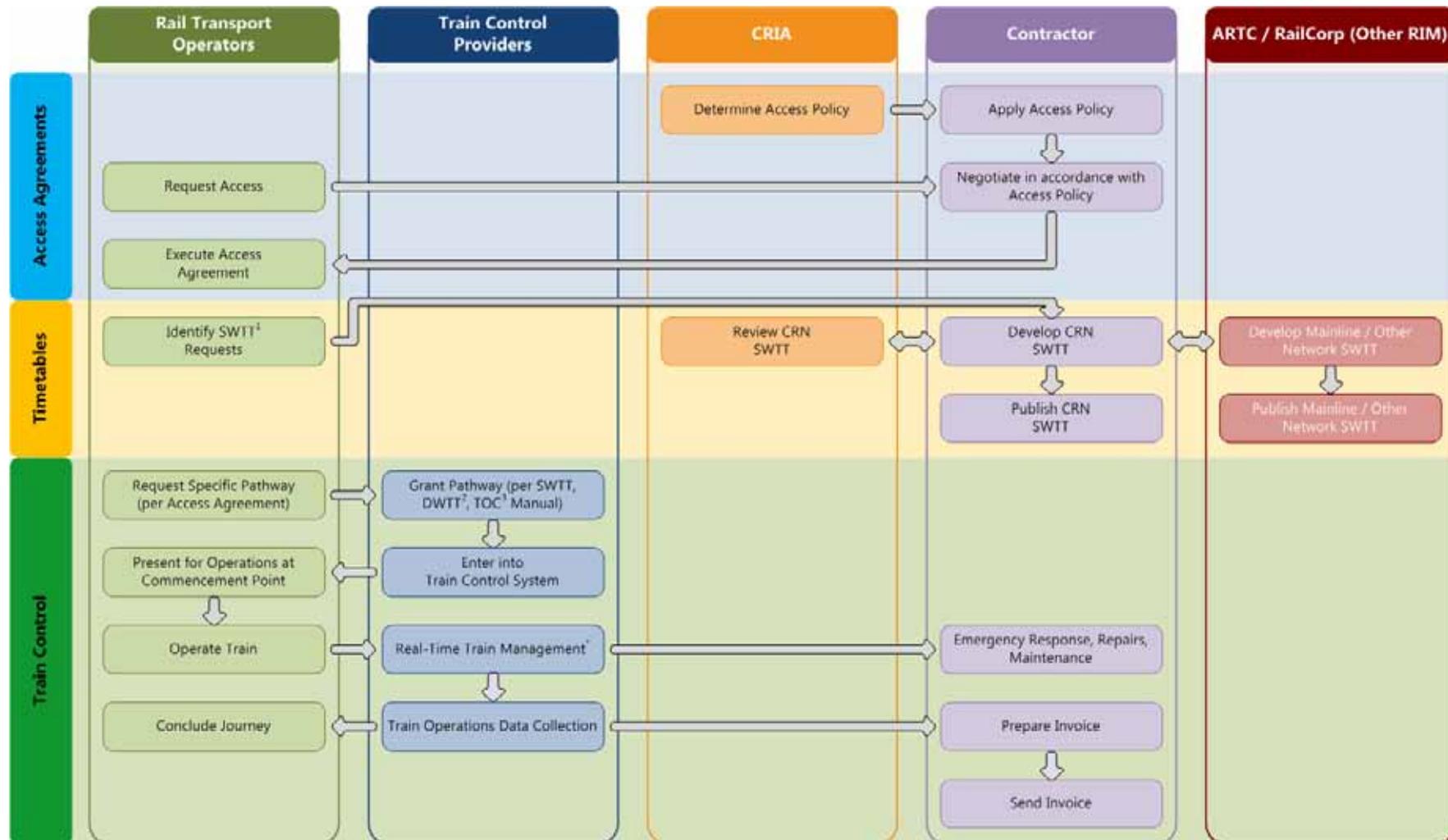
Negotiation of Access Agreements with Rail Transport Operators

- 7.2.1 The Contractor must negotiate and manage suitable Access Agreements with RTOs for the CRN on behalf of CRIA to the extent permitted and required by the Agency Principles and in compliance with the Act and the NSW Rail Access Undertaking.
- 7.2.2 RTOs may include, but not be limited to:
 - (a) passenger service providers;
 - (b) freight operators;
 - (c) maintenance service providers; and
 - (d) heritage operators.

Administration

- 7.2.3 The Contractor must manage access to the CRN by RTOs, including, but not limited to:
 - (a) compliance with Rail Safety Accreditation and other safety requirements;
 - (b) monitoring the compliance of operators with other terms and conditions of Access Agreements; and
 - (c) the seamless integration of CRN access with access to adjacent networks.
- 7.2.4 Note that this access is not to be confused with subcontractors' and other third parties' access to the rail corridor or other sites to conduct maintenance or related work, as described in section 10.9.

Figure 7-1: Rail Network Management and Interfaces



¹ Includes Communications, Alterations, and Emergency Reporting

² SWTT: Standard Working Timetable

³ DWTT: Daily Working Timetable

⁴ TOC: Train Operating Condition

7.3 Billing and Revenue Reporting

Billing

- 7.3.1 The Contractor must undertake and manage the billing of RTOs for access to, and use of, the CRN.
- 7.3.2 The Contractor must maintain a network access billing system for this purpose. The billing system shall, as a minimum, include the following features:
- (a) a table of applicable rates based on measurable train parameters agreed to by CRIA and the RTOs;
 - (b) a system for assessing a train's conformance with access requirements;
 - (c) a system for recording the train path charged for on each occasion;
 - (d) a system for documenting billing and certification of payments;
 - (e) a system for debtor reporting and management; and
 - (f) a facility for measuring the payment performance of RTOs.

Revenue Reporting

- 7.3.3 The Contractor must provide monthly reports of access revenue to CRIA as part of the Monthly Progress Report.
- 7.3.4 The Contractor shall provide weekly reports of revenue payments to CRIA.
- 7.3.5 Monthly reports shall include debtor analysis, details of late payments and any other issues of significance in relation to payments by RTOs for access to, and use of, the CRN.
- 7.3.6 The Contractor must ensure, and must report to CRIA, that there are no debtors outstanding for more than 90 days for which collection action has not been initiated.
- 7.3.7 Monthly reports shall also include details of activity undertaken to ensure that RTOs provided correct details of their access requirements (e.g. tonnage, distance travelled) and that they were charged accordingly.

7.4 Network Management and Train Control

Network Planning

- 7.4.1 The Contractor must plan access to the CRN, including, but not limited to:
- (a) planning of train paths for:
 - (i) scheduled services as per the Standard Working Timetable (**SWTT**);
 - (ii) flexible train paths; or
 - (iii) ad hoc access when required;
 - (b) scheduling of possessions; and
 - (c) granting Track Occupancy Authority (**TOA**) as required.
- 7.4.2 Proposed SWTT changes must be forwarded to CRIA for review and comment.

Network Management

- 7.4.3 The Contractor must manage network operations to ensure that they are conducted in accordance with train path planning as described in paragraph 7.4.1 above.

- 7.4.4 Network management activities include:
- (a) maintenance of network rules and procedures, including maintenance of the Train Operating Conditions Manual and supporting documentation;
 - (b) management of train paths according to an agreed set of decision factors, through which conflicts are to be resolved;
 - (c) authorisation and notification to RTOs, and reporting to CRIA of temporary deviations from the SWTT or daily timetables;
 - (d) seamless integration of CRN access with adjacent networks;
 - (e) development and maintenance of Interface Agreements (refer section 10.8); and
 - (f) other items identified below.

Network Rules and Procedures

- 7.4.5 The Contractor must manage the CRN in accordance with the network rules and procedures current at the time of operation, in accordance with the Act.
- 7.4.6 The Contractor, in consultation with RTOs and managers of adjacent networks, must engage in the introduction of the national safeworking rules that are currently being developed by the Rail Industry Safety Standards Board (**RISSB**) Australian National Rules and Procedures (**ANRP**) Project.

Management of Operator Performance

- 7.4.7 The Contractor must manage the compliance of RTOs with the terms and conditions of Access Agreements and provide reports to CRIA. Measures of operator performance shall include, but not be limited to:
- (a) on-time running in accordance with the SWTT and published daily timetables;
 - (b) serviceability of trains, in particular where defects have the potential to inflict undue wear or damage on elements of the CRN;
 - (c) reliability of information provided by RTOs in relation to their access requirements (e.g. train weights etc.);
 - (d) compliance with CRIA Standards and Codes, safe working requirements, and Protocols; and
 - (e) other administrative requirements (e.g. Rail Safety Accreditation of RTOs; confirmation that they have an up-to-date and relevant Safety Management Plan etc).
- 7.4.8 The Contractor shall report to CRIA, in the Monthly Progress Report, any instances of RTOs entering and operating on the CRN without an Access Agreement.

Communication and Consultation

- 7.4.9 The Contractor must communicate and consult with RTOs in relation to any planned service interruptions or changes (e.g. possessions, speed restrictions or other maintenance activities) to ensure awareness and, if possible, agreement with planned activities.
- 7.4.10 The Contractor must also consult with RTOs in relation to any risk assessment that may be required in relation to RM, MPM, Enhancement Works or other operational changes under consideration.
- 7.4.11 The Contractor must advise CRIA of any delays which have occurred on the CRN within 8 hours of the delay/s occurring. Details of reporting requirements are provided in SWTC Appendix 15.

Management of Train Control

- 7.4.12 The Contractor must manage and administer all aspects of the Train Control Systems during the Term of the O&M Deed and ensure that the Train Control Systems are fit for purpose.

- 7.4.13 The Contractor must effectively manage Train Control interfaces with CRIA, RTOs and operators of adjacent networks.
- 7.4.14 The Contractor must comply with CRIA's network rules and procedures and CRIA's train operating conditions relating to above rail operations.

Implementation of Train Control

- 7.4.15 The Contractor must ensure that the Train Control services provided meet the safety, performance and other operational needs of the NSW Government, CRIA, and RTOs using the CRN, throughout the Term of the O&M Deed.
- 7.4.16 The Contractor must ensure that the Train Control Systems facilitate the movement of passenger and freight services in accordance with agreed and published timetables.

Management of Signalling, Communications and Electrical Safety and Performance

- 7.4.17 The Contractor must manage and analyse signalling, communications and electrical safety and performance through use of the defect and failure management system and processes described in SWTC Appendix 10.

Management of Incidents and Safeworking Breaches

- 7.4.18 The Contractor must establish, and maintain at all times, the capability to respond appropriately to Incidents and emergencies. The Contractor's Incident management capability must, as a minimum, include:
- (a) short-term response to Incidents;
 - (b) liaison with emergency services and other relevant local authorities;
 - (c) communications with RTOs and other affected parties to ensure impacts of Incidents are contained;
 - (d) initiation of corrective maintenance, repairs, replacements or operational measures to remedy causes of Incidents;
 - (e) other short-term actions required to maintain network safety and service reliability;
 - (f) Incident investigation, reporting and follow-up; and
 - (g) initiation and reporting of corrective actions.
- 7.4.19 The Contractor must also manage the commercial aspects of Incidents that relate to access and network management. In particular, the organisation of independent inspections and reporting by a suitably experienced Incident investigator to determine liability (e.g. in the case of derailments, whether the Incident was caused by the infrastructure, the rolling stock, or a combination of both).
- 7.4.20 In relation to safeworking breaches, key tasks shall include, but not be limited to:
- (a) investigation of breaches;
 - (b) reporting of breaches; and
 - (c) initiation of preventive and corrective actions.

8 Rail Infrastructure Maintenance

8.1 General

- 8.1.1 The Contractor shall carry out all rail infrastructure maintenance to ensure the infrastructure, land and systems meet the performance requirements in a safe, reliable and efficient manner.
- 8.1.2 Rail infrastructure maintenance work includes:
- (a) RM;
 - (b) MPM;
 - (c) emergency works;
 - (d) Enhancement Works; and
 - (e) maintenance of the CRIA Non-operational Network.
- 8.1.3 All infrastructure maintenance and services shall:
- (a) comply with the relevant CRIA and other Standards and Codes, including but not limited to those identified in SWTC Appendix 12; and
 - (b) be completed without disruption to planned services, except by prior agreement or where an emergency situation makes this impossible.
- 8.1.4 The Contractor must provide all required construction and maintenance labour, plant and equipment, tools, test equipment or other items necessary to undertake the work.
- 8.1.5 The Contractor must, as a minimum, conduct quarterly reviews on the effectiveness of its maintenance activities. These reviews shall include, but not be limited to:
- (a) consideration of the appropriateness of CRIA and other Standards and Codes under which maintenance is conducted, and the development of proposals for improvements;
 - (b) risk identification, treatment selection and monitoring including where necessary, processes that identify the changing risk profiles associated with changes to:
 - (i) maintenance budgets (if any);
 - (ii) any maintenance Backlog;
 - (c) preparation of a written report detailing activities undertaken, outcomes achieved and any issues that have arisen; and
 - (d) a presentation to CRIA of key findings from the review.
- 8.1.6 The findings of the quarterly reviews must be reported in the relevant Monthly Progress Report.

8.2 Routine Maintenance (RM)

- 8.2.1 RM refers to the day-to-day activities needed to ensure that the railway is fit for purpose. The Contractor must carry out all required RM for rail infrastructure on the CRN, including but not limited to: track, structures, electrical systems, signals and communications. This shall include CRIA-owned public road overbridges on the Leased Network, which are also considered part of the CRN.
- 8.2.2 RM activities shall include, but not be limited to:
- (a) undertaking scheduled inspections, detailed surveillance, condition monitoring, servicing, testing and certification of infrastructure and operating systems;
 - (b) defect identification and undertaking of corrective maintenance, repairs or replacements to remedy defects and causes of Incidents where infrastructure condition is identified as a cause of the Incident;

- (c) short-term response to defects or Incidents;
- (d) emergency response;
- (e) ultrasonic inspections;
- (f) corridor maintenance;
- (g) fence maintenance;
- (h) vermin and pest control;
- (i) WTSA control and risk mitigation;
- (j) level crossing inspections and monitoring; and
- (k) all minor works required to maintain safety and service reliability.

8.2.3 The level of RM activity is made up of a base level of inspection work and corrective work, which is a function of the existing asset condition and the level of MPM work, asset renewal works and above rail activity on the line. The scope of RM work, activity rates, and frequencies is defined in the relevant Standards and Codes.

8.2.4 The Contractor must ensure that sufficient capacity and capability is available for responding appropriately to Incidents and emergencies.

8.3 Major Periodic Maintenance (MPM)

8.3.1 The Contractor must carry out all required MPM for rail infrastructure on the CRN, including, but not limited to: track, structures, signals and communications. This shall include CRIA-owned public road overbridges on the Leased Network which are also a part of the CRN.

8.3.2 Key MPM activities shall include, but not be limited to, the following activities as described in the CRN AMP included at SWTC Appendix 2:

- (a) supply and installation of steel and timber sleepers;
- (b) supply and installation of concrete sleepers;
- (c) re-surfacing associated with resleepering;
- (d) ballasting associated with resleepering;
- (e) renewal of underbridges;
- (f) repair of underbridges;
- (g) refurbishment of overbridges;
- (h) renewal of overbridges;
- (i) replacement of rail joints with Continuous Welded Rail (**CWR**);
- (j) welded track adjustments;
- (k) replacement of rail;
- (l) renewal of turnout bearers;
- (m) renewal of bridge transoms;
- (n) re-surfacing - maintenance;
- (o) re-surfacing of turnouts;
- (p) renewal of turnouts;
- (q) replacement of turnout components;
- (r) maintenance of turnouts;
- (s) upgrades to level crossings (including civil and signalling);
- (t) maintenance ballasting;
- (u) track reconditioning - sledding - ballasting cleaning;
- (v) rail grinding;
- (w) dipped weld corrections;
- (x) renewal of fencing;

- (y) vegetation control;
- (z) vermin and pest control;
- (aa) maintenance of drainage;
- (bb) maintenance of survey points;
- (cc) maintenance of cuttings and embankments;
- (dd) maintenance of signalling equipment;
- (ee) maintenance of tunnels, platforms, retaining walls and miscellaneous structures; and
- (ff) renewal of signalling.

8.3.3 The Contractor must ensure that all completed MPM activities comply with CRIA and other Standards and Codes.

8.3.4 The initial quantities of MPM are described in the CRN Asset Management Plan. The Contractor must update the CRN Asset Management Plan in accordance with section 2.6 and SWTC Appendices 11 and 13.

8.4 Emergency Works

Response to Incidents

8.4.1 The Contractor must respond to all Incidents.

8.4.2 The Contractor must provide 24 hour response capability to respond to Incidents.

8.4.3 The Contractor must use its best endeavours to provide an immediate first response to any Incident in order to ensure that, in the first instance:

- (a) the site of the incident is made safe; and
- (b) there are no network-wide issues requiring immediate action.

8.4.4 Where immediate action is required to prevent a further Incident or to stop the deterioration of an existing situation, the Contractor must initiate the required action in conjunction with local authorities, emergency services, or other groups as required.

8.4.5 Following the immediate response, the Contractor must take all necessary actions to ensure the preservation of evidence at the Incident site.

8.4.6 The Contractor must then carry out and/or support investigation and follow-up action in accordance with:

- (a) the Contractor's SMS requirements for the management of notifiable occurrences;
- (b) CRIA Standard *SAF STD 008 Accident Reporting & Investigation*; and
- (c) the requirements of the rail safety and OH&S legislation.

8.4.7 In addition to legislative requirements for the reporting of Incidents, the Contractor must notify CRIA's Representative within 4 hours of any Major Incident on the CRN. The Contractor shall then follow up with a detailed, written report to CRIA of the Incident within 48 hours of the Incident with the requirements as described in SWTC Appendix 15.

Repairs and Replacement

8.4.8 The Contractor must complete all works which could not be completed during the routine maintenance works and are not considered emergency works during planned repair and replacement works.

Reporting of Unplanned Disruptions

- 8.4.9 The Contractor must advise CRIA of any unplanned disruptions which have occurred or unplanned works which have been undertaken on the CRN within 8 hours of the unplanned disruptions or works occurring. Details of reporting requirements are provided in SWTC Appendix 15.

8.5 Enhancement Works

- 8.5.1 The Contractor must undertake Enhancement Works in accordance with the O&M Deed. Enhancement Works may include upgrades to existing assets and/or the development of new assets and management systems.
- 8.5.2 The scope of Enhancement Works may include, when directed by CRIA, initial investigations including, but not limited to:
- (a) feasibility studies;
 - (b) development of business cases;
 - (c) value for money analysis;
 - (d) detailed scope and price development; and
 - (e) value engineering studies.
- 8.5.3 The Contractor or CRIA may propose Enhancement Works.

8.6 Maintenance of the CRIA Non-operational Network

- 8.6.1 The Contractor must maintain the rail corridors comprising the CRIA Non-operational Network to ensure that the local environment is preserved and that public safety is maintained. Maintenance of the CRIA Non-operational Network shall include, but not be limited to:
- (a) noxious weed and animal control;
 - (b) other vegetation management where required;
 - (c) maintenance of fencing;
 - (d) safety-related inspections and works in relation to structures;
 - (e) other works required to ensure that the CRIA Non-operational Network does not create any undue or unfavourable local impacts; and
 - (f) any other work required to rectify a safety hazard.

8.7 Asset Condition Report

- 8.7.1 The Contractor must provide to CRIA an annual asset condition report as defined in SWTC Appendix 13 and SWTC Appendix 15.

9 Property Management Services

9.1 General Requirements

- 9.1.1 CRIA holds a large portfolio of land, buildings and other improvements to the land which together comprise the CRIA property assets. SWTC Appendix 4 contains a list of property assets and SWTC Appendix 6 contains a list of miscellaneous assets.
- 9.1.2 The Contractor must prepare an annual property services program, which will be included in the Annual Works Plan, and include as a minimum:
- (a) the properties for which maintenance or other work is planned;
 - (b) the location of each property and description of any improvements;
 - (c) details of the work proposed;
 - (d) a Whole of Life Benefit analysis for each proposed work;
 - (e) planned expenditure;
 - (f) contamination reports and environmental management;
 - (g) heritage works and management; and
 - (h) a list of proposed property sales and acquisitions as required in paragraph 9.5.3 below.
- 9.1.3 The Contractor must manage property maintenance works in accordance with the relevant Protocols.
- 9.1.4 The Contractor must provide CRIA with monthly progress updates and accrued costs to date in the property section of the Monthly Progress Report.
- 9.1.5 The Contractor must adequately and efficiently supervise and audit property maintenance works.
- 9.1.6 The Contractor must report any non-conformances to CRIA and implement corrective actions.

9.2 Management of Agreements, Tenancies and Other Property-Related Business

- 9.2.1 The Contractor must actively manage agreements, tenancies and other property-related business to ensure that investment returns for CRIA's property portfolio are maximised, considering CRIA's corporate objectives.
- 9.2.2 The Contractor must benchmark lease and license agreements against equivalent properties in the applicable local area to ensure that satisfactory market rates are being achieved. The Contractor must provide CRIA with reports on performance against the benchmarks.
- 9.2.3 The Contractor must manage agreements, leases and licences in accordance with the relevant Protocols.
- 9.2.4 The Contractor must, as a minimum:
- (a) manage tenancy agreements including renewals in a timely manner;
 - (b) guarantee bonds;
 - (c) administer land lease agreements;
 - (d) provide property maintenance services;
 - (e) manage tenancy and land lease payments;
 - (f) manage land lease insurances;
 - (g) manage third party access and usage; and

(h) manage tenancy and land disaster recovery works in response to bushfires, floods and other natural disasters.

9.2.5 The Contractor must negotiate tenancies and enter into tenancies on behalf of CRIA to the extent permitted and required by the Agency Principles.

9.2.6 The Contractor must inform CRIA of any breaches to tenancy agreements.

9.2.7 The Contractor may terminate any tenancy agreements if, and only if, CRIA directs them in writing to do so.

9.3 Management of Maintenance of the CRIA Property Portfolio

9.3.1 The Contractor must maintain a database based on the property information identified in section 4.6.2, which details the maintenance status of each asset comprising the CRIA property portfolio. The database shall indicate what maintenance is required for each asset and when, and is to be used to facilitate the planning and management of the property maintenance program.

9.4 Maintenance of Property-Related Standards and Codes

9.4.1 The Contractor must update all relevant Standards and Codes relating to property management and maintenance activities as required to ensure compliance with relevant legislative requirements and to ensure best practice is employed in property management and maintenance activities.

9.4.2 The Contractor must ensure that the latest versions of all relevant Standards and Codes are distributed to all affected tenants and subcontractors in a timely manner.

9.5 Management of Property Sales and Acquisitions

9.5.1 The Contractor must manage property sales and acquisitions in accordance with the relevant Protocols.

9.5.2 The Contractor must prepare a list of proposed property sales and acquisitions based on CRIA's requirements. The list shall include the reasons for each proposed sale or acquisition, the expected costs and the forecast benefits.

9.5.3 The Contractor shall include a list of proposed property sales and acquisitions in the annual property services program for CRIA's consideration and approval or rejection.

9.5.4 The Contractor must ensure that the property sales and acquisitions meet all CRIA and NSW Government probity requirements.

9.5.5 The Contractor must advise CRIA on the most cost-effective means of acquiring and disposing of property assets, taking into consideration market and economic circumstances, to ensure CRIA obtains the best value for money outcome.

9.5.6 The Contractor must engage an independent recognised property valuation consultant to provide an independent property valuation report that includes all related transaction costs. These reports must accompany the list of proposed property sales and acquisitions provided to CRIA.

9.5.7 The Contractor must maintain property transaction records in accordance with the relevant Protocols.

9.6 Management of Property-Related Heritage Issues

- 9.6.1 The Contractor must comply with all requirements and guidelines established by the Heritage Council of NSW (www.heritage.nsw.gov.au) and must demonstrate sensitivity to local stakeholder groups when dealing with heritage issues.
- 9.6.2 The Contractor must manage heritage listed assets in accordance with the relevant Protocols.
- 9.6.3 The Contractor must manage, on CRIA's behalf, all applications for financial incentives that may be applicable, and must notify CRIA of funding details if applications are granted. The Contractor must manage the funds and works that may be applicable under NSW and Commonwealth heritage incentive schemes and report works progress to CRIA as part of the Monthly Progress Report.
- 9.6.4 The Contractor must ensure that the maintenance works of heritage assets address, as a minimum, the following:
- (a) structural issues in the case of buildings that have timber or reactive clays;
 - (b) suitability and use of new building materials;
 - (c) stone selection, cleaning and repair;
 - (d) timber repairs and impact of termites;
 - (e) historic flooring, including commonly used heritage material such as fabric and timber; and
 - (f) roofing repairs and replacements.
- 9.6.5 The Contractor must manage the delisting application process with the relevant authorities if CRIA elects to apply for such a process. Progress of any delisting application process must be indicated in the register of heritage assets.
- 9.6.6 The Contractor must ensure all subcontractors, processes and materials are suitable for the work envisaged, and may use the resources listed in the conservation section of the NSW Department of Planning Heritage Branch web page, which provides industry standards and qualified suppliers (www.heritage.nsw.gov.au/13_index.htm).
- 9.6.7 The Contractor must manage all development processes that may be required to manage heritage works. Approval must be gained from the Heritage Council when making changes to a heritage place listed on the State Heritage Register or covered by an interim heritage order.
- 9.6.8 The Contractor must ensure heritage material recycling, usage, and disposal activities are managed according to CRIA and Heritage Council requirements and take into account stakeholder wishes where relevant and where feasible.
- 9.6.9 The Contractor must consult with CRIA in relation to any potentially contentious heritage issues prior to action.

9.7 Planning and Development Applications

- 9.7.1 The Contractor must ensure the Property Management Services meet all NSW Government, local government and any other relevant planning, licensing or approval process obligations including, in particular, development applications.
- 9.7.2 The Contractor shall ensure that all development approvals and any other planning or licence conditions are met during the Term and report any major non-compliance to CRIA.
- 9.7.3 The Contractor must manage town planning issues in accordance with CRIA management protocol *CRD-P-P003 Management of Town Planning Issues*.

9.8 Management of Adjoining Land Development Applications

9.8.1 The Contractor shall ensure that all adjoining land development application issues and any other planning or licence conditions related matters are managed on CRIA's behalf during the Term and report any major issues or non-compliances to CRIA.

9.9 Management of Land Contamination Issues

9.9.1 The Contractor must manage land contamination issues in accordance with the O&M Deed and CRIA's management requirements as defined in CRIA protocol *CRD-P-P005 Management of Land Contamination Issues*.

9.10 Areas of Archaeological Significance

9.10.1 The Contractor must report any archaeological relics found during the performance of Services to the local and state authorities. CRIA must be notified as soon as practicable.

9.10.2 The Contractor must manage the works to ensure that archaeological findings are protected, and must engage suitable and qualified consultants to report on the findings and liaise with the relevant authorities.

9.10.3 The Contractor must obtain all necessary approvals before excavating any land on the CRIA Assets, including the CRN, where an archaeological relic may be affected.

9.11 Management of Level Crossing Closures and Road Closures

9.11.1 The Contractor must manage all level crossing closures required as part of the Scope of Works in accordance with all relevant legislation and the Standards and Codes, and ensure that they are planned and executed in a safe manner.

9.11.2 The Contractor must manage any road closures required to perform the Scope of Work in accordance with all relevant legislation and the Standards and Codes, and coordinate any activities with NSW Roads and Traffic Authority.

9.12 Fire Fighting Infrastructure

9.12.1 The Contractor must ensure that all water tanks and water pumps that are included in the CRIA Assets, including the CRN, and that are currently used to provide water services to CRIA properties or for rural fire fighting services are maintained to a serviceable condition. Maintenance works must be carried out by suitable service providers.

9.12.2 The Contractor must maintain all service information in the property maintenance management database as required in paragraph 9.3.1.

9.13 Road and Property Access

9.13.1 The Contractor must ensure that all access roads that are part of the CRIA Assets are maintained in accordance with the relevant Standards and Codes.

9.14 Advertising

9.14.1 The Contractor must manage all advertising contracts, expenses and revenue.

- 9.14.2 The Contractor must submit new public advertising contracts for CRIA's approval.
- 9.14.3 The Contractor shall submit public advertising content and design for CRIA's consideration and approval.
- 9.14.4 The Contractor must manage all advertising related services in compliance with the relevant Protocols.
- 9.14.5 The Contractor shall report all advertising revenue as a separate item in the weekly revenue report and Monthly Progress Report.
- 9.14.6 The Contractor shall negotiate advertising fees within industry standard pricing benchmarks.
- 9.14.7 All advertising shall comply with all relevant regulatory and council standards and requirements.

9.15 Property Enhancement Works

- 9.15.1 Where Enhancement Works to property are to be undertaken, the Contractor must ensure that the design of all new buildings, warehouses and other properties complies with Building Code of Australia requirements, as well as all applicable regulatory, safety, OH&S, and other relevant requirements.

9.16 Management of Third Party Access to Rail Corridor

- 9.16.1 The Contractor must manage third party access to the rail corridor in accordance with the relevant Protocols.
- 9.16.2 The Contractor must ensure third parties comply with all relevant safety, environmental and regulatory requirements.
- 9.16.3 The Contractor must ensure third parties comply with all insurance requirements specified in the relevant agreement with that third party.

10 Safety Management

10.1 Introduction

10.1.1 The Contractor must ensure that safety requirements are taken into account for all aspects in the Scope of Work under the O&M Deed. In particular, the Contractor must address safety during:

- (a) network operation;
- (b) RM and MPM;
- (c) Enhancement Works; and
- (d) all other work described in this SWTC.

10.1.2 The Contractor must develop and implement a Safety Management Plan and, where specified, subordinate plans which describe how the Contractor shall meet the requirements specified in this SWTC section 10.

10.2 Safety Policy

10.2.1 The Contractor must publish and publicise a Safety Policy that expresses the Contractor's commitment to safety in relation to all its activities.

10.3 Rail Safety Accreditation

10.3.1 The Contractor must seek and obtain Rail Safety Accreditation to enable it to exercise effective management and control of the CRN and undertake all works described in this SWTC.

10.3.2 The Contractor must seek and obtain Rail Safety Accreditation and be able to commence the full range of operations as detailed in this SWTC during the transition period, in accordance with the Contractor's Transition Management Plan and subject to any transitional arrangements required by ITSR, provided that these transitional arrangements are acceptable to CRIA.

10.3.3 A requirement to maintain Rail Safety Accreditation is the forwarding to ITSR of an annual safety performance report in accordance with the Act. The Contractor must also provide a copy of the report to CRIA, not less than 1 month prior to its submission to ITSR.

10.3.4 The Contractor must keep CRIA informed of the status of its Rail Safety Accreditation, and shall immediately alert CRIA to any risks or issues that may affect its Rail Safety Accreditation status as soon as these are known to the Contractor.

10.4 Safety Management System

10.4.1 The Contractor must develop, maintain and operate an SMS that is fully compliant with rail safety legislation.

10.4.2 The Contractor's SMS must include provision for interfaces with CRIA's integrated SMS where necessary to ensure consistency and alignment. These interfaces must be actively managed to ensure consistency and alignment between the Contractor's SMS and CRIA's Integrated SMS.

10.4.3 The Contractor's SMS shall include a comprehensive set of standards, procedures and forms to enable safe, efficient and effective operation of the SMS.

- 10.4.4 The Contractor must provide a Quarterly Safety Analysis Report as defined in SWTC Appendix 13 and SWTC Appendix 15.
- 10.4.5 The Contractor must perform an annual external independent audit of the compliance of the SMS to legislative requirements and of the Contractor's compliance with its SMS.
- 10.4.6 The Contractor must provide Incident Investigation Reports as defined in SWTC Appendix 15.

10.5 Occupational Health and Safety

- 10.5.1 The Contractor, as principal contractor under the *Occupational Health and Safety Act 2000*, must, as a minimum:
- (a) incorporate OH&S considerations into all aspects of the Services;
 - (b) without limiting its other O&M Deed obligations, have a Corporate OH&S Management System that complies with the NSW Government's *OH&S Management Systems Guidelines, Third Edition, November 1998* and *AS 4801 Occupational Health and Safety Management Systems* and ensure that it is maintained for the Term of the O&M Deed;
 - (c) develop, implement and maintain, within the Safety Management Plan, an OH&S Management Plan for the Services and ensure compliance with this OH&S Management Plan at all times; and
 - (d) provide a suitably qualified site safety representative who shall be responsible for issues relating to OH&S throughout the Services.
- 10.5.2 The Contractor must perform an annual external independent audit to verify that the system complies with *AS 4801 Occupational Health and Safety Management Systems* and all other relevant statutory requirements, and an annual external independent audit of the Contractor's compliance with their system.

10.6 Safety Risk Management

- 10.6.1 The Contractor must implement systematic safety risk management techniques to determine hazards and associated risks that could adversely affect safety. This includes the development and implementation of risk management strategies to manage those risks and hazards. The risk management strategies shall be included in the risk management section of the Management Services Plan, as identified in SWTC Appendix 10.
- 10.6.2 The Contractor must operate a risk management process that meets the requirements of *AS/NZS 4360 Risk Management*, and which applies safety risk tolerability criteria that are aligned with those detailed in *CRIA Standard GEN STD 001 Risk Management*.
- 10.6.3 CRIA requires the elimination of risks to safety so far as is reasonably practicable (**SFAIRP**), and if it is not reasonably practicable to eliminate risks to safety, to reduce those risks so far as is reasonably practicable.
- 10.6.4 Safety risk shall be integrated into the overall business risk and issues management framework as described in section 2.4. This shall include recording, monitoring and control of safety-related risks in a centralised risk register.

10.7 Response to Incidents

- 10.7.1 The Contractor must respond to safety Incidents in a timely manner.
- 10.7.2 If a Major Incident occurs, the Contractor must provide notification to CRIA as soon as is reasonably practicable, and in any case in not more than 4 hours after becoming aware of the Major Incident.
- 10.7.3 Initial notification may be by telephone (voice or text) or email, provided that receipt of the notification by the CRIA Representative is confirmed.
- 10.7.4 The initial notification for a Major Incident must then be followed promptly by a written report.
- 10.7.5 In the case of category A or B occurrences as defined in the *Rail Safety (General) Regulation 2008*, the Contractor shall then provide to CRIA a copy of the detailed, written report of the incident which it is required to submit to ITSAR, within 72 hours of the incident.
- 10.7.6 CRIA may from time to time notify the Contractor of its requirements relating to the notification, investigation and rectification of Incidents.
- 10.7.7 The Contractor will formulate an emergency management plan in accordance with the Act for dealing with Incidents and provide it to CRIA. The Contractor's plan for dealing with Incidents must be consistent with any requirements notified by CRIA under this section 10.7 and CRIA's integrated Safety Management System.
- 10.7.8 Without affecting the Contractor's obligations under all Laws, the Contractor will follow the plan referred to in paragraph 10.7.7 above.
- 10.7.9 Each party will cooperate with an investigation of an Incident and the Contractor will make available to CRIA records and personnel relevant to the Incident, other than Privileged Documents.
- 10.7.10 The parties will consult with each other to determine any action to be taken as a result of any investigation of an Incident.
- 10.7.11 The Contractor must keep and maintain accurate records together with details of any rectification costs associated with Incidents.
- 10.7.12 Without limiting any of the above requirements, if an Incident occurs which involves the Contractor and in relation to which CRIA has given written notice to the Contractor that a report is required, the Contractor must promptly prepare and submit to CRIA a written report which must include the following (to the extent relevant to the Incident and reasonably practicable for the Contractor to ascertain):
- (a) the time and location of the Incident;
 - (b) available details of all loss or damage resulting from the Incident (including damage to the CRN);
 - (c) the factors which may have contributed to the cause of the loss or damage (the parties acknowledging that such statement will not be binding on the Contractor and will not be taken to be an admission by the Contractor for any purpose, including insurance and indemnification purposes (notwithstanding the terms of any insurance policy to the contrary));
 - (d) names of the Contractor's staff including volunteers in any way involved in the Incident either as principals or witnesses;
 - (e) an analysis in printed format of speed recorder charts for any train involved;
 - (f) such other information which is required to be disclosed in a report required under the Act; and
 - (g) such other information which is required to be disclosed in a report under the Dangerous Goods Code.

10.7.13 The Contractor shall also provide to CRIA a copy of any follow-up, interim or final Incident investigation reports upon completion of the investigation of any Incident.

10.8 Safety Interface Requirements

10.8.1 The Contractor shall enter into Interface Agreements with other RTOs, in accordance with the Act, for the purpose of managing risks to safety that may arise from their operations, where those risks are caused wholly or partly by the railway operations carried out by or on behalf of the other RTO/s.

10.8.2 In relation to this requirement, the Contractor must, as a minimum:

- (a) identify all such interfaces;
- (b) determine and agree upon the interface boundaries with the other party/s; and
- (c) develop and sign an Interface Agreement with each other party to state unambiguously the responsibilities of each of the parties and the boundaries at which the responsibilities transfer from one party to the other. The Interface Agreement should also include procedures for:
 - (i) management of the interface, in particular communication and consultation;
 - (ii) emergency and Incident management and follow-up; and
 - (iii) dispute resolution.

10.8.3 The Contractor's approach to the management of interfaces will be described in the Contractor's Interface Management Plan, for which further requirements are provided in SWTC Appendix 11 and SWTC Appendix 13.

10.8.4 Interface Agreements shall be compliant with the requirements of the Act.

10.8.5 The Contractor may wish to make use of the guidance and template Interface Agreement available on the ITSR website (<http://www.transportregulator.nsw.gov.au/>).

10.9 Access to Rail Corridor and Other CRIA Sites

10.9.1 In relation to access to the rail corridor and other CRIA sites by subcontractors or other third parties for the purpose of maintenance or other work, the Contractor must develop, maintain and administer:

- (a) a procedure whereby subcontractors or other third parties request access;
- (b) a procedure by which access requests are reviewed and, if appropriate, granted;
- (c) guidance material to enable subcontractors or other third parties to enter, work safely and notify departure from CRN or other CRIA sites; and
- (d) a permit system and associated procedures for the monitoring and control of activities to ensure safety.

10.9.2 The starting point for this procedure shall be the access procedure in place at the commencement of the transition period.

10.9.3 The Contractor must ensure that its safeworking requirements and any other relevant safety provisions are enforced and observed in relation to work in the rail corridor.

10.9.4 Note that this requirement is not to be confused with access to the CRN by RTOs for train operations, which is described in section 7.2.1.

11 Environmental Management and Sustainability

11.1 Environmental Management Plan

11.1.1 The Contractor must develop and implement an Environmental Management Plan which describes how the Contractor shall meet the requirements specified in this SWTC section 11.

11.2 Environmental Licence for the CRIA Assets

11.2.1 The Contractor must seek and obtain an environmental protection licence (or licences) for the CRIA Assets, including the CRN, to enable it to exercise effective management and control of the CRIA Assets and undertake all works described in this SWTC.

11.2.2 The Contractor must seek and obtain the environmental protection licence (or licences) for the CRIA Assets, including the CRN, and be able to commence the full range of operations as detailed in this SWTC during the transition period, in accordance with the Contractor's Transition Plan and subject to any transitional arrangements required by the relevant authorities.

11.2.3 Once obtained, the Contractor must maintain its environmental protection licence (or licences) at a level that enables it to continue to undertake all of the works described in this SWTC for the Term of the O&M Deed.

11.2.4 The Contractor must keep CRIA informed of the status of its environmental protection licence (or licences), and shall immediately alert CRIA to any risks or issues that may affect its licence status as soon as these are known to the Contractor.

11.3 Environmental Management System

11.3.1 The Contractor must develop, implement and maintain an Environmental Management System (**EMS**) that, as a minimum:

- (a) is in accordance with *ISO 14000 Environmental Management*;
- (b) is compliant with legislative requirements;
- (c) is compliant with the NSW Government's *Environmental Management Systems Guidelines, November 1998*;
- (d) meets NSW *Sustainability Policy* requirements; and
- (e) enables the Contractor to meet requirements specified in this SWTC.

11.3.2 The Contractor must ensure that the EMS addresses integration of environmental management with maintenance, train operations and all other activities described in the O&M Deed and this SWTC.

11.4 Key Environmental Management Activities

11.4.1 The Contractor must undertake environmental management activities commensurate with its stewardship role in relation to the CRIA Assets, including the CRN, and in support of CRIA's Objectives. Where the Contractor's activities affect the environment, the Contractor must ensure that its operations are conducted

in compliance with the principles of ecologically sustainable development contained in section 6 (2) of the *Protection of the Environment Administration Act 1991*.

11.4.2 Routine environmental management activities shall include, but not be limited to:

- (a) vegetation control along the rail corridors comprising the CRIA Assets ; and
- (b) fire hazard reduction (refer also section 11.12 below).

11.4.3 The Contractor must ensure that any necessary environmental activities are incorporated into rail infrastructure maintenance and Enhancement Works plans and schedules so as not to delay the commencement, progress or completion of any work. Environmental activities to be considered shall include, but not be limited to:

- (a) environmental studies;
- (b) environmental surveys;
- (c) environmental reports;
- (d) environmental design and related work;
- (e) environmental approvals;
- (f) preparation of environmental impact statements; and
- (g) ad hoc and formal reports to CRIA on environmental risks and issues.

11.4.4 The Contractor must manage Contamination and Remediation in accordance with the O&M Deed.

11.5 Environmental Approvals

11.5.1 The Contractor must obtain all necessary environmental licences and approvals in a timely manner so as not to delay the commencement, progress or completion of any work.

11.5.2 The Contractor must ensure all relevant licence conditions are met and, when required, audited by an appropriately qualified environmental auditor.

11.6 Environmental Impact Statements

11.6.1 The Contractor must initiate the preparation of all necessary environmental impact statements in a timely manner so as not to delay the commencement, progress or completion of any work.

11.7 Response to Incidents

11.7.1 The Contractor must respond to environmental Incidents in a timely manner so as not to delay the commencement, progress or completion of any work.

11.7.2 If an environmental Incident occurs, the Contractor must advise CRIA as soon as is reasonably practicable.

11.7.3 The Contractor shall also comply with the requirements of the *Protection of the Environment Administration Act 1991* for the notification and reporting of environmental Incidents.

11.8 Restoration, Regeneration and Planting

11.8.1 The Contractor must reinstate all sites and maintain landscaping works progressively as maintenance or other work is completed.

11.8.2 The Contractor must ensure that all land outside work sites that has been occupied by the Contractor for the purpose of carrying out work, including storage and site facilities, and which is to be vacated upon

completion of any work, is reinstated to a condition at least equivalent to that existing before that occupation or as otherwise required by relevant authorities.

- 11.8.3 In the event that any site is vacated following temporary occupation, the Contractor must ensure that all surplus construction materials, including residual or stockpiled excavated material, is loaded and disposed of or dispersed on the site in accordance with the requirements of the Contractor's EMS and to the satisfaction of CRIA and any relevant authorities and stakeholders. The Contractor must ensure that all surplus ballast is removed from rail track formation.

11.9 Cultural Heritage Management Plan

- 11.9.1 The Contractor must develop and maintain a Cultural Heritage Management Plan in accordance with SWTC Appendix 11.
- 11.9.2 The plan shall include details of systems, processes and people assigned to manage issues of cultural and heritage significance, including indigenous heritage, as well as details of arrangements to ensure that legislative requirements are complied with.

11.10 Pest and Vermin Control

- 11.10.1 The Contractor must provide pest and vermin control services and ensure that all services meet all legislative requirements.
- 11.10.2 The Contractor must provide pest and vermin control services for CRIA Assets including property and land.
- 11.10.3 Pest control must include provisions for dealing with locusts and other potential plagues.

11.11 Provision for Sustainability Reporting

- 11.11.1 The Contractor shall develop reports in compliance with the NSW Government *Sustainability Policy 2008*.
- 11.11.2 If required, the Contractor shall develop reports in compliance with the *National Greenhouse and Energy Reporting Act 2007*.
- 11.11.3 The Contractor shall provide ad hoc reports from time to time if required by CRIA's representative.

11.12 Fire Management and Fire Hazard Reduction

- 11.12.1 The Contractor must implement a fire management policy and fire management systems to minimise fire hazards.
- 11.12.2 The Contractor must maintain a program of fire hazard reduction throughout the CRIA Assets, including the CRN.
- 11.12.3 The Contractor must program all works with consideration of environmental conditions, seasonal weather and other relevant conditions that may affect the work risk rating.
- 11.12.4 The Contractor must ensure that all work complies with recommendations and guidelines provided by the New South Wales Fire Brigade (**NSWFB**) and the New South Wales Rural Fire Service (**NSWRFS**).
- 11.12.5 The Contractor must manage all fire hazards and ensure that they are reported to the relevant authorities and CRIA in a timely manner.

- 11.12.6 The Contractor must ensure all communication systems and protocols comply with recommendations and guidelines provided by NSWFB, NSWRFSA and other emergency response authorities.
- 11.12.7 The Contractor must ensure that all employees and subcontractors are adequately trained in fire prevention and response management.

12 Transition Management

12.1 Transition Management Plan

- 12.1.1 The Contractor must prepare and implement a Transition Management Plan which will address the activities to be undertaken prior to, during, and immediately following the period of transition of responsibility for the management, operations, maintenance and upgrade of the CRIA Assets, including the CRN, from the previous RIM to the Contractor.
- 12.1.2 The Transition Management Plan shall detail the processes the Contractor shall implement to ensure that, as a minimum, safety is maintained for all aspects of railway operations and maintenance activities that comprise the Services.
- 12.1.3 The Transition Management Plan shall also detail the processes the Contractor shall implement to achieve Rail Safety Accreditation as the RIM for the CRN from ITSR under the Act, as detailed in section 10.3.
- 12.1.4 Further requirements for the Transition Management Plan are provided in SWTC Appendix 11.

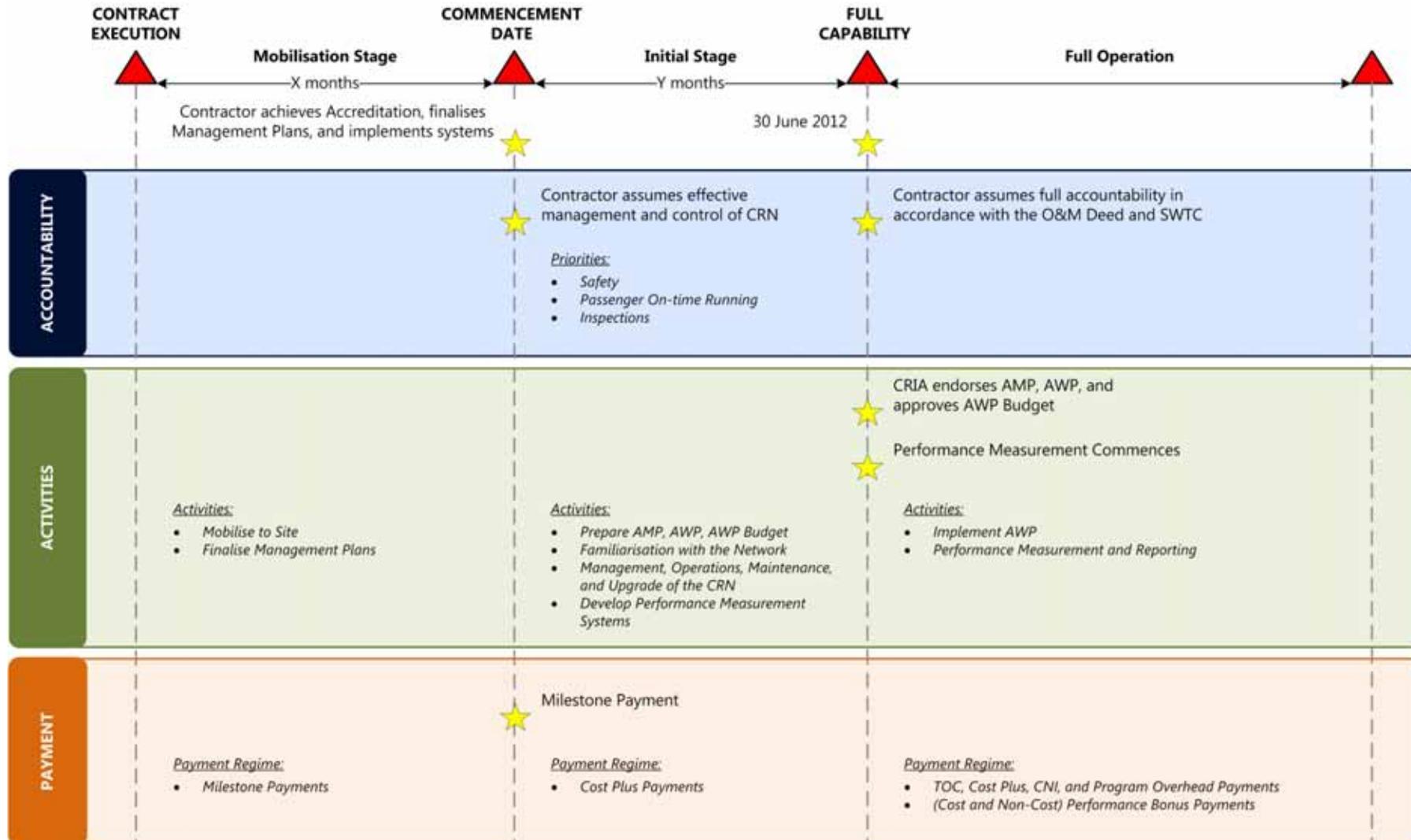
12.2 Transition Management Team

- 12.2.1 The Contractor shall define as part of the Transition Management Plan the organisation chart and team structure proposed to manage the process.

12.3 Transition Phases

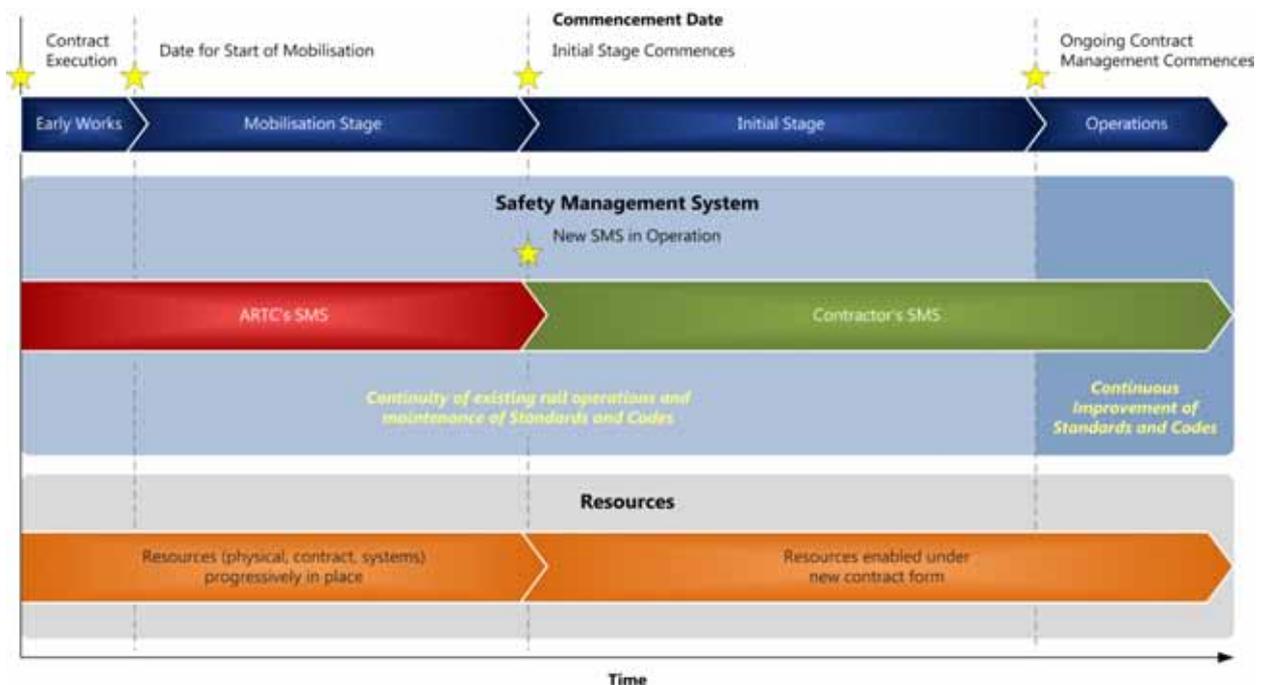
- 12.3.1 The transition will include a Mobilisation Stage followed by an Initial Stage of operations. A high level overview of the Transition stages is shown in Figure 12-1 below.

Figure 12-1: Transition Overview



- 12.3.2 During the Mobilisation Stage, the Contractor must undertake all activities necessary to prepare for taking over the management, operations, maintenance and upgrade of the CRIA Assets, including the CRN. This includes but is not limited to:
- (a) establishing its facilities;
 - (b) mobilising staff and labour;
 - (c) mobilising plant and equipment including purchase or lease as required;
 - (d) establishing its information management systems;
 - (e) applying for Rail Safety Accreditation;
 - (f) familiarising itself with the assets; and
 - (g) finalising management plans.
- 12.3.3 The Transition Management Plan must defined the activities to be undertaken during the Mobilisation Stage, the duration of the activities, the linkages between activities and the resources required.
- 12.3.4 During the Mobilisation Stage, the Contractor must do everything necessary to ensure it is capable of performing the Services including, but not limited to:
- (a) achieving Rail Safety Accreditation;
 - (b) establishing key Interface Agreements;
 - (c) finalising management plans; and
 - (d) establishing full capability for the Contractor’s safety, quality and asset management systems.
- 12.3.5 From the Commencement Date the Contractor assumes full responsibility for management, operations, maintenance and upgrade of the CRIA Assets as defined in the O&M Deed.
- 12.3.6 The Contractor is required to exercise effective management and control from the Commencement Date and assume full responsibility for the management of safety from that time as illustrated in Figure 12-2 below.

Figure 12-2: Transition Program – Changeover of SMS



- 12.3.7 During the Initial Stage, and for the remainder of the Term, the Contractor will be the RIM for the CRN.
- 12.3.8 The purpose of the Initial Stage is to ensure that the Contractor has the full capability to deliver the Services. The priorities during the Initial Stage include, but are not limited to:
 - (a) safety; and
 - (b) on-time passenger service performance.
- 12.3.9 The Transition Management Plan must define the activities to be undertaken during the Initial Stage, the duration of the activities, the linkages between activities and the resources required.
- 12.3.10 During the Initial Stage the Contractor must:
 - (a) finalise the Asset Management Plan, the AWP and AWP Budget for the work to be undertaken during the first operational period;
 - (b) establish and demonstrate to CRIA full capability of its systems, people, plant and equipment; and
 - (c) familiarise itself with the assets.
- 12.3.11 During the Initial Stage the Contractor must establish and demonstrate the capability of its performance measurement systems including KRA and KPI measurement. However, performance during the Initial Stage will not result in PSGS being applied, or Contractor's Bonus being made or withheld.
- 12.3.12 The transition program shall be incorporated into the Transition Management Plan described in section 12.1 above and further detailed in SWTC Appendix 11.

12.4 Key Tasks During Transition

- 12.4.1 During the transition period, the Contractor must:
 - (a) conduct two formal Hazard and Operability (**HAZOP**) studies on transition risks prior to the Initial Stage and implement appropriate controls;
 - (b) effectively manage stakeholder relationships;
 - (c) develop Interface Agreements as required by legislation and manage interfaces;
 - (d) develop and deliver all necessary training programs required to ensure that the competency and capacity of the Contractor's employees and subcontractors are adequate to undertake the Scope of Work;
 - (e) test transition arrangements, where possible, prior to the introduction of changes; and
 - (f) provide a weekly update of transition issues to CRIA, in the form of a Weekly Transition Issues Log as described in SWTC Appendix 15.

12.5 Handover Package

- 12.5.1 The Contractor must prepare and maintain a handover package throughout the Term to ensure service continuity can be maintained in the event that CRIA or a successor operator is required to step in and assume responsibility for operating the O&M Deed.
- 12.5.2 The Contractor must ensure that CRIA and any future provider of rail operations and maintenance services similar to those described in this SWTC will have access to all licences, IP, copyrights, specialised tools, long lead items and any other relevant assets or elements that may be required as part of the handover package.
- 12.5.3 The handover package must be forwarded to CRIA within 6 months after the completion of the transition period and thereafter updated on an annual basis.
- 12.5.4 Further details on the requirements for the handover package are provided in SWTC Appendix 14.

12.6 Disengagement Plan

- 12.6.1 The Contractor must prepare, for inclusion in the Transition Management Plan, a draft, high-level Disengagement Plan that addresses the activities to be undertaken prior to, during, and immediately following completion of the Term for the period of transition of responsibility for the work from the Contractor to a future RIM.
- 12.6.2 The Disengagement Plan shall detail the processes to be implemented to ensure that safety is maintained, as a minimum, at existing levels for all aspects of railway operations and maintenance activity that comprises the works, and will address the same processes and tasks as applicable to the Transition Management Plan. The Disengagement Plan must be forwarded to CRIA within 6 months after the completion of the Initial Stage and thereafter updated on an annual basis.
- 12.6.3 Requirements for the Disengagement Plan are further detailed in SWTC Appendix 11.

12.7 Disengagement Management Team

- 12.7.1 The Contractor shall define, as part of the Disengagement Plan, the organisation chart and team structure proposed to manage the process.

Appendix 1

Work Breakdown Structure

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Scope of Work and Technical Criteria (SWTC)

```
graph TD; A[Scope of Work and Technical Criteria (SWTC)] --- B[1. Project & Business Management]; A --- C[2. Performance Measurement]; A --- D[3. Asset Management Services]; A --- E[4. Engineering Services]; A --- F[5. Integrated Logistics Support (ILS)]; A --- G[6. Network Management]; A --- H[7. Rail Infrastructure Maintenance]; A --- I[8. Property Management Services]; A --- J[9. Safety Management]; A --- K[10. Environmental Management & Sustainability]; A --- L[11. Transition Management];
```

1. Project & Business Management ⊕

2. Performance Measurement ⊕

3. Asset Management Services ⊕

4. Engineering Services ⊕

5. Integrated Logistics Support (ILS) ⊕

6. Network Management ⊕

7. Rail Infrastructure Maintenance ⊕

8. Property Management Services ⊕

9. Safety Management ⊕

10. Environmental Management & Sustainability ⊕

11. Transition Management ⊕

1. Project & Business Management

Develop, maintain and implement Management Services Plan

Conduct business risk and issues management activities ⊕

Implement business management systems ⊕

Develop, maintain and implement all Management Plans

Establish and maintain a document management system

Maintain records

Manage collection of revenue from the operation and utilisation of CRIA Assets

Financial Management ⊕

Contract Management ⊕

Provision of Reciprocal Support to Enable Effective Contract Management by CRIA

Manage stakeholder relationships & communications ⊕

Manage local industry participation

Comply with NSW Government indigenous employment policies

Quality Management ⊕

Industrial Relations (IR) Management

Intellectual Property (IP) Management

Prevent fraud and corruption

2. Performance Measurement

Establish performance measurement systems

Conduct performance measurement and analysis

Produce performance reports

Review measurement and incentive systems & make recommendations for improvement

Undertake annual assessment of the Whole of Life Benefit to the CRIA Assets; identify potential improvements

3. Asset Management Services

Establish and maintain asset management system and processes

+

Provide asset management planning advice to CRIA

Provide configuration management services for CRIA Assets

Provide inventory maintenance services for spares and equipment

Asset Management Implementation Plan

+

Asset Registers

+

CRN Asset Management Plan

+

Develop and implement Property Management Plan

Review, revise, update and maintain property information

+

4. Engineering Services

```
graph LR; A[4. Engineering Services] --- B[Provide Engineering Services to support rail infrastructure maintenance]; A --- C[Support, plan, and execute decommissioning work and/or the disposal of assets]; A --- D[Undertake configuration management]; A --- E[Maintain, update and ensure accessibility of CRIA and other Standards and Codes]; A --- F[Manage independent verification and validation activities];
```

Provide Engineering Services to support rail infrastructure maintenance

⊕

Support, plan, and execute decommissioning work and/or the disposal of assets

Undertake configuration management

Maintain, update and ensure accessibility of CRIA and other Standards and Codes

Manage independent verification and validation activities

5. Integrated Logistics Support (ILS)

Develop and implement an Integrated Logistic Support (ILS) Plan

Spare parts and materials provisioning and procurement

Warehousing, storage and distribution of spares, materials & repairable items

Interfaces with CRN configuration management system

Management of ILS documentation and technical data

Management of repairable items

Management of specialised tools and test equipment

Provision and management of plant and equipment required to carry out operations and maintenance

Provision of ongoing training to staff and subcontractors

Processes for review of ILS effectiveness

Management of the disposal of assets, non-repairable items and surplus material

6. Network Management

Develop and implement a Rail Network Management Plan

Network Access



Billing and Revenue Reporting



Network Management and Train Control



7. Rail Infrastructure Maintenance

Conduct Routine Maintenance (RM)

+

Conduct Major Periodic Maintenance (MPM)

+

Conduct Emergency Works

+

Undertake Enhancement Works

Carry out maintenance on the CRIA
Non-Operational Network

+

8. Property Management Services

Prepare an annual property services program

Manage agreements, tenancies and other property-related business

Manage maintenance of the CRIA Property Portfolio

Manage maintenance of Property-Related Standards and Codes

Manage Property Sales and Acquisitions

Manage Property-Related Heritage Issues

Manage Planning and Development Applications

Manage Adjoining Land Development Applications

Manage Land Contamination Issues

Manage Areas of Archaeological Significance

Manage Level Crossing Closures and Road Closures

Ensure that all Fire Fighting Infrastructure is maintained to a serviceable condition

Ensure that all access roads that are part of the CRIA Assets are maintained in accordance with the relevant Standards and Codes.

Manage all advertising contracts, expenses and revenue.

Ensure that the design of all Property Enhancement Works comply with Building Code of Australia requirements, as well as all applicable regulatory, safety, OH&S, and other relevant requirements.

Management of Third Party Access to Rail Corridor

9. Safety Management

Publish and publicise Safety Policy

Rail Safety Accreditation

+

Safety Management System (SMS)

+

Maintain OH&S Compliance

Undertake safety risk management process

+

Respond to Incidents

+

Maintain Safety Interfaces

Control access to rail corridor and other CRN sites

10. Environmental Management & Sustainability

Develop and implement Environmental Management Plan

Seek, obtain and maintain environmental protection licence for the CRIA Assets

Develop, implement and maintain Environmental Management System (EMS)

Undertake environmental management activities

+

Obtain environmental licences and approvals when required

Initiate preparation of Environmental Impact Statements when required

Respond to environmental incidents

Manage restoration, regeneration & planting on vacated sites

Develop and maintain Cultural Heritage Management Plan

Provide pest and vermin control services

Make provision for sustainability reporting as required to comply with relevant legislation

Undertake fire management and fire hazard reduction

11. Transition Management

Prepare and implement Transition Management Plan

Carry out key tasks during transition

+

Prepare and maintain a handover package

Prepare a draft, high-level Disengagement Plan

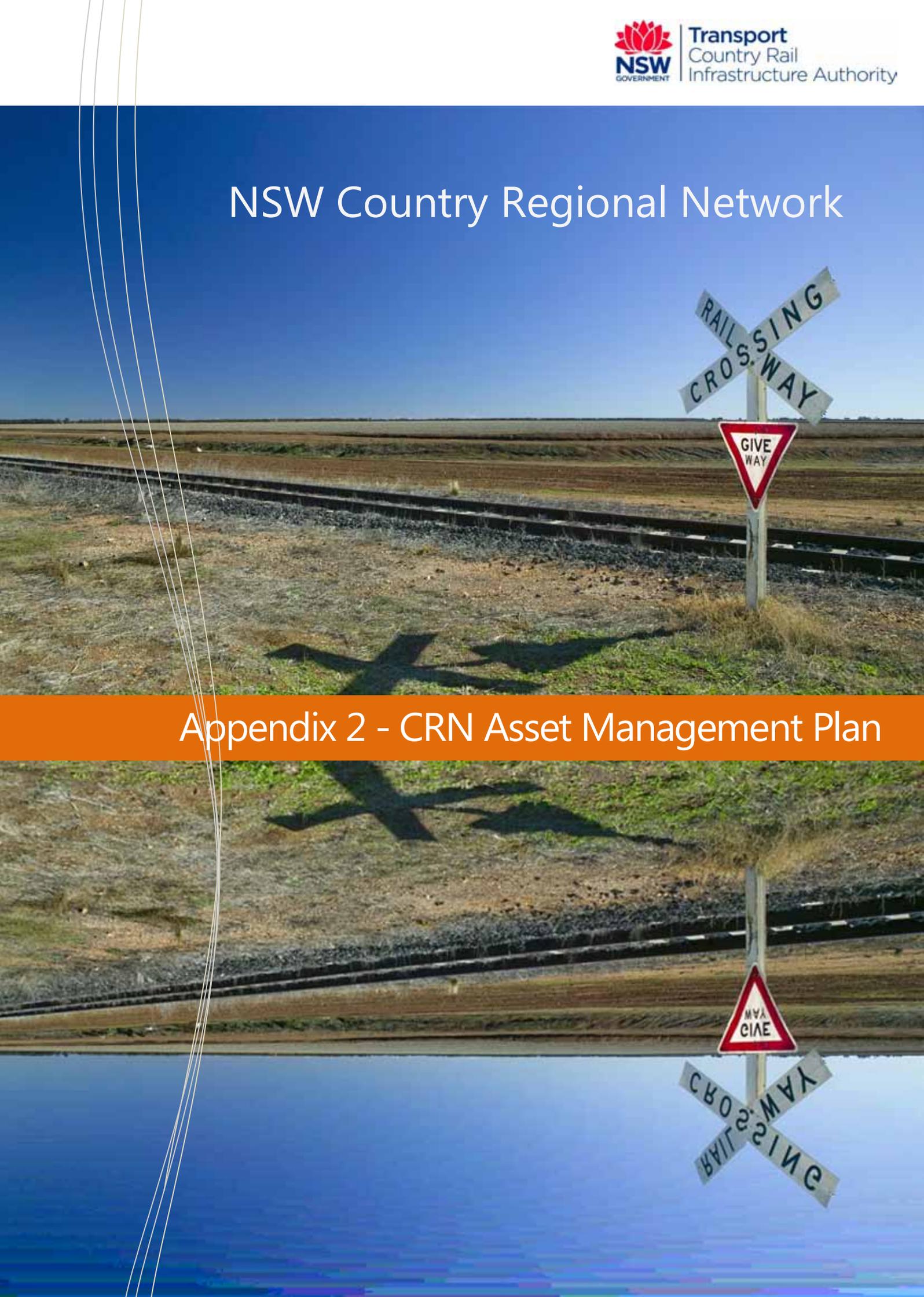
Appendix 2

CRN Asset Management Plan

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NSW Country Regional Network



Appendix 2 - CRN Asset Management Plan



Contents

1	INTRODUCTION	1
2	EXECUTIVE SUMMARY	1
3	BUSINESS OVERVIEW	2
4	ASSET STRATEGY	3
4.1	Asset Population	3
4.2	Routine Maintenance (RM)	6
4.3	Major Periodic Maintenance (MPM)	6
4.4	Enhancement Works	8
4.5	Performance Indicators	8
5	STRATEGIC MANAGEMENT PLANS	9
5.1	Rail Infrastructure Enhancement Investment Strategic Plan	9
5.2	Rail Infrastructure Asset Maintenance Strategic Plan	9
5.3	Summary MPM Program	13
6	PROPERTY STRATEGIC MANAGEMENT PLAN	16
7	OVERBRIDGE STRATEGIC MANAGEMENT PLAN	16
8	ASSET DISPOSAL STRATEGIC PLAN	16

Appendices

ATTACHMENT 1	TONNAGE BY LINE AND COMMODITY
ATTACHMENT 2	DISUSED/NON-OPERATIONAL LINES
ATTACHMENT 3	SLEEPER POPULATION
ATTACHMENT 4	TIMBER AND IRON UNDERBRIDGE POPULATION
ATTACHMENT 5	PERFORMANCE INDICATORS
ATTACHMENT 6	TIMBER SLEEPER RENEWAL PLAN
ATTACHMENT 7	BRIDGE RENEWAL PLAN
ATTACHMENT 8	BRIDGE RESURFACING PLAN
ATTACHMENT 9	OVERBRIDGE 15 YEAR ENHANCEMENT PLAN
ATTACHMENT 10	OVERBRIDGE 15 YEAR ENHANCEMENT PLAN

List of Abbreviations

Abbreviations used specifically in this CRN Asset Management Plan are defined in the list of abbreviations. Other abbreviations that are used in this CRN Asset Management Plan are defined in the O&M Deed and SWTC and shall be given the same meaning as in the O&M Deed and SWTC.

CSO	Community Service Obligation
FMECA	Failure Modes, Effects, and Criticality Analysis
MGT	Million Gross Tonnes
MGTK	Million Gross Tonne Kilometres
SBR	Signal Box Rationalisation
T&I	Department of Transport and Infrastructure
TOW	Train Order Working
TQI	Track Quality Index



1 Introduction

- 1.1.1 The NSW Government's Total Asset Management Policy was introduced to achieve better planning and management of the State's physical assets. It assists in the alignment of asset planning and management practices with service delivery priorities and strategies, within the limits of available resources
- 1.1.2 The Country Rail Infrastructure Authority (**CRIA**), as the owner of the Country Regional Network (**CRN**) has followed NSW Government Total Asset Management guidelines for the development of both annual and longer-term strategic rail infrastructure plans. This Asset Management Plan (**AMP**) for the CRN complies with the systematic Total Asset Management approach and aligns with the CRIA Statement of Corporate Intent and Business Plan.
- 1.1.3 CRIA, as the asset owner of the CRN, sets asset management strategy and engages competent accredited organisations to provide management services for the CRN.
- 1.1.4 This version of the CRN AMP describes the scope of works required to achieve sustainable rail services across the CRN.
- 1.1.5 CRIA operates within a legislative framework that includes the *Transport Administration Act 1988* and the *Rail Safety Act 2008*. CRIA must satisfy the Independent Transport Safety Regulator (**ITSR**) that the CRN is safe, reliable and sustainable. CRIA's objectives for the Core and Grain Networks are summarised in the Executive Summary below.
- 1.1.6 This plan is a live document and is revised on an annual basis or more frequently if operational or business demands change.

2 Executive Summary

- 2.1.1 CRIA provides train paths for the Core and Grain Networks. CRIA's objectives include:
 - (a) Core Network:
 - (i) Existing CountryLink passenger services and freight services will continue on the current routes and frequencies to the existing standards.
 - (b) Grain Network:
 - (i) All lines will continue to be maintained to sustain current operating standards (generally low-speed, 19 tonne axle load. Some lines allow for higher performance).
- 2.1.2 CRIA has formulated a long-term asset management plan by establishing the scope of works required to operate existing services on all operational core and grain lines in a safe, reliable and sustainable way.

3 Business Overview

- 3.1.1 CRIA provides network capacity and train paths to performance levels set out in the ARTC Train Operating Condition Manual.
 - (a) Core Network:
 - (i) Existing CountryLink passenger services continue on the current routes and frequencies.
 - (ii) Freight services continue to be provided as set out in the Train Operating Conditions Manual.
 - (b) Grain Line Network:
 - (i) All lines will continue to be maintained to sustain current operating standards (generally low-speed, 19 tonne axle load).

- 3.1.2 The demand for train paths on the CRN has been relatively static over many years with the exception of the Gap to Narrabri sector (see below). The Lithgow/Wallerawang/Kandos, Wallerawang/Blayney/Orange/Dubbo, and Orange/Molong/Parkes sections have shown some increase in traffic with opening of new coal loading at Austen and Butta, a new mine at Airly to open in March 2010, a new container facility at Bathurst with daily service, increased use of Blayney container facility and ore loading, Fletcher’s siding at Dubbo with additional container train daily and Parkes intermodal facilities. In the short-term demand is susceptible to international market volatility and seasonal effects. The demand for paths for grain and cotton trains, for example, has over the past six years decreased significantly due to the drought in regional NSW.

- 3.1.3 Attachment 1 identifies the level of business by line and commodity. Table 1 below shows a summary of traffic type (commodity) and their proportion of total demand based on 2008/09 million gross tonne kilometres (**MGTK**).

Table 1: Traffic Type Distribution

Traffic Type	Core Network MGTK	Grain Network MGTK	% of Total
Bulk Coal	759.2	0.0	20
Bulk Grain	1,020.5	236.9	30
Minerals	343.0	0.0	9
General Freight (containers)	1,230.6	5.8	33
Passenger	203.1	0.0	5
Total	3,556.4	242.7	100

- 3.1.4 All CRN line sectors have surplus capacity except for the Gap to Narrabri sector where the increase in coal production will push total tonnes carried over this sector from 7 million gross tonne (**MGT**) in 2008/09 to 20 MGT within five (5) years. In 2008/09 CRIA completed a capacity enhancement program, negotiated by CRIA with mining companies, to increase train path capacity to meet demand. The cost of this enhancement will be recovered from those coal mines utilising the enhanced infrastructure.



- 3.1.5 The results CRIA seeks to achieve through this AMP are to have its train paths delivered safely, reliably, and sustainably, at minimum life cycle cost:
- (a) Safety is a mandatory requirement. However, different rail lines have different risk consequence profiles which can affect maintenance activity e.g. passenger lines and grain lines.
 - (b) Reliability refers to meeting specified train path characteristics, particularly timetabled running times (on time running).
 - (c) Sustainability refers to the continuing ability to offer train paths as specified.
 - (d) Minimising life cycle costs requires a holistic approach to asset management including selection of design, technologies, materials, maintenance techniques and consideration of labour costs and availability.

4 Asset Strategy

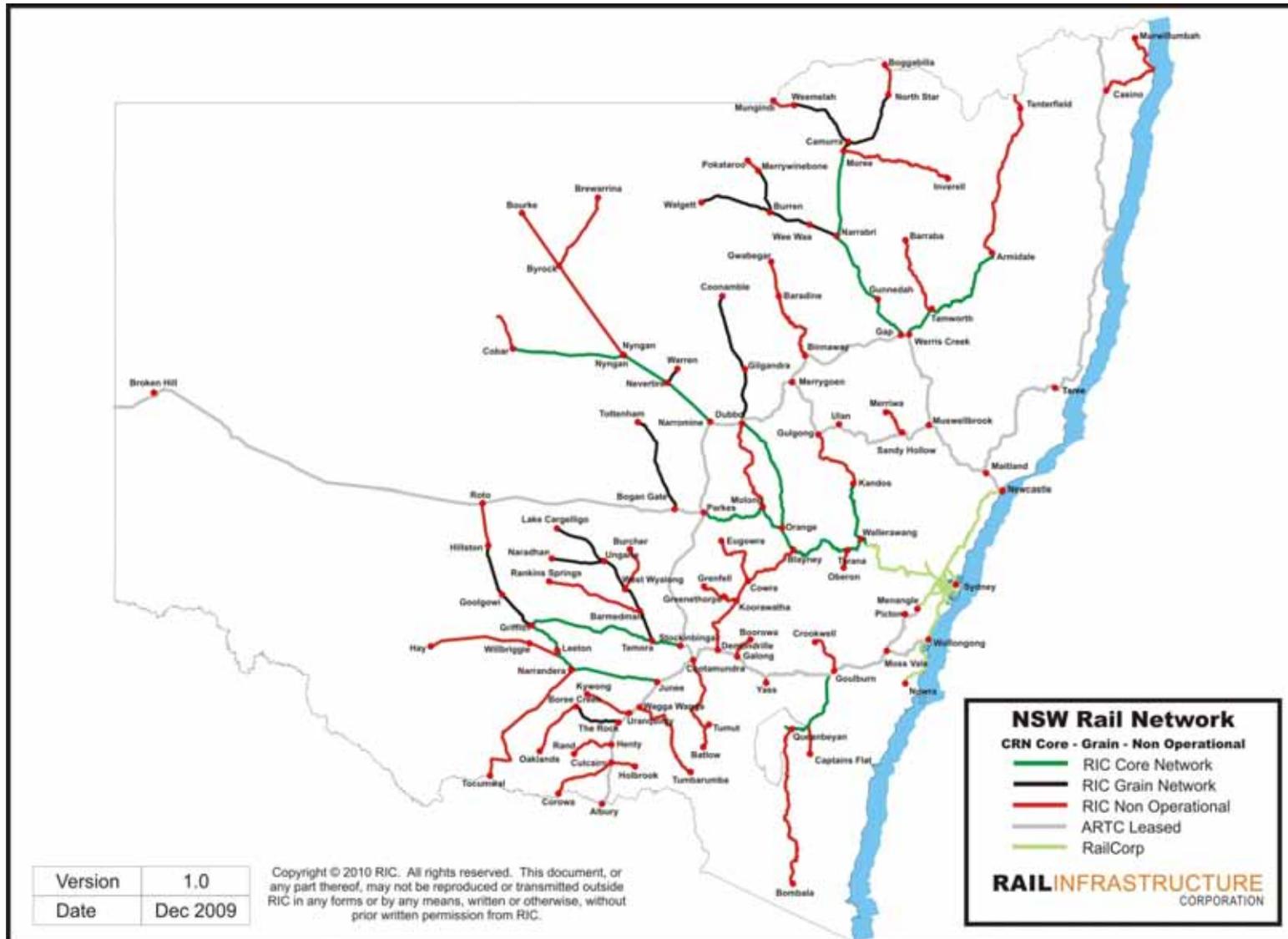
4.1 Asset Population

4.1.1 Since 2006, CRIA has divided its operating railway lines into two primary asset groupings as a basis for determining maintenance needs and allocating limited resources, namely Core and Grain lines. Core lines were subsequently grouped into Passenger and Freight lines. Other stand-alone asset classes which are utilised by CRIA include Disused Lines, Property, Rail Bridges (underbridges), Road Over Rail Bridges (overbridges) and Other.

- (a) Core Passenger Lines
 - (i) These lines service the CountryLink passenger routes, as well as freight traffic, and are typically the most heavily used, and the highest speed routes (up to potentially 160 km/h for XPT). Total: 1,204 track km.
- (b) Core Freight Lines
 - (i) These lines are the more heavily used freight only lines carrying minerals from Cobar, coal and cement from Kandos, and mixed freight from Griffith. Total: 523 track km.
- (c) Grain Lines
 - (i) These lines exist almost exclusively to service grain movements and are typically the lightest configuration, carry the least tonnages and are the slowest speed lines. Total: 1,093 track km.
- (d) Disused Lines
 - (i) In total 48 railway lines have had services withdrawn since 1968 and these are not maintained. However, CRIA remains responsible for noxious weed and animal control, and public safety (particularly road over rail, or rail over road bridges). Attachment 2 provides a list of disused lines, their length, and year of decommissioning. Total: 3,174 track km.

4.1.2 Note that the above totals indicate track kilometres. CRIA also uses measures of route kilometres for other management purposes, and in the case of core passenger lines the total route km is lower than total track km as it does not take account of duplicated lines. There is also, on occasion, some rounding error when totals are added from summary data in other CRIA documents

- 4.1.3 The Network Diagram on page 7 identifies the Core Lines and Grain Lines as well as the Australian Rail Track Corporation (ARTC) Leased Network, and the RailCorp Network. The following additional asset groupings are also CRIA's responsibility:
- (a) Property
 - (i) The rail corridor lands for the CRN and other leased properties have been vested from State Rail Authority (SRA) to CRIA. CRIA owns approximately 13,000 hectares of corridor land under the operational lines, 14,000 hectares under the disused lines and 1,000 hectares outside the rail corridor.
 - (b) Rail Bridges (Underbridges)
 - (i) CRIA owns a total of approximately 600 underbridges, of which less than 150 are classified as "major" (i.e. of length greater than 20m). These are constructed predominately of either concrete, steel, or timber, with a small number constructed of wrought iron or other materials.
 - (c) Road Over Rail Bridges (Overbridges)
 - (i) CRIA owns a total of 384 public and private overbridges. These overbridges cross over both the CRN and the Leased Network.
 - (d) Other
 - (i) CRIA does not own any office buildings but does own a small number of computers, vehicles for its field managers, and the office fitout for its Newcastle office. The value of these assets is insignificant compared to the remainder of CRIA assets.
- 4.1.4 For the 2009/10 year and beyond CRIA has assumed that all existing operational lines will remain operational and that train axle loads and speeds will be maintained to the current operational levels.
- 4.1.5 Risks to CRIA's services and desired results can come from various sources, however, the greatest risks come from asset-related defects or degraded asset condition. Broken rails, track geometry defects and storm washaways can all cause derailments with significant risks to safety, reliability, cost, and train path availability. Assets can degrade over time or with use to the point where services have to be curtailed.
- 4.1.6 Asset-related risk is managed by the application of life cycle asset management principals to the CRN. This approach includes service demand forecast, optimising the network to meet the demand, operation and maintenance and, ultimately, disposal or replacement of assets to achieve minimum life cycle cost.
- 4.1.7 Timely maintenance and renewal intervention is needed to minimise life cycle costs. Maintaining or renewing assets too early or beyond the most economic time increases life cycle cost. The selection of the most appropriate systems, materials and delivery methods for routine maintenance, major periodic maintenance and enhancement works will influence life cycle costs.
- 4.1.8 The Annual Maintenance Program is dominated by two asset populations, timber sleepers and timber bridges. Attachment 3 details the sleeper population by line and type (timber, steel or concrete) and the proportion of timber sleepers with an estimated age in excess of 20 years. The typical life expectancy of timber sleepers is 20-25 years. In total 58% of sleepers are timber and 76% of those are over 20 years old.
- 4.1.9 Attachment 4 details the population of timber and wrought iron underbridges. All these bridges have reached or are close to reaching the end of their economic life.



4.2 Routine Maintenance (RM)

- 4.2.1 Routine Maintenance (**RM**) refers to the day-to-day activities needed to ensure that the railway is fit for its intended function. These activities include:
- (a) Scheduled inspections, servicing and condition monitoring;
 - (b) Defect identification, correction or protection; and
 - (c) Emergency response.
- 4.2.2 The scheduled inspections regime is developed from a combination of historical time or tonnage based programs and schedules developed from a Failure Modes, Effects, and Criticality Analysis (**FMECA**). This FMECA approach is applied primarily in the signalling area whenever potential opportunities for improvement arise.
- 4.2.3 Defects are identified during the inspection activities or from reports by other parties e.g. train drivers. The defects are logged into a computerised management system, prioritised and programmed for repair. If a defect threatens the safe movement of trains, the location is protected, usually by use of a temporary speed restriction or interim repair, until more permanent repairs can be scheduled.
- 4.2.4 When an incident affecting services occurs and is either caused by the rail infrastructure or threatens the rail infrastructure, emergency response procedures are enacted and trained staff attend to the incident and determine what, if any, infrastructure repairs are required to restore services.
- 4.2.5 The level of RM activity is made up of a base level of inspection work and corrective work which is in turn a function of the existing asset condition, the level of MPM work, asset renewal works and above rail activity on the line. If Major Periodic Maintenance (MPM) works are deferred beyond their optimum time then RM will increase until that MPM activity is completed. Where scheduled MPM work is further deferred, the condition of the infrastructure will reach a stage where withdrawal of services is needed to ensure that safety is maintained.

4.3 Major Periodic Maintenance (MPM)

- 4.3.1 Major Periodic Maintenance (**MPM**) refers to maintenance activities that are cyclic in nature with a cycle typically greater than one year. As most track maintenance activity is expensive if performed manually, it is more economical and safer to use specialist equipment brought in periodically.
- 4.3.2 The timing of MPM activity is determined from the RM condition monitoring records and threshold levels of acceptable condition. The cycle of MPM activities is a function of asset configuration, condition, and usage (or time for some of the timber components). Table 2 below identifies the main MPM activities and the typical cycle times.

Table 2: Main MPM Activities and Typical Cycle Times

MPM Activity	Description	Typical Cycle
Steel and timber sleeper supply and install	Typical life 15 to 25 years depending on location and tonnage	25% of population at 5 to 7 years
Timber turnout bearer renewal	Typical life 15 to 25 years depending on location and tonnage	25% of population at 5 to 7 years
Bridge transom renewal	Typical life 15 to 25 years depending on location and tonnage	25% of population at 5 to 7 years
Resurfacing - maintenance	Pack ballast under sleepers to restore track geometry	In conjunction with re-sleeping cycle plus every 2-5 years depending on condition and tonnage
Turnout resurfacing	Pack ballast under sleepers to restore track geometry	2-5 years depending on condition and tonnage
Turnout renewal	Replace complete turnouts when more economic than part renewal	On condition
Level crossing upgrades (track and road)	Replace timber track panel (with steel or concrete) and road surface	25% of population at 5 to 7 years
Ballasting - maintenance	With resleeping and resurfacing or to restore ballast profile	25% of population at 5 to 7 years
Track reconditioning - sledding	To remove fouled ballast and correct formation surface	On condition
Rail grinding	To reduce friction, wear, noise, and extend other MPM cycles	In conjunction with rerailing or every 30 to 50 MGT
Dipped weld correction	To correct rail geometry and prolong rail life	On condition
Fencing renewal	Replace when life expired	30 years depending on location
Vegetation control	Fire hazard reduction, noxious weeds, drainage, sighting	Seasonal
Drainage	Clean drains, restore cuttings and embankments	On condition
Cuttings and embankments	Restore cuttings and embankments	On condition
Signalling renewal	Component replacement when life expired	On condition

4.4 Enhancement Works

- 4.4.1 Enhancement works can include the construction of new infrastructure with the intention of enhancing service capability or the replacement of infrastructure with the intention of increasing service capability.
- 4.4.2 Replacement of an existing asset without enhancing service capability is the norm on the CRN where typically timber assets are replaced by modern types e.g. timber bridges with concrete and timber sleepers with steel or pre-stressed concrete. The justification for this investment is based on economic appraisal concluding that it is cheaper to replace an item than to continue to maintain it. In the case of timber sleepers, these components reach a stage where maintenance is not possible and they must be replaced.
- 4.4.3 Replacement of an asset or procurement of a new asset to enhance service capability is less common on the CRN. However enhancement projects to extend four (4) crossing loops between Gap and Narrabri and extend Centralised Train Control from Werris Creek to Narrabri have recently been completed. This work was carried out to manage the additional train numbers and gross tonnage being generated by rapidly expanding coal production in this area.
- 4.4.4 Over the past 15 years some of the grain lines have been re-railed and re-sleepered together with ballast depth improvements to provide higher axle loads and operational speeds.

4.5 Performance Indicators

- 4.5.1 A number of performance indicators are reported to the Department of Transport and Infrastructure (**T&I**) as required by the Line Funding Agreement between CRIA and T&I. Two indicators are shown in Attachment 5 for the three groupings of lines, being core passenger, core freight and grain:
- (a) Track Quality Index (**TQI**)
- (i) This index is computed by the Track Geometry Recording Car which traverses the network every four (4) months for core passenger lines, six (6) monthly for core freight lines and annually for grain lines. It is a weighted average of all line sectors in that category.
 - (ii) The index provides a trend line on track roughness (descending is better, ascending is worse) and is an indicator of underlying sleeper, ballast, and geometry condition. Note that the disconnect in the trend line between 2003/04 and 2004/05 is due to a change in measurement technology.
 - (iii) The graphs in Attachment 1 indicate a continuing steady condition in the passenger and freight groups, and a significant improvement in the grain lines as a result of increased investment in recent years combined with minimal traffic on these lines.
- (b) Speed Restriction Time Loss
- (i) This indicator measures the calculated time lost to a standard freight train as a result of temporary speed restrictions typically imposed due to degraded track condition or recent work sites. It is a sum of time lost in all line sections in each category.
 - (ii) The graphs in Attachment 5 indicate the volatility caused by seasonal conditions (summer heat) and the continuing high level of speed restriction on some grain lines.

5 Strategic Management Plans

The overall asset management strategy is to safely and reliably deliver specified services and achieve target results at the lowest cost of asset ownership. This strategy requires the optimisation of the trade-offs between RM, MPM and Enhancement Works within available resource constraints e.g. deferring MPM will result in additional RM costs.

The following sections detail the planned scope of management plans for CRIA’s assets.

5.1 Rail Infrastructure Enhancement Investment Strategic Plan

- 5.1.1 The strategy for enhancement investment is to invest in new infrastructure when service enhancements are in demand and can be funded by increased access revenues or Community Service Obligation (**CSO**) contributions.
- 5.1.2 In 2009/10 service enhancement projects in the Gap to Narrabri section are planned to be completed together with the signalling and train management system projects.,
- 5.1.3 Train Order Working (**TOW**) is planned to be completed in 2010/11..
- 5.1.4 This Asset Management Plan is a live document and is revised on an annual basis and more frequently if operational or business demands change. Two areas of the network which may require enhancement works in the future are:
 - (a) Gap - Narrabri: further capacity improvements to match coal demand; and
 - (b) Gulgong - Wallerawang: restoring services from Gulgong to Kandos and upgrading Kandos to Wallerawang to support increased coal supply to Mt Piper.

5.2 Rail Infrastructure Asset Maintenance Strategic Plan

Routine Maintenance

- 5.2.1 Routine maintenance activities include:
 - (a) scheduled inspection, condition monitoring, and servicing;
 - (b) defect correction; and
 - (c) emergency response.
- 5.2.2 The CRIA strategy for routine maintenance includes:
 - (a) review of the scheduled inspection, monitoring and servicing frequencies and tasks to ensure they appropriately mitigate the asset risks;
 - (b) minimise the cost of RM by timely investment in MPM and enhancement works; and
 - (c) minimise disruption to services by timely repair of defects and response to network incidents.

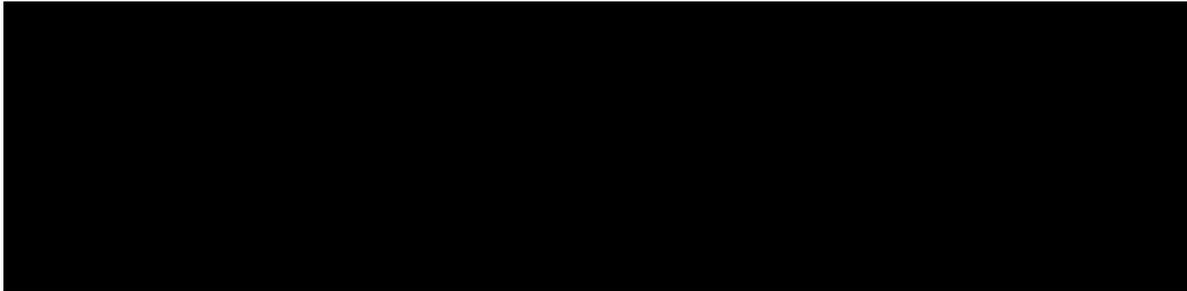
Major Periodic Maintenance

- 5.2.3 Investment in MPM and asset renewal will be ongoing as assets reach the end of their economic life and are still required to support service delivery. The primary objective is to replace timber components (20 year life) on lines which are to remain operational indefinitely with economically superior steel or concrete components (50+ year life). As conversion of whole lines reaches completion, recurrent expenditure on MPM will reduce significantly.



5.2.4 The categories and description of these types of investment are as follows:

- (a) Steel and timber sleeper supply and install
 - (i) Timber sleepers typically last about 20 years but good quality new hardwood timber sleepers are becoming increasingly rare and expensive. Steel sleepers provide at least a 50 year life (and potentially much longer life) and are cheaper over the sleeper lifecycle. Table 3 describes the current timber sleeper population and age profile by line grouping.
 - (ii) Table 3 highlights that 73% of timber sleepers have reached or are beyond the typical economic sleeper age at which time they increase routine maintenance costs, and the costs of some MPM activities, as well as increasing safety and reliability risks.



- (iv) Attachment 6 details the timber sleeper renewal plan to 2023/24. When implemented, all timber sleepers will have been replaced on the core network by 2020 and on the grain network by 2023/24 (except for under mechanical joints).

Table 3: Sleeper Population and Age Profile by Line Grouping

Line Group	Total Sleepers	% Timber	% Timber >20yr old
Core Passenger	2,007,000	55%	61%
Core Freight	872,000	52%	71%
Grain	1,822,000	66%	87%
Total	4,700,000	59%	73%

- (b) Concrete sleeper supply and install
 - (i) In areas of heavy axle load, high annual gross tonnage or sharp curvature, concrete is a more economical solution than steel sleepers and would generally be installed on a face rather than in a pattern of one in four or one in two.
- (c) Replacement of timber underbridges with steel and/or concrete bridge
 - (i) As with sleepers, quality timber bridge components are difficult to source and the artisan skills needed for this work are becoming increasingly difficult to find. It is generally more economic to replace timber bridges with steel or concrete bridges. Many shallow bridges can be replaced by precast pipes or culverts.
 - (ii) Table 4 below identifies the current timber underbridge population.
 - (iii) As with timber sleepers the CRIA strategy for timber underbridge renewal is to replace all timber underbridges on the core network with steel and/or concrete bridges within an 11 year period. A

similar replacement rate will be needed on the grain network depending on the future viability of each line.

- (iv) Attachment 7 details the CRIA timber and wrought iron bridge renewal plan which would see all timber and wrought iron bridges replaced by 2020.

Table 4: Timber Underbridge Population

Line Group	No. of Timber Bridges
Core Network	32
Grain Network	110
Total	142

- (d) Replacement of wrought iron bridges with steel and/or concrete bridges
 - (i) Following the temporary closure of the Menangle wrought iron bridge in 2004, the State Government undertook to replace the Bathurst and Wellington wrought iron truss bridges which date from 1876 (Bathurst). The replacement of the Bathurst bridge has commenced. The Wellington bridge is due for replacement in 2015.
 - (ii) There are an additional two wrought iron truss bridges in the operating network at Tamworth and Woolbrook. However, these bridges have been relatively lightly used over their lifetime and would be replaced in the outer years of this plan. The condition of the remaining wrought iron bridges continues to be regularly monitored.
- (e) Replace rail joints with continuous welded rail (**CWR**)
 - (i) Over many years rail joints in the core passenger and core freight lines (typically every 110 metres) have been progressively removed and replaced with CWR which is cheaper to maintain. In addition to improved life cycle costs, reliability and safety, CWR offers improvements for rolling stock operators in fuel economy. Some sections of jointed track remain and the program of joint replacement with welds continues.
- (f) Replacement of life-expired rail
 - (i) Rail life is determined by wear (rail head reduced to condemning dimensions) or the rate of rail defects and is replaced to mitigate the safety risk associated with broken rails.
 - (ii) Consideration is being given to strategies to increase the capacity of Class 5 and Class 3 grain lines including re-railing. Re-railing to allow operation of 120t coal wagons between Werris Creek and Turravan and between Lithgow and Kandos may become a necessity within the 15-year timeframe of this AMP.
- (g) Timber turnout bearer renewal
 - (i) Hardwood timber will be used for partial renewal of timber turnout bearers as they become life expired. Where full sets of bearers are required, steel or concrete bearers become more cost-effective and will be used.
- (h) Timber underbridge transom renewal
 - (i) Open deck bridges (timber or steel) have timber transoms under the rails. There is currently no cost-effective alternative to timber for replacement of timber bridge transoms. The CRIA strategy is to continue to replace timber transoms as they life expire with new hardwood timber.
- (i) Track resurfacing



- (i) The strategy is to resurface behind cyclic sleeper renewal activity and other severe track disturbance such as ballast cleaning or reconditioning. In general, MPM works are planned to minimise the frequency of resurfacing due to the cost, degradation of ballast and damage to components. Out of cycle resurfacing will be required where track geometry falls below the acceptable level. Attachment 8 details the track resurfacing plan to 2023/24.
- (ii) Once steel and concrete re-sleepering is completed, resurfacing on a frequency of two to five years can be expected, depending on formation condition, ballast depth and tonnage.
- (j) Turnout resurfacing
 - (i) The strategy is to resurface in conjunction with other major MPM works or renewals and minimise out-of-cycle resurfacing due to the cost, degradation of ballast and damage to components. Out-of-cycle resurfacing will be required where turnout geometry falls below the acceptable level.
- (k) Turnout renewal
 - (i) Typically on the CRN, the turnout rails have longer lives than the bearers or ballast and the different components are replaced at different times. In some instances it is more economical to replace the whole turnout.
- (l) Level crossing renewal
 - (i) Existing timber-sleepered track panels in level crossings deteriorate over time with road and rail use. As it requires a road closure to replace a track panel in a level crossing, the CRIA strategy is to replace complete track panels using steel or concrete sleepers when the timber panels are no longer maintainable. The road surface is also replaced and drainage improvements implemented at the same time if required.
- (m) Level crossing protection
 - (i) CRIA has identified the risk of a truck striking a passenger train as its highest operational risk on the CRN. The review of level crossings affected by introduction of the Train Order Working project in parts of the network has been given the highest priority.
 - (ii) CRIA applies funding from the Level Crossing Strategy Council, from CRIA's own resources and from the current Federal funding to progressively upgrade priority level crossings.
- (n) Ballast top-up
 - (i) Ballast deteriorates with weathering, track use and from track maintenance. Ballast needs to be topped up from time to time to retain ballast profile, track support and stability. The CRIA strategy is to perform this top-up in conjunction with sleeper renewal, resurfacing, or ballast cleaning activity.
- (o) Track reconditioning
 - (i) Where track ballast is significantly fouled and/or the formation has failed, track reconditioning removes the full track structure and repairs it from the ground up. The strategy is to recondition track when it is cheaper than maintaining the different track components.
- (p) Ballast cleaning/sledding
 - (i) Areas of unclean (foul) ballast will lose their drainage and mechanical properties as voids fill with fines and soil. This will result in poor track geometry and higher maintenance costs. Sometimes it is cost-effective to use a ballast cleaning machine to remove the fines from the ballast, however this activity is rare on the lightly used CRN lines. A cheaper more cost-effective alternative is sledding where there are no track height constraints. These activities are performed where economically justified.
- (q) Rail grinding
 - (i) The CRIA strategy is to grind rails when installed and where there is a positive economic return from savings in rail, sleeper, ballast, and geometry maintenance and renewal. This typically occurs

in the more heavily trafficked areas. By restoring an optimal rail profile, rail life is extended, and above-rail operators receive economic benefits.

- (r) Dipped weld correction
 - (i) The rail steel around rail welds is altered by the heat generated by the welding process and becomes softer than the original steel, leading to dips in the rail. Like rail grinding, the straightening of rails to remove the dips can have a positive economic return from savings in rail, sleeper, ballast and geometry maintenance and renewal.
- (s) Fencing renewal
 - (i) Fencing materials including posts, mesh, wires, and strainers deteriorate over time and need to be replaced on average at about 30 year intervals. CRIA's strategy is to replace fencing only where it has a statutory obligation to maintain a stock proof fence, or where a fence is required to mitigate rail safety risk or public safety risk.
- (t) Bridge walkways
 - (i) Under OH&S legislation a walkway or other restraining device may need to be provided across railway bridges. Length and height of the bridge together with traffic density contribute to the risk profile.
- (u) Vegetation control
 - (i) The CRIA strategy is to meet statutory requirements to manage bush fire fuel hazards and noxious weeds. In addition, vegetation control to maintain sighting distances for level crossing road users and train drivers' sighting of signals and signs will be carried out.
- (v) Drainage/Earthworks
 - (i) Low life cycle cost track requires good drainage. CRIA's strategy is to clean out drains and restore cutting and embankment faces where there is a positive economic return from savings in rail, sleeper, ballast, and geometry maintenance and renewal.
- (w) Signalling renewal
 - (i) Much of the existing obsolete signaling equipment remaining in the CRN will be renewed with the completion of the Train Order Working project in 2010. With signaling systems that have been in operation for some time, it is usually more economical to replace equipment rather than maintain it or replace components. The CRIA strategy is to replace signaling equipment where economically justified including the avoidance of service interruptions and safety risks.
 - (ii) Signalling assets include level crossing protection including the installation of Cerebus remote monitoring, control hut replacement, LED lamps, and swing gates for pedestrian crossings. These assets will continue to require repair and component renewal.

5.3 Summary MPM Program

- 5.3.1 Table 5 and Table 6 identify at a grouped line level the forecast MPM scope for major activities over a five-year period.

Table 5: MPM Scope by Activity per Year for the Core Network

		09/10	10/11	11/12	12/13	13/14	14/15
Activity - Core Network	Units	Scope	Scope	Scope	Scope	Scope	Scope
Steel & Timber Sleeper supply & install	Each	221,374	141,757	127,649	149,573	145,908	132,885
Concrete Sleeper supply & install	Each	0	0	0	0	0	-
Resurfacing associated with resleepering	Kms	447	151	235	217	217	275
Resurfacing - Maintenance	Kms	380	357	352	388	393	427
Ballasting associated with resleepering	Tonne	52,260	22,650	38,710	36,810	37,310	47,800
Ballasting - Maintenance	Tonne	40,580	33,725	33,725	35,500	40,700	33,850
Timber Turnout Bearer Renewal	Each	679	679	679	679	679	679
Turnout crossing replacement	Each	5	4	4	4	4	4
Turnout Renewal	Each	7	3	11	12	13	14
Turnout Maintenance	Each	8	18	18	18	18	18.4
Turnout Resurfacing	Each	8	82	72	89	77	60
Bridge Transom Renewal	Each	202	375	375	375	375	375
Private Overbridge Refurbishment	Each	1	1	0	1	1	1
Timber & WI Bridge Renewal	Each	22	6	2	6	0	0
Steel Underbridge Repairs	Each	0	1	0	1	0	1
Timber Underbridge Repairs	Each	0	0	0	0	0	0
Replace Rail Joints with Welded Rail (CWR)	Kms	221	132	139	127	75	50
Dipped Weld Correction	Kms	3	20	20	50	40	0
Rail Grinding	Kms	52	99	100	94	0	103
Rerailing (rail replacement)	Metres	1,000	0	0	220	220	220
Vegetation Control	Kms	3,483	2,590	2,590	2,590	2,590	2,590
Engineering Investigations	Each	53	6	6	6	6	6
Track Reconditioning - Sledding	Metres	5,015	2,450	1,600	1,600	1,600	1,600
Cuttings & Embankments	Each	7	6	6	8	10	8
Drainage	Metres	47,351	69,450	69,450	69,450	69,450	69,450
Fencing Renewal	Metres	18,001	64,500	64,500	64,500	64,500	64,500
Level Crossing Upgrades (Track and Road)	Each	46	37	38	40	38	37
Signaling Renewal	Each	91	4	4	4	4	4

Table 6: MPM Scope by Activity per Year for the Grain Network

		09/10	10/11	11/12	12/13	13/14	14/15
Activity - Grain Network	Units	Scope	Scope	Scope	Scope	Scope	Scope
Steel & Timber Sleeper supply & install	Each	43,329	108,415	91,575	57,430	47,310	90,551
Concrete Sleeper supply & install	Each	0	0	0	0	0	0
Resurfacing associated with resleepering	Kms	80	192	245	99	200	213
Resurfacing - Maintenance	Kms	240	132	142	146	136	129
Ballasting associated with resleepering	Tonne	7,560	38,600	41,561	20,280	40,000	42,600
Ballasting - Maintenance	Tonne	27,918	21,450	19,070	17,014	16,994	14,834
Timber Turnout Bearer Renewal	Each	118	340	340	340	340	340
Turnout Crossing Replacement	Each	0	1	0	0	0	0
Turnout Renewal	Each	0	10	8	6	5	3
Turnout Maintenance	Each	0	4	4	4	4	4
Turnout Resurfacing	Each	2	35	59	26	38	39
Bridge Transom Renewal	Each	174	293	293	293	293	293
Private Overbridge Refurbishment	Each	0	0	0	0	1	0
Timber & WI Bridge Renewal	Each	1	5	17	8	9	23
Steel Underbridge Repairs	Each	0	0	1	0	0	0
Timber Underbridge Repairs	Each	5	3	2	3	3	0
Replace Rail Joints with Welded Rail (CWR)	Kms	39	0	60	0	0	70
Dipped Weld Correction	Kms	0	0	0	0	0	0
Rail Grinding	Kms	55	0	0	0	0	0
Rerailing (rail replacement)	Metres	1,860	0	0	0	0	0
Vegetation Control	Kms	1,093	1,093	1,093	1,093	1,093	1,093
Engineering Investigations	Each	4	3	2	2	2	2
Track Reconditioning - Sledding	Metres	0	0	0	0	0	0
Cuttings & Embankments	Each	0	0	0	1	0	0
Drainage	Metres	0	13,700	13,700	13,700	13,700	13,700
Fencing Renewal	Metres	0	0	0	0	0	0
Level Crossing Upgrades (Track and Road)	Each	1	25	26	25	26	25
Signaling Renewal	Each	32	0	0	0	0	0

6 Property Strategic Management Plan

- 6.1.1 CRIA manages approximately 16,000 hectares of corridor land under the operational lines, 13,000 hectares under disused lines and a further 4,000 hectares of land outside the rail corridor.
- 6.1.2 CRIA's property portfolio includes in excess of 1,000 properties.

7 Overbridge Strategic Management Plan

- 7.1.1 CRIA maintains its 379 overbridges in a safe condition for road users. In some cases, bridges are replaced completely where economic analysis supports renewal over maintenance.
- 7.1.2 With a total of 80 public timber overbridges in country NSW (crossing the CRN and the Leased Network) in various stages of deterioration, the CRIA strategy is to replace on average four (4) per year over a 20 year period. In addition, overbridge components (particularly timber) are repaired or replaced when they approach a condition which would require load and/or speed restrictions to be applied. CRIA's strategy is, where possible, to restore the original design capabilities of the bridges.
- 7.1.3 Attachment 9 details the CRIA overbridge renewal plan to 2023/24.

8 Asset Disposal Strategic Plan

- 8.1.1 The maintenance and renewal works undertaken each year generate waste materials. In all cases ARTC disposes of these assets in accordance with their environmental licence and to maximise the financial return to CRIA. Components that are disposed of include timber sleepers, timber bridge components, fouled ballast, steel fastenings and track plates, and earthworks spoil.
- 8.1.2 The completion of specific projects may present opportunities to dispose of particular assets. In 2009/10 CRIA will complete the replacement of the wrought iron truss bridge over the Macquarie River at Bathurst. This bridge, dating from 1876, is on the CRIA heritage register and is a structure of state heritage significance. The replacement bridge is on a new alignment and when it is connected to the track at each end the old bridge will become surplus.
- 8.1.3 CRIA has been unable to find an alternative community use for this bridge as it is not near an established cycle way or walking track and the local council has shown no interest in taking over the bridge. At this time it is proposed to secure the bridge from unauthorized use when it is decommissioned. It is adjacent to the new bridge and can be readily observed.

- 8.1.4 In terms of value, the major asset disposal issue for CRIA relates to the future of the 3,223 km of disused lines in NSW. Most of these lines have been out of service for in excess of 20 years, meaning that for them to be reused for rail transport the infrastructure would need total reconstruction. However, CRIA is prevented by legislation from removing the infrastructure from these lines and from disposing of the corridor lands. Attachment 2 has a list of disused lines, their length and the year they became disused.
- 8.1.5 For these non-operational lines, CRIA continues to have statutory requirements which need to be met relating to:
- (a) Fire hazard management;
 - (b) Noxious weed control;
 - (c) Noxious animal control; and
 - (d) Public safety, particularly with respect to bridges including road over rail bridges.
- 8.1.6 CRIA's strategy is to pursue alternative arrangements for the management of non-operational lines. CRIA is currently investigating options that include alternative uses and owners for surplus infrastructure assets of heritage significance.
- 8.1.7 CRIA is currently in discussions with the NSW Department of Transport and Infrastructure and the Department of Lands to explore opportunities for the better use of disused lines.

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Attachment 1 Tonnage by Line and Commodity

Tonnage by Line and Commodity – Core

Note: This table applies to 2007/08 – a year heavily affected by drought

Passenger Lines	Km	MGTK					Total MGTK	Av.GT (MGT)
		Coal	Grain	Minerals	General Freight	Pass		
Gap - Gunnedah	64	400.7	171.7		84.3	4.4	661.0	10.33
Gunnedah - Narrabri	85	84.7	285.3		100.2	6.9	477.1	5.61
Narrabri Junction - Moree	101		184.9		19.0	7.1	210.7	2.09
Werris Creek - Armidale	168		2.2		7.3	25.7	35.2	0.21
Lithgow - Wallerawang	26	88.6	13.9	15.2	87.2	9.9	212.8	8.18
Wallerawang - Blayney	175		65.1	73.0	345.4	47.7	531.2	3.04
Blayney - Orange	48		18.0	0.2	76.1	13.8	108.1	2.25
Orange Junction - Goobang	125		131.9	0.8	139.5	25.1	297.3	2.38
Orange Junction - Dubbo	139		26.4		140.9	32.9	200.2	1.44
Joppa Jct - Queanbeyan	91				65.0	24.7	89.7	0.99
Queanbeyan - Canberra	8				2.1	2.4	4.5	0.56
Junee - Yanco	120		36.3		99.3	1.3	136.8	1.14
Yanco - Griffith	54		0.1		29.6	0.4	30.0	0.56
Passenger Lines Total	1,204	574.0	935.8	89.2	1195.9	202.3	2997.2	2.49

Freight Lines	Km	MGTK					Total MGTK	Av.GT (MGT)
		Coal	Grain	Minerals	General Freight	Pass		
Narromine - Nevertire	67		27.5	63.3	4.5	0.1	95.4	1.42
Nevertire - Cobar	191		11.3	190.5	0.2	0.4	202.4	1.06
Wallerawang - Kandos	78	185.2			29.0		214.2	2.75
Stockinbingal - Temora	35		21.0		0.9	0.1	22.0	0.63
Temora - Griffith	152		24.9		0.1	0.2	25.3	0.17
Freight Lines Total	523	185.2	84.7	253.8	34.7	0.8	559.3	1.07

Core Network Total	1,727	759.2	1020.5	343.0	1230.6	203.1	3556.4	2.06
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Tonnage by Line and Commodity – Grain Lines

Grain Lines	Km	MGTK					Total MGTK	Av.GT (MGT)
		Coal	Grain	Minerals	General Freight	Pass		
Moree - Camurra	11		2.0				2.0	0.18
Camurra - Weemelah	86		19.7				19.7	0.23
Burren - Merrywinebone	53		5.5				5.5	0.10
Camurra - North Star	84		12.6		3.7		16.3	0.20
Narrabri - Burren Junction	83		52.8		0.7		53.5	0.64
Burren Junction - Walgett	88		26.6				26.6	0.30
Dubbo - Gilgandra	59		30.0				30.0	0.51
Gilgandra - Coonamble	91		50.0				50.0	0.55
Bogan Gate - Tottenham	114		11.1				11.1	0.10
Nevertire - Warren	20		1.2		0.2		1.4	0.07
Temora - Barmedman	35		6.3				6.3	0.18
Barmedman - W. Wyalong	30		4.9				4.9	0.16
The Rock - Boree Creek	57		0.8		0.1		0.8	0.01
West Wyalong - Ungarie	42		3.9				3.9	0.09
Ungarie - Lake Cargelligo	72		0.9				0.9	0.01
Ungarie - Naradhan	60		1.1				1.1	0.02
Griffith - Hillston	108		7.5		1.2		8.7	0.08
Grain Lines Total	1,093	0	236.9	0	5.8	0	242.7	0.22
Network Total	2,820	759	1,257	343	1,236	203	3,799	1.35

Attachment 2 Disused/Non-Operational Lines

From	To	Length (Km)	Non-Operational Date
Bungendore	Captains Flat	37	1968
Merrywinebone	Pokataroo	16	1974
Byrock	Brewarrina	93	1974
Tarana	Oberon	24	1979
Cootamundra	Tumut	104	1984
Gilmore	Batlow	26	1984
Weemelah	Mungindi	27	1984
Craboon	Coolah	39	1985
Hillston	Roto	48	1986
Culcairn	Holbrook	26	1987
Galong	Boorowa	29	1987
West Tamworth	Barraba	99	1987
North Star	Bogabilla	36	1987
Uranquinty	Kywong	54	1988
Yass Junction	Yass Town	4	1988
Sandy Hollow	Merriwa	38	1988
Boree Creek	Oaklands	67	1982/88
Wagga Wagga	Tumbarumba	130	1974/88
Henty	Rand	53	1989
Nyngan	Bourke	202	1989
Queanbeyan	Bombala	213	1986/1989
Goulburn	Crookwell	58	1989
Narrandera	Tocumwal	180	1987/91
Cowra	Eugowra	80	1991
Koorawatha	Grenfell	52	1991/2009
Culcairn	Corowa	76	1989/91
Molong	Dubbo	129	1982/92
Armidale	Wallangara	213	1989/93/2000
Moree	Inverell	155	1987/91/94

From	To	Length (Km)	Non-Operational Date
Barmedman	Rankins Springs	115	2004
Casino	Murwillumbah	131	2004
Binnaway	Gwabegar	145	2005
Yanco	Hay	150	1989/2005
West Wyalong	Burcher	54	2005
Blaney	Demondrille	178	2007/09
Kandos	Gulgong	91	2007
Total disused km		3,174	

Note: Some lines became disused in sections over two or more years as shown.

Attachment 3 Sleeper Population

Sleeper Population - Core

Passenger Lines	Km's	SLEEPERS (As at 30-6-09)				
		Total Sleepers	Timber	Steel	Concrete	Timber >20yrs
			%	%	%	%
Gap - Gunnedah	64	106,688	0	0	100	0
Gunnedah - Narrabri Jct	85	141,695	48	52	0	80
Narrabri Junction - Moree	101	168,367	69	32	0	70
Werris Creek - Armidale	168	280,056	72	28	0	90
Lithgow - Wallerawang	26	43,342	56	32	12	50
Wallerawang - Blayney	175	291,725	35	45	20	60
Blayney - Orange	48	80,016	51	49	0	80
Orange Jct - Goobang	125	208,375	60	39	1	65
Orange Junction - Dubbo	139	231,713	64	36	0	75
Joppa Jct - Queanbeyan	91	151,697	79	21	0	20
Queanbeyan - Canberra	8	13,336	75	25	0	20
Junee - Yanco	120	200,040	56	44	0	40
Yanco - Griffith	54	90,018	43	57	0	60
Passenger Lines Total	1,204	2,007,068	55	36	9	61

Freight Lines	Km's	Total Sleepers	Timber	Steel	Concrete	Timber >20yrs
			%	%	%	%
Narromine - Nevertire	67	111,689	51	49	0	60
Nevertire - Cobar	191	318,397	50	50	0	70
Wallerawang - Kandos	78	130,026	51	49	0	75
Stockinbingal - Temora	35	58,345	0	100	0	0
Temora - Griffith	152	253,384	66	34	0	90
Freight Lines Total	523	871,841	52	40	6	71

Core Network Total	1,727	2,878,909	54	40	6	64
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Sleeper Population – Grain

Grain Lines	Km's	Total Sleepers	Timber	Steel	Concrete	Timber >20yrs
			%	%	%	%
Moree - Camurra	11	18,337	75	25	0	85
Camurra - Weemelah	86	143,362	75	25	0	70
Burren - Merrywinebone	53	88,351	76	24	0	80
Camurra - North Star	84	139,195	11	89	0	100
Narrabri - Burren Junction	83	138,361	57	43	0	100
Burren Junction - Walgett	88	146,696	86	14	0	100
Dubbo - Gilgandra	59	98,353	90	10	0	100
Gilgandra - Coonamble	91	151,697	66	34	0	85
Bogan Gate - Tottenham	114	190,038	66	34	0	75
Nevertire - Warren	20	33,673	78	22	0	75
Temora - Barmedman	35	58,345	80	20	0	0
Barmedman - West Wyalong	30	50,010	50	50	0	100
The Rock - Boree Creek	57	95,019	66	34	0	95
West Wyalong - Ungarie	42	70,014	72	28	0	95
Ungarie - Lake Cargelligo	72	120,024	40	60	0	95
Ungarie - Naradhan	60	100,020	84	16	0	85
Griffith - Hillston	108	180,036	76	24	0	95
Grain Lines Total	1,093	1,821,531	66	34	0	87

Network Total	2,820	4,700,440	59	38	4	73
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Attachment 4 Timber and Iron Underbridge Population

Timber & Iron Underbridge Population – Core

Passenger Lines	No. Major Timber U/Bs	No. Minor Timber U/Bs	No. Wrought Iron U/Bs
Gap - Gunnedah			
Gunnedah - Narrabri Junction			
Narrabri Junction – Moree	1	1	
Werris Creek - Armidale	2	1	2
Lithgow - Wallerawang			
Wallerawang - Blayney			1
Blayney - Orange			
Orange Jct - Goobang			
Orange Junction - Dubbo	2	5	1
Joppa Jct - Queanbeyan	2	10	
Queanbeyan - Canberra			
Junee - Yanco		1	
Yanco - Griffith			
Passenger Lines Total	7	18	4

Freight Lines	No. Major Timber U/Bs	No. Minor Timber U/Bs	No. Wrought Iron U/Bs
Narromine - Nevertire		1	
Nevertire - Cobar	2	3	
Wallerawang - Kandos			
Stockinbingal - Temora			
Temora - Griffith		1	
Freight Lines Total	2	5	

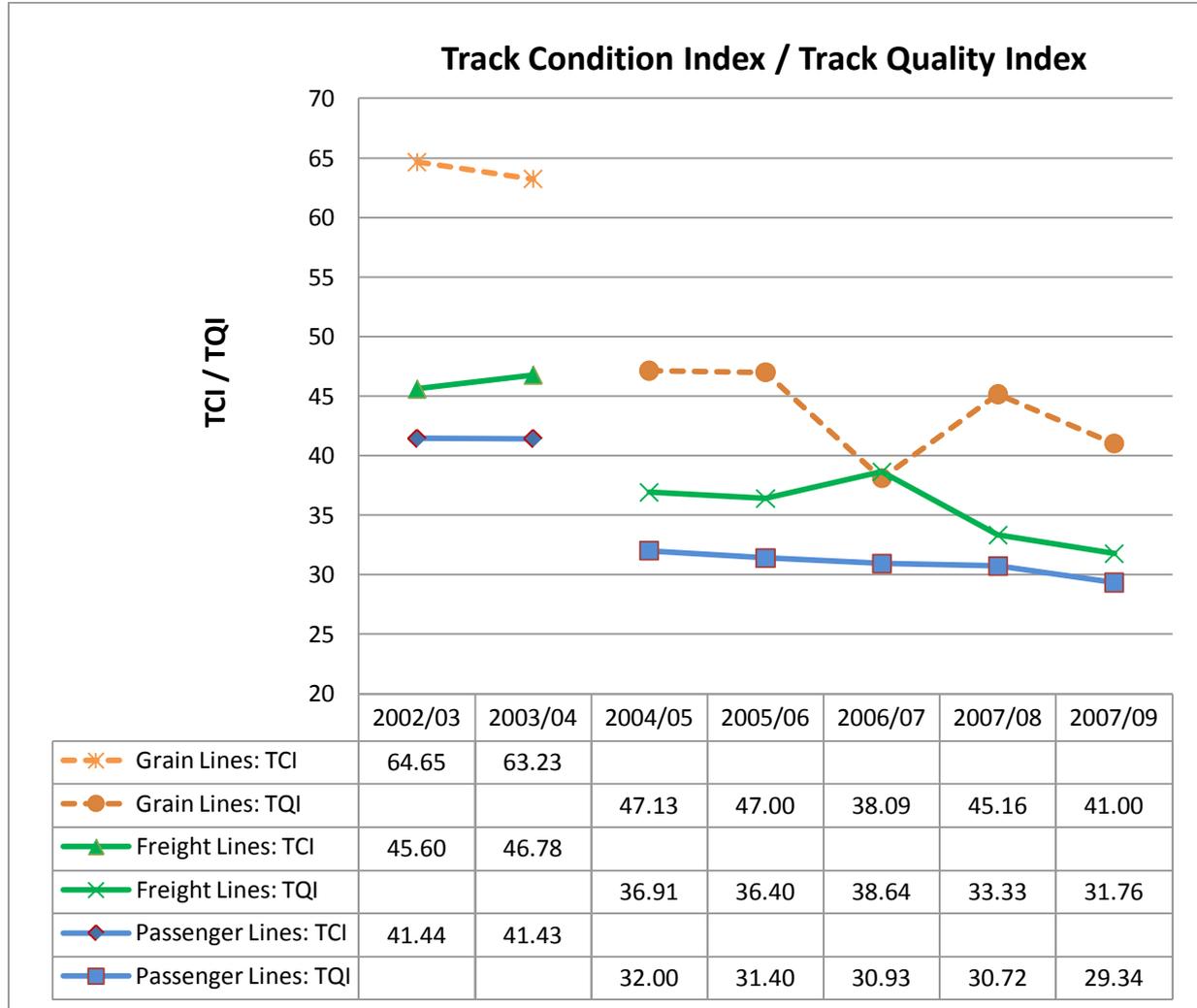
Core Network Total	9	23	4
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Timber & Iron Underbridge Population – Grain

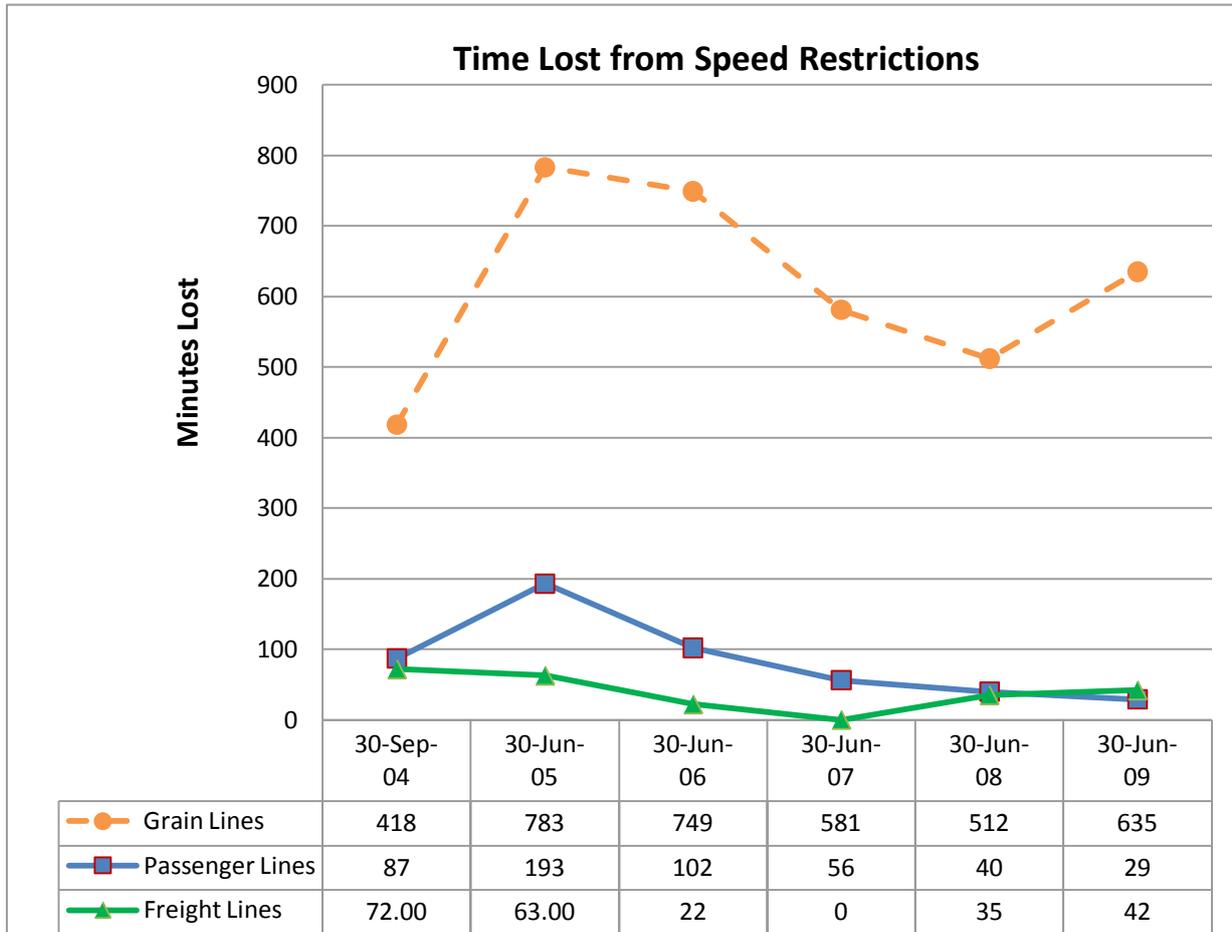
Grain Lines	No. Major Timber U/Bs	No. Minor Timber U/Bs	No. Wrought Iron U/Bs
Moree - Camurra	7	2	
Camurra - Weemelah	9	15	
Burren - Merrywinebone			
Camurra - North Star	1	1	
Narrabri - Burren Junction	2		
Burren Junction - Walgett			
Dubbo - Gilgandra	4	24	
Gilgandra - Coonamble		17	
Bogan Gate - Tottenham	2	12	
Nevertire - Warren	1	6	
Temora - Barmedman			
Barmedman - W. Wyalong		1	
The Rock - Boree Creek	1	2	
West Wyalong - Ungarie			
Ungarie - Lake Cargelligo	2		
Ungarie - Naradhan			
Griffith - Hillston		1	
Grain Lines Total	29	81	0
Network Total	38	104	4

Attachment 5 Performance Indicators

Track Condition



Speed Restrictions



Attachment 6 Timber Sleeper Renewal Plan

Core: Scope – Number of Timber Sleepers Replaced by Line per Year

Passenger Lines	Number of sleepers to be replaced each year										
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Gap - Gunnedah	245										
Gunnedah - Narrabri Junction				68,862							
Narrabri Junction - Moree	44,000		1,000			45,000		29,163	40,000		
Werris Creek - Armidale						50,000					146,918
Lithgow - Wallerawang	5,000	19,000									
Wallerawang - Blayney			103,649								
Blayney - Orange					40,612						
Orange Junction - Goobang		122,757									
Orange Junction - Dubbo	58,000				90,296						
Joppa Junction - Queanbeyan	40,000							79,134			
Queanbeyan - Canberra	5,000							6,502			
Junee - Yanco	1,000			24,000	15,000					72,524	
Yanco - Griffith						37,885					
Passenger Lines Total	153,246	141,757	104,649	92,862	145,908	132,885	0	114,799	40,000	72,524	146,918



Freight Lines	Number of sleepers to be replaced each year										
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Narromine - Nevertire				56,711							
Nevertire - Cobar							132,472	28,000			
Wallerawang - Kandos	68,129										
Stockinbingal - Temora											
Temora - Griffith			23,000						85,000		
Freight Lines Total	68,129	0	23,000	56,711	0	0	132,472	28,000	85,000		

Core Network Total	221,374	141,757	127,649	149,573	145,908	132,885	132,472	142,799	125,000	72,524	146,918
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Grain: Scope – Number of Timber Sleepers Replaced by Line per Year – all timber sleepers, with the exception of joints renewed by 2022/23

Grain Lines	Number of sleepers to be replaced each year														
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Moree - Camurra	2,500			4,565				8,968						11	11
Camurra - Weemeloh	4,500				35,690					35,690				18,000	955
Burren - Merrywinebone	1,500					22,000					22,000		11,734	588	588
Camurra - North Star											14,049			84	84
Narrabri - Burren Junction	5,567					22,000	15,000					40,206		83	83
Burren Junction - Walgett	11,955		27,020				24,520	12,000			51,359			88	88
Dubbo - Gilgandra	4,207	14,485					24,485					36,368		59	59
Gilgandra - Coonamble	2,000	76,500					23,620							266	266
Bogan Gate - Tottenham	300				47,310				52,807					1,265	1,265



Grain Lines	Number of sleepers to be replaced each year														
Nevertire - Warren	200			24,045										111	111
Temora - Barmedman	1,500					14,525				31,451				35	35
Barmedman - W. Wyalong							12,450					11,955		30	30
The Rock - Boree Creek			23,655					26,755						633	633
West Wyalong - Ungarie	500	17,430							17,430				14,710	42	42
Ungarie - Lake Cargelligo	200					32,026								799	799
Ungarie - Naradhan	1,000		24,900					24,900					31,017	60	60
Griffith - Hillston	7,400		16,000	28,820				27,820	17,000				18,811	1,199	1,199
Grain Lines Total	43,329	108,415	91,575	57,430	83,000	90,551	100,075	100,443	87,237	67,141	99,363	76,574	76,272	23,087	6,042

Network Total	264,703	250,172	219,224	207,003	228,908	223,436	232,547	243,242	212,237	197,837	246,281	76,574	76,272	23,087	6,042
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Attachment 7 Bridge Renewal Plan

Core: Scope – Number of Planned Bridge Renewals by Line per Year

Passenger Lines	Number of Timber & Wrought Iron Bridge Renewals Each Year											
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Gap - Gunnedah		1										
Gunnedah - Narrabri Junction												
Narrabri Junction - Moree	1				2							
Werris Creek - Armidale	1		2	1		1	1			1	1	1
Lithgow - Wallerawang												
Wallerawang - Blayney	0	1	0.43	1.57								
Blayney - Orange												
Orange Junction - Goobang	2	1	1	1								
Orange Junction - Dubbo		1.1	5.59	6.4	2				0.3	0.7		
Joppa Junction - Queanbeyan	9		3	7								
Queanbeyan - Canberra												
Junee - Yanco		2	3	2		1						
Yanco - Griffith		1										
Passenger Lines Total	13	7.1	15.02	18.97	4	2	1	0	0.3	1.7	1	1



Freight Lines	Number of Timber & Wrought Iron Bridge Renewals each Year											
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Narromine - Nevertire							1					
Nevertire - Cobar		1		2	1		4					
Wallerawang - Kandos	8			1								
Stockinbingal - Temora												
Temora - Griffith	4	2.2	1	0.4	1							
Freight Lines Total	12	3.2	1	3.4	2		5					
Core Network Total	25	10.3	16.02	22.37	6	2	6	0	0.3	1.7	1.0	1



Grain: Scope – Number of Planned Bridge Renewals by Line per Year

Grain Lines	Number of Timber & Wrought Iron Bridge Renewals each Year											
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Moree - Camurra	0	0	0	0	0	0	7	2	0	0	0	0
Camurra - Weemeloh	16	0	0	0	0	0	0	6	8	0	0	0
Burren - Merrywinebone	0	1	0	0	0	0	0	0	0	0	0	0
Camurra - North Star	0	0	0	0	0	0	1	0	1	0	0	0
Narrabri - Burren Junction	0	2.35	3	0	0	2	0	0	0	0	0	0
Burren Junction - Walgett	0	0	0	0	0	0	0	0	0	0	0	0
Dubbo - Gilgandra	1	0	1	0	4	4	0	0	0	0	0	0
Gilgandra - Coonamble	0	6	0	0	0	5	0	0	0	0	0	0
Bogan Gate - Tottenham	3	0	0	0	0	2	0	0	6	0	0	0
Nevertire - Warren	1	1	0	1	0	0	0	0	7	0	0	0
Temora - Barmedman	0	0	0	0	0	0	0	0	0	0	0	0
Barmedman - W. Wyalong	10	2	0	0	0	1	0	0	0	0	0	0
The Rock - Boree Creek	3	0	0	0	1	2	0	0	0	0	0	0
West Wyalong - Ungarie	0	0	0	0	0	0	0	0	0	0	0	0
Ungarie - Lake Cargelligo	4	4	0	0	0	1	0	0	1	0	0	0
Ungarie - Naradhan	0	0	0	0	0	0	0	0	0	0	0	0
Griffith - Hillston	0	2	0	0	0	0	0	1	0	0	0	0
Grain Lines Total	38	18.35	4	1	5	17	8	9	23	0	0	0
Network Total	63	28.65	20.02	23.37	11	19	14	9	23.3	1.7	1	1



Attachment 8 Bridge Resurfacing Plan

Core: Scope – KMs of Planned Resurfacing by Line per Year

Passenger Lines	Resurfacing Kms (includes Maintenance, post resleepering and geometry maintenance Kms)														
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Gap - Gunnedah	50	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Gunnedah - Narrabri Jct	6	26	26	95	26	26	26	26	26	26	26	26	26	26	26
Narrabri Junction - Moree	71	30	33	30	30	131	30	65	96	30	30	30	30	30	30
Werris Creek - Armidale	34	34	34	34	34	154	34	14	14	34	202	34	34	34	34
Lithgow - Wallerawang	10	31	5	7	7	7	7	7	7	7	7	7	7	7	7
Wallerawang - Blayney	40	35	190	53	53	53	53	53	53	53	53	53	53	53	53
Blayney - Orange	8	10	10	10	53	14	14	14	14	14	14	14	14	14	14
Orange Junction - Goobang	30	135	25	38	38	38	38	38	38	38	38	38	38	38	38
Orange Junction - Dubbo	156	28	28	28	149	42	42	42	42	42	42	42	42	24	42
Joppa Jct -Queanbeyan	101	18	18	18	18	18	18	99	23	23	23	23	23	23	23
Queanbeyan - Canberra	10	2	2	2	2	2	2	10	2	2	2	2	2	2	2
Junee - Yanco	32	24	24	89	66	36	36	36	36	156	36	36	36	36	36
Yanco - Griffith	11	11	10	11	11	58	16	16	16	16	16	16	16	16	16
Passenger Lines Total	559	402	424	432	504	596	333	437	384	458	506	338	338	338	338



Freight Lines	Resurfacing Kms (includes Maintenance, post resleepering and geometry maintenance Kms)														
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Narromine- Nevertire	17	13	13	72	13	13	13	13	13	13	13	13	13	13	13
Nevertire - Cobar	41	38	38	38	38	38	105	162	38	38	38	38	38	38	38
Wallerawang - Kandos	85	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Stockinbingal - Temora	5	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Temora - Griffith	34	30	87	30	30	30	30	30	182	160	30	30	30	30	30
Freight Lines Total	182	106	163	173	106	106	173	230	258	236	106	106	106	106	106

Core Network Total	741	508	587	605	610	702	506	668	642	694	612	444	444	444	444
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Grain: Scope – KMs of Planned Resurfacing by Line per Year

Freight Lines	Resurfacing Kms (includes Maintenance, post resleepering and geometry maintenance Kms)														
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Moree - Camurra	2	2	2	11	2	2	13	2	2	2	2	2	2	2	2
Camurra - Weemelah	10	10	10	10	89	10	10	10	10	89	10	10	10	89	10
Burren - Merrywinebone	6	6	6	6	6	55	6	6	6	6	59	6	59	6	6
Camurra - North Star	8	8	8	8	8	8	8	8	8	8	92	8	8	8	8
Narrabri - Burren Jct	17	17	17	17	17	58	35	17	17	17	17	88	17	17	17
Burren Jct - Walgett	20	18	106	18	18	18	62	48	18	18	90	18	18	18	18
Dubbo - Gilgandra	13	69	12	12	12	12	64	12	12	12	12	61	12	12	12
Gilgandra - Coonamble	5	99	18	18	18	18	96	18	18	18	18	18	18	18	18
Bogan Gate - Tottenham	13	13	13	13	118	13	13	13	119	13	13	13	13	13	13
Nevertire - Warren	2	2	2	22	2	2	2	2	2	2	2	2	2	2	2
Temora - Barmedman	7	7	7	7	7	37	7	7	7	42	7	7	7	7	7
Barmedman - W. Wyalong	6	6	6	6	6	6	32	6	6	6	36	6	6	6	6
The Rock - Boree Creek	6	6	58	6	6	6	6	63	6	6	6	6	6	6	6
West Wyalong - Ungarie	5	47	5	5	1	5	5	5	44	5	5	5	44	5	5
Ungarie - Lake Cargelligo	8	8	8	8	8	74	8	8	8	8	8	8	8	8	8
Ungarie - Naradhan	6	6	61	6	6	6	6	62	6	6	6	6	62	6	6
Griffith - Hillston	12	12	48	72	12	12	12	70	52	12	12	12	70	12	12
Grain Lines Total	146	336	387	245	336	342	385	357	341	270	395	276	362	235	156

Network Total	887	844	974	850	946	1044	891	1025	983	964	1007	720	806	679	600
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Attachment 9 Overbridge 15 Year Enhancement Plan

Planned Number of Public Overbridges Replaced by Line per Year

Lines	Region	Plan															
		09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	Total
North	Main North West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	Main North	-	2	1	-	1	-	-	-	-	-	-	-	-	2	-	5
West	Main West	-	-	-	-	-	1	-	-	-	-	-	-	4	-	-	5
West	Orange Junction - Broken Hill	-	-	-	-	-	1	-	-	-	2	-	1	-	-	-	4
West	Orange Junction - Dubbo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Joppa Junction - Bombala	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
South	Junee - Yanco	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
South	Yanco - Griffith	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Narromine - Nevertire	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Nevertire - Cobar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Wallerawang - Gwabegar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Temora - Griffith	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	Burren - Merrywinebone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	Camurra - North Star	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	Narrabri South Junct - Walgett	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Troy Junction - Coonamble	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Bogan Gate - Tottenham	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Nevertire - Warren	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



South	Blayney - Demondrille	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
South	The Rock - Boree Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Koorawatha - Greenthorpe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Cootamundra - Lake Cargelligo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Ungarie - Naradhan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Griffith - Hillston	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	North Coast	1	3	3	3	2	2	1	4	3	-	1	2	-	-	2	27	
South	Main South	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1	3	
North	Casino - Murwillumbah	-	-	1	-	-	-	2	-	-	1	1	1	-	1	-	7	
West	Cowra - Eugowra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
South	Narrandera - Tocumwal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
South	Picton - Mittagong	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	
	Total No of Overbridges	1	5	5	5	4	4	3	4	4	3	3	4	4	4	4	4	56



Attachment 10 Overbridge 15 Year Enhancement Plan

Planned Number of Public Overbridges Replaced by Line per Year

Lines	Region	Plan															
		09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	Total
North	Main North West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	Main North	-	2	1	-	1	-	-	-	-	-	-	-	-	2	-	5
West	Main West	-	-	-	-	-	1	-	-	-	-	-	-	4	-	-	5
West	Orange Junction - Broken Hill	-	-	-	-	-	1	-	-	-	2	-	1	-	-	-	4
West	Orange Junction - Dubbo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Joppa Junction - Bombala	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
South	Junee - Yanco	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
South	Yanco - Griffith	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Narromine - Nevertire	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Nevertire - Cobar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Wallerawang - Gwabegar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Temora - Griffith	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	Burren - Merrywinebone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	Camurra - North Star	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	Narrabri South Junct - Walgett	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Troy Junction - Coonamble	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Bogan Gate - Tottenham	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West	Nevertire - Warren	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



South	Blayney - Demondrille	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
South	The Rock - Boree Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Koorawatha - Greenthorpe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Cootamundra - Lake Cargelligo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Ungarie - Naradhan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Griffith - Hillston	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	North Coast	1	3	3	3	2	2	1	4	3	-	1	2	-	-	2	27
South	Main South	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1	3
North	Casino - Murwillumbah	-	-	1	-	-	-	2	-	-	1	1	1	-	1	-	7
West	Cowra - Eugowra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
South	Narrandera - Tocumwal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South	Picton - Mittagong	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	Total No of Overbridges	1	5	5	5	4	4	3	4	4	3	3	4	4	4	4	56



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Appendix 3

**Passenger, Freight, Grain and Non-
operational Lines**

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Appendix 3: Passenger, Freight, Grain and Non-operational Lines

1.1 Contractor Requirements

1.1.1 The Contractor shall perform a detailed survey after the Commencement Date to identify all relevant rail lines and update the relevant registers and documents with all the CRN rail line information as per the SWTC requirements.

1.2 Passenger, Freight and Grain Operational Lines

1.2.1 The following table describes the existing Operational Lines.

Sector Code	Sector Name	Sector Type	Start km	End km	Route km
425	Werris Creek to West Tamworth	Core Passenger	411.175	453.394	42 219
426	West Tamworth to Armidale	Core Passenger	453.394	579.500	126.106
473	Gap to Curlewis	Core Passenger	416.025	458.911	42.886
474	Curlewis to Gunnedah Colliery Junction	Core Passenger	458.911	480.213	21.302
475	Gunnedah Colliery Junction to Narrabri Junction	Core Passenger	480.213	565.326	85.113
476	Narrabri Junction to Moree	Core Passenger	565.326	665.811	100.485
477	Moree to Camurra	Grain	665.811	677.030	11 219
478	Camurra to Weemalah	Grain	677.030	762.710	85.680
480	Narrabri Junction to Burren	Grain	565.212	648.277	83.065
481	Burren to Walgett	Grain	648.277	736.485	88 208
482	Burren to Merrywinebone	Grain	648.277	700.910	52.633
485	Camurra to North Star	Grain	677.030	760.570	83.540
645	The Rock to Boree Creek	Grain	551.075	607.700	56.625
650	Joppa Junction to Tarago	Core Passenger	230.610	263.000	32.390
651	Tarago to Queanbeyan	Core Passenger	263.000	321.462	58.462

Sector Code	Sector Name	Sector Type	Start km	End km	Route km
654	Queanbeyan to Canberra	Core Passenger	321.462	330.005	8.543
671	Stockinbingal to Temora	Core Freight	454.790	489.553	34.763
672	Temora to Barmedman	Grain	489.553	525.883	36.330
673	Barmedman to West Wyalong	Grain	525.883	557.370	31.487
674	West Wyalong to Ungarie	Grain	557.370	597.811	40.441
675	Ungarie to Lake Cargelligo	Grain	597.811	669.175	71.364
678	Ungarie to Naradhan	Grain	597.811	658.251	60.440
680	Junee to Narrandera	Core Passenger	486.033	584.860	98.827
681	Narrandera to Yanco	Core Passenger	584.860	605.906	21.046
685	Yanco to Griffith	Core Passenger	605.906	659.900	53 994
686	Temora to Griffith	Core Freight	489.553	640.000	150.447
687	Griffith to Hillston	Grain	640.000	748.050	108.050
702	Bowenfels to Wallerawang	Core Passenger	158.790	171.900	13.110
703	Wallerawang to Tarana	Core Passenger	171.900	198.355	26.455
704	Tarana to Orange Junction	Core Passenger	198.355	320.800	122.445
706	Orange Junction to Dubbo	Core Passenger	320.800	461.790	140.990
710	Narromine to Nevertire	Core Freight	498.000	563.953	65 953
711	Nevertire to Nyngan Junction	Core Freight	563.953	622.500	58.547
720	Orange Junction to Molong	Core Passenger	320.800	360.000	39 200
721	Molong to Parkes	Core Passenger	360.000	445.900	85 900
722	Parkes to Goobang Junction	Core Freight	445.900	447.100	1.200
732	Bogan Gate to Tottenham	Grain	483.845	598.425	114.580
743	Nevertire to Warren	Grain	563.953	584.200	20 247
744	Nyngan Junction to Cobar	Core Freight	622.500	754.200	131.700

Sector Code	Sector Name	Sector Type	Start km	End km	Route km
750	Wallerawang to Baal Bone Junction	Core Freight	171.900	193.800	21 900
751	Baal Bone Junction to Charbon Colliery Junction	Core Freight	193.800	246.264	52.464
752	Charbon Colliery Junction to Kandos	Core Freight	246.264	249.300	3.036
761	Dubbo to Coonamble	Grain	466.855	616.420	149.565
786	Wallerawang Colliery	Core Freight	169.844	171.595	1.751

1.3 Non-operational Lines

1.3.1 The following list describes the existing Non-operational Lines.

From	To	Length (km)	Non-operational Date
Bungendore	Captains Flat	37	1968
Merrywinebone	Pokataroo	16	1974
Byrock	Brewarrina	93	1974
Tarana	Oberon	24	1979
Cootamundra	Tumut	104	1984
Gilmore	Batlow	26	1984
Weemelah	Mungindi	27	1984
Craboon	Coolah	39	1985
Hillston	Roto	48	1986
Culcairn	Holbrook	26	1987
Galong	Boorowa	29	1987
West Tamworth	Barraba	99	1987
North Star	Bogabilla	36	1987
Uranquinty	Kywong	54	1988

From	To	Length (km)	Non-operational Date
Yass Junction	Yass Town	4	1988
Sandy Hollow	Merriwa	38	1988
Boree Creek	Oaklands	67	1982/88
Wagga Wagga	Tumbarumba	130	1974/88
Henty	Rand	53	1989
Nyngan	Bourke	202	1989
Queanbeyan	Bombala	213	1986/1989
Goulburn	Crookwell	58	1989
Narrandera	Tocumwal	180	1987/91
Cowra	Eugowra	80	1991
Koorawatha	Grenfell	52	1991/2009
Culcairn	Corowa	76	1989/91
Molong	Dubbo	129	1982/92
Armidale	Wallangara	213	1989/93/2000
Moree	Inverell	155	1987/91/94
Barmedman	Rankins Springs	115	2004
Casino	Murwillumbah	131	2004
Binnaway	Gwabegar	145	2005
Yanco	Hay	150	1989/2005
West Wyalong	Burcher	54	2005
Blaney	Demondrille	178	2007/09
Kandos	Gulgong	91	2007

Note: Some lines became non-operational in sections over two (2) or more years as shown.



Appendix 4 **Property Assets**

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Appendix 4: Property Assets

1.1 Land

- 1.1.1 Table 1 provides a summary of CRIA's land assets. The Contractor shall update and maintain this breakdown of land assets in the property register as part of the Services.
- 1.1.2 The information provided in this SWTC Appendix 4 is based on CRIA's register of property leases and licences, GIS data, and other property registers. However, CRIA does not warrant that this information is complete or accurate.

Table 1: Summary of CRIA's Land Assets

CRIA Owned Land Type	Calculated Area (m ²)
Corridor Box	239,355,842
Station Box	38,797,553
Isolated Box	4,706,746
Total	282,860,141

1.2 Corridor Box

- 1.2.1 CRIA owns land under rail within the CRN operational or non-operational lines. The estimated area is approximately 239,356,000m².
- 1.2.2 The current breakdown of corridor boxes is provided in Attachment 1.

1.3 Station Box

- 1.3.1 CRIA owns land around railway station yards on the CRN operational or non-operational lines. The estimated area is approximately 38,798,000m².
- 1.3.2 The current breakdown of station boxes is provided in Attachment 2.

1.4 Isolated Box

- 1.4.1 CRIA owns land not within Country CRN operational or non-operational lines. The estimated area is approximately 4,707,000m².
- 1.4.2 The current breakdown of station boxes is provided in Attachment 3.



1.5 Buildings and Other Property

- 1.5.1 CRIA does not currently have a definitive property register of buildings and other property assets owned by CRIA. The Contractor shall perform, after the Commencement Date, and as part of the Services, a detailed survey to identify all relevant property assets and develop a property register with all the CRIA Asset information as per the SWTC requirements.

Attachment 1 **Corridor Boxes**

Table 2: Summary of Corridor Boxes

Name	Description	Sector Name	Calculated Area (m ²)	Core Lots
Roslyn	Roslyn to Hinkler		130,555	13
Hinkler	Hinkler to Taralga		244,189	23
Mangoplah	Mangoplah to Burrandana		163,577	18
Burrandana	Burrandana to Pulletop		189,192	14
Pulletop	Pulletop to Westby		146,400	11
Gulgong	Gulgong to Beryl		423,199	46
Beryl	Beryl to Mebul Road		368,321	32
Mebul Road	Mebul Road to Goolma		298,603	13
Goolma	Goolma to Spicers Creek		635,763	49
Spicers Creek	Spicers Creek to Drill Creek		473,903	35
Drill Creek	Drill Creek to Comobella		394,801	20
Comobella	Comobella to Maryvale		263,521	16
Werris Creek	Werris Creek to Warragundi	Werris Creek to West Tamworth	183,515	1
Warragundi	Warragundi to Currabubula	Werris Creek to West Tamworth	201,369	10
Currabubula	Currabubula to Belgamba	Werris Creek to West Tamworth	161,013	5
Belgamba	Belgamba to Duri	Werris Creek to West Tamworth	160,291	1
Duri	Duri to Warral	Werris Creek to West Tamworth	211,403	1
Warral	Warral to West Tamworth	Werris Creek to West Tamworth	244,485	4
West Tamworth	West Tamworth to Tamworth	West Tamworth to Armidale	58,936	40
Tamworth	Tamworth to Nemingha	West Tamworth to Armidale	251,914	64
Nemingha	Nemingha to Tintinhull	West Tamworth to Armidale	136,462	7
Tintinhull	Tintinhull to Kootingal	West Tamworth to Armidale	249,179	11
Kootingal	Kootingal to Limbri	West Tamworth to Armidale	598,145	20
Limbri	Limbri to Danglemah	West Tamworth to Armidale	556,460	1
Danglemah	Danglemah to Woolbrook	West Tamworth to Armidale	1,225,736	14
Woolbrook	Woolbrook to Walcha Rd	West Tamworth to Armidale	361,391	4
Walcha Road	Walcha Road to Wollun	West Tamworth to Armidale	599,230	27
Wollun	Wollun to Kentucky South	West Tamworth to Armidale	216,210	17
Kentucky South	Kentucky South to Kentucky	West Tamworth to Armidale	85,792	7

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Kentucky	Kentucky to Uralla	West Tamworth to Armidale	577,216	48
Uralla	Uralla to Kellys Plains	West Tamworth to Armidale	659,810	30
Kellys Plains	Kellys Plains to Armidale	West Tamworth to Armidale	285,800	82
Glen Innes	Glen Innes to Yarrowford	Glen Innes to Wallangarra	493,554	55
Yarrowford	Yarrowford to Dundee	Glen Innes to Wallangarra	426,028	22
Dundee	Dundee to Deepwater	Glen Innes to Wallangarra	463,332	36
Deepwater	Deepwater to Bolivia	Glen Innes to Wallangarra	1,129,798	33
Sandy Flat	Sandy Flat to Bluff Rock	Glen Innes to Wallangarra	370,365	9
Bluff Rock	Bluff Rock to Bungulla	Glen Innes to Wallangarra	270,920	9
Bungulla	Bungulla to Tenterfield	Glen Innes to Wallangarra	314,180	10
Tenterfield	Tenterfield to Sunnyside	Glen Innes to Wallangarra	417,868	52
Sunnyside	Sunnyside to Wallangarra	Glen Innes to Wallangarra	316,035	3
Sandy Hollow	Sandy Hollow to Gungal	Sandy Hollow Jct to Merriwa	317,126	26
Gungal	Gungal to Wappinguy	Sandy Hollow Jct to Merriwa	488,034	56
Wappinguy	Wappinguy to Merriwa	Sandy Hollow Jct to Merriwa	321,478	20
West Tamworth	West Tamworth to Westdale	West Tamworth to Barraba	155,002	4
Westdale	Westdale to Gidley	West Tamworth to Barraba	205,629	3
Gidley	Gidley to Appleby	West Tamworth to Barraba	138,236	2
Appleby	Appleby to Attunga	West Tamworth to Barraba	143,370	10
Attunga	Attunga to Kaytoun	West Tamworth to Barraba	170,908	22
Kaytoun	Kaytoun to Sulcor	West Tamworth to Barraba	77,740	5
Sulcor	Sulcor to Klori	West Tamworth to Barraba	146,177	15
Klori	Klori to Moonaran	West Tamworth to Barraba	185,756	10
Moonaran	Moonaran to Manilla	West Tamworth to Barraba	176,178	25
Manilla	Manilla to Brabri	West Tamworth to Barraba	242,773	41
Brabri	Brabri to Wimborne	West Tamworth to Barraba	178,854	21
Wimborne	Wimborne to Upper Manilla	West Tamworth to Barraba	117,847	15
Upper Manilla	Upper Manilla to Tarpoly	West Tamworth to Barraba	172,604	24
Tarpoly	Tarpoly to Ennisdale	West Tamworth to Barraba	208,726	2
Ennisdale	Ennisdale to Black Springs	West Tamworth to Barraba	476,912	25

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Black Springs	Black Springs to Barraba	West Tamworth to Barraba	262,747	32
Armidale	Armidale to Dumaresq	Armidale to Glen Innes	381,015	38
Dumaresq	Dumaresq to Exmouth	Armidale to Glen Innes	530,643	36
Exmouth	Exmouth to Black Mountain	Armidale to Glen Innes	565,201	17
Black Mountain	Black Mountain to Guyra	Armidale to Glen Innes	431,213	15
Guyra	Guyra to Llangothlin	Armidale to Glen Innes	556,035	11
Llangothlin	Llangothlin to Ben Lomond	Armidale to Glen Innes	716,710	6
Ben Lomond	Ben Lomond to Glencoe	Armidale to Glen Innes	1,427,441	23
Glencoe	Glencoe to Stonehenge	Armidale to Glen Innes	706,941	39
Stonehenge	Stonehenge to Glen Innes	Armidale to Glen Innes	513,566	59
Old Casino	Old Casino to North Casino	Casino to Murwillumbah	159,123	10
North Casino	North Casino to Naughtons Gap	Casino to Murwillumbah	129,585	11
Naughtons Gap	Naughtons Gap to Bentley	Casino to Murwillumbah	81,559	9
Bentley	Bentley to Bungabee	Casino to Murwillumbah	71,768	11
Bungabee	Bungabee to Fernside	Casino to Murwillumbah	57,474	6
Fernside	Fernside to Leycester	Casino to Murwillumbah	58,703	8
Leycester	Leycester to Tuncester	Casino to Murwillumbah	120,295	13
Tuncester	Tuncester to Lismore	Casino to Murwillumbah	126,838	38
Lismore	Lismore to North Lismore	Casino to Murwillumbah	37,755	48
North Lismore	North Lismore to Woodlawn	Casino to Murwillumbah	288,833	30
Woodlawn	Woodlawn to Bexhill	Casino to Murwillumbah	156,135	49
Bexhill	Bexhill to Eltham	Casino to Murwillumbah	117,069	8
Eltham	Eltham to Lauredale	Casino to Murwillumbah	70,596	7
Lauredale	Lauredale to Booyong	Casino to Murwillumbah	183,821	8
Booyong	Booyong to Nashua	Casino to Murwillumbah	129,029	3
Nashua	Nashua to Binna Burra	Casino to Murwillumbah	174,911	9
Binna Burra	Binna Burra to Bangalow	Casino to Murwillumbah	157,594	9
Bangalow	Bangalow to Talofa	Casino to Murwillumbah	185,455	11
Talofa	Talofa to St Helena	Casino to Murwillumbah	64,744	2
St Helena	St Helena to Byron Bay	Casino to Murwillumbah	293,420	9

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Byron Bay	Byron Bay to Tyagarah	Casino to Murwillumbah	347,846	16
Tyagarah	Tyagarah to Myocum	Casino to Murwillumbah	243,764	9
Myocum	Myocum to Mullumbimby	Casino to Murwillumbah	56,909	4
Mullumbimby	Mullumbimby to Billinudgel	Casino to Murwillumbah	257,519	25
Billinudgel	Billinudgel to Yelgun	Casino to Murwillumbah	94,281	25
Yelgun	Yelgun to Crabbes Creek	Casino to Murwillumbah	117,507	25
Crabbes Creek	Crabbes Creek to Mooball	Casino to Murwillumbah	105,614	23
Mooball	Mooball to Burringbar	Casino to Murwillumbah	83,735	13
Burringbar	Burringbar to Upper Burringbar	Casino to Murwillumbah	130,277	13
Upper Burringbar	Upeer Buringar to Stokers Siding	Casino to Murwillumbah	292,860	31
Stokers Siding	Stokers Siding to Dunbible	Casino to Murwillumbah	82,962	19
Dunbible	Dunbible to Murwillumbah	Casino to Murwillumbah	231,858	15
Murwillumbah	Murwillumbah to Condong	Murwillumbah to Condong	51,707	8
Gap	Gap to Breeza	The Gap to Curlewis	761,498	102
Breeza	Breeza to Watermark	The Gap to Curlewis	395,501	24
Watermark	Watermark to Nea	The Gap to Curlewis	152,597	3
Nea	Nea to Curlewis	The Gap to Curlewis	304,576	4
Curlewis	Curlewis to Gunnedah	Curlewis to Gunnedah Colliery Jct	646,868	49
Gunnedah	Gunnedah to Gunnedah West	Curlewis to Gunnedah Colliery Jct	309,915	5
Gunnedah West	Gunnedah West to Emerald Hill	Gunnedah Colliery Jct to Narrabri Jct	677,223	16
Emerald Hill	Emerald Hill to Boggabri	Gunnedah Colliery Jct to Narrabri Jct	1,337,645	69
Boggabri	Boggabri to Baan Baa	Gunnedah Colliery Jct to Narrabri Jct	698,678	24
Baan Baa	Baan Baa to Turrawan	Gunnedah Colliery Jct to Narrabri Jct	948,052	4
Turrawan	Turrawan to Tiberena	Gunnedah Colliery Jct to Narrabri Jct	801,074	7
Tiberena	Tiberena to Narrabri Jct	Gunnedah Colliery Jct to	143,850	3

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
		Narrabri Jct		
Narrabri Jct	Narrabri Jct to Narrabri	Narrabri Jct to Moree	162,110	20
Narrabri	Narrabri to Edgeroi	Narrabri Jct to Moree	1,147,018	53
Edgeroi	Edgeroi to Woolenget	Narrabri Jct to Moree	173,563	7
Woolenget	Woolenget to Bellata	Narrabri Jct to Moree	970,042	41
Bellata	Bellata to Bommeri	Narrabri Jct to Moree	370,520	2
Bommeri	Bomeri to Kilgowla	Narrabri Jct to Moree	312,057	3
Kilgowla	Kilgowla to Gurley	Narrabri Jct to Moree	412,094	15
Gurley	Gurley to Tycannah	Narrabri Jct to Moree	777,897	24
Tycannah	Tycannah to Moree	Narrabri Jct to Moree	944,305	22
Moree	Moree to Camurra	Moree to Camurra	388,500	27
Camurra	Camurra to Ashley	Camurra to Weemalah	241,183	17
Ashley	Ashley to Moppin	Camurra to Weemalah	512,344	6
Moppin	Moppin to Garah	Camurra to Weemalah	706,097	14
Garah	Garah to Bengerang	Camurra to Weemalah	681,642	7
Bengerang	Bengerang to Weemalah	Camurra to Weemalah	631,035	22
Weemalah	Weemalah to Neeworra	Weemalah to Mungindi	538,942	16
Neeworra	Neeworra to Mungindi	Weemalah to Mungindi	371,763	21
Narrabri West	Narrabri West to Kiandool	Narrabri Jct to Burren	400,921	9
Kiandool	Kiandool to Culgoora	Narrabri Jct to Burren	260,922	4
Culgoora	Culgoora to Wee Waa	Narrabri Jct to Burren	598,957	30
Wee Waa	Wee Waa to Merah North	Narrabri Jct to Burren	486,723	27
Merah North	Merah North to Carbeen	Narrabri Jct to Burren	187,009	7
Carbeen	Carbeen to Cubbaroo	Narrabri Jct to Burren	349,252	11
Cubbaroo	Cubbaroo to Burren Junction	Narrabri Jct to Burren	623,090	15
Burren Junction	Burren Junction to Bugilbone	Burren to Walgett	848,011	16
Bugilbone	Bugilbone to Cryon	Burren to Walgett	442,713	11
Cryon	Cryon to Inverness	Burren to Walgett	355,147	17
Inverness	Inverness to Koothney	Burren to Walgett	127,602	4
Koothney	Koothney to Beanbri	Burren to Walgett	229,507	7
Beanbri	Beanbri to Kiel Kiel	Burren to Walgett	182,581	3

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Kiel Kiel	Kiel Kiel to Waminda	Burren to Walgett	79,515	4
Waminda	Waminda to Eurie Eurie	Burren to Walgett	292,944	4
Eurie Eurie	Eurie Eurie to Walgett	Burren to Walgett	427,989	15
Burren Junction	Burren Junction to Kigwegil	Burren to Merrywinebone	521,613	10
Kigwegil	Kigwegil to Old Burren	Burren to Merrywinebone	263,477	5
Old Burren	Old Burren to Windella	Burren to Merrywinebone	241,456	10
Windella	Windella to Rowena	Burren to Merrywinebone	365,140	4
Rowena	Rowena to Merrywinebone	Burren to Merrywinebone	665,358	13
Moree	Moree to Mungie Bundie	Moree to Biniguy	447,923	25
Mungie Bundie	Mungie Bundie to Mia Creek	Moree to Biniguy	55,950	4
Mia Creek	Mia Creek to Marambir	Moree to Biniguy	279,412	6
Marambir	Marambir to Wubbera	Moree to Biniguy	365,321	12
Wubbera	Wubbera to Biniguy	Moree to Biniguy	246,498	16
Biniguy	Biniguy to Yagobie	Biniguy to Inverell	168,804	11
Yagobie	Yagobie to Gravesend	Biniguy to Inverell	418,562	20
Gravesend	Gravesend to Syfield	Biniguy to Inverell	126,249	14
Syfield	Syfield to Glendon	Biniguy to Inverell	186,976	4
Glendon	Glendon to Hadleigh	Biniguy to Inverell	105,872	11
Hadleigh	Hadleigh to Warialda	Biniguy to Inverell	360,938	33
Warialda	Warialda to Booshang	Biniguy to Inverell	541,491	23
Booshang	Booshang to Koloona	Biniguy to Inverell	265,088	10
Koloona	Koloona to Domboy Tank	Biniguy to Inverell	245,996	8
Domboy Tank	Domboy Tank to Delungra	Biniguy to Inverell	144,567	7
Delungra	Delungra to Mt Russell	Biniguy to Inverell	361,585	34
Mt Russell	Mt Russell to Greenwood	Biniguy to Inverell	358,239	35
Greenwood	Greenwood to Bookoola	Biniguy to Inverell	129,964	15
Bookoola	Bookoola to Byron	Biniguy to Inverell	205,682	30
Byron	Byron to Inverell	Biniguy to Inverell	152,289	18
Camurra	Camurra to Wongabinda	Camurra to North Star	624,361	21
Wongabinda	Wongabinda to Calimpa	Camurra to North Star	279,369	9

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Calimpa	Calimpa to Milguy	Camurra to North Star	193,177	8
Milguy	Milguy to Crooble	Camurra to North Star	448,515	8
Crooble	Crooble to Croppa Creek	Camurra to North Star	657,157	12
Croppa Creek	Croppa Creek to Tikitere	Camurra to North Star	519,955	31
Tikitere	Tikitere to Windridge	Camurra to North Star	289,255	3
Windridge	Windridge to North Star	Camurra to North Star	213,635	6
North Star	North Star to Bibilah	North Star to Boggabilla	281,562	9
Bibilah	Bibilah to Mungle	North Star to Boggabilla	78,227	4
Mungle	Mungle to Wearne	North Star to Boggabilla	430,038	7
Wearne	Wearne to Doyles Siding	North Star to Boggabilla	201,916	12
Doyles Siding	Doyles Siding to Boggabilla	North Star to Boggabilla	427,053	26
Merrywinebone	Merrywinebone to Pokataroo	Merrywinebone to Pokataroo	569,761	10
Picton	Picton to Thirlmere	Picton to Braemar (via Thirlmere)	89,322	5
Colo Vale	Colo Vale to Braemar	Picton to Braemar (via Thirlmere)	11,770	1
North Goulburn	North Goulburn to Argyle	Goulburn to Crookwell	26,285	44
Argyle	Argyle to Kenmore	Goulburn to Crookwell	62,044	28
Kenmore	Kenmore to Norwood	Goulburn to Crookwell	128,902	8
Norwood	Norwood to The Forest	Goulburn to Crookwell	200,980	12
The Forest	The Forest to Woodhouselee	Goulburn to Crookwell	451,234	23
Woodhouselee	Woodhouselee to Roslyn	Goulburn to Crookwell	264,807	13
Roslyn	Roslyn to Mcalister	Goulburn to Crookwell	310,112	37
Mcalister	Mcalister to Crookwell	Goulburn to Crookwell	202,371	16
Yass Junction	Yass Junction to North Yass	Yass Jct to Yass Town	43,087	7
North Yass	North Yass to Yass Town	Yass Jct to Yass Town	60,036	9
Galong	Galong to St Michaels	Galong to Boorowa	79,832	18
St Michaels	St Michaels to St Clements	Galong to Boorowa	73,617	7
St Clements	St Clements to Nannong	Galong to Boorowa	66,749	5
Nannong	Nannong to Oreston	Galong to Boorowa	95,750	13
Oreston	Oreston to Gooramma	Galong to Boorowa	120,982	16

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Gooramma	Gooramma to Boorowa	Galong to Boorowa	295,214	35
Cootamundra	Cootamundra to Brawlin	Cootamundra to Gilmore	444,013	37
Brawlin	Brawlin to Muttama	Cootamundra to Gilmore	421,732	29
Muttama	Muttama to Bongalong	Cootamundra to Gilmore	42,310	7
Bongalong	Bongalong to Wambidgee	Cootamundra to Gilmore	227,244	14
Wambidgee	Wambidgee to Coolac	Cootamundra to Gilmore	336,107	23
Coolac	Coolac to Mingay	Cootamundra to Gilmore	252,525	28
Mingay	Mingay to Gundagai	Cootamundra to Gilmore	567,802	87
Gundagai	Gundagai to South Gundagai	Cootamundra to Gilmore	38,117	29
South Gundagai	South Gundagai to Willie Ploma	Cootamundra to Gilmore	250,593	54
Willie Ploma	Willie Ploma to Tumblong	Cootamundra to Gilmore	168,085	14
Tumblong	Tumblong to Laudra	Cootamundra to Gilmore	86,382	7
Laudra	Laudra to Mount Horeb	Cootamundra to Gilmore	172,918	9
Mount Horeb	Mt Horeb to Califat	Cootamundra to Gilmore	179,398	13
Califat	Califat to Reka	Cootamundra to Gilmore	144,356	11
Reka	Reka to Gadara	Cootamundra to Gilmore	84,271	6
Gadara	Gadara to Gilmore	Cootamundra to Gilmore	217,472	25
Gilmore	Gilmore to Tumut	Gilmore to Tumut	108,626	15
Gilmore	Gilmore to Windowie	Gilmore to Batlow	107,583	9
Windowie	Windowie to Wreboldera	Gilmore to Batlow	151,797	19
Wreboldera	Wreboldera to Shaws	Gilmore to Batlow	454,509	32
Shaws	Shaws to Wybalena	Gilmore to Batlow	52,486	7
Wybalena	Wybalena to Brightside	Gilmore to Batlow	46,538	7
Brightside	Brightside to Batlow	Gilmore to Batlow	61,621	8
Wagga Wagga	Wagga Wagga to Forest Hill	Wagga Wagga to Tumbarumba	281,765	20
Forest Hill	Forest Hill to Ladysmith	Wagga Wagga to Tumbarumba	270,065	31
Ladysmith	Ladysmith to Tamboola	Wagga Wagga to Tumbarumba	260,116	25
Tamboolba	Tamboolba to Coreinbob	Wagga Wagga to Tumbarumba	219,769	18
Coreinbob	Coreinbob to Borambola	Wagga Wagga to Tumbarumba	142,578	13
Borambola	Borambola to Tarcutta	Wagga Wagga to Tumbarumba	507,508	20

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Tarcutta	Tarcutta to Umbango Creek	Wagga Wagga to Tumbarumba	400,854	38
Umbango Creek	Umbango Creek to Humula	Wagga Wagga to Tumbarumba	408,920	63
Humula	Humula to Rosewood	Wagga Wagga to Tumbarumba	996,005	69
Rosewood	Rosewood to Wolsely Park	Wagga Wagga to Tumbarumba	163,244	28
Wolsely Park	Wolsely Park to Glenroy	Wagga Wagga to Tumbarumba	191,301	15
Glenroy	Glenroy to Tumbarumba	Wagga Wagga to Tumbarumba	276,552	33
Uranquinty	Uranquinty to Collingullie	Uranquinty to Kywong	305,787	21
Collingullie	Collingullie to Belfrayden	Uranquinty to Kywong	255,204	21
Belfrayden	Belfrayden to Bulgary	Uranquinty to Kywong	307,981	22
Bulgary	Bulgary to Arajoel	Uranquinty to Kywong	202,920	6
Arajoel	Arajoel to Galore	Uranquinty to Kywong	203,193	13
Galore	Galore to Kywong	Uranquinty to Kywong	259,759	11
The Rock	The Rock to tootool	The Rock to Boree Creek	436,400	9
tootool	tootool to French Park	The Rock to Boree Creek	196,372	15
French Park	French Park to Milbrulong	The Rock to Boree Creek	224,081	12
Milbrulong	Milbrulong to Napier	The Rock to Boree Creek	244,736	6
Napier	Napier to Lockhart	The Rock to Boree Creek	206,402	5
Lockhart	Lockhart to Long Park	The Rock to Boree Creek	333,524	18
Long Park	Long Park to Boree Creek	The Rock to Boree Creek	169,380	18
Henty	Henty to Ryan	Henty to Rand	395,200	27
Ryan	Ryan to Munyabla	Henty to Rand	128,311	5
Munyabla	Munyabla to Pleasant Hills	Henty to Rand	320,050	22
Pleasant Hills	Pleasant Hills to Urangeline East	Henty to Rand	403,043	21
Urangeline East	Urangeline East to Ferndale	Henty to Rand	314,518	25
Ferndale	Ferndale to Rand	Henty to Rand	237,762	15
Culcairn	Culcairn to Morven	Culcairn to Holbrook	217,278	16
Morven	Morven to Fellow Hills	Culcairn to Holbrook	141,344	6
Fellow Hills	Fellow Hills to Ralvona	Culcairn to Holbrook	153,603	9
Ralvona	Ralvona to Holbrook	Culcairn to Holbrook	280,133	27
Culcairn	Culcairn to Weeamera	Culcairn to Corowa	260,243	10

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Weeamera	Weeamera to Hurricane Hill	Culcairn to Corowa	46,943	1
Hurricane Hill	Hurricane Hill to Walla Walla	Culcairn to Corowa	293,695	11
Walla Walla	Walla Walla to Burrumbuttock	Culcairn to Corowa	496,540	23
Burrumbuttock	Burrumbuttock to Orelida	Culcairn to Corowa	160,164	9
Orelida	Orelida to Brocklesby	Culcairn to Corowa	221,533	16
Brocklesby	Brocklesby to Balldale	Culcairn to Corowa	605,664	26
Balldale	Balldale to Hopefield	Culcairn to Corowa	322,527	17
Hopefield	Hopefield to Corowa	Culcairn to Corowa	525,344	29
Tuggeranong	Tuggeranong to Royalla	Tuggeranong to Bombala	520,357	28
Royalla	Royalla to Williamsdale	Tuggeranong to Bombala	266,000	11
Williamsdale	Williamsdale to Michelago	Tuggeranong to Bombala	710,982	51
Michelago	Michelago to Colinton	Tuggeranong to Bombala	786,639	76
Colinton	Colinton to Bredbo	Tuggeranong to Bombala	435,142	29
Bredbo	Bredbo to Billilingra	Tuggeranong to Bombala	166,233	13
Billilingra	Billilingra to Chakola	Tuggeranong to Bombala	609,118	28
Chakola	Chakola to Bunyan	Tuggeranong to Bombala	338,182	28
Bunyan	Bunyan to Cooma	Tuggeranong to Bombala	316,448	12
Cooma	Cooma to Rock Flat	Tuggeranong to Bombala	508,893	43
Rock Flat	Rock Flat to Coonerang	Tuggeranong to Bombala	285,243	28
Coonerang	Coonerang to Bobingah	Tuggeranong to Bombala	179,775	18
Bobingah	Bobingah to Nimmitabel	Tuggeranong to Bombala	222,941	8
Nimmitabel	Nimmitabel to Maclaughlin	Tuggeranong to Bombala	453,107	61
Nimmitabel	Maclaughlin to Holts Flat	Tuggeranong to Bombala	323,481	23
Holts Flat	Holts Flat to Jincumbilly	Tuggeranong to Bombala	643,942	45
Jincumbilly	Jincumbilly to Bukalong	Tuggeranong to Bombala	351,631	28
Bukalong	Bukalong to Bombala	Tuggeranong to Bombala	589,068	34
Joppa Junction	Joppa Junction to Tirranna	Joppa Jct to Tarago	65,921	3
Tirranna	Tirranna to Komungla	Joppa Jct to Tarago	198,590	3
Komungla	Komungla to Springfield	Joppa Jct to Tarago	278,857	4
Springfield	Springfield to Inverloch	Joppa Jct to Tarago	82,032	1

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Inverloch	Inverloch to Lake Bathurst	Joppa Jct to Tarago	167,516	5
Lake Bathurst	Lake Bathurst to Tarago	Joppa Jct to Tarago	222,323	9
Tarago	Tarago to Mt Fairy	Tarago to Queanbeyan	512,358	42
Mt Fairy	Mt Fairy to Butmaroo	Tarago to Queanbeyan	381,192	35
Butmaroo	Butmaroo to Bungendore	Tarago to Queanbeyan	309,004	7
Bungendore	Bungendore to Burbong	Tarago to Queanbeyan	829,923	49
Burbong	Burbong to Queanbeyan	Tarago to Queanbeyan	418,694	21
Queanbeyan	Queanbeyan to Letchworth	Queanbeyan to Tuggeranong	171,438	4
Letchworth	Letchworth to Tuggeranong	Queanbeyan to Tuggeranong	384,976	26
Bungendore	Bungendore to HoskinsTown	Bungendore to Captains Flat	419,804	18
HoskinsTown	HoskinsTown to Captains Flat	Bungendore to Captains Flat	659,919	53
Boree Creek	Boree Creek to Yaluma	Boree Creek to Oaklands	329,765	6
Yuluma	Yuluma to Cullivel	Boree Creek to Oaklands	462,122	25
Cullivel	Cullivel to Urana	Boree Creek to Oaklands	374,300	32
Urana	Urana to Uranagong	Boree Creek to Oaklands	255,635	27
Uranagong	Uranagong to Coorabin	Boree Creek to Oaklands	319,972	9
Coorabin	Coorabin to Oaklands	Boree Creek to Oaklands	160,315	11
Demondrille	Demondrille to Kingsvale	Demondrille to Koorawatha	504,567	30
Kings Vale	Kingsvale to Prunevale	Demondrille to Koorawatha	151,590	12
Prunevale	Prunevale to Young	Demondrille to Koorawatha	530,589	94
Young	Young to Burrangong	Demondrille to Koorawatha	160,263	49
Burrangong	Burrangong to Maimuru	Demondrille to Koorawatha	111,872	15
Maimuru	Maimuru to Monteagle	Demondrille to Koorawatha	514,379	38
Monteagle	Monteagle to Bendick Murrell	Demondrille to Koorawatha	435,785	13
Bendick Murrell	Bendick Murrell to Crowther	Demondrille to Koorawatha	375,689	8
Crowther	Crowther to Koorawatha	Demondrille to Koorawatha	381,997	12
Koorawatha	Koorawatha to Wattamondara	Cowra to Koorawatha	538,847	19
Wattamondara	Wattamondara to Noonbinna	Cowra to Koorawatha	278,892	3
Noonbinna	Noonbinna to Cowra	Cowra to Koorawatha	499,015	49
Blayney	Blayney to Stanfield	Blayney to Cowra	269,281	21

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Stanfield	Stanfield to Carcoar	Blayney to Cowra	369,118	27
Carcoar	Carcoar to Mandurama	Blayney to Cowra	262,207	15
Mandurama	Mandurama to Lyndhurst	Blayney to Cowra	139,261	14
Lyndhurst	Lyndhurst to Garland	Blayney to Cowra	167,279	16
Garland	Garland to Lucan	Blayney to Cowra	146,986	14
Lucan	Lucan to Swan Ponds	Blayney to Cowra	166,504	6
Swan Ponds	Swan Ponds to Nargong	Blayney to Cowra	13,540	2
Nargong	Nargong to Waugoola	Blayney to Cowra	156,338	9
Waugoola	Waulgoola to Woodstock	Blayney to Cowra	322,826	15
Woodstock	Woodstock to Holmwood	Blayney to Cowra	534,974	25
Holmwood	Holmwood to Cowra	Blayney to Cowra	201,082	19
Koorawatha	Koorawatha to Warrangong	Koorawatha to Greenethorpe	319,266	22
Warrangong	Warrangong to Uppingham	Koorawatha to Greenethorpe	111,531	6
Uppingham	Uppingham to Greenethorpe	Koorawatha to Greenethorpe	219,215	12
Cowra	Cowra to Cowra West	Cowra to Eugowra	59,055	27
Cowra West	Cowra West to Glenlogan	Cowra to Eugowra	217,501	33
Glenlogan	Glenlogan to Billimari	Cowra to Eugowra	315,991	30
Billimari	Billimari to Bangaroo	Cowra to Eugowra	188,629	14
Bangaroo	Bangaroo to Canowindra	Cowra to Eugowra	298,996	33
Canowindra	Canowindra to Nyrang Creek	Cowra to Eugowra	448,231	31
Nyrang Creek	Nyrang Creek to Geradan	Cowra to Eugowra	249,834	19
Geradan	Geradan to Gooloogong	Cowra to Eugowra	174,113	1
Gooloogong	Gooloogong to Nanami	Cowra to Eugowra	263,330	14
Nanami	Nanami to Trajere	Cowra to Eugowra	156,603	8
Trajere	Trajere to Eugowra	Cowra to Eugowra	234,697	9
Greenethorpe	Greenethorpe to Brundah	Greenethorpe to Grenfell	201,187	17
Brundah	Brundah to Mogongong	Greenethorpe to Grenfell	262,549	14
Mogongong	Mogongong to Wirega	Greenethorpe to Grenfell	120,226	12
Wirega	Wirega to Quondong	Greenethorpe to Grenfell	210,140	20
Quondong	Quondong to Grenfell	Greenethorpe to Grenfell	162,096	31

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Stockinbingal	Stockinbingal to Gundibindyal	Stockinbingal to Temora	395,145	21
Gundibindyal	Gundibindyal to Springdale	Stockinbingal to Temora	316,574	8
Springdale	Springdale to Combaning	Stockinbingal to Temora	269,166	16
Combaning	Combaning to Temora	Stockinbingal to Temora	783,410	82
Temora	Temora to Sprouls Lagoon	Temora to Barmedman	267,098	41
Sprouls Lagoon	Spouls Lagoon to Gidginbung	Temora to Barmedman	199,528	6
Gidginbung	Gidginbung to Reefton Tank	Temora to Barmedman	271,332	1
Reefton Tank	Reefton Tank to Barmedman	Temora to Barmedman	418,952	16
Barmedman	Barmedman to Yiddah	Barmedman to West Wyalong	493,851	16
Yiddah	Yiddah to South Wyalong	Barmedman to West Wyalong	461,147	6
South Wyalong	South Wyalong to Wyalong	Barmedman to West Wyalong	41,884	1
Wyalong	Wyalong to West Wyalong	Barmedman to West Wyalong	21,594	2
West Wyalong	West Wyalong to Calleen	West Wyalong to Ungarie	639,967	34
Calleen	Calleen to Girral	West Wyalong to Ungarie	295,050	4
Girral	Girral to Ungarie	West Wyalong to Ungarie	434,899	15
Ungarie	Ungarie to Winnunga	Ungarie to Lake Cargelligo	212,172	3
Winnunga	Winnunga to Weja	Ungarie to Lake Cargelligo	308,972	2
Weja	Weja to Bygalorie	Ungarie to Lake Cargelligo	262,260	9
Bygalorie	Bygalorie to Tullibigeal	Ungarie to Lake Cargelligo	177,898	8
Tullibigeal	Tullibigeal to Burgooney	Ungarie to Lake Cargelligo	549,342	3
Burgooney	Burgooney to Wargambegal	Ungarie to Lake Cargelligo	348,024	2
Wargambegal	Wargambegal to Lake Cargelligo	Ungarie to Lake Cargelligo	324,120	16
Barmedman	Barmedman to Wargin	Barmedman to Rankins Springs	510,099	22
Wargin	Wargin to Bellarwi	Barmedman to Rankins Springs	209,884	4
Bellarwi	Bellarwi to Alleena	Barmedman to Rankins Springs	186,889	5
Alleena	Alleena to Buddigower	Barmedman to Rankins Springs	463,315	10
Buddigower	Buddigower to Tallimba	Barmedman to Rankins Springs	504,675	13
Tallimba	Tallimba to Buralyang	Barmedman to Rankins Springs	566,956	12
Buralyang	Buralyang to Narriah	Barmedman to Rankins Springs	218,381	5
Narriah	Narriah to Weethalle	Barmedman to Rankins Springs	429,957	6

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Weethalle	Weethalle to Euratha	Barmedman to Rankins Springs	246,693	7
Euratha	Euratha to Taleeban	Barmedman to Rankins Springs	304,052	3
Taleeban	Taleeban to Erigolia	Barmedman to Rankins Springs	366,383	2
Erigolia	Erigolia to Rankins Springs	Barmedman to Rankins Springs	315,034	9
West Wyalong	West Wyalong to Wyrra	West Wyalong to Burcher	501,038	27
Wyrra	Wyrra to Clear Ridge	West Wyalong to Burcher	245,245	5
Clear Ridge	Clear Ridge to Lake Cowal	West Wyalong to Burcher	405,763	14
Lake Cowal	Lake Cowal to Corringale	West Wyalong to Burcher	196,537	5
Corringale	Corringale to Wamboyne	West Wyalong to Burcher	405,120	19
Wamboyne	Wamboyne to Burcher	West Wyalong to Burcher	199,397	4
Ungarie	Ungarie to Youngareen	Ungarie to Naradhan	399,341	19
Youngareen	Youngareen to Thulloo	Ungarie to Naradhan	386,197	17
Thulloo	Thulloo to Kikoira	Ungarie to Naradhan	367,868	12
Kikoira	Kikoira to Gubbata	Ungarie to Naradhan	400,363	9
Gubbata	Gubbata to Hannan	Ungarie to Naradhan	434,088	7
Hannan	Hannan to Naradhan	Ungarie to Naradhan	327,349	5
Junee	Junee to Old Junee	Junee to Narrandera	653,273	48
Old Junee	Old Junee to Rockview	Junee to Narrandera	555,231	8
Rockview	Rockview to Marrar	Junee to Narrandera	342,470	16
Marrar	Marrar to Coolamon	Junee to Narrandera	687,380	27
Coolamon	Coolamon to Brushwood	Junee to Narrandera	514,995	1
Brushwood	Brushwood to Ganmain	Junee to Narrandera	361,888	1
Ganmain	Ganmain to Derain	Junee to Narrandera	329,647	1
Derain	Derain to Matong	Junee to Narrandera	247,485	1
Matong	Matong to Pamandi	Junee to Narrandera	567,223	3
Pamandi	Pamandi to Grong Grong	Junee to Narrandera	122,078	1
Grong Grong	Grong Grong to Narrandera	Junee to Narrandera	1,203,006	13
Narrandera	Narrandera to Paynters	Narrandera to Yanco	358,799	21
Paynters	Paynters to Roach	Narrandera to Yanco	373,278	17
Roach	Roach to Yanco	Narrandera to Yanco	336,760	10

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Yanco	Yanco to Gogeldrie	Yanco to Willbriggie	563,867	17
Gogeldrie	Gogeldrie to Dandinya	Yanco to Willbriggie	93,784	2
Dandinya	Dandinya to Whitton	Yanco to Willbriggie	381,655	12
Whitton	Whitton to Willbriggie	Yanco to Willbriggie	772,520	18
Willbriggie	Willbriggie to Benerembah	Willbriggie to Hay	1,072,830	19
Benerembah	Benerembah to Bringagee	Willbriggie to Hay	538,554	12
Bringagee	Bringagee to Groongal	Willbriggie to Hay	647,901	16
Groongal	Groongal to Carrathool	Willbriggie to Hay	652,438	9
Carrathool	Carrathool to Uardry	Willbriggie to Hay	672,175	8
Uardry	Uardry to Beabula	Willbriggie to Hay	727,732	12
Beabula	Beabula to Nulabor	Willbriggie to Hay	103,795	3
Nulabor	Nulabor to Illilliwa	Willbriggie to Hay	427,863	10
Illilliwa	Illilliwa to Hay	Willbriggie to Hay	777,015	16
Narrandera	Narrandera to Gillenbah	Narrandera to Tocumwal	205,619	61
Gillenbah	Gillenbah to Corobmilla	Narrandera to Tocumwal	743,056	5
Corobmilla	Corobmilla to New Park	Narrandera to Tocumwal	347,593	5
New Park	New Park to Morundah	Narrandera to Tocumwal	201,407	9
Morundah	Morundah to Widgiewa	Narrandera to Tocumwal	845,375	23
Widgiewa	Widgiewa to Coonong	Narrandera to Tocumwal	487,089	6
Coonong	Coonong to Bundure	Narrandera to Tocumwal	535,640	8
Bundure	Bundure to North Yathong	Narrandera to Tocumwal	809,271	14
North Yathong	North Yathong to Jerilderie	Narrandera to Tocumwal	1,083,235	50
Jerilderie	Jerilderie to Wunnamurra	Narrandera to Tocumwal	249,229	15
Wunnamurra	Wunnamurra to Mairjimmy	Narrandera to Tocumwal	345,308	13
Mairjimmy	Mairjimmy to Green Swamp Road	Narrandera to Tocumwal	406,949	10
Green Swamp Road	Green Swamp Road to Berrigan	Narrandera to Tocumwal	478,473	16
Berrigan	Berrigan to Wait A While	Narrandera to Tocumwal	140,014	12
Wait A While	Wait A While to Leniston	Narrandera to Tocumwal	69,648	8
Leniston	Leniston to Curraghmohr	Narrandera to Tocumwal	59,432	6

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Curraghmore	Curraghmore to Finley	Narrandera to Tocumwal	99,222	9
Finley	Finley to Langunya	Narrandera to Tocumwal	256,642	12
Langunya	Langunya to tocumwal	Narrandera to Tocumwal	344,598	6
Yanco	Yanco to Leeton	Yanco to Griffith	267,089	10
Leeton	Leeton to Koonadan	Yanco to Griffith	304,122	1
Koonadan	Koonadan to Murrami	Yanco to Griffith	405,001	13
Murrami	Murrami to Neeambah	Yanco to Griffith	279,047	26
Neeambah	Neeambah to Wumbulgal	Yanco to Griffith	179,420	9
Wumbulgal	Wumbulgal to Widgelli	Yanco to Griffith	257,131	15
Widgelli	Widgelli to Yoogali East	Yanco to Griffith	91,352	8
Yoogali East	Yoogali East to Yoogali	Yanco to Griffith	79,828	7
Yoogali	Yoogali to Griffith	Yanco to Griffith	42,089	6
Temora	Temora to Pucawan	Temora to Griffith	679,857	52
Pucawan	Pucawan to Quandary	Temora to Griffith	101,419	5
Quandary	Quandary to Aria Park	Temora to Griffith	260,044	18
Aria Park	Aria Park to Mirrool	Temora to Griffith	424,340	11
Mirrool	Mirrool to Beckom	Temora to Griffith	462,209	3
Beckom	Beckom to Ardlethan	Temora to Griffith	220,607	11
Ardlethan	Ardlethan to Kamarah	Temora to Griffith	324,593	10
Kamarah	Kamarah to Moombooldool	Temora to Griffith	357,752	9
Moombooldool	Moombooldool to Barellan	Temora to Griffith	359,529	8
Barellan	Barellan to Garoolgan	Temora to Griffith	540,006	7
Garoolgan	Garoolgan to Binya	Temora to Griffith	340,089	2
Binya	Binya to Yenda	Temora to Griffith	514,678	10
Yenda	Yenda to Beelbanger	Temora to Griffith	329,557	11
Beelbanger	Beelbanger to Griffith	Temora to Griffith	230,017	13
Griffith	Griffith to Lakeview	Griffith to Hillston	65,866	13
Lakeview	Lakeview to Tharbogang	Griffith to Hillston	138,107	6
Tharbogang	Tharbogang to Warburn	Griffith to Hillston	525,399	26
Warburn	Warburn to Tabbita	Griffith to Hillston	389,549	13

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Tabbita	Tabbita to Carolgi	Griffith to Hillston	374,551	3
Carolgi	Carolgi to Goolgowi	Griffith to Hillston	317,318	5
Goolgowi	Goolgowi to Budawong	Griffith to Hillston	394,128	5
Budawong	Budawong to Merriwagga	Griffith to Hillston	352,111	3
Merriwagga	Merriwagga to Goorawin	Griffith to Hillston	358,904	10
Goorawin	Goorawin to Langtree	Griffith to Hillston	311,515	6
Langtree	Langtree to Dirrung	Griffith to Hillston	383,855	12
Dirrung	Dirrung to Hillston	Griffith to Hillston	458,887	55
Hillston	Hillston to Lowlands	Hillston to Roto	1,291,294	36
Lowlands	Lowlands to Roto	Hillston to Roto	653,726	5
Bowenfels	Bowenfels to Marrangaroo	Bowenfels to Wallerawang	220,997	14
Marrangaroo	Marrangaroo to Wallerawang	Bowenfels to Wallerawang	568,066	63
Wallerawang	Walerawang to Rydal	Wallerawang to Tarana	443,087	27
Rydal	Rydal to Sodwalls	Wallerawang to Tarana	344,267	33
Sodwalls	Sodwalls to Birumba	Wallerawang to Tarana	274,073	3
Birumba	Birumba to Tarana	Wallerawang to Tarana	180,941	7
Tarana	Tarana to Gemalla	Tarana to Orange Jct	466,813	10
Gemalla	Gemalla to Locksley	Tarana to Orange Jct	328,515	11
Locksley	Locksley to Wambool	Tarana to Orange Jct	383,958	17
Wambool	Wambool to Brewongle	Tarana to Orange Jct	283,698	22
Brewongle	Brewongle to Raglan	Tarana to Orange Jct	337,621	5
Raglan	Raglan to Kelso	Tarana to Orange Jct	127,327	10
Kelso	Kelso to Bathurst	Tarana to Orange Jct	78,690	14
Bathurst	Bathurst to Orton Park	Tarana to Orange Jct	100,874	25
Orton Park	Orton Park to Perthville	Tarana to Orange Jct	66,768	14
Perthville	Perthville to Georges Plains	Tarana to Orange Jct	111,350	15
Georges Plains	Georges Plains to Tumulla	Tarana to Orange Jct	129,487	10
Tumulla	Tumulla to Wimbleton	Tarana to Orange Jct	237,906	12
Wimbleton	Wimbleton to Gresham	Tarana to Orange Jct	131,731	5
Gresham	Gresham to Newbridge	Tarana to Orange Jct	303,884	15

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Newbridge	Newbridge to Athol	Tarana to Orange Jct	415,546	32
Athol	Athol to Blayney	Tarana to Orange Jct	319,548	33
Blayney	Blayney to Polona	Tarana to Orange Jct	274,271	32
Polona	Polona to Millthorpe	Tarana to Orange Jct	137,982	21
Millthorpe	Millthorpe to Spring Hill	Tarana to Orange Jct	236,157	28
Spring Hill	Spring Hill to Huntley	Tarana to Orange Jct	111,697	20
Huntley	Huntley to Bloomfield	Tarana to Orange Jct	200,995	14
Bloomfield	Bloomfield to Orange East	Tarana to Orange Jct	48,018	2
Orange	Orange to Cullya	Orange Jct to Dubbo	328,537	14
Cullya	Cullya to Clergate	Orange Jct to Dubbo	29,389	1
Clergate	Clergate to Mullion Creek	Orange Jct to Dubbo	172,413	8
Mullion Creek	Mullion Creek to Kerrs Creek	Orange Jct to Dubbo	382,638	3
Kerrs Creek	Kerrs Creek to Warnercliffe	Orange Jct to Dubbo	224,571	5
Warnercliffe	Warnercliffe to Euchareena	Orange Jct to Dubbo	146,696	1
Euchareena	Euchareena to Store Creek	Orange Jct to Dubbo	229,109	10
Store Creek	Store Creek to Farnham	Orange Jct to Dubbo	134,218	3
Farnham	Farnham to Stuart Town	Orange Jct to Dubbo	180,046	14
Stuart Town	Stuart Town to Mumbil	Orange Jct to Dubbo	325,406	3
Mumbil	Mumbil to Dripstone	Orange Jct to Dubbo	373,277	16
Dripstone	Dripstone to Oddfield	Orange Jct to Dubbo	121,941	1
Oddfields	Oddfields to Apsley	Orange Jct to Dubbo	60,960	2
Apsley	Apsley to Wellington	Orange Jct to Dubbo	157,366	29
Wellington	Wellington to Maryvale	Orange Jct to Dubbo	306,284	38
Maryvale	Maryvale to Combo	Orange Jct to Dubbo	231,215	30
Combo	Combo to Geurie	Orange Jct to Dubbo	252,419	20
Geurie	Geurie to Wongarbron	Orange Jct to Dubbo	313,850	2
Wongarbron	Wongarbron to Eulomogo	Orange Jct to Dubbo	346,605	6
Eulomogo	Eulomogo to Dubbo	Orange Jct to Dubbo	462,560	31
Narromine	Narromine to Ceres	Narromine to Nevertire	554,342	9
Ceres	Ceres to Mungeribar	Narromine to Nevertire	301,631	3

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Mungeribar	Mungeribar to Trangie	Narromine to Nevertire	1,001,392	13
Trangie	Trangie to Myall Mundi	Narromine to Nevertire	420,106	1
Myall Mundi	Myall Mundi to Cathundral	Narromine to Nevertire	573,786	4
Cathundral	Cathundral to Mullengudgery	Narromine to Nevertire	333,083	2
Mullengudgery	Mullengudgery to Nevertire	Narromine to Nevertire	444,005	5
Nevertire	Nevertire to Belaringa	Nevertire to Nyngan Jct	718,731	2
Belaringar	Belaringar to Miowera	Nevertire to Nyngan Jct	1,932,588	7
Miowera	Miowera to Warrigal	Nevertire to Nyngan Jct	181,284	2
Warrigal	Warrigal to Nyngan	Nevertire to Nyngan Jct	403,030	5
Nyngan	Nyngan to Summervale	Nyngan Jct to Byrock	1,200,270	7
Summervale	Summervale to Grahweed	Nyngan Jct to Byrock	645,334	3
Grahweed	Grahweed to Girilambone	Nyngan Jct to Byrock	809,880	3
Girilambone	Girilambone to Wilga Tank	Nyngan Jct to Byrock	862,266	3
Wilga Tank	Wilga Tank to Coolabah	Nyngan Jct to Byrock	977,845	2
Coolabah	Coolabah to Glenariff	Nyngan Jct to Byrock	1,627,490	2
Glenariff	Glenariff to Byrock	Nyngan Jct to Byrock	1,460,414	2
Byrock	Byrock to Dwyers	Byrock to Bourke	1,991,366	3
Vdwyers	Dwyers to Boorindal	Byrock to Bourke	545,428	1
Boorindal	Boorindal to Maroona	Byrock to Bourke	736,509	1
Maroona	Maroona to Bourke	Byrock to Bourke	1,641,744	2
Byrock	Byrock to Wave Hill	Byrock to Brewarrina	953,663	12
Wave Hill	Wave Hill to Compyon Downs	Byrock to Brewarrina	355,356	3
Compton Downs	Compton Downs to Tarcoon	Byrock to Brewarrina	862,841	11
Tarcoon	Tarcoon to Charlton	Byrock to Brewarrina	107,141	4
Charlton	Charlton to Tarrion Creek	Byrock to Brewarrina	1,161,943	12
Tarrion	Tarrion to Brewarrina	Byrock to Brewarrina	389,171	9
Orange East	Orange East to Orange	Orange Jct to Molong	19,964	2
Orange	Orange to Canobolas	Orange Jct to Molong	87,339	8
Canobolas	Canobolas to Nashdale	Orange Jct to Molong	145,922	18
Nashdale	Nashdale to Borenore	Orange Jct to Molong	250,762	33

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Borenore	Borenore to Amaroo	Orange Jct to Molong	501,749	55
Amaroo	Amaroo to Gamboola	Orange Jct to Molong	64,851	6
Gamboola	Gamboola to Molong	Orange Jct to Molong	381,029	22
Molong	Molong to Pinecliffe	Molong to Parkes	589,986	53
Pinecliffe	Pinecliffe to Gregra	Molong to Parkes	177,336	18
Gregra	Gregra to Manildra	Molong to Parkes	254,972	37
Manildra	Manildra to Meranburn	Molong to Parkes	297,421	64
Meranburn	Meranburn to Jeerabung	Molong to Parkes	289,223	9
Jeerabung	Jeerabung to Bumberry	Molong to Parkes	407,597	9
Bumberry	Bumberry to Mandadgery	Molong to Parkes	708,530	6
Mandadgery	Mandadgery to Cookamidgera	Molong to Parkes	656,691	6
Cookamidgera	Cookamidgera to Mugincoble	Molong to Parkes	323,059	10
Mugincoble	Mugincoble to Parkes	Molong to Parkes	272,397	42
Parkes	Parkes to Goobang Junction	Molong to Parkes	75,611	14
Molong	Molong to Larras Lee	Molong to Yeoval	309,165	30
Larras Lee	Larras Lee to Cumnock	Molong to Yeoval	786,738	61
Cumnock	Cumnock to Yullundry	Molong to Yeoval	490,545	42
Yullundry	Yullundry to Loombah Tank	Molong to Yeoval	12,118	2
Loombah Tank	Loombah Tank to Yeoval	Molong to Yeoval	492,037	36
Yeoval	Yeoval to Walmer	Yeoval to Dubbo	480,910	39
Walmer	Walmer to Arthurville	Yeoval to Dubbo	459,517	34
Arthurville	Arthurville to Nubingerie	Yeoval to Dubbo	385,095	28
Nubingerie	Nubingerie to toongi	Yeoval to Dubbo	501,982	16
toongi	toongi to Glengeera	Yeoval to Dubbo	228,590	13
Glengeera	Glengeera to Cumboogle	Yeoval to Dubbo	403,932	26
Cumboogle	Cumboogle to Dubbo	Yeoval to Dubbo	335,603	36
Bogan Gate	Bogan Gate to Botfield	Bogan Gate to Tottenham	514,411	30
Botfield	Botfield to Trundle	Bogan Gate to Tottenham	396,255	11
Trundle	Trundle to The Troffs	Bogan Gate to Tottenham	372,408	13
The Troffs	The Troffs to Kadungle	Bogan Gate to Tottenham	296,125	5

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Kadungle	Kadungle to Gobondery	Bogan Gate to Tottenham	260,825	7
Gobondery	Gobondery to Tullamore	Bogan Gate to Tottenham	196,194	9
Tullamore	Tullamore to Yetherera	Bogan Gate to Tottenham	301,613	18
Yetherera	Yetherera to Middlefield	Bogan Gate to Tottenham	425,116	8
Middlefield	Middlefield to Albert	Bogan Gate to Tottenham	422,856	10
Albert	Albert to Minemoorong	Bogan Gate to Tottenham	337,254	7
Minemoorong	Minemoorong to tottenham	Bogan Gate to Tottenham	419,701	10
Tarana	Tarana to Carlwood	Tarana to Oberon	352,941	29
Carlwood	Carlwood to Hazelgrove	Tarana to Oberon	350,857	20
Hazelgrove	Hazelgrove to Oberon	Tarana to Oberon	176,322	17
Nevertire	Nevertire to Egelabra	Nevertire to Warren	373,896	34
Egelabra	Egelabra to Warren	Nevertire to Warren	285,077	9
Nyngan	Nyngan to Tikkara	Nyngan Jct to Cobar	524,300	21
Tikkara	Tikkara to Miandetta	Nyngan Jct to Cobar	695,185	8
Miandetta	Miandetta to Thorndale	Nyngan Jct to Cobar	352,801	4
Thorndale	Thorndale to Hermidale	Nyngan Jct to Cobar	1,036,278	8
Hermidale	Hermidale to Birkalla	Nyngan Jct to Cobar	651,553	7
Birkalla	Birkalla to Muriel Tank	Nyngan Jct to Cobar	523,215	5
Muriel Tank	Muriel Tank to Pooraka	Nyngan Jct to Cobar	421,927	4
Pooraka	Pooraka to Florida	Nyngan Jct to Cobar	520,748	7
Florida	Florida to Boppy Mountain	Nyngan Jct to Cobar	339,907	2
Boppy Mountain	Boppy Mountain to Meryula	Nyngan Jct to Cobar	1,237,079	7
Meryula	Meryula to Cobar	Nyngan Jct to Cobar	1,232,311	17
Cobar	Cobar to Csa Mine	Nyngan Jct to Cobar	12,649	3
Cobar	Cobar to Wrightville	Nyngan Jct to Cobar	59,839	18
Wrightville	Wrightville to Occidental Siding	Nyngan Jct to Cobar	44,588	6
Wallerawang	Wallerawang to Irondale	Wallerawang to Baal Bone Jct	81,567	9
Irondale	Irondale to Pipers Flat	Wallerawang to Baal Bone Jct	225,270	8
Pipers Flat	Pipers Flat to Portland	Wallerawang to Baal Bone Jct	44,334	2
Portland	Portland to Cullen Bullen	Wallerawang to Baal Bone Jct	277,927	13

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Cullen Bullen	Cullen Bullen to Ben Bullen	Wallerawang to Baal Bone Jct	581,484	6
Ben Bullen	Ben Bullen to Capertee	Baal Bone Jct to Charbon Colliery Jct	563,169	8
Capertee	Capertee to Torbane	Baal Bone Jct to Charbon Colliery Jct	262,827	15
Torbane	Torbane to Excelsior	Baal Bone Jct to Charbon Colliery Jct	317,861	3
Excelsior	Excelsior to Weenga	Baal Bone Jct to Charbon Colliery Jct	135,208	1
Weenga	Weenga to Carlos Gap	Baal Bone Jct to Charbon Colliery Jct	173,212	3
Carlos Gap	Carlos Gap to Vulcan	Baal Bone Jct to Charbon Colliery Jct	427,103	1
Vulcan	Vulcan to Brogans Creek	Baal Bone Jct to Charbon Colliery Jct	209,393	3
Brogans Creek	Brogans Creek to Clandulla	Baal Bone Jct to Charbon Colliery Jct	646,783	9
Clandulla	Clandulla to Charbon	Baal Bone Jct to Charbon Colliery Jct	204,842	15
Charbon	Charbon to Kandos	Charbon Colliery Jct to Kandos	175,319	13
Binnaway	Binnaway to Murrawal	Binnaway to Gwabegar	375,121	41
Murrawal	Murrawal to Deringulla	Binnaway to Gwabegar	298,146	43
Deringulla	Deringulla to Ulamambri	Binnaway to Gwabegar	274,880	41
Ulamambri	Ulamambri to Coonabarabran	Binnaway to Gwabegar	492,013	50
Coonabarabran	Coonabarabran T50 Yearinan	Binnaway to Gwabegar	913,391	78
Yearinan	Yearinan to Bugaldie	Binnaway to Gwabegar	507,780	24
Bugaldie	Bugaldie to Wittenbra	Binnaway to Gwabegar	271,770	11
Wittenbra	Wittenbra to Baradine	Binnaway to Gwabegar	374,212	5
Baradine	Baradine to Tallama	Binnaway to Gwabegar	363,805	36
Tallama	Tallama to Kenebri	Binnaway to Gwabegar	473,381	15
Kenebri	Kenebri to Merebene	Binnaway to Gwabegar	328,143	5
Merebene	Merebene to Gwabegar	Binnaway to Gwabegar	299,817	16
Troy Junction	Troy Junction to Talbragar	Dubbo to Coonamble	85,064	15

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Troy Junction	Troy Junction to Talbragar	Dubbo to Coonamble	118,801	4
Talbragar	Talbragar to Mogriguy	Dubbo to Coonamble	468,046	23
Mogriguy	Mogriguy to Eumungerie	Dubbo to Coonamble	425,380	19
Eumungerie	Eumungerie to Balladoran	Dubbo to Coonamble	353,014	11
Balladoran	Balladoran to Marthaguy	Dubbo to Coonamble	330,135	10
Marthaguy	Marthaguy to Gilgandra	Dubbo to Coonamble	210,838	7
Gilgandra	Gilgandra to Kamber	Dubbo to Coonamble	315,877	20
Kamber	Kamber to Curban	Dubbo to Coonamble	317,934	22
Curban	Curban to Armatree	Dubbo to Coonamble	531,047	9
Armatree	Armatree to Gular	Dubbo to Coonamble	351,918	13
Gular	Gular to Combara	Dubbo to Coonamble	819,139	29
Combara	Combara to Coonamble	Dubbo to Coonamble	617,446	29
Craboon	Craboon to Leadville	Craboon to Coolah	311,176	15
Leadville	Leadville to Weeraman	Craboon to Coolah	151,398	10
Weeraman	Weeraman to Hannahs Bridge	Craboon to Coolah	163,878	18
Hannahs Bridge	Hannahs Bridge to Girragulang	Craboon to Coolah	166,016	16
Girragulang	Girragulang to Coolah	Craboon to Coolah	319,400	22
Kandos	Kandos to Rylstone	Kandos to Gulgong	339,141	24
Rylstone	Rylstone to Mortonmain	Kandos to Gulgong	437,915	16
Mortonmain	Mortonmain to Lue	Kandos to Gulgong	666,091	41
Lue	Lue to Havilah	Kandos to Gulgong	412,818	7
Havilah	Havilah to Mt Knowles	Kandos to Gulgong	184,878	1
Mt Knowles	Mt Knowles to Mt Frome	Kandos to Gulgong	452,557	27
Mt Frome	Mt Frome to Mudgee	Kandos to Gulgong	280,537	16
Mudgee	Mudgee to Munna	Kandos to Gulgong	264,480	53
Munna	Munna to Warrobil	Kandos to Gulgong	397,083	33
Warrobil	Warrobil to Gulgong	Kandos to Gulgong	331,761	27

Attachment 2 **Station Boxes**

Table 3: Summary of Station Boxes

Name	Sector Name	Calculated Area (m ²)	Core Lots
Hinkler		14,175	1
Taralga			0
Mangoplah		3,954	1
Pulletop		33,816	6
Westby		44,107	2
Beryl		18,868	3
Mebul Road		22,644	4
Goolma		13,237	3
Spicers Creek		23,129	4
Drill Creek		21,868	3
Comobella		16,235	2
Warrigundi	Werris Creek to West Tamworth	13,603	1
Currabubula	Werris Creek to West Tamworth	59,231	20
Belgamba	Werris Creek to West Tamworth	76,250	2
Duri	Werris Creek to West Tamworth	26,274	6
Warral	Werris Creek to West Tamworth	21,253	2
West Tamworth	Werris Creek to West Tamworth	12,721	4
Tamworth	West Tamworth to Armidale	10,044	6
Nemingha	West Tamworth to Armidale	40,828	9
Tintinhull	West Tamworth to Armidale	29,928	5
Kootingal	West Tamworth to Armidale	55,325	3
Limbri	West Tamworth to Armidale	18,842	1
Danglemah	West Tamworth to Armidale	30,196	1
Woolbrook	West Tamworth to Armidale	80,712	4
Walcha Road	West Tamworth to Armidale	52,085	6
Wollun	West Tamworth to Armidale	43,163	2
Kentucky South	West Tamworth to Armidale	11,896	2
Kentucky	West Tamworth to Armidale	58,603	9
Uralla	West Tamworth to Armidale	55,026	11

Name	Sector Name	Calculated Area (m2)	Core Lots
Kellys Plains	West Tamworth to Armidale	157,304	15
Armidale	West Tamworth to Armidale	-	2
Yarraford	Glen Innes to Wallangarra	46,393	1
Dundee	Glen Innes to Wallangarra	127,213	2
Deepwater	Glen Innes to Wallangarra	102,134	9
Bolivia	Glen Innes to Wallangarra	48,484	4
Sandy Flat	Glen Innes to Wallangarra	28,459	4
Bluff Rock	Glen Innes to Wallangarra	21,843	1
Bungulla	Glen Innes to Wallangarra	34,836	2
Tenterfield	Glen Innes to Wallangarra	2,126	2
Sunnyside	Glen Innes to Wallangarra	21,305	4
Wallangarra	Glen Innes to Wallangarra	165,845	3
Gungal	Sandy Hollow Jct to Merriwa	90,489	11
Wappinguy	Sandy Hollow Jct to Merriwa	14,853	2
Merriwa	Sandy Hollow Jct to Merriwa	111,731	8
Westdale	West Tamworth to Barraba	8,566	3
Gidley	West Tamworth to Barraba	16,926	2
Appleby	West Tamworth to Barraba	15,992	3
Attunga	West Tamworth to Barraba	61,289	5
Kaytoun	West Tamworth to Barraba	14,471	2
Sulcor	West Tamworth to Barraba	6,559	1
Klori	West Tamworth to Barraba	33,754	2
Moonaran	West Tamworth to Barraba	54,181	5
Manilla	West Tamworth to Barraba	78,436	14
Brabri	West Tamworth to Barraba	35,200	2
Wimborne	West Tamworth to Barraba	57,704	5
Upper Manilla	West Tamworth to Barraba	51,416	3
Tarpoly	West Tamworth to Barraba	25,624	1
Ennisdale	West Tamworth to Barraba	18,541	3
Black Springs	West Tamworth to Barraba	38,653	1

Name	Sector Name	Calculated Area (m2)	Core Lots
Barraba	West Tamworth to Barraba	86,947	3
Glen Innes	Armidale to Glen Innes	124,314	6
Dumaresq	Armidale to Glen Innes	41,027	1
Exmouth	Armidale to Glen Innes	24,145	1
Black Mountain	Armidale to Glen Innes	2,473	3
Guyra	Armidale to Glen Innes	95,211	3
Llangothlin	Armidale to Glen Innes	55,871	2
Ben Lomond	Armidale to Glen Innes	118,419	3
Glencoe	Armidale to Glen Innes	45,010	6
Stonehenge	Armidale to Glen Innes	37,676	5
Old Casino	Casino to Murwillumbah	74,434	4
North Casino	Casino to Murwillumbah	56,592	6
Naughtons Gap	Casino to Murwillumbah	42,453	6
Bentley	Casino to Murwillumbah	34,476	7
Bungabee	Casino to Murwillumbah	58,554	4
Fernside	Casino to Murwillumbah	642	1
Leycester	Casino to Murwillumbah	31,013	2
Tuncester	Casino to Murwillumbah	60,969	8
Lismore	Casino to Murwillumbah	76,765	13
North Lismore	Casino to Murwillumbah	76,120	8
Woodlawn	Casino to Murwillumbah	41,382	7
Bexhill	Casino to Murwillumbah	64,490	4
Eltham	Casino to Murwillumbah	51,476	10
Laureldale	Casino to Murwillumbah	10,380	2
Booyong	Casino to Murwillumbah	4,036	1
Nashua	Casino to Murwillumbah	50,724	6
Binna Burra	Casino to Murwillumbah	1,237	1
Bangalow	Casino to Murwillumbah	26,502	6
Talofa	Casino to Murwillumbah	16,027	2
St Helena	Casino to Murwillumbah	25,192	1

Name	Sector Name	Calculated Area (m2)	Core Lots
Byron Bay	Casino to Murwillumbah	130,944	32
Tyagarah	Casino to Murwillumbah	54,561	3
Myocum	Casino to Murwillumbah	62,389	4
Mullumbimby	Casino to Murwillumbah	10,086	5
Billinudgel	Casino to Murwillumbah	56,816	3
Yelgun	Casino to Murwillumbah	24,334	4
Crabbes Creek	Casino to Murwillumbah	15,475	2
Mooball	Casino to Murwillumbah	11,446	1
Burringbar	Casino to Murwillumbah	33,679	2
Upper Burringbar	Casino to Murwillumbah	28,853	4
Dunbible	Casino to Murwillumbah	48,998	2
Murwillumbah	Casino to Murwillumbah	92,691	10
Breeza	The Gap to Curlewis	61,443	3
Watermark	The Gap to Curlewis	54,550	3
Nea	The Gap to Curlewis	19,860	2
Curlewis	Curlewis to Gunnedah Colliery Jct	89,778	7
Gunnedah	Curlewis to Gunnedah Colliery Jct	170	3
Gunnedah West	Gunnedah Colliery Jct to Narrabri Jct	27,538	1
Emerald Hill	Gunnedah Colliery Jct to Narrabri Jct	74,066	7
Boggabri	Gunnedah Colliery Jct to Narrabri Jct	65,845	21
Baan Baa	Gunnedah Colliery Jct to Narrabri Jct	62,333	4
Turrawan	Gunnedah Colliery Jct to Narrabri Jct	62,816	2
Tibberena	Gunnedah Colliery Jct to Narrabri Jct	123,975	1
Narrabri Jct	Narrabri Jct to Moree	105,271	8
Narrabri	Narrabri Jct to Moree	40,181	16
Edgeroi	Narrabri Jct to Moree	83,106	7
Woolenget	Narrabri Jct to Moree	21,464	1
Bellata	Narrabri Jct to Moree	60,775	2
Bommeri	Narrabri Jct to Moree	60,109	2
Kilgowla	Narrabri Jct to Moree	14,796	1

Name	Sector Name	Calculated Area (m2)	Core Lots
Gurley	Narrabri Jct to Moree	49,678	2
Tycannah	Narrabri Jct to Moree	42,951	5
Moree	Narrabri Jct to Moree	96,383	22
Ashley	Camurra to Weemalah	83,612	2
Moppin	Camurra to Weemalah	90,687	4
Garah	Camurra to Weemalah	89,880	4
Bengerang	Camurra to Weemalah	112,332	2
Weemelah	Camurra to Weemalah	126,250	3
Neeworra	Weemalah to Mungindi	125,855	4
Mungindi	Weemalah to Mungindi	147,203	2
Narrabri West	Narrabri Jct to Burren	51,782	8
Kiandool	Narrabri Jct to Burren	18,922	1
Culgoora	Narrabri Jct to Burren	37,156	4
Wee Waa	Narrabri Jct to Burren	71,719	7
Merah North	Narrabri Jct to Burren	61,161	6
Carbeen	Narrabri Jct to Burren	50,353	1
Cubbaroo	Narrabri Jct to Burren	39,874	2
Burren Jct	Narrabri Jct to Burren	40,940	3
Bugilbone	Burren to Walgett	36,043	0
Cryon	Burren to Walgett	59,595	4
Inverness	Burren to Walgett	12,386	2
Koothney	Burren to Walgett	10,690	1
Beanbri	Burren to Walgett	44,764	2
Kiel Kiel	Burren to Walgett	38,624	1
Waminda	Burren to Walgett	36,580	1
Eurie Eurie	Burren to Walgett	59,825	1
Walgett	Burren to Walgett	136,547	6
Kigwegil	Burren to Merrywinebone	13,324	1
Old Burren	Burren to Merrywinebone	47,143	2
Windella	Burren to Merrywinebone	10,155	1

Name	Sector Name	Calculated Area (m2)	Core Lots
Rowena	Burren to Merrywinebone	31,897	4
Merrywinebone	Burren to Merrywinebone	31,179	4
Mungie Bundie	Moree to Biniguy	49,023	2
Mia Creek	Moree to Biniguy	22,308	1
Marambir	Moree to Biniguy	47,040	2
Wubbera	Moree to Biniguy	7,595	1
Biniguy	Moree to Biniguy	77,921	8
Yagobie	Biniguy to Inverell	29,278	5
Gravesend	Biniguy to Inverell	139,274	1
Syfield	Biniguy to Inverell	4,188	2
Glendon	Biniguy to Inverell	7,622	2
Hadleigh	Biniguy to Inverell	42,037	3
Warialda	Biniguy to Inverell	19,575	3
Booshang	Biniguy to Inverell	242,819	2
Koloona	Biniguy to Inverell	46,505	1
Domboy Tank	Biniguy to Inverell	40,834	2
Delungra	Biniguy to Inverell	54,133	6
Mt Russell	Biniguy to Inverell	6,993	1
Greenwood	Biniguy to Inverell	38,536	3
Bookoola	Biniguy to Inverell	5,972	2
Byron	Biniguy to Inverell	20,467	3
Inverell	Biniguy to Inverell	88,094	6
Camurra	Camurra to North Star	114,966	9
Wongabinda	Camurra to North Star	94,347	2
Calimpa	Camurra to North Star	97,956	4
Milguy	Camurra to North Star	62,754	2
Crooble	Camurra to North Star	55,299	1
Croppa Creek	Camurra to North Star	74,535	5
Tikitere	Camurra to North Star	16,985	1
Windridge	Camurra to North Star	16,950	1

Name	Sector Name	Calculated Area (m2)	Core Lots
North Star	Camurra to North Star	58,119	3
Bibilah	North Star to Boggabilla	12,197	1
Mungle	North Star to Boggabilla	108,535	4
Wearne	North Star to Boggabilla	59,923	1
Doyles Siding	North Star to Boggabilla	16,610	1
Boggabilla	North Star to Boggabilla	132,149	5
Pokataroo	Merrywinebone to Pokataroo	163,476	4
Argyle	Goulburn to Crookwell	11,938	3
Kenmore	Goulburn to Crookwell	12,497	1
Norwood	Goulburn to Crookwell	44,320	2
The Forest	Goulburn to Crookwell	66,317	2
Woodhouselee	Goulburn to Crookwell	37,271	2
Roslyn	Goulburn to Crookwell	32,071	7
Mcalister	Goulburn to Crookwell	49,897	4
Crookwell	Goulburn to Crookwell	47,537	11
North Yass	Yass Jct to Yass Town	3,579	2
Yass Town	Yass Jct to Yass Town	27,192	4
St Michaels	Galong to Boorowa	15,518	1
St Clements	Galong to Boorowa	11,053	1
Nannong	Galong to Boorowa	9,616	3
Oreston	Galong to Boorowa	7,252	1
Gooramma	Galong to Boorowa	95,424	6
Boorowa	Galong to Boorowa	123,596	10
Brawlin	Cootamundra to Gilmore	37,423	3
Muttama	Cootamundra to Gilmore	85,282	3
Bongalong	Cootamundra to Gilmore	14,929	2
Wambidgee	Cootamundra to Gilmore	51,303	3
Coolac	Cootamundra to Gilmore	27,070	3
Mingay	Cootamundra to Gilmore	34,004	3
Gundagai	Cootamundra to Gilmore	46,733	27

Name	Sector Name	Calculated Area (m2)	Core Lots
South Gundagai	Cootamundra to Gilmore	17,438	10
Willie Ploma	Cootamundra to Gilmore	29,526	1
Tumblong	Cootamundra to Gilmore	65,079	2
Luadra	Cootamundra to Gilmore	19,762	6
Mt Horeb	Cootamundra to Gilmore	63,603	2
Califat	Cootamundra to Gilmore	22,109	6
Reka	Cootamundra to Gilmore	26,939	6
Gadara	Cootamundra to Gilmore	32,319	1
Gilmore	Gilmore to Tumut	16,602	4
Tumut	Gilmore to Tumut	102,562	6
Windowie	Gilmore to Batlow	12,064	2
Werboldera	Gilmore to Batlow	62,606	7
Shaws	Gilmore to Batlow	8,878	1
Wybalena	Gilmore to Batlow	25,142	1
Brightside	Gilmore to Batlow	10,234	2
Batlow	Gilmore to Batlow	71,403	28
Forest Hill	Wagga Wagga to Tumbarumba	43,199	1
Ladysmith	Wagga Wagga to Tumbarumba	82,303	2
Tamboolba	Wagga Wagga to Tumbarumba	83,935	1
Coreinbob	Wagga Wagga to Tumbarumba	32,949	2
Borambola	Wagga Wagga to Tumbarumba	119,237	2
Tarcutta	Wagga Wagga to Tumbarumba	108,593	1
Umbango Creek	Wagga Wagga to Tumbarumba	98,318	5
Humula	Wagga Wagga to Tumbarumba	121,049	2
Rosewood	Wagga Wagga to Tumbarumba	23,045	11
Wolseley Park	Wagga Wagga to Tumbarumba	544	3
Glenroy	Wagga Wagga to Tumbarumba	67,370	4
Tumbarumba	Wagga Wagga to Tumbarumba	57,318	2
Collingullie	Uranquinty to Kywong	94,300	3
Belfrayden	Uranquinty to Kywong	64,312	2

Name	Sector Name	Calculated Area (m2)	Core Lots
Bulgary	Uranquinty to Kywong	90,730	3
Arajoel	Uranquinty to Kywong	62,004	1
Galore	Uranquinty to Kywong	98,168	1
Kywong	Uranquinty to Kywong	88,863	1
Tootool	The Rock to Boree Creek	61,019	3
French Park	The Rock to Boree Creek	72,187	4
Milbrulong	The Rock to Boree Creek	40,088	2
Napier	The Rock to Boree Creek	47,235	1
Lockhart	The Rock to Boree Creek	93,575	7
Long Park	The Rock to Boree Creek	57,859	2
Boree Creek	The Rock to Boree Creek	30,955	11
Ryan	Henty to Rand	99,715	2
Munyabla	Henty to Rand	50,980	3
Pleasant Hills	Henty to Rand	81,664	12
Urangeline East	Henty to Rand	39,271	2
Ferndale	Henty to Rand	76,692	4
Rand	Henty to Rand	75,142	3
Morven	Culcairn to Holbrook	48,630	1
Fellow Hills	Culcairn to Holbrook	70,207	1
Ralvona	Culcairn to Holbrook	55,287	5
Holbrook	Culcairn to Holbrook	98,419	8
Weeamera	Culcairn to Corowa	20,368	2
Hurricane Hill	Culcairn to Corowa	19,101	1
Walla Walla	Culcairn to Corowa	5,528	2
Burrumbuttock	Culcairn to Corowa	29,720	3
Orelda	Culcairn to Corowa	38,950	2
Brocklesby	Culcairn to Corowa	34,199	5
Balldale	Culcairn to Corowa	129,951	5
Hopefield	Culcairn to Corowa	78,907	3
Corowa	Culcairn to Corowa	80,811	25

Name	Sector Name	Calculated Area (m2)	Core Lots
Royalla	Tuggeranong to Bombala	22,769	1
Williamsdale	Tuggeranong to Bombala	24,172	5
Michelago	Tuggeranong to Bombala	139,231	6
Colinton	Tuggeranong to Bombala	68,386	43
Bredbo	Tuggeranong to Bombala	46,914	4
Billilingra	Tuggeranong to Bombala	29,128	1
Chakola	Tuggeranong to Bombala	30,820	4
Bunyan	Tuggeranong to Bombala	53,131	3
Cooma	Tuggeranong to Bombala	2,956	2
Rock Flat	Tuggeranong to Bombala	54,488	3
Coonerang	Tuggeranong to Bombala	49,508	1
Bobingah	Tuggeranong to Bombala	19,036	2
Nimmitabel	Tuggeranong to Bombala	82,316	1
Maclaughlin	Tuggeranong to Bombala	21,050	1
Holts Flat	Tuggeranong to Bombala	80,684	7
Jincumbilly	Tuggeranong to Bombala	155,815	5
Bukalong	Tuggeranong to Bombala	156,356	7
Bombala	Tuggeranong to Bombala	163,721	43
Tirranna	Joppa Jct to Tarago	13,038	2
Komungla	Joppa Jct to Tarago	53,642	3
Inverloch	Joppa Jct to Tarago	22,519	1
Lake Bathurst	Joppa Jct to Tarago	32,377	4
Tarago	Tarago to Queanbeyan	26,528	6
Mt Fairy	Tarago to Queanbeyan	77,333	2
Butmaroo	Tarago to Queanbeyan	18,660	1
Bungendore	Tarago to Queanbeyan	156,620	9
Burbong	Tarago to Queanbeyan	81,467	16
Queanbeyan	Tarago to Queanbeyan	68,637	4
Letchworth	Queanbeyan to Tuggeranong	15,212	2
Tuggeranong	Queanbeyan to Tuggeranong	35,429	7

Name	Sector Name	Calculated Area (m2)	Core Lots
Hoskinstown	Bungendore to Captains Flat	42,259	6
Captains Flat	Bungendore to Captains Flat	31,131	3
Yuluma	Boree Creek to Oaklands	118,264	1
Cullivel	Boree Creek to Oaklands	32,299	1
Urana	Boree Creek to Oaklands	64,024	30
Uranagong	Boree Creek to Oaklands	46,699	1
Coorabin	Boree Creek to Oaklands	57,308	2
Oaklands	Boree Creek to Oaklands	62,133	11
Kings Vale	Demondrille to Koorawatha	73,686	7
Prunevale	Demondrille to Koorawatha	14,860	1
Young	Demondrille to Koorawatha	24,500	5
Burrangong	Demondrille to Koorawatha	22,827	6
Maimuru	Demondrille to Koorawatha	50,585	8
Monteagle	Demondrille to Koorawatha	24,778	2
Bendick Murrell	Demondrille to Koorawatha	81,462	4
Crowther	Demondrille to Koorawatha	42,595	4
Koorawatha	Demondrille to Koorawatha	46,041	10
Wattamondara	Cowra to Koorawatha	16,233	2
Noonbinna	Cowra to Koorawatha	31,762	3
Cowra	Cowra to Koorawatha	98,678	35
Stanfield	Blayney to Cowra	18,728	5
Carcoar	Blayney to Cowra	107,102	4
Mandurama	Blayney to Cowra	19,339	8
Lyndhurst	Blayney to Cowra	81,344	1
Garland	Blayney to Cowra	34,262	3
Lucan	Blayney to Cowra	16,462	3
Swan Ponds	Blayney to Cowra	95,039	3
Nargong	Blayney to Cowra	18,864	2
Waugoola	Blayney to Cowra	15,754	3
Woodstock	Blayney to Cowra	21,564	2

Name	Sector Name	Calculated Area (m2)	Core Lots
Holmwood	Blayney to Cowra	30,134	4
Warrangong	Koorawatha to Greenethorpe	57,360	1
Uppingham	Koorawatha to Greenethorpe	52,683	1
Greenethorpe	Koorawatha to Greenethorpe	34,666	1
Cowra West	Cowra to Eugowra	12,720	5
Glenlogan	Cowra to Eugowra	1,083	2
Billimari	Cowra to Eugowra	56,382	1
Bangaroo	Cowra to Eugowra	75,943	1
Canowindra	Cowra to Eugowra	67,954	2
Nyrang Creek	Cowra to Eugowra	24,346	2
Geradan	Cowra to Eugowra	63,124	1
Gooloogong	Cowra to Eugowra	101,468	1
Nanami	Cowra to Eugowra	73,838	1
Trajere	Cowra to Eugowra	20,250	2
Eugowra	Cowra to Eugowra	126,156	10
Brundah	Greenethorpe to Grenfell	12,153	1
Mogongong	Greenethorpe to Grenfell	29,335	1
Wirega	Greenethorpe to Grenfell	14,955	1
Quondong	Greenethorpe to Grenfell	37,877	1
Grenfell	Greenethorpe to Grenfell	71,542	41
Gundibindyal	Stockinbingal to Temora	40,983	3
Springdale	Stockinbingal to Temora	28,284	1
Combaning	Stockinbingal to Temora	129,069	6
Temora	Stockinbingal to Temora	56,072	39
Sprouls Lagoon	Temora to Barmedman	37,280	4
Gidginbung	Temora to Barmedman	15,505	1
Reefton Tank	Temora to Barmedman	30,198	4
Barmedman	Temora to Barmedman	92,424	13
Yiddah	Barmedman to West Wyalong	45,127	1
South Wyalong	Barmedman to West Wyalong	24,847	1

Name	Sector Name	Calculated Area (m2)	Core Lots
Wyalong	Barmedman to West Wyalong	125,794	5
West Wyalong	Barmedman to West Wyalong	26,191	2
Calleen	West Wyalong to Ungarie	118,538	7
Girral	West Wyalong to Ungarie	89,459	2
Ungarie	West Wyalong to Ungarie	165,659	5
Winnunga	Ungarie to Lake Cargelligo	133,344	2
Weja	Ungarie to Lake Cargelligo	92,078	5
Bygalorie	Ungarie to Lake Cargelligo	191,660	8
Tullibigeal	Ungarie to Lake Cargelligo	67,759	7
Burgooney	Ungarie to Lake Cargelligo	48,370	5
Wargambegal	Ungarie to Lake Cargelligo	149,025	1
Lake Cargelligo	Ungarie to Lake Cargelligo	103,462	22
Wargin	Barmedman to Rankins Springs	85,709	3
Bellarwi	Barmedman to Rankins Springs	95,144	2
Alleena	Barmedman to Rankins Springs	88,392	1
Buddigower	Barmedman to Rankins Springs	75,980	1
Tallimba	Barmedman to Rankins Springs	99,008	3
Buralyang	Barmedman to Rankins Springs	75,791	1
Narriah	Barmedman to Rankins Springs	94,733	2
Weethalle	Barmedman to Rankins Springs	54,692	2
Euratha	Barmedman to Rankins Springs	93,974	1
Taleeban	Barmedman to Rankins Springs	93,621	1
Erigolia	Barmedman to Rankins Springs	59,420	1
Rankins Springs	Barmedman to Rankins Springs	263,886	3
Wyrra	West Wyalong to Burcher	100,200	2
Clear Ridge	West Wyalong to Burcher	99,296	1
Lake Cowal	West Wyalong to Burcher	51,393	4
Corringle	West Wyalong to Burcher	104,129	2
Wamboyne	West Wyalong to Burcher	108,078	1
Burcher	West Wyalong to Burcher	64,366	2

Name	Sector Name	Calculated Area (m2)	Core Lots
Youngareen	Ungarie to Naradhan	51,956	1
Thulloo	Ungarie to Naradhan	126,961	4
Kikoira	Ungarie to Naradhan	54,910	2
Gubbata	Ungarie to Naradhan	90,183	1
Hannan	Ungarie to Naradhan	86,297	1
Naradhan	Ungarie to Naradhan	62,594	5
Old Junee	Junee to Narrandera	66,548	2
Rockview	Junee to Narrandera	64,690	4
Marrar	Junee to Narrandera	89,920	2
Coolamon	Junee to Narrandera	150,584	10
Brushwood	Junee to Narrandera	29,612	2
Ganmain	Junee to Narrandera	124,464	5
Derain	Junee to Narrandera	40,267	2
Matong	Junee to Narrandera	80,717	1
Pamandi	Junee to Narrandera	43,844	1
Grong Grong	Junee to Narrandera	93,204	1
Narrandera	Junee to Narrandera	126,753	11
Paynters	Narrandera to Yanco	29,366	1
Roach	Narrandera to Yanco	35,209	3
Yanco	Narrandera to Yanco	68,577	8
Gogeldrie	Yanco to Willbriggie	77,322	2
Dandinya	Yanco to Willbriggie	31,878	2
Whitton	Yanco to Willbriggie	58,071	3
Willbriggie	Willbriggie to Hay	147,910	4
Benerembah	Willbriggie to Hay	13,362	1
Bringagee	Willbriggie to Hay	135,232	5
Groongal	Willbriggie to Hay	70,112	1
Carrathool	Willbriggie to Hay	92,451	1
Uardry	Willbriggie to Hay	25,644	2
Beabula	Willbriggie to Hay	143,419	1

Name	Sector Name	Calculated Area (m ²)	Core Lots
Nulabor	Willbriggie to Hay	157,583	4
Illilliwa	Willbriggie to Hay	41,535	3
Hay	Willbriggie to Hay	77,727	9
Gillenbah	Narrandera to Tocumwal	21,721	2
Corobimilla	Narrandera to Tocumwal	23,572	3
New Park	Narrandera to Tocumwal	32,152	1
Morundah	Narrandera to Tocumwal	48,869	4
Widgiewa	Narrandera to Tocumwal	116,500	5
Coonong	Narrandera to Tocumwal	138,808	5
Bundure	Narrandera to Tocumwal	109,159	4
North Yathong	Narrandera to Tocumwal	90,222	4
Jerilderie	Narrandera to Tocumwal	108,491	20
Wunnamurra	Narrandera to Tocumwal	43,897	1
Mairjimmy	Narrandera to Tocumwal	58,454	4
Green Swamp Road	Narrandera to Tocumwal	63,399	3
Berrigan	Narrandera to Tocumwal	66,416	21
Wait A While	Narrandera to Tocumwal	64,683	2
Leniston	Narrandera to Tocumwal	16,679	1
Curraghmore	Narrandera to Tocumwal	15,114	1
Finley	Narrandera to Tocumwal	99,507	6
Langunya	Narrandera to Tocumwal	70,734	4
Leeton	Yanco to Griffith	116,670	8
Koonadan	Yanco to Griffith	82,305	1
Murrami	Yanco to Griffith	79,751	1
Neeambah	Yanco to Griffith	37,776	2
Wumbulgal	Yanco to Griffith	103,507	1
Widgelli	Yanco to Griffith	88,280	2
Yoogali East	Yanco to Griffith	16,024	1
Yoogali	Yanco to Griffith	17,899	2
Griffith	Yanco to Griffith	4,529	2

Name	Sector Name	Calculated Area (m2)	Core Lots
Pucawan	Temora to Griffith	2,199	1
Quandary	Temora to Griffith	17,295	3
Ariah Park	Temora to Griffith	65,530	3
Mirrool	Temora to Griffith	34,125	2
Beckom	Temora to Griffith	126,171	8
Ardlethan	Temora to Griffith	100,490	3
Kamarah	Temora to Griffith	42,979	1
Moombooldool	Temora to Griffith	30,214	3
Barellan	Temora to Griffith	99,193	2
Garoolgan	Temora to Griffith	125,036	2
Binya	Temora to Griffith	96,968	4
Yenda	Temora to Griffith	186,617	1
Beelbanger	Temora to Griffith	64,903	2
Lakeview	Griffith to Hillston	14,707	3
Tharbogang	Griffith to Hillston	66,423	1
Warburn	Griffith to Hillston	95,326	1
Tabbita	Griffith to Hillston	56,021	1
Carolgi	Griffith to Hillston	92,930	2
Goolgowi	Griffith to Hillston	79,091	1
Budawong	Griffith to Hillston	72,640	1
Merriwagga	Griffith to Hillston	45,099	2
Goorawin	Griffith to Hillston	77,402	2
Langtree	Griffith to Hillston	92,846	2
Dirrung	Griffith to Hillston	93,599	1
Hillston	Griffith to Hillston	58,801	45
Lowlands	Hillston to Roto	21,649	1
Marrangaroo	Bowenfels to Wallerawang	16,338	4
Wallerawang	Wallerawang to Tarana	1,091,711	16
Rydal	Wallerawang to Tarana	6,924	5
Sodwalls	Wallerawang to Tarana	29,391	1

Name	Sector Name	Calculated Area (m2)	Core Lots
Birumba	Wallerawang to Tarana	18,294	2
Tarana	Tarana to Orange Jct	61,108	6
Gemalla	Tarana to Orange Jct	12,416	1
Locksley	Tarana to Orange Jct	77,082	5
Wambool	Tarana to Orange Jct	33,920	1
Brewongle	Tarana to Orange Jct	38,004	2
Raglan	Tarana to Orange Jct	65,691	18
Kelso	Tarana to Orange Jct	60,667	7
Bathurst	Tarana to Orange Jct	221,924	2
Orton Park	Tarana to Orange Jct	4,148	1
Perthville	Tarana to Orange Jct	30,490	17
Georges Plains	Tarana to Orange Jct	48,456	2
Tumulla	Tarana to Orange Jct	62,013	1
Wimbledon	Tarana to Orange Jct	38,018	5
Gresham	Tarana to Orange Jct	21,248	3
Newbridge	Tarana to Orange Jct	43,104	7
Athol	Tarana to Orange Jct	12,996	1
Blayney	Tarana to Orange Jct	886	1
Polona	Tarana to Orange Jct	19,461	5
Millthorpe	Tarana to Orange Jct	6,750	3
Spring Hill	Tarana to Orange Jct	57,706	5
Huntley	Tarana to Orange Jct	23,969	3
Bloomfield	Tarana to Orange Jct	9,947	6
Orange East	Tarana to Orange Jct	115,963	8
Orange	Orange Jct to Dubbo	52,914	13
Cullya	Orange Jct to Dubbo	11,965	1
Clergate	Orange Jct to Dubbo	6,430	1
Mullion Creek	Orange Jct to Dubbo	23,504	4
Kerrs Creek	Orange Jct to Dubbo	21,272	1
Warmercliffe	Orange Jct to Dubbo	39,287	2

Name	Sector Name	Calculated Area (m2)	Core Lots
Euchareena	Orange Jct to Dubbo	52,676	5
Store Creek	Orange Jct to Dubbo	37,023	2
Farnham	Orange Jct to Dubbo	13,020	2
Stuart Town	Orange Jct to Dubbo	36,835	1
Mumbil	Orange Jct to Dubbo	50,871	6
Dripstone	Orange Jct to Dubbo	78,927	9
Oddfields	Orange Jct to Dubbo	15,130	2
Apsley	Orange Jct to Dubbo	11,022	2
Wellington	Orange Jct to Dubbo	6,372	2
Maryvale	Orange Jct to Dubbo	31,842	7
Combo	Orange Jct to Dubbo	12,438	2
Geurie	Orange Jct to Dubbo	44,443	8
Wongarbon	Orange Jct to Dubbo	36,197	1
Eulomogo	Orange Jct to Dubbo	24,975	2
Ceres	Narromine to Nevertire	36,195	1
Mungeribar	Narromine to Nevertire	45,627	1
Trangie	Narromine to Nevertire	600,254	12
Myall Mundi	Narromine to Nevertire	30,996	1
Cathundral	Narromine to Nevertire	59,989	1
Mullengudgery	Narromine to Nevertire	58,053	1
Nevertire	Narromine to Nevertire	151,571	9
Belaringar	Nevertire to Nyngan Jct	60,779	1
Miowera	Nevertire to Nyngan Jct	59,860	1
Warrigal	Nevertire to Nyngan Jct	51,882	2
Nyngan	Nevertire to Nyngan Jct	128,346	12
Summervale	Nyngan Jct to Byrock	46,571	1
Grahweed	Nyngan Jct to Byrock	36,493	1
Girilambone	Nyngan Jct to Byrock	91,075	3
Wilga Tank	Nyngan Jct to Byrock	62,746	1
Coolabah	Nyngan Jct to Byrock	101,129	4

Name	Sector Name	Calculated Area (m2)	Core Lots
Glenariff	Nyngan Jct to Byrock	115,285	3
Byrock	Nyngan Jct to Byrock	114,998	3
Dwyers	Byrock to Bourke	50,896	1
Boorindal	Byrock to Bourke	25,118	1
Maroona	Byrock to Bourke	29,952	1
Bourke	Byrock to Bourke	101,935	14
Wave Hill	Byrock to Brewarrina	12,871	1
Compton Downs	Byrock to Brewarrina	55,103	2
Tarcoon	Byrock to Brewarrina	87,605	1
Charlton	Byrock to Brewarrina	36,859	3
Tarrion	Byrock to Brewarrina	61,026	3
Brewarrina	Byrock to Brewarrina	161,898	12
Canobolas	Orange Jct to Molong	17,856	1
Nashdale	Orange Jct to Molong	49,749	9
Borenore	Orange Jct to Molong	51,548	4
Amaroo	Orange Jct to Molong	34,545	4
Gamboola	Orange Jct to Molong	11,789	2
Molong	Molong to Parkes	60,865	13
Pinecliffe	Molong to Parkes	30,385	2
Gregra	Molong to Parkes	27,365	2
Manildra	Molong to Parkes	21,191	12
Meranburn	Molong to Parkes	27,411	4
Jeerabung	Molong to Parkes	16,722	1
Bumberry	Molong to Parkes	97,217	4
Mandagery	Molong to Parkes	24,948	2
Cookamidgera	Molong to Parkes	41,619	2
Mugincoble	Molong to Parkes	38,135	3
Parkes	Molong to Parkes	75,155	39
Larras Lee	Molong to Yeoval	67,778	4
Cumnock	Molong to Yeoval	56,867	1

Name	Sector Name	Calculated Area (m2)	Core Lots
Yullundry	Molong to Yeoval	3,928	3
Loombah Tank	Molong to Yeoval	12,521	1
Yeoval	Yeoval to Dubbo	65,416	7
Walmer	Yeoval to Dubbo	64,040	7
Arthurville	Yeoval to Dubbo	21,637	2
Nubingerie	Yeoval to Dubbo	74,693	1
Toongi	Yeoval to Dubbo	59,993	3
Glengeera	Yeoval to Dubbo	74,310	2
Cumboogle	Yeoval to Dubbo	102,928	3
Botfield	Bogan Gate to Tottenham	46,947	1
Trundle	Bogan Gate to Tottenham	46,806	1
The Troffs	Bogan Gate to Tottenham	34,935	1
Kadungle	Bogan Gate to Tottenham	19,092	1
Gobondery	Bogan Gate to Tottenham	25,261	3
Tullamore	Bogan Gate to Tottenham	102,388	3
Yetheria	Bogan Gate to Tottenham	66,816	7
Middlefield	Bogan Gate to Tottenham	189,528	8
Albert	Bogan Gate to Tottenham	72,303	7
Minemoorong	Bogan Gate to Tottenham	110,707	5
Tottenham	Bogan Gate to Tottenham	168,208	3
Carlwood	Tarana to Oberon	52,105	1
Hazelgrove	Tarana to Oberon	23,990	1
Oberon	Tarana to Oberon	62,221	9
Egelabra	Nevertire to Warren	22,757	1
Warren	Nevertire to Warren	109,957	5
Tikkara	Nyngan Jct to Cobar	26,207	1
Miandetta	Nyngan Jct to Cobar	28,017	5
Thorndale	Nyngan Jct to Cobar	26,662	1
Hermidale	Nyngan Jct to Cobar	64,623	1
Birkalla	Nyngan Jct to Cobar	26,484	1

Name	Sector Name	Calculated Area (m2)	Core Lots
Muriel Tank	Nyngan Jct to Cobar	23,499	3
Pooraka	Nyngan Jct to Cobar	46,152	3
Florida	Nyngan Jct to Cobar	18,396	1
Boppy Mountain	Nyngan Jct to Cobar	101,167	3
Meryula	Nyngan Jct to Cobar	70,415	2
Cobar	Nyngan Jct to Cobar	126,399	9
Wrightville	Nyngan Jct to Cobar	34,607	11
Irondale	Wallerawang to Baal Bone Jct	19,713	1
Pipers Flat	Wallerawang to Baal Bone Jct	29,742	5
Portland	Wallerawang to Baal Bone Jct	17,329	2
Cullen Bullen	Wallerawang to Baal Bone Jct	32,650	1
Ben Bullen	Wallerawang to Baal Bone Jct	29,852	5
Capertee	Baal Bone Jct to Charbon Colliery Jct	88,434	11
Torbane	Baal Bone Jct to Charbon Colliery Jct	44,510	1
Excelsior	Baal Bone Jct to Charbon Colliery Jct	51,132	1
Weenga	Baal Bone Jct to Charbon Colliery Jct	48,753	2
Carlos Gap	Baal Bone Jct to Charbon Colliery Jct	41,206	1
Vulcan	Baal Bone Jct to Charbon Colliery Jct	48,596	1
Brogans Creek	Baal Bone Jct to Charbon Colliery Jct	40,664	2
Clandulla	Baal Bone Jct to Charbon Colliery Jct	46,710	3
Charbon	Charbon Colliery Jct to Kandos	13,439	2
Kandos	Charbon Colliery Jct to Kandos	20,784	4
Murrawal	Binnaway to Gwabegar	100,246	6
Deringulla	Binnaway to Gwabegar	18,124	3
Ulamambri	Binnaway to Gwabegar	69,571	6
Coonabarabran	Binnaway to Gwabegar	117,996	18
Yearinan	Binnaway to Gwabegar	96,817	2
Bugaldie	Binnaway to Gwabegar	124,028	1
Wittenbra	Binnaway to Gwabegar	51,287	2
Baradine	Binnaway to Gwabegar	95,977	3

Name	Sector Name	Calculated Area (m2)	Core Lots
Tallama	Binnaway to Gwabegar	90,264	7
Kenebri	Binnaway to Gwabegar	18,829	1
Merebene	Binnaway to Gwabegar	97,540	2
Gwabegar	Binnaway to Gwabegar	3,171	2
Talbragar	Dubbo to Coonamble	24,774	2
Mogriguy	Dubbo to Coonamble	45,871	3
Eumungerie	Dubbo to Coonamble	29,540	1
Balladoran	Dubbo to Coonamble	32,209	2
Marthaguy	Dubbo to Coonamble	45,139	3
Gilgandra	Dubbo to Coonamble	88,938	16
Kamber	Dubbo to Coonamble	41,747	4
Curban	Dubbo to Coonamble	48,561	3
Armatree	Dubbo to Coonamble	13,963	5
Gular	Dubbo to Coonamble	79,838	4
Combara	Dubbo to Coonamble	25,604	2
Coonamble	Dubbo to Coonamble	148,038	8
Leadville	Craboon to Coolah	50,597	3
Weeraman	Craboon to Coolah	48,946	2
Hannahs Bridge	Craboon to Coolah	61,909	3
Girragulang	Craboon to Coolah	70,434	2
Coolah	Craboon to Coolah	52,594	8
Rylstone	Kandos to Gulgong	101,900	32
Mortonmain	Kandos to Gulgong	30,048	4
Lue	Kandos to Gulgong	104,334	11
Havelah	Kandos to Gulgong	40,518	1
Mt Knowles	Kandos to Gulgong	29,484	2
Mt Frome	Kandos to Gulgong	33,333	5
Mudgee	Kandos to Gulgong	54,542	16
Munna	Kandos to Gulgong	58,343	2
Warrobil	Kandos to Gulgong	64,777	7

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Attachment 3 **Isolated Boxes**

Table 4: Summary of Isolated Boxes

Name	Description	Sector Name	Calculated Area (m ²)	Core Lots
Batlow to Kunama		Gilmore to Batlow	1,854	1
East Maitland to Morpeth	East Maitland to Morpeth		611	3
Matakana to Mount Hope	Matakana to Mount Hope		6,779	1
Cobar to Wilcannia	Cobar to Wilcannia	Cobar to Elura		1
Maldon to Dombarton	Maldon to Dombarton	Tahmoor Colliery Jct to Mittagong Jct	2,180,677	31
Guyra to Dorrigo	Guyra to Dorrigo		187,622	8
Casino	Casino to Bonalbo	Casino to Border Loop	206,714	11
Manning River Siding	Taree to Kundle Kundle		29,906	3
Booyong	Booyong to Ballina		19,652	14
Goulburn			3,205	3
Joppa Junction			336,944	6
Werris Creek			1,361	2
Werris Creek			64,636	4
Quirindi			19,889	2
Cootamundra			506	1
Wagga Wagga			3,301	1
Wagga Wagga			1,387	1
The Rock			4,587	4
Table Top			4,099	2
Albury			12,337	4
Cootamundra West			155	1
Nubba			257	1
Cullerin			2,217	1
Cullerin			54,341	4
Oolong			431	2
Oolong			3,269	3
Oolong			3,403	1

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Jerrawa			1,596	3
Goondah			2,672	1
Illalong Creek			271,594	8
Binalong			2,055	1
Galong			9,435	2
Galong			967	2
Galong			104,164	7
Harden			699	1
Harden			615	1
Murrumburrah			1,353	2
Murrumburrah			5,294	6
Murrumburrah			176	1
Demondrille			199	1
Moss Vale Jct			449	1
Moss Vale Jct			1,080	1
Exeter			2,151	2
Bundanoon			8,031	1
Bundanoon			259	1
Tallong			171,915	1
Tallong			3,289	1
Penrose			4,567	1
Goulburn			14,023	2
St Anthony's			752	1
Robertson			3,890	5
St Anthony's			4,746	5
Picton			17	1
Tahmoor			86	1
Bargo			8,081	1
Yanderra			2,633	1
Yerrinbool			1,416	1

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Braemar			231	1
Braemar			2,481	1
Mittagong			109	1
Mittagong			7,663	3
Bowral			1,090	1
Bowral			1,880	1
Bowral			5,370	2
Stickingbingal			908	1
Maleeja to Milvale			48,964	1
Bribbaree			79,970	2
Nelungaloo to Gunningbland			7,715	3
Kiacatoo to Gunebang			21,677	1
Eubalong West			40,664	2
The Gorge to Mt Gipps			2,215	1
Broken Hill			11,610	1
Parkes to Goobang Jct			84,424	14
Goonumbla			6,064	1
Narromine			16,551	2
Muronbung to Elong Elong			648	2
Binnaway			4,563	2
Werris Creek			57,030	3
Werris Creek			7,656	3
Denman to Myambat			26,633	5
Sandy Hollow to Bearami			113,059	8
Branxton			14,454	4
Aberdeen to Togar			7,501	1
Scone 1			9,605	1
Scone 2			2,953	1
Scone 3			7,021	2

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Blandford to Murrurundi			335	1
Kankool to Willow Tree			266,477	7
Willow Tree			422	1
Quirindi to Quipolly			221	1
Paterson			1,185	2
Pitlochry			3,538	4
Kolondong to Taree 1			889	1
Kolondong to Taree 2			722	1
Herrons Creek			721	1
Glenreagh			2,818	1
Coffs Harbour 1			900	1
Coffs Harbour 2			301	1
South Grafton 1			10,381	1
South Grafton 2			549	1
South Grafton River Siding			24,006	5
Grafton			7,789	9
Koolkhan to Kyarran			207	1
Coombell			15	1
South Casino			5,825	1
South Casino to Casino 1			731	1
South Casino to Casino 2			1,207	1
Casino 1			193	1
Casino 2			96	1
Kyogle			52	1
The Risk 1			2,326	1
The Risk 2			501	1
Warabrook			9,444	1
Thornton			4,322	1
East Maitland			160	2
Victoria Street			65	1

Name	Description	Sector Name	Calculated Area (m2)	Core Lots
Maitland 1			212	1
Maitland 2			325	1
Luknow	Sig Location Near Orange Included In Land Tax Assessment		0	

Appendix 5

Underbridges and Overbridges

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Appendix 5: Underbridges and Overbridges

1.1 Underbridges

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
198687	434.120	1.2	403	2	Concrete	Tamworth
133901	483.780	2.4	403	1	Concrete	Tamworth
133909	487.197	2.5	403	1	Concrete	Tamworth
133899	481.970	2.5	403	1	Concrete	Tamworth
198696	481.150	2.5	403	1	Concrete	Tamworth
134110	533.910	2.6	403	1	Concrete	Tamworth
134112	534.940	2.6	403	1	Concrete	Tamworth
133959	512.115	3.5	403	1	Concrete	Tamworth
134280	449.110	3.5	403	1	Concrete	Tamworth
134060	519.550	3.5	403	1	Concrete	Tamworth
134244	438.038	3.5	403	1	Concrete	Tamworth
134246	438.373	3.5	403	1	Concrete	Tamworth
134254	439.295	3.5	403	1	Concrete	Tamworth
134266	443.030	3.5	403	1	Concrete	Tamworth
134344	463.335	3.5	403	1	Concrete	Tamworth
134342	461.715	3.5	403	1	Concrete	Tamworth
133929	495.645	3.5	403	1	Concrete	Tamworth
134284	449.775	3.6	403	1	Concrete	Tamworth
134202	417.735	3.6	403	1	Concrete	Tamworth
134380	469.630	3.7	403	1	Concrete	Tamworth
236167	480.550	3.7	403	1	Concrete	Tamworth
134282	449.535	3.7	403	1	Concrete	Tamworth
133903	484.560	3.8	403	1	Concrete	Tamworth

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
134106	533.290	3.8	403	1	Concrete	Tamworth
134334	460.765	3.8	403	1	Concrete	Tamworth
133907	486.315	5.0	403	1	Concrete	Tamworth
134268	444.134	5.0	403	1	Concrete	Tamworth
134290	450.735	5.0	403	1	Concrete	Tamworth
134304	456.230	5.0	403	1	Concrete	Tamworth
133923	491.835	5.1	403	1	Concrete	Tamworth
134212	426.514	5.1	403	1	Concrete	Tamworth
134400	471.445	5.1	403	1	Concrete	Tamworth
133921	490.500	5.2	403	1	Concrete	Tamworth
133913	488.075	5.2	403	1	Concrete	Tamworth
133941	502.995	5.2	403	1	Concrete	Tamworth
133943	504.345	5.2	403	1	Concrete	Tamworth
133945	505.670	5.2	403	1	Concrete	Tamworth
134394	470.640	5.3	403	1	Concrete	Tamworth
134358	465.670	5.3	403	1	Concrete	Tamworth
134118	539.290	5.8	403	2	Concrete	Tamworth
134238	436.180	6.1	403	1	Concrete	Tamworth
134240	436.990	6.1	403	1	Concrete	Tamworth
134052	515.670	7.0	403	2	Concrete	Tamworth
134208	421.735	7.2	403	2	Concrete	Tamworth
134276	447.950	7.3	403	2	Concrete	Tamworth
133911	488.250	7.3	403	2	Concrete	Tamworth
133931	496.540	7.4	403	2	Concrete	Tamworth
133915	488.420	7.4	403	2	Concrete	Tamworth
134252	439.055	7.4	403	2	Concrete	Tamworth
134094	530.470	7.6	403	1	Concrete	Tamworth
133949	507.960	7.6	403	2	Concrete	Tamworth
133927	494.070	7.7	403	3	Concrete	Tamworth

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
134206	420.770	10.5	403	3	Concrete	Tamworth
134338	461.510	11.1	403	3	Concrete	Tamworth
134272	445.230	11.2	403	3	Concrete	Tamworth
198688	444.590	14.4	403	4	Concrete	Tamworth
134302	455.075	18.2	403	7	Concrete	Tamworth
133891	479.240	20.4	403	2	Concrete	Tamworth
133895	480.550	3.7	403	1	Concrete	Tamworth
134348	463.735	3.6	403	1	Concrete	Tamworth
134082	524.850	5.6	403	2	Steel	Tamworth
133889	477.814	5.7	403	1	Steel	Tamworth
134096	530.565	6.0	403	1	Steel	Tamworth
134056	517.665	6.1	403	1	Steel	Tamworth
133961	512.385	7.6	403	2	Steel	Tamworth
134102	531.940	10.4	403	2	Steel	Tamworth
134104	532.150	13.0	403	2	Steel	Tamworth
134218	431.825	18.2	403	2	Steel	Tamworth
133883	476.500	27.6	403	3	Steel	Tamworth
198700	499.510	31.5	403	9	Steel	Tamworth
134192	416.270	63.6	403	6	Steel	Tamworth
134040	513.480	88.0	403	10	Steel	Tamworth
134220	432.045	137.3	403	15	Steel	Tamworth
135926	512.850	156.0	403	13	Steel	Tamworth
132458	425.085	3.8	404	1	Concrete	Tamworth
132384	411.974	2.0	404	1	Concrete	Tamworth
133296	571.536	2.0	404	1	Concrete	Tamworth
198637	421.154	2.0	404	1	Concrete	Tamworth
198632	413.154	2.4	404	2	Concrete	Tamworth
198644	565.443	2.5	404	1	Concrete	Tamworth
132756	471.517	2.5	404	1	Concrete	Tamworth

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
132764	473.733	2.6	404	1	Concrete	Tamworth
132422	418.711	2.8	404	1	Concrete	Tamworth
132768	473.971	2.8	404	1	Concrete	Tamworth
132506	433.390	2.8	404	1	Concrete	Tamworth
132532	439.479	2.8	404	1	Concrete	Tamworth
132526	438.545	3.0	404	1	Concrete	Tamworth
132540	440.780	3.0	404	1	Concrete	Tamworth
132424	418.925	3.0	404	1	Concrete	Tamworth
132736	467.120	3.1	404	1	Concrete	Tamworth
132760	472.421	3.2	404	1	Concrete	Tamworth
132490	429.930	3.3	404	1	Concrete	Tamworth
132750	470.492	3.3	404	1	Concrete	Tamworth
132494	430.258	3.3	404	1	Concrete	Tamworth
132546	442.626	3.6	404	1	Concrete	Tamworth
132548	442.904	3.6	404	1	Concrete	Tamworth
132554	443.646	3.6	404	1	Concrete	Tamworth
132558	444.401	3.6	404	1	Concrete	Tamworth
132502	432.686	3.6	404	1	Concrete	Tamworth
132574	449.028	3.6	404	3	Concrete	Tamworth
132774	474.725	3.7	404	1	Concrete	Tamworth
132536	440.502	3.8	404	1	Concrete	Tamworth
133318	577.412	3.8	404	1	Concrete	Tamworth
132528	438.684	5.0	404	1	Concrete	Tamworth
133234	553.596	5.0	404	1	Concrete	Tamworth
133236	554.189	5.0	404	1	Concrete	Tamworth
133184	541.664	5.0	404	1	Concrete	Tamworth
132742	468.258	5.2	404	2	Concrete	Tamworth
132504	432.768	5.6	404	2	Concrete	Tamworth
132518	436.570	5.6	404	2	Concrete	Tamworth

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
132590	452.229	5.9	404	2	Concrete	Tamworth
132410	416.788	6.4	404	2	Concrete	Tamworth
132542	441.082	6.6	404	2	Concrete	Tamworth
132464	425.752	7.4	404	2	Concrete	Tamworth
132394	414.314	8.0	404	4	Concrete	Tamworth
132650	456.390	8.0	404	1	Concrete	Tamworth
132432	420.590	9.0	404	3	Concrete	Tamworth
132514	436.008	12.0	404	6	Concrete	Tamworth
133270	561.640	12.8	404	4	Concrete	Tamworth
132552	443.417	16.5	404	5	Concrete	Tamworth
132772	474.555	17.0	404	5	Concrete	Tamworth
132860	486.424	21.0	404	7	Concrete	Tamworth
132428	420.000	30.4	404	8	Concrete	Tamworth
133024	509.799	3.7	404	1	Concrete	Tamworth
198643	462.007	2.3	404	1	Steel	Tamworth
132748	469.968	3.0	404	1	Steel	Tamworth
132762	472.702	3.8	404	1	Steel	Tamworth
133050	513.624	3.8	404	1	Steel	Tamworth
132778	475.564	6.6	404	5	Steel	Tamworth
133334	579.430	9.0	404	1	Steel	Tamworth
132862	486.654	25.8	404	3	Steel	Tamworth
132480	428.428	26.7	404	3	Steel	Tamworth
132560	445.286	27.5	404	3	Steel	Tamworth
133028	510.202	32.2	404	2	Steel	Tamworth
132382	411.608	36.0	404	3	Steel	Tamworth
132716	465.884	37.0	404	5	Steel	Tamworth
133859	555.726	45.7	404	5	Steel	Tamworth
132628	453.501	152.4	404	15	Steel	Tamworth
133284	566.690	16.0	404	4	Timber	Tamworth

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
133196	544.950	24.0	404	6	Timber	Tamworth
133288	568.619	24.0	404	6	Timber	Tamworth
132598	453.276	4.2	405	1	Timber	Tamworth
134162	560.400	2.6	421	1	Concrete	Narrabri
134158	558.770	2.6	421	1	Concrete	Narrabri
134170	564.435	7.4	421	2	Concrete	Narrabri
134156	557.120	36.4	421	3	Concrete	Narrabri
134154	555.835	3.7	421	1	Steel	Narrabri
134164	561.410	5.2	421	1	Steel	Narrabri
134152	555.165	6.1	421	1	Steel	Narrabri
134160	559.845	46.3	421	5	Steel	Narrabri
236123	565.755	302.0	421	28	Steel	Narrabri
231451	567.663	372.0	421	13	Steel	Narrabri
134536	581.180	4.5	422	1	Concrete	Narrabri
134544	582.605	33.6	422	8	Concrete	Narrabri
134557	586.200	32.0	422	4	Steel	Narrabri
134622	600.500	65.0	422	7	Steel	Narrabri
134492	571.605	74.8	422	22	Steel	Narrabri
134488	569.930	52.8	422	9	Timber	Narrabri
134996	607.490	5.2	423	2	Concrete	Narrabri
134882	572.500	282.1	423	33	Concrete	Narrabri
134916	582.845	81.0	423	27	Concrete	Narrabri
134940	591.705	21.5	423	5	Concrete	Narrabri
135026	614.530	45.0	423	30	Concrete	Narrabri
134998	608.080	54.8	423	8	Concrete	Narrabri
134984	604.310	2.8	423	1	Steel	Narrabri
134902	577.900	14.8	423	4	Steel	Narrabri
134966	600.500	330.6	423	73	Timber	Narrabri
135308	711.920	91.2	424	16	Concrete	Narrabri

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
135836	668.590	52.4	425	8	Concrete	Narrabri
135838	668.689	69.6	425	12	Steel	Narrabri
272162	679.795	4.6	425	1	Timber	Narrabri
134684	620.610	26.0	431	2	Concrete	Narrabri
134836	653.620	2.4	431	1	Concrete	Narrabri
134756	641.540	116.6	431	8	Steel	Narrabri
272431	742.240	1.8	432	1	Steel	Narrabri
272432	742.690	1.8	432	1	Steel	Narrabri
272458	741.345	1.8	432	1	Steel	Narrabri
236742	714.820	3.0	432	1	Steel	Narrabri
236763	691.025	3.0	432	1	Steel	Narrabri
135382	680.615	4.8	432	2	Steel	Narrabri
135484	723.875	4.8	432	2	Steel	Narrabri
135412	706.250	7.2	432	3	Steel	Narrabri
135438	711.620	7.2	432	3	Steel	Narrabri
135394	690.830	9.0	432	5	Steel	Narrabri
135524	737.555	9.0	432	3	Steel	Narrabri
135488	725.275	9.6	432	4	Steel	Narrabri
135470	721.030	12.0	432	5	Steel	Narrabri
135400	696.990	12.4	432	5	Steel	Narrabri
135430	708.445	12.6	432	9	Steel	Narrabri
135454	716.850	22.5	432	3	Steel	Narrabri
135538	744.555	22.5	432	6	Steel	Narrabri
135552	750.965	22.5	432	5	Steel	Narrabri
135526	740.665	37.5	432	5	Steel	Narrabri
236828	734.945	60.0	432	8	Steel	Narrabri
135516	735.115	21.0	432	2	Steel	Narrabri
135518	736.210	2.0	432	5	Timber	Narrabri
135696	725.390	1.9	433	1	Steel	Narrabri

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
135718	739.125	2.4	433	1	Steel	Narrabri
135704	728.990	2.4	433	2	Timber	Narrabri
135744	747.390	2.4	433	1	Timber	Narrabri
135674	716.260	4.8	433	4	Timber	Narrabri
135676	717.085	4.8	433	4	Timber	Narrabri
135730	743.675	4.8	433	4	Timber	Narrabri
135754	749.920	4.8	433	2	Timber	Narrabri
135776	755.675	4.8	433	4	Timber	Narrabri
135752	749.480	7.2	433	6	Timber	Narrabri
135650	706.110	12.0	433	10	Timber	Narrabri
135666	713.525	21.0	433	5	Timber	Narrabri
135722	740.855	24.0	433	10	Timber	Narrabri
135792	760.710	24.0	433	10	Timber	Narrabri
135794	761.330	24.0	433	10	Timber	Narrabri
135780	756.830	136.8	433	19	Timber	Narrabri
135724	741.290	180.0	433	35	Timber	Narrabri
135788	758.875	18.0	433	15	Timber	Narrabri
135590	668.720	7.2	435	3	Concrete	Narrabri
135606	678.610	12.0	435	5	Steel	Narrabri
231376	667.505	28.8	435	8	Steel	Narrabri
135576	666.340	75.6	435	3	Steel	Narrabri
135612	681.695	4.5	435	3	Timber	Narrabri
135610	680.730	4.8	435	2	Timber	Narrabri
135624	690.965	37.8	435	9	Timber	Narrabri
241636	676.221	42.8	435	6	Timber	Narrabri
135580	666.945	50.4	435	12	Timber	Narrabri
135582	667.210	54.6	435	13	Timber	Narrabri
135578	666.341	67.8	435	10	Timber	Narrabri
233910	666.645	71.4	435	17	Timber	Narrabri

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
135584	667.370	72.0	435	15	Timber	Narrabri
135602	676.220	72.0	435	2	Timber	Narrabri
135588	667.945	102.0	435	20	Timber	Narrabri
135626	691.215	134.4	435	27	Timber	Narrabri
144225	168.761	3.0	511	1	Brick / Masonry / Stone	Bathurst
144207	166.488	6.1	511	1	Brick / Masonry / Stone	Bathurst
144223	168.460	9.1	511	1	Brick / Masonry / Stone	Bathurst
144187	163.406	48.8	511	4	Brick / Masonry / Stone	Bathurst
144155	159.156	73.2	511	6	Brick / Masonry / Stone	Bathurst
144217	167.704	3.0	511	1	Concrete	Bathurst
144153	158.855	22.6	511	2	Steel	Bathurst
323701	168.506	30.4	511	3	Steel	Bathurst
144227	169.593	112.4	511	13	Steel	Bathurst
144432	198.118	9.1	512	1	Brick / Masonry / Stone	Bathurst
240610	192.544	13.1	512	1	Brick / Masonry / Stone	Bathurst
144361	188.025	18.3	512	2	Brick / Masonry / Stone	Bathurst
144363	188.316	18.3	512	2	Brick / Masonry / Stone	Bathurst
143396	176.717	18.3	513	3	Concrete	Bathurst

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
143418	180.137	23.8	513	5	Concrete	Bathurst
144065	239.903	37.1	513	3	Concrete	Bathurst
241923	246.875	3.0	513	1	Steel	Bathurst
144117	245.668	3.0	513	1	Timber	Bathurst
144534	218.850	1.8	521	1	Brick / Masonry / Stone	Bathurst
144506	215.397	7.6	521	1	Brick / Masonry / Stone	Bathurst
144907	284.073	9.1	521	1	Brick / Masonry / Stone	Bathurst
144440	199.206	26.2	521	2	Brick / Masonry / Stone	Bathurst
144560	221.505	2.7	521	1	Concrete	Bathurst
144925	286.268	2.9	521	1	Concrete	Bathurst
240612	283.038	5.5	521	2	Concrete	Bathurst
198855	239.700	11.3	521	1	Steel	Bathurst
144624	238.332	18.3	521	2	Steel	Bathurst
144948	289.480	37.0	521	5	Steel	Bathurst
145074	239.100	146.3	521	3	Wrought Iron	Bathurst
142062	318.897	6.0	531	1	Concrete	Bathurst
196495	302.804	8.8	531	1	Steel	Bathurst
142121	332.047	2.9	532	1	Concrete	Bathurst
142113	330.539	52.1	532	3	Concrete	Bathurst
142262	360.227	33.5	532	3	Steel	Bathurst
241328	360.193	33.5	532	3	Steel	Bathurst
142454	350.420	7.3	533	1	Brick / Masonry / Stone	Bathurst

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
142552	369.734	9.2	533	5	Brick / Masonry / Stone	Bathurst
142312	326.645	3.0	533	1	Concrete	Bathurst
142324	329.221	3.0	533	1	Concrete	Bathurst
142530	365.240	15.0	533	5	Concrete	Bathurst
142532	365.500	15.3	533	5	Concrete	Bathurst
142550	368.611	22.5	533	3	Timber	Bathurst
142580	374.150	28.8	533	3	Timber	Bathurst
145980	434.234	0.8	544	2	Concrete	Bathurst
145173	421.948	1.2	544	1	Steel	Bathurst
145147	382.027	1.2	544	3	Steel	Bathurst
145169	416.332	1.4	544	1	Steel	Bathurst
145141	378.613	1.6	544	1	Steel	Bathurst
145143	378.626	1.6	544	1	Steel	Bathurst
145165	410.025	1.8	544	2	Steel	Bathurst
145131	363.590	1.8	544	1	Steel	Bathurst
145183	443.979	1.8	544	1	Steel	Bathurst
240990	444.357	1.8	544	1	Steel	Bathurst
145133	363.978	1.9	544	1	Steel	Bathurst
145135	365.187	2.4	544	2	Steel	Bathurst
145145	379.688	3.0	544	1	Steel	Bathurst
145179	437.617	3.7	544	2	Steel	Bathurst
145167	411.238	4.2	544	2	Steel	Bathurst
145129	361.418	37.0	544	5	Steel	Bathurst
145153	384.471	48.3	544	5	Steel	Bathurst
145127	361.290	59.2	544	8	Steel	Bathurst
145181	443.061	104.4	544	7	Steel	Bathurst
148070	588.957	1.5	545	1	Concrete	West Wyalong
145397	554.046	10.4	545	5	Concrete	West Wyalong

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
145377	508.913	15.1	545	5	Concrete	West Wyalong
145385	544.712	109.2	545	22	Concrete	West Wyalong
145413	575.737	2.1	545	1	Timber	West Wyalong
328937	576.551	2.1	545	1	Timber	West Wyalong
145411	573.702	3.7	545	3	Timber	West Wyalong
145417	580.057	3.7	545	3	Timber	West Wyalong
145427	593.956	3.7	545	3	Timber	West Wyalong
145403	556.818	4.9	545	2	Timber	West Wyalong
145419	586.813	10.2	545	7	Timber	West Wyalong
145401	556.266	12.2	545	4	Timber	West Wyalong
145409	573.349	12.8	545	3	Timber	West Wyalong
142804	416.881	45.8	585	15	Steel	Dubbo
142824	421.286	18.3	585	6	Timber	Dubbo
142938	448.436	18.3	585	6	Timber	Dubbo
142946	452.044	32.0	585	5	Timber	Dubbo
142790	412.847	185.6	585	5	Wrought Iron	Dubbo
141313	498.174	1.8	586	1	Steel	Dubbo
141323	503.333	9.1	586	3	Steel	Dubbo
141369	530.108	18.3	586	6	Concrete	Dubbo
141317	499.399	2.0	586	1	Timber	Dubbo
141413	556.640	3.0	586	1	Timber	Dubbo
242100	462.988	0.8	587	2	Concrete	Dubbo
139215	501.520	2.4	587	1	Concrete	Dubbo
139217	501.743	4.8	587	2	Concrete	Dubbo
139191	497.106	6.0	587	2	Concrete	Dubbo
139145	482.235	2.4	587	1	Steel	Dubbo
139109	468.555	90.9	587	3	Steel	Dubbo
139117	472.814	1.2	587	1	Timber	Dubbo
139279	520.659	2.5	587	6	Timber	Dubbo

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
139143	481.749	2.7	587	2	Timber	Dubbo
139241	508.030	2.7	587	2	Timber	Dubbo
139247	509.141	2.7	587	2	Timber	Dubbo
139261	514.990	2.7	587	2	Timber	Dubbo
139263	515.666	2.7	587	2	Timber	Dubbo
328940	498.916	3.0	587	1	Timber	Dubbo
139251	512.014	3.7	587	2	Timber	Dubbo
139167	488.536	4.1	587	3	Timber	Dubbo
139173	490.689	4.1	587	3	Timber	Dubbo
139225	503.722	4.1	587	3	Timber	Dubbo
139115	470.758	5.5	587	4	Timber	Dubbo
139273	518.152	5.5	587	4	Timber	Dubbo
139121	474.260	5.6	587	2	Timber	Dubbo
139203	499.413	7.3	587	4	Timber	Dubbo
139113	469.893	8.5	587	2	Timber	Dubbo
139277	520.085	10.3	587	9	Timber	Dubbo
139227	503.788	12.3	587	9	Timber	Dubbo
139245	508.873	24.4	587	5	Timber	Dubbo
139265	516.481	25.6	587	6	Timber	Dubbo
139129	475.661	38.4	587	9	Timber	Dubbo
139189	496.160	67.1	587	8	Timber	Dubbo
242107	613.370	10.0	587	3	Timber	Dubbo
139671	607.960	6.0	594	2	Steel	Dubbo
139515	585.660	16.8	594	7	Steel	Dubbo
139604	597.901	2.4	594	6	Timber	Dubbo
139607	598.437	2.4	594	6	Timber	Dubbo
500258	608.850	2.7	594	3	Timber	Dubbo
139710	611.108	2.8	594	7	Timber	Dubbo
139704	610.528	3.2	594	8	Timber	Dubbo

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
139614	600.587	3.4	594	3	Timber	Dubbo
139686	609.147	3.6	594	9	Timber	Dubbo
139650	607.038	5.6	594	5	Timber	Dubbo
139666	607.733	5.6	594	5	Timber	Dubbo
139732	614.780	6.1	594	5	Timber	Dubbo
139499	582.804	10.5	594	10	Timber	Dubbo
139725	613.991	10.8	594	9	Timber	Dubbo
240618	623.262	39.5	601	5	Steel	Dubbo
141573	622.698	311.6	601	39	Steel	Dubbo
141660	583.854	14.5	602	5	Concrete	Dubbo
500291	578.480	1.3	602	3	Timber	Dubbo
500290	567.666	3.6	602	3	Timber	Dubbo
141623	576.631	5.4	602	3	Timber	Dubbo
141630	577.609	5.5	602	3	Timber	Dubbo
144992	581.011	9.2	602	5	Timber	Dubbo
141658	582.821	60.4	602	9	Timber	Dubbo
141850	664.257	3.0	604	1	Steel	Dubbo
141895	674.013	6.1	604	2	Steel	Dubbo
143174	739.614	6.1	604	2	Concrete	Dubbo
141842	663.895	3.7	604	2	Steel	Dubbo
141951	684.776	3.7	604	2	Steel	Dubbo
143120	727.991	5.2	604	2	Steel	Dubbo
142984	696.797	7.3	604	4	Steel	Dubbo
143124	728.197	9.1	604	3	Steel	Dubbo
141845	664.012	11.0	604	6	Steel	Dubbo
141848	664.096	12.8	604	7	Steel	Dubbo
143138	731.326	14.5	604	5	Steel	Dubbo
143140	731.447	14.5	604	5	Steel	Dubbo
141664	623.262	35.0	604	5	Steel	Dubbo

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
141858	665.806	3.7	604	2	Timber	Dubbo
141744	640.821	5.5	604	3	Timber	Dubbo
141761	643.597	5.5	604	3	Timber	Dubbo
142998	699.618	25.6	604	6	Timber	Dubbo
143166	737.482	47.0	604	11	Timber	Dubbo
96089	232.528	1.5	723	1	Concrete	Goulburn
96244	311.354	2.8	723	1	Concrete	Goulburn
96239	304.456	3.9	723	1	Concrete	Goulburn
96119	248.645	4.6	723	3	Concrete	Goulburn
96112	247.798	4.9	723	2	Concrete	Goulburn
96098	241.310	5.8	723	1	Concrete	Goulburn
96091	233.093	7.2	723	2	Concrete	Goulburn
96160	262.660	7.2	723	3	Concrete	Goulburn
96108	246.911	8.2	723	3	Concrete	Goulburn
96180	274.861	9.8	723	4	Concrete	Goulburn
96099	241.450	23.4	723	6	Concrete	Goulburn
505365	304.436	32.7	723	2	Concrete	Goulburn
96153	255.750	34.9	723	3	Concrete	Goulburn
96202	286.530	54.0	723	4	Concrete	Goulburn
96162	264.156	77.2	723	5	Concrete	Goulburn
96221	293.007	37.0	723	4	Concrete	Goulburn
97236	275.855	2.6	723	1	Steel	Goulburn
97580	314.715	2.7	723	1	Steel	Goulburn
96225	297.634	3.0	723	1	Steel	Goulburn
96209	289.085	3.7	723	1	Steel	Goulburn
96215	291.083	3.7	723	1	Steel	Goulburn
239511	291.541	3.7	723	1	Steel	Goulburn
96207	288.696	3.7	723	1	Steel	Goulburn
96169	271.054	3.8	723	1	Steel	Goulburn

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
96191	277.638	3.8	723	1	Steel	Goulburn
96173	271.285	7.6	723	2	Steel	Goulburn
96171	271.131	7.7	723	2	Steel	Goulburn
96248	311.989	117.6	723	8	Steel	Goulburn
96258	320.935	150.0	723	9	Steel	Goulburn
97586	316.447	0.9	723	1	Timber	Goulburn
97600	317.138	0.9	723	1	Timber	Goulburn
97246	283.277	1.2	723	2	Timber	Goulburn
97590	316.939	1.3	723	1	Timber	Goulburn
97550	297.709	1.6	723	1	Timber	Goulburn
97551	297.912	1.7	723	1	Timber	Goulburn
228269	274.252	3.8	723	1	Timber	Goulburn
97620	318.223	4.9	723	2	Timber	Goulburn
96189	277.135	4.9	723	2	Timber	Goulburn
239510	285.058	6.7	723	2	Timber	Goulburn
96256	319.928	33.6	723	5	Timber	Goulburn
96184	276.109	39.6	723	5	Timber	Goulburn
96266	324.180	12.2	724	1	Steel	Goulburn
96269	324.452	12.2	724	1	Steel	Goulburn
96294	328.420	20.8	724	4	Steel	Goulburn
96287	328.390	81.6	724	6	Steel	Goulburn
96438	463.534	5.4	751	1	Concrete	West Wyalong
96364	405.019	18.0	751	6	Concrete	West Wyalong
96391	428.864	20.0	751	1	Concrete	West Wyalong
97199	405.655	27.6	751	4	Concrete	West Wyalong
96361	404.774	33.9	751	3	Concrete	West Wyalong
96369	408.528	1.5	751	1	Steel	West Wyalong
96353	403.635	3.0	751	2	Steel	West Wyalong
96412	439.711	4.3	751	1	Steel	West Wyalong

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
96355	403.794	4.5	751	3	Steel	West Wyalong
96359	404.598	4.5	751	3	Steel	West Wyalong
96357	404.024	5.4	751	3	Steel	West Wyalong
96347	402.916	9.0	751	6	Steel	West Wyalong
96419	440.911	23.8	751	3	Steel	West Wyalong
96403	437.073	40.0	751	2	Steel	West Wyalong
96374	411.440	9.6	751	2	Timber	West Wyalong
96408	439.387	33.5	751	5	Timber	West Wyalong
96387	423.380	39.6	751	5	Timber	West Wyalong
96328	392.052	33.5	752	4	Concrete	West Wyalong
96446	368.384	424.6	752	21	Steel	West Wyalong
227981	369.926	4.3	752	1	Timber	West Wyalong
96309	382.669	12.8	752	3	Timber	West Wyalong
98644	406.641	2.0	753	1	Timber	West Wyalong
96640	409.726	4.3	753		Timber	West Wyalong
96634	395.897	51.2	753	7	Timber	West Wyalong
41449	588.740	2.7	764	3	Concrete	West Wyalong
38579	584.025	2.4	764	4	Steel	West Wyalong
38578	582.965	3.8	764	5	Steel	West Wyalong
38583	585.950	8.4	764	8	Steel	West Wyalong
38558	563.155	172.2	764	41	Timber	West Wyalong
138994	506.682	1.9	765	1	Concrete	West Wyalong
38750	540.080	1.8	765	2	Steel	West Wyalong
41302	505.575	3.0	765	1	Steel	West Wyalong
38728	510.438	5.4	765	3	Steel	West Wyalong
38708	488.338	12.0	765	3	Steel	West Wyalong
38725	506.300	18.0	765	6	Steel	West Wyalong
38755	559.460	62.4	765	12	Steel	West Wyalong
232480	487.177	0.7	765	1	Timber	West Wyalong

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	No of spans / Cell height	Span Material	Area / Provisioning Centre
38747	537.937	31.5	765	9	Timber	West Wyalong
38797	587.020	3.7	781	1	Steel	West Wyalong
38823	604.370	36.4	781	7	Steel	West Wyalong
38828	609.355	3.0	782	1	Steel	West Wyalong
38872	656.905	12.0	782	1	Steel	West Wyalong
38875	658.420	16.8	782	4	Steel	West Wyalong
38826	606.510	26.0	782	5	Steel	West Wyalong
38863	651.650	45.9	782	9	Steel	West Wyalong
38669	631.985	6.9	784	1	Steel	West Wyalong
38676	643.118	14.4	785	3	Steel	West Wyalong
38703	741.623	23.0	785	10	Steel	West Wyalong
38702	734.944	34.5	785	15	Steel	West Wyalong
39114	662.862	4.2	785	5	Timber	West Wyalong
37817	642.933	4.0	795	9	Steel	West Wyalong
37807	636.824	4.8	795	2	Steel	West Wyalong
37786	621.089	9.0	795	5	Steel	West Wyalong
37799	632.984	9.6	795	16	Steel	West Wyalong
151453	632.671	0.9	795	1	Timber	West Wyalong
328920	659.401	4.9	795	4	Timber	West Wyalong
37766	606.191	29.4	795	7	Timber	West Wyalong
38009	645.855	6.0	796	2	Steel	West Wyalong
38003	626.081	18.0	796	6	Steel	West Wyalong
38006	645.408	30.0	796	10	Steel	West Wyalong
37992	612.196	32.4	796	9	Steel	West Wyalong
37390	479.629	43.2	811	3	Steel	West Wyalong
38627	554.026	72.0	812	5	Steel	West Wyalong
37464	520.708	87.6	813	6	Steel	West Wyalong
37469	520.902	87.6	813	6	Steel	West Wyalong

1.2 Footbridges

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Provisioning Centre
132632	455.040	18.0	404	Steel	Tamworth
240600	171.125	63.9	511	Steel	Bathurst
144434	198.226	20.6	512	Brick / Masonry / Stone	Bathurst
142282	322.710	35.7	533	Brick / Masonry / Stone	Bathurst
145439	445.605	43.0	544	Steel	Bathurst
145078	411.708	36.8	585	Timber	Dubbo
141567	621.693	14.0	601	Steel	Dubbo

1.3 Overbridges

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
144333	185.175	20.6	512	Timber	Bathurst
144413	196.211	22.5	512	Timber	Bathurst
241919	248.667	9.8	513	Steel	Bathurst
198867	215.674	21.0	521	Timber	Bathurst
240605	302.300	32.0	531	(UNKNOWN)	Bathurst
142189	345.454	20.0	532	Timber	Bathurst
142141	335.154	28.1	532	Timber	Bathurst
142320	328.467	15.1	533	Timber	Bathurst
142438	347.753	18.3	533	Timber	Bathurst
96088	231.080	21.3	723	Timber	Goulburn
96442	464.890	17.4	751	Timber	West Wyalong
96436	461.524	18.0	751	Timber	West Wyalong
RC-C03-165089	165.089	18.5	C03 - Port Waratah	Timber	Tighes Hill

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-C03-165701	165.701	15.6	C03 - Port Waratah	Concrete	Tighes Hill
RC-C03-166353	166.353	91.4	C03 - Port Waratah	Steel	Tighes Hill
RC-C07-170148	170.148	9.8	C07 - Kooragang	Concrete	Sandgate
RC-C07-178010	178.010	30.9	C07 - Kooragang	Concrete	Kooragang
RC-C33-241790	241.790	32.6	C33 - Mt Thorley	Concrete_Pre-Stressed	Mt Thorley
RC-C36-263311	263.311	16.1	C36 - Newdell Bch	Concrete	Newdell Jcn
RC-N00-165842	165.842	20.1	N00 - Main North	Steel-JA	Waratah
RC-N00-167271	167.271	47.6	N00 - Main North	Steel-JA	Waratah
RC-N00-170309	170.309	21.3	N00 - Main North	Concrete_Pre-Stressed	Sandgate
RC-N00-177973	177.973	21.2	N00 - Main North	Concrete_Pre-Stressed	Tarro
RC-N00-178255	178.255	21.4	N00 - Main North	Steel-JA	Tarro
RC-N00-179623	179.623	29.1	N00 - Main North	Steel-JA	Beresfield
RC-N00-182107	182.107	18.3	N00 - Main North	Steel-JA	Thornton
RC-N00-188112	188.112	18.8	N00 - Main North	Steel	East Maitland
RC-N00-188253	188.253	18.3	N00 - Main North	Steel-JA	East Maitland
RC-N00-189138	189.138	24.2	N00 - Main North	Steel-JA	East Maitland
RC-N00-191165	191.165	22.8	N00 - Main North	Steel-JA	Maitland
RC-N00-192598	192.598	35.0	N00 - Main North	Steel-JA	Maitland

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-N00-193354	193.354	43.4	N00 - Main North	Steel	Maitland
RC-N00-193815	193.815	20.6	N00 - Main North	Timber	Maitland
RC-N00-204809	204.809	10.5	N00 - Main North	Concrete	Lochinvar
RC-N00-210653	210.653	8.9	N00 - Main North	Steel-JA	Greta
RC-N00-215018	215.018	43.1	N00 - Main North	Concrete_Pre-Stressed	Branxton
RC-N00-228768	228.768	20.1	N00 - Main North	Steel-JA	Minimbah
RC-N00-239048	239.048	46.6	N00 - Main North	Concrete_Pre-Stressed	Singleton
RC-N00-283486	283.486	17.1	N00 - Main North	Steel	St Heliers
RC-N00-288153	288.153	25.4	N00 - Main North	Steel-JA	Muswellbrook
RC-N00-290406	290.406	6.3	N00 - Main North	Concrete_Pre-Stressed	Muswellbrook
RC-N00-300101	300.101	28.4	N00 - Main North	Concrete_Pre-Stressed	Aberdeen
RC-N00-300806	300.806	21.5	N00 - Main North	Steel	Aberdeen
RC-N00-304623	304.623	23.1	N00 - Main North	Steel	Togar
RC-N00-336459	336.459	55.3	N00 - Main North	Steel	Murulla
RC-N00-353154	353.154	16.1	N00 - Main North	Timber	Murrurundi
RC-N00-361059	361.059	6.4	N00 - Main North	Steel	Ardglen
RC-N00-381030	381.030	49.2	N00 - Main North	Steel	Braefield
RC-N00-451750	451.750	10.0	N00 - Main North	Concrete	West Tamworth

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-N00-466310	466.310	6.0	N00 - Main North	Masonry-Brick arch	Tintinhull
RC-N00-466330	466.330	8.0	N00 - Main North	Masonry-Brick arch	Tintinhull
RC-N00-466342	466.342	10.0	N00 - Main North	Concrete	Tintinhull
RC-N00-489324	489.324	24.5	N00 - Main North	Timber	Limbri
RC-N00-496019	496.019	22.6	N00 - Main North	Timber	Danglemah
RC-N00-511651	511.651	14.0	N00 - Main North	Concrete	Walcha Road
RC-N00-555183	555.183	18.6	N00 - Main North	Concrete	Uralla
RC-N00-577573	577.573	14.0	N00 - Main North	Steel-JA	Armidale
RC-N00-580523	580.523	94.0	N00 - Main North	Concrete	Armidale
RC-N00-592490	592.490	8.0	N00 - Main North	Concrete	Dumaresq
RC-N00-592520	592.520	19.3	N00 - Main North	Timber	Dumaresq
RC-N00-664000	664.000	8.0	N00 - Main North	Concrete_Pre-Stressed	Glencoe
RC-N00-664115	664.115	6.0	N00 - Main North	Masonry-Brick arch	Glencoe
RC-N00-676729	676.729	6.0	N00 - Main North	Masonry-Brick arch	Glen Innes
RC-N00-681074	681.074	16.5	N00 - Main North	Timber	Glen Innes
RC-N00-705885	705.885	6.4	N00 - Main North	Steel-pipe	Dundee
RC-N00-715836	715.836	18.0	N00 - Main North	Concrete	Deepwater
RC-N00-743175	743.175	20.9	N00 - Main North	Timber	Bolivia

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-N00-759168	759.168	18.0	N00 - Main North	Concrete	Bluff Rock
RC-N00-773611	773.611	16.0	N00 - Main North	Concrete_Pre-Stressed	Tenterfield
RC-N00-774496	774.496	25.7	N00 - Main North	Concrete_Pre-Stressed	Tenterfield
RC-N00-774939	774.939	23.8	N00 - Main North	Timber	Tenterfield
RC-N00-786895	786.895	9.1	N00 - Main North	Steel-pipe	Wallangarra
RC-N40-435420	435.420	49.2	N40 - Ulan	Concrete_Pre-Stressed	Ulan
RC-N51-194087	194.087	34.4	N51 - North Coast	Timber	Telarah
RC-N51-195020	195.020	29.3	N51 - North Coast	Concrete	Telarah
RC-N51-201147	201.147	14.5	N51 - North Coast	Concrete	Oakhampton
RC-N51-206285	206.285	18.9	N51 - North Coast	Timber	Mindaribba
RC-N51-216959	216.959	14.7	N51 - North Coast	Concrete	Paterson
RC-N51-218045	218.045	17.5	N51 - North Coast	Timber	Martins Ck
RC-N51-220652	220.652	19.2	N51 - North Coast	Timber	Martins Ck
RC-N51-238289	238.289	20.8	N51 - North Coast	Concrete	Wirragulla
RC-N51-244282	244.282	19.2	N51 - North Coast	Concrete	Dungog
RC-N51-248617	248.617	14.6	N51 - North Coast	Concrete	Dungog
RC-N51-249975	249.975	17.3	N51 - North Coast	Timber	Dungog
RC-N51-263816	263.816	23.3	N51 - North Coast	Timber	Stroud Rd

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-N51-266725	266.725	25.0	N51 - North Coast	Steel	Stroud Rd
RC-N51-286905	286.905	27.0	N51 - North Coast	Concrete	Craven
RC-N51-308852	308.852	(UNKNOWN)	N51 - North Coast	Steel-arch	Gloucester
RC-N51-317970	317.970	20.3	N51 - North Coast	Timber	Yumbunga
RC-N51-334220	334.220	16.6	N51 - North Coast	Timber	Bundook
RC-N51-348171	348.171	17.8	N51 - North Coast	Timber	Mount George
RC-N51-355017	355.017	18.0	N51 - North Coast	Timber	Killawarra
RC-N51-356027	356.027	17.2	N51 - North Coast	Timber	Killawarra
RC-N51-364979	364.979	20.9	N51 - North Coast	Timber	Wingham
RC-N51-366906	366.906	30.8	N51 - North Coast	Concrete	Wingham
RC-N51-376445	376.445	22.5	N51 - North Coast	Concrete	Taree
RC-N51-380147	380.147	30.1	N51 - North Coast	Concrete	Taree
RC-N51-380791	380.791	13.8	N51 - North Coast	Concrete	Taree
RC-N51-384240	384.240	16.1	N51 - North Coast	Timber	Lansdowne
RC-N51-396683	396.683	16.5	N51 - North Coast	Timber	Melinga
RC-N51-404854	404.854	16.5	N51 - North Coast	Timber	Cooperook
RC-N51-408319	408.319	28.2	N51 - North Coast	Concrete	Cooperook
RC-N51-418257	418.257	17.4	N51 - North Coast	Timber	Johns River

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-N51-427645	427.645	42.3	N51 - North Coast	Concrete	Kendall
RC-N51-435766	435.766	18.1	N51 - North Coast	Timber	Kendall - Herons Creek Rd
RC-N51-445104	445.104	26.1	N51 - North Coast	Concrete	Kerewong
RC-N51-452931	452.931	18.3	N51 - North Coast	Timber	Wauchope
RC-N51-453855	453.855	15.4	N51 - North Coast	Timber	Wauchope
RC-N51-457170	457.170	17.5	N51 - North Coast	Steel	Wauchope
RC-N51-462262	462.262	21.0	N51 - North Coast	Steel	Pembroke
RC-N51-462981	462.981	17.9	N51 - North Coast	Steel	Pembroke
RC-N51-466187	466.187	10.9	N51 - North Coast	Concrete	Pembroke
RC-N51-469502	469.502	17.6	N51 - North Coast	Steel	Telegraph Point
RC-N51-472061	472.061	38.0	N51 - North Coast	Concrete	Telegraph Point
RC-N51-472780	472.780	23.8	N51 - North Coast	Timber	Telegraph Point
RC-N51-474004	474.004	18.6	N51 - North Coast	Steel	Telegraph Point
RC-N51-482643	482.643	16.5	N51 - North Coast	Steel	Mingaletta
RC-N51-501000	501.000	14.1	N51 - North Coast	Concrete	Kempsey
RC-N51-501640	501.640	6.3	N51 - North Coast	Steel	Kempsey
RC-N51-502175	502.175	16.3	N51 - North Coast	Steel	Kempsey
RC-N51-507275	507.275	17.8	N51 - North Coast	Steel	Kempsey West

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-S00-105771	105.771	9.0	S00 - Main South	Concrete	Bargo
RC-S00-107528	107.528	23.0	S00 - Main South	Concrete	Bargo
RC-S00-107554	107.554	23.0	S00 - Main South	Concrete	Bargo
RC-S00-108731	108.731	15.2	S00 - Main South	Concrete	Tennessee
RC-S00-108784	108.784	16.2	S00 - Main South	Concrete	Tennessee
RC-S00-109175	109.175	8.1	S00 - Main South	Concrete-arch	Tennessee
RC-S00-111174	111.174	10.3	S00 - Main South	Concrete-arch	Yerrinbool
RC-S00-111274	111.274	12.9	S00 - Main South	Concrete	Yerrinbool
RC-S00-111376	111.376	13.3	S00 - Main South	Concrete	Yerrinbool
RC-S00-126079	126.079	14.6	S00 - Main South	Concrete-arch	Aylmerton
RC-S00-129153	129.153	8.1	S00 - Main South	Steel-JA	Mittagong
RC-S00-129825	129.825	1.8	S00 - Main South	Concrete-arch	Mittagong
RC-S00-130351	130.351	9.1	S00 - Main South	Steel-JA	Mittagong
RC-S00-131076	131.076	23.9	S00 - Main South	Steel	Mittagong
RC-S00-133322	133.322	80.8	S00 - Main South	Concrete	Mittagong
RC-N51-509579	509.579	21.8	N51 - North Coast	Steel	Kempsey
RC-N51-511349	511.349	17.6	N51 - North Coast	Steel	Colombatti
RC-N51-515141	515.141	17.6	N51 - North Coast	Steel	Colombatti

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-N51-516619	516.619	17.1	N51 - North Coast	Timber	Colombatti
RC-N51-524243	524.243	17.8	N51 - North Coast	Steel	Tamban
RC-N51-528045	528.045	17.1	N51 - North Coast	Steel	Eungai
RC-N51-530822	530.822	18.3	N51 - North Coast	Steel	Eungai
RC-N51-535449	535.449	24.8	N51 - North Coast	Concrete	Eungai
RC-N51-539512	539.512	17.7	N51 - North Coast	Steel	Eungai
RC-N51-540450	540.45	18.1	N51 - North Coast	Steel	Eungai
RC-N51-541102	541.102	22.6	N51 - North Coast	Steel	Warrell Creek
RC-N51-543238	543.238	16.7	N51 - North Coast	Steel	Warrell Creek
RC-N51-546254	546.254	18.4	N51 - North Coast	Concrete	Warrell Creek
RC-N51-549872	549.872	21.5	N51 - North Coast	Steel	Macksville
RC-N51-552030	552.030	20.5	N51 - North Coast	Steel	Macksville
RC-N51-555727	555.727	18.6	N51 - North Coast	Timber	Wirrimbi
RC-N51-562083	562.083	21.3	N51 - North Coast	Timber	Nambucca Heads
RC-N51-564570	564.570	(UNKNOWN)	N51 - North Coast	Concrete	Nambucca Heads
RC-N51-570269	570.269	16.0	N51 - North Coast	Concrete	Valla
RC-N51-578340	578.340	22.1	N51 - North Coast	Timber	Urunga
RC-N51-580812	580.812	20.0	N51 - North Coast	Steel	Urunga

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-N51-581295	581.295	20.0	N51 - North Coast	Concrete	Urunga
RC-N51-590367	590.367	25.3	N51 - North Coast	Timber	Repton
RC-N51-595278	595.278	17.9	N51 - North Coast	Timber	Bonville
RC-N51-598845	598.845	35.0	N51 - North Coast	Concrete	Sawtell
RC-N51-601371	601.371	25.5	N51 - North Coast	Concrete	Sawtell
RC-N51-609546	609.546	20.5	N51 - North Coast	Concrete	Coffs Harbour
RC-N51-620603	620.603	18.1	N51 - North Coast	Steel	Landrigans
RC-N51-622906	622.906	(UNKNOWN)	N51 - North Coast	Concrete	Karangji
RC-N51-626992	626.992	18.7	N51 - North Coast	Timber	Coramba
RC-N51-636250	636.250	19.4	N51 - North Coast	Timber	Nana Glen
RC-N51-639799	639.799	18.0	N51 - North Coast	Timber	Nana Glen
RC-N51-668040	668.040	17.3	N51 - North Coast	Timber	Kungala
RC-N51-689533	689.533	18.2	N51 - North Coast	Timber	Braunstone
RC-N51-692070	692.070	8.6	N51 - North Coast	Concrete	Grafton
RC-N51-694773	694.773	15.3	N51 - North Coast	Timber	Grafton
RC-N51-747485	747.485	6.7	N51 - North Coast	Concrete	Whiporie
RC-N51-804959	804.959	23.1	N51 - North Coast	Steel	Casino
RC-N51-832345	832.345	27.2	N51 - North Coast	Concrete	Kyogle

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-N51-835596	835.596	23.9	N51 - North Coast	Steel	Kyogle
RC-N51-841870	841.870	46.0	N51 - North Coast	Concrete	Kilgra
RC-N60-193805	193.805	5.0	N60 - Telarah Triangle	Steel-pipe	Telarah
RC-N62-814840	814.840	17.6	N62 - Casino to Murwillumbah	Timber	Naughtons Gap
RC-N62-843285	843.285	21.4	N62 - Casino to Murwillumbah	Timber	Woodlawn
RC-N62-846520	846.520	21.2	N62 - Casino to Murwillumbah	Timber	Bexhill
RC-N62-847696	847.696	(UNKNOWN)	N62 - Casino to Murwillumbah	Concrete	Woodlawn
RC-N62-861436	861.436	18.9	N62 - Casino to Murwillumbah	Steel	Nashua
RC-N62-866370	866.370	22.3	N62 - Casino to Murwillumbah	Timber	Bangalow
RC-N62-869600	869.600	(UNKNOWN)	N62 - Casino to Murwillumbah	Concrete	Bangalow
RC-N62-870780	870.780	(UNKNOWN)	N62 - Casino to Murwillumbah	Concrete	Bangalow
RC-N62-870800	870.800	(UNKNOWN)	N62 - Casino to Murwillumbah	Concrete	Bangalow
RC-N62-874117	874.117	17.8	N62 - Casino to Murwillumbah	Concrete	St Helena
RC-N62-875774	875.774	30.0	N62 - Casino to Murwillumbah	Timber	St Helena
RC-N62-878940	878.940	16.0	N62 - Casino to Murwillumbah	Timber	St Helena
RC-N62-890690	890.690	(UNKNOWN)	N62 - Casino to Murwillumbah	Concrete	Tyagarah
RC-N62-890720	890.720	(UNKNOWN)	N62 - Casino to Murwillumbah	Concrete	Tyagarah
RC-N62-895599	895.599	(UNKNOWN)	N62 - Casino to Murwillumbah	Timber	Mullumbimby

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-N62-910470	910.470	(UNKNOWN)	N62 - Casino to Murwillumbah	Timber	Wooyung
RC-N62-916005	916.005	(UNKNOWN)	N62 - Casino to Murwillumbah	Concrete	Burringbar
RC-N62-932694	932.694	(UNKNOWN)	N62 - Casino to Murwillumbah	Concrete	Murwillumbah
RC-N73-475195	475.195	22.0	N73 - Werris Ck to Moree	Steel	Gunnedah
RC-N73-562680	562.680	33.0	N73 - Werris Ck to Moree	Concrete_Pre-Stressed	Narrabri
RC-N73-572500	572.500	12.0	N73 - Werris Ck to Moree	Concrete_Pre-Stressed	Narrabri
RC-N73-619620	619.620	15.0	N73 - Werris Ck to Moree	Concrete	Bellata
RC-S00-101152	101.152	8.3	S00 - Main South	Masonry-Brick arch	Bargo
RC-S00-103378	103.378	8.3	S00 - Main South	Concrete	Bargo
RC-S00-136369	136.369	16.1	S00 - Main South	Steel-JA	Bowral
RC-S00-145529	145.529	20.0	S00 - Main South	Steel-JA	Moss Vale
RC-S00-158341	158.341	21.8	S00 - Main South	Steel-JA	Exeter
RC-S00-160153	160.153	20.9	S00 - Main South	Steel-JA	Bundanoon
RC-S00-162466	162.466	21.8	S00 - Main South	Steel-JA	Bundanoon
RC-S00-164032	164.032	13.8	S00 - Main South	Concrete-arch	Bundanoon
RC-S00-172390	172.390	21.6	S00 - Main South	Steel-JA	Penrose
RC-S00-185693	185.693	9.2	S00 - Main South	Steel-JA	Tallong
RC-S00-192465	192.465	33.1	S00 - Main South	Concrete	Marulan

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-S00-192506	192.506	33.3	S00 - Main South	Concrete	Marulan
RC-S00-192723	192.723	26.6	S00 - Main South	Steel-JA	Marulan
RC-S00-212518	212.518	16.3	S00 - Main South	Steel-JA	Towrang
RC-S00-222225	222.225	8.4	S00 - Main South	Masonry-Brick arch	North Goulburn
RC-S00-222330	222.330	13.9	S00 - Main South	Concrete	North Goulburn
RC-S00-223537	223.537	25.0	S00 - Main South	Steel-JA	Goulburn
RC-S00-225585	225.585	26.1	S00 - Main South	Steel-JA	Goulburn
RC-S00-227063	227.063	46.5	S00 - Main South	Concrete	Goulburn
RC-S00-227125	227.125	47.8	S00 - Main South	Concrete	Goulburn
RC-S00-232525	232.525	50.8	S00 - Main South	Concrete	Yarra
RC-S00-232566	232.566	50.8	S00 - Main South	Steel	Yarra
RC-S00-233840	233.840	26.0	S00 - Main South	Steel	Yarra
RC-S00-239155	239.155	17.5	S00 - Main South	Timber	Yarra
RC-S00-258845	258.845	27.5	S00 - Main South	Steel-JA	Cullerin
RC-S00-259570	259.570	21.9	S00 - Main South	Steel-JA	Gunning
RC-S00-265115	265.115	23.1	S00 - Main South	Concrete	Gunning
RC-S00-272850	272.850	21.9	S00 - Main South	Steel-JA	Gunning
RC-S00-278333	278.333	18.4	S00 - Main South	Steel-JA	Gunning

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-S00-291433	291.433	27.1	S00 - Main South	Steel-JA	Oolong
RC-S00-294305	294.305	20.9	S00 - Main South	Steel-JA	Oolong
RC-S00-313855	313.855	21.8	S00 - Main South	Steel-JA	Yass Junct
RC-S00-316940	316.940	34.2	S00 - Main South	Concrete	Yass Junct
RC-S00-316975	316.975	65.2	S00 - Main South	Concrete	Yass Junct
RC-S00-318986	318.986	10.8	S00 - Main South	Masonry-Brick arch	Yass Junct
RC-S00-321160	321.160	65.9	S00 - Main South	Concrete	Yass Junct
RC-S00-321190	321.190	65.9	S00 - Main South	Concrete	Yass Junct
RC-S00-325680	325.680	31.2	S00 - Main South	Concrete	Yass Junct
RC-S00-329395	329.395	24.9	S00 - Main South	Steel-JA	Bowning
RC-S00-347583	347.583	18.7	S00 - Main South	Steel-JA	Binnalong
RC-S00-351941	351.941	18.7	S00 - Main South	Concrete	Binnalong
RC-S00-363604	363.604	17.9	S00 - Main South	Steel-JA	Galong
RC-S00-365427	365.427	17.6	S00 - Main South	Steel-JA	Galong
RC-S00-371863	371.863	18.0	S00 - Main South	Steel-JA	Galong
RC-S00-378311	378.311	18.7	S00 - Main South	Steel-JA	Cunningar
RC-S00-391376	391.376	25.0	S00 - Main South	Steel-JA	Demondrille
RC-S00-396762	396.762	8.6	S00 - Main South	Concrete	Demondrille

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-S00-407209	407.209	19.5	S00 - Main South	Steel-JA	Wallendbeen
RC-S00-407912	407.912	19.2	S00 - Main South	Steel-JA	Wallendbeen
RC-S00-408836	408.836	20.2	S00 - Main South	Steel-JA	Wallendbeen
RC-S00-414781	414.781	8.3	S00 - Main South	Steel	Wallendbeen
RC-S00-417978	417.978	19.5	S00 - Main South	Steel	Wallendbeen
RC-S00-419760	419.760	22.0	S00 - Main South	Steel	Jindalee
RC-S00-427995	427.995	9.1	S00 - Main South	Steel	Cootamundra
RC-S00-435461	435.461	24.0	S00 - Main South	Steel	Cootamundra
RC-S00-445031	445.031	20.7	S00 - Main South	Timber	Cootamundra
RC-S00-486122	486.122	57.7	S00 - Main South	Steel	June
RC-S00-521377	521.377	12.0	S00 - Main South	Steel-JA	Wagga Wagga
RC-S00-523520	523.520	11.7	S00 - Main South	Concrete	Wagga Wagga
RC-S00-527970	527.970	4.8	S00 - Main South	Masonry-Brick arch	Kapooka - Olympic Hwy
RC-S00-59285	59.285	80.4	S00 - Main South	Concrete	Menangle Park
RC-S00-59290	59.290	80.4	S00 - Main South	Concrete	Menangle Park
RC-S00-620523	620.523	(UNKNOWN)	S00 - Main South	Steel-concrete	Gerogery
RC-S00-635000	635.000	60.0	S00 - Main South	Concrete	Ettamogah
RC-S00-639321	639.321	(UNKNOWN)	S00 - Main South	Concrete	Albury North

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-S00-641225	641.225	(UNKNOWN)	S00 - Main South	Concrete	Albury
RC-S00-643315	643.315	(UNKNOWN)	S00 - Main South	Concrete	Albury
RC-S00-644140	644.140	(UNKNOWN)	S00 - Main South	Concrete	Albury
RC-S00-645092	645.092	(UNKNOWN)	S00 - Main South	Concrete	Albury
RC-S00-65605	65.605	28.9	S00 - Main South	Concrete	Menangle Park
RC-S00-80148	80.148	15.6	S00 - Main South	Concrete	Maldon
RC-S00-84550	84.550	29.3	S00 - Main South	Timber	Maldon
RC-S00-85171	85.171	35.0	S00 - Main South	Steel	Picton
RC-S00-88949	88.949	10.5	S00 - Main South	Concrete	Picton
RC-S00-91015	91.015	10.5	S00 - Main South	Concrete	Tahmoor
RC-S00-94285	94.285	8.5	S00 - Main South	Steel	Tahmoor
RC-S00-96056	96.056	10.3	S00 - Main South	Masonry-Brick arch	Tahmoor
RC-S00-96385	96.385	8.6	S00 - Main South	Concrete	Tahmoor
RC-S32-124044	124.044	18.6	S32 - Picton to Mittagong Loop	Timber	Braemar
RC-S32-124563	124.563	7.2	S32 - Picton to Mittagong Loop	Concrete	Braemar
RC-S34-121664	121.664	22.0	S34 - Unanderra to Moss Vale	Steel	Mount Murray
RC-S34-122327	122.327	(UNKNOWN)	S34 - Unanderra to Moss Vale	Steel	Mount Murray
RC-S34-122347	122.347	24.7	S34 - Unanderra to Moss Vale	Concrete	Mount Murray

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-S34-124122	124.122	16.1	S34 - Unanderra to Moss Vale	Concrete	Robertson
RC-S34-125178	125.178	35.8	S34 - Unanderra to Moss Vale	Concrete	Robertson
RC-S34-149536	149.536	6.4	S34 - Unanderra to Moss Vale	Steel-JA	Moss Vale Jct
RC-S34-91533	91.533	25.7	S34 - Unanderra to Moss Vale	Steel	Unanderra
RC-S36-226935	226.935	6.3	S36 - Goulburn to Crookwell	Concrete	Goulburn
RC-S50-311780	311.780	(UNKNOWN)	S50 - Joppa Jcn to Bombala	Concrete	Bungendore
RC-S50-321225	321.225	(UNKNOWN)	S50 - Joppa Jcn to Bombala	Concrete	Queanbeyan
RC-S50-322779	322.779	(UNKNOWN)	S50 - Joppa Jcn to Bombala	Masonry-Brick arch	Queanbeyan
RC-S50-323490	323.490	(UNKNOWN)	S50 - Joppa Jcn to Bombala	Concrete	Queanbeyan
RC-S50-327504	327.504	(UNKNOWN)	S50 - Joppa Jcn to Bombala	Concrete	Queanbeyan
RC-S50-363533	363.533	(UNKNOWN)	S50 - Joppa Jcn to Bombala	Timber	Michalego
RC-S50-383400	383.400	(UNKNOWN)	S50 - Joppa Jcn to Bombala	Concrete	Michalego
RC-S50-432700	432.700	(UNKNOWN)	S50 - Joppa Jcn to Bombala	Steel	Cooma
RC-S50-435501	435.501	21.1	S50 - Joppa Jcn to Bombala	Concrete	Cooma
RC-S50-476780	476.780	16.8	S50 - Joppa Jcn to Bombala	Steel	Nimmitabel
RC-S54-322600	322.600	15.6	S54 - Q'beyan to Canberra	Steel	Queanbeyan
RC-S54-322620	322.620	15.5	S54 - Q'beyan to Canberra	Concrete	Queanbeyan
RC-S54-326460	326.460	33.0	S54 - Q'beyan to Canberra	Concrete	Queanbeyan

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-S54-327830	327.830	33.0	S54 - Q'beyan to Canberra	Concrete	Queanbeyan
RC-S54-327935	327.935	29.6	S54 - Q'beyan to Canberra	Concrete	Queanbeyan
RC-S60-292092	292.092	(UNKNOWN)	S60 - Blayney to Demondrille	Steel	Blayney
RC-S60-440645	440.645	8.8	S60 - Blayney to Demondrille	Concrete	Young
RC-S60-447862	447.862	14.7	S60 - Blayney to Demondrille	Timber	Young
RC-S60-453722	453.722	18.0	S60 - Blayney to Demondrille	Timber	Young
RC-S60-461530	461.530	(UNKNOWN)	S60 - Blayney to Demondrille	Timber	Kingsvale
RC-S60-467340	467.340	18.9	S60 - Blayney to Demondrille	Timber	Demondrille
RC-S64-366705	366.705	18.0	S64 - Cowra to Eugowra	Timber	Cowra
RC-S80-583377	583.377	(UNKNOWN)	S80 - Junee to Hay	Concrete	Narrandera
RC-S80-584230	584.230	14.4	S80 - Junee to Hay	Timber	Narrandera
RC-S84-622272	622.272	(UNKNOWN)	S84 - Narrandera to Tocumwal	Concrete	Widgiewa
RC-S85-612219	612.219	(UNKNOWN)	S85 - Yanco to Griffith	Concrete	Leeton
RC-W00-159545	159.545	43.0	W00 - Main West	Concrete	Bowenfels
RC-W00-159597	159.597	43.0	W00 - Main West	Concrete	Bowenfels
RC-W00-161009	161.009	18.9	W00 - Main West	Steel	Bowenfels

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-W00-164101	164.101	50.8	W00 - Main West	Concrete	Bowenfels
RC-W00-171797	171.797	32.6	W00 - Main West	Timber	Wallerawang
RC-W00-177100	177.100	22.5	W00 - Main West	Concrete	Rydal
RC-W00-177154	177.154	15.5	W00 - Main West	Steel	Rydal
RC-W00-186486	186.486	19.1	W00 - Main West	Steel-JA	Sodwalls
RC-W00-187389	187.389	10.5	W00 - Main West	Steel-JA	Sodwalls
RC-W00-196211	196.211	(UNKNOWN)	W00 - Main West	Timber	Tarana
RC-W00-199603	199.603	8.5	W00 - Main West	Steel-JA	Tarana
RC-W00-201407	201.407	8.4	W00 - Main West	Steel-JA	Tarana
RC-W00-204528	204.528	21.1	W00 - Main West	Timber	Tarana
RC-W00-210387	210.387	8.5	W00 - Main West	Steel-JA	Locksley
RC-W00-214223	214.223	7.9	W00 - Main West	Masonry-Brick arch	Locksley
RC-W00-217718	217.718	22.2	W00 - Main West	Timber	Wambool

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-W00-218225	218.225	24.4	W00 - Main West	Steel	Wambool
RC-W00-219857	219.857	15.0	W00 - Main West	Steel	Wambool
RC-W00-222629	222.629	7.7	W00 - Main West	Masonry-Brick arch	Brewongle
RC-W00-223697	223.697	15.7	W00 - Main West	Masonry-Brick arch	Brewongle
RC-W00-232113	232.113	25.7	W00 - Main West	Timber	Raglan
RC-W00-236870	236.870	28.8	W00 - Main West	Concrete	Kelso
RC-W00-240681	240.681	41.2	W00 - Main West	Steel	Bathurst
RC-W00-256394	256.394	22.5	W00 - Main West	Timber	Tumulla
RC-W00-259853	259.853	19.2	W00 - Main West	Steel	Tumulla
RC-W00-273214	273.214	29.5	W00 - Main West	Timber	Newbridge
RC-W00-275985	275.985	20.7	W00 - Main West	Steel	Newbridge
RC-W00-280287	280.287	15.6	W00 - Main West	Concrete	Newbridge
RC-W00-282296	282.296	20.8	W00 - Main West	Steel	Murrobo

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-W00-287663	287.663	18.0	W00 - Main West	Steel	Murrobo
RC-W00-302169	302.169	32.0	W00 - Main West	Steel	Millthorpe
RC-W00-321969	321.969	26.1	W00 - Main West	Concrete_Pre-Stressed	Orange
RC-W00-366508	366.508	18.3	W00 - Main West	Timber	Euchareena
RC-W00-413460	413.460	36.0	W00 - Main West	Concrete	Wellington
RC-W20-324094	324.094	17.7	W20 - Orange to Broken Hill	Steel-JA	Orange
RC-W20-324430	324.430	30.4	W20 - Orange to Broken Hill	Concrete	Orange
RC-W20-325233	325.233	21.2	W20 - Orange to Broken Hill	Timber	Orange
RC-W20-326391	326.391	(UNKNOWN)	W20 - Orange to Broken Hill	Concrete_Pre-Stressed	Orange
RC-W20-329553	329.553	22.2	W20 - Orange to Broken Hill	Timber	Nashdale
RC-W20-331162	331.162	22.6	W20 - Orange to Broken Hill	Timber	Nashdale
RC-W20-332380	332.380	20.0	W20 - Orange to Broken Hill	Timber	Nashdale
RC-W20-335154	335.154	(UNKNOWN)	W20 - Orange to Broken Hill	Timber	Borenore

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-W20-343132	343.132	20.0	W20 - Orange to Broken Hill	Timber	Borenore
RC-W20-359494	359.494	19.8	W20 - Orange to Broken Hill	Timber	Molong
RC-W20-361619	361.619	20.0	W20 - Orange to Broken Hill	Timber	Molong
RC-W20-407553	407.553	(UNKNOWN)	W20 - Orange to Broken Hill	Concrete	Bumberry
RC-W20-516419	516.419	8.0	W20 - Orange to Broken Hill	Concrete	Ootha
RC-W20-546502	546.502	(UNKNOWN)	W20 - Orange to Broken Hill	Concrete	Condobolin
RC-W30-365119	365.119	45.0	W30 - Molong to Dubbo	Concrete	Larras lee
RC-W30-374504	374.504	17.5	W30 - Molong to Dubbo	Timber	Larras Lee
RC-W32-597234	597.234	19.5	W32 - Bogan Gate to Tottenham	Steel	Tottenham
RC-W34-599331	599.331	27.8	W34 - Stockinbingal to Parkes	Concrete	Forbes
RC-W44-686003	686.003	(UNKNOWN)	W44 - Nyngan To Elura	Concrete	Boppy Mountain
RC-W50-207905	207.905	26.1	W50 - Wallerawang to Gwabegar	Concrete	Capertee
RC-W50-217429	217.429	(UNKNOWN)	W50 - Wallerawang to Gwabegar	Steel	Exelsior

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
RC-W50-244525	244.525	(UNKNOWN)	W50 - Wallerawang to Gwabegar	Concrete	Charbon
RC-W50-246674	246.674	17.3	W50 - Wallerawang to Gwabegar	Timber	Charbon
RC-W50-249825	249.825	9.1	W50 - Wallerawang to Gwabegar	Masonry-Brick arch	Kandos
RC-W50-308179	308.179	(UNKNOWN)	W50 - Wallerawang to Gwabegar	Steel	Mudgee
RC-W50-518410	518.410	18.0	W50 - Wallerawang to Gwabegar	Concrete	Coonabarabran
RC-S00-152045	152.045	(UNKNOWN)	S00 - Main South	Steel-JA	Exeter
RC-N51-227150	227.150	17.0	N51 - North Coast	Concrete	Hilldale
RC-N51-607520	607.520	(UNKNOWN)	N51 - North Coast	Concrete_Pre-Stressed	Coffs Harbour
RC-N51-560579	560.579	(UNKNOWN)	N51 - North Coast	Concrete_Pre-Stressed	Wirrimbi
RC-N51-557657	557.657	(UNKNOWN)	N51 - North Coast	Concrete_Pre-Stressed	Wirrimbi
RC-N51-431071	431.071	19.0	N51 - North Coast	Concrete_Pre-Stressed	Kendall
RC-N51-265219	265.219	(UNKNOWN)	N51 - North Coast	Steel	Stroud Rd
838	828.495	14.0	N62	(UNKNOWN)	Lismore
846	873.290	18.6	N62	(UNKNOWN)	Byron
854	913.106	23.	N62	(UNKNOWN)	Tweed
857	929.712	23.2	N62	(UNKNOWN)	Tweed
858	932.198	20.1	N62	(UNKNOWN)	Tweed
642	524.839	18.0	N00	(UNKNOWN)	Walcha

Asset Number	Kilometrage	Bridge length / Barrel length	Line Segment	Span Material	Area / Provisioning Centre
-	664.000	1.0	N00	(UNKNOWN)	Severn
-	705.885	6.4	N00	(UNKNOWN)	Severn
654	743.175	23.8	N00	(UNKNOWN)	Tenterfield
463	231.080	21.3	S50	(UNKNOWN)	Mulwaree
487	461.524	18.0	S60	(UNKNOWN)	Harden
488	464.890	17.4	S60	(UNKNOWN)	Harden
538	259.853	18.9	W00	(UNKNOWN)	Evans
541	280.287	16.2	W00	(UNKNOWN)	Blaney
568	345.454	20.0	W20	(UNKNOWN)	Cabonne
546	347.753	18.3	W00	(UNKNOWN)	Cabonne

Appendix 6

Miscellaneous Assets

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Appendix 6: Miscellaneous Assets

1.1 Introduction

1.1.1 In addition to the assets described in Appendices 2, 3, 4 and 5, the CRIA Assets also include miscellaneous assets. These miscellaneous assets may include, for example:

- (a) telecommunications towers;
- (b) solar power generators;
- (c) lifting devices;
- (d) auxiliary structures;
- (e) fuel tanks and related equipment;
- (f) turntables;
- (g) tunnels;
- (h) platforms and loading banks;
- (i) retaining walls;
- (j) dams; and
- (k) other miscellaneous assets.

1.2 Contractor Requirements

1.2.1 The Contractor shall perform, within 12 months of the Commencement Date, a detailed survey to identify all miscellaneous assets. The Contractor shall then update the Engineering Asset Register (**EAR**) and provide input to CRIA's Fixed Asset Register (**FAR**).

1.2.2 The Contractor shall label and provide a means of unique identification of all miscellaneous assets as per the EAR requirements.

1.2.3 The Contractor shall ensure that all the miscellaneous assets are maintained and comply with all relevant Laws and relevant standards.

1.2.4 The Contractor shall maintain, if required, all miscellaneous assets and related infrastructure that are part of the CRN.

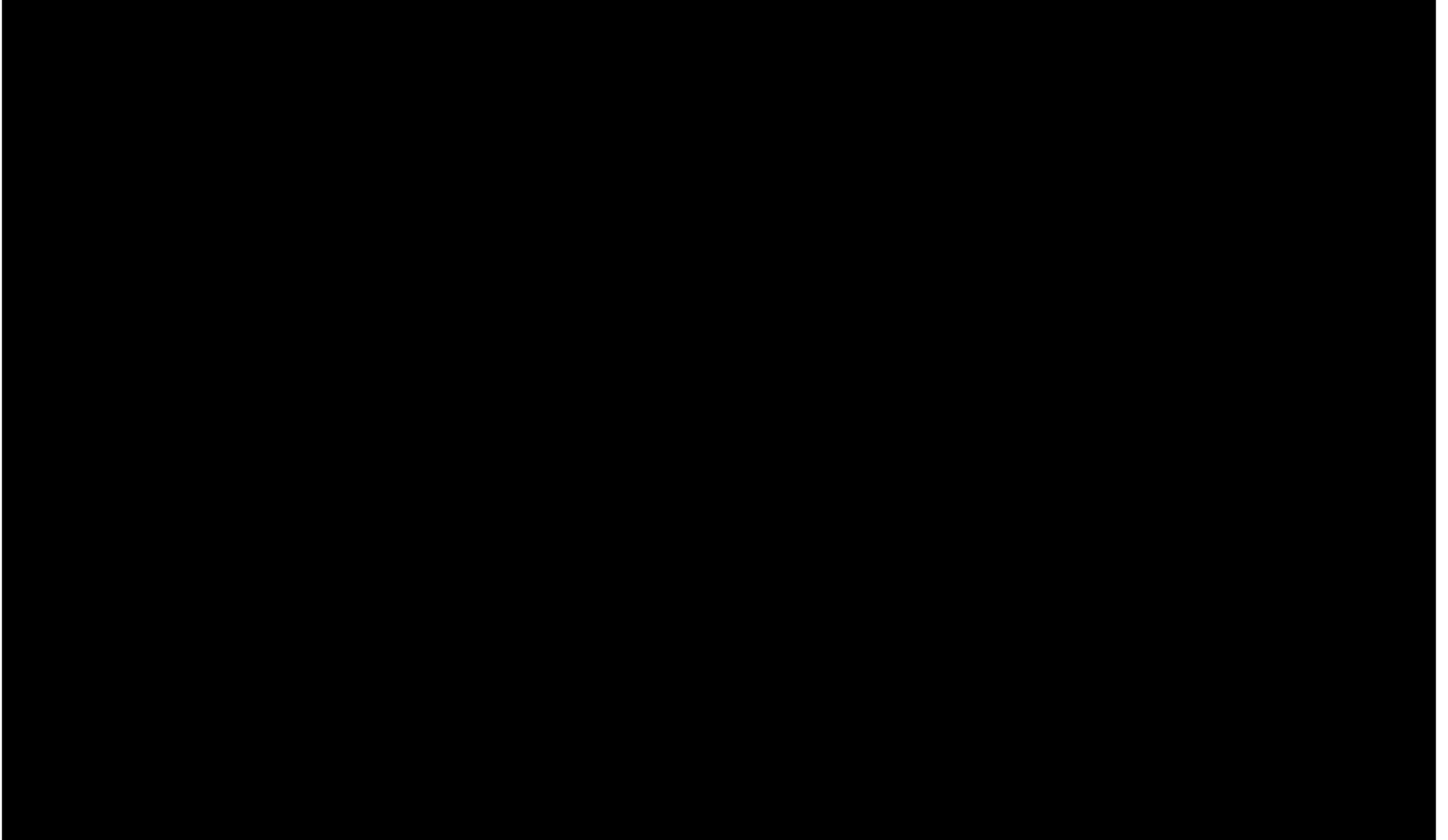
1.2.5 The Contractor shall manage all miscellaneous assets service agreements including contracts and payments and manage all other activities that may be required for the safe and reliable operation of all miscellaneous assets.

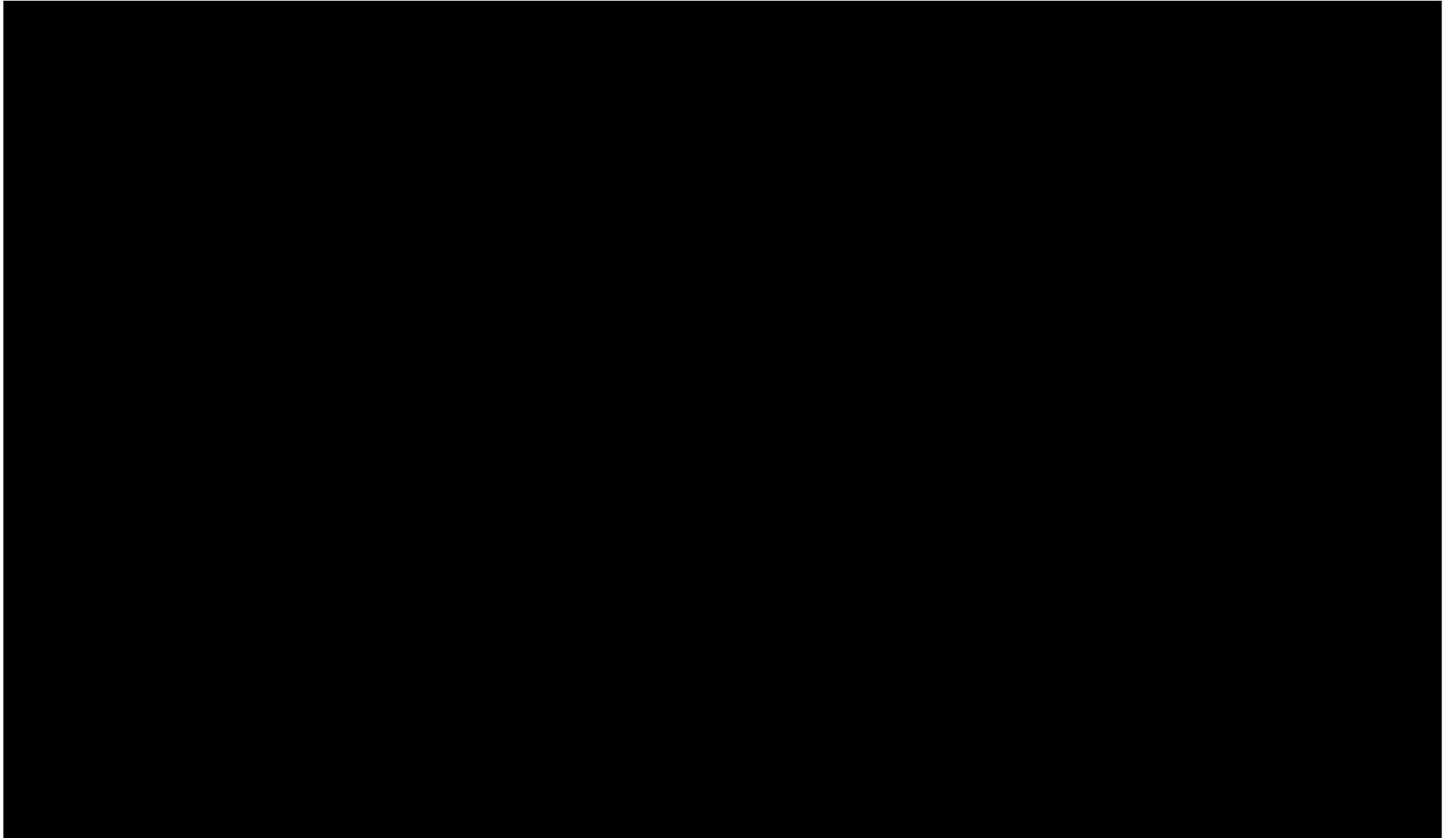
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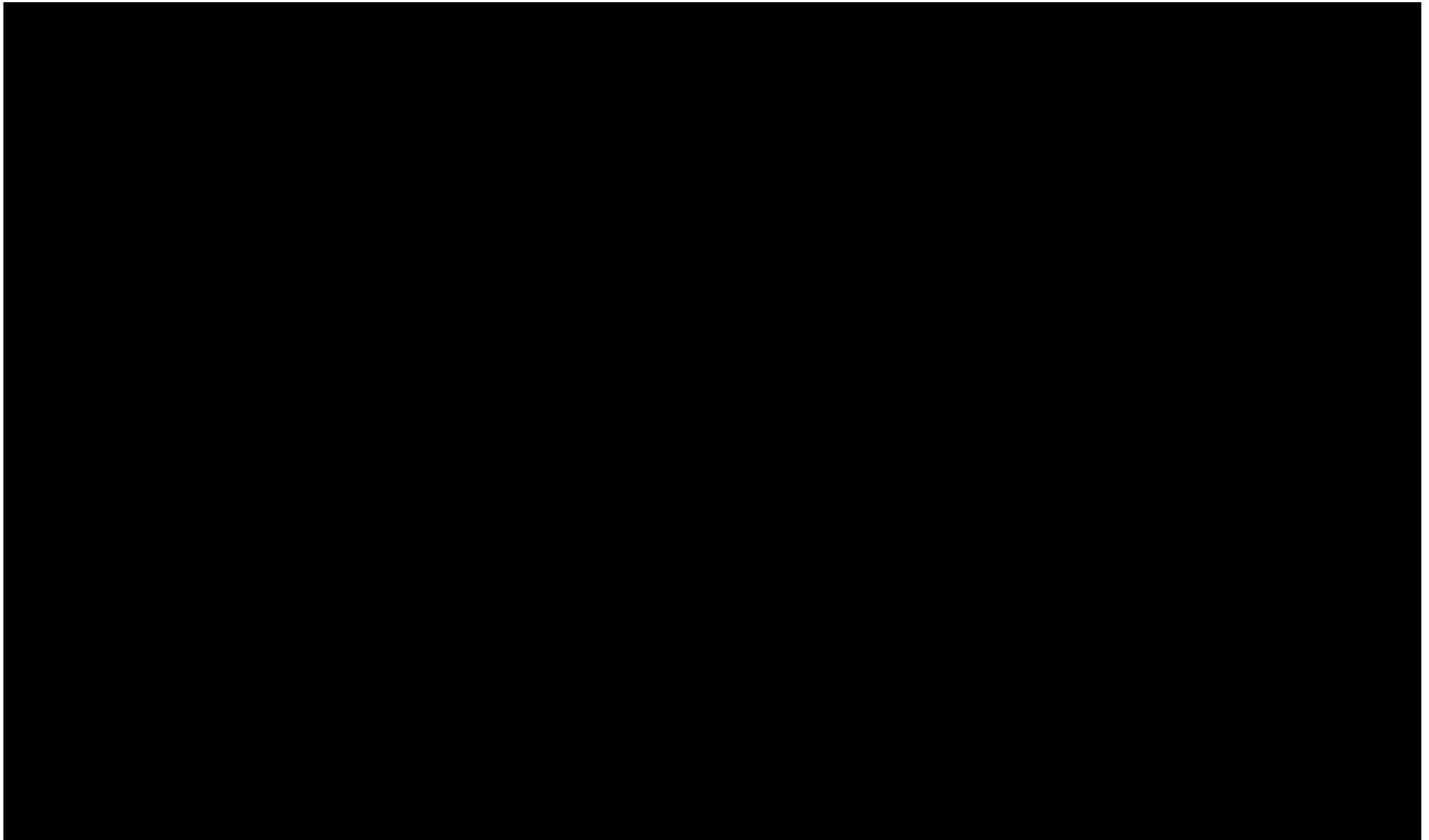
Appendix 7

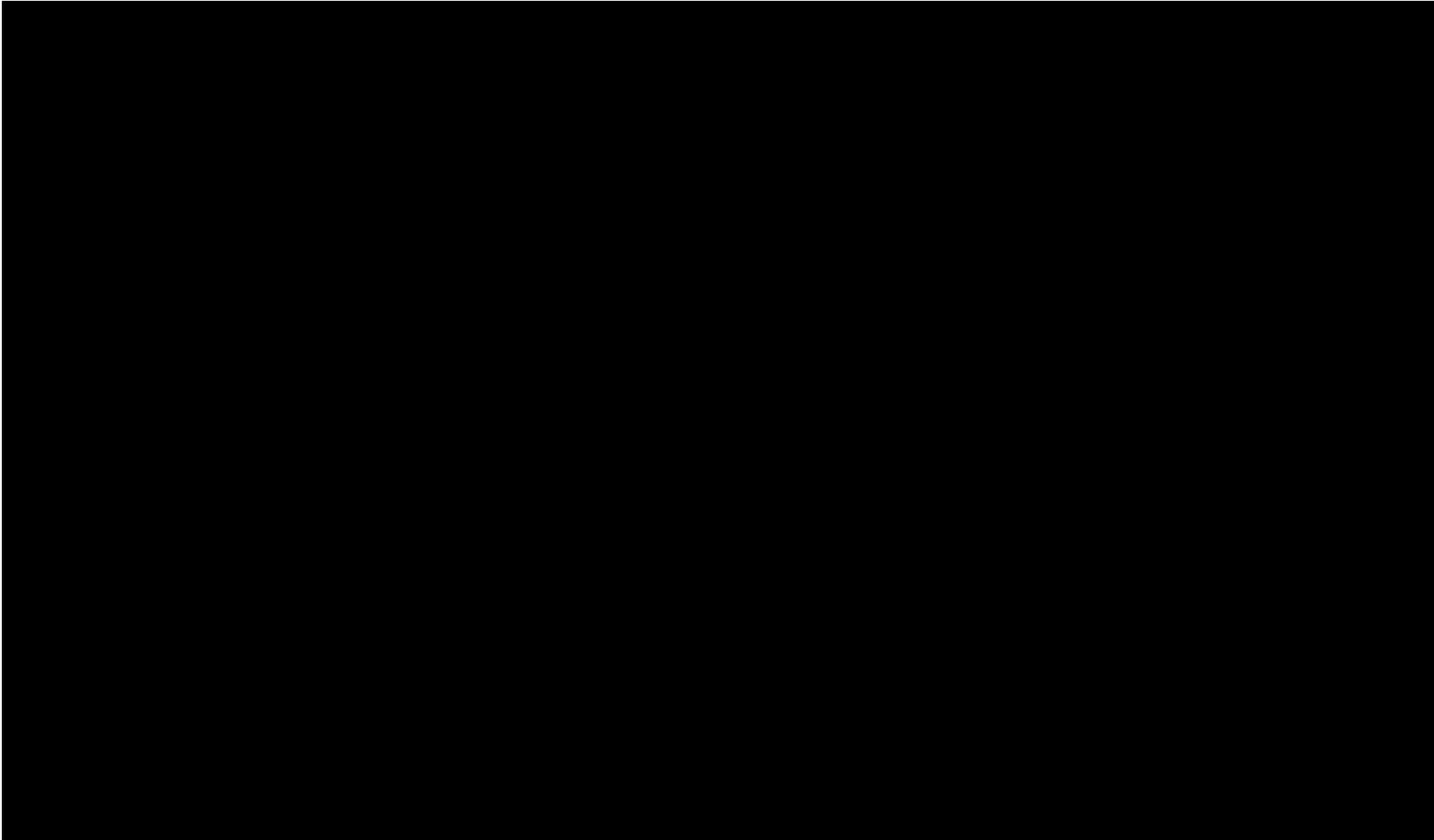
**Contractor's Organisation Structure after
Transition Phase**

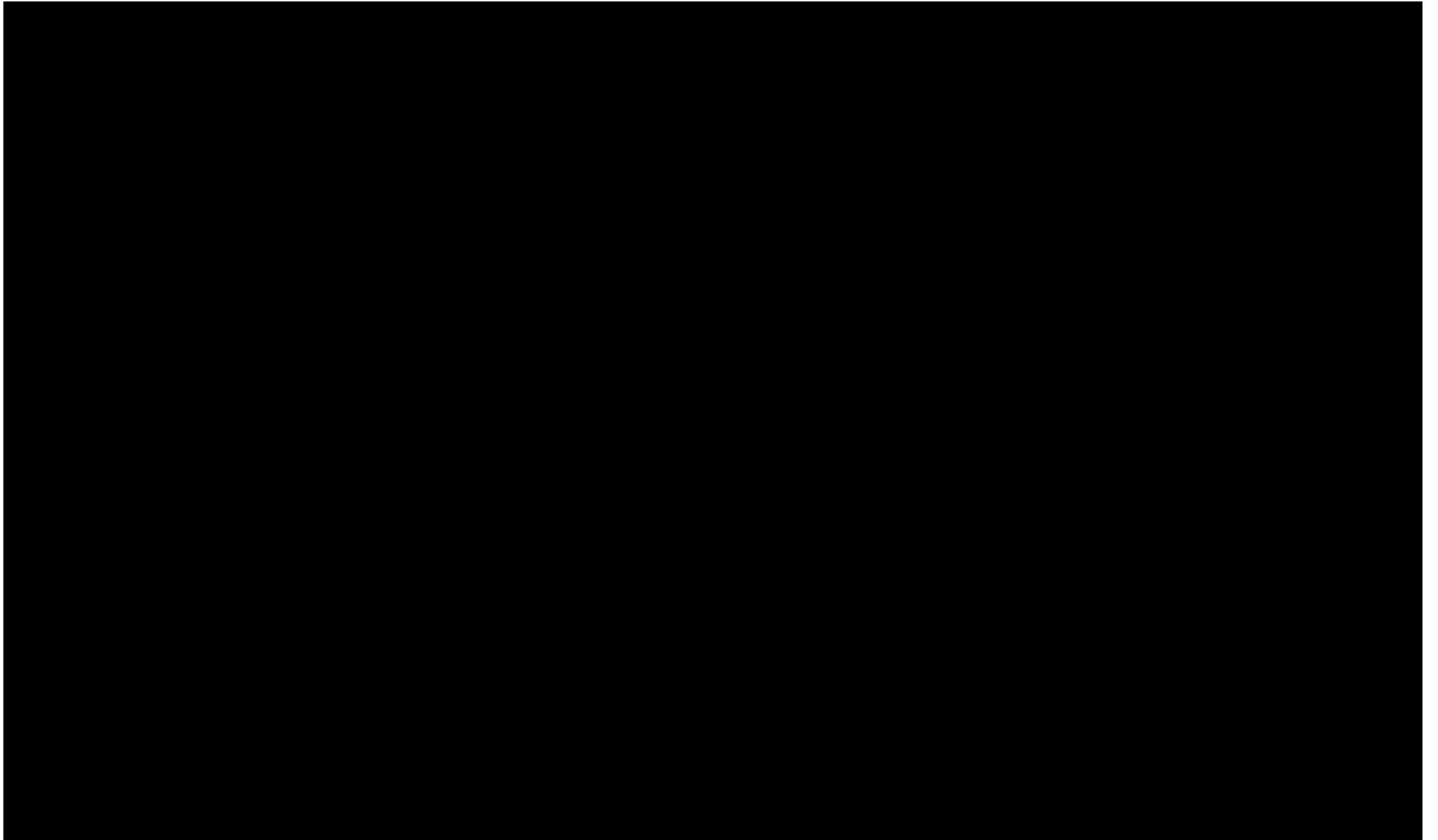
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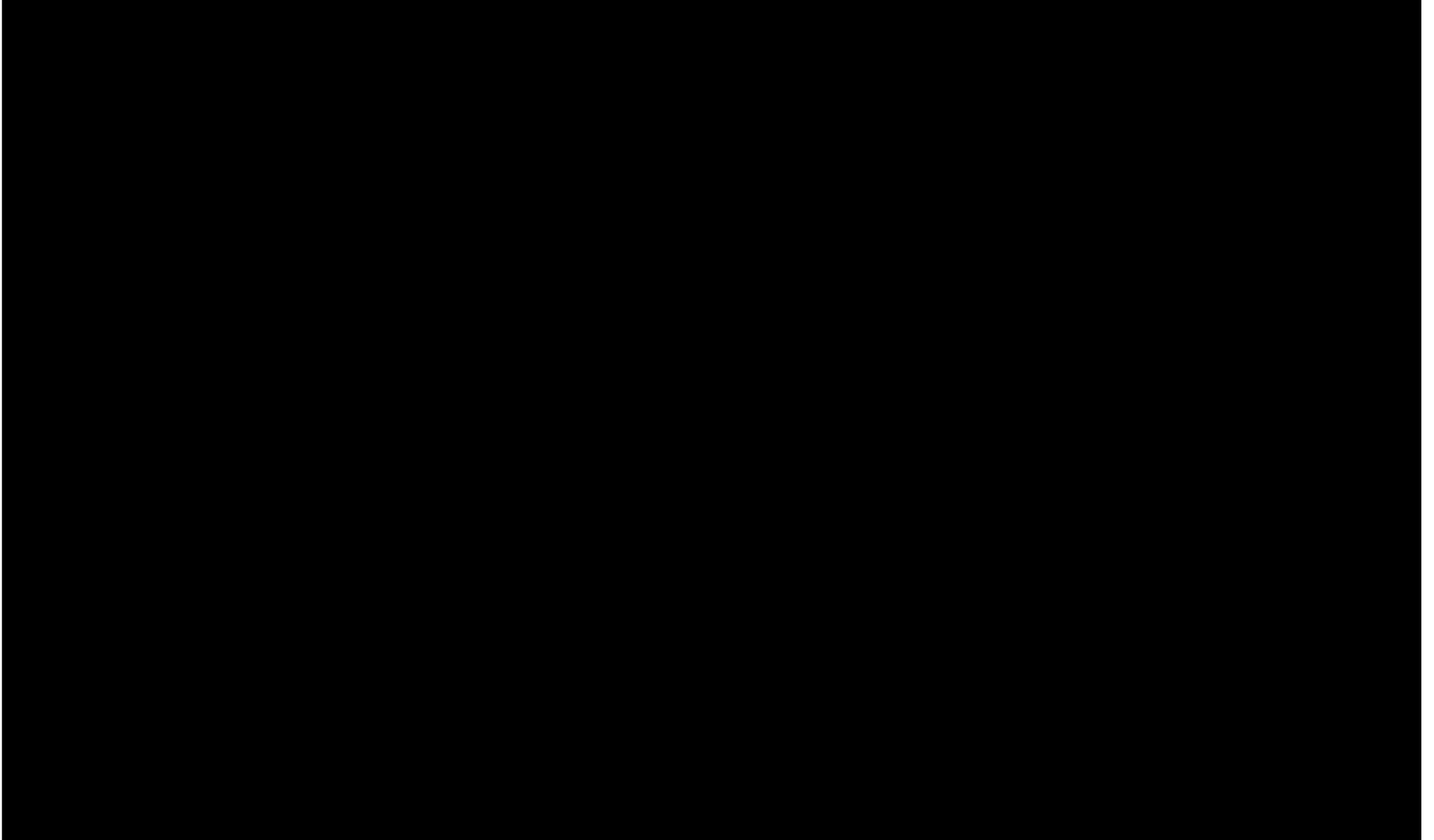


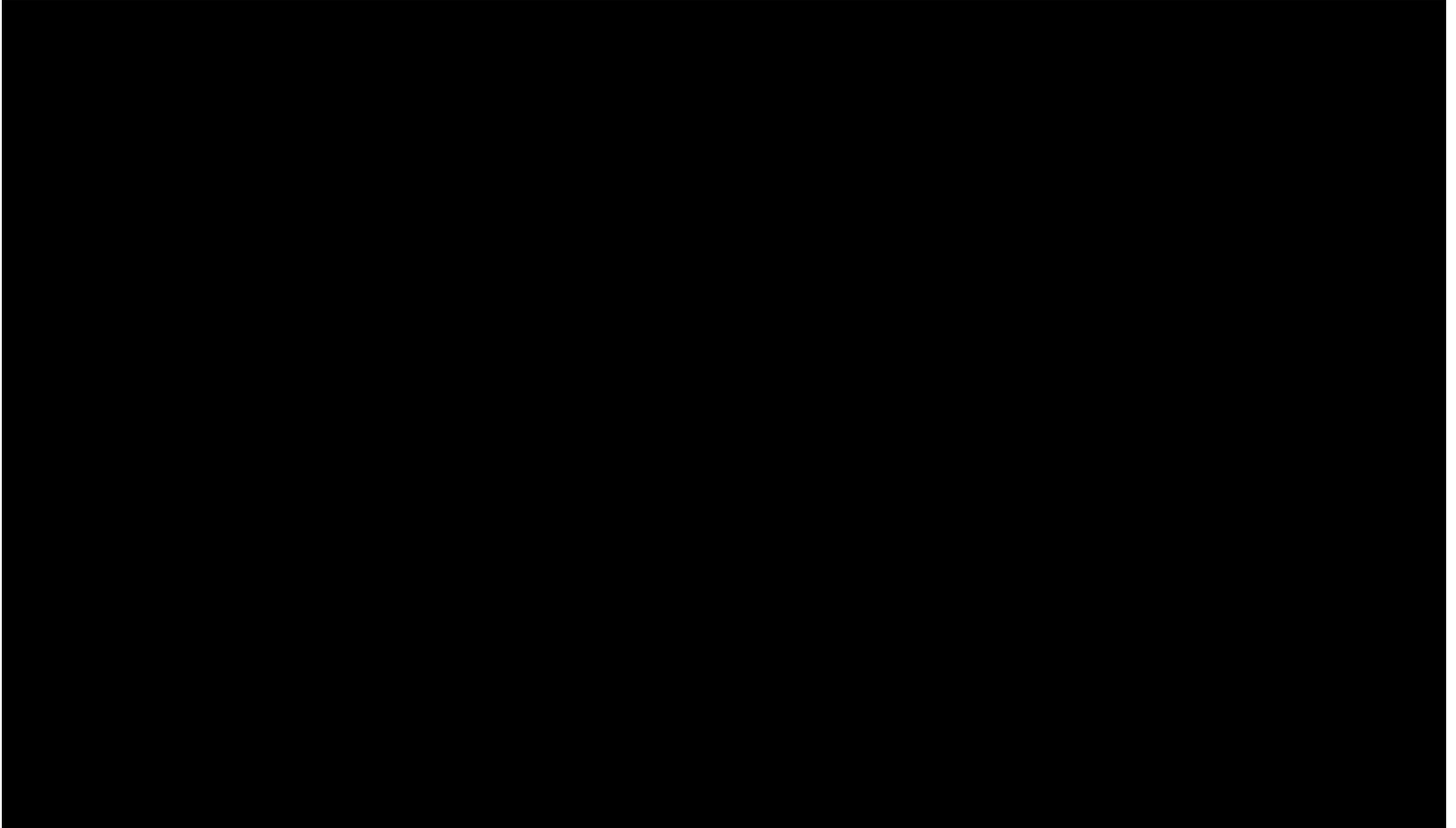


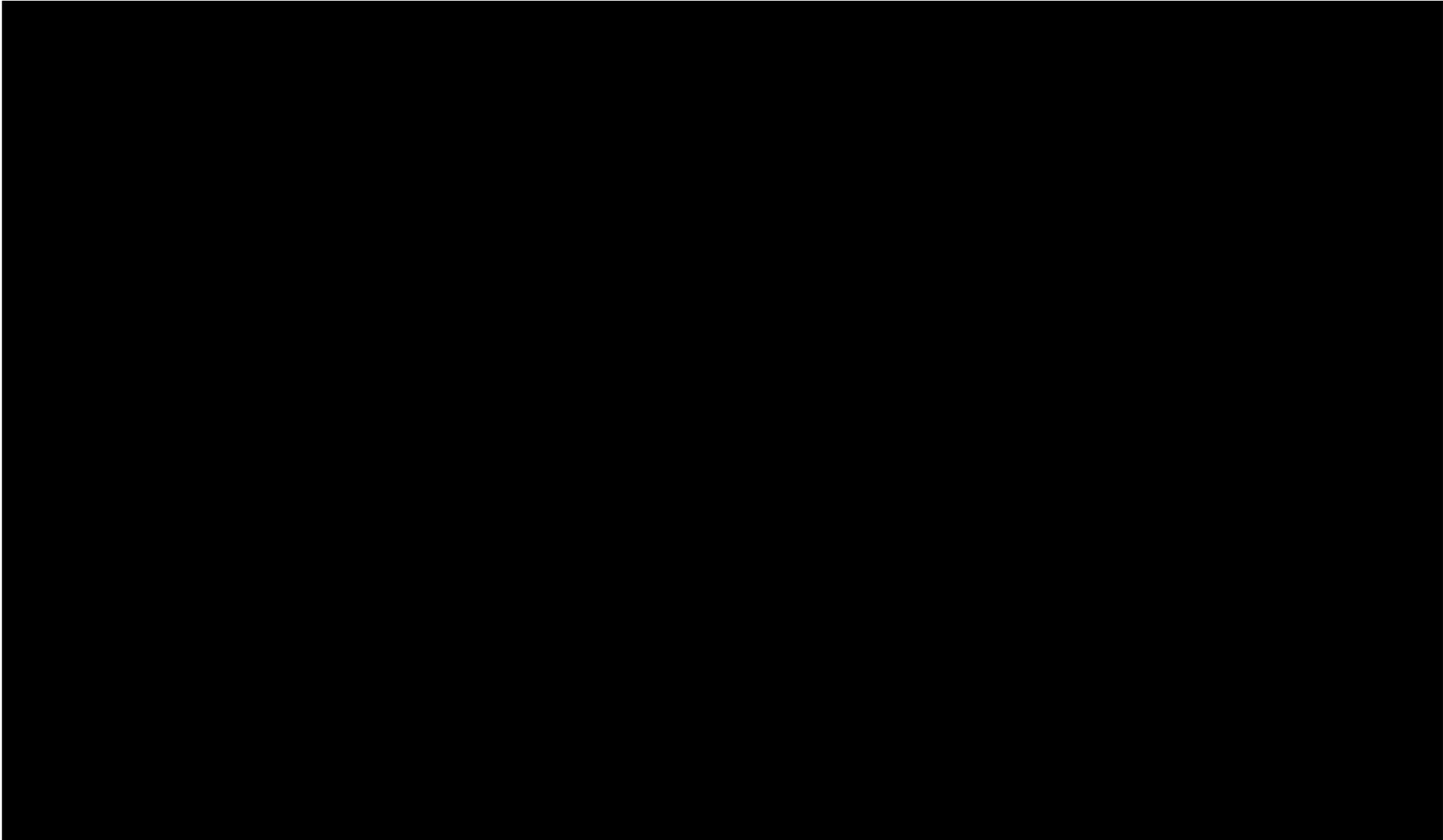












Appendix 8

Quality



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Appendix 8: Quality

1.1 Quality Assurance Documentation

1.1.1 The Contractor shall ensure the QMS documentation includes the following:

- (a) table of contents;
- (b) applicable procedures and documents;
- (c) relevant drawings and technical data;
- (d) asset identification information;
- (e) date when the works was carried out;
- (f) any subcontractors used and the scope of their services;
- (g) names of accredited personnel if required;
- (h) proof of accreditations if required including copies of certificates;
- (i) schedules of accredited equipment used to carry out work under the O&M Deed;
- (j) Rail or Asset location where the works was carried out;
- (k) detailed recommendations for preventative maintenance frequency and procedures if applicable;
- (l) commissioning check lists if applicable;
- (m) warranties certificates if applicable;
- (n) material certificates if applicable;
- (o) names of any Auditors or Supervisors who inspected and released the work;
- (p) copies of manufacturers' warranties;
- (q) certificates from authorities; and
- (r) product certification.

1.1.2 The Contractor must ensure the QA management system data is included if relevant in the Engineering Asset Register (**EAR**).

1.2 Repaired Items

1.2.1 The Contractor shall identify the item repaired including location and asset identification including the reason for the repair work.

1.2.2 The Contractor must also manage assets which are under warranty and need to be repaired.

1.2.3 The Contractor must manage the repair and commercial process and liaise with the relevant suppliers.

1.2.4 The Contractor must consider whether or not is cost effective to replace an asset or repair it considering whole of life cycle benefits.

1.2.5 The Contractor must develop a clear policy for repairing items including assessment process for those items which are not covered by warranty.

1.2.6 The Contractor must ensure all repaired items comply with the quality assurance requirements and appropriate certificates are issued if required and uploaded in the EAR.

1.2.7 The Contractor must ensure all relevant repair and certificates information is uploaded in the EAR.

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Appendix 9

Integrated Logistics Support

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Appendix 9: Integrated Logistics Support

1.1 Occupational Health and Safety

- 1.1.1 The Contractor must ensure that materials delivered to any site or storage location are accompanied by all relevant documentation and material safety data sheets, and are properly identified and packaged.
- 1.1.2 The Contractor must ensure that materials are stored in compliance with all relevant safety requirements.
- 1.1.3 The Contractor must ensure that operators have all relevant accreditations, certificates and training required to manage the materials.
- 1.1.4 The Contractor must ensure that personnel are adequately trained and accredited to manage and operate any relevant plant and equipment.

1.2 ILS Documentation and Technical Data

- 1.2.1 The Contractor must ensure that the ILS documentation and technical data management system includes, as a minimum, the following details for each item of infrastructure, plant or equipment:
 - (a) table of contents;
 - (b) description of the item and its operation:
 - (i) name, address, website, telephone, facsimile and e-mail contact details of the manufacturer or supplier of items;
 - (ii) catalogue list numbers;
 - (iii) estimated cost;
 - (iv) average lead times for delivery or repair;
 - (v) contact details for local authorised maintenance service providers; and
 - (vi) expiry date, if applicable.
 - (c) drawings and technical data as necessary for the efficient operation and maintenance of the item, and in compliance with the relevant Standards and Codes;
 - (d) equipment schedules stating locations, duties, performance figures and dates of manufacture;
 - (e) manufacturers' technical literature as appropriate;
 - (f) material safety data sheets;
 - (g) details of any special training requirements;
 - (h) details of any special tools that may be required for operations or maintenance activities;
 - (i) detailed recommendations for preventive maintenance frequency and procedures;
 - (j) lifting requirements;
 - (k) special instructions for commissioning;
 - (l) storage requirements;
 - (m) safe methods for trouble-shooting, disassembly, repair and reassembly, cleaning, alignment and adjustment, and balancing and checking, including logical, step-by-step instructions for each procedure;
 - (n) copies of manufacturers' warranties;
 - (o) item registration details, as required for warranty and/or service purposes;
 - (p) certificates from authorities; and

- (q) product certification.

1.3 Operations and Maintenance Manuals

1.3.1 The Contractor must ensure that operations and maintenance documentation includes, as a minimum, the following details:

- (a) document description and asset reference;
- (b) table of contents;
- (c) description of the system, plant or part, including operating details;
- (d) description of all applicable documents, including but not limited to, diagrams, schematics, manuals and other documents that are required to operate and maintain the asset;
- (e) asset schedules stating location, rating, year installed, last maintenance date, and all other relevant data;
- (f) equipment descriptions, including location, manufacturer, year, duty, part number and asset identification;
- (g) detailed operation manuals, including logic interlock for signalling systems;
- (h) detailed maintenance instructions, including diagrams, sketches and photos;
- (i) copies of manufacturers' warranties;
- (j) copies of equipment or spare parts certificates;
- (k) safe methods for trouble-shooting, disassembly, repair and reassembly, cleaning, alignment and adjustment, and balancing and checking, including logical, step-by-step instructions for each procedure;
- (l) lifting requirements;
- (m) transportation and packaging specifications;
- (n) testing and commissioning specifications;
- (o) storage instructions, including safety requirements; and
- (p) material safety data sheets.

1.4 As-Built Documents

1.4.1 The Contractor must ensure that all CRN documents are up-to-date and that all as-built documentation is updated on a monthly basis.

1.5 Spare Parts

1.5.1 The Contractor must maintain a register of spare parts suppliers, containing all data required for procuring spare parts, including but not limited to, lot sizes, lead times, discount structures and suppliers' contact details.

1.5.2 The Contractor must maintain a spare parts list, describing the estimated monthly and annual spare parts requirements for RM and emergency response.

1.6 Special Tools and Plant

1.6.1 The Contractor must maintain a list of all special tools, test equipment, and plant that is required to provide the Services along with their suppliers' contact details and estimates of cost.

1.7 Training

- 1.7.1 The Contractor must develop and maintain all necessary training manuals.
- 1.7.2 The Contractor must maintain a list of preferred training suppliers along with their contact details, qualifications, training schedules and course costs.

1.8 Repaired Items

- 1.8.1 The Contractor must develop and maintain a database of all infrastructure, plant, or equipment, which identifies the operational status of each item.
- 1.8.2 The Contractor must ensure that all items requiring repair are properly identified and stored in a quarantined section of the storage locations.
- 1.8.3 The database shall highlight all items requiring repair, describing the nature of the fault, the work required to address the fault, and the scheduled date and time for the repair.
- 1.8.4 All repaired items shall be properly identified and returned to their storage location. The Contractor must ensure that the database is updated to reflect the change in operational status for the repaired items.
- 1.8.5 All repaired items shall be inspected or tested to ensure they are fit for purpose. Repaired items which may affect critical systems or safety must be re-tested when required and provided with all relevant Quality Assurance documents prior to use to ensure they are fit for purpose.
- 1.8.6 The Contractor must identify all items requiring repair or inspection that can be undertaken under the terms of a manufacturer's warranty. Where this is applicable, the Contractor must manage the warranty claims process and ensure that the items are repaired to a satisfactory level.

1.9 Decommissioning of Spare Parts

- 1.9.1 The Contractor must dispose of all spare parts that are no longer required due to obsolescence or degraded asset condition. The Contractor must notify CRIA of such disposals and provide details including depreciation method and residual value for accounting purposes.

1.10 Storage and Warehousing

- 1.10.1 The Contractor must ensure that all materials are stored under suitable conditions, and that operational performance or longevity of materials is not adversely affected by storage.
- 1.10.2 The Contractor must ensure that storage location information for all materials is accurately recorded in the ILS documentation and technical data management system.
- 1.10.3 The Contractor must ensure that storage locations are adequately designed and secured.
- 1.10.4 The Contractor must ensure that all storage locations have adequate safety systems.

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Appendix 10

Engineering Services

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Appendix 10: Engineering Services

1.1 General

1.1.1 The Contractor shall develop and implement processes for managing Engineering Services including but not limited to:

- (a) project management;
- (b) scope definition;
- (c) works planning;
- (d) value engineering;
- (e) investigations and feasibility studies;
- (f) project control;
- (g) engineering services works management;
- (h) design management;
- (i) review process;
- (j) approval process;
- (k) works execution management;
- (l) quality assurance management;
- (m) safety management;
- (n) risk management;
- (o) testing and commissioning management;
- (p) non-conformance management;
- (q) rectification works management; and
- (r) performance and cost control and reporting.

1.1.2 The Contractor shall provide an Engineering Services organisation structure including key personnel, responsibilities and resources required to deliver the Engineering Services.

1.1.3 The Contractor shall provide a list of the key engineering services subcontractors including capabilities and key personnel.

1.2 Design

1.2.1 The Contractor shall provide Engineering Services which shall include design management and design services.

1.2.2 The Contractor shall provide Engineering Services for replacement and upgrade activities required as part of the RM, MPM, and Enhancement Works.

1.2.3 The scope of the design services shall include but not be limited to:

- (a) design verification;
- (b) design certification;
- (c) investigations;
- (d) fault analysis;
- (e) work method statements;
- (f) RM and MPM planning;
- (g) asset replacement material selection;

- (h) track-work;
- (i) turnouts;
- (j) level crossings;
- (k) ballast;
- (l) signalling;
- (m) communications;
- (n) under bridges;
- (o) overbridges;
- (p) access roads;
- (q) power systems;
- (r) train control;
- (s) environmental works;
- (t) geotechnical;
- (u) property,
- (v) urban and landscape;
- (w) water storage and fire fighting;
- (x) storm water and drainage;
- (y) lifecycle cost;
- (z) cost benefit analysis;
- (aa) structural analysis;
- (bb) safety;
- (cc) standards and documents;;
- (dd) services design (including lighting, electrical design and services relocation);
- (ee) noise attenuation;
- (ff) risk analysis;
- (gg) operational readiness;
- (hh) commissioning;
- (ii) testing;
- (jj) troubleshooting; and
- (kk) temporary works.

1.2.4 The Design Services shall include but not be limited to:

- (a) asset management strategy;
- (b) scope definition;
- (c) value proposition;
- (d) cost planning;
- (e) planning;
- (f) reliability, maintainability and availability analysis;
- (g) Interface management;
- (h) procurement planning;
- (i) resource planning and management;
- (j) management of all approvals;
- (k) design of all maintenance activities and work plans;
- (l) design of all Quality Assurance process and templates;
- (m) design of temporary works if required;
- (n) design considering continuous improvement, value for money, material replacement strategy, and design life;
- (o) design considering Rail Safety regulations and accreditation requirements;

- (p) human factors safety analysis;
- (q) noise and vibration reports;
- (r) surveys;
- (s) design considering Occupational Health and Safety and improvements in network operation and maintenance;
- (t) design considering Hazards and Operational requirements;
- (u) manage all design documents process including certification and coordination with other stakeholders;
- (v) coordinate standards review process with CRIA.
- (w) maintain and incorporate all latest legislative and regulatory requirements in the applicable documents and standards;
- (x) manage all site investigations as reasonably required to complete the works.

Design Lives

- 1.2.5 The Performance Requirements have been developed in the context of the Objectives and CRIA's further objective to maximise the Whole of Life Benefit of the Services.
- 1.2.6 For the purposes of providing the Services, design life is defined as the period over which each element of the CRIA Assets must perform its intended function, with adequate routine maintenance but without replacement or refurbishment.
- 1.2.7 The CRIA Assets must have the minimum design life specified in the Standards and Codes.
- 1.2.8 Where a design life is not specified by the Standards and Codes, the Contractor must either:
 - (a) ensure the asset meets the life design requirements of the system to which it belongs; or
 - (b) make its own assessment of the performance criteria for each asset in terms of:
 - (i) The overall design life of the system where the asset is installed or operates;
 - (ii) the micro-environment;
 - (iii) potential deterioration mechanisms in this micro-environment;
 - (iv) the service conditions;
 - (v) the likely material life;
 - (vi) the feasibility and cost of in-situ monitoring, maintenance and/or repair and replacement;
 - (vii) the significance of failure; and
 - (viii) ensure the design and asset selection criteria meets the Whole of Life Benefit objective, and the risk and safety management requirements of the SWTC.

1.3 Provision of Services to Support Routine Maintenance

- 1.3.1 The Contractor shall provide RM productivity analysis and provide continuous improvement services which shall include but not be limited to:
 - (a) productivity analysis including resources, equipment and cost analysis;
 - (b) work methods improvement processes including use of new technologies, processes, equipment and tools;
 - (c) materials durability, maintenance and reliability analysis including use of new materials;
 - (d) fault and non conformance analysis, and continuous improvement processes;
 - (e) troubleshooting diagnose; root analysis and solution evaluation;
 - (f) monitoring analysis, historical data analysis and statistical analysis;

- (g) identify performance trends including drivers and effectiveness of implemented continuous improvement processes;
- (h) asset management works records update;
- (i) Quality Assurance performance management including non-conformance analysis, defective works cause and subcontractor performance.

Conduct of System Testing

- 1.3.2 The Contractor shall update all testing records in the Engineering Asset Register (**EAR**) including but not limited to:
- (a) material certificates;
 - (b) subcontractors used;
 - (c) date;
 - (d) process;
 - (e) results;
 - (f) asset location and identification;
 - (g) test method;
 - (h) operator's qualifications details including license details; and
 - (i) repair works if applicable.

Work Scheduling

- 1.3.3 The Contractor shall prepare all RM programs using suitable planning software with enterprise resource planning capabilities including project portfolio management planning and detailed reporting accessible through the internet.

RM Delivery Management

- 1.3.4 The Contractor shall provide on-site delivery management and technical support to adequately supervise, monitor and audit the RM Services.

1.4 Provision of Services to Support Major Programmed Maintenance and Enhancement Works

- 1.4.1 The Contractor shall provide Engineering Services to support MPM services similar to those described in 1.2.3 and 1.2.4.

Management of MPM and Enhancement Works

- 1.4.2 The Contractor shall manage the MPM and Enhancement works including certification process.

Commissioning of Works

- 1.4.3 The Contractor shall manage all commissioning works including design, planning, works execution, certification and reporting.

Procurement

- 1.4.4 The Contractor shall provide Engineering Services required to support all procurement and logistics activities that shall include but not be limited to:
- (a) providing engineering input to the process of identifying potential suppliers;

- (b) incorporating the required engineering considerations into the development of procurement documentation including specifications and statements of work;
- (c) participation in the evaluation of tenders and proposals;
- (d) review of maintenance documentation;
- (e) establishing through life support requirements based on analysis of failure modes, effects and criticality analysis (**FMECA**);
- (f) evaluating test results; and
- (g) acceptance of goods and services when required.

1.5 Defects and Failure Management

- 1.5.1 The Contractor must establish a Defects and Failure Management processes and systems to record instances of equipment and system failures, investigate failure modes, measure reliability, analyse the information, record and report on observed trends and propose engineering solutions to improve the asset performance and correct the defects and or failure.
- 1.5.2 The Contractor must ensure all critical defects and failures that affect safety, environmental or asset performance are reported to CRIA in a timely manner.
- 1.5.3 The Contractor must ensure all critical defects and failures are included in technical bulletins and are distributed to relevant parties including asset operation and maintenance recommendations.
- 1.5.4 The Contractor must update regularly CRIA standards and documents to ensure all defect and failure corrective recommendations are included.
- 1.5.5 The defects and failure management system capabilities should include, but not be limited to, the ability to:
- (a) capture and record failures and asset operations irregularities;
 - (b) capture and record any other asset defects;
 - (c) capture assets failure modes;
 - (d) analyse failures and signalling or other assets irregularities;
 - (e) identify trends;
 - (f) produce reports on trends;
 - (g) identify asset class;
 - (h) link assets to the EAR;
 - (i) identify Incident location i.e. section, area, district, etc;
 - (j) have a number of agreed failures categories e.g.:
 - (i) lightning;
 - (ii) adjustment;
 - (iii) vandalism;
 - (iv) derailment;
 - (v) storm;
 - (vi) no cause found, etc;
 - (k) filter information;
 - (l) produce reports per area or corridor and type of equipment;
 - (m) enable the initiation of preventive and corrective actions, including MPM activities;
 - (n) manage failure investigations and proposed improvement processes; and
 - (o) allow ad hoc reporting when required.

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Appendix 11

Requirements for Management Plans

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Contents

1.1	PURPOSE	1
1.2	SUMMARY OF MANAGEMENT PLANS	1
1.3	MANAGEMENT SERVICES PLAN	5
	Strategic Plan	5
	Business Development	5
	Risk Management	6
	Document and Data Management	6
	Industrial Relations	6
	Local Industry Participation	7
	Intellectual Property	7
	Business Continuity	7
	Community and Stakeholder Management	7
	Performance Measurement	8
	Contract Management	8
1.4	CONTRACTOR'S ASSET MANAGEMENT IMPLEMENTATION PLAN	8
1.5	CRN ASSET MANAGEMENT PLAN	9
1.6	ANNUAL WORKS PLAN	10
	AWP Budget	11
1.7	ENGINEERING SERVICES MANAGEMENT PLAN	11
	Design	12
	Configuration Management	12
	Construction Management	13
	Road Traffic Management	13
1.8	QUALITY ASSURANCE PLAN	14
1.9	INTEGRATED LOGISTICS SUPPORT PLAN	14
	Procurement	15
	Training	15
1.10	INTERFACE MANAGEMENT PLAN	15
	Rail Safety Interface Agreements	16
1.11	RAIL NETWORK MANAGEMENT PLAN	16
1.12	ENVIRONMENTAL MANAGEMENT PLAN	17
1.13	CULTURAL HERITAGE MANAGEMENT PLAN	18
1.14	PROPERTY MANAGEMENT PLAN	18

1.15	SAFETY MANAGEMENT PLAN	19
	Rail Safety Management Plan	19
	Occupational Health & Safety Management Plan	20
	Change Management Plan	20
	Health and Fitness Management Program	21
	Fatigue Management Program	21
	Drug and Alcohol Management Program	22
	Competence Management Plan	22
	Emergency Management Plan	22
	Security Management Plan	23
1.16	TRANSITION MANAGEMENT PLAN	24
1.17	DISENGAGEMENT PLAN	24

Appendix 11: Management Plans

1.1 Purpose

1.1.1 The purpose of this document is to define the management plans the Contractor must provide as part of the Scope of Work. The management plans should be developed, implemented and maintained in accordance with the requirements described in this appendix and the relevant sections of the SWTC.

1.2 Summary of Management Plans

1.2.1 Table 1 identifies each management plan and describes its purpose.

1.2.2 Further details of requirements are provided in section 1.3 to section 1.16 below.

1.2.3 Each Management Plan must be updated throughout the Term:

- (a) to address changes in the systems, processes and organisation;
- (b) to address any change in CRIA's requirements;
- (c) to address changes identified by the continuous improvement of processes;
- (d) to address any other legislative or relevant change that may apply during the Term of the O&M Deed; or
- (e) at the request of CRIA.

1.2.4 SWTC Appendix 15 states how frequently revisions are to be submitted to CRIA.

Table 1: Summary of Management Plans

No.	Management Plan Title	Purpose
1	Management Services Plan	<p>Defines the Contractor’s approach to long-term planning for the future of the CRIA Assets, including the CRN.</p> <p>Defines how the Contractor will organise, plan, resource, budget, and provide the Services to meet O&M Deed requirements. Includes:</p> <ul style="list-style-type: none"> a) strategy and business development; b) strategy to implement every year the Annual Works Plan (AWP) and manage efficiently the AWP Budget; c) risk management; d) document & data management; e) Industrial Relations (IR); f) local industry participation; g) Intellectual Property (IP); h) business continuity; i) community & stakeholder management; j) performance measurement; and k) contract management.
2	CRN Asset Management Plan	<p>Describes the scope of work to be undertaken for the maintenance and Whole of Life enhancement of the CRN, for a rolling fifteen-year period, including all construction, operation, maintenance and renewal or disposal of assets in order to meet the performance requirements specified in the O&M Deed and SWTC.</p> <p>Describes and details the program for Asset Management of all CRN, assets for the next two (2) financial years, including all construction, operation, maintenance and renewal or assets disposal activities to achieve the agreed standards and usage levels.</p>
3	Contractor’s Asset Management Implementation Plan	<p>Defines how the Contractor will establish and implement systems and processes for the management of all CRIA Assets including maintenance and enhancement or disposal of assets. The contractor shall document the relevant standards (ISO, AS/NZS, etc.) and associated rationale to which the Asset Management Implementation Plan is to conform in part or whole.</p> <p>Describes the Contractor’s intended approach to planning, controlling and conducting a fully integrated asset management effort.</p> <p>Provides detailed information on the asset management processes, decisions and data to be used.</p>
4	Annual Works Plan	<p>Provides detailed scope of work and Services for the Contractor’s work program for the next financial year. The AWP Budget is included as a subset of the Annual Works Plan.</p>



No.	Management Plan Title	Purpose
5	Engineering Services Management Plan	<p>Describes how the Contractor will provide Engineering Services required by the SWTC. The contractor shall document the relevant Standards (ISO, AS/NZS, etc.) and associated rationale to which the Engineering Services Management Plan is to conform in part or whole.</p> <p>Documents the Contractor's requirements to formally control the authorisation of competent people to make technical decisions for the processes documented in the SWTC and the management plans described in this appendix.</p> <p>Includes:</p> <ul style="list-style-type: none"> a) design management; b) configuration management; c) ILS management; d) maintenance management; e) construction management; and f) road traffic management. <p>Provides detailed information on the engineering services, processes, decisions and data to be used.</p>
6	Quality Assurance Plan	<p>Defines how the Contractor will establish and implement processes and systems to manage quality assurance in order to meet all statutory, regulatory and CRIA requirements</p>
7	Integrated Logistics Support Plan	<p>Defines how the Contractor will meet the Integrated Logistics Support requirements of the SWTC. Includes:</p> <ul style="list-style-type: none"> a) procurement; and b) training.
8	Interface Management Plan	<p>Defines how the Contractor will meet the interface management requirements including those with ARTC and RailCorp.</p>
9	Rail Network Management Plan	<p>Defines how the Contractor will establish and implement processes and systems to meet statutory, CRIA and any other requirements in order to effectively manage network access by RTOs and coordinate network operations.</p>
10	Environmental Management Plan	<p>Defines how the Contractor will manage compliance with all statutory and CRIA environmental requirements for all works under the O&M Deed.</p>
11	Cultural Heritage Management Plan	<p>Defines how the Contractor will manage compliance with all statutory and CRIA cultural heritage requirements for all works under the O&M Deed.</p>
12	Property Management Plan	<p>Defines how the Contractor will establish and implement processes and systems to provide the property management services required by the O&M Deed.</p>

No.	Management Plan Title	Purpose
13	Safety Management Plan	<p>Defines how the Contractor will establish and implement processes and systems to ensure the safety of its workforce, customers, users of the rail network, members of the public and stakeholders.</p> <p>Includes:</p> <ul style="list-style-type: none"> a) Accreditation Plan; b) Rail Safety Management Plan; c) Occupational Health and Safety (OH&S) Management Plan; d) Change Management Plan; e) Security Management Plan; f) Emergency Management Plan; g) Health and Fitness Management Program; h) Drug and Alcohol Management Program; i) Fatigue Management Program; j) Competence Management Plan; and k) the process for identification of persons who do rail safety work.
14	Transition Management Plan	<p>Defines how the Contractor will manage the transition period during which operations and maintenance of the CRIA Assets, including the CRN, are handed over to a new contractor. Includes:</p> <ul style="list-style-type: none"> a) the transition period during which ARTC will hand over the operations and maintenance of the CRIA Assets, including the CRN to the new contractor; and b) handover of the operations and maintenance of the CRIA Assets, including the CRN, to a new contractor after the Term expires including in the case of early termination (includes the handover pack).
15	Disengagement Plan	<p>Addresses, at high level, the activities to be undertaken prior to, during and immediately following the termination of the O&M Deed during the period of transition of responsibility for the work from the Contractor to a future RIM.</p>

1.3 Management Services Plan

- 1.3.1 The Management Services Plan must include a strategic plan for the CRIA Assets, including the CRN, which defines the Contractor's approach to the long-term planning for the future of the CRIA Assets.
- 1.3.2 CRIA will provide the Strategic Asset Plan to the Contractor. The Strategic Asset Plan will form the basis of the detailed strategic plan for the CRIA Assets including the CRN. If updates or modifications are made to the Strategic Asset Plan, CRIA will provide the updates or modifications to the Contractor.
- 1.3.3 The strategic planning processes described in the Management Services Plan must include the development of "route utilisation strategies" for each line. The route utilisation strategies balance capacity, passenger and freight demand, operational performance, and operations and maintenance costs.
- 1.3.4 The route utilisation strategies shall be used to inform the development of the maintenance activities which will be detailed in the CRN Asset Management Plan.
- 1.3.5 The Contractor shall develop the Asset Management strategy to maximise the Whole of Life Benefit of the Services to the CRIA Assets.
- 1.3.6 The Management Services Plan must include the Contractor's ethics policy, stating the Contractor's high-level commitment to ethical conduct in the delivery of the Services.
- 1.3.7 The Management Services Plan must identify the procedures, processes and management systems that the Contractor intends to apply to ensure delivery of the Scope of Work in accordance with the O&M Deed. As a minimum (unless dealt with elsewhere), the Management Services Plan must address:
- (a) the service management team structure and responsibilities;
 - (b) key personnel, positions and reporting;
 - (c) organisation chart with defined responsibilities including transition and handover phase;
 - (d) communication protocols including transition and handover phase;
 - (e) methods of managing interfaces with other stakeholders;
 - (f) methods of dealing with Services and relevant authorities;
 - (g) services program time, quality control and cost control;
 - (h) resources management including key personnel and managing skilled resources shortage;
 - (i) services management reporting;
 - (j) method of managing the Management Services Plan;
 - (k) interfaces management with other management plans;
 - (l) services reporting;
 - (m) strategy and processes for obtaining all necessary Approvals; and
 - (n) survey, inspection, maintenance works and condition monitoring management.
- 1.3.8 The Management Services Plan must address the following topics as indicated:
- Strategic Plan*
- 1.3.9 Detail the Contractor's strategic plan for the CRIA Assets, including the CRN, as described above.
- Business Development*
- 1.3.10 In relation to business development, detail the Contractor's plans for maximising the revenue returned to CRIA, through the operation and utilisation of the CRIA Assets.

Risk Management

- 1.3.11 In relation to risk management, the Management Services Plan must address, as a minimum, the following:
- (a) processes for the identification of all relevant business, safety and environmental risks;
 - (b) the means by which risks will be assessed and evaluated, and controls identified through an integrated approach to all categories of risk;
 - (c) the criteria to be applied for the assessment and evaluation of risks, for which tolerability criteria are to align with CRIA Standard *GEN STD 001 Risk Management*;
 - (d) the establishment and maintenance of a risk register and the means by which responsibilities for risk management in general, and the control of individual risks, will be allocated;
 - (e) risk reporting, escalation, monitoring, management and close-out processes; and
 - (f) frequency of risk workshops and other reviews at different levels in the Contractor's organisation.
- 1.3.12 Note that in accordance with *AS/NZS 4360:2004 Risk Management*, a "risk" is defined as having the potential for positive or negative impact on objectives, and therefore includes what was previously separately defined as an "opportunity". Business opportunities may be identified, assessed and managed through separate and different processes. Review of opportunities may include economic analysis if required.
- 1.3.13 The Contractor shall manage "issues", which may be defined as risks with 100% probability through the above risk management processes. Alternatively, the Contractor may have a separate process for the management of issues.

Document and Data Management

- 1.3.14 In relation to document and data management, the Management Services Plan must address, as a minimum, the following:
- (a) document management including process and responsibilities;
 - (b) flowcharts, organisation structure, approvals, distribution and communications;
 - (c) database management;
 - (d) traceability, backup, accessibility, software capabilities;
 - (e) asset management support;
 - (f) protection of Intellectual Property and confidential information;
 - (g) training requirements and deployment strategy;
 - (h) IT requirements; and
 - (i) reporting and audit.

Industrial Relations

- 1.3.15 In relation to Industrial Relations (IR), the Management Services Plan must address, as a minimum, the following:
- (a) legislative requirements; and
 - (b) all IR processes and activities that have an effect on the work; and
 - (c) impact on other related stakeholders.
- 1.3.16 The Management Services Plan sections addressing IR must be further developed and updated:
- (a) to take into account changes to existing practices;
 - (b) to reflect any changes in law;
 - (c) where requested or required by any relevant authority; and
 - (d) at the request of CRIA.

Local Industry Participation

- 1.3.17 In relation to local industry participation, the Management Services Plan must address, as a minimum, the following:
- (a) local industry engagement and participation strategy;
 - (b) local industry participation targets and measurement;
 - (c) stakeholder management;
 - (d) communication strategy; and
 - (e) effects on other plans.

Intellectual Property

- 1.3.18 As a minimum, in relation to Intellectual Property (**IP**), the Management Services Plan must contain:
- (a) all necessary processes and strategies that will ensure all intellectual property rights produced to deliver the work are effectively transferred to CRIA in accordance with the O&M Deed;
 - (b) all process required to ensure all the Contractor and all subcontractors meet the O&M Deed requirements; and
 - (c) all necessary strategy and management plans to ensure confidentiality of information is managed according to O&M Deed requirements.
- 1.3.19 The Management Services Plan sections addressing IP must be further developed and updated:
- (a) to take into account changes to existing practices;
 - (b) to reflect any changes in law;
 - (c) where requested or required by any relevant authority; and
 - (d) at the request of CRIA.

Business Continuity

- 1.3.20 The Contractor's approach to business continuity shall generally comply with Standards Australia HB221:2004 "Business Continuity Management Handbook" (ISBN 0733762506).
- 1.3.21 The Management Services Plan must document the Contractor's approach to business continuity.

Community and Stakeholder Management

- 1.3.22 In relation to community and stakeholder relationship management, the Management Services Plan must:
- (a) describe the Contractor's approach to dealing with the community and all other stakeholder groups;
 - (b) clearly identify who holds the responsibility for community and stakeholder liaison within the Contractor's management team. (Current copies of those details, together with 24 hours per day, 7 days per week, contact details are to be provided to CRIA); and
 - (c) detail the communication systems, processes and procedures, which address all aspects of the Contractor's community and stakeholder interfaces.
- 1.3.23 As a minimum the Management Services Plan must address:
- (a) community consultation required to ensure environmental and community impacts are properly addressed;
 - (b) announcements related to community benefits from the commencement and completion of any significant work;
 - (c) advice to the community through advertising, particularly if any work carrying out the Services has an impact on traffic flow through the area;
 - (d) advice to affected stakeholders on when and how they will be affected; and

- (e) advice to affected stakeholders concerning the means of contact should they have any concerns or complaints.
- 1.3.24 In developing its approach to communications and stakeholder relationship management, the Contractor must liaise with CRIA. The relevant sections of the Management Services Plan must be further developed and updated:
- (a) to address changes in community needs;
 - (b) to inform the community of changes in significant work practices or delivery programs; and
 - (c) at the request of CRIA.

Performance Measurement

- 1.3.25 In relation to performance management and measurement, the Management Services Plan will describe how the Contractor shall:
- (a) establish measurement systems for assigned Key Performance Indicators (**KPIs**) and other performance measures;
 - (b) conduct performance measurement and analysis;
 - (c) collect performance data;
 - (d) identify and report performance trends;
 - (e) produce performance reports;
 - (f) initiate corrective actions when required to achieve required performance levels;
 - (g) conduct progress meetings;
 - (h) review measurement and incentive systems & make recommendations for improvement;
 - (i) conduct internal audits of engineering systems performance; and
 - (j) respond to external audit process results.

Contract Management

- 1.3.26 In relation to contract management, the Management Services Plan will describe how the Contractor shall:
- (a) manage the O&M Deed;
 - (b) organise and manage contractual communications with CRIA;
 - (c) manage the approval process for all procurement activities including processes for dispute resolution;
 - (d) manage tender processes;
 - (e) manage subcontracts;
 - (f) manage conflicts of interest which may arise with related company subcontractors; and
 - (g) approach and manage the ethics and transparency requirements of applicable NSW Government guidelines and policies.

1.4 Contractor's Asset Management Implementation Plan

- 1.4.1 The Contractor's Asset Management Implementation Plan shall define the Contractor's asset management system that is generally in accordance with the Asset Management Council's "Asset Management Process Model" and/or PAS 55-1 Specification for the optimised management of physical assets and/or ISO/IEC 15288 System Life Cycle Processes.

- 1.4.2 The Contractor's Asset Management Implementation Plan must as a minimum address the following:
- (a) define the asset management systems to be adopted including identification of all necessary hardware and software;
 - (b) describe the timeline for implementation of the asset management systems and the capabilities available at relevant points in time;
 - (c) identify and define the Contractor's asset management policies and procedures;
 - (d) identify resources to manage the asset management systems and assign responsibilities;
 - (e) identify resources for the implementation of asset management and assign responsibilities;
 - (f) describe the approach to planning of Routine Maintenance and Major Periodic Maintenance;
 - (g) describe the approach to defects management;
 - (h) describe the asset management approach to be adopted to manage Incidents;
 - (i) describe the asset management approach to the management of unplanned maintenance;
 - (j) identify processes for risk identification, treatment selection and monitoring for the identification of changing risk profiles associated with:
 - (i) changes to maintenance budgets (if any);
 - (ii) changes to any maintenance Backlog;
 - (iii) forecast changes to CRN future demands; and
 - (k) progress reports processes and audit.
- 1.4.3 The Contractor's Asset Management Implementation Plan must be further developed and updated as the Contractor's approach to implementation of asset management develops over the Term.

1.5 CRN Asset Management Plan

- 1.5.1 The CRN Asset Management Plan describes the implementation of the Asset Management strategy, described in the Management Services Plan, which will be adopted to maximise the Whole of Life Benefit of the CRN and meet the Objectives. The CRN Asset Management Plan describes the implementation of the route utilisation strategies which are identified in the Management Services Plan.
- 1.5.2 The CRN Asset Management Plan describes at a high level the scope of work to be undertaken for the maintenance and Whole of Life enhancement of the CRN, for a rolling fifteen-year period, including all planned construction, operation, maintenance, and renewal or disposal of assets in order to meet the performance requirements specified in the O&M Deed and SWTC.
- 1.5.3 The CRN Asset Management Plan describes and details, on a rolling basis, the program for the management of all CRN, for the next two (2) financial years, including all construction, operation, maintenance and renewal or assets disposal activities to achieve the agreed Standards and usage levels.
- 1.5.4 The CRN Asset Management Plan reflects all the activities planned for the whole of life for all the assets comprising the CRN and therefore, must address, as a minimum, the following:
- (a) the forecast usage of the assets, of the CRN, for a rolling fifteen (15) year period;
 - (b) current condition of all the CRN assets and the planned condition for those same assets at each year of the fifteen (15) year period;
 - (c) Routine Maintenance;
 - (d) Major Periodic Maintenance;
 - (e) resource management;
 - (f) Enhancement Works;
 - (g) progress reports processes and audits.

- 1.5.5 The initial version of this document is included at SWTC Appendix 2 and does not include the detailed content described above. This initial CRN Asset Management Plan must be developed by the Contractor, as part of the Services, to include the required content.
- 1.5.6 The Contractor may separate out detailed asset management plans for the next two (2) years as distinct from requirements for the subsequent thirteen (13) years.

1.6 Annual Works Plan

- 1.6.1 The Contractor shall develop an Annual Works Plan, in Contractor format, which provides a detailed development of the work identified in the CRN Asset Management Plan and the Property Management Plan for the following Contract Year.
- 1.6.2 The Annual Works Plan must completely define the Scope of Work to be undertaken for the following Contract Year. The Annual Works Plan must include definition of:
- (a) Routine Maintenance work;
 - (b) Major Periodic Maintenance work;
 - (c) Enhancement Works;
 - (d) The Services to be provided including:
 - (i) project and business management;
 - (ii) performance measurement;
 - (iii) asset management;
 - (iv) Engineering Services;
 - (v) Integrated Logistics Support;
 - (vi) network operations;
 - (vii) Property Management Services;
 - (viii) safety management;
 - (ix) environmental management and sustainability; and
 - (x) transition;
 - (e) the timing for performance of the work including sequencing and any interrelationships;
 - (f) the resources required for completion of the work;
 - (g) the details required by the Commercial Framework; and
 - (h) any other details the Contractor believes are necessary to completely define the Scope of Work for the Contract Year.
- 1.6.3 Generally work will be planned and presented on a line by line basis and in accordance with a pre-planned work breakdown structure. The Contractor is free to develop a work breakdown structure that best reflects its approach to developing and undertaking the Scope of Work. Development of the work breakdown structure should be done in conjunction with CRIA. The work breakdown structure may differ from year to year.
- 1.6.4 The Annual Works Plan must separately identify:
- (a) TOC Activities;
 - (b) Cost Plus Activities; and
 - (c) CRIA Nominated Items.
- 1.6.5 The timing for development of the Annual Works Plan is defined in the Commercial Framework.

AWP Budget

- 1.6.6 The AWP Budget is a subset of the Annual Works Plan and completely defines the estimated costs of the work to be undertaken in accordance with the Annual Works Plan.
- 1.6.7 The AWP Budget must include the details required by the Commercial Framework and separately identify:
- (a) Program Overhead;
 - (b) the TOC Margin applied to Program Overhead;
 - (c) Budgeted TOC;
 - (d) the TOC Margin applied to the Budgeted TOC;
 - (e) Cost Plus Activities;
 - (f) the Cost Plus Margin applied to the estimated value of the Cost Plus Activities;
 - (g) CRIA Nominated Items;
 - (h) the CNI Margin (Reimbursable Cost) applied to the applicable portion of the estimated value of the CRIA Nominated Items; and
 - (i) the CNI Margin (Direct Payment by CRIA) applied to the applicable portion of the estimated value of the CRIA Nominated Items.
- 1.6.8 The Contractor and CRIA will develop and agree the format of the AWP during the Initial Stage.

1.7 Engineering Services Management Plan

- 1.7.1 The Engineering Services Management Plan shall describe how the Contractor shall meet the requirements detailed in the SWTC, including:
- (a) provision of Engineering Services as required to provide Services under the O&M Deed;
 - (b) provision of appropriately qualified personnel to provide the Services;
 - (c) ensuring all engineering personnel are appropriately experienced and where required have the relevant accreditations and qualifications to perform the Services;
 - (d) the Engineering Services organisation structure identifying the relationship with other project team members;
 - (e) ensuring the Engineering Services meet all Standards and Codes;
 - (f) ensuring Engineering Services are properly reviewed and audited by accredited organisations or personnel when required by relevant Standards and Codes or by the O&M Deed;
 - (g) coordination and management of interfaces with other parties; and
 - (h) ensuring all work that is part of an interface is done to the satisfaction of the other party to the interface.
- 1.7.2 The Engineering Services Management Plan documents the Contractor's requirements to formally control the authorisation of competent people to make technical decisions (technical regulation).
- 1.7.3 The structure of this plan shall be based on the philosophy that every engineering decision involves risk. As a result, technical regulation is a principles-based system for controlling risk during the making of all design, construction and maintenance decisions for all CRN assets, such that all those decisions are made:
- (a) to approved Standards and Codes;
 - (b) by competent and authorised individuals;
 - (c) who are acting as members of an engineering organisation; and
 - (d) whose work is certified as correct.

Design

- 1.7.4 In relation to design, the Engineering Services Management Plan must describe the method by which the following considerations will be integrated into the design process:
- (a) identification and compliance with relevant design standards;
 - (b) functional and performance requirements to ensure design will be fit for purpose;
 - (c) incorporation of geotechnical information, including foundation and ground condition/s;
 - (d) environmental performance requirements;
 - (e) design optimisation having regard to Whole of Life cost;
 - (f) design life specifications;
 - (g) safety design having regard to rail safety and OH&S in the construction and operational phases;
 - (h) CRIA's communication, consultation and design review requirements;
 - (i) project risk assessment (i.e. risks with potential cost, schedule and quality impact) and design risk mitigation; and
 - (j) compliance with development and other approvals required from relevant authorities.
- 1.7.5 The Engineering Services Management Plan must also include:
- (a) specific sections to address how the design process for each asset type (bridges, signals, rail track, etc) will be managed; and
 - (b) production of as-built information and input into configuration management as described in paragraph 1.7.8 below.
- 1.7.6 The Engineering Services Management Plan must provide details of the monitoring plan to verify compliance with O&M Deed and SWTC requirements.
- 1.7.7 The Engineering Services Management Plan must demonstrate how design subcontractors, if used, will certify and verify design documents as they are developed.

Configuration Management

- 1.7.8 In relation to configuration management the Engineering Services Management Plan must address, as a minimum, the following:
- (a) CRN network configuration including maps and other configuration management requirements;
 - (b) configuration management process, flowchart, organisation and responsibilities;
 - (c) maintenance of all asset registers and the associated functional and physical data;
 - (d) maintenance of a complete set of updated drawings for the assets comprising the CRN and where relevant other CRIA Assets;
 - (e) maintenance of all other technical data to ensure configuration of the CRN, and where relevant other CRIA Assets, is fully documented following any RM, MPM, or other work;
 - (f) management of interfaces and communications with stakeholders;
 - (g) status account reporting, and
 - (h) database management.
- 1.7.9 The configuration management requirements of the Engineering Services Management Plan must be generally in compliance with *AS/NZS 3907 Quality management - Guidelines for configuration management*.

Construction Management

- 1.7.10 In relation to construction management, the Engineering Services Management Plan must identify the processes whereby each of the following requirements will be achieved and satisfied on occasions when it is necessary to establish a construction site (typically for significant Enhancement Works):
- (a) design performance requirements;
 - (b) durability requirements;
 - (c) technical specifications and construction standards;
 - (d) construction program requirements;
 - (e) safe processes for each element of work;
 - (f) adequacy and safety of the temporary works;
 - (g) access to affected properties;
 - (h) necessary adjustments to property and Services;
 - (i) "as-built" information requirements;
 - (j) details of construction methods and planned resource levels for the information of CRIA;
 - (k) provision of up-to-date information to CRIA at all times and as required by the O&M Deed;
 - (l) interface with other plans;
 - (m) procurement strategy;
 - (n) works method statements; and
 - (o) site security.
- 1.7.11 The Engineering Services Management Plan must include procedures that detail the excavation, shoring, spoil disposal, material, rail replacement, and haulage methodology and the management measures to avoid, reduce, reuse and recycle waste, including details of proposed beneficial reuse of excavated or rail infrastructure material.
- 1.7.12 The Engineering Services Management Plan must also include a specific section for testing and commissioning. The testing, commissioning and performance testing section must address, as a minimum:
- (a) the details of the personnel conducting the testing, commissioning and performance testing work;
 - (b) CRIA Inputs required for the commissioning and performance testing; and
 - (c) methods and procedures for the testing, commissioning and performance testing.

Road Traffic Management

- 1.7.13 In relation to road traffic management, the Engineering Services Management Plan must identify the processes whereby each of the following requirements will be achieved and satisfied:
- (a) all road traffic activities required to deliver the work are effectively managed and comply with all relevant authorities and legal requirements;
 - (b) all Roads and Traffic Authority (**RTA**) requirements;
 - (c) site access, signage, temporary road closures, detours, road disruptions, and other related activities;
 - (d) provisions for special events;
 - (e) emergency response;
 - (f) stakeholder relationship management; and
 - (g) impact on other Management Plans;
- 1.7.14 The Engineering Services Management Plan must be further developed and updated:
- (a) to take into account changes to existing practices;
 - (b) to reflect any changes in law;
 - (c) where requested or required by any relevant authority; and

- (d) at the request of CRIA.

1.8 Quality Assurance Plan

1.8.1 The Quality Assurance Plan must define how the Contractor will establish and implement processes and systems to manage quality assurance in order to meet all statutory, regulatory and CRIA requirements. The scope of the Quality Assurance Plan must include all services described in the SWTC.

1.8.2 The Quality Assurance Plan must include:

- (a) implementation and maintenance of the Quality Management System (**QMS**) certified to *ISO 9001 Quality management systems – Requirements*;
- (b) the means by which all QMS records and any other records relating to the quality of the work will be made freely accessible to CRIA;
- (c) the role of the quality manager, and his or her reporting requirements;
- (d) a schedule of standard hold points and witness points for MPM, and guidance for the establishment of hold points and witness points for any Enhancement Works that may be initiated;
- (e) processes for the identification, review, analysis and correction, recording and reporting of non-conformances; and
- (f) processes for the management of quality records in accordance with the *State Records Act 1998* and other relevant legislative requirements.

1.8.3 The Quality Assurance Plan must be further developed and updated:

- (a) to address changes in maintenance, design and construction processes including the use and development of new designs and materials;
- (b) to address safety or technical changes that may have an effect on the design , network access, train operations and construction processes;
- (c) for processes requiring quality assurance that the existing Quality Assurance Plan does not address; and
- (d) at the request of CRIA.

1.9 Integrated Logistics Support Plan

1.9.1 The Integrated Logistics Support (**ILS**) Plan must address, as a minimum, the following issues:

- (a) spare parts management including minimum stocks required for the handover process;
- (b) repaired items;
- (c) materials management;
- (d) warehouse and inventory management;
- (e) database and asset management systems and processes;
- (f) reporting and data records management for progress claims and inventory management;
- (g) change management;
- (h) suppliers qualification;
- (i) interaction with other Management Plans;
- (j) supply chain analysis including lead times and inventory requirements;
- (k) certificates and documentation management;
- (l) labelling; packaging, and transportation management;
- (m) quality assurance and procurement due diligence process; and
- (n) material safety data sheets and safety related process management.

1.9.2 The ILS Plan must be further developed and updated if required; and at the request of CRIA.

Procurement

- 1.9.3 In relation to procurement, the ILS Plan must address, as a minimum, the following:
- (a) procurement management;
 - (b) approval process;
 - (c) suppliers qualification, local industry engagement;
 - (d) evaluation, probity, reporting and audit;
 - (e) stakeholder communication and relationship management;
 - (f) impact on other plans; and
 - (g) financial analysis and cash-flow management.

Training

- 1.9.4 In relation to training, the Contractor must describe how it will:
- (a) meet statutory obligations including in respect of OH&S training;
 - (b) provide induction on OH&S for all employees, CRIA and any other persons engaged on the work which meets the requirements of the *Construction Safety Amendment (Amenities and Training) Regulation 1998*;
 - (c) provide induction on environmental systems for all personnel engaged in the work;
 - (d) provide a structured training program to address the requirements of the O&M Deed, including environmental and any site-specific requirements; and
 - (e) establish dedicated training facilities on any site when required.
- 1.9.5 The description of training must include:
- (a) description and details of the workforce;
 - (b) identification of the training needs of all personnel engaged in carrying out the Services, including potential skill shortages and how they might be addressed;
 - (c) an indication of how structured training outcomes are/will be achieved;
 - (d) succession planning;
 - (e) targets for addressing training needs; and
 - (f) priorities for training.
- 1.9.6 Plans for the management of training must be further developed and updated:
- (a) to take into account changes in technology, infrastructure operations, site conditions and work, generally accepted occupational health, safety and rehabilitation practices and changes in law;
 - (b) where requested or required by any relevant authority; and
 - (c) at the request of CRIA.

1.10 Interface Management Plan

- 1.10.1 The Interface Management Plan must describe the process for the development of Interface Agreements as required by the Act.
- 1.10.2 The Interface Management Plan must identify all entities with whom Interface Agreements and other agreements are likely to be required, including, but not limited to:
- (a) Rail Transport Operators (**RTO**) operating on the CRN;
 - (b) owners or operators of any railway line which is adjacent to a CRN site or which will require the Contractor to obtain track possessions from railway lines in order to perform work; and
 - (c) the NSW RTA.

- 1.10.3 Where engineering considerations are involved, the Interface Management Plan must ensure these are addressed in the establishment and operation of any Interface Agreement or other agreement to ensure there is no gap in Standards and Codes or safety across any interface.

Rail Safety Interface Agreements

- 1.10.4 In relation to rail safety-related Interface Agreements, the Interface Management Plan must detail how the Contractor shall, as a minimum:
- (a) identify all such interfaces;
 - (b) determine and agree upon the interface boundaries with the other party/s; and
 - (c) develop and sign an Interface Agreement with the other party to state unambiguously the responsibilities of each of the parties and the boundaries at which the responsibilities transfer from one party to the other. The Interface Agreement should also include procedures for:
 - (i) management of the interface, in particular communication and consultation;
 - (ii) emergency and incident management and follow-up; and
 - (iii) dispute resolution.
- 1.10.5 The Interface Management Plan must detail how the Contractor shall ensure that Interface Agreements are compliant with the requirements of the Act, including, as a minimum, provisions for:
- (a) implementing and maintaining measures to manage risks to safety from the Interface;
 - (b) the evaluation, testing and, where appropriate, revision, of those measures;
 - (c) the respective roles and responsibilities of each party to the agreement in relation to those measures;
 - (d) procedures by which each party to the agreement will monitor and determine whether the other party complies with its obligations under the agreement; and
 - (e) a process for keeping, reviewing and revising the agreement.
- 1.10.6 The Contractor may wish to make use of the guidance and template Interface Agreement available on the ITR website (<http://www.transportregulator.nsw.gov.au/>).
- 1.10.7 The Interface Management Plan must be further developed and updated if required, or at the request of CRIA.

1.11 Rail Network Management Plan

- 1.11.1 The Rail Network Management Plan must describe, as a minimum, how the Contractor shall meet the requirements of the SWTC, including, but not limited to:
- (a) network access:
 - (i) negotiation of Access Agreements with Rail Transport Operators (**RTOs**);
 - (ii) administration and management of access to the CRN by RTOs;
 - (b) billing and revenue Reporting;
 - (c) network management and Train Control:
 - (i) planning of train paths;
 - (ii) scheduling of possessions;
 - (iii) granting Track Occupancy Authority (**TOA**) as required;
 - (iv) maintenance of network rules and procedures, including maintenance of the Train Operating Conditions Manual and supporting documentation;
 - (v) management of train paths according to an agreed set of decision factors, through which conflicts are to be resolved;

- (vi) authorisation and notification to RTOs, and reporting to CRIA of temporary deviations from the SWTT or daily timetables;
- (vii) seamless integration of CRN access with adjacent networks;
- (viii) development and maintenance of Safety Interface Agreements (refer section 1.10 above);
- (ix) management of operator performance;
- (x) communication and consultation;
- (xi) management of train control;
- (xii) implementation of train control;
- (xiii) management of signalling safety and performance; and
- (xiv) management of incidents and safeworking breaches.

1.11.2 The Rail Network Management Plan must be further developed and updated:

- (a) to take into account changes in network operations, controls, changes in law;
- (b) where requested or required by any relevant authority; and
- (c) at the request of CRIA.

1.12 Environmental Management Plan

1.12.1 The Environmental Management Plan must, as a minimum:

- (a) identify and assess the risk, provide protection from and a remedy for any adverse environmental effect which may result from the performance of any component of the work;
- (b) define the environmental responsibilities of the Contractor and each position within the Contractor's management team;
- (c) define how carbon emission accounting will be managed and minimised;
- (d) include schedules of available resources, including personnel to deal with environmental incidents; and
- (e) address the need for environmental safeguards and the adoption of environmentally sensitive work practices during any of the work under the O&M Deed including:
 - (i) noise, water, air quality, vibration and groundwater monitoring and control;
 - (ii) management measures to reduce noise levels;
 - (iii) management measures to avoid, reduce, reuse and recycle waste;
 - (iv) dust control measures including monitoring, mitigation and remedial actions;
 - (v) detection, treatment and disposal of contaminated materials and water;
 - (vi) water quality control measures and facilities;
 - (vii) minimise carbon foot print;
 - (viii) erosion and sediment control plans; and
 - (ix) road traffic management plans as they affect community safety and amenity.

- 1.12.2 The Environmental Management Plan shall provide evidence of review and compliance to:
- (a) the Contractor's SMS;
 - (b) CRIA requirements; and
 - (c) relevant environmental legislation.
- 1.12.3 The Environmental Management Plan must be further developed and updated:
- (a) to take into account changes to the environment or generally accepted environmental management practices, new risks to the environment, any pollution, or contamination;
 - (b) to reflect any changes in law;
 - (c) where requested or required by any relevant authority; and
 - (d) at the request of CRIA.

1.13 Cultural Heritage Management Plan

- 1.13.1 The Cultural Heritage Management Plan must address, as a minimum, the following:
- (a) heritage and cultural management;
 - (b) compliance with local government and State requirements;
 - (c) property management;
 - (d) stakeholder management; and
 - (e) reporting.
- 1.13.2 The Cultural Heritage Management Plan must be further developed and updated:
- (a) to take into account changes to the cultural and heritage or generally accepted management practices, new risks to existing assets;
 - (b) to reflect any changes in law;
 - (c) where requested or required by any relevant authority; and
 - (d) at the request of CRIA.

1.14 Property Management Plan

- 1.14.1 The Property Management Plan shall describe the overall property management strategy, including short and long-term strategic property management objectives.
- 1.14.2 The Property Management Plan shall detail the systems and processes by which the Contractor will:
- (a) provide an efficient framework to manage the CRIA property portfolio and meet the service delivery requirements of these properties;
 - (b) meet all relevant corporate environmental, sustainability and social responsibility objectives;
 - (c) meet all asset heritage conservation objectives;
 - (d) meet all relevant regulatory and legislative requirements;
 - (e) operate and maintain property assets in accordance with OH&S requirements;
 - (f) meet relevant community objectives where appropriate;
 - (g) ensure all relationships with stakeholders are managed in a sustainable and professional manner; and
 - (h) meet all other property management requirements as stated in the SWTC.
- 1.14.3 The Property Management Plan shall include an organisation chart and a list of subcontractors involved in delivering the services, indicating the role of each subcontractor.
- 1.14.4 The Property Management Plan shall include details of continuous improvement processes to improve the delivery of property management services over time.

- 1.14.5 On an annual basis the Contractor shall update the Property Management Plan to identify the detailed Scope of Work that is proposed on the CRIA Assets for the next Contract Year, excluding the CRN. The Property Management Plan is the equivalent of the CRN Asset Management Plan for the non CRN CRIA Assets.

1.15 Safety Management Plan

- 1.15.1 The Safety Management Plan must describe all systems, processes and people to be employed to ensure the safety of its workforce, customers, users of the rail network, members of the public and stakeholders. The Safety Management Plan will comprise two key sections:
- (a) the Rail Safety Management Plan, which shall address compliance with the Act and the *Rail Safety (General) Regulation 2008*; and
 - (b) the Occupational Health and Safety (**OH&S**) Management Plan, which shall address compliance with the NSW Government's *OH&S Management Systems Guidelines, Third Edition, November 1998*.
- 1.15.2 In addition, the Rail Safety Management Plan shall be supported by subordinate plans and programs which are required to achieve compliance with legislative requirements.

Rail Safety Management Plan

- 1.15.3 The Rail Safety Management Plan shall describe how the Contractor's SMS is to be implemented to meet the Contractor's Rail Safety Accreditation requirements and to maintain compliance with the Act and the *Rail Safety (General) Regulation 2008*. In general terms, the Rail Safety Management Plan shall describe how the Contractor's SMS will:
- (a) include or provide for all of the matters listed in Schedule 1 of the *Rail Safety (General) Regulation 2008* that are relevant to the railway operations for which the operator is Accredited, or seeking to be Accredited;
 - (b) provide a level of detail with respect to each of these matters that is appropriate, having regard to the scope and nature of those operations and any risks to safety identified as arising or that may arise from the carrying out of the railway operations, and
 - (c) provide for the risk management principles set out in paragraphs 1.15.4 and 1.15.5 below.
- 1.15.4 If the elimination of a risk to safety is not reasonably practicable, the Contractor's SMS must provide for the following measures to be taken:
- (a) firstly, substituting the hazard giving rise to the risk with a hazard that gives rise to a lesser risk;
 - (b) secondly, isolating the hazard from the person put at risk;
 - (c) thirdly, minimising the risk by engineering means;
 - (d) fourthly, minimising the risk by administrative means (for example, by adopting safe working practices or providing appropriate training, instruction or information); or
 - (e) fifthly, using personal protection.
- 1.15.5 The Contractor's SMS must provide that a combination of the above measures is required to be taken to minimise the risk to the lowest level reasonably practicable if no single measure is sufficient for that purpose.
- 1.15.6 The Rail Safety Management Plan must be further developed and updated:
- (a) to take account of changes in relevant legislation;
 - (b) where requested or required by ITSR or other relevant authority; and
 - (c) at the request of CRIA.

Occupational Health & Safety Management Plan

- 1.15.7 The OH&S Management Plan must address, as a minimum, the following issues:
- (a) OH&S hazard identification and risk analysis, with any activity identified as a potential hazard to be covered by a Work Method Statement;
 - (b) induction of all workers before they commence any work;
 - (c) incorporation of off-site and subcontractor OH&S systems;
 - (d) work processes for safe systems of work;
 - (e) accident and incident reporting including corrective action;
 - (f) safety bulletins management and continuous improvement processes;
 - (g) safety reporting including safety KPIs corrective actions and continuous improvement processes implementation;
 - (h) weekly team meetings to identify occupational health, safety and rehabilitation issues; and
 - (i) site vehicle and plant movement plans and processes.
- 1.15.8 The OH&S Management Plan must be further developed and updated:
- (a) to take into account changes in site conditions and work, generally accepted occupational health, safety and rehabilitation practices and changes in law;
 - (b) where requested or required by any relevant authority; and
 - (c) at the request of CRIA.

Change Management Plan

- 1.15.9 The Change Management Plan shall comply with the requirements of the *Rail Safety (General) Regulation 2008* for management of change procedures, i.e. it includes procedures for ensuring that changes that may affect the safety of railway operations of the CRN are identified and managed, including, but not limited to, procedures for ensuring the following, so far as is reasonably practicable:
- (a) that changes are fully identified and described in the context of the railway operations,
 - (b) that affected parties are identified and, if practicable, consulted,
 - (c) that the roles and responsibilities of rail safety workers and employees are clearly specified with respect to the change,
 - (d) that the rail safety workers and employees are fully informed and trained to understand and deal with the proposed change,
 - (e) that the requirements of the Act are observed in relation to any risks associated with the proposed change, and
 - (f) that the change, once implemented, is reviewed and assessed by the Contractor to determine whether or not the change has been appropriately managed.
- 1.15.10 In addition, the Change Management Plan must address, as a minimum, the following:
- (a) change management processes and approval mechanisms that will be implemented in order to effectively manage changes during the Term;
 - (b) the interface to those changes are managed under the Configuration Management Plan requirements;
 - (c) reporting and communication process that will effectively communicate changes to all stakeholders; and
 - (d) the effect of change in other related management plans.

Health and Fitness Management Program

- 1.15.11 The Contractor's Health and Fitness Management Program shall ensure that the Contractor complies with the Act and the *National Standard for Health Assessment of Rail Safety Workers*, published by the National Transport Commission, as in force from time to time.
- 1.15.12 The Health and Fitness Management Program shall provide evidence of review and compliance to:
- (a) the Contractor's SMS;
 - (b) CRIA requirements; and
 - (c) rail safety legislation.

Fatigue Management Program

- 1.15.13 The Contractor's Fatigue Management Program shall take into account and assess, any fatigue-related risks to safety arising from the following:
- (a) the impact on rail safety workers of the scheduling of shift and rest periods;
 - (b) without limiting paragraph (a), the impact of work scheduling and relief practices generally on social and psychological factors that may impact on performance and safety;
 - (c) the kinds of rail safety work being carried out;
 - (d) physiological factors arising out of work practices affecting rail safety workers, such as the effect on worker alertness and recovery from the time when work is undertaken and the length and frequency of breaks;
 - (e) the need for education and training of rail safety workers to identify and manage fatigue;
 - (f) the kind of rest environments that are to be provided by the operator for rail safety workers;
 - (g) the physical environment in which rail safety work is to be carried out;
 - (h) any special circumstances in which rail safety work may be required to be carried out, including in emergencies or under degraded and abnormal conditions;
 - (i) the variations in shifts and rest periods that may be required by different rail safety work requirements, including different routes; and
 - (j) relevant developments in research related to fatigue and any technology that may be applied to manage work-related fatigue.
- 1.15.14 The Contractor's Fatigue Management Program for rail safety workers must:
- (a) provide for safe hours of work;
 - (b) provide for safe periods of time between shifts;
 - (c) specify work scheduling practices that provide for sufficient rail safety workers to be available to meet reasonably foreseeable demands for relief arrangements;
 - (d) reflect the scope of the rail transport operations on the CRN and address the operating conditions in which all of the railway operations of the Contractor occur;
 - (e) require the Contractor to keep under review relevant developments in research related to fatigue and any technology that may be applied to manage work-related fatigue; and
 - (f) require the Contractor to keep under review the appropriate balance between the commercial and operational needs of the Contractor and the duties of the Contractor under the Act.

- 1.15.15 The Contractor shall include in its Fatigue Management Program:
- (a) procedures for monitoring how actual hours of work or rail safety workers compare with the conditions of work for rail safety workers;
 - (b) procedures for monitoring the impact of changes to planned rosters due to shift swapping, overtime and on-call working; and
 - (c) quantitative measures for assessing the effectiveness of the Contractor's fatigue management program.
- 1.15.16 The Contractor's Fatigue Management Program may include alternative arrangements to those described above if exemption is granted by ITSR and the Contractor complies with the conditions of any such exemption.
- 1.15.17 The Fatigue Management Program shall provide evidence of review and compliance to:
- (a) the Contractor's SMS;
 - (b) CRIA requirements; and
 - (c) rail safety legislation.

Drug and Alcohol Management Program

- 1.15.18 The Contractor's Drug and Alcohol Management Program shall describe how the Contractor will ensure compliance with the Act and the *Rail Safety (Drug and Alcohol Testing) Regulation 2008*.
- 1.15.19 The Drug and Alcohol Management Program shall provide evidence of review and compliance to:
- (a) the Contractor's SMS;
 - (b) CRIA requirements; and
 - (c) rail safety legislation.

Competence Management Plan

- 1.15.20 The Contractor's Competence Management Plan shall comply with the requirements of the Act.
- 1.15.21 The Contractor's Competence Management Plan shall make provision for the maintenance of records of competence in accordance with the *Rail Safety (General) Regulation 2008*.
- 1.15.22 The Competence Management Plan shall provide evidence of review and compliance to:
- (a) the Contractor's SMS;
 - (b) CRIA requirements; and
 - (c) rail safety legislation.

Emergency Management Plan

- 1.15.23 The Contractor's Emergency Management Plan must comply with the Act and shall include the items specified in the *Rail Safety (General) Regulation 2008* including the following:
- (a) the types and classes of emergencies that are foreseeable in relation to CRN railway operations;
 - (b) the consequences of each type or class of emergency, including an estimate of the likely magnitude and severity of the effects of each type or class;
 - (c) the risks to safety arising from those emergencies;
 - (d) measures to mitigate the effects of those emergencies;
 - (e) initial response procedures for dealing with those emergencies and the provision of rescue services;
 - (f) recovery procedures for the restoration of railway operations if an emergency occurs and for the assistance of people affected by the occurrence of an emergency;

- (g) the allocation of emergency management roles and responsibilities within the Contractor's organisation, and between the operator and other organisations;
 - (h) call-out procedures;
 - (i) the allocation of personnel for the on-site management of an emergency;
 - (j) procedures for liaison with emergency services, including when emergency services should be immediately contacted;
 - (k) procedures to ensure that emergency services are provided with all information that is reasonably required to enable them to respond effectively to an emergency;
 - (l) procedures for effective communications and co-operation throughout an emergency response; and
 - (m) procedures for ensuring site security and the preservation of evidence.
- 1.15.24 In addition to the requirements of the *Rail Safety (General) Regulation 2008*, the Emergency Management Plan shall address other forms of emergency, including:
- (a) bushfire, including access for fire fighters;
 - (b) flooding; and
 - (c) earthquake.
- 1.15.25 The Emergency Management Plan shall provide evidence of review and compliance to:
- (a) the Contractor's SMS;
 - (b) CRIA requirements; and
 - (c) rail safety legislation.
- 1.15.26 The Emergency Management Plan must be further developed and updated:
- (a) to take into account changes to existing practices or stakeholders;
 - (b) to reflect any changes in law;
 - (c) where requested or required by ITSR or other any relevant authority; and
 - (d) at the request of CRIA.

Security Management Plan

- 1.15.27 The Contractor's Security Management Plan shall comply with the requirements of the Act and shall include the items specified in the *Rail Safety (General) Regulation 2008* including:
- (a) a list of the risks arising from the matters specified in the Act;
 - (b) a description of the protective and response measures to be used to manage the matters specified in the Act, including a description of the policies, procedures, equipment and other physical resources that are proposed to be used for those measures and of any training to be provided relating to those measures;
 - (c) where the CRN shares a location such as a modal interchange or a port with one or more other transport operators, a description of arrangements made with those other transport operators in relation to protective and response measures to be used to manage any security incident;
 - (d) procedures for the recording, reporting and analysis of security incidents;
 - (e) provision for the allocation of security roles and responsibilities to appropriate people;
 - (f) provision for liaison with emergency services, and other transport operators who may be affected by the implementation of the plan, to share information and carry out joint operations; and
 - (g) provision for the evaluation, testing and, if necessary, the revision of measures and procedures.

1.15.28 The Security Management Plan shall provide evidence of review and compliance to:

- (a) the Contractor's SMS;
- (b) CRIA requirements;
- (c) rail safety legislation; and
- (d) other Commonwealth and NSW security legislation as applicable.

1.15.29 The Security Management Plan must be further developed and updated:

- (a) to take into account changes to existing practices or stakeholders;
- (b) to reflect any changes in law;
- (c) where requested or required by ITSR or any other relevant authority; and
- (d) at the request of CRIA.

1.16 Transition Management Plan

1.16.1 The Transition Management Plan must address, as a minimum, the following issues:

- (a) management service activities and site works management during the transition phase from O&M Deed commencement while ARTC hands over all rail infrastructure and assets to the Contractor;
- (b) interface coordination with ARTC during that phase including network access management and coordinating ARTC subcontractors' work on site during this phase;
- (c) risk management;
- (d) changes to the SMS;
- (e) changes to key personnel responsible for safety;
- (f) identified areas for improvement in safety performance;
- (g) changes to Asset Management methodology;
- (h) communication protocols;
- (i) stakeholder management;
- (j) Rail Transport Operator (**RTO**) access management;
- (k) communications strategy;
- (l) responsibility matrix during the transition phase including dates for handover;
- (m) progress measurement and KPI management during this period;
- (n) organisation chart and communication protocol during this transition phase;
- (o) a program detailing tasks, milestones and dates throughout the transition period; and
- (p) final handover package transfer process including documents, records, assets and other O&M Deed requirements.

1.16.2 The Transition Management Plan shall include an organisation chart which indicates the Contractor's organisation structure during the mobilisation and migration phases of the transition period.

1.16.3 The Transition Management Plan must be further developed and updated if required or at the request of CRIA.

1.17 Disengagement Plan

1.17.1 The Disengagement Plan will address, at high level, the activities to be undertaken prior to the Termination Date and during the period of transition of responsibility for the work from the Contractor to a future RIM.

1.17.2 The Disengagement Plan will detail the processes by which safety will be maintained at existing levels for all aspects of railway operations and maintenance activities that comprise the work, and will address the

same processes and tasks as those applicable to the Transition Management Plan as described in section 1.16 above.

- 1.17.3 The Disengagement Plan must address, as a minimum, the following:
- (a) disengagement process and management;
 - (b) ensure all documents, processes, spare parts stock required to manage the disengagement process are available at any point in time to ensure a smooth transition in a timely manner;
 - (c) ensuring the process is updated frequently in order to meet all operational readiness requirements;
 - (d) organisation chart during the process;
 - (e) transition management;
 - (f) handover package and operational readiness;
 - (g) stakeholders engagement, documentation, training, information and asset transfer processes;
 - (h) key people and succession planning; and
 - (i) impact on other plans.
- 1.17.4 The Disengagement Plan shall be forwarded to CRIA not later than six (6) months following the completion of the Initial Stage, and thereafter updated on an annual basis. The Disengagement Plan must be further developed and updated if required, and at the request of CRIA.

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Appendix 12

CRIA Standards and Documents

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Appendix 12: CRIA Standards and Documents

Discipline	Reference	File Name
Civil Practices Manual	RAP 5108	Sleeper Inspection for Renewal Programs
Civil Practices Manual	RAP 5133	Track Patrols, Front of Train and Detailed Walking Inspections - Procedures
Civil Practices Manual	RAP 5134	Inspection of Turnouts/Diamonds - Procedure
Civil Practices Manual	RAP 5135	Inspection of Track Clearances - Procedure
Civil Practices Manual	RAP 5139	Inspection of Rail Wear - Procedure
Civil Practices Manual	RAP 5140	Inspection and Maintenance of Rail Lubricators - Procedure
Civil Practices Manual	RAP 5141	Inspection of Level Crossings - Procedure
Civil Practices Manual	RAP 5142	Inspection of Yards and Sidings - Procedure
Civil Practices Manual	RAP 5181	Care and Protection of Underground Pipes and Cables
Civil Practices Manual	RAP 5221	Preparation for Flood Emergencies
Civil Practices Manual	RAP 5374	Testing of New Field Welds
Civil Practices Manual	RAP 5391	Aluminothermic Welds - Identification, Recording and Reporting
Civil Practices Manual	RAP 5393	Field Welding – Alignment Defects
Civil Practices Manual	RAP 5394	Quality Control of Field Welding
Civil Practices Manual	RAP 5701	Field Management of Track Recording Car RVX4
Civil Practices Manual	RAP 6831	Cutting Firebreaks and Burning off on Railway Land
Civil Practices Manual	RAP5138	Inspection of Insulated Joints - Procedure
Civil Practices Manual	RC 0001	Introduction
Civil Practices Manual	RC 0002	Definition of Titles
Civil Practices Manual	RC 2304	Field Replacement of RBM Crossing Inserts
Civil Practices Manual	RC 2400	Rail Defects Handbook

Discipline	Reference	File Name
Civil Practices Manual	RC 2407	Rail Flaw Detection Vehicles - Programming and Management
Civil Practices Manual	RC 2408	Rail Defects: Exceedent Control System
Civil Practices Manual	RC 2410	Guidelines for the Assessment of Broken Rails
Civil Practices Manual	RC 2411	Guidelines for Trackside Lubrication
Civil Practices Manual	RC 2442	Track Examination System - WTSA Guidelines for Field Examination and Assessment
Civil Practices Manual	RC 2508	Work in Summer Months
Civil Practices Manual	RC 3361	Field Application of Swage Fasteners in Existing Trackwork
Civil Practices Manual	RC 4012	Buried Corrugated Metal Structures - Installation
Civil Practices Manual	RC 4100	Steel & Wrought Iron Rail Underbridge Superstructure Strength Rating
Civil Practices Manual	RC 4300	Bridge Repair Manual
Civil Practices Manual	RC 4703	Track Machines - Safe Procedures for Starting & Moving
Civil Practices Manual	RC 4707	Ballast Stabilising Machine
Civil Practices Manual	RC 4800	Train Inspection Sites Track Maintenance Procedures
Civil Practices Manual	RC 7006	Certification of Civil Technical Competencies
Civil Practices Manual	RC 7007	Competency Requirements for Certification of Infrastructure Repair
Civil Practices Manual	RC2 436	Track Examination System - General Responsibilities
Civil Practices Manual	RCSI 019	Rail Installation - Cleaning of Rail Head
Civil Practices Manual	RCSI 021	Impact of Trackwork on Pantograph/Overhead Wiring
Civil Practices Manual	RCSI 022	Turnouts – Prevention of Signal Failures
Civil Practices Manual	RCSI 030	Tamping Depth for Concrete Turnout Ties
Civil Practices Manual	RTS 2803	Track Evaluation Car RVX-4 - Principal of Measurement, Recording and Evaluation
Civil Practices Manual	RTS 3430	Track Reconditioning Guidelines
Civil Practices Manual	RTS 3432	Track Drainage – Inspection and Maintenance

Discipline	Reference	File Name
Civil Practices Manual	RTS 3433	Track Drainage - Design and Construction
Civil Practices Manual	RTS 3602	Aluminothermic Welding Manual
Civil Practices Manual	RTS 3620	Dipped Weld Straightening
Civil Practices Manual	RTS 3640	Rail Adjustment Manual
Civil Practices Manual	RTS 3643	Field Loading and Unloading of Welded Rails
Civil Practices Manual	RTS 3646	Continuous Welded Rail - Control of Creep
Civil Practices Manual	RTS 3648	Maintenance of Welded Track (General)
Civil Practices Manual	RTS 3652	Adjustment of Ballast Cleaned Welded Track
Civil Practices Manual	RTS 3655	Maintenance of Mechanical Joints & Examination of Rail Ends In Welded Track
Civil Practices Manual	RTS 3656	Correction of Misalignments on Welded Track
Civil Practices Manual	RTS 3733	Rail Repair Using Wire Feed Welding
Civil Practices Manual	RTS 3734	Wire Feed Welding Manual
Civil Standards	AP 5134	Examination of Turnouts & Diamonds - Procedure
Civil Standards	AP 5181	Care & Protection of Underground Pipes & Cables
Civil Standards	AP 5363	Reporting of Misalignments on Welded Track
Civil Standards	AP 5373	Internal Rail Inspection
Civil Standards	AP 5374	Examination of New Welds by Kratkramer Operators Using Portable Ultrasonic Equipment
Civil Standards	AP 6111	Derailment Protection of Existing Supporting Structures
Civil Standards	AP 6841	Boundary Fences - Maintenance Policy
Civil Standards	AP 6882	Placement of Redundant Material on Railway Property
Civil Standards	BI 1010	Definition of Titles
Civil Standards	BI 1126	Timber Sleeper Replacement Policy
Civil Standards	BI 1131	Land Maintenance Policy
Civil Standards	C 1001	Definition of Titles
Civil Standards	C 1100	Earthworks Construction Procedures

Discipline	Reference	File Name
Civil Standards	C 2009	Base Operating Condition Standards of Track Geometry
Civil Standards	C 2009	Base Operating Condition Standards of Track Geometry
Civil Standards	C 2010	Operating Safety Standards for Track
Civil Standards	C 2011	Base Operating Condition Standards of Track Geometry - Standing Orders
Civil Standards	C 2100	Transit Space Handbook - System Overview
Civil Standards	C 2101	Transit Space Policy
Civil Standards	C 2102	Transit Space Handbook Corridor Strategies
Civil Standards	C 2103	Transit Space Standards
Civil Standards	C 2104	Structure Gauge 1994
Civil Standards	C 2105	Application of Kinematic Envelope
Civil Standards	C 2106	Infringement of Transit Space Standards
Civil Standards	C 2107	Base Operating Standards for Clearances.
Civil Standards	C 2108	Clearances at Platforms
Civil Standards	C 2109	Transit Space for Special Loads
Civil Standards	C 2110	Transit Space Handbook - Commentary
Civil Standards	C 2111	Track Centre Clearance Signs for Yards
Civil Standards	C 2200	Mainline Track Geometry
Civil Standards	C 2203	Infrastructure Requirements for Unit Train Loading and Unloading Facilities for Coal and Mineral Products
Civil Standards	C 2303	Technical Specification for Manufacture of Turnouts and Components
Civil Standards	C 2315	Thornley Type 45 Lever - Installation and Maintenance Procedures
Civil Standards	C 2405	Rail Defect Standards
Civil Standards	C 2406	Rail Examination System - Testing Intervals for Plain Track
Civil Standards	C 2407	Rail Examination System Programming and Management of Rail Flaw Detection Vehicles
Civil Standards	C 2408	Rail Defects: Exceedent Control System
Civil Standards	C 2430	Exceedent Control Policy
Civil Standards	C 2435	Track Examination Handbook: System Overview

Discipline	Reference	File Name
Civil Standards	C 2436	Track Examination: General Instructions and Responsibilities
Civil Standards	C 2437	Track Examination: Track Patrol and Front of Train Examination
Civil Standards	C 2438	Track Examination - Detailed Walking
Civil Standards	C 2439	Track Examination: Examination of Rail Lubricators
Civil Standards	C 2440	Track Examination: Examination of Level Crossings & Take-offs
Civil Standards	C 2441	Track Examination System - Examination of Rail Ends and Rail Inserts
Civil Standards	C 2442	Track Examination: Field Examination for Welded Track Stability Analysis
Civil Standards	C 2443	Track Examination: Calculation of Welded Track Stability from Field Information
Civil Standards	C 2444	Track Examination: Examination of Mainline Turnouts & Diamonds
Civil Standards	C 2445	Track Examination: Examination Track and Structure Clearances
Civil Standards	C 2446	Track Examination: Examination of Insulated Joints
Civil Standards	C 2447	Track Examination: Examination of Rail Wear
Civil Standards	C 2448	Track Examination: Drainage Examination
Civil Standards	C 2460	Track & Structure Infrastructure Inspection Requirements for Non Operational Lines
Civil Standards	C 2480	Automatic Rainfall Monitoring Policy
Civil Standards	C 2490	Automatic Rainfall Monitoring: Procedures for Assessment, Design, Installation and Commissioning
Civil Standards	C 2501	Welded Track - Definition of Terms
Civil Standards	C 2508	Maintenance of Welded Track (Summer Period)
Civil Standards	C 2512	Maintenance of Welded Track (Summer Period) Additional Instructions When Ambient Temperature Exceeds 38C
Civil Standards	C 2513	Temporary WOLO Speed Restrictions for Welded Track Under Extreme Weather Conditions
Civil Standards	C 2514	Maintaining Rail Adjustment in Track Adjoining a Major Removal
Civil Standards	C 2532	Maintenance of Non Welded Track (Summer Months)
Civil Standards	C 3102	Timber Bearer and Transom Standards

Discipline	Reference	File Name
Civil Standards	C 3108	Railway Track Sleeper and Bridge Timber Specification
Civil Standards	C 3109	Prestressed Concrete Sleepers - Design (RIC)
Civil Standards	C 3110	Steel Sleeper Specification
Civil Standards	C 3200	Rail Grinding - Plain Track
Civil Standards	C 3201	Rail Grinding - Turnouts
Civil Standards	C 3210	Rail Surface Condition
Civil Standards	C 3215	Rail Head Loss Limits
Civil Standards	C 3304	Specification for Vibration isolation Rail Fasteners
Civil Standards	C 3361	Field Application of Swage Fasteners in Existing Trackwork
Civil Standards	C 3363	Manufacture and Pre-Installation Testing of Assembled Glued Insulated Joints
Civil Standards	C 3365	Specification for the Supply of Field Assembled Mechanical Insulated Joint Components
Civil Standards	C 4005	Underbridge Transoms - Design & Fixing Requirements.
Civil Standards	C 4009	Underbridge Walkways
Civil Standards	C 4010	Safety Refuges and Handrail Devices for Trackside Structures
Civil Standards	C 4250	System Operating Standards for Underbridges
Civil Standards	C 4501	Metallic Lineside Fencing in Electrified Areas
Civil Standards	C 4601	Survey Definition of Alignment and Kilometrage
Civil Standards	C 4610	Control Survey - Policy
Civil Standards	C 4611	Control Surveys - Field Specification
Civil Standards	C 4613	Control Surveys - Documentation Procedures
Civil Standards	C 4631	Drawing Standard for Plans Showing Horizontal Alignment
Civil Standards	C 4641	Survey Requirements for Infrastructure Renewals
Civil Standards	C 4707	Ballast Stabilising Machine
Civil Standards	C 4750	Specification - Signals, Track Warning
Civil Standards	C 5200	Evaluation and Approval of Track Components.
Civil Standards	CSI 018	Use of Resilient Fastenings in Dogspiked Track
Civil Standards	CSI 027	Rail Replacement Policy

Discipline	Reference	File Name
Civil Standards	CSI 029	Grinding of Crossings
Civil Standards	CSI 031	Engineering Works in the Vicinity of Platforms and Structure Footings.
Civil Standards	CSI 039	Excess Grease Inhibiting Testing
Civil Standards	ESC 300	Structures System
Civil Standards	ESC 301	Load Ratings of Underbridges
Civil Standards	ESC 310	Underbridges
Civil Standards	ESC 320	Overbridges and Footbridges
Civil Standards	ESC 330	Overbridges Wiring Structures and Signal Gantries
Civil Standards	ESC 340	Tunnels
Civil Standards	ESC 350	Retaining Walls and Platforms
Civil Standards	ESC 360	Miscellaneous Structures
Civil Standards	ESC 370	Air Space Developments
Civil Standards	ESC 380	External Developments
Civil Standards	G 2650	Compilation of Historical Records of Buildings Scheduled for Demolition
Civil Standards	G 3623	Total Fire Bans
Civil Standards	G 3624	Bushfire Management Policy
Civil Standards	G 4610	Management of Railway Heritage
Civil Standards	G 4630	Preparation and issue of Certificate of Heritage Status.
Civil Standards	G 5000	Management System for Pipe, Electrical Telephone Crossings Under and Over Railway Property
Civil Standards	G 5001	Technical Requirements for Installation of Other Parties' Services and Pipelines within Railway Boundaries (R.O.A. Code)
Civil Standards	G 5002	Pipeline Agreement for Service Crossing on Railway Land
Civil Standards	G 5003	Electrical Service Crossings on Railway Land
Civil Standards	G 5004	Telecom and Optus Cable Crossing on Railway Property
Civil Standards	G 5005	Water Board Crossing on Railway Property
Civil Standards	G 5006	Standard for Installation of Domestic Water Pipelines within Railway Boundaries

Discipline	Reference	File Name
Civil Standards	G 5007	The Australian Gas Light Company (Subsidiaries: Natural Gas Company and Newcastle Gas Company) Crossing on Railway Property
Civil Standards	G 5410	Procedures for the Safe Transit of Special and Out-of-Gauge Loads
Civil Standards	G 6030	Authorisation of Track Vehicles
Civil Standards	G 8001	Worksite Safety Boundary Markers
Civil Standards	G 8530	Use of Survey Control Marks by External Bodies
Civil Standards	TS 20 540 3 00 SP	Steel Sleepers - Usage and Installation Standards
Civil Standards	TS 22 000 2 01 SP	Timber Sleepers - Maintenance Standard
Civil Standards	TS 2621	Alignment Surveys - Accuracy and Marking Standards for Existing and Proposed Railways
Civil Standards	TS 27 00 01 01 SP	Level Crossings - Configuration Standards
Civil Standards	TS 27 00 03 01 SP	Level Crossings — Design and Installation
Civil Standards	TS 27 00 03 02 SP	Pedestrian Level Crossings - Design and Installation
Civil Standards	TS 30 000 3 01 SP	Structures - Design Standards
Civil Standards	TS 30 000 5 04 SP	Structures - Defect Recording and Assessment
Civil Standards	TS 31 000 3 01 SP	Buried Corrugated Metal Structures - Configuration and Design
Civil Standards	TS 31 000 6 01 SP	Buried Corrugated Metal Structures - Purchase Specification
Civil Standards	TS 31 200 1 01 SP	Guard Rails - Configuration Standards
Civil Standards	TS 31 400 1 01 SP	Configuration Standard - Bridge Ends
Civil Standards	TS 3101	Standard Classification of Lines
Civil Standards	TS 3102	Track Standards - Method of Measurements
Civil Standards	TS 3103	Track Standards Construction
Civil Standards	TS 3104	Upgraded Track Standards - Main Line
Civil Standards	TS 3105	Track Geometry Maintenance Standards
Civil Standards	TS 3106	Track Recording Car Track Condition Indices
Civil Standards	TS 3107	Existing Track Regrading
Civil Standards	TS 3108	Standards for Electrification of Existing Lines
Civil Standards	TS 3109	Minimum Track Maintenance Standards on Electrified Tracks

Discipline	Reference	File Name
Civil Standards	TS 3111	Rail Use Policy for Existing Tracks
Civil Standards	TS 3202	Basic Siding Track Design Standards
Civil Standards	TS 3203	Industrial Railway Design Standards
Civil Standards	TS 3208	Allowable Speed Around Curves
Civil Standards	TS 3306	Standard Sleeper Boring Patterns
Civil Standards	TS 3322	Specification for the Manufacture and Supply of Resilient Rail Fastening Assemblies for S.R.A. Concrete Sleepers
Civil Standards	TS 3341	Use of Resilient Fastenings Pandrol Type
Civil Standards	TS 3342	Use of Reformed Plates With Resilient Fastenings
Civil Standards	TS 3362	Use of Flame Cut Rails
Civil Standards	TS 3371	Standard Fishbolts, Washers and Nuts
Civil Standards	TS 3394	Use of Glued Insulated Joints
Civil Standards	TS 3396	Pre-Assembled Double Glued Insulated Joint Specification
Civil Standards	TS 3397	Use of Resilient Fastenings at Glued Insulated Joints
Civil Standards	TS 34 100 3 01 SP	Design and Installation - Tunnel Fire Safety - New Passenger Railway Tunnels
Civil Standards	TS 3402	Specification for Supply of Aggregate for Ballast
Civil Standards	TS 3421	General Standards for Formation and Earthworks
Civil Standards	TS 3422	Standard for Formation Capping Material
Civil Standards	TS 3424	Standard Procedure for Embankment Widening
Civil Standards	TS 3481	Technical Requirements for Lease on Commission Land and Erection of Buildings on Leases
Civil Standards	TS 3501	Turnouts - Components Definitions
Civil Standards	TS 3502	Standard Turnouts
Civil Standards	TS 3504	Catch Point Design & Clearance Beyond Catchpoints
Civil Standards	TS 3509	Turnout Renewals in Existing Lines
Civil Standards	TS 3521	Field Marking of Crossings
Civil Standards	TS 3601	Field Welding Standards
Civil Standards	TS 3602	Standard Procedures for Welding

Discipline	Reference	File Name
Civil Standards	TS 3603	Approved Aluminothermic Welding Processes for Field Welding of Rail
Civil Standards	TS 3604	Rails Approved for Welding
Civil Standards	TS 3606	Rails Approved for Use as Junction Rails
Civil Standards	TS 3640	Policy Use of Welded Track
Civil Standards	TS 3642	Standard for Laying Continuous Welded Rails
Civil Standards	TS 3645	Anchoring of Track
Civil Standards	TS 3646	Continuous Welded Rail - Control of Creep
Civil Standards	TS 3648	Maintenance of Welded Track (General)
Civil Standards	TS 3650	Adjustment & Field Welding for Cont Welded Track
Civil Standards	TS 3654	Rail Inserts and Slotted Plates - Use and Maintenance
Civil Standards	TS 3655	Maintenance of Mechanical Joints and Examination of Rail Ends
Civil Standards	TS 3734	Oxy-Acetylene Resurfacing of Worn Crossings
Civil Standards	TS 3921	Standard Fencing
Civil Standards	TS 3941	Standard Trackside Warning Board Signs
Civil Standards	TS 4150	Examination of Bridges and Structures Handbook
Civil Standards	TS 4151	Bridges and Structures: Description and Numbering
Civil Standards	TS 4152	Bridge and Structure Examination: General Requirements
Civil Standards	TS 4153	Timber Bridge Examination
Civil Standards	TS 4154	Steel Bridge Examination
Civil Standards	TS 4155	Concrete Bridge Examination
Civil Standards	TS 4156	Overhead Wiring Structure Examination
Civil Standards	TS 4157	Tunnel and Miscellaneous Structure Examination
Civil Standards	TS 4158	Bridge and Structure Examination Books
Civil Standards	TS 4161	Examination & Repairs of Broad Flange Beams Over Roadways
Civil Standards	TS 4451	General Requirements for Airspace Developments
Civil Tech Notes	CTN 00 01	Transom Bolts
Civil Tech Notes	CTN 00 02	Alternative Rail Brace Bolts

Discipline	Reference	File Name
Civil Tech Notes	CTN 01 01	Loading of Spoil Wagons
Civil Tech Notes	CTN 01 05	Tangential Turnouts with Long Switches Bent to Fit Sharp Curves at Olympic Park - Special Inspection Requirements
Civil Tech Notes	CTN 01 06	Installation of 'Fastclip' Fastenings
Civil Tech Notes	CTN 01 07	Inspection of Crossing Loops
Civil Tech Notes	CTN 01 08	Reporting and Investigation of Broken Rails
Civil Tech Notes	CTN 01 11	Painting of Wire Feed Welds & Reporting of All Untested Welds by Patrol Staff
Civil Tech Notes	CTN 01 13	Use of Screwspikes With Helical Spring Washers
Civil Tech Notes	CTN 01 14	Approval of Swage Fasteners
Civil Tech Notes	CTN 01 15	Use of Pesticides
Civil Tech Notes	CTN 01 18	Use of Permanent formwork
Civil Tech Notes	CTN 02 01	Visual Detection of VSH Rail Defects
Civil Tech Notes	CTN 02 02	Steel Sleepers at Level Crossings and Other Track Circuit Installations
Civil Tech Notes	CTN 02 03	Additional Measures for VSH Rail Defects
Civil Tech Notes	CTN 02 04	Special Pandrol Clips for Insulated Joints
Civil Tech Notes	CTN 02 05	Trackside Lubrication
Civil Tech Notes	CTN 02 06	Testing and Marking of Rail Closures
Civil Tech Notes	CTN 02 07	Use of Metallic Objects on or About the Track
Civil Tech Notes	CTN 02 10	Use of Temporary Signalling Bonds
Civil Tech Notes	CTN 02 11	Points Equipment – Use of Nyloc & Other Self-Locking Nuts
Civil Tech Notes	CTN 02 13	Repair of Bearings on Steel Bridge Spans
Civil Tech Notes	CTN 02 14	Level Crossings & Low Clearance Vehicles
Civil Tech Notes	CTN 02 16	Lubrication After Rerailing
Civil Tech Notes	CTN 02 19	Lifting of Overbridges
Civil Tech Notes	CTN 03 01	Expansion Switches on Viaducts At Woolloomooloo and Rushcutters Bay
Civil Tech Notes	CTN 03 03	Special Bridge Examinations for Wrought Iron – Cast Iron – Steel Bridges

Discipline	Reference	File Name
Civil Tech Notes	CTN 03 04	Robel Rail Clamps
Civil Tech Notes	CTN 03 05	Timber Bridges – Splicing Piles
Civil Tech Notes	CTN 03 06	Timber Bridges – Bridge Examination Books
Civil Tech Notes	CTN 03 08	Scheduling of Bridge Examinations
Civil Tech Notes	CTN 03 10	Sleeper Inspection
Civil Tech Notes	CTN 03 11	Permanent Speedboards
Civil Tech Notes	CTN 03 13	Bush Fire Hazard Management
Civil Tech Notes	CTN 03 14	Contract Rail Welders
Civil Tech Notes	CTN 03 15	Summer Track Stability – Defensive Measures
Civil Tech Notes	CTN 03 16	Temporary Speed Restrictions Intermediate Warning Signs
Civil Tech Notes	CTN 04 01	Explorer/Endeavour/XPT Trip Gear Rolling Stock Outline Infringement
Civil Tech Notes	CTN 04 02	Defective Weld Portions Version 3
Civil Tech Notes	CTN 04 03	Checklist of Winter Hazards
Civil Tech Notes	CTN 04 04	Metropolitan Area - Application of Base Operating Condition Standards
Civil Tech Notes	CTN 04 05	Rail Welding – Recall of Thermit Australia Thimbles Version 2
Civil Tech Notes	CTN 04 06	Pandrol (AJAX) Dogscrew and Lockscrew
Civil Tech Notes	CTN 04 07	Pre Swingnose Crossing Inspections
Civil Tech Notes	CTN 04 08	Welded Track Stability - Preparation for 2004/2005 Summer
Civil Tech Notes	CTN 04 09	Welded Track Stability - Summer Briefing Notes
Civil Tech Notes	CTN 04 10	Reporting of Track Conditions Affecting Signalling Reliability
Civil Tech Notes	CTN 04 11	Bolt Maintenance At Switches
Civil Tech Notes	CTN 04 12	Metropolitan Area - Joint Civil/Signals Inspections of Turnouts
Civil Tech Notes	CTN 04 14	Approved Welding Equipment
Civil Tech Notes	CTN 04 15	Redundant Glued Insulated Joints
Civil Tech Notes	CTN 04 16	Mechanical & Chemical Anchors
Civil Tech Notes	CTN 04 17	Use of Reclaimed Sleeper Plates

Discipline	Reference	File Name
Civil Tech Notes	CTN 04 18	Reporting Defective Components
Civil Tech Notes	CTN 04 19	Safe Temperature Increase (STI) Calculation Procedure
Civil Tech Notes	CTN 04 21	Interim Engineering Authority for Track & Structures Design Activities within RailCorp
Civil Tech Notes	CTN 04 22	Underbridge Walkways – Safety Signs
Civil Tech Notes	CTN 04 23	53Kg Glued Insulated Joints with Head Hardened Rail
Civil Tech Notes	CTN 04 24	Application of The Verse System for The Assessment of Track Adjustment (for The 2004/2005 W TSA Program)
Civil Tech Notes	CTN 04 25	Visual Detection & Reporting of Squat Defects in Rail
Civil Tech Notes	CTN 04 26	Use of Led Warning Lights on Temporary Speed Signs
Civil Tech Notes	CTN 06 08	Integrated Track Patrol for Plain Track, Turnouts and Special Trackwork
Civil Tech Notes	CTN 06 20	Wire Feed Welding Reminders
Civil Tech Notes	CTN 06 21	Kilometerage Indicators
Civil Tech Notes	CTN 06 22	Removal of Redundant Turnouts and Insulated Joints
Civil Tech Notes	CTN 06 23	Weld Track Stability Preparation for 2006/2007 Summer
Civil Tech Notes	CTN 06 24	Cracked Switch Plates
Civil Tech Notes	CTN 06 34	Total Firebans - TIDC Projects
Civil Tech Notes	CTN 07 01	Adjustment Control for Turnout Component Replacement
Civil Tech Notes	CTN 07 02	Fixing Plates to A and B Timber Bearers
Civil Tech Notes	CTN 07 03	Buffer Stops - Protective Coating
Civil Tech Notes	CTN 07 04	Name Signs on Overbridges and Tunnels
Civil Tech Notes	CTN 07 09	Trackstab Manual Adjustments
Civil Tech Notes	CTN 07 11	Bushfire Dangers Periods and Total Firebans
Civil Tech Notes	CTN 08 04	Cracks in 53KGM Switches
Civil TMP's	TS 0001 MP	Civil Technical Maintenance Plan - Full Content
Civil TMP's	TS 0002 MP	Maintenance Plan - Menangle Rail Bridge, Wrought Iron Spans, Main South 64.334Km
Civil TMP's	TS 0003 MP	Maintenance Plan - First Generation Wrought Iron Girder Underbridge Wagga Wagga - Murrumbidgee River Bridge

Discipline	Reference	File Name
Civil TMP's	TS 0004 MP	Maintenance Plan - First Generation Wrought Iron Girder Underbridges Bathurst, Wellington, Tamworth and Woolbrook
Civil TMP's	TS 0005 MP	Maintenance Plan - Second Generation Wrought Iron Girder Underbridges Albury, Dubbo and Cowra
Civil TMP's	TS 0006 MP	Maintenance Plan - Joppa Junction, Run of Waters Creek Underbridge - Main South Line
Civil TMP's	TS 0007 MP	Hybrid Girders for Railway Overbridges Engineered Alternative Hardwood Road Bridge Girders
Configuration Management	CD 0001	Policy for Scanning of Colour Drawings
Configuration Management	CM1	Basic Configuration Control Process
Configuration Management	CM2	Configuration Change Process - Rolling Stock Approvals
Configuration Management	CM3	Bringing Non-Conforming Infrastructure Under Configuration Control
Configuration Management	CMP 01	Configuration Management Plan
Configuration Management	REP 0003	Policy for Installing, Relocating, Removing and Changing the Configuration of Level Crossings
Configuration Management	REP 02	Configuration Management Policy
Electrical Services Schedules	EP 01	01 Electrical Services Schedule
Electrical Services Schedules	EP 02	02 Electrical Services Schedule
Electrical Services Schedules	EP 03	03 Electrical Services Schedule
Electrical Services Schedules	EP 04	04 Electrical Services Schedule
Electrical Services Schedules	EP 05	05 Electrical Services Schedule
Electrical Services Schedules	EP 06	06 Electrical Services Schedule

Discipline	Reference	File Name
Electrical Services Schedules	EP 07	07 Electrical Services Schedule
Electrical Services Schedules	EP 08	08 Electrical Services Schedule
Electrical Services Schedules	EP 10	10 Electrical Services Schedule
Electrical Services Schedules	EP 12	12 Electrical Services Schedule
Electrical Services Schedules	EP 16	16 Electrical Services Schedule
Electrical Services Schedules	EP 18	18 Electrical Services Schedule
Electrical Services Schedules	EP 19	19 Electrical Services Schedule
Electrical Services Schedules	EP 97	97 Electrical Services Schedule
Electrical Services Schedules	EP 99	99 Electrical Services Schedule
Electrical Standards	EP 00 00 00 01 TI	RIC Electrical System General Description
Electrical Standards	EP 00 00 00 02 SP	Electrical Technical Maintenance Coding System
Electrical Standards	EP 00 00 00 07 SP	Requirements for Handling & Disposal of Material Containing PCB
Electrical Standards	EP 00 00 00 08 SP	Safe Limits of DC Voltages
Electrical Standards	EP 00 00 00 12 SP	Electrical Power Equipment - Integrated Support Requirements
Electrical Standards	EP 00 00 00 13 SP	Electrical Power Equipment - Design Ranges of Ambient Conditions
Electrical Standards	EP 00 00 00 15 SP	Common Requirements for Electrical Power Equipment
Electrical Standards	EP 01 00 00 01 SP	33KV AC Indoor Switchgear: Non-Withdrawable
Electrical Standards	EP 01 00 00 02 SP	11KV AC Indoor Switchgear - Non-Withdrawable
Electrical Standards	EP 02 00 00 01 SP	Transformer Loss Evaluation
Electrical Standards	EP 03 00 00 01 TI	Rectifier Transformer & Rectifier Characteristics
Electrical Standards	EP 03 01 40 00 SP	Rectifier Transformer
Electrical Standards	EP 03 02 00 01 SP	Controls & Protection for Rectification Equipment

Discipline	Reference	File Name
Electrical Standards	EP 03 02 30 00 SP	Semiconductor 12 Pulse Series Bridge Rectifier: Power Cubicle
Electrical Standards	EP 03 05 70 00 SP	Outdoor DC Reactor
Electrical Standards	EP 04 00 00 02 SP	System Substation 1500 V DC Links and Switches
Electrical Standards	EP 04 01 00 01 SP	1500 V High Speed DC Feeder Circuit Breaker
Electrical Standards	EP 05 00 00 01 SP	Substation Auxiliary Transformer from Rectifier Transformer Secondary
Electrical Standards	EP 06 00 00 01 SP	System Substation Battery
Electrical Standards	EP 08 00 00 01 SP	Overhead Wiring Standards for the Electrification of New Routes
Electrical Standards	EP 08 00 00 02 SP	Overhead Wiring Maintenance Standards
Electrical Standards	EP 08 00 00 03 SP	Overhead Wiring Base Safety and Operating Standards
Electrical Standards	EP 08 00 00 04 SP	Relative Positions of Signals and Airgaps
Electrical Standards	EP 08 00 00 05 SP	Methods of Rail Connecting 1500V OHW
Electrical Standards	EP 08 00 00 06 SP	Vegetation Control Near 1500V DC Equipment (OHW) Policy
Electrical Standards	EP 08 00 00 07 SP	Safety Screens for Bridges Over 1500 V OHW Equipment
Electrical Standards	EP 08 00 00 10 SP	Overhead Wiring Layouts - Requirements and Symbology
Electrical Standards	EP 08 00 00 12 SP	Level Crossings - OHW Clearance Requirements
Electrical Standards	EP 08 00 00 13 SP	Overhead Wiring Fittings and Materials
Electrical Standards	EP 08 00 00 14 SP	Services Erected Above Overhead Wiring
Electrical Standards	EP 08 00 00 16 SP	Designations of Overhead Wiring Conductor Systems
Electrical Standards	EP 08 00 00 17 SP	Overhead Wiring Conductor System Selection Criteria
Electrical Standards	EP 08 00 00 19 SP	Performance Specification for Overhead Wiring Post Insulator Units
Electrical Standards	EP 08 00 00 20 SP	Performance Specification for Overhead Wiring String Insulator Set
Electrical Standards	EP 08 00 00 21 SP	Insulator Type Tests - DC Power ARC Withstand
Electrical Standards	EP 08 16 00 01 SP	Labels for OHW Structures
Electrical Standards	EP 08 16 00 02 SP	Safety Barriers for OHW Structures
Electrical Standards	EP 09 00 00 01 SP	Trackside Negative Bus-Rails
Electrical Standards	EP 10 00 00 04 SP	Transmission Line Easement Conditions
Electrical Standards	EP 10 00 00 05 SP	Transmission Line Current Ratings & Standard Conductors

Discipline	Reference	File Name
Electrical Standards	EP 10 01 00 01 SP	Wood Pole Condemning Policy
Electrical Standards	EP 10 01 00 02 SP	Transmission Line Maintenance Standards
Electrical Standards	EP 10 01 00 03 SP	Transmission Line Base Safety and Operating Standards
Electrical Standards	EP 10 01 00 05 SP	Requirements for Electric Aerials Crossing RIC Infrastructure
Electrical Standards	EP 10 01 00 06 SP	Transmission Line Standard for Design and Construction
Electrical Standards	EP 12 00 00 01 SP	High Voltage and 1500 System Earthing References and Definitions
Electrical Standards	EP 12 00 00 02 SP	Low Voltage Distribution and Installations Earthing References and Definitions
Electrical Standards	EP 12 10 00 10 SP	System Substation Earthing
Electrical Standards	EP 12 10 00 11 SP	Distribution Substation Earthing
Electrical Standards	EP 12 10 00 12 SP	Transmission Line and Cable Earthing
Electrical Standards	EP 12 10 00 13 SP	1500 V Traction System Earthing
Electrical Standards	EP 12 10 00 20 SP	Low Voltage Distribution Earthing
Electrical Standards	EP 12 10 00 21 SP	Low Voltage Installations Earthing
Electrical Standards	EP 12 10 00 22 SP	Buildings and Structures Under Overhead Lines
Electrical Standards	EP 12 20 00 01 SP	Bonding of Overhead Wiring Structures to Rail
Electrical Standards	EP 12 30 00 01 SP	Electrolysis from Stray DC Current
Electrical Standards	EP 16 00 00 01 SP	Pole Mounted Distribution Transformer
Electrical Standards	EP 16 00 00 02 SP	Outdoor Ground Type Distribution Transformer
Electrical Standards	EP 17 00 00 06 SP	Installation Inspections
Electrical Standards	EP 17 00 00 11 SP	Low Voltage Isolating Transformer
Electrical Standards	EP 17 00 00 11 SP	Low Voltage Isolating Transformer
Electrical Standards	EP 17 00 00 12 SP	Demarcation of RIC Low Voltage Distribution System
Electrical Standards	EP 19 00 00 01 SP	DCCB and Delta I Relay Setting Calculation Method
Electrical Standards	EP 19 00 00 02 EP	Protection System Requirements for the High Voltage Network
Electrical Standards	EP 19 00 00 03 SP	Commissioning of Translay Pilot Wire Protection Scheme
Electrical Standards	EP 20 00 00 03 SP	Above Ground Cable Installation Systems - Selection Guide
Electrical Standards	EP 20 00 00 20 SP	Testing of High Voltage Cables

Discipline	Reference	File Name
Electrical Standards	EP 20 00 03 01 SP	Requirements for Cable Polymeric Terminations and Joints
Electrical Standards	EP 20 00 04 01 SP	Cable Route Selection Guide
Electrical Standards	EP 20 00 04 02 SP	Underground Installation Configurations for High Voltage and 1500 V DC Cables
Electrical Standards	EP 20 00 04 04 SP	Ground Entry Arrangements
Electrical Standards	EP 20 00 04 05 SP	Cable Pits
Electrical Standards	EP 20 00 04 06 SP	Underground Cable - Location Recording
Electrical Standards	EP 20 10 00 01 SP	1500 Volt DC Cable Ratings
Electrical Standards	EP 20 10 00 02 SP	High Voltage Cable Selection Guide
Electrical Standards	EP 21 00 00 01 SP	Insulation Co-ordination & Surge Arrester Selection
Electrical Standards	EP 90 10 00 01 SP	Electrical Phase Relationships
Electrical Standards	EP 90 10 00 02 SP	Standard Voltage Tolerances
Electrical Standards	EP 90 20 00 01 SP	1500V DC Equipment Current Ratings
Electrical Standards	EP 90 20 00 02 SP	1500V System Voltage Ratings
Electrical Standards	EP 90 30 00 01 SI	Polarity of AC Signalling Supplies
Electrical Standards	EP 95 00 00 01 TI	Electric Power System - Safety Aspects
Electrical Standards	EP 95 00 00 03 SI	Requirements for Work Using Cranes and Plant
Electrical Standards	EP 95 00 00 04 SP	Authorisation and Training of Staff
Electrical Standards	EP 95 00 00 05 SP	Hazard Assessment and Work Process Controls
Electrical Standards	EP 95 00 00 06 SP	Tools and Safety Equipment
Electrical Standards	EP 95 00 00 07 SP	Suitable Operating Equipment
Electrical Standards	EP 95 00 00 08 SP	Permit System
Electrical Standards	EP 95 00 00 09 SI	Operating Agreement
Electrical Standards	EP 95 00 00 10 TI	Definitions
Electrical Standards	EP 95 00 00 11 SI	Requirements for Work Using Scaffolding and Metal Ladders
Electrical Standards	EP 95 00 00 12 SI	Advertising of New Work
Electrical Standards	EP 95 00 00 13 SP	Overview of the Rail Infrastructure Corporation Electric Power System Safe Operation Manual
Electrical Standards	EP 95 00 30 03 SP	Customer Installation Safety Plan

Discipline	Reference	File Name
Electrical Standards	EP 95 00 30 04 SP	Public Electrical Safety Awareness Plan
Electrical Standards	EP 95 00 30 05 SP	Bush Fire Risk Management Plan for the Electrical Distribution Network
Electrical Standards	EP 95 00 30 06 SP	Electrical Network Management Plan
Electrical Standards	EP 95 10 00 01 SI	Work Near High Voltage Equipment - Permit Requirements and Safe Working Distances
Electrical Standards	EP 95 10 00 02 SI	Work on Live High Voltage Equipment
Electrical Standards	EP 95 10 00 03 SI	Isolation of High Voltage Equipment for Work Outside Substations
Electrical Standards	EP 95 10 00 04 SI	Isolation of High Voltage Equipment for Work Inside Substations
Electrical Standards	EP 95 10 00 05 SI	Operating Work - High Voltage System
Electrical Standards	EP 95 10 00 06 SP	Requirements for Portable Earthing Equipment for the High Voltage System
Electrical Standards	EP 95 20 00 01 SI	Work Near 1500 Volt Equipment - Permit Requirements and Safe Working Distances
Electrical Standards	EP 95 20 00 02 SI	Work on Live 1500 Volt Overhead Wiring
Electrical Standards	EP 95 20 00 03 SI	Isolation of 1500 Volt Overhead Lines and Cables for Work Outside Substation
Electrical Standards	EP 95 20 00 04 SI	Isolation of 1500 Volt Equipment for Work Inside Substations
Electrical Standards	EP 95 20 00 05 SI	Operating Work - 1500 Volt System
Electrical Standards	EP 95 20 00 06 SI	Methods of Rail Connecting 1500 Volt Overhead Wiring
Electrical Standards	EP 95 20 00 07 SP	Requirements for Test Equipment for Determining if it is Safe to Apply Rail Connections
Electrical Standards	EP 95 20 00 08 SI	Removal of 1500 Volt Supply Under Emergency Conditions
Electrical Standards	EP 95 20 00 09 SI	Procedures for Work on Negative Equipment Outside Substations
Electrical Standards	EP 95 20 00 10 SI	Procedures for Work on Negative Equipment Inside Substations
Electrical Standards	EP 95 30 00 01 SI	Work on Or Near Low Voltage Distribution Equipment - Permit Requirements and Safe Working Distances
Electrical Standards	EP 95 30 00 02 SI	Isolation of Low Voltage Distribution Equipment for Work
Electrical Standards	EP 95 30 00 03 SI	Operating Work - Low Voltage Distribution System
Electrical Standards	EP 99 00 00 01 SP	Substations Minimum Construction Standards

Discipline	Reference	File Name
Electrical Standards	EP 99 00 00 02 SP	System Substation Commissioning Tests
Electrical Standards	EP 99 00 00 04 SP	Substations - Base Safety & Operating Standards
Electrical TMP's	RAC EP 01	Electrical TMP
Electrical TMP's	RAC EP 02	Electrical TMP
Electrical TMP's	RAC EP 03	Electrical TMP
Electrical TMP's	RAC EP 04	Electrical TMP
Electrical TMP's	RAC EP 05	Electrical TMP
Electrical TMP's	RAC EP 06	Electrical TMP
Electrical TMP's	RAC EP 07	Electrical TMP
Electrical TMP's	RAC EP 08	Electrical TMP
Electrical TMP's	RAC EP 10	Electrical TMP
Electrical TMP's	RAC EP 12	Electrical TMP
Electrical TMP's	RAC EP 16	Electrical TMP
Electrical TMP's	RAC EP 18	Electrical TMP
Electrical TMP's	RAC EP 19	Electrical TMP
Electrical TMP's	RAC EP 20	Electrical TMP
Electrical TMP's	RAC EP 97	Electrical TMP
Electrical TMP's	RAC EP 99	Electrical TMP
Rolling Stock Standards	RSU 010	Introduction
Rolling Stock Standards	RSU 100	Introduction
Rolling Stock Standards	RSU 110	Rolling Stock Outline Interface
Rolling Stock Standards	RSU 120	Track Interface
Rolling Stock Standards	RSU 130	Overhead Power Interface
Rolling Stock Standards	RSU 140	Vehicle to Vehicle Interface

Discipline	Reference	File Name
Rolling Stock Standards	RSU 150	Environmental Interface
Rolling Stock Standards	RSU 160	Signalling Interface
Rolling Stock Standards	RSU 180	Automatic Equipment Identification Interface
Rolling Stock Standards	RSU 190	Train Radio Interface
Rolling Stock Standards	RSU 200	Introduction
Rolling Stock Standards	RSU 210	Wheels
Rolling Stock Standards	RSU 211	Design and Manufacture
Rolling Stock Standards	RSU 212	Minimum Operational Requirements
Rolling Stock Standards	RSU 220	Axles
Rolling Stock Standards	RSU 221	Design and Manufacture
Rolling Stock Standards	RSU 222	Minimum Operational Requirements
Rolling Stock Standards	RSU 230	Wheel and Axle Assembly
Rolling Stock Standards	RSU 240	Axle Bearing Assembly
Rolling Stock Standards	RSU 250	Bogie Frames and Associated Componentry
Rolling Stock Standards	RSU 260	Vehicle Suspension
Rolling Stock Standards	RSU 261	Suspension Springs
Rolling Stock Standards	RSU 262	Suspension Damping

Discipline	Reference	File Name
Rolling Stock Standards	RSU 263	Resilient Suspension Components
Rolling Stock Standards	RSU 270	Brakes & Pneumatic Equipment
Rolling Stock Standards	RSU 271	Brake Equipment Compatibility
Rolling Stock Standards	RSU 272	Brake Blocks and Disc Pads
Rolling Stock Standards	RSU 273	Pneumatic Equipment
Rolling Stock Standards	RSU 280	Vehicle Compatibility Tests
Rolling Stock Standards	RSU 281	Static Rolling Stock Outline Test
Rolling Stock Standards	RSU 282	Static Vehicle Weigh Test
Rolling Stock Standards	RSU 283	Static Vehicle Twist Test
Rolling Stock Standards	RSU 283	Static Vehicle Twist Test
Rolling Stock Standards	RSU 284	Static Vehicle/Bogie Swing Test
Rolling Stock Standards	RSU 285	Static Vehicle/Vehicle Swing Test
Rolling Stock Standards	RSU 286	Static Brake Test
Rolling Stock Standards	RSU 287	Brake Performance Test
Rolling Stock Standards	RSU 288	Ride Performance Test
Rolling Stock Standards	RSU 289	Kinematic Rolling Stock Outline Test
Rolling Stock Standards	RSU 290	Pitch and Bounce Performance Test

Discipline	Reference	File Name
Rolling Stock Standards	RSU 291	Rock and Roll Test
Rolling Stock Standards	RSU 292	Environmental Tests
Rolling Stock Standards	RSU 293	Signal Visibility Test
Rolling Stock Standards	RSU 294	Electrical Safety Inspection
Rolling Stock Standards	RSU 295	Signal Compatibility Test
Rolling Stock Standards	RSU 296	Signal Interference Test
Rolling Stock Standards	RSU 300	Introduction
Rolling Stock Standards	RSU 310	Bogie Components
Rolling Stock Standards	RSU 320	Brakes and Pneumatic Equipment
Rolling Stock Standards	RSU 321	Dynamic/Regenerative Brake
Rolling Stock Standards	RSU 330	Body & Underframe
Rolling Stock Standards	RSU 340	Vehicle Performance
Rolling Stock Standards	RSU 341	Traction Performance
Rolling Stock Standards	RSU 342	Braking Performance
Rolling Stock Standards	RSU 343	Locomotive Ride Performance
Rolling Stock Standards	RSU 350	Safety Equipment
Rolling Stock Standards	RSU 360	Locomotive Specific Requirements

Discipline	Reference	File Name
Rolling Stock Standards	RSU 361	Diesel/Electric or Diesel/Hydraulic Locomotives
Rolling Stock Standards	RSU 362	Electric Locomotives
Rolling Stock Standards	RSU 363	Steam Locomotives
Rolling Stock Standards	RSU 364	Driver only Operation
Rolling Stock Standards	RSU 365	Remote Controlled Locomotives
Rolling Stock Standards	RSU 400	Introduction
Rolling Stock Standards	RSU 410	Bogie Components
Rolling Stock Standards	RSU 420	Brakes & Pneumatic Equipment
Rolling Stock Standards	RSU 430	Body and Underframe
Rolling Stock Standards	RSU 440	Vehicle Performance
Rolling Stock Standards	RSU 441	Braking Performance
Rolling Stock Standards	RSU 442	Freight Vehicle Ride Performance
Rolling Stock Standards	RSU 450	Non Conventional Vehicles
Rolling Stock Standards	RSU 451	Articulated or Permanently Coupled Vehicles
Rolling Stock Standards	RSU 452	Rail Compatible Road Trailers
Rolling Stock Standards	RSU 460	Vehicle Specific Requirements
Rolling Stock Standards	RSU 461	Tank Wagons

Discipline	Reference	File Name
Rolling Stock Standards	RSU 500	Introduction
Rolling Stock Standards	RSU 510	Bogie Components
Rolling Stock Standards	RSU 520	Brakes & Pneumatic Equipment
Rolling Stock Standards	RSU 530	Body, Underframe and Appointments
Rolling Stock Standards	RSU 540	Vehicle Performance
Rolling Stock Standards	RSU 541	Braking Performance
Rolling Stock Standards	RSU 542	Vehicle Ride Performance
Rolling Stock Standards	RSU 600	Introduction
Rolling Stock Standards	RSU 610	Bogie Components
Rolling Stock Standards	RSU 620	Brakes & Pneumatic Equipment
Rolling Stock Standards	RSU 630	Body, Underframe & Appointments
Rolling Stock Standards	RSU 640	Vehicle Performance
Rolling Stock Standards	RSU 641	Braking Performance
Rolling Stock Standards	RSU 642	Vehicle Ride Performance
Rolling Stock Standards	RSU 650	Safety Equipment
Rolling Stock Standards	RSU 660	Electric Train Specific Requirements
Rolling Stock Standards	RSU 670	Diesel Train Specific Requirements

Discipline	Reference	File Name
Rolling Stock Standards	RSU 700	Introduction
Rolling Stock Standards	RSU 710	On Track Vehicles
Rolling Stock Standards	RSU 711	Bogie/Suspension Components
Rolling Stock Standards	RSU 712	Brakes and Pneumatic Equipment
Rolling Stock Standards	RSU 713	Body and Underframe
Rolling Stock Standards	RSU 714	Safety Equipment
Rolling Stock Standards	RSU 715	Vehicle Performance
Rolling Stock Standards	RSU 716	Track Vehicles Operating as a Train
Rolling Stock Standards	RSU 720	Road/Rail Vehicles
Rolling Stock Standards	RSU 721	Suspension
Rolling Stock Standards	RSU 722	Brakes
Rolling Stock Standards	RSU 723	Body
Rolling Stock Standards	RSU 724	Safety Equipment
Rolling Stock Standards	RSU 725	Vehicle Performance
Rolling Stock Standards	RSU 726	Ride Performance Test
Rolling Stock Standards	RSU 727	Vehicle Operation
Rolling Stock Standards	RSU 730	Trolleys, Trailers, Quadricycles and Trikes

Discipline	Reference	File Name
Rolling Stock Standards	RSU 731	Flat Top Trolleys
Rolling Stock Standards	RSU 732	Trailers
Rolling Stock Standards	RSU 733	Quadricycles and Trikes
Rolling Stock Standards	RSU 800	Introduction
Rolling Stock Standards	RSU Appendix A1	RSU Appendix A1: Vehicle Information Pack for Locomotives
Rolling Stock Standards	RSU Appendix A2	RSU Appendix A2: Vehicle Information Pack for Freight Vehicles
Rolling Stock Standards	RSU Appendix A3	RSU Appendix A3: Vehicle Information Pack for Locomotive Hauled Passenger Vehicles
Rolling Stock Standards	RSU Appendix A4	RSU Appendix A4: Vehicle Information Pack for Multiple Unit Trains
Rolling Stock Standards	RSU Appendix A5	RSU Appendix A5: Vehicle Information Pack for 'on' Track Maintenance Machines
Rolling Stock Standards	RSU Appendix A6	RSU Appendix A6: Vehicle Information Pack for Road/Rail Vehicles
Rolling Stock Standards	RSU Appendix A7	RSU Appendix A7: Vehicle Information Pack for Trolleys, Trailers, Quadricycles and Trikes
Rolling Stock Standards	RSU Appendix B	RSU Appendix B: Glossary
Rolling Stock Standards	RSU Appendix C	RSU Appendix C: Static Vehicle Weigh Test
Rolling Stock Standards	RSU Appendix D	RSU Appendix D: Standard for Driver Safety Systems
Rolling Stock Standards	RSU Appendix E	RSU Appendix E: Specification for 1500V DC Traction Supply
Rolling Stock Standards	RSU Appendix F	RSU Appendix F: Signalling and Communication System
Rolling Stock Standards	RSU Appendix G	RSU Appendix G: Drawings

Discipline	Reference	File Name
Rolling Stock Standards	RSU Appendix H	RSU Appendix H: Automatic Equipment Identification (AEI)
Rolling Stock Standards	RSU Appendix I	RSU Appendix I: Reflective Delineators (Reflectors)
Signal TMP's	SC 00 51 00 00 MP	Technical Maintenance Plan
Signal TMP's	SC 00 51 00 00 SS	TMP Service Schedule Index
Signal TMP's	TMP 01	A,B and C Control Matrixes for Control and Indications
Signal TMP's	TMP 02	A Matrix for Remote Control and Indications
Signal TMP's	TMP 03	A Matrix for Train Describers
Signal TMP's	TMP 04	A Matrix for Operations Data / Passenger Information
Signal TMP's	TMP 05	Pg 1 to 8 Matrix for Interlockings
Signal TMP's	TMP 08	A Matrix for Token / Tokenless Block
Signal TMP's	TMP 09	A & B Matrix for Power Supply
Signal TMP's	TMP 10	A Matrix for Communications
Signal TMP's	TMP 11	A & B Matrix for Cable / Line Routes
Signal TMP's	TMP 12	A Matrix for Enclosures
Signals Instructions	RSA 0001	Signalling Circuit Integrity
Signals Instructions	RSA 0002	Entry to Signalling Locations by RSA Fire Protection Officer
Signals Instructions	RSA 0003	Regular Examination of Signal Safeworking Notice Boards
Signals Instructions	RSA 0004	Suitably of Ex-employees as Contractors in RSA Signalling
Signals Instructions	RSA 0005	IMS Services Search Procedures
Signals Instructions	RSA 0006	Cable Insulation Testing Program
Signals Instructions	RSA 0007	Entry to Signalling Locations by RSA Supply Branch Officers
Signals Instructions	RSA 0008	RAC Type Approval for Signalling Equipment and Systems
Signals Instructions	RSA 0009	Mechanical Interlocking Machines
Signals Instructions	RSA 0010	Competency Qualifications Issues
Signals Instructions	RSA 0011	Competency Qualifications Issues
Signals Instructions	RSA 0012	Irregular Illumination of LED Tunnel Signals
Signals Instructions	RSA 0013	Accreditation of Signalling Staff

Discipline	Reference	File Name
Signals Instructions	RSA 0101	Type F Level Crossing Signal Lenses
Signals Instructions	RSA 0102	Plug-in Relays - Visual Inspection
Signals Instructions	RSA 0103	Metal Cutting Near Working Circuits
Signals Instructions	RSA 0104	JAE Trainstops Limit Switch Adj
Signals Instructions	RSA 0105	Response to Level Crossing Lamp Failures
Signals Instructions	RSA 0106	Calibration Requirements for Test Equipment
Signals Instructions	RSA 0108	Work on Electrical Installations
Signals Instructions	RSA 0201	Westinghouse QAJTC1 - Possible Irregular Operation
Signals Instructions	RSA 0202	SSI TFM Operating Voltages
Signals Instructions	RSA 0203	Switch Mode Power Supplies
Signals Instructions	RSA 0204	LED Signal Unit Assoc Microlok Lamp Drivers
Signals Instructions	RSA 0205	Use of Temporary Bonds
Signals Instructions	RSA 0206	Level Crossing Remote Test Prerequisites
Signals Instructions	RSA 0207	ESML EOL Arrangements
Signals Instructions	RSA 0208	Precautions with Use of Self-Locking Nuts
Signals Instructions	RSA 0209	Safety Related Work to be Performed by Accredited Persons
Signals Instructions	RSA 0210	LED Main Line Signals - Complaints of Excessive Brightness
Signals Instructions	RSA 0212	Claw Lock Pin Security
Signals Instructions	RSA 0213	Polarity Measurement on High Voltage Impulse Tracks
Signals Instructions	RSA 0214	M84 Detector Circuit Plug - Incorrect Connection
Signals Instructions	RSA 0301	High Voltage Impulse Tracks - Care when using Integrator
Signals Instructions	RSA 0302	Westinghouse Cross Arm LED lights
Signals Instructions	RSA 0303	Adjustment of Pulsating Aspects
Signals Instructions	RSA 0304	Level Crossing Flasher Compatibility with Monitoring
Signals Instructions	RSA 0305	Testing of Store 74 Level Crossing Battery Charger
Signals Instructions	RSA 0306	Train Shunt Test Following Rerailing
Signals Instructions	RSA 0307	Earth Leakage faults on Signalling 120V Power supplies
Signals Instructions	RSA 0308	Hand Operation of M84 Points Machine

Discipline	Reference	File Name
Signals Instructions	RSA 0309	Westinghouse JAE Train Stop Limit Switch Adjustment
Signals Instructions	RSA 0401	All Testing Requirements to be Completed Prior to Commissioning
Signals Instructions	RSA 0402	Change of Claw Pins
Signals Instructions	RSA 0403	Modification to Issued Signalling Design
Signals Instructions	RSA 0404	Interpretation of Signalling Log Reports
Signals Instructions	RSA 0405	Q Relay Examination
Signals Instructions	RSA 0406	Signalling Safety Work to be Performed by Competent and Accredited Persons
Signals Instructions	RSA 0407	Varistors in Resonating Capacitor Boxes in 2000R and
Signals Instructions	RSA 0408	Engineering Authority for Signal Design
Signals Instructions	RSA 0409	Reporting of Track Conditions Affecting Signalling Reliability
Signals Instructions	RSA 0410	Metropolitan Area Joint Civil Signals Inspections of Turnouts
Signals Instructions	RSA 0411	Signalling Surge Protection Failures Due to HV Power
Signals Instructions	RSA 0412	Alterations to Network Rule NGE220
Signals Instructions	RSA 0413	Q Plug In Relays with Pertoid Operating Arms
Signals Instructions	RSA 0414	Fortress Locks Code A-I
Signals Instructions	RSA 0501	Engineering Authority for Signal Design
Signals Instructions	RSA 0502	SSI Maintenance Procedures
Signals Instructions	RSA 0503	Use of Cable Locators in SSI Areas
Signals Instructions	RSA 0504	Irregular Operation of Westinghouse Releasing Switch
Signals Instructions	RSA 9501	Level Crossing
Signals Instructions	RSA 9601	Advertising New and Altered Works
Signals Instructions	RSA 9701	Enclosed Spaces
Signals Instructions	RSA 9702	Working at Heights - Signal Gantries
Signals Instructions	RSA 9901	Signal Siting
Signals Services Schedules	SS 01 11 01 02	Control Panel Lever Key Switch
Signals Services Schedules	SS 01 11 02 01	Control Panel Rotary Key Switch

Discipline	Reference	File Name
Signals Services Schedules	SS 01 11 02 02	Control Panel Rotary Key Switch
Signals Services Schedules	SS 01 12 01 01	Control Panel Westinghouse Pushbutton
Signals Services Schedules	SS 01 12 02 01	Control Panel Standard Pushbutton
Signals Services Schedules	SS 01 15 01 01	Signaller VDU Workstation (DPEP-K450/10.0/NC4-6 Aust)
Signals Services Schedules	SS 01 15 01 02	Signaller VDU Workstation (DPEP-K450/10.0/NC4-6 Aust)
Signals Services Schedules	SS 01 15 01 03	Signaller VDU Workstation (DPEP-K450/10.0/NC4-6 Aust)
Signals Services Schedules	SS 01 15 01 04	Signaller VDU Workstation (DPEP-K450/10.0/NC4-6 Aust)
Signals Services Schedules	SS 01 16 01 01	Fringing Workstation (DPEP-K450/10.0/NC4-6 Aust)
Signals Services Schedules	SS 01 16 01 02	Fringing Workstation (DPEP-K450/10.0/NC4-6 Aust)
Signals Services Schedules	SS 01 16 01 03	Fringing Workstation (DPEP-K450/10.0/NC4-6 Aust)
Signals Services Schedules	SS 01 21 01 01	Indication Panel Eyeball Indicator
Signals Services Schedules	SS 01 21 01 02	Indication Panel Eyeball Indicator
Signals Services Schedules	SS 01 21 02 01	Indication Panel Needle Type
Signals Services Schedules	SS 01 21 02 02	Indication Panel Needle Type Indicator
Signals Services Schedules	SS 01 22 01 01	Indication Panel Large Incandescent
Signals Services Schedules	SS 01 22 02 01	Indication Panel Miniature Incandescent
Signals Services Schedules	SS 01 23 01 01	Indication Panel Mimic Panel

Discipline	Reference	File Name
Signals Services Schedules	SS 01 51 01 01	Level Crossing Monitor
Signals Services Schedules	SS 01 55 00 01	Level Crossing Control Centre
Signals Services Schedules	SS 01 55 00 02	Level Crossing Control Centre
Signals Services Schedules	SS 01 55 00 03	Level Crossing Control Centre
Signals Services Schedules	SS 02 10 05 01	Indicating Automatic Signal Sections (IASS) Dupline System
Signals Services Schedules	SS 02 11 00 01	Telemetry TDM
Signals Services Schedules	SS 02 11 03 01	Telemetry – Atrics, Dual Telemetry System MTU Computers A & B (Rack-300AW/PIII-450)
Signals Services Schedules	SS 02 11 04 01	Data Link
Signals Services Schedules	SS 02 11 05 01	Telemetry – Atrics, RTU
Signals Services Schedules	SS 02 11 05 02	Telemetry – Atrics, RTU
Signals Services Schedules	SS 02 11 06 01	Telemetry – Atrics, Server
Signals Services Schedules	SS 02 11 06 02	Telemetry – Atrics, Server
Signals Services Schedules	SS 02 11 06 03	Telemetry – Atrics, Server
Signals Services Schedules	SS 02 11 07 01	Telemetry – Data Link Normally In Use
Signals Services Schedules	SS 02 11 07 02	Telemetry – Data Link Normally In Use
Signals Services Schedules	SS 02 11 08 01	Telemetry – Data Link Standby
Signals Services Schedules	SS 02 12 00 01	Telemetry F.D.M.

Discipline	Reference	File Name
Signals Services Schedules	SS 03 17 00 01	Train Describer – Atrics, System
Signals Services Schedules	SS 03 17 00 02	Train Describer – Atrics, System
Signals Services Schedules	SS 03 17 00 03	Train Describer – Atrics, System
Signals Services Schedules	SS 03 17 01 01	Train Describer – Atrics, RCS Server RCS Computers A&B (DPEP-K450/6.4/N4 Aust)
Signals Services Schedules	SS 03 17 01 02	Train Describer – Atrics, RCS Server RCS Computers A&B (DPEP-K450/6.4/N4 Aust)
Signals Services Schedules	SS 03 17 01 03	Train Describer – Atrics, RCS Server RCS Computers A&B (DPEP-K450/6.4/N4 Aust)
Signals Services Schedules	SS 03 17 01 04	Train Describer – Atrics, RCS Server RCS Computers A&B (DPEP-K450/6.4/N4 Aust)
Signals Services Schedules	SS 03 17 02 01	Train Describer – Atrics, IFS Server IFS Computers A&B (DPEP-K450/6.4/N4 Aust)
Signals Services Schedules	SS 03 17 02 02	Train Describer – Atrics, IFS Server IFS Computers A&B (DPEP-K450/6.4/N4 Aust)
Signals Services Schedules	SS 03 17 02 03	Train Describer – Atrics, IFS Server IFS Computers A&B (DPEP-K450/6.4/N4 Aust)
Signals Services Schedules	SS 03 17 02 04	Train Describer – Atrics, IFS Server IFS Computers A&B (DPEP-K450/6.4/N4 Aust)
Signals Services Schedules	SS 03 17 03 01	Train Describer – Atrics, Maintenance Computer (DPEP-K450/10.0/NC4-6 Aust)
Signals Services Schedules	SS 03 17 03 02	Train Describer – Atrics, Maintenance Computer (DPEP-K450/10.0/NC4-6 Aust)
Signals Services Schedules	SS 03 17 04 01	Train Describer – Atrics, Log Server Compaq DI380
Signals Services Schedules	SS 03 17 04 02	Train Describer – Atrics, Log Server Compaq DI380
Signals Services Schedules	SS 03 17 04 03	Train Describer – Atrics, Log Server Compaq DI380
Signals Services Schedules	SS 03 17 04 04	Train Describer – Atrics, Log Server Compaq DI380

Discipline	Reference	File Name
Signals Services Schedules	SS 03 17 05 01	Train Describer – Atrics, Log Archive Magneto-Optical Juke Box & DPEP-K45-/10.0/NC4-6 Aust)
Signals Services Schedules	SS 03 17 05 02	Train Describer – Atrics, Log Archive Magneto-Optical Juke Box & DPEP-K45-/10.0/NC4-6 Aust)
Signals Services Schedules	SS 03 17 06 01	Train Describer – Atrics, Windows 2000 Domain Controller Protection (Operating System)
Signals Services Schedules	SS 03 17 06 02	Train Describer – Atrics, Windows 2000 Domain Controller Protection (Operating System)
Signals Services Schedules	SS 03 18 01 01	Sigview System (IASS)
Signals Services Schedules	SS 03 18 01 02	Sigview System (IASS)
Signals Services Schedules	SS 05 11 01 01	Relays A.C. Shelf Mounted Line (Unproved)
Signals Services Schedules	SS 05 11 01 02	Relays A.C. Shelf Mounted Line (Unproved)
Signals Services Schedules	SS 05 11 02 01	Relays A.C. Shelf Mounted Line (Proved)
Signals Services Schedules	SS 05 11 02 02	Relays A.C. Shelf Mounted Line (Proved)
Signals Services Schedules	SS 05 11 04 01	Relays A.C. Shelf Mounted Time Limit
Signals Services Schedules	SS 05 11 04 02	Relays A.C. Shelf Mounted Time Limit
Signals Services Schedules	SS 05 11 04 03	Relays A.C. Shelf Mounted Time Limit
Signals Services Schedules	SS 05 12 01 01	Relays D.C. Shelf Mounted Line (Unproved)
Signals Services Schedules	SS 05 12 01 02	Relays D.C. Shelf Mounted Line (Unproved)
Signals Services Schedules	SS 05 12 02 01	Relays D.C. Shelf Mounted Line (Proved)
Signals Services Schedules	SS 05 12 02 02	Relays D.C. Shelf Mounted Line (Proved)

Discipline	Reference	File Name
Signals Services Schedules	SS 05 12 04 01	Relays D.C. Shelf Mounted Time Limit
Signals Services Schedules	SS 05 12 04 02	Relays D.C. Shelf Mounted Time Limit
Signals Services Schedules	SS 05 12 04 03	Relays D.C. Shelf Mounted Time Limit
Signals Services Schedules	SS 05 13 01 01	Relays Miniature Plug In (Line)
Signals Services Schedules	SS 05 13 02 01	Relays Miniature Plug In (Time Limit)
Signals Services Schedules	SS 05 14 01 01	Relays Large Plug In (Line)
Signals Services Schedules	SS 05 14 02 01	Relays Large Plug In (Time Limit)
Signals Services Schedules	SS 05 14 02 02	Relays Large Plug In (Time Limit)
Signals Services Schedules	SS 05 21 01 01	Mechanical Direct Action
Signals Services Schedules	SS 05 21 01 02	Mechanical Direct Action
Signals Services Schedules	SS 05 21 01 03	Mechanical Direct Action
Signals Services Schedules	SS 05 21 01 04	Mechanical Direct Action
Signals Services Schedules	SS 05 21 02 01	Mechanical Direct Action Ground Frame
Signals Services Schedules	SS 05 21 02 02	Mechanical Direct Action Ground Frame
Signals Services Schedules	SS 05 21 02 03	Mechanical Direct Action Ground Frame
Signals Services Schedules	SS 05 21 02 04	Mechanical Direct Action Ground Frame
Signals Services Schedules	SS 05 22 01 01	Mechanical Cam & Tappet

Discipline	Reference	File Name
Signals Services Schedules	SS 05 22 01 02	Mechanical Cam & Tappet
Signals Services Schedules	SS 05 22 01 03	Mechanical Cam & Tappet
Signals Services Schedules	SS 05 22 01 04	Mechanical Cam & Tappet
Signals Services Schedules	SS 05 41 00 01	SSI Interlocking
Signals Services Schedules	SS 05 41 00 02	SSI Interlocking
Signals Services Schedules	SS 05 41 00 03	SSI Interlocking
Signals Services Schedules	SS 05 41 00 04	SSI Interlocking
Signals Services Schedules	SS 05 42 00 01	Westrace Interlocking
Signals Services Schedules	SS 05 42 00 02	Westrace Interlocking
Signals Services Schedules	SS 05 43 00 01	Microlock (1 Or 2) Interlocking
Signals Services Schedules	SS 05 43 00 02	Microlock (1 Or 2) Interlocking
Signals Services Schedules	SS 05 51 01 01	Maintenance Releasing Lock (XYZ Key Type)
Signals Services Schedules	SS 05 51 01 02	Maintenance Releasing Lock (XYZ Key Type)
Signals Services Schedules	SS 05 51 01 03	Maintenance Releasing Lock (XYZ Key Type)
Signals Services Schedules	SS 05 51 01 04	Maintenance Releasing Lock (XYZ Key Type)
Signals Services Schedules	SS 05 51 02 01	Emergency Releasing Lock (Pilotmens Lock)
Signals Services Schedules	SS 05 51 02 02	Emergency Releasing Lock (Pilotmens Lock)

Discipline	Reference	File Name
Signals Services Schedules	SS 05 51 02 03	Emergency Releasing Lock (Pilotmens Lock)
Signals Services Schedules	SS 05 51 03 01	Half Pilot Staff Lock
Signals Services Schedules	SS 05 51 03 03	Half Pilot Staff Lock
Signals Services Schedules	SS 07 11 01 01	Signal D.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 01 02	Signal D.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 01 03	Signal D.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 01 04	Signal D.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 01 05	Signal D.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 02 01	Signal A.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 02 02	Signal A.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 02 03	Signal A.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 02 04	Signal A.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 02 05	Signal A.C. Upper Quadrant Semaphore
Signals Services Schedules	SS 07 11 03 01	Signal Banner
Signals Services Schedules	SS 07 11 03 02	Signal Banner
Signals Services Schedules	SS 07 12 01 01	Signal Colour Light Signal Branch Frame Mounted
Signals Services Schedules	SS 07 12 01 02	Signal Colour Light Signal Branch Frame Mounted

Discipline	Reference	File Name
Signals Services Schedules	SS 07 12 01 03	Signal Colour Light Signal Branch Frame Mounted
Signals Services Schedules	SS 07 12 01 04	Signal Colour Light Signal Branch Frame Mounted
Signals Services Schedules	SS 07 12 02 01	Signal Colour Light Signal Branch Post Mounted
Signals Services Schedules	SS 07 12 02 02	Signal Colour Light Signal Branch Post Mounted
Signals Services Schedules	SS 07 12 02 03	Signal Colour Light Signal Branch Post Mounted
Signals Services Schedules	SS 07 12 02 04	Signal Colour Light Signal Branch Post Mounted
Signals Services Schedules	SS 07 12 03 01	Signal Westinghouse Style R2 Mk 1
Signals Services Schedules	SS 07 12 03 02	Signal Westinghouse Style R2 Mk 1
Signals Services Schedules	SS 07 12 03 03	Signal Westinghouse Style R2 Mk 1
Signals Services Schedules	SS 07 12 03 04	Signal Westinghouse Style R2 Mk 1
Signals Services Schedules	SS 07 12 04 01	Signal Westinghouse Style R2 Mk 3
Signals Services Schedules	SS 07 12 04 02	Signal Westinghouse Style R2 Mk 3
Signals Services Schedules	SS 07 12 04 03	Signal Westinghouse Style R2 Mk 3
Signals Services Schedules	SS 07 12 04 04	Signal Westinghouse Style R2 Mk 3
Signals Services Schedules	SS 07 12 05 01	Signal Westinghouse Style R2 Mk 4
Signals Services Schedules	SS 07 12 05 02	Signal Westinghouse Style R2 Mk 4
Signals Services Schedules	SS 07 12 05 03	Signal Westinghouse Style R2 Mk 4

Discipline	Reference	File Name
Signals Services Schedules	SS 07 12 05 04	Signal Westinghouse Style R2 Mk 4
Signals Services Schedules	SS 07 12 06 01	Signal M.L
Signals Services Schedules	SS 07 12 06 02	Signal M.L
Signals Services Schedules	SS 07 12 06 04	Signal M.L
Signals Services Schedules	SS 07 12 07 01	Signal GEC
Signals Services Schedules	SS 07 12 07 02	Signal GEC
Signals Services Schedules	SS 07 12 07 03	Signal GEC
Signals Services Schedules	SS 07 12 07 04	Signal GEC
Signals Services Schedules	SS 07 12 08 01	Signal Aldridge
Signals Services Schedules	SS 07 12 08 02	Signal Aldridge
Signals Services Schedules	SS 07 12 08 03	Signal Aldridge
Signals Services Schedules	SS 07 12 08 04	Signal Aldridge
Signals Services Schedules	SS 07 12 09 01	Signal Montrose
Signals Services Schedules	SS 07 12 09 02	Signal Montrose
Signals Services Schedules	SS 07 12 09 03	Signal Montrose
Signals Services Schedules	SS 07 12 09 04	Signal Montrose
Signals Services Schedules	SS 07 12 10 01	Signal Tunnel Incandescent

Discipline	Reference	File Name
Signals Services Schedules	SS 07 12 10 02	Signal Tunnel Incandescent
Signals Services Schedules	SS 07 12 10 03	Signal Tunnel Incandescent
Signals Services Schedules	SS 07 12 10 04	Signal Tunnel Incandescent
Signals Services Schedules	SS 07 12 11 01	Signal Tunnel LED
Signals Services Schedules	SS 07 12 11 02	Signal Tunnel LED
Signals Services Schedules	SS 07 12 11 03	Signal Tunnel LED
Signals Services Schedules	SS 07 12 12 01	Signal Colour Light LED
Signals Services Schedules	SS 07 12 12 02	Signal Colour Light LED
Signals Services Schedules	SS 07 12 12 03	Signal Colour Light LED
Signals Services Schedules	SS 07 13 01 01	Signal Shunt Colour Light
Signals Services Schedules	SS 07 13 01 02	Signal Shunt Colour Light
Signals Services Schedules	SS 07 13 02 01	Signal Westinghouse Shunt Colour Light
Signals Services Schedules	SS 07 13 02 02	Signal Westinghouse Shunt Colour Light
Signals Services Schedules	SS 07 14 01 01	Signal Position Light
Signals Services Schedules	SS 07 14 01 02	Signal Position Light
Signals Services Schedules	SS 07 14 02 01	Signal Westinghouse Position Light
Signals Services Schedules	SS 07 14 02 02	Signal Westinghouse Position Light

Discipline	Reference	File Name
Signals Services Schedules	SS 07 14 03 01	Signal Westinghouse Position Light Mk 2
Signals Services Schedules	SS 07 14 03 02	Signal Westinghouse Position Light Mk 2
Signals Services Schedules	SS 07 14 04 01	Signal GEC Position Light Mk 2
Signals Services Schedules	SS 07 14 04 02	Signal GEC Position Light Mk 2
Signals Services Schedules	SS 07 19 01 01	Signal Lower Quadrant Mechanical
Signals Services Schedules	SS 07 19 01 02	Signal Lower Quadrant Mechanical
Signals Standards	SC 00 47 00 00 SP	Specification - Installation of Trackside Equipment
Signals Services Schedules	SS 07 19 01 03	Signal Lower Quadrant Mechanical
Signals Services Schedules	SS 07 19 01 04	Signal Lower Quadrant Mechanical
Signals Services Schedules	SS 07 19 01 05	Signal Lower Quadrant Mechanical
Signals Services Schedules	SS 07 19 02 01	Signal Lower Quadrant Mechanical Reverser Worked
Signals Services Schedules	SS 07 19 02 02	Signal Lower Quadrant Mechanical Reverser Worked
Signals Services Schedules	SS 07 19 02 03	Signal Lower Quadrant Mechanical Reverser Worked
Signals Services Schedules	SS 07 19 02 04	Signal Lower Quadrant Mechanical Reverser Worked
Signals Services Schedules	SS 07 19 02 05	Signal Lower Quadrant Mechanical Reverser Worked
Signals Services Schedules	SS 07 19 03 01	Signal Lower Quadrant Mechanical Dwarf
Signals Services Schedules	SS 07 19 03 02	Signal Lower Quadrant Mechanical Dwarf
Signals Services Schedules	SS 07 19 03 03	Signal Lower Quadrant Mechanical Dwarf

Discipline	Reference	File Name
Signals Services Schedules	SS 07 19 03 04	Signal Lower Quadrant Mechanical Dwarf
Signals Services Schedules	SS 07 19 04 01	Signal Lower Quadrant Mechanical Reverser Worked A.C
Signals Services Schedules	SS 07 19 04 02	Signal Lower Quadrant Mechanical Reverser Worked A.C
Signals Services Schedules	SS 07 19 04 03	Signal Lower Quadrant Mechanical Reverser Worked A.C
Signals Services Schedules	SS 07 19 04 04	Signal Lower Quadrant Mechanical Reverser Worked A.C
Signals Services Schedules	SS 07 19 04 05	Signal Lower Quadrant Mechanical Reverser Worked A.C
Signals Services Schedules	SS 07 21 01 01	Trainstop Westinghouse JA
Signals Services Schedules	SS 07 21 01 02	Trainstop Westinghouse JA
Signals Services Schedules	SS 07 21 01 03	Trainstop Westinghouse JA
Signals Services Schedules	SS 07 21 01 04	Trainstop Westinghouse JA
Signals Services Schedules	SS 07 21 01 05	Trainstop Westinghouse JA
Signals Services Schedules	SS 07 21 02 01	Trainstop Signal Branch E.P
Signals Services Schedules	SS 07 21 02 02	Trainstop Signal Branch E.P
Signals Services Schedules	SS 07 21 02 03	Trainstop Signal Branch E.P
Signals Services Schedules	SS 07 21 02 04	Trainstop Signal Branch E.P
Signals Services Schedules	SS 07 21 02 05	Trainstop Signal Branch E.P
Signals Services Schedules	SS 07 22 01 01	Trainstop Westinghouse J A.H

Discipline	Reference	File Name
Signals Services Schedules	SS 07 22 01 02	Trainstop Westinghouse J A.H
Signals Services Schedules	SS 07 22 01 03	Trainstop Westinghouse J A.H
Signals Services Schedules	SS 07 22 01 04	Trainstop Westinghouse J A.H
Signals Services Schedules	SS 07 22 01 05	Trainstop Westinghouse J A.H
Signals Services Schedules	SS 07 22 02 01	Trainstop Westinghouse J A.H Dry Sump
Signals Services Schedules	SS 07 22 02 02	Trainstop Westinghouse J A.H Dry Sump
Signals Services Schedules	SS 07 22 02 03	Trainstop Westinghouse J A.H Dry Sump
Signals Services Schedules	SS 07 22 02 04	Trainstop Westinghouse J A.H Dry Sump
Signals Services Schedules	SS 07 22 02 05	Trainstop Westinghouse J A.H Dry Sump
Signals Services Schedules	SS 07 23 01 01	Trainstop Electric G.R.S
Signals Services Schedules	SS 07 23 01 02	Trainstop Electric G.R.S
Signals Services Schedules	SS 07 23 01 03	Trainstop Electric G.R.S
Signals Services Schedules	SS 07 23 01 04	Trainstop Electric G.R.S
Signals Services Schedules	SS 07 23 02 01	Trainstop Electric F-1
Signals Services Schedules	SS 07 23 02 02	Trainstop Electric F-2
Signals Services Schedules	SS 07 23 02 03	Trainstop Electric F-3
Signals Services Schedules	SS 07 23 02 04	Trainstop Electric F-4

Discipline	Reference	File Name
Signals Services Schedules	SS 07 23 03 01	Trainstop Electric F-2
Signals Services Schedules	SS 07 23 03 02	Trainstop Electric F-3
Signals Services Schedules	SS 07 23 03 03	Trainstop Electric F-4
Signals Services Schedules	SS 07 23 03 04	Trainstop Electric F-5
Signals Services Schedules	SS 07 23 04 01	Trainstop Electric T
Signals Services Schedules	SS 07 23 04 02	Trainstop Electric T
Signals Services Schedules	SS 07 23 04 03	Trainstop Electric T
Signals Services Schedules	SS 07 23 04 04	Trainstop Electric T
Signals Services Schedules	SS 07 23 05 01	Trainstop Westinghouse J.A.E
Signals Services Schedules	SS 07 23 05 02	Trainstop Westinghouse J.A.E
Signals Services Schedules	SS 07 23 05 03	Trainstop Westinghouse J.A.E
Signals Services Schedules	SS 07 31 01 01	Points Electric Siemens H.A
Signals Services Schedules	SS 07 31 01 02	Points Electric Siemens H.A
Signals Services Schedules	SS 07 31 01 03	Points Electric Siemens H.A
Signals Services Schedules	SS 07 31 01 04	Points Electric Siemens H.A
Signals Services Schedules	SS 07 31 02 01	Points Electric M Series
Signals Services Schedules	SS 07 31 02 02	Points Electric M Series

Discipline	Reference	File Name
Signals Services Schedules	SS 07 31 02 03	Points Electric M Series
Signals Services Schedules	SS 07 31 02 04	Points Electric M Series
Signals Services Schedules	SS 07 31 03 01	Points Electric M70 / M3A / 84M Series
Signals Services Schedules	SS 07 31 03 02	Points Electric M70 / M3A / 84M Series
Signals Services Schedules	SS 07 31 03 03	Points Electric M70 / M3A / 84M Series
Signals Services Schedules	SS 07 31 03 04	Points Electric M70 / M3A / 84M Series
Signals Services Schedules	SS 07 31 04 01	Points Electric G.E.C HW Series
Signals Services Schedules	SS 07 31 04 02	Points Electric G.E.C HW Series
Signals Services Schedules	SS 07 31 04 03	Points Electric G.E.C HW Series
Signals Services Schedules	SS 07 31 04 04	Points Electric G.E.C HW Series
Signals Services Schedules	SS 07 31 05 01	Points Electric Nippon KA 1200A, KA 1211C, KA 1401C
Signals Services Schedules	SS 07 31 05 02	Points Electric Nippon KA 1200A, KA 1211C, KA 1401C
Signals Services Schedules	SS 07 31 05 03	Points Electric Nippon KA 1200A, KA 1211C, KA 1401C
Signals Services Schedules	SS 07 31 05 04	Points Electric Nippon KA 1200A, KA 1211C, KA 1401C
Signals Services Schedules	SS 07 33 01 01	Points Pneumatic Signal Branch E.P
Signals Services Schedules	SS 07 33 01 02	Points Pneumatic Signal Branch E.P
Signals Services Schedules	SS 07 33 01 03	Points Pneumatic Signal Branch E.P

Discipline	Reference	File Name
Signals Services Schedules	SS 07 33 01 04	Points Pneumatic Signal Branch E.P
Signals Services Schedules	SS 07 34 01 01	Points Mechanical
Signals Services Schedules	SS 07 34 01 02	Points Mechanical
Signals Services Schedules	SS 07 34 01 03	Points Mechanical
Signals Services Schedules	SS 07 34 02 01	Points Mechanical – Trailable
Signals Services Schedules	SS 07 34 02 02	Points Mechanical – Trailable
Signals Services Schedules	SS 07 34 03 01	Point Mechanical With Mechanical Point Indicator (Train Order Working Areas)
Signals Services Schedules	SS 07 34 03 02	Point Mechanical With Mechanical Point Indicator (Train Order Working Areas)
Signals Services Schedules	SS 07 37 01 01	Points Claw Lock Electric Drive
Signals Services Schedules	SS 07 37 01 02	Points Claw Lock Electric Drive
Signals Services Schedules	SS 07 37 01 03	Points Claw Lock Electric Drive
Signals Services Schedules	SS 07 37 01 04	Points Claw Lock Electric Drive
Signals Services Schedules	SS 07 37 01 05	Points Claw Lock Electric Drive
Signals Services Schedules	SS 07 37 02 01	Points Claw Lock EP Drive
Signals Services Schedules	SS 07 37 02 02	Points Claw Lock EP Drive
Signals Services Schedules	SS 07 37 02 03	Points Claw Lock EP Drive
Signals Services Schedules	SS 07 37 02 04	Points Claw Lock EP Drive

Discipline	Reference	File Name
Signals Services Schedules	SS 07 38 02 01	Derail and Crowder EP Drive
Signals Services Schedules	SS 07 38 02 02	Derail and Crowder EP Drive
Signals Services Schedules	SS 07 38 02 03	Derail and Crowder EP Drive
Signals Services Schedules	SS 07 38 02 04	Derail and Crowder EP Drive
Signals Services Schedules	SS 07 41 01 01	Track Circuits D.C
Signals Services Schedules	SS 07 41 01 02	Track Circuits D.C
Signals Services Schedules	SS 07 41 01 03	Track Circuits D.C
Signals Services Schedules	SS 07 41 01 04	Track Circuits D.C
Signals Services Schedules	SS 07 41 01 05	Track Circuits D.C
Signals Services Schedules	SS 07 41 02 01	Track Circuits D.C Rectified
Signals Services Schedules	SS 07 41 02 02	Track Circuits D.C Rectified
Signals Services Schedules	SS 07 41 02 03	Track Circuits D.C Rectified
Signals Services Schedules	SS 07 41 02 04	Track Circuits D.C Rectified
Signals Services Schedules	SS 07 41 02 05	Track Circuits D.C Rectified
Signals Services Schedules	SS 07 41 03 01	Track Circuits D.C Solar Fed
Signals Services Schedules	SS 07 41 03 02	Track Circuits D.C Solar Fed
Signals Services Schedules	SS 07 41 03 03	Track Circuits D.C Solar Fed

Discipline	Reference	File Name
Signals Services Schedules	SS 07 41 03 04	Track Circuits D.C Solar Fed
Signals Services Schedules	SS 07 41 03 05	Track Circuits D.C Solar Fed
Signals Services Schedules	SS 07 42 01 01	Track Circuits Jeumont Single Rail
Signals Services Schedules	SS 07 42 01 02	Track Circuits Jeumont Single Rail
Signals Services Schedules	SS 07 42 01 03	Track Circuits Jeumont Single Rail
Signals Services Schedules	SS 07 42 01 04	Track Circuits Jeumont Single Rail
Signals Services Schedules	SS 07 42 02 01	Track Circuits Jeumont Double Rail
Signals Services Schedules	SS 07 42 02 02	Track Circuits Jeumont Double Rail
Signals Services Schedules	SS 07 42 02 03	Track Circuits Jeumont Double Rail
Signals Services Schedules	SS 07 42 02 04	Track Circuits Jeumont Double Rail
Signals Services Schedules	SS 07 43 01 01	Track Circuits A.C Single Rail
Signals Services Schedules	SS 07 43 01 02	Track Circuits A.C Single Rail
Signals Services Schedules	SS 07 43 01 03	Track Circuits A.C Single Rail
Signals Services Schedules	SS 07 43 01 04	Track Circuits A.C Single Rail
Signals Services Schedules	SS 07 43 01 05	Track Circuits A.C Single Rail
Signals Services Schedules	SS 07 43 02 01	Track Circuits A.C Double Rail
Signals Services Schedules	SS 07 43 02 02	Track Circuits A.C Double Rail

Discipline	Reference	File Name
Signals Services Schedules	SS 07 43 02 03	Track Circuits A.C Double Rail
Signals Services Schedules	SS 07 43 02 04	Track Circuits A.C Double Rail
Signals Services Schedules	SS 07 43 02 05	Track Circuits A.C Double Rail
Signals Services Schedules	SS 07 43 02 06	Track Circuits A.C Double Rail
Signals Services Schedules	SS 07 43 03 01	Track Circuits Westinghouse A.C Single Rail
Signals Services Schedules	SS 07 43 03 02	Track Circuits Westinghouse A.C Single Rail
Signals Services Schedules	SS 07 43 03 03	Track Circuits Westinghouse A.C Single Rail
Signals Services Schedules	SS 07 43 03 04	Track Circuits Westinghouse A.C Single Rail
Signals Services Schedules	SS 07 43 03 05	Track Circuits Westinghouse A.C Single Rail
Signals Services Schedules	SS 07 43 04 01	Track Circuits A.C Double Rail (Non Electrified Areas)
Signals Services Schedules	SS 07 43 04 02	Track Circuits A.C Double Rail (Non Electrified Areas)
Signals Services Schedules	SS 07 43 04 03	Track Circuits A.C Double Rail (Non Electrified Areas)
Signals Services Schedules	SS 07 43 04 04	Track Circuits A.C Double Rail (Non Electrified Areas)
Signals Services Schedules	SS 07 43 04 05	Track Circuits A.C Double Rail (Non Electrified Areas)
Signals Services Schedules	SS 07 44 01 01	Track Circuits C.S.E.E Audio
Signals Services Schedules	SS 07 44 01 03	Track Circuits C.S.E.E Audio
Signals Services Schedules	SS 07 44 01 04	Track Circuits C.S.E.E Audio

Discipline	Reference	File Name
Signals Services Schedules	SS 07 44 01 05	Track Circuits C.S.E.E Audio
Signals Services Schedules	SS 07 44 01 06	Track Circuits C.S.E.E Audio
Signals Services Schedules	SS 07 44 02 01	Track Circuits Westinghouse Audio
Signals Services Schedules	SS 07 44 02 02	Track Circuits Westinghouse Audio
Signals Services Schedules	SS 07 44 02 03	Track Circuits Westinghouse Audio
Signals Services Schedules	SS 07 44 02 04	Track Circuits Westinghouse Audio
Signals Services Schedules	SS 07 44 03 01	Track Circuits M.L Audio
Signals Services Schedules	SS 07 44 03 01e	Track Circuits M.L Audio
Signals Services Schedules	SS 07 44 03 02	Track Circuits M.L Audio
Signals Services Schedules	SS 07 44 03 03	Track Circuits M.L Audio
Signals Services Schedules	SS 07 47 01 01	Microtrax
Signals Services Schedules	SS 07 47 01 02	Microtrax
Signals Services Schedules	SS 07 51 01 01	Releasing Switch Signal Branch
Signals Services Schedules	SS 07 51 01 02	Releasing Switch Signal Branch
Signals Services Schedules	SS 07 51 01 03	Releasing Switch Signal Branch
Signals Services Schedules	SS 07 51 01 04	Releasing Switch Signal Branch
Signals Services Schedules	SS 07 51 02 01	Releasing Switch Westinghouse

Discipline	Reference	File Name
Signals Services Schedules	SS 07 51 02 02	Releasing Switch Westinghouse
Signals Services Schedules	SS 07 51 02 03	Releasing Switch Westinghouse
Signals Services Schedules	SS 07 51 02 04	Releasing Switch Westinghouse
Signals Services Schedules	SS 07 51 03 01	Releasing Switch D.M.L
Signals Services Schedules	SS 07 51 03 02	Releasing Switch D.M.L
Signals Services Schedules	SS 07 51 03 03	Releasing Switch D.M.L
Signals Services Schedules	SS 07 51 03 04	Releasing Switch D.M.L
Signals Services Schedules	SS 07 61 00 01	Level Crossing Type F Lights and Bells
Signals Services Schedules	SS 07 61 00 02	Level Crossing Type F Lights and Bells
Signals Services Schedules	SS 07 61 00 03	Level Crossing Type F Lights and Bells
Signals Services Schedules	SS 07 62 20 01	Level Crossing Pedestrian
Signals Services Schedules	SS 07 62 20 02	Level Crossing Pedestrian
Signals Services Schedules	SS 07 62 20 03	Level Crossing Pedestrian
Signals Services Schedules	SS 07 62 30 01	Level Crossing Pedestrian Swing Gates
Signals Services Schedules	SS 07 62 30 02	Level Crossing Pedestrian Swing Gates
Signals Services Schedules	SS 07 62 30 03	Level Crossing Pedestrian Swing Gates
Signals Services Schedules	SS 07 62 30 04	Level Crossing Pedestrian Swing Gates

Discipline	Reference	File Name
Signals Services Schedules	SS 07 62 30 05	Level Crossing Pedestrian Swing Gates
Signals Services Schedules	SS 07 62 30 06	Level Crossing Pedestrian Swing Gates
Signals Services Schedules	SS 07 63 00 01	Level Crossing Type F Lights, Bells and Boom Gates (All Types)
Signals Services Schedules	SS 07 63 00 02	Level Crossing Type F Lights, Bells and Boom Gates (All Types)
Signals Services Schedules	SS 07 63 00 03	Level Crossing Type F Lights, Bells and Boom Gates (All Types)
Signals Services Schedules	SS 07 82 01 01	Hot Box Detector
Signals Services Schedules	SS 07 82 01 02	Hot Box Detector
Signals Services Schedules	SS 07 82 02 01	Dragging Equipment Detector
Signals Services Schedules	SS 07 82 03 01	Wheel Impact Load Detector
Signals Services Schedules	SS 07 85 02 01	Automatic Equipment Identification (AEI) Systems – Delairco Type
Signals Services Schedules	SS 07 85 02 02	Automatic Equipment Identification (AEI) Systems – Delairco Type
Signals Services Schedules	SS 07 91 00 01	Notice Plates
Signals Services Schedules	SS 07 91 00 02	Notice Plates
Signals Services Schedules	SS 07 91 00 03	Notice Plates
Signals Services Schedules	SS 07 92 01 01	Guards Indicator
Signals Services Schedules	SS 07 92 01 02	Guards Indicator
Signals Services Schedules	SS 07 92 01 03	Guards Indicator

Discipline	Reference	File Name
Signals Services Schedules	SS 07 92 02 01	Buffer Stop Lights
Signals Services Schedules	SS 07 92 02 02	Buffer Stop Lights
Signals Services Schedules	SS 07 92 02 03	Buffer Stop Lights
Signals Services Schedules	SS 07 92 03 01	Warning Lights
Signals Services Schedules	SS 07 92 03 02	Warning Lights
Signals Services Schedules	SS 07 92 03 03	Warning Lights
Signals Services Schedules	SS 07 94 01 01	Weighbridge Signals
Signals Services Schedules	SS 07 94 01 02	Weighbridge Signals
Signals Services Schedules	SS 07 94 01 03	Weighbridge Signals
Signals Services Schedules	SS 07 94 02 01	Loading Signals
Signals Services Schedules	SS 07 94 02 02	Loading Signals
Signals Services Schedules	SS 07 94 02 03	Loading Signals
Signals Services Schedules	SS 08 11 01 01	Safeworking Instruments Miniature Electric Staff
Signals Services Schedules	SS 08 11 01 02	Safeworking Instruments Miniature Electric Staff
Signals Services Schedules	SS 08 11 01 03	Safeworking Instruments Miniature Electric Staff
Signals Services Schedules	SS 08 11 01 04	Safeworking Instruments Miniature Electric Staff
Signals Services Schedules	SS 08 11 02 01	Safeworking Instruments Large Electric Staff

Discipline	Reference	File Name
Signals Services Schedules	SS 08 11 02 02	Safeworking Instruments Large Electric Staff
Signals Services Schedules	SS 08 11 02 03	Safeworking Instruments Large Electric Staff
Signals Services Schedules	SS 08 11 02 04	Safeworking Instruments Large Electric Staff
Signals Services Schedules	SS 09 11 01 01	Power Supply AC
Signals Services Schedules	SS 09 11 01 02	Power Supply AC
Signals Services Schedules	SS 09 11 01 03	Power Supply AC
Signals Services Schedules	SS 09 11 02 01	Power Supply Motor Generator Sets
Signals Services Schedules	SS 09 11 02 02	Power Supply Motor Generator Sets
Signals Services Schedules	SS 09 11 02 03	Power Supply Motor Generator Sets
Signals Services Schedules	SS 09 11 02 04	Power Supply Motor Generator Sets
Signals Services Schedules	SS 09 11 03 01	Electric Power Supply - UPS
Signals Services Schedules	SS 09 11 03 02	Electric Power Supply - UPS
Signals Services Schedules	SS 09 11 04 01	Electric Power Supply – UPS (IASS)
Signals Services Schedules	SS 05 51 03 02	Half Pilot Staff Lock
Signals Services Schedules	SS 09 11 04 02	Electric Power Supply – UPS (IASS)
Signals Services Schedules	SS 09 11 07 01	Electric Power Supply - Inverter
Signals Services Schedules	SS 09 11 07 02	Electric Power Supply - Inverter

Discipline	Reference	File Name
Signals Services Schedules	SS 09 12 01 01	Power Supply D.C No Break
Signals Services Schedules	SS 09 12 01 02	Power Supply D.C No Break
Signals Services Schedules	SS 09 12 01 03	Power Supply D.C No Break
Signals Services Schedules	SS 09 12 01 04	Power Supply D.C No Break
Signals Services Schedules	SS 09 12 02 01	Power Supply D.C Rectified
Signals Services Schedules	SS 09 12 02 02	Power Supply D.C Rectified
Signals Services Schedules	SS 09 12 02 03	Power Supply D.C Rectified
Signals Services Schedules	SS 09 12 03 01	Electric Power Supply - Battery
Signals Services Schedules	SS 09 12 04 01	Electric Power Supply – Regulated Dc
Signals Services Schedules	SS 09 21 01 01	Power Supply Pneumatic System
Signals Services Schedules	SS 11 11 01 01	Cable Signalling Multicore
Signals Services Schedules	SS 11 11 02 01	Cable Signalling Power
Signals Services Schedules	SS 11 11 03 01	Cable Signalling Single Core
Signals Services Schedules	SS 11 21 01 01	Cable Route Buried
Signals Services Schedules	SS 11 22 01 01	Cable Route Ground Level Trough
Signals Services Schedules	SS 11 23 01 01	Cable Route Galvanised Steel Trough
Signals Services Schedules	SS 11 31 01 01	Open Wire Line Signalling

Discipline	Reference	File Name
Signals Services Schedules	SS 11 31 01 02	Open Wire Line Signalling
Signals Services Schedules	SS 11 31 02 01	Open Wire Line Signalling Communications
Signals Services Schedules	SS 11 31 02 02	Open Wire Line Signalling Communications
Signals Services Schedules	SS 12 10 01 01	Signalling Complexes
Signals Services Schedules	SS 12 20 01 01	Small Buildings and Locations
Signals Services Schedules	SS 12 24 00 01	Enclosures – Equipment Cubicle
Signals Services Schedules	SS 12 24 01 01	Atrics Telemetry Cubicle
Signals Services Schedules	SS 12 24 02 01	Atrics Computer Cubicle
Signals Staff Certifications	RIC Signals Certificate of Competency Engr Const	RIC Signals Certificate of Competency Engr Const
Signals Staff Certifications	RIC Signals Certificate of Competency Engr Maint	RIC Signals Certificate of Competency Engr Maint
Signals Staff Certifications	RIC Signals Certificate of Competency SE Const	RIC Signals Certificate of Competency SE Const
Signals Staff Certifications	RIC Signals Certificate of Competency SE Maint	RIC Signals Certificate of Competency SE Maint
Signals Staff Certifications	RIC Signals Certificate of Competency Sen Fld Engr	RIC Signals Certificate of Competency Senior Engr Field

Discipline	Reference	File Name
Signals Staff Certifications	SC 00 02 10 02 SC	Reassessment of Signalling Infrastructure Workers
Signals Standard Drawings	CSTD0000	Sig Circuit Design Guidelines Front Page
Signals Standard Drawings	CSTDA01	Automatic Signalling - Country
Signals Standard Drawings	CSTDA02	Automatic Signalling - Metropolitan
Signals Standard Drawings	CSTDA03	Automatic Signalling - Metropolitan
Signals Standard Drawings	CSTDA04	Automatic Signalling - City, Pg1
Signals Standard Drawings	CSTDA08	Pulsating Band of Lights (Country)
Signals Standard Drawings	CSTDA10	Signal Operating - Shunt Signal
Signals Standard Drawings	CSTDA11	Signal Operating - Six Light Signal
Signals Standard Drawings	CSTDA12	Signal Light Operating - Turnout Repeater Signal Pg 1
Signals Standard Drawings	CSTDA14	Outer Metropolitan With Trainstops
Signals Standard Drawings	CSTDA15	Signal Light Operating - Preliminary Medium
Signals Standard Drawings	CSTDA16	Intermediate Train Stops Approaching Catchpoint Pg 1
Signals Standard Drawings	CSTDA17	Intermediate Train Stops Approaching Catchpoint Pg 2
Signals Standard Drawings	CSTDA18	Intermediate Train Stops Approaching Catchpoint Pg 3
Signals Standards	SC 00 11 00 00 TI	Glossary of Signalling Terms
Signals Standards	SC 00 13 01 00 SP	Introduction
Signals Standards	SC 00 13 01 01 SP	Signals
Signals Standards	SC 00 13 01 02 SP	Headway

Discipline	Reference	File Name
Signals Standards	SC 00 13 01 03 SP	Braking Distance
Signals Standards	SC 00 13 01 04 SP	Overlaps
Signals Standards	SC 00 13 01 05 SP	Speed Restrictions
Signals Standards	SC 00 13 01 06 SI	Noticeboards
Signals Standards	SC 00 13 01 07 SP	Single Line Sections
Signals Standards	SC 00 13 01 08 SP	Bi-Directional Signalling
Signals Standards	SC 00 13 01 09 SP	Time Releases
Signals Standards	SC 00 13 01 10 SP	Locking Arrangements
Signals Standards	SC 00 13 01 11 SP	Approach Locking
Signals Standards	SC 00 13 01 12 SP	Route Holding
Signals Standards	SC 00 13 01 13 SP	Local Control
Signals Standards	SC 00 13 01 14 SP	Points
Signals Standards	SC 00 13 01 15 SP	Trainstops
Signals Standards	SC 00 13 01 16 SP	Controls and Indications
Signals Standards	SC 00 13 01 17 SP	Track Circuits
Signals Standards	SC 00 13 01 18 SP	Level Crossings
Signals Standards	SC 00 13 01 19 SP	Train Orders
Signals Standards	SC 00 13 01 20 SP	Warning Lights
Signals Standards	SC 00 13 01 21 SP	Placing Signals at Stop to Protect a Worksite
Signals Standards	SC 00 13 01 22 SP	Measurement of Distances on Signalling Plans
Signals Standards	SC 00 13 01 23 SP	Placement of Yard Limit Boards
Signals Standards	SC 00 13 01 24 SP	Arrangements of Infrastructure at Signalling to Train Order and Token Area Boundaries
Signals Standards	SC 00 15 00 00 SP	Specification - Traction Return, Track Insulation and Bonding
Signals Standards	SC 00 16 00 00 SP	Specification - Signalling Power Systems
Signals Standards	SC 00 21 00 00 SP	Standard Requirements for Signalling Electronic Systems
Signals Standards	SC 00 21 01 00 SP	Signalling Electronic System Verification
Signals Standards	SC 00 22 00 00 SP	Environmental Conditions
Signals Standards	SC 00 23 00 00 SP	Signalling Documentation and Drawings

Discipline	Reference	File Name
Signals Standards	SC 00 24 00 00 SP	Signs, Notice Plates and Instruction Plates
Signals Standards	SC 00 25 00 00 SP	Specification - General Requirements for Labelling of Equipment
Signals Standards	SC 00 26 00 00 SP	Electrical & Electronic Components (Ratings & Construction Requirements)
Signals Standards	SC 00 41 00 08 SP	Glossary of Terms
Signals Standards	SC 00 41 02 00 SP	Inspection and Testing of New and Altered Signalling Works General Requirements
Signals Standards	SC 00 41 02 01 SP	Inspection and Testing of New and Altered Signalling Works Inspection and Testing Procedures
Signals Services Schedules	SS 07 44 01 02	Track Circuits C.S.E.E Audio
Signals Standards	SC 00 41 02 03 SP	Inspection and Testing of New and Altered Signalling Works Standard forms
Signals Standards	SC 00 41 02 04 SP	Typical Inspections and Tests for Signalling Apparatus Procedures for Alterations
Signals Standards	SC 00 45 00 00 SP	Type Approval Requirements for Signalling Systems and Equipment
Signals Standards	SC 00 51 00 00 MP	Signalling Technical Maintenance Plan
Signals Standards	SC 00 51 00 00 SS	Service Schedules
Signals Standards	SC 00 52 00 00 SI	Technical Manual Signalling Maintenance Procedures (Cover)
Signals Standards	SC 00 52 00 01 SI	Introduction to Signalling Maintenance Procedures
Signals Standards	SC 00 52 00 02 SI	Bridging Or False Feeding of Signalling Circuits
Signals Standards	SC 00 52 00 03 SI	Accidents Or Derailments - Action to Be Taken
Signals Standards	SC 00 52 00 04 SI	Failures
Signals Standards	SC 00 52 00 05 SI	Damage to Signalling Equipment Including Cables
Signals Standards	SC 00 52 00 06 SI	Release of Track Locking Or Indication Locking
Signals Standards	SC 00 52 00 07 SI	Apparatus Seldom Used
Signals Standards	SC 00 52 00 08 SI	Booking Signalling Equipment Out of Use
Signals Standards	SC 00 52 00 09 SI	Disconnection of Signalling Apparatus
Signals Standards	SC 00 52 00 10 SI	Testing and Certifying Equipment Worked on or Altered During Maintenance

Discipline	Reference	File Name
Signals Standards	SC 00 52 00 11 SI	Like for Like Renewals
Signals Standards	SC 00 52 00 12 SI	Repair/Replacement of Signalling Wires
Signals Standards	SC 00 52 00 13 SI	Field Paralleling of Signalling Contacts
Signals Standards	SC 00 52 00 14 SI	Document Control of Signal Plans and Circuit Books issued to The Field
Signals Standards	SC 00 52 00 15 SI	Location of Trackside Equipment
Signals Standards	SC 00 52 00 16 SI	Notification of Whereabouts and Liaison With Signallers
Signals Standards	SC 00 52 00 17 SI	Maintenance Responsibilities, Frequencies, Recording
Signals Standards	SC 00 52 00 18 SI	Depot Overhaul of Vital Signalling Equipment
Signals Standards	SC 00 52 00 19 SI	Cleanliness and Lubrication of Mechanical Signalling Equipment
Signals Standards	SC 00 52 00 20 SI	Security, Fire Protection, Weather Proofing and Cleanliness of Signalling Equipment, Housings and Locations
Signals Standards	SC 00 52 00 21 SI	Minor Signalling Works on Maintenance Areas Involving Installing, Removal Or Altering Signalling Equipment
Signals Standards	SC 00 52 00 22 SI	Testing Interlockings - Maintenance Responsibilities
Signals Standards	SC 00 52 00 23 SI	Insulation Inspection and Testing
Signals Standards	SC 00 52 00 24 SI	Vital Signalling Relays
Signals Standards	SC 00 52 00 24 SI	Vital Signalling Relays
Signals Standards	SC 00 52 00 25 SI	Track Circuits
Signals Standards	SC 00 52 00 26 SI	Rerailing - Precautions to be Taken
Signals Standards	SC 00 52 00 27 SI	Traction Return (1500V DC)
Signals Standards	SC 00 52 00 28 SI	Points Detection Test - Separate Electrical
Signals Standards	SC 00 52 00 29 SI	Facing Point Lock Testing - Mechanical
Signals Standards	SC 00 52 00 30 SI	Facing Point Lock and Detection Testing - Combined Point Machine
Signals Standards	SC 00 52 00 31 SI	Maintenance of Signal Sighting and Signals
Signals Standards	SC 00 52 00 32 SI	Solid State Interlocking (SSI)
Signals Standards	SC 00 52 00 33 SI	Electric Train Staff Instruments
Signals Standards	SC 00 52 00 34 SI	Custody, Storage and Despatch of Staffs and Keys
Signals Standards	SC 00 52 00 35 SI	Use of Master Keys and Staffs

Discipline	Reference	File Name
Signals Standards	SC 00 52 00 37 SI	Microtax Coded Track Circuits
Signals Standards	SC 00 52 00 38 SI	Microlok Computer Based Interlocking
Signals Standards	SC 00 52 00 39 SI	Westrace Computer Based Interlocking
Signals Standards	SC 00 52 00 40 SI	Use of Radio Transmitters Near Electronic Signalling Systems
Signals Standards	SC 00 52 00 41 SI	Pole Route
Signals Standards	SC 00 52 00 42 SI	Work on Signalling Power Mains
Signals Standards	SC 00 52 00 43 SI	Guidelines for Irregularity Inspection and Testing to Determine Cause
Signals Standards	SC 00 52 00 44 SI	General Signalling Maintenance Management, Administration and Supervision Responsibilities
Signals Standards	SC 00 52 00 45 SI	Surveillance Inspections
Signals Standards	SC 00 52 00 46 SI	Guidelines for The Safe Use of Temporary Recording, Monitoring and Logging Equipment on Signalling Systems
Signals Standards	SC 00 52 00 47 SI	Calibration of Tools and Instruments for Signalling Applications
Signals Standards	SC 00 70 00 00 EQ	Trackside Monitoring Systems
Signals Standards	SC 01 01 00 00 SP	Signalling Operator Interface
Signals Standards	SC 01 32 01 00 SP	Specification - Connectors for Signalling Interface
Signals Standards	SC 01 33 00 00 SP	Specification: Vital Indication Optoisolator
Signals Standards	SC 01 51 00 00 EQ	Cerberus Level Crossing Monitor Equipment Manual
Signals Standards	SC 01 51 00 00 SP	Level Crossing Monitor Requirements
Signals Standards	SC 01 51 09 00 SP	Specification - Battery Voltage Monitor and Alarm
Signals Standards	SC 05 13 00 00 SP	Specification Relays, Plug-In Vital
Signals Standards	SC 05 40 00 00 SP	Computer- Based Interlocking Requirements
Signals Standards	SC 05 43 00 00 SP	Design of Microlok II Interlockings
Signals Standards	SC 07 10 00 00 SP	Specification - Light Signals
Signals Standards	SC 07 10 01 00 SP	Signal Lamps
Signals Standards	SC 07 21 00 00 SP	Electro-Pneumatic Train Stops
Signals Standards	SC 07 22 00 00 SP	Specification - Hydraulic Train Stop
Signals Standards	SC 07 31 00 00 SP	Point Mechanisms

Discipline	Reference	File Name
Signals Standards	SC 07 33 01 00 EQ	Electro-Pneumatic Points - Style S Control Valve
Signals Standards	SC 07 34 00 00 EQ	Mechanical Points and Ground Frames
Signals Standards	SC 07 37 00 01 EQ	The Claw Lock Mechanism Description and Operation
Signals Standards	SC 07 37 00 02 EQ	The Claw Lock Mechanism Safety and Functional Tests Routine Maintenance
Signals Standards	SC 07 37 00 03 EQ	The Claw Lock Mechanism Overhaul
Signals Standards	SC 07 37 00 04 EQ	The Claw Lock Mechanism Installation on Turnouts
Signals Standards	SC 07 37 00 05 EQ	The Claw Lock Mechanism Installation on Swing Nose Crossings
Signals Standards	SC 07 37 00 06 EQ	The Claw Lock Mechanism Installation of Switch Rollers
Signals Standards	SC 07 40 01 00 SP	Specification - 6 Ohm Track Resistor
Signals Standards	SC 07 40 03 00 SP	Centre-Tapped Electrolysis Bond Chokes (30Arail)
Signals Standards	SC 07 40 04 00 SP	Impedance Bonds
Signals Standards	SC 07 41 00 01 WI	DC Track Circuits - Set-Up, Test and Certification
Signals Standards	SC 07 41 00 02 WI	AC Immune DC Track Circuits Set-Up, Test and Certification
Signals Standards	SC 07 42 00 00 EQ	Jeumont Schneider Track Circuits
Signals Standards	SC 07 42 00 00 SP	High Voltage Impulse Track Circuits
Signals Standards	SC 07 42 00 00 WI	Jeumont-Schneider Impulse Track Circuits - Set-Up, Test and Certification
Signals Standards	SC 07 43 01 00 WI	AC Single Rail Track Circuits Set-Up, Test and Certification
Signals Standards	SC 07 43 02 00 WI	AC Double Rail Track Circuits Set-Up, Test and Certification
Signals Standards	SC 07 44 00 00 SP	Specification - Audio Frequency Jointless Track Circuits for Main Line Applications
Signals Standards	SC 07 44 01 00 WI	CSEE UM71 AF
Signals Standards	SC 07 44 02 00 WI	WB&S FS2500 AF Jointless Track Circuits - Set-Up, Test and Certification
Signals Standards	SC 07 44 03 00 WI	MI TI21 AF Jointless Track Circuits - Set-Up, Test and Certification
Signals Standards	SC 07 44 04 00 EQ	Westinghouse FS 2600 Manual
Signals Standards	SC 07 60 00 00 SP	Level Crossing Equipment
Signals Standards	SC 07 60 01 00 EQ	Road Level Crossing Protection Equipment (Zipped 59 Files)

Discipline	Reference	File Name
Signals Standards	SC 07 62 00 00 EQ	Pedestrian Level Crossing Protection Equipment
Signals Standards	SC 09 10 00 00 SP	Power Supply Units for Signalling Equipment - General Requirements
Signals Standards	SC 09 10 01 00 SP	Single Phase Air Cooled, Isolating Transformer for Signalling Applications
Signals Standards	SC 09 10 02 00 SP	Emergency Changeover Contactor Panel
Signals Standards	SC 09 10 02 01 SP	High Speed Emergency Changeover Contactor Panel (Zipped 3 Files)
Signals Standards	SC 09 10 03 00 SP	Mains Failure Plant
Signals Standards	SC 09 10 04 00 SP	Power Supply Units for Signalling Equipment - DC (Unfiltered) Units.
Signals Services Schedules	SS 09 21 01 02	Power Supply Pneumatic System
Signals Standards	SC 09 10 05 00 SP	Power Supply Units for Signalling Equipment - DC (Filtered) Units
Signals Standards	SC 09 10 06 00 SP	Power Supply Units for Signalling Equipment - DC Track Feeds
Signals Standards	SC 09 10 07 00 SP	Power Supply Units for Signalling Equipment - DC (Regulated & Filtered) Units
Signals Standards	SC 09 10 08 00 SP	Power Supply Units for Signalling Equipment - Battery Chargers
Signals Standards	SC 09 10 09 00 SP	Specification - Fuses for Railway Signalling Applications
Signals Standards	SC 09 15 01 00 SP	Specification - Lightning/Surge Protection Inductor / Varistor Panel
Signals Standards	SC 09 15 02 00 SP	Lightning/Surge Protection - Varistor/Arrestor Panel (Vap)
Signals Standards	SC 09 15 03 00 SP	Lightning/Surge Protection - Varistor Panel
Signals Standards	SC 09 15 04 00 SP	Lightning/ Surge Protection - Power Inductors
Signals Standards	SC 09 15 06 00 SP	Lightning/Surge Protection for Communications Lines - Line Protection Unit - LPU
Signals Standards	SC 09 15 07 00 SP	Lightning/Surge Protection Inductor/Diverter Panel
Signals Standards	SC 09 20 00 00 SP	Air Reticulation Systems
Signals Standards	SC 11 11 00 00 SP	Cables for Railway Signalling Applications - General Requirements
Signals Standards	SC 11 11 01 00 SP	Specification - Supply and Installation of Cable Jointing Material for the Jointing and Repair of PVC Signal and Power Cable

Discipline	Reference	File Name
Signals Standards	SC 11 11 07 00 SP	Cables for Railway Signalling Applications - Multi-Conductor Signalling Cables.
Signals Standards	SC 11 11 08 00 SP	Cables for Railway Signalling Applications - Fire Safe Multi-Conductor Cables
Signals Standards	SC 11 11 09 00 SP	Cables for Railway Signalling Applications - Single Twin Conductor Cables
Signals Standards	SC 11 11 11 00 SP	Cables for Railway Signalling Applications - Fire Safe High Frequency Screened Track Circuit Cable
Signals Standards	SC 11 11 12 00 SP	Cables for Railway Signalling Applications - Fire Safe Single and Twin Conductor Power Cables
Signals Standards	SC 11 11 13 00 SP	Cables for Railway Signalling Applications - High Frequency Screened Track Circuit Cables
Signals Standards	SC 11 11 14 00 SP	Cables for Railway Signalling Applications - Traction Return Bonding and Track Connection Cables
Signals Standards	SC 11 11 15 00 SP	Cables for Railway Signalling Applications - Fire Rate Twin Conductor Power Cables for Emergency Services
Signals Standards	SC 11 13 00 00 SP	Installation of Equipment Racks and Termination of Cables and Wiring
Signals Standards	SC 11 14 00 00 SP	Specification - Solderless Terminals Screw and Spring Clamp Terminal Blocks
Signals Standards	SC 11 15 00 00 SP	Specification - Solderless Terminals - Cable Lugs for Signalling Applications
Signals Standards	SC 11 20 00 00 SP	Construction of Cable Route and Associated Civil Works (Zipped 18 Files)
Signals Standards	SC 12 20 00 00 SP	Small Buildings, Location Cases, Terminal Cases and General Purpose Cases
Signals Technical Notes	CRN 7021	Signalling Vigilance Inspections on Non-operational Lines

Appendix 13

Contract Document Requirements List

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Appendix 13: Contract Document Requirements List

1.1 Document Management System

1.1.1 The Document Management System (**DMS**) shall:

- (a) manage all documentation requirements under the O&M Deed;
- (b) provide access to documentation for all authorised stakeholders;
- (c) manage all documents according to the quality assurance management plan, SWTC and O&M Deed requirements;
- (d) manage document approvals and the distribution processes;
- (e) manage document transmittals (as applicable);
- (f) manage and maintain documents distribution records;
- (g) provide a simple method of searching and organising documents;
- (h) provide a simple method of automatically notifying stakeholders when new revised documents become available;
- (i) provide a secure document access system through the internet for all authorised stakeholders;
- (j) provide a simple way of uploading documents into the DMS;
- (k) manage documents issued in electronic and hardcopy format;
- (l) manage documents prepared in different electronic formats; and
- (m) provide different levels of documentation access to different stakeholders based on their user requirements.

1.1.2 The DMS shall ensure all Confidential Information is managed according to the O&M Deed requirements.

1.1.3 The DMS processes shall include process to manage documentation disposal.

1.2 Document Management System Software and Hardware Requirements

1.2.1 The Contractor shall provide a software and hardware solution that shall meet all DMS requirements as described in this Appendix, the SWTC, and O&M Deed.

1.2.2 The Contractor shall provide regular free training in the use of the DMS, to CRIA personnel, if required.

1.2.3 The Contractor shall prepare a DMS users manual which must be available to CRIA and all other stakeholders.

1.2.4 The Contractor shall ensure the DMS software is updated regularly during the Term to ensure the system is maintained fully operational and incorporates all relevant technology changes that may occur during the Term.

1.2.5 The Contractor shall perform regular audits to ensure the DMS complies with the SWTC and O&M Deed requirements.

1.3 Document Management System Hard Copy Requirements

- 1.3.1 Where the Contractor provides documents as hard copies, they shall be properly organised and identified in accordance with paragraph 1.6.3.
- 1.3.2 The Contractor shall provide updated hard copies of documents at the frequency indicated in Table 1.

1.4 Disengagement Requirements

- 1.4.1 The Contractor shall ensure a full set of relevant hard copy information is provided during the disengagement phase as part of the process to ensure the incoming contractor will have all required documents to manage the transition. Requirements for delivery of documentation shall be documented in the Disengagement Plan.
- 1.4.2 At the time of disengagement the Contractor will transfer to CRIA at a minimum the data and IP required under the O&M Deed.

1.5 Contract Document Requirements List

Purpose

- 1.5.1 This section identifies the documents the Contractor is to provide to CRIA and provides the cross-reference to the relevant SWTC clause. The section also sets out the processes and procedures for preparation, delivery, management and maintenance of documents by the Contractor, and comment and approval by CRIA.
- 1.5.2 The Contract Document Requirements List (**CDRL**) included with this section is a consolidated list of documents to be delivered during the course of the O&M Deed and includes CDRL management information. The CDRL defines the document, the O&M Deed clause reference, CRIA action required upon receipt of each document and update requirements.

Management of Documents

- 1.5.3 The Contractor shall implement document management and control procedures (including reissues or amendments) in accordance with section 2.8 of the SWTC. These procedures shall ensure that the version or issue (as appropriate) and amendment status of each document is identified and controlled.
- 1.5.4 The Contractor shall comment, update and deliver amendments or reissued documents, or confirm the continuing accuracy of documents annotated with an update period, in accordance with the CDRL.
- 1.5.5 Delivery of amended, reissued or resubmitted documents shall be to the location(s) and in the format and quantities specified in the CDRL for the initial submission of the documents.

Explanation of the CDRL

- 1.5.6 Application of this CDRL is specified in the SWTC at section 2.7. An explanation of each CDRL column is detailed below and applies to each document:
- (a) CDRL Line Number: This field provides the unique sequential number that identifies each document.
 - (b) Document Title: This field identifies the title of the document.
 - (c) SWTC Clause Ref: This field shows the major clause in the main body of the SWTC where the document is called up. There may be multiple references to the document in the O&M Deed, SWTC,

or other O&M Deed documents, but generally only the first (or one) reference in the SWTC is shown in the CDRL.

- (d) CRIA Action Required: This field indicates the purpose for which the document is being submitted to CRIA. This will either be:
 - (i) approval;
 - (ii) comment; or
 - (iii) for information only (**FIO**);
- (e) Outline Doc Due: This field specifies, for all documents for which an outline or initial document has not been submitted as part of the Proposal, when the outline for a document is to be submitted to CRIA;
- (f) Initial Document Due: This field specifies, for all documents for which an initial document has not been submitted as part of the Proposal, when the initial document is to be submitted to CRIA;
- (g) Update Cycle: This field specifies either the time intervals, after each delivery, at which the document shall be updated, if required, by the Contractor or for reports, the submission periodicity.
- (h) Update Due: This field specifies when updates to documents, if required, are to be submitted to CRIA; and
- (i) Comments: If necessary, additional comments and explanatory information relating to a CDRL document are provided in this column.

1.6 General Requirements for Documents

1.6.1 The information required in each document is generally described in either:

- (a) the O&M Deed;
- (b) SWTC Appendix 11: "Requirements for Management Plans"; or
- (c) SWTC Appendix 15: "Requirements for Reports".

Document Media

1.6.2 Unless otherwise specified or agreed with CRIA:

- (a) all electronic copies of documents shall be prepared and delivered in Microsoft Word, Microsoft Excel or .pdf file formats with margins consistent with A4 size paper or A3 paper size if applicable;
- (b) all database summaries and financial reporting shall be provided in Excel format, or other format agreed by CRIA;
- (c) all drawings shall be provided in AutoCAD compatible format; and
- (d) all hard copies of documents shall be prepared and delivered on A4 or A3 size paper.

Format Instructions

1.6.3 Documents shall include the following identification information:

- (a) the document reference number;
- (b) the document title and date of issue;
- (c) the volume number (only applicable to multi-volume documents);
- (d) the version number/ revision indicator;
- (e) the confidentiality requirements, where applicable;
- (f) the CDRL line number;
- (g) the electronic file name; and
- (h) the name and contact details of the person responsible for the document.

1.6.4 Documents greater than five pages in length shall contain a table of contents.

- 1.6.5 All documents shall be provided in folders properly labelled.
- 1.6.6 Each page shall contain a unique page number and preferably display the document number, version, volume, and date of issue, as applicable.
- 1.6.7 If a document is revised or updated, and where the software used to create the document is able to produce revision marks, the Contractor shall mark all changes made since the previous release of the document to CRIA with a side bar in the margin of the document to aid Comment.
- 1.6.8 If the software is not able to produce revision marks, the Contractor shall accompany those affected documents with revision lists containing a summary of all changes made since the previous release to CRIA.

Transmittals

- 1.6.9 All formal delivery of documentation required by the O&M Deed shall be delivered with a transmittal letter, which shall contain at least the following:
- (a) date;
 - (b) issuer;
 - (c) carbon copies details;
 - (d) reference;
 - (e) media (paper or electronic file) and address details;
 - (f) CRIA representative name;
 - (g) client action required and date for response if applicable;
 - (h) document list including description, revision number, status (draft or final) and all other relevant information;
 - (i) number of copies provided;
 - (j) superseded document list if applicable;
 - (k) documents which require an urgent action shall be clearly identified; and
 - (l) total number of pages/documents.
- 1.6.10 The Contractor shall maintain a transmittal list which shall contain the following:
- (a) transmittal details including reference;
 - (b) dates;
 - (c) action and response date required; and
 - (d) status (indicate if actions were closed).
- 1.6.11 The Contractor shall include information on the transmittal list status in the monthly report.

Table 1: Contract Document Requirements List

CDRL Line No.	Document Title	SWTC Clause Ref.	CRIA Action Required	Outline Doc Due	Initial Document Due	Update Cycle				Update Due	Comments
						Monthly	Quarterly	6-Monthly	Annually		
1	Management Services Plan	2.2.1	Comment	-	CP				✓	+ 12 months	CRIA is to respond within 20 business days.
2	CRN Asset Management Plan	4.4	Comment	-	Prior to end of Initial Stage				✓	30 September	CRIA is to respond within 20 business days. CRIA is to provide initial plan to Contractor.
3	Contractor's Asset Management Implementation Plan	4.2	Comment	-	CP				✓	+ 12 months	CRIA is to respond within 20 business days.
4	Annual Works Plan	2.6.5	Comment	-	-				✓	20 Business Days after notification of the Nominated Budget	CRIA is to respond within 10 business days. CRIA is to provide initial plan to Contractor.
5	Annual Works Plan Budget	2.6.5	Approve	-	Prior to end of Initial Stage				✓	20 Business Days after notification of the Nominated Budget	CRIA is to respond within 10 business days.



CDRL Line No.	Document Title	SWTC Clause Ref.	CRIA Action Required	Outline Doc Due	Initial Document Due	Update Cycle				Update Due	Comments
						Monthly	Quarterly	6-Monthly	Annually		
6	Engineering Services Management Plan	5.1.1	Comment	CP	CP + 60 days				✓	30 September	CRIA is to respond within 20 business days.
7	Welded Track Stability Analysis Report	5.2.10	FIO	-	-				✓	14 December	-
8	Quality Assurance Plan	2.17.4	Comment	CP	CP + 60 days				✓	+ 12 months	CRIA is to respond within 20 business days.
9	Integrated Logistic Support Plan	6.1	Comment	-	CP + 60 days				✓	+ 12 months	CRIA is to respond within 20 business days.
10	Interface Management Plan	10.8.3	Comment	-	CP				✓	+ 12 months	CRIA is to respond within 20 business days.
11	Rail Network Management Plan	7.1.1	Comment	-	CP				✓	+ 12 months	CRIA is to respond within 20 business days.
12	Environmental Management Plan	11.1.1	Comment	-	CP				✓	+ 12 months	CRIA is to respond within 20 business days.
13	Cultural Heritage Management Plan	11.9.1	Comment	CP	CP + 60 days				✓	+ 12 months	CRIA is to respond within 20 business days.
14	Property Management Plan	4.5	Comment	CP	CP + 60 days				✓	30 September	CRIA is to respond within 20 business days.

CDRL Line No.	Document Title	SWTC Clause Ref.	CRIA Action Required	Outline Doc Due	Initial Document Due	Update Cycle				Update Due	Comments
						Monthly	Quarterly	6-Monthly	Annually		
15	Rail Safety Accreditation Plan	-	FIO	-	CP					N/A	Draft submitted in Proposal.
16	Safety Management Plan	10.1.2	Comment	-	CP				✓	+ 12 months	CRIA is to respond within 20 business days. Other safety management-related plans identified in RFP Appendix 4 may be incorporated into the Safety Management Plan.
17	Transition Management Plan	12.1	Comment	-	CP					N/A	Draft submitted in Proposal.
18	Interface Agreements	10.8	Comment	-	CP + 60 days					As required	Multiple agreements. CRIA is to respond within 20 business days.
19	Geographical Information System (GIS)	4.6	FIO	-	-					As required	To be made available to CRIA when requested. Updates to be made within 30 days of any change to source data.
21	CRIA Register of Property Agreements	4.6	FIO	-	-					As required	To be made available to CRIA when requested. Updates to be made within 30 days of any change to source data.



CDRL Line No.	Document Title	SWTC Clause Ref.	CRIA Action Required	Outline Doc Due	Initial Document Due	Update Cycle				Update Due	Comments
						Monthly	Quarterly	6-Monthly	Annually		
22	Register of other property-related information	4.6	FIO	-	-					As required	Requirement to be clarified following RFP response. Information may be incorporated into one of the above two property data items.
23	Annual Property Services Program	9.1.2	Comment	-	CP				✓	20 Business Days after notification of the Nominated Budget	To be included as part of the Annual Works Plan CRIA is to respond within 10 business days.
25	Engineering Asset Register	4.3	FIO	-	Prior to end of Initial Stage				✓		-
26	Risk Register	2.4.4	FIO	CP	CP + 60 days		✓			+ 3 months	-
28	Equipment Calibration Register	6.7.2	FIO	-	-					N/A	Upon request by CRIA
29	Standard Working Timetable	7.4.1	Comment	-	-					As required	Initial SWTT is handed over to the Contractor by CRIA. CRIA is to respond within 20 business days.
30	Safety Policy	10.2	FIO	-	CP					As required	-



CDRL Line No.	Document Title	SWTC Clause Ref.	CRIA Action Required	Outline Doc Due	Initial Document Due	Update Cycle				Update Due	Comments
						Monthly	Quarterly	6-Monthly	Annually		
31	Annual Safety Performance Report to ITSR	10.3.3	FIO	-	-				✓	30 September	To be provided to ITSR not later than 30 October of each calendar year.
32	Annual Asset Condition Report*	8.7	FIO	-	-				✓	31 August	
33	Quarterly Safety Analysis Report	10.4.4	FIO	-	-		✓			Not later than 10 working days after reported period.	
34	Annual Contract Report*	2.12.12	Comment	-	-				✓	31 August	CRIA is to respond within 20 business days.
35	Monthly Progress Report	2.12.13	Comment	-	First month of Initial Stage	✓				Financial report within 5 business days from the end of the month and the remainder of the report within 7 days from the end of the month	CRIA is to respond within 20 business days.



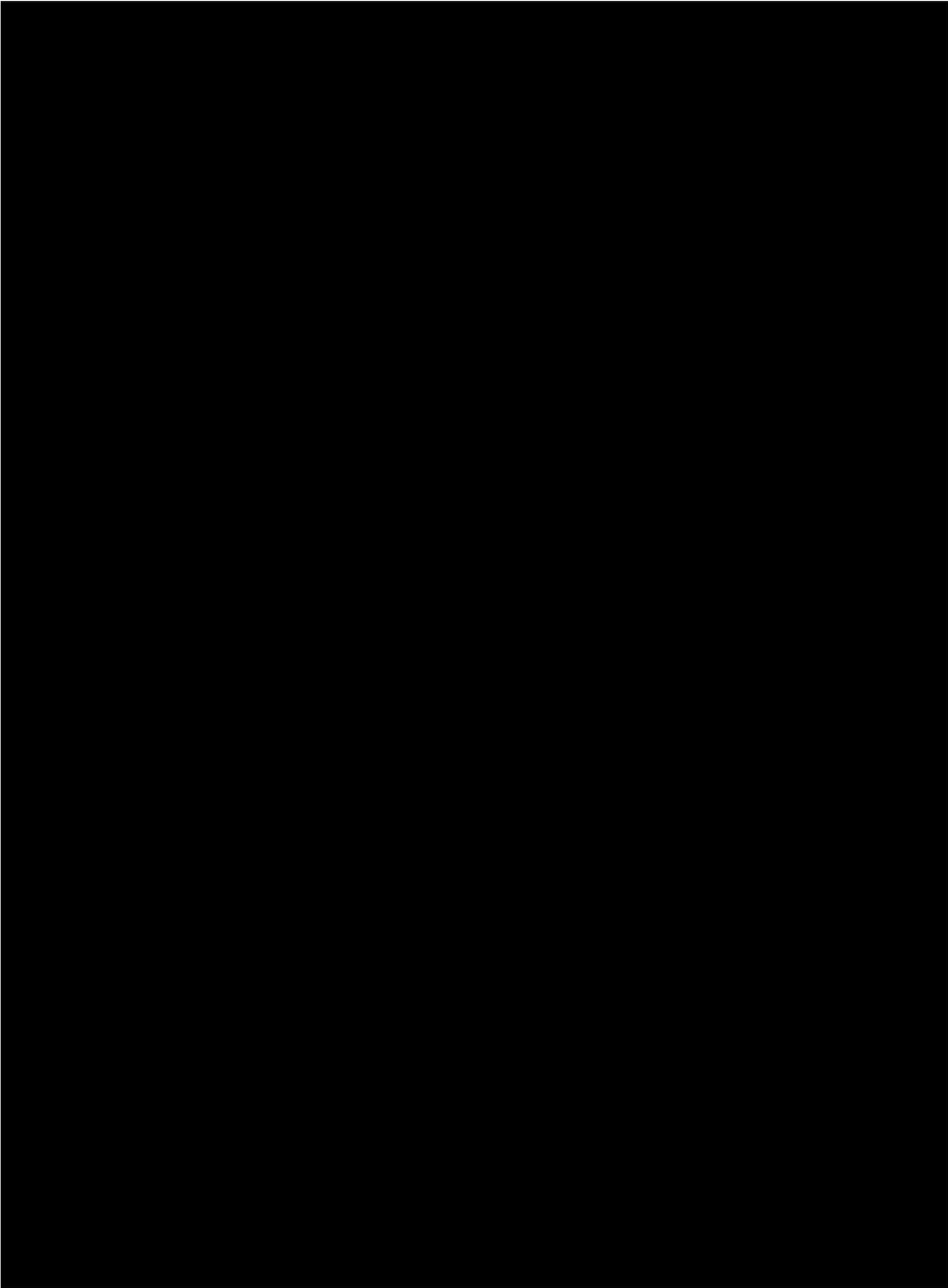
CDRL Line No.	Document Title	SWTC Clause Ref.	CRIA Action Required	Outline Doc Due	Initial Document Due	Update Cycle				Update Due	Comments
						Monthly	Quarterly	6-Monthly	Annually		
36	Weekly Transition Issues Log	12.4.1 f)	Comment	-	First week of Mobilisation Stage					N/A	Weekly during transition period. CRIA is to respond within 20 business days.
37	Quality Audit: Monthly Progress Report	2.17.19	FIO		First month of Initial Stage	✓				Within 5 business days from end of each month	Monthly reports to be provided as an attachment to the Monthly progress Report.
38	Annual Quality Audit Report	2.17.26	Comment	-	-				✓	31 August	Annual report to be provided as an attachment to the Annual Contract Report.
39	Report of Submission for Diesel Fuel Rebate	2.10.3	FIO	-	-				✓	30 July	-
40	Incident Investigation Report	10.7.13	FIO		N/A					As required	Upon completion of any investigations following Incident. May also include follow-up and interim reports.
41	Community and Stakeholder Complaints and Issues Report	2.14.25	Comment		N/A					As required	When required, within 24 hours of receipt of complaint or awareness of issue. CRIA is to respond within 20 business days.

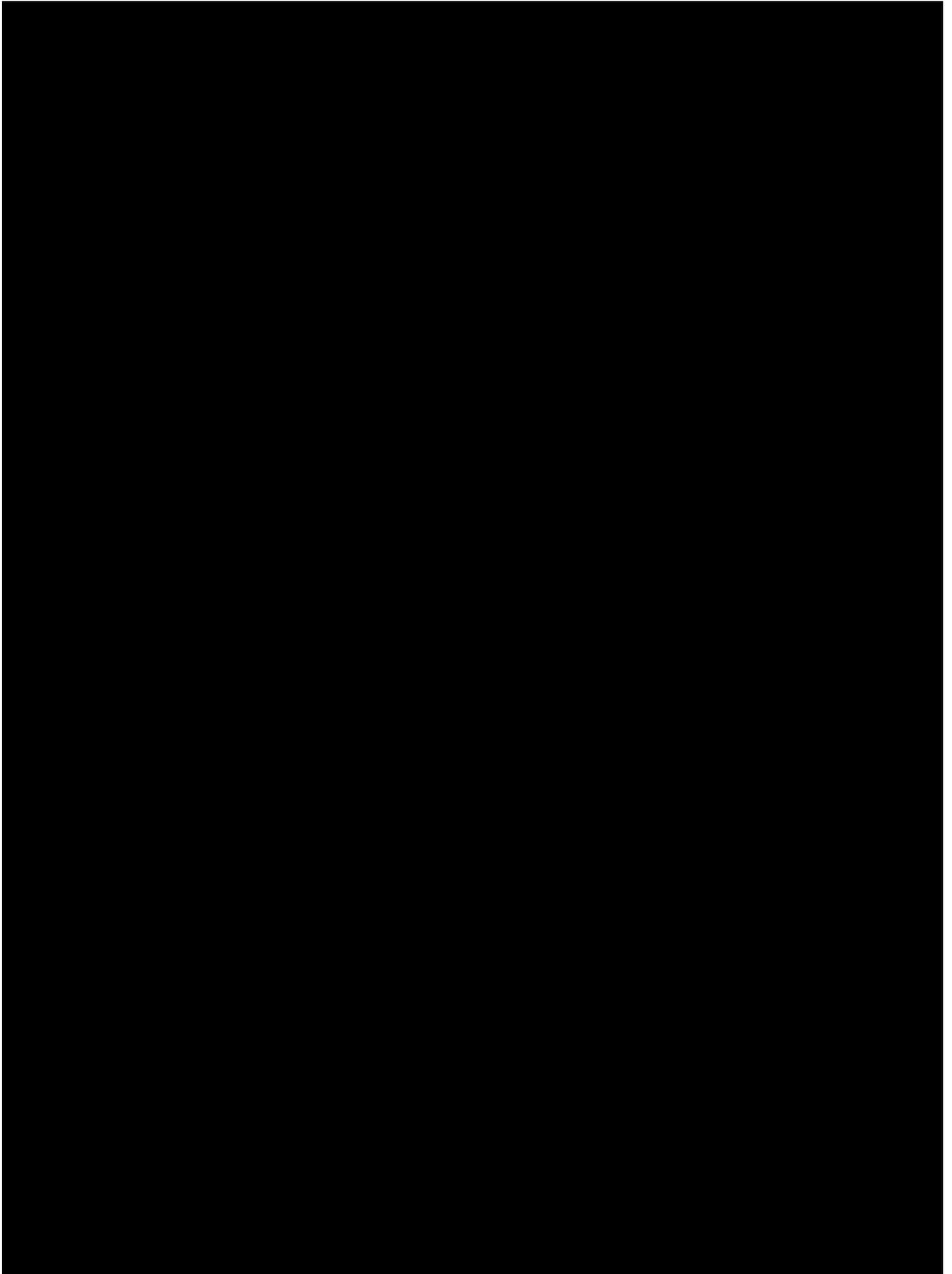


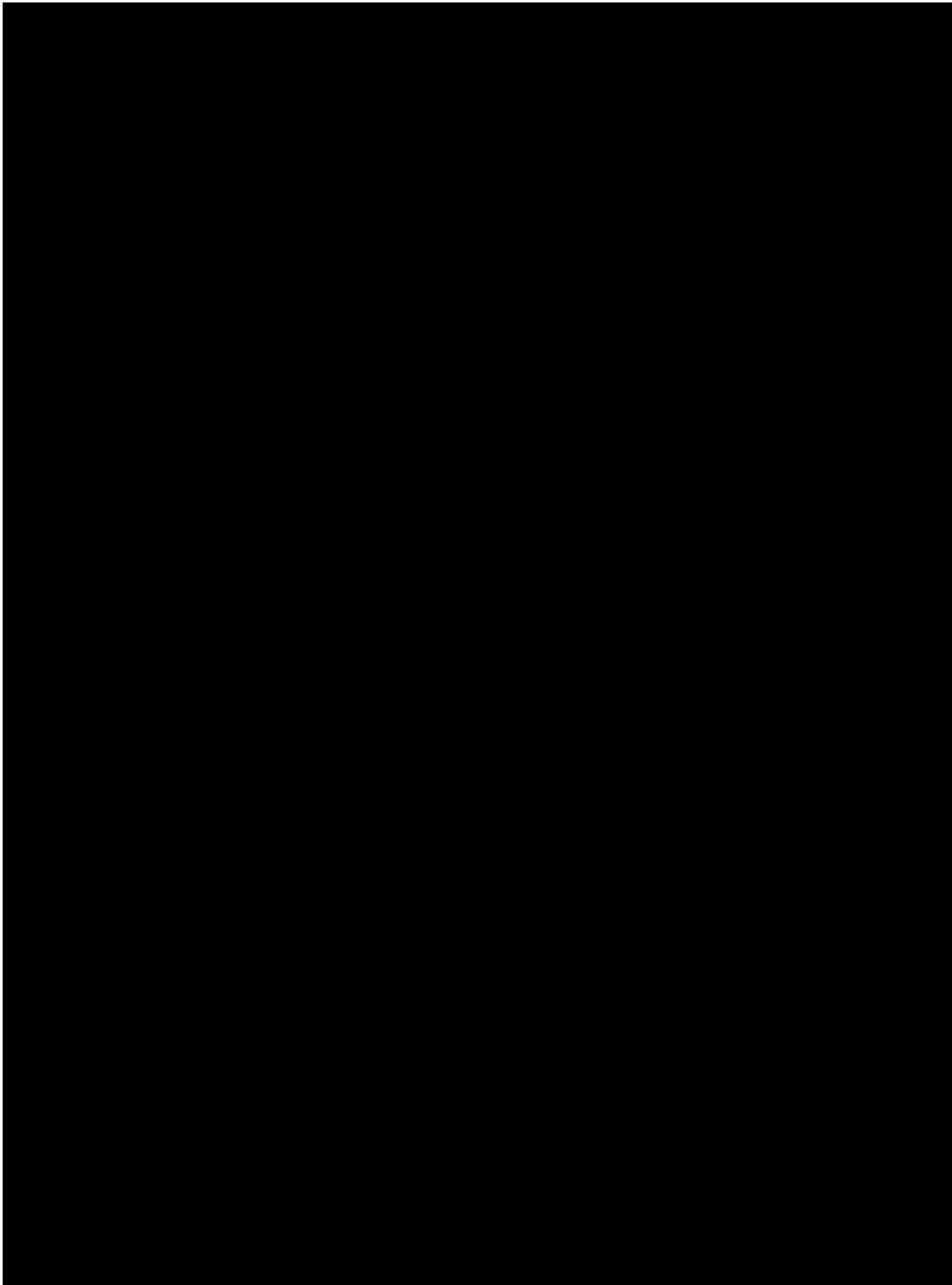
CDRL Line No.	Document Title	SWTC Clause Ref.	CRIA Action Required	Outline Doc Due	Initial Document Due	Update Cycle				Update Due	Comments
						Monthly	Quarterly	6-Monthly	Annually		
42	72 Hour Incident Report	10.7.5	FIO		N/A					As required	Within 72 hours of Incident occurrence.
43	Quality Certificate	2.17.6	FIO	-	Commencement Date				✓	+ 12 months	Annual certification that the Contractor's QMS is implemented in accordance with the Quality Assurance Plan
44	List of Critical Geotechnical Sites	5.2.17	FIO	-	N/A					As required	-
45	Handover Package	12.5	FIO	-	within 6 months of completion of transition period				✓	+ 12 months	-

CP = "Date for Commencement"









Appendix 14

Handover Package

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Appendix 14: Handover Package

1.1 Purpose of Handover Package

- 1.1.1 The Contractor shall develop and maintain a handover package for the purpose of securing service continuity and to ensure that a step-in party or successor RIM can seamlessly assume responsibility for all Services under the O&M Deed.

1.2 Handover Package Information Requirements

- 1.2.1 The Contractor shall prepare, and keep up to date throughout the Term of the O&M Deed, a handover package containing, as a minimum, the following information:

- (a) safety – names and locations of all safety manuals, plans, procedures and accredited officers;
- (b) premises – details of all premises owned, leased or operated by the Contractor;
- (c) contracts – a list of all agreements, leases, permits, licences or other documents in relation to the Services;
- (d) a plant and equipment list including:
 - (i) lease or agreement details;
 - (ii) financing arrangement details; and
 - (iii) remaining value to be paid under the Contract.
- (e) systems – a list and description of systems used for the maintenance and operation of the CRN, including all master passwords;
- (f) critical spare parts list requirements including suppliers details;
- (g) critical spare parts list inventory;
- (h) daily operations – all information relevant to the daily operation of the CRN and the O&M Deed;
- (i) organisational structure – a detailed diagrammatical representation of the organisational structure of the Contractor to front line management level; and
- (j) employees – a list of all employees (including casual employees) showing full particulars of each employee including all agreements or arrangements relating to any employees entered into between the Contractor or any related body corporate and a trade union, including elected representatives.

- 1.2.2 The handover package shall be updated each 6 months after the Commencement Date.

1.3 Related Handover Requirements

- 1.3.1 In addition to the documentation requirements for the handover package, the Contractor shall ensure that arrangements are in place to ensure that a step-in party or successor RIM will have access to, and be able to use:

- (a) all licences;
- (b) IP;
- (c) copyrights;
- (d) plant and equipment;
- (e) specialised tools, test and support equipment;
- (f) long lead items; and
- (g) any other relevant assets or elements that may be required to continue operations and maintenance of the CRN.

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Appendix 15

Requirements for Reports

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Contents

1.1	REQUIREMENTS FOR REPORTS	1
	Purpose	1
	Report Summary Requirements	1
	Requirement for Common Lexicon of Reporting Terms	2
	Trend Reporting and Analysis	3
1.2	ANNUAL SAFETY PERFORMANCE REPORT TO ITSr	3
1.3	ANNUAL ASSET CONDITION REPORT	3
1.4	WELDED TRACK STABILITY ANALYSIS REPORT	4
1.5	QUARTERLY SAFETY ANALYSIS REPORT	4
1.6	ANNUAL CONTRACT REPORT	4
	Executive Summary	5
	Scope of Work	5
	Financial Outcomes	5
	KRAs and Abatement	5
	CRN Asset Management Plan	6
	Contractor's Asset Management Systems	6
	Opportunities for Improvement	6
1.7	MONTHLY PROGRESS REPORT	6
	Executive Summary	7
	Safety	7
	Project and Business Management	8
	Performance Measurement	12
	Asset Management Services	12
	Engineering Services	12
	Integrated Logistics Support	12
	Network Operations	13
	Rail Infrastructure Maintenance	13
	Property Management Services	14
	Environmental Management and Sustainability	16
	Transition Management	16
1.8	QUALITY AUDIT PROGRAM - MONTHLY PROGRESS REPORT	16
1.9	ANNUAL QUALITY AUDIT REPORT	17
1.10	REPORT OF SUBMISSION FOR DIESEL FUEL REBATE	17
1.11	WEEKLY TRANSITION ISSUES LOG	17

1.12	INCIDENT INVESTIGATION REPORT	17
1.13	72-HOUR INCIDENT REPORT	18
1.14	COMMUNITY AND STAKEHOLDER COMPLAINTS AND ISSUES REPORT	18

Appendix 15: Requirements for Reports

1.1 Requirements for Reports

Purpose

- 1.1.1 The purpose of this Appendix is to detail the content requirements for the reports the Contractor is to provide to CRIA as part of the Services. The reports should be developed, implemented and maintained in accordance with the requirements described in this Appendix and in relevant sections of the SWTC.
- 1.1.2 Refer also to the following appendices for additional information in relation to reporting requirements:
 - (a) SWTC Appendix 13: "Contract Document Requirements" for O&M Deed and SWTC clauses that call up the requirement for each report, the action required by CRIA and details of report periodicity; and
 - (b) SWTC Appendix 16: "Performance Measures" that lists KRAs and KPIs required for reports.

Report Summary Requirements

- 1.1.3 Table 1 summarises report requirements.
- 1.1.4 Additional detail on report content is provided in the following section.

Table 1: Report Summary

No.	Report Title	Contents
Periodic Reports		
1	Annual Safety Performance Report to ITSR	A copy of the annual safety performance report to ITSR as required by section 15 of the Act. This is to include a summary of the outcomes of a review of the Contractor's Safety Management System (SMS) as required by the <i>Rail Safety (General) Regulation 2008</i> .
2	Annual Asset Condition Report	A comprehensive annual asset condition report which must include Track Quality Index, time lost from speed restrictions and train operating conditions for the different rail lines.
3	Welded Track Stability Analysis Report	Written annual report on results of Welded Track Stability Analysis
4	Quarterly Safety Analysis Report	A quarterly rail safety report to include a summary of the Contractor's SMS performance including detailed analysis of trends, causal factors and risk management activities.
5	Annual Contract Report	A comprehensive report summarising the outcomes for the performance of the Services for the preceding Contract Year.

No.	Report Title	Contents
6	Monthly Progress Report	A detailed report on the status of the Services and Scope of Work including: <ul style="list-style-type: none"> a) executive summary; b) safety (including OH&S); c) project and business management; d) performance measurement; e) asset management; f) Engineering Services; g) Integrated Logistics Support; h) network operations; i) rail infrastructure maintenance; j) Property Management Services; k) environmental management and sustainability; l) Transition management; and m) other information when required.
7	Quality Audit Monthly Progress Report	Monthly progress against the current annual quality audit program.
8	Annual Audit Program Report	Report of completion of the annual audit program, including a summary of all major findings and recommendations.
9	Report of Submissions for Diesel Fuel Rebate	Annual advice to CRIA that the submission has been made, or not made, as appropriate.
10	Weekly Transition Issues Log	Weekly update of transition issues to CRIA.
Ad Hoc Reports		
11	Incident Investigation Report	Details of any rail safety or OH&S-related Incident investigation report with conclusions and recommendations.
12	Community and Stakeholder complaints and issues report	Advice of any community or stakeholder complaints, or issues which have the potential to have an adverse effect upon communities, community members or stakeholders.
13	72 Hr Incident Report	Advice of any category A or B occurrences (as defined in the <i>Rail Safety (General) Regulation 2008</i>) which has occurred on the CRN that must be provided within 72 hours.

Requirement for Common Lexicon of Reporting Terms

1.1.5 The Contractor shall publish, and adhere to, a common lexicon of terms to be used in all reports.

Trend Reporting and Analysis

- 1.1.6 Reports shall include, where relevant, trends and trend analysis including sufficient commentary to explain variances from the previous reporting period including causal analysis.
- 1.1.7 Information should be presented graphically when appropriate.

1.2 Annual Safety Performance Report to ITSR

- 1.2.1 The Contractor must provide to CRIA, not less than one month prior to its submission to ITSR, a copy of the annual safety performance report as required by the Act.

1.3 Annual Asset Condition Report

- 1.3.1 The Contractor must provide to CRIA, a copy of the annual asset condition report for:
- (a) rail lines;
 - (b) underbridges and overbridges; and
 - (c) other CRIA assets.
- 1.3.2 The annual asset condition rail line report must contain the following information as a minimum per rail line:
- (a) type of rail line (Passenger, Freight or Grain);
 - (b) km;
 - (c) rail line identification;
 - (d) Track Quality Index graph;
 - (e) time lost from speed restriction;
 - (f) train operating conditions;
 - (g) geotechnical sites;
 - (h) bridges under speed restrictions; and
 - (i) general notes on asset status, trends and issues arising.
- 1.3.3 The annual asset condition report must contain, as a minimum, the following information for overbridges and underbridges:
- (a) executive summary including:
 - (i) key statistics;
 - (ii) milestones achieved;
 - (iii) targets;
 - (iv) risk summary;
 - (v) summary of defect types;
 - (vi) defects total (outstanding) and overdue;
 - (vii) bridge replacement plan for next 3 years; and
 - (viii) trends and issues arising;
 - (b) asset descriptions including:
 - (i) type and location;
 - (ii) bridge loading rating data and any restrictions;
 - (iii) risk rating;
 - (iv) issues for the particular bridge; and
 - (v) priority for renewal;
 - (c) asset financial information including:

- (i) cost per bridge;
- (ii) breakdown of major category spends;
- (iii) emergency response work and spend; and
- (iv) type and date of inspections.

1.4 Welded Track Stability Analysis Report

- 1.4.1 The Contractor must perform a Welded Track Stability Analysis (**WTSA**) on a yearly basis and provide a written report to CRIA not later than the 14th December of any year.

1.5 Quarterly Safety Analysis Report

- 1.5.1 The Contractor must provide to CRIA on a quarterly basis a safety report which must include as a minimum quarterly and YTD information for the CRN including detailed analysis of trends and causal factors:

- (a) category A (refer to Guideline for the reporting of Notifiable Occurrences, Occurrence Notification-Standard One (ON-S1) June 2008 and Guideline for the Top Event Classification Notifiable Occurrences, Occurrence Classification-Guideline One (OC-G1) June 2008) incidents report including charts including trend analysis;
- (b) category B incidents report including charts including trend analysis;
- (c) category A and B incidents by classification report including charts;
- (d) collision report including charts;
- (e) derailment report including charts;
- (f) signals passed at danger report including charts;
- (g) level crossing incidents;
- (h) safe working irregularities report including charts;
- (i) safe working breach frequency rate report;
- (j) track infrastructure report including charts;
- (k) communications irregularities accountable report including charts;
- (l) signaling irregularities report including charts;
- (m) loading irregularities report including charts;
- (n) vandalism/trespass/theft report including charts;
- (o) train partings report including charts;
- (p) category C incidents report including charts;
- (q) OH&S incidents; and
- (r) any other safety incident.

1.6 Annual Contract Report

- 1.6.1 By no later than the end of August each Contract Year the Contractor must provide a comprehensive report detailing the Contractor's performance in carrying out the Services.

- 1.6.2 The Contractor and CRIA will agree the format for the report but generally the report will include:

- (a) executive summary;
- (b) scope of work achieved;
- (c) financial outcomes;
- (d) performance outcomes for KRA and Abatement;
- (e) review of the CRN Asset Management Plan;
- (f) review of the Contractor's asset management systems; and

- (g) opportunities for improvement.

Executive Summary

- 1.6.3 The executive summary should describe the key outcomes for the previous Contract Year.
- 1.6.4 If relevant the executive summary should describe key failures, the cause and the corrective action implemented or proposed.

Scope of Work

- 1.6.5 The report should provide a detailed analysis of the scope of work achieved versus that planned to be achieved in the Annual Works Plan (as amended by Variations). The report should identify:
- (a) under or over achievement of planned scope with an analysis of reasons;
 - (b) any carry over work with an analysis of reasons; and
 - (c) any other issues with carrying out the planned work.
- 1.6.6 If there was a requirement to de-scope the work in order to remain within budget an analysis should be provided of the reasons why the work had to be de-scoped.

Financial Outcomes

- 1.6.7 The report must provide a summary of the financial outcomes for the Contract Year including a comparison of the AWP Budget with:
- (a) Reimbursable Costs for TOC Activities;
 - (b) Reimbursable Costs for Cost Plus Activities;
 - (c) Reimbursable Costs for CRIA Nominated Items;
 - (d) Program Overhead;
 - (e) amounts paid as TOC Margin for TOC Activities;
 - (f) amounts paid as TOC Margin for Program Overhead;
 - (g) amounts paid as Cost Plus Margin;
 - (h) amounts paid as CNI Margin (Reimbursable Cost) and CNI Margin (Direct Payment by CRIA);
 - (i) any PSGS amounts;
 - (j) the total of any amounts with held in accordance with the Abatement Regime;
 - (k) the aggregate of the amounts paid to the Contractor as Reimbursable Costs; and
 - (l) the aggregate of the amounts paid to the Contractor as TOC Margin, Cost Plus Margin, CNI Margin (Reimbursable Cost) and CNI Margin (Direct Payment by CRIA).
- 1.6.8 The report should include an analysis of reasons for any variance between the TOC and the Varied TOC.
- 1.6.9 Where unit rates have been amended due to underachievement of scope the report should provide an analysis of the causes for the changes.
- 1.6.10 This section of the report should include the analysis of the Whole of Life Benefit of the Services to the CRN.

KRAs and Abatement

- 1.6.11 The report must provide a detailed review of the KRA performance. Reasons for underperformance should be provided, along with the proposed or implemented corrective action.

- 1.6.12 Where the Contractor has scored well in KRAs reasons should be provided along with the proposed or implemented actions to reinforce the positive performance.
- 1.6.13 The Contractor should review and comment on the KRA regime and provide recommendations for improvement if applicable.
- 1.6.14 The Contractor should provide a detailed review of the stewardship objective including suggestions for improvement. The Contractor should comment on CRIA's approach to management of the O&M Deed.
- 1.6.15 If Abatement has been applied during the Contract Year the report should provide details, along with an analysis of the causes and recommended or implemented corrective actions.

CRN Asset Management Plan

- 1.6.16 The Contractor should provide a narrative review of the effectiveness of the CRN Asset Management Plan and particularly of the asset management strategies implemented by the plan. This information will be used by CRIA to inform CRIA's overarching strategy for the CRN which will in turn inform the Management Services Plan and CRN Asset Management Plan.
- 1.6.17 The Contractor should, where relevant, propose alteration or amendment of the asset management strategies.

Contractor's Asset Management Systems

- 1.6.18 The Contractor must provide a review of the effectiveness of the Contractor's asset management systems described in the Asset Management Implementation Plan.
- 1.6.19 The results of the independent audit of the asset management systems should be presented in this section of the report.

Opportunities for Improvement

- 1.6.20 If not presented elsewhere in the report the Contractor should identify opportunities for improvement. This should include opportunities for CRIA to contribute to improvements by altering its behavior, systems or processes.
- 1.6.21 The report should include a section that reviews and comments on the status of the technology used to implement the Contractor's IMS. In particular, the report should discuss any requirement or recommendations for technology upgrades to the Network Control Centre to ensure continued efficient operation and long term supportability.
- 1.6.22 The report should also include, for all interfaces between the Contractor's IMS and CRIA's IMS, a discussion on any requirements or recommendations for technology upgrades to CRIA's IMS and/or CRIA's IMS interfaces with the Contractor's IMS.

1.7 Monthly Progress Report

- 1.7.1 The Contractor must provide to CRIA and the PCG, not later than seven business days (subject to section 1.7.2) after the end of each calendar month, a monthly progress report including a narrative description for each section containing as a minimum the following information:
 - (a) executive summary;
 - (b) safety (including OH&S);
 - (c) project and business management;

- (d) performance measurement;
- (e) asset management;
- (f) Engineering Services;
- (g) Integrated Logistics Support;
- (h) network operations;
- (i) rail infrastructure maintenance;
- (j) Property Management Services;
- (k) Environmental management and sustainability; and
- (l) Transition management.

1.7.2 The financial report (of the monthly progress report) must be provided within 5 business days after the end of each month.

1.7.3 The detailed requirements for each section are described below.

Executive Summary

1.7.4 Provide a narrative summary description of:

- (a) safety outcomes;
- (b) KRA and Abatement outcomes;
- (c) outcomes of other performance measures, if relevant;
- (d) significant events and activities undertaken during the month (and for the June report for the year);
- (e) significant achievements during the month (and for the June report for the year);
- (f) significant events planned for the next month;
- (g) matters considered by and decisions by the PCG; and
- (h) any other matters the Contractor's Representative wishes to draw attention to.

Safety

1.7.5 Safety performance, including the following safety performance and analysis for the month:

- (a) OH&S:
 - (i) details of any improvement or prohibition notice issued by an inspector appointed by WorkCover in accordance with Part 6 of the *Occupational Health and Safety Act 2000*
 - (ii) Lost Time Injuries (**LTI**);
 - (iii) Lost Time Injury Frequency Rate (**LTIFR**) (monthly and 12-month rolling);
 - (iv) Lost Time Injury Severity Rate (**LTISR**) (monthly and 12-month rolling);
 - (v) Medical Treatment Injury (**MTI**);
 - (vi) Medical Treatment Injury Frequency Rate (**MTIFR**) (monthly and 12-month rolling);
 - (vii) Total Recordable Incident Rate (**TRIR**);
 - (viii) number of inspections completed monthly (%);
 - (ix) number of task observations completed (%);
 - (x) number of hazards reported;
 - (xi) number of outstanding corrective actions;
 - (xii) number of leadership visits completed;
 - (xiii) number of safe work method statements reviewed;
 - (xiv) number of safety audits;
 - (xv) number of relevant lessons learnt circulated; and
 - (xvi) number of times where work is stopped as a result of a safety issue;
- (b) rail safety:

- (i) full details of any incidents which may or have triggered an investigation under section 67 of the *Rail Safety Act 2008*;
- (ii) safety audits carried out;
- (iii) category A incidents;
- (iv) category B incidents;
- (v) competency training progress to program;
- (vi) drug and alcohol program-testing and outcomes;
- (vii) fatigue management program-testing and outcomes;
- (viii) completion or otherwise of all programmed safety-critical inspections;
- (ix) safety-critical compliance: percentage of inspections not compliant, indicating by signals and track, for:
 - A. core passenger lines;
 - B. core freight lines; and
 - C. grain lines;
- (x) structures: percentage of structures not compliant, for:
 - A. core passenger lines;
 - B. core freight lines; and
 - C. grain lines.
- (xi) safety-significant compliance: percentage of inspections not compliant, indicating by signals and track, for:
 - A. core passenger lines;
 - B. core freight lines; and
 - C. grain lines; and
- (xii) structures: percentage of structures not compliant, for:
 - A. core passenger lines;
 - B. core freight lines; and
 - C. grain lines.

Project and Business Management

1.7.6 The Contractor must provide the following details on financial performance:

- (a) a financial performance report indicating for the month, the year to date and forecast for the full year the :
 - (i) actual costs;
 - (ii) AWP varied budget;
 - (iii) variance between varied budget and actual costs; and
 - (iv) annual forecast costs at completion; and
 - (v) variance between forecast costs at completion and budget;
- (b) the financial performance report must identify as a minimum:
 - (i) TOC Activities;
 - (ii) Cost Plus Activities;
 - (iii) CRIA Nominated Items;
 - (iv) Program Overhead;
 - (v) amounts paid as TOC Margin;
 - (vi) amounts paid as Cost Plus Margin;
 - (vii) amounts paid as CNI Margin (Reimbursable Cost) and CNI Margin (Direct Payment by CRIA);
 - (viii) any forecast PSGS amounts; and
 - (ix) any amounts with held in accordance with the Abatement Regime

- 1.7.7 The financial report should, for TOC Activities, Cost Plus Activities and CRIA Nominated Items identify the AWP Budget, the expenditure and the variance to budget for:
- (a) Routine Maintenance;
 - (b) Major Periodic Maintenance;
 - (c) Enhancement Works;
 - (d) Capital-major works; and
 - (e) Capital-other.
- 1.7.8 The financial report should also include revenue for the following:
- (a) Access;
 - (b) Property;
 - (c) material disposal;
 - (d) advertising;
 - (e) Government rebates; and
 - (f) other revenues.
- 1.7.9 Variance analysis should be undertaken and provided for both budget and scope and should include:
- (a) An analysis for the Year to Date (**YTD**) by cost, including:
 - (i) YTD actual costs;
 - (ii) YTD approved budget;
 - (iii) YTD original AWP Budget; and
 - (iv) variance to the approved budget;
 - (b) An analysis for the YTD by scope, including:
 - (i) YTD Actual TOC Scope;
 - (ii) YTD Varied TOC Scope;
 - (iii) YTD actual Cost Plus scope;
 - (iv) YTD varied Cost Plus scope;
 - (v) YTD actual CNI scope;
 - (vi) YTD varied CNI scope;
 - (vii) variances to the approved scopes;
 - (viii) variances to the original AWP Budget scope;
 - (c) An analysis for the month by cost, including:
 - (i) month actual costs;
 - (ii) month approved budget costs;
 - (iii) original monthly AWP Budgets;
 - (iv) variance to approved budgets;
 - (v) variance to original AWP Budget;
 - (d) An analysis for the month by scope, including:
 - (i) month Actual TOC Scope;
 - (ii) month Varied TOC Scope;
 - (iii) month actual Cost Plus scope;
 - (iv) month varied Cost Plus scope;
 - (v) month actual CNI scope;
 - (vi) month varied CNI scope;
 - (vii) variances to approved scope; and
 - (viii) variances to the original AWP Budget scope.
- 1.7.10 The Contractor must provide a report identifying the make-up of revenue received as follows:

- (a) Access revenue by customer, commodity, quarterly and year to date actual totals, year to date budget, full year budget and full year forecast;
 - (b) Property revenue;
 - (c) material disposal revenue;
 - (d) advertising revenue;
 - (e) government rebates;
 - (f) any other revenue received.
- 1.7.11 The Contractor should provide, only in excel spreadsheet format, details of revenue collected on behalf of CRIA, including:
- (a) Access revenue:
 - (i) train identifier;
 - (ii) train date;
 - (iii) invoice group;
 - (iv) month;
 - (v) year;
 - (vi) operator name;
 - (vii) commodity;
 - (viii) billing segment;
 - (ix) line code;
 - (x) line name;
 - (xi) distance travelled;
 - (xii) section origin description;
 - (xiii) destination description;
 - (xiv) flagfall charge;
 - (xv) usage charge;
 - (xvi) total charge;
 - (xvii) Net Tonne Kilometres (**NTK**);
 - (xviii) Gross Tonne Kilometres (**GTK**);
 - (xix) Net tonnes; and
 - (xx) Train Kilometres (**KM**);
 - (b) property revenue by agreement/lease number;
 - (c) material disposal revenue by project identifier including quantity and customer;
 - (d) government rebates received;
 - (e) advertising revenue by customer; and
 - (f) any other revenue received.
- 1.7.12 The Contractor must also provide an aged debtor analysis including days outstanding, collection action initiated, identifying any late payments and any other issues of significance in relation of payments owed to CRIA.
- 1.7.13 The Contractor must provide, in an excel spreadsheet separate to the monthly report, the following detailed project by project information on progress against the Annual Works Plan and the AWP Budget, for further analysis by CRIA. This information must include:
- (a) project number;
 - (b) activity no.;
 - (c) CRIA code;
 - (d) activity description (classified according to the list of MPM activities provided in the CRN Asset Management Plan, Table 5 or 6 as applicable);

- (e) scope description;
 - (f) project manager;
 - (g) program;
 - (h) funding;
 - (i) CRN classification;
 - (j) line type;
 - (k) line code;
 - (l) line description;
 - (m) agreed budget for each month:
 - (i) quantity;
 - (ii) unit price; and
 - (iii) cost;
 - (n) Variations for each month:
 - (i) Variation;
 - (ii) scope; and
 - (iii) cost; and
 - (o) approved (varied) budget for each month:
 - (i) quantity;
 - (ii) unit price; and
 - (iii) cost.
- 1.7.14 The Contractor must provide detailed cost information in relation to works funded by third parties including, but not limited to, specific level crossings. CRIA will identify at an early stage projects funded by third parties.
- 1.7.15 The Contractor must provide the following information in relation to risk management:
- (a) the status of the top ten risks;
 - (b) description of risk reviews undertaken and outcomes from the reviews; and
 - (c) any other relevant information in relation to risk management.
- 1.7.16 The Contractor must provide the following information in relation to quality management:
- (a) copy of updated audit program;
 - (b) number of audits carried out against the audit program;
 - (c) % of programmed audits completed;
 - (d) non-conformances found during audits; and
 - (e) % of critical NCRs / CARs closed within the nominated timeframe.
- 1.7.17 The Contractor must provide the following information in relation to stakeholder and communications management:
- (a) stakeholder issues:
 - (i) all contacts logged in the Contractor's community and stakeholder communication management system details of incoming correspondence (including telephone calls and emails);
 - (ii) response times to incoming correspondence;
 - (iii) issues arising from stakeholder meetings and any other potential issues;
 - (iv) action employed to close out or manage issues;
 - (v) upcoming milestones and activities;
 - (vi) positive media/promotional opportunities;

- (vii) professional photographs and video footage showing the progress of any maintenance or capital works of potential significance; and
- (viii) customer and stakeholder issues satisfactorily resolved as recorded in Contractor's database, including:
 - A. number of issues resolved during month; and
 - B. % of issues resolved; and
- (ix) see also section 2.10 below in relation to the reporting of specific community and stakeholder issues; and
- (b) workforce status, including status of activities in relation to proportion of in-house staff vs subcontractor staff employed.

1.7.18 The Contractor must provide any other information relevant to the status of the Services for the remaining topics listed under project and business management in the work breakdown structure contained in Appendix 1 to the SWTC.

Performance Measurement

- 1.7.19 The Contractor must provide a detailed analysis of the Key Result Areas including:
- (a) performance during the reporting month;
 - (b) year to date performance;
 - (c) forecast of potential Contractor's Bonus payable to the Contractor at completion of the Contract Year; and
 - (d) trend analysis including from completion of the Initial Stage to current date.
- 1.7.20 Where possible information should be presented graphically with a narrative explanation.
- 1.7.21 Significant variations to the minimum conditions must be analysed and where necessary corrective action proposed.
- 1.7.22 The Contractor must provide an analysis of performance against the remaining performance measures identified in Appendix 16. This should include:
- (a) performance during the reporting month;
 - (b) year to date performance; and
 - (c) trend analysis including from completion of the Initial Stage to current date.
- 1.7.23 The Contractor must provide details of any adjustments to payment claims made under the Abatement Regime and the reasons why performance targets were not met. Where Abatement has been applied corrective action must be proposed.

Asset Management Services

1.7.24 The Contractor must provide a report on the status of its asset management systems, plans, policies and procedures.

Engineering Services

1.7.25 The Contractor must provide a report on the provision of Engineering Services including any significant activities or events during the reporting period.

Integrated Logistics Support

1.7.26 The Contractor must provide a report on the status of its Integrated Logistics Support services including:

- (a) spare parts management;
- (b) inventory management;
- (c) logistics and distribution management;
- (d) operational efficiencies achieved;
- (e) risk and criticality analysis based on operational plans and forecasts; and
- (f) disposal management strategy including stock piles and recycling.

Network Operations

- 1.7.27 The Contractor must report on the status of network operations and Train Control.
- 1.7.28 The following network performance information must be provided:
- (a) asset utilisation:
 - (i) passenger train km;
 - (ii) freight train km; and
 - (iii) freight GTK;
 - (b) passenger train delays: reported as total minutes' delay for all passenger services on CRN, due to all Contractor-caused delays, in particular speed restrictions and unscheduled works. Contractor may provide additional information to account for the delays;
 - (c) network closures outside planned closures; and
 - (d) network delays; and
 - (e) unplanned disruptions or works.
- 1.7.29 The Contractor must report on the management of and performance of RTOs including:
- (a) activity undertaken to ensure that RTOs provided correct details of their access requirements (e.g. tonnage, distance travelled) and that they were charged accordingly;
 - (b) compliance of RTOs with the terms and conditions of Access Agreements including:
 - (i) on-time running in accordance with the SWTT and published daily timetables;
 - (ii) serviceability of trains, in particular where defects have the potential to inflict undue wear or damage on elements of the CRN;
 - (iii) reliability of information provided by RTOs in relation to their access requirements (e.g. train weights, etc.);
 - (iv) compliance with CRIA Standards and Codes, safe working requirements, and operational protocols;
 - (v) other administrative requirements (e.g. rail safety accreditation of RTOs; confirmation that they have an up-to-date and relevant Safety Management Plan, etc); and
 - (c) any instances of RTOs who enter and operate on the CRN without an Access Agreement.

Rail Infrastructure Maintenance

- 1.7.30 The Contractor must provide a report on the status of its implementation of:
- (a) Routine Maintenance;
 - (b) Major Periodic Maintenance; and
 - (c) Enhancement Works.
- 1.7.31 The status of significant projects should be reported in detail.
- 1.7.32 The following specific asset performance information is to be reported:
- (a) breakdown-failure repairs as percentage of total RM;
 - (b) weld inspections carried out;

- (c) proportion of hours unscheduled maintenance / hours scheduled maintenance;
- (d) earthworks failures;
- (e) signalling failures;
- (f) broken rails;
- (g) number of other asset failures;
- (h) temporary speed restrictions (**TSR**):
 - (i) passenger lines;
 - A. minutes lost;
 - B. km under restriction; and
 - C. duration of restriction and forecast removal date;
 - (ii) freight lines;
 - A. minutes lost;
 - B. km under restriction; and
 - C. duration of restriction and forecast removal date;
 - (iii) grain lines;
 - A. minutes lost;
 - B. km under restriction; and
 - C. duration of restriction and forecast removal date;
- (i) other rail defects;
- (j) bridges with speed restrictions;
- (k) bridges with load restrictions; and
- (l) Track Quality Index (**TQI**).

1.7.33 The Contractor must report the following level of detail for overbridges and underbridges:

- (a) inspections;
- (b) maintenance;
- (c) Incidents summary;
- (d) compliance;
- (e) issues list;
- (f) corrective and preventive actions;
- (g) major works;
- (h) tendered works if applicable; and
- (i) risk assessment.

Property Management Services

1.7.34 The Contractor must report on the status of its Property Management Services, including the following details:

- (a) progress of works under NSW and Commonwealth heritage incentive schemes;
- (b) performance against the benchmarks for property lease agreements in local area;
- (c) status of lease negotiations, including:
 - (i) building ID;
 - (ii) building name;
 - (iii) region;
 - (iv) agreement no;
 - (v) lease creation date;
 - (vi) lease conversion date;
 - (vii) new or renewal status;

- (viii) description of land;
- (ix) file no;
- (x) suite;
- (xi) tenant no;
- (xii) tenant name;
- (xiii) class;
- (xiv) list status [executed or pending];
- (xv) execution date;
- (xvi) account no;
- (xvii) annual revenue;
- (xviii) lease payment frequency;
- (xix) rental for period;
- (xx) rental per annum;
- (xxi) lease start date;
- (xxii) lease terms;
- (xxiii) lease expiry;
- (xxiv) months to expiry;
- (xxv) security bond amount;
- (xxvi) review date;
- (xxvii) review type;
- (xxviii) remarks;
- (xxix) lettable;
- (xxx) premises leased;
- (xxxi) agreement type;
- (xxxii) group;
- (xxxiii) extension letter details;
- (xxxiv) date of extension; and
- (xxxv) comments (mandatory for items over \$ 5,000 where lease has expired);
- (d) status of any statutory issues (e.g. development applications);
- (e) level crossings:
 - (i) significantly changed;
 - (ii) licensed; and
 - (iii) closed/removed;
- (f) sidings:
 - (i) new connections; and
 - (ii) renewed agreements;
- (g) external party works:
 - (i) new applications; and
 - (ii) executed licences;
- (h) property sales:
 - (i) exchanged;
 - (ii) settled;
 - (iii) pending exchange or settlement;
 - (iv) proposed submitted for CRIA approval; and
 - (v) proposed discussion stage; and
- (i) property environmental contamination remediation costs forecasts and actuals.

Environmental Management and Sustainability

- 1.7.35 The Contractor must report on the status of its environmental management and sustainability activities. The following information should be provided:
- (a) environmental management activities undertaken;
 - (b) full details of any environmental incidents which may or have triggered a clean-up, prevention or prohibition notice under Chapter 4 of the *Protection of the Environment Operations Act 1997* or other NSW or Commonwealth environmental or heritage legislation;
 - (c) compliance with external environmental performance targets, including:
 - (i) NSW sustainability targets; and
 - (ii) Commonwealth carbon pollution reduction scheme;
 - (d) contaminated land notifications;
 - (e) environmental audits and other assurance activities:
 - (i) results; and
 - (ii) actions to address identified issues;
 - (f) status of environmental projects under way or proposed;
 - (g) any other environmental issues; and
 - (h) heritage activities.

Transition Management

- 1.7.36 During the Mobilisation Stage and Initial Stage, the Contractor must provide detailed reports on its progress against the tasks and timelines identified in the Transition Management Plan. Risk issues must be identified and addressed. Any support required from CRIA should be identified.
- 1.7.37 During steady state operation, the Contractor must report on the status of the handover package and the Disengagement Plan.

1.8 Quality Audit Program - Monthly Progress Report

- 1.8.1 The Contractor must provide to CRIA, not later than five working days after the end of each calendar month and attached to the Monthly report described in section 2.5, a quality audit program progress report containing as a minimum the following information:
- (a) executive summary;
 - (b) compliance summary against the target annual Quality audit program agreed with CRIA including:
 - (i) no. of audits carried out against audit program; and
 - (ii) % of programmed audits completed;
 - (c) auditor details;
 - (d) inspection dates;
 - (e) auditee details;
 - (f) due date for the reported audit as per the Quality audit program;
 - (g) circulation;
 - (h) objective;
 - (i) staff attending the audit;
 - (j) audit method;
 - (k) audit findings;
 - (l) audit recommendations;
 - (m) compliance status;
 - (n) due date for re-inspection if applicable;
 - (o) non conformance details;

- (p) issues requiring further action;
- (q) general notes;
- (r) corrective action;
- (s) proposed corrective action completion date;
- (t) proposed corrective action actual completion date;
- (u) acceptance details; and
- (v) date of rectification action closure.

1.9 Annual Quality Audit Report

- 1.9.1 The Contractor must provide an Annual Quality Audit Report (once per year, not later than the 31st August) for those activities that are required to be audited on an annual basis. The annual period will be aligned with CRIA financial year which ends the 30 June each year and will include a summary of information as described in 1.8.1.

1.10 Report of Submission for Diesel Fuel Rebate

- 1.10.1 The Contractor must provide to CRIA an annual advice that the submission for diesel fuel rebate has been made, or not made, as appropriate.

1.11 Weekly Transition Issues Log

- 1.11.1 During the transition period, the Contractor shall provide a weekly update of transition issues to CRIA, in the form of a weekly transition issues log. This may be in tabular form, and include, as a minimum:
- (a) issue no;
 - (b) date raised;
 - (c) description of issue;
 - (d) person who raised issue;
 - (e) person responsible for management;
 - (f) proposed action for resolution; and
 - (g) expected date of resolution.

1.12 Incident Investigation Report

- 1.12.1 The Contractor must provide to CRIA a copy of any report of the outcome any rail safety or OH&S-related Incident investigation report, including any conclusions and recommendations.
- 1.12.2 For OH&S-related incidents, the report shall include at least the information indicated in NSW WorkCover Advice Sheet 5: "*Reporting Safety*", i.e.:
- (a) who reported the problem?
 - (i) time; and
 - (ii) date;
 - (b) what is the problem?
 - (c) what has been done to rectify the problem?
 - (i) time; and
 - (ii) date;
 - (d) what further action needs to be taken, (e.g. review of safe work procedures, training)?
 - (e) outline corrective action taken.

1.13 72-Hour Incident Report

- 1.13.1 The Contractor must provide to CRIA a copy of its initial report to ITSR to on category A or B occurrences (as defined in the *Rail Safety (General) Regulation 2001*) within 72 hours of occurrence.
- 1.13.2 The report is to contain the information required by ITSR and be provided in the manner and form approved.
- 1.13.3 For ITSR reporting requirements, the Contractor may refer to the *Guideline for the Reporting of Notifiable Occurrences, Occurrence Notification – Standard One (ON-S1), Revision 2*, last updated on 13th June 2008 or any subsequent updates for terminology and descriptors, reporting requirements, occurrence categories and definitions. This document is available on the ITSR website at: <http://www.transportregulator.nsw.gov.au/statistics/Documents/ON-S1.pdf>.

1.14 Community and Stakeholder Complaints and Issues Report

- 1.14.1 The Contractor must advise CRIA of any community or stakeholder complaints, or issues which have the potential to have an adverse effect upon communities, community members or stakeholders, within twenty-four (24) hours of receipt of the complaint or awareness of the potential issue. The report must include, as a minimum:
- a copy of the original complaint or notification of the issue as received by the Contractor (if in written form);
 - description and/or further elaboration of the complaint or issue, including potential outcomes or consequences;
 - contact details of person who raised the complaint or issue;
 - details or immediate response given at the time complaint was made or issue was raised;
 - any relevant background information;
 - person responsible for management;
 - proposed action for resolution; and
 - expected date of resolution.

Appendix 16

Performance Measures

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Appendix 16: Performance Measures

1.1 Introduction

- 1.1.1 The purpose of this Appendix is to list the performance areas the Contractor must measure and report to CRIA as part of the Services.
- 1.1.2 Refer also to SWTC Appendix 15: *"Requirements for Reports"* which details other requirements for reports.
- 1.1.3 Note that the measures identified in this Appendix are not for the purposes of determining the Contractor's Bonus or Abatement. The performance measures for the Contractor's Bonus and Abatement are defined in the Commercial Framework.

1.2 Table of Performance Measures

- 1.2.1 The following table provides additional detail in relation to performance measures required to be reported in the reports identified in SWTC Appendix 15.

Table 1: Performance Measures

KRA	Performance Measure	Lead or Lag Indicator?	Units of Measure	MCOS	Target Perf. Level	Report Frequency	Method of Measurement
Asset Management	Achievement of the AWP: Percent of AWP delivered according to plan	Lag	% of planned scope	80%	100%	Annual	% of planned scope complete is to be determined by Contractor and reported to CRIA. CRIA may audit all or part of report to verify.
	Welded Track Stability Analysis Report - quality	Lag	Subjective Score 1-10	7	10	Annual	Short (max-one page) survey to be distributed to key CRIA staff responsible for review of WTSA Report. Scores to be averaged.
	No of defective welds installed.	Lag	% of all welds installed for a month	Less than 1%	Less than 0.1%	Monthly	
	Number of Broken rails	Lag	No off	2	0	Monthly	
	Temporary speed restrictions (TSR) - passenger lines – minutes lost	Lag	Minutes	50	20	Monthly	
	TSR - passenger lines – km under restriction	Lag	km	26	15	Monthly	
	TSR- freight lines – minutes lost	Lag	Minutes	10	2	Monthly	
	TSR - freight lines – km under restriction	Lag	km	9	5	Monthly	



KRA	Performance Measure	Lead or Lag Indicator?	Units of Measure	MCOS	Target Perf. Level	Report Frequency	Method of Measurement
	TSR - grain lines – minutes lost	Lag	Minutes	500	300	Monthly	
	TSR- grain lines – km under restriction	Lag	km	590	400	Monthly	
	Under Bridges with speed restrictions	Lag	Number	16	8	Monthly	
	Under Bridges with load restrictions	Lag	Number	1	0	Monthly	
	Over Bridges with load restrictions	Lag	Number	40	20	Monthly	
	TQI per line	Lag	Number				See Separate Table
	TQI per line type	Lag	Number				See Separate Table
Network Performance	Safety audits carried out	Lag	Count	5	10	Monthly	
	Train to train collisions	Lag	Count	0	0	Monthly	
	Signals Passed at Danger (SPAD)	Lag	Count	1 per million train km	1 per million train km	Monthly	
	Level crossing accidents	Lag	Count	1 per million train km	1 per million train km	Monthly	



KRA	Performance Measure	Lead or Lag Indicator?	Units of Measure	MCOS	Target Perf. Level	Report Frequency	Method of Measurement
Safety & Risk Management	Level crossing near misses	Lead	Count	5	2	Annually	
	Derailments – Passenger trains	Lag	Count	0	0	Monthly	
	Derailments – Freight trains	Lag	Count	3 per million train km	2 per million train km	Monthly	
	Other Category A Incidents	Lag	Count	3	0	Monthly	
	Category B Incidents	Lag	Count	20	10	Monthly	
	Safe working incidents	Lag	Count	2	0	Monthly	
	Safety-Critical Compliance: Percentage of inspections not compliant	Lag	% of scheduled inspections completed	100%	100%	Monthly	
	Structures: Percentage of structures not compliant	Lag	% of scheduled inspections completed	100%	100%	Monthly	
	Employee fatalities	Lag	Count	0	0	Monthly	
	Lost Time Injury Frequency Rate (LTIFR)	Lag	Count	5 per million hours worked	0 per million hours worked	Monthly	



KRA	Performance Measure	Lead or Lag Indicator?	Units of Measure	MCOS	Target Perf. Level	Report Frequency	Method of Measurement
	Medical Treatment Injury Rate (MTIFR)	Lag	Count	20 per million hours worked	5 per million hours worked	Monthly	
	No. of OH&S audits completed	Lag	Count	2	4	Monthly	
	Prohibition notices issued by WorkCover or ITSR	Lag	Count	0	0	Monthly	
	Major non-compliances highlighted during ITSR audits	Lag	Count	0	0	Monthly	
	Drug and alcohol tests	Lag	Count	0 employees found positive	0 employees found positive	Monthly	



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