



**Exhibit A –  
Scope of Works and Technical Criteria  
for**

---

**Design and Construction of**

---

**Western Sydney Infrastructure  
Plan - The Northern Road  
Upgrade - Stage 3 North Project**

Penrith, New South Wales

Contract number: 15.3662.2254

November 2016

---

Document author: Roads & Maritime Services

This page has been intentionally left blank.

## About this document

### Project data

<b>Project name:</b>	Western Sydney Infrastructure Plan, The Northern Road Upgrade - Stage 3 North Project
<b>Contract type:</b>	Design and Construction
<b>Contract number:</b>	15.3662.2254
<b>Location:</b>	Penrith, New South Wales
<b>Road name:</b>	The Northern Road and M4 Motorway
<b>Local government area(s):</b>	Penrith City Council

### Data for this document

<b>Document name:</b>	WSIP The Northern Road Upgrade - Stage 3 North Project Exhibit A - SWTC
<b>Version and date:</b>	Contract Execution - V2
<b>Prepared by:</b>	Roads and Maritime Services
<b>Objective document ID and Version No.</b>	qA1764323

# Table of Contents

---

1	Introduction.....	11
1.1	Project Overview .....	11
1.2	Project Description .....	11
1.3	Project Objectives.....	12
1.4	Purpose and interpretation of Scope of Works and Technical Criteria.....	12
1.5	Locality, Site, Local Road Works Areas, Local Road Corridors, Temporary Works Areas and RMS Owned Land .....	14
1.6	RMS specifications and Australian Standards .....	14
1.7	Terminology.....	15
1.8	Contractor’s Specifications.....	16
2	Basic Requirements.....	17
2.1	General .....	17
2.2	Contractor’s Work .....	18
2.2.1	General.....	18
2.2.2	Nature and extent of Landscaping Maintenance .....	19
2.3	Project Works.....	20
2.3.1	The Works .....	20
2.3.2	Property Works.....	22
2.3.3	Local Road Works.....	23
2.3.4	Service Works.....	23
2.3.5	Principal items of infrastructure to be constructed .....	24
2.4	Temporary Works.....	27
2.5	Commissioning and testing .....	27
2.6	Environment .....	28
2.6.1	Environmental Management System .....	28
2.6.2	Environmental Manager.....	28
2.6.3	Environmental Review Group.....	28
2.7	Work Health and Safety .....	28
2.8	Workplace relations.....	29
2.9	Risk management .....	29
2.10	Reporting.....	29
2.11	Training .....	30
2.12	Project plans.....	31
2.13	Information requirements.....	31

2.14	Durability .....	31
2.15	Application of RMS and Contractor specifications.....	32
2.16	Effects of Contractor’s Work, the Project Works and the Temporary Works .....	32
2.17	Maintainability.....	33
2.18	Traffic and transport management.....	33
2.19	Availability of project information and data.....	34
2.19.1	Local area network.....	34
2.19.2	Information and data on an extranet.....	35
2.20	Aboriginal participation.....	36
2.21	Project design office.....	36
2.22	Leadership Planning and RMS Values and Objectives.....	36
2.22.1	RMS Values and Objectives .....	36
2.22.2	Performance Coach.....	37
2.23	Chain of Responsibility .....	37
2.24	Utilities Management Team.....	38
2.25	Australian Industry Participation Plan.....	38
3	Quality, Project Plans and Project Verification.....	43
3.1	Quality assurance .....	43
3.1.1	Quality system .....	43
3.1.2	Quality Plan.....	43
3.1.3	Hold points.....	44
3.1.4	Release of hold points.....	44
3.1.5	Non-conformities and continuous improvement.....	49
3.1.6	Non-conformities .....	50
3.1.7	Maintenance Plan.....	50
3.1.8	Records .....	50
3.1.9	Audits and Monitoring.....	50
3.1.10	Proof Checking.....	51
3.1.11	Access for Independent Verification .....	51
3.1.12	Planning Product Realisation.....	51
3.2	Project verification.....	52
4	Investigation, Survey and Condition Monitoring .....	53
4.1	General .....	53
4.2	Site investigation .....	53
4.3	Condition surveys .....	54
4.4	Survey requirements .....	54

4.4.1	General.....	54
4.4.2	Control survey .....	55
4.5	Infrastructure Monitoring Strategy .....	56
5	Performance and Design Requirements.....	57
5.1	General .....	57
5.2	Road safety audits .....	57
5.3	Safety in design.....	58
5.3.1	Establishing context.....	58
5.3.2	Hazard identification.....	58
5.3.3	Assessing risk.....	58
5.3.4	Controlling risks .....	59
5.3.5	Other Requirements.....	59
5.4	Reference Documents and Standards .....	59
5.4.1	General.....	59
5.4.2	Order of precedence .....	60
5.4.3	Standard units .....	60
5.4.4	Design datum.....	60
5.4.5	Works classification .....	60
5.5	Design life .....	60
5.5.1	General.....	60
5.5.2	Retained Infrastructure.....	62
5.6	Traffic.....	63
5.7	Aesthetics .....	63
5.8	Environmental design .....	63
5.9	Durability .....	64
5.10	Functional requirements .....	64
5.10.1	Noise mitigation measures and structures .....	64
5.10.2	Authorities and emergency services .....	65
5.10.3	Pedal cyclists and pedestrians .....	65
5.11	Geometric design.....	65
5.11.1	General Standards and Applications.....	65
5.12	Drainage.....	65
5.12.1	General.....	65
5.12.2	Flood Levels .....	67
5.13	Geotechnical design.....	67
5.14	Pavements.....	67

5.14.1	General.....	67
5.14.2	Pavement types and extents.....	68
5.15	Structures .....	68
5.16	Delineation and signposting.....	69
5.16.1	General.....	69
5.16.2	Delineation .....	69
5.16.3	Signposting.....	70
5.17	Urban Design and Landscape Requirements .....	70
5.18	Roadside furniture.....	71
5.18.1	General.....	71
5.18.2	Roadside Furniture .....	71
5.19	Fences and gates .....	72
5.20	Lighting.....	72
5.20.1	General.....	72
5.20.2	Lighting for Bridges.....	73
5.20.3	Lighting for Short Underpasses.....	73
5.20.4	Lighting for Footpaths and Shared Use Paths .....	73
5.21	Emergency Telephones .....	73
5.22	Traffic Control Signals.....	73
5.23	Intelligent Transport Systems.....	73
5.24	Electrical .....	74
5.25	Future works.....	74
5.26	Maintenance.....	74
5.27	Safety Screens.....	75
5.28	Bus Lane Requirements.....	75
5.29	Southern Tie-in .....	75
6	Property Works, Local Road Works and Service Works .....	77
6.1	Property Works.....	77
6.2	Local Road Works.....	77
6.3	Service Works .....	78
7	Construction.....	80
7.1	General .....	80
7.2	Work methods .....	80
7.3	Quality of material and workmanship.....	80
7.4	Working Hours.....	80
7.5	Special events.....	80

7.6	Advertising and signs .....	81
7.7	Stockpiling of materials.....	81
7.8	Not Used .....	81
7.9	As constructed documentation.....	81
7.10	Construction vehicle loads.....	81
7.11	Temporary site facilities .....	82
7.12	Site restoration, regeneration and planting .....	82
7.13	Discharge water quality .....	83
7.14	Maintenance during construction .....	83
7.15	Security during Construction .....	86
7.16	Acid Sulphate Soils and Rocks .....	86
7.17	Road conditions .....	86
7.18	Traffic safety and traffic management .....	87
7.19	Road occupancies, detours and closures .....	89
7.19.1	Compliance with Traffic Instructions during Construction .....	89
7.19.2	Bicycle Provisions .....	89
7.19.3	Transport of over-dimensional loads .....	89
7.19.4	Traffic Controllers .....	90
7.19.5	Design and Monitoring .....	90
7.20	Traffic accidents on worksites during Construction.....	90
7.21	Construction Noise.....	91
7.22	Access to Public Roads.....	91
7.23	Access for Contractor’s Work.....	91
7.24	Fire precautions .....	91
7.25	Property access and services.....	91
7.26	Protection and preservation of fauna.....	92
7.27	Construction completion report and pavement report .....	92
7.28	Project Testing.....	92
7.29	Cement sampling.....	93
7.30	Design resources.....	93
8	Community Involvement Obligations .....	94
8.1	General community involvement obligations.....	94
8.2	Personnel and resources.....	97
8.2.1	Community Relations Manager and support staff.....	97
8.2.2	Community contacts database .....	98
8.3	Displays.....	98



---

8.3.1	Community Information.....	98
8.3.2	Public Displays.....	99
8.4	Community information.....	100
8.4.1	General.....	100
8.4.2	Notifications.....	102
8.4.3	Advertising.....	102
8.4.4	Community update newsletters.....	103
8.4.5	Design Development and Community Involvement.....	104
8.4.6	Project Website.....	104
8.4.7	Site tours.....	106
8.4.8	Notification of traffic conditions.....	106
8.5	Complaints management.....	107
8.6	Responding to community representations.....	108
8.7	Project documentation.....	108
8.8	Media liaison and events.....	109
8.8.1	Media liaison.....	109
8.8.2	Media / community events.....	109
8.9	Project branding.....	110
8.10	Staff training.....	110

## List of Appendices

---

Appendix 1	Locality Map and Route .....	113
Appendix 2	Site, Local Road Works Areas and Temporary Works Areas.....	114
Appendix 3	Property Adjustments.....	115
Appendix 4	Additional Environmental Requirements.....	116
Appendix 5	Not Used.....	117
Appendix 6	RMS General Specifications.....	118
Appendix 7	RMS Technical Specifications.....	119
Appendix 8	Reference Documents .....	120
Appendix 9	Geometric Performance and Design Requirements .....	121
Appendix 10	Drainage Performance and Design Requirements .....	122
Appendix 11	Geotechnical Performance and Design Requirements.....	123
Appendix 12	Pavement Performance and Design Requirements.....	124
Appendix 13	Structural Performance and Design Requirements.....	125
Appendix 14	Not Used.....	126
Appendix 15	Urban Design Performance and Design Requirements .....	127
Appendix 16	Delineation and Signposting Performance and Design Requirements.....	128
Appendix 17	Not Used.....	129
Appendix 18	Intelligent Transport Systems .....	130
Appendix 19	Provisional Sum Work.....	131
Appendix 20	Traffic Control Signals.....	132
Appendix 21	Project Plan Requirements.....	133
Appendix 22	RMS Site Facilities .....	134
Appendix 23	Not Used.....	135
Appendix 24	Contractor Documentation Schedule .....	136
Appendix 25	Maintenance Standards During Construction .....	137
Appendix 26	Information Signs.....	138
Appendix 27	Road Occupancy .....	139

---

Appendix 28	Not Used.....	140
Appendix 29	Asset Items and Sub-Items – Specified Design Lives .....	141
Appendix 30	Concept Design .....	142
Appendix 31	Contractor’s Urban and Landscape Design .....	143
Appendix 32	Contractor’s Specifications .....	144
Appendix 33	Not Used.....	145
Appendix 34	Not Used.....	146
Appendix 35	Initial Project Management Plan.....	147
Appendix 36	Initial Environmental Management Plan .....	148
Appendix 37	Initial Design Plan.....	149
Appendix 38	Initial Construction Plan.....	150
Appendix 39	Initial Chain of Responsibility Management Plan.....	151
Appendix 40	Initial Community Involvement Plan.....	152
Appendix 41	Initial Project WHS Management Plan.....	153
Appendix 42	Initial Earthworks Plan.....	154
Appendix 43	Initial Traffic Management and Safety Plan.....	155
Appendix 44	Initial Enterprise Training Management Plan .....	156
Appendix 45	Initial Workplace Relations Management Plan .....	157

# 1 Introduction

---

## 1.1 Project Overview

- (a) The Western Sydney Infrastructure Plan (**WSIP**) consists of a number of projects, including The Northern Road Upgrade project. The Northern Road upgrade - Stage 3 North Project involves upgrading approximately 4km of The Northern Road between Glenmore Parkway, Glenmore Park and Jamison Road, Penrith.
- (b) This Scope of Works and Technical Criteria (**SWTC**) relates to Stage 3 North of The Northern Road Upgrade project, which involves road widening and intersection upgrades along The Northern Road from Jamison Road, Penrith to just south of Glenmore Parkway, Glenmore Park, including upgrade of the M4 Motorway interchange. In this SWTC, 'the Project' will refer to Stage 3 North of The Northern Road Upgrade project.

## 1.2 Project Description

- (a) The Project will:
  - (i) provide for up to eight (8) through lanes of carriageway between Jamison Road, Penrith and Glenmore Parkway, Glenmore Park, including two bus lanes; Additional dedicated turning lanes will also be provided to facilitate intersection upgrades
  - (ii) be designed to cater for design speeds of 80km/h north of the M4 Motorway interchange, 90km/h south of and including the M4 Motorway interchange and 80km/h for the transition from the Main Carriageway to the existing northbound and southbound carriageways of The Northern Road at the southern extent of the Site;
  - (iii) include the upgrade of the existing interchange between the M4 Motorway and The Northern Road to provide four through lanes in each direction with two bus lanes on the Northern Road. The upgraded interchange will include additional turning lanes for existing movements and will provide for Smart Motorway requirements;
  - (iv) include shared paths for pedestrians and cyclists;
  - (v) include ancillary works such as public utility adjustments, construction compounds and water management measures;
  - (vi) upgrade (including additional turning lanes and new or upgraded traffic lights) existing intersections as listed in section 2.3.5 and Appendix 9 of this SWTC;
  - (vii) provide continuous bus lanes in each direction;
  - (viii) include installation of a central median;
  - (ix) include installation of new street lighting and safety barriers; and
  - (x) include upgrade of the drainage system.
- (b) A list of the Principal Items of Infrastructure for the Project Works is contained in section 2.3.5 of this SWTC.

### 1.3 Project Objectives

- (a) The WSIP program objectives are grouped in four themes:
  - (i) Development and demand – Support the proposed Western Sydney Airport, land use change and residential growth; balancing functional, social, environmental and value for money considerations.
  - (ii) Connectivity to airport – Provide a resilient connection for freight and people to the proposed Western Sydney Airport.
  - (iii) Integrated network – Provide road improvements to support and integrate with the broader transport network.
  - (iv) Customer focus – Provide meaningful engagement with customers and stakeholders throughout the program life.
- (b) The Project objectives for The Northern Road Upgrade - Stage 3 are to:
  - (i) improve transport connections from the Penrith region and M4 Motorway to the proposed Western Sydney Airport and surrounding developments including the South West Priority Land Release Area and the Western Sydney Priority Growth Area;
  - (ii) support freight movement to efficiently address the growing freight task;
  - (iii) cater for future traffic demand to improve the flow of traffic to provide reliable journeys;
  - (iv) support public and active transport to promote sustainable and efficient journeys; and
  - (v) improve road safety.

### 1.4 Purpose and interpretation of Scope of Works and Technical Criteria

- (a) The criteria in this Scope of Works and Technical Criteria are minimum criteria and requirements, including technical, operational and performance requirements for the Contractor's Work, Project Works, Temporary Works and Landscaping Maintenance which the Contractor must satisfy to fulfil its obligations under the deed.
- (b) If more than one criterion or requirement applies in respect of any part of the Project Works, Temporary Works and Contractor's Work then all criteria and requirements must be satisfied. If there are criteria and requirements that are mutually exclusive, then the criterion or requirement which delivers the greatest level of service, or is of the highest standard, must apply.
- (c) In this Scope of Works and Technical Criteria reference to any work includes any additional activities necessary for the satisfactory completion and performance of that work and full compliance with these criteria and requirements.
- (d) The Contractor bears the risk that compliance with this Scope of Works and Technical Criteria will not fulfil the Contractor's obligations under the deed. In particular the Contractor will be required to carry out any work, tasks and activities additional to

that contemplated by this Scope of Works and Technical Criteria to ensure that the Contractor satisfies its obligations under the deed.

The Contractor must not depart from any aspect of this Scope of Works and Technical Criteria other than:

- (i) as necessary to comply with the requirements of the deed where this is necessary to satisfy its obligations under clause 12.1 of the deed, or
  - (ii) in accordance with clause 15 of the deed.
- (e) In either case the prior written approval of RMS' Representative is required.
- (f) Pursuant to the Transport Administration Act 1988 (NSW), on and from 1 November 2011:
- (i) references to the 'Roads and Traffic Authority' or 'RTA' in any document is taken to be a reference to Roads and Maritime Services and RMS respectively; and
  - (ii) the assets, interests, rights, obligations and liabilities of the 'Roads and Traffic Authority' were transferred to RMS.
- (g) Accordingly, references to Roads and Traffic Authority and RTA in this Scope of Works and Technical Criteria are references to Roads and Maritime Services and RMS respectively, except where the terms are incorporated in the title of documents, Reference Documents, RTA D&C specifications, RTA publications, RTA reports and other similar documents where those titles have not yet been updated.
- (h) Unless the context otherwise requires, in this Scope of Works and Technical Criteria the words "the deed", "the Deed" or "the Project Deed" are to be read as references to "this deed".
- (i) Unless the context otherwise requires, terms which have a defined meaning in the deed have the same meaning where used in this Scope of Works and Technical Criteria.
- (j) Other terms used in this SWTC are defined in section 1.7 (Terminology) or in the relevant Appendices.
- (k) References to "this document", "SWTC" or "Scope of Works and Technical Criteria" are to this Scope of Works and Technical Criteria, including its Appendices.
- (l) Unless stated otherwise, references to "Appendix" or "Appendices" in this Scope of Works and Technical Criteria are a reference to an Appendix or Appendices attached to this Scope of Works and Technical Criteria.
- (m) Unless stated otherwise, references to "section", "sections", "subsection", "subsections", "paragraph" or "paragraphs" in this Scope of Works and Technical Criteria are a reference to a section, sections, subsection, subsections, paragraph or paragraphs, respectively in this Scope of Works and Technical Criteria.
- (n) Any references in RMS D&C specifications to "You" (or "you") must be read as a reference to "the Contractor." Any references in RMS D&C specifications to "Your" (or "your") must be read as a reference to "the Contractor's."
- (o) In this Scope of Works and Technical Criteria headings are for convenience only and do not affect interpretation.

## **1.5 Locality, Site, Local Road Works Areas, Local Road Corridors, Temporary Works Areas and RMS Owned Land**

- (a) Appendix 1 of this SWTC contains a locality map of the Project Works and a route sketch of the Works.
- (b) Appendix 2 of this SWTC contains details of the Site, Local Road Works Areas, Local Road Corridors and Temporary Works Areas.
- (c) The Works must be designed and constructed to lie completely within the Site, which is defined in Appendix 2 of this SWTC.
- (d) Chainages identified in this SWTC are relative to Chainage 0.0 at E286955.584, N6258133.161 and measured along the Main Carriageway, unless otherwise stated.

## **1.6 RMS specifications and Australian Standards**

- (a) Any reference in the deed to RMS D&C specifications must be read as a reference to the specifications and documents referred to in this SWTC.
- (b) Any reference in RMS D&C specifications to "Drawings" (or "drawings") must be read as a reference to drawings prepared by the Contractor that have been verified by the Project Verifier and otherwise prepared and submitted in accordance with the deed.
- (c) For the Project Works, Temporary Works and Contractor's Work, any reference in RMS D&C specifications to "testing" must be read as a reference to "RTA Test Methods" or "RMS Test Methods" on RMS's website, ([www.rms.nsw.gov.au](http://www.rms.nsw.gov.au)) current at the date of the deed.
- (d) Any reference in RMS D&C specifications to the "Company" must be read as a reference to the Contractor.
- (e) Any reference to the "Project Quality Plan" must be read as the Quality Plan.
- (f) Any reference in RMS D&C specifications to "RMS's Representative" or "RTA's Representative" must be read as a reference to RMS.
- (g) Any reference in RMS D&C specifications to the "Works", "works", "Work" or "work" must be read as a reference to the Project Works, Temporary Works, Landscaping Maintenance or the Contractor's Work as the context requires.
- (h) Any reference in RMS D&C specifications to the "Contract" must be read as a reference to the deed.
- (i) Any reference in RMS D&C specifications to submissions, to RMS or otherwise, must be read to also require a submission to RMS, the Project Verifier and, where relevant, the Proof Engineer.
- (j) For the Project Works, Temporary Works and Contractor's Work, references to Australian Standards or to codes includes the publications of Standards Australia and, unless stated otherwise, to the version of each publication current at the date of the deed.
- (k) All relevant information identified and required by the annexures and other similar pro-forma documents in RMS D&C specifications must be included in the versions of RMS specifications that are included in the Design Documentation.

- (l) For the Contractor's Works, references to Australian Standards or to codes are references to the publications of Standards Australia and to the version of each publication current at the date of the deed.
- (m) Any reference to the "SWTC" must be read as a reference to this Scope of Works and Technical Criteria.

## 1.7 Terminology

In this SWTC, unless the context requires otherwise:

- (a) **Assets** means all components of the Works including all Asset Items and Asset Sub-Items described in section 5.5.1 of this SWTC.
- (b) **Asset Items** are single occurrences of an Asset, such as a pavement section, a bridge bearing, specific items of plant or equipment, a warning sign or a length of barrier line.
- (c) **Asset Sub-Items** are components of Asset Items which have a specified design life or maintenance requirements which vary from that established for the Asset Item, of which the Asset Sub-Item forms a part, such as light lamps and fan bearings.
- (d) **Concept Design** means the design documentation in Appendix 30 of this SWTC.
- (e) **Contractor's Specifications** means the specifications in Appendix 32 of this SWTC.
- (ee) **Chainage** means the chainage measured along the Main Carriageway relative to Chainage 0.0 at E286955.584, N6258133.161, unless otherwise stated.
- (f) **Design Life** means the period over which an Asset must perform its intended function without replacement, refurbishment or significant maintenance.
- (g) **Level of Service** means the traffic capacity analysis defined in Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis and further described in the Austroads Guide to Traffic Management and Austroads Guide to Road Design and RTA Supplements.
- (h) **Main Carriageway** comprises the travel lanes plus shoulders of The Northern Road and M4 Motorway ramps, where these fall within the Site.
- (i) **Other Roads** are roads in the Site other than the Main Carriageway.
- (j) **Reference Documents** are the publications, standards, specifications, guidelines and handbooks identified and listed in Appendix 8 of this SWTC.
- (k) **Retained Infrastructure** means those items of existing infrastructure, which may be incorporated into the Project Works subject to section 5.5.2.
- (l) **Segment** is the location (and length of road) by which maintenance accomplishment and condition is reported. For maintenance accomplishment, a segment is a 500 metre lane length, or part thereof. For condition reporting, a segment is a 100 metre lane length, or part thereof.
- (m) **TMC** means the NSW Transport Management Centre.
- (n) **WHS** means work health and safety.



## **1.8 Contractor's Specifications**

The Contractor's Specifications are the specifications which, subject to clause 12 of the deed, the Contractor must further develop and implement in developing the Design Documentation.

## 2 Basic Requirements

---

### 2.1 General

- (a) The Contractor must undertake the Contractor's Work in accordance with the requirements of the deed, including this SWTC and the Environmental Documents.
- (b) The Contractor acknowledges and agrees that one of the key purposes of the deed is to assist RMS in achieving the overall project objectives as identified in section 1 of this SWTC.
- (c) The Contractor must ensure that in undertaking the Contractor's Work it fully fulfils the project objectives as identified in section 1 of this SWTC.
- (d) The Contractor must implement a fully integrated approach to the Contractor's Work, which accommodates and addresses the Contractor's role as the designer and constructor of a key part of the urban road network.
- (e) In particular, the Contractor must:
  - (i) ensure that its planning and programming is comprehensive and provides for the concurrent delivery of the performance and environmental requirements of the Deed;
  - (ii) proactively liaise with and satisfy the requirements of all relevant Authorities;
  - (iii) diligently address safety, function, durability, reliability and aesthetics in all aspects of the Project Works and the Temporary Works;
  - (iv) preserve, protect and, as required, reinstate existing services and infrastructure (including structures, roads and buildings);
  - (v) design and construct the Project Works to accommodate safe, efficient and effective maintenance and maintain user convenience;
  - (vi) provide for the safe and efficient operation of the Project which is coordinated with and complementary to the management of the urban road network;
  - (vii) implement a proactive community involvement strategy which enables the Contractor to anticipate, respond to and accommodate reasonable community expectations;
  - (viii) incorporate appropriate urban and landscape design in all aspects of the Project Works;
  - (ix) diligently minimise disruption and inconvenience to all road users, to the public and to other affected parties;
  - (x) ensure a high standard of environmental, community, safety and quality performance in the delivery of the Contractor's Work by developing and implementing effective management plans and providing effective leadership to develop and maintain the culture and values that are consistent and aligned with this performance objective;

- (xi) ensure that the Contractor's Work is carried out by personnel that have the necessary qualifications, knowledge and skills to competently perform the Contractor's Work; and
- (xii) achieve a high degree of accountability, at all levels of the Contractor's organisation, in fulfilling the Contractor's obligations under the deed during the Contractor's Work. The Contractor must proactively identify, report and action all non-conformities to the Contractor's accountabilities and implementing appropriate corrective and preventative actions where any shortcomings or departures from the Contractor's accountability occur.

## **2.2 Contractor's Work**

### **2.2.1 General**

Without in any way limiting the Contractor's obligations under the deed, The Contractor's Work includes all tasks and things necessary to:

- (a) investigate, design, construct and commission the Project Works and any Temporary Works;
- (b) except as identified otherwise by the Environmental Documents, demolish and remove existing infrastructure and rehabilitate the affected sites, including roads, road tie-ins, structures, services, buildings, improvements and properties:
  - (i) that are within the Site except for Services that are not made redundant by the Project Works, the Temporary Works or the Contractor's Work; and
  - (ii) as required by Appendix 3 of this SWTC.
- (c) ensure that the Contractor can hand over the Project Works to RMS (or their respective owners) at the Date of Construction Completion in the specified condition;
- (d) hand over and, during the Defects Correction Period, repair all Defects in the Local Road Works, the Service Works and the Property Works;
- (e) secure, maintain, repair, reinstate and hand back, in the specified condition, Temporary Areas and any other areas occupied by or affected by Temporary Works;
- (f) connect, modify, make arrangements and undertake improvements necessary to connect the Project Works to the traffic network and to ensure the continuing function of the surrounding traffic network during and after completion of the Project Works including the provision of a transition and all associated work at the southern limit of work to connect to the existing Northern Road;
- (g) investigate, relocate and/or protect Services necessary as a consequence of the Contractor's Work;
- (h) adjust properties and access as necessary, as a consequence of the Contractor's Work;
- (i) prepare all Design Documentation and prepare and update the Contract Program;
- (j) enable the Project Verifier to independently verify the Contractor's Work, the Project Works and the Temporary Works;
- (k) enable the Proof Engineer to independently certify, as required, the Project Works and the Temporary Works;

- (l) provide quality assurance of the Contractor's Work;
- (m) develop, implement and maintain an environmental management system including environmental monitoring;
- (n) mitigate environmental impacts during construction of the Project Works and the Temporary Works and the performance of the Landscaping Maintenance;
- (o) implement all necessary traffic management methods to effectively manage traffic affected by the construction of the Project Works and the Temporary Works during the construction activities, Contractor's Work and during the performance of the Landscaping Maintenance;
- (p) develop, implement and maintain the Project Plans in accordance with the deed;
- (q) develop, implement and maintain a work health and safety management system;
- (r) develop, implement, maintain and conform with a Project WHS Management Plan in accordance with the Contractor's Corporate OHS Management System and in accordance with Appendix 21 of this SWTC;
- (s) develop, implement, maintain and conform with a Project Training Management Plan in accordance with the Contractor's Enterprise Training Management Plan and in accordance with Appendix 21 of this SWTC;
- (t) provide effective community involvement;
- (u) maintain and repair existing and new infrastructure as required by section 7.14;
- (v) prepare a Maintenance Plan which includes a Landscaping Maintenance Plan in accordance with the requirements of Appendix 21 of this SWTC;
- (w) implement all necessary traffic management methods to effectively manage traffic affected by the Project Works and the Temporary Works during construction;
- (x) open the Project and the Local Roads affected by the Local Road Works to traffic in accordance with the deed;
- (y) maintain Local Roads affected by the Local Road Works;
- (z) carry out the Landscaping Maintenance;
- (aa) provision of site inductions for all personnel requiring access to site;
- (bb) comply and conform to the reporting structure and requirements as documented in Appendix 24 of this SWTC and the deed that may be updated from time to time during the course of the project; and
- (cc) undertake comprehensive testing and commissioning of the Works and the Temporary Works that meet with the delivery requirements of the Project.

## **2.2.2 Nature and extent of Landscaping Maintenance**

The Landscaping Maintenance includes all things and tasks necessary to maintain the landscaped and vegetated areas of the Site for the duration of the Landscaping Maintenance Period including:

- (a) maintaining vegetative groundcover and plant health, including weed control and removal of other undesirable vegetation (large tree species from batters and within clear zones), pruning, mulching, fertilising, watering and pest and disease control;
- (b) repairing, refurbishing, upgrading and providing replacement plantings as required in the landscaped areas and, subject to the requirements of RMS D&C R179, replacing dead plantings within 28 days of the identification of the dead planting;
- (c) repairing, refurbishing, upgrading and providing additional re-vegetation treatments as required in the vegetated areas and subject to the requirements of RMS D&C R178, replacing dead revegetation within 28 days of the identification of the dead revegetation;
- (d) inspecting the landscaped and vegetated areas to determine the condition of the landscaping and vegetation and the effectiveness of maintenance previously carried out and in progress, identifying required and necessary maintenance works, maintaining records of all works undertaken and preparing and submitting landscaping maintenance reports;
- (e) preparing, implementing, updating and improving the Landscaping Maintenance Plan as required by Appendix 21 of this SWTC;
- (f) providing quality assurance in the Landscaping Maintenance;
- (g) implementing and maintaining an Environmental Management System, including environmental monitoring, throughout the Landscaping Maintenance Period;
- (h) mitigating the environmental impacts of the Landscaping Maintenance during the Landscaping Maintenance Period; and
- (i) handing over the areas where the Landscaping Maintenance has been performed to RMS and relevant Authorities at the end of the Landscaping Maintenance Period in the specified condition.

Notwithstanding the requirements of sections 2.2.2(a) to (i) inclusive, the Contactor is not required to perform routine mowing of verges and rubbish removal during the Landscaping Maintenance Period.

## **2.3 Project Works**

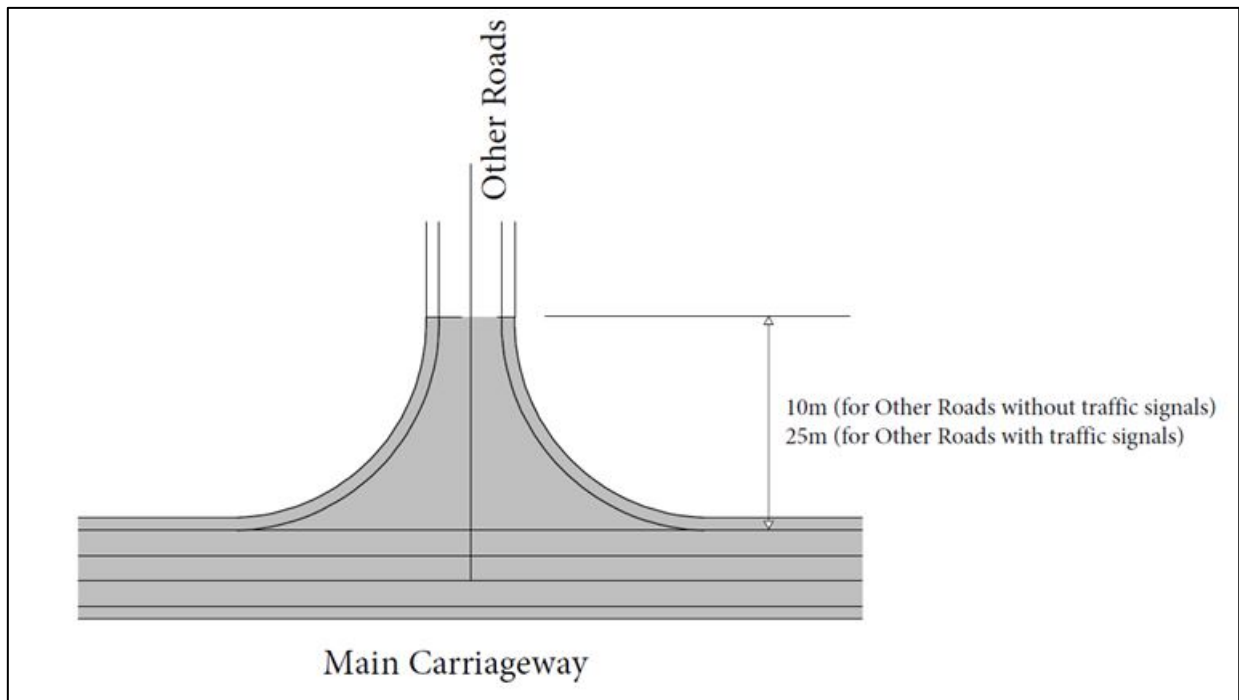
The Project Works include the following categories of works:

### **2.3.1 The Works**

The Works includes:

- (a) all the infrastructure and associated infrastructure, including any of the permanent infrastructure described in section 2.3.5, that is necessary to upgrade The Northern Road ('TNR') and provide for the safe and efficient passage of motor vehicles, cyclists and pedestrians along the roads located within the Site as shown in Appendix 2 of this SWTC (including the work required to be done on Other Roads as part of the Works), excluding the infrastructure, items and configurations associated with Property Works, Local Road Works, Service Works and Temporary Works, all as envisaged in the Environmental Documents;

- (b) the infrastructure, items and the configurations identified in Appendix 30 of this SWTC, excluding the infrastructure, items and configurations associated with Property Works, Local Road Works, Service Works and Temporary Works;
- (c) drainage (including subsurface drainage), earthworks, all structures (including tunnels, retaining walls, bridges, underpasses and overpasses), pavements (including ramps and connections to the existing road network), all finishes, furniture and landscaping;
- (d) all works to allow pedestrians, disabled persons and pedal cyclists to use routes nominated in the Environmental Documents;
- (e) all infrastructure necessary to operate and maintain the Works;
- (f) the provision of all Services to any facility necessary to operate and maintain the Works;
- (g) pavement markings, signs (and sign support systems), traffic light signals and the provision of all street and pedestrian lighting;
- (h) items of roadside furniture erected to provide safety (including safety barriers) and the provision of all fencing and other security measures necessary to prevent either unlawful or accidental access to the Works;
- (i) all environmental safeguards and measures necessary to mitigate environmental impacts during operation of the Works, including those identified in the Environmental Documents;
- (j) all measures necessary to achieve discharge water quality in accordance with the requirements of the deed and all measures necessary to mitigate noise and vibration during construction of the Works;
- (k) all measures required as a consequence of reasonable community requirements;
- (l) all equipment necessary to monitor the operational and environmental performance of the Works, assess the durability of all elements and assist in the operation and maintenance of the Works. This includes the provision of all traffic management, monitoring and control systems, infrastructure and services and the connection of such systems to RMS facilities;
- (m) communications systems including the Intelligent Transport System and all data connections including those required as a consequence of the Local Road Works;
- (n) all infrastructure required to connect the Works to the surrounding road network including from the limit of work at the southern end to the existing Northern Road;
- (o) all measures in the Works which are necessary as a consequence of the requirements in Appendix 3 of this SWTC; and
- (p) all other infrastructure, items and measures identified in section 2.3.5 of this SWTC, which are on or in, or are to be constructed on or in, the Site, excluding those associated with Property Works, Local Road Works, Service Works and Temporary Works.
- (q) For the purposes of the delineation between the Main Carriageway and Other Roads shall be in accordance with Figure 1

**Figure 1: Delineation between the Main Carriageway and Other Roads Pavement**

### 2.3.2 Property Works

Property Works (subject to not being part of the Works, the Service Works or the Local Road Works) include:

- (a) all adjustments, permanent arrangements or changes in arrangements to allow people and vehicles access to existing infrastructure or to and within properties which are necessary as a consequence of the Works, the Service Works, the Local Road Works and the Contractor's Work or as a consequence of the community liaison process, including those identified in Appendix 3 of this SWTC;
- (b) all changes in access arrangements outside the Site, Temporary Areas and Local Roads;
- (c) demolition and adjustment of built features within properties, including those identified in Appendix 3 of this SWTC ;
- (d) adjustments to buildings within properties, including those identified in Appendix 3 of this SWTC;
- (e) adjustments to property drainage within properties, including those identified in Appendix 3 of this SWTC;
- (f) all adjustments to properties which are necessary as a consequence of the requirements in Appendix 4 of this SWTC; and
- (g) all other property adjustment works necessary as a consequence of the Contractor's Work including those identified in the Environmental Documents.

### 2.3.3 Local Road Works

Local Road Works includes all works, including modifications, adjustments, reinstatements and improvements, necessary to construct any new Local roads or adjust any existing Local Roads:

- (a) affected by or as a consequence of the Works, Property Works, or Services Works;
- (b) required by the Environmental Documents including, as a minimum, resurfacing and/or reconstruction of affected streets and roads; and/or
- (c) required as a consequence of the reasonable requirements of the community.

where the works include:

- (d) all fencing, drainage including subsurface drainage, erosion and sediment control works, earthworks, all structures (including retaining walls and bridges), pavements and planting;
- (e) all provisions to allow public transport, pedestrians, pedal cyclists and disabled persons to use the surrounding road network affected by the Contractor's Work;
- (f) all permanent arrangements to allow people and vehicles access to property affected by the Contractor's Work;
- (g) provision of adjustments to pavement markings, signs, sign support systems, traffic control signals and street lighting;
- (h) items of roadside furniture erected to improve safety (particularly safety barriers) and the provision of all fencing and other security measures necessary to prevent either unlawful, or accidental access;
- (i) measures to mitigate noise and vibration during the construction of the Local Road Works (including during the rectification of Defects during the relevant Defects Correction Period);
- (j) all environmental safeguards necessary to mitigate environmental impacts which might arise as a consequence of the use by the Contractor for the Local Roads, including those identified in the Environmental Documents;
- (k) provision of the infrastructure, plant, equipment, systems for RMS's Local Road operation management and control system, as identified in Appendix 18 of this SWTC; and
- (l) those parts of the works identified in section 2.3.5 of this SWTC that comprise or involve adjustments to Local Roads, except as specified otherwise in section 5.5.2 of this SWTC. Local Road Works which involve widening of existing roads includes upgrading of all trafficable retained sections of the existing roads, kerbs and drainage over the full widened length to meet the requirements of the deed including this SWTC.

### 2.3.4 Service Works

Service Works include:

- (a) all activities and works necessary for the protection, support, adjustment, modification, removal, relocation, disconnection or enhancement of infrastructure related to Services which are affected by the Contractor's Work, Project Works and Temporary Works and



all activities and works necessary for the provision and connection of Services, including:

- (i) potholing, investigation and design work;
  - (ii) communication and coordination with Service owners and Authorities;
  - (iii) obtaining Approvals from Services' owners and Authorities;
  - (iv) payment of fees, levees and the like required by Services' owners and Authorities;
  - (v) traffic management;
  - (vi) environmental safeguards;
  - (vii) safety protection works;
  - (viii) temporary arrangements and measures; and
  - (ix) survey work, including survey work that is required to allow Services to be handed over to Services' owners and Authorities.
- (b) all activities and works necessary for the preservation of Services throughout the design and construction of the Project Works and the Temporary Works;
  - (c) all activities and works necessary for the provision of all Services' connections for undertaking the Contractor's Work and for maintenance of the Project Works;
  - (d) all protection, adjustments or enhancements to Services necessary to meet the requirements of, and all works required by, Appendix 3 of this SWTC; and
  - (e) those parts of works identified in section 2.3.5 of this SWTC which comprise or involve construction, modification or relocation of Services.

### 2.3.5 Principal items of infrastructure to be constructed

- (a) The Project Works includes all permanent infrastructure which must be constructed or modified to enable the Contractor to satisfy the requirements of the Deed.
- (b) The infrastructure to be constructed or modified as part of the Project Works includes the items listed in Table 2-1 below. Detailed configuration requirements for Item 1 (Road Works) are presented in Appendix 9 of this SWTC. The Northern Road is referred to as 'TNR'.

**Table 2-1: Principal Items of Infrastructure**

Item No.	Infrastructure Items
1	Road Works
1.1	Widening of the existing TNR carriageway from the intersection at Jamison Road to approximately 200m south of the intersection with Glenmore Parkway to provide two 4-lane continuous carriageways, one northbound and one southbound (each including one kerbside bus lane).
1.2	Upgrade of the existing signalised intersection at TNR/Jamison Road.

Item No.	Infrastructure Items
1.3	Upgrade of the existing signalised intersection at TNR/Smith Street.
1.4	Upgrade of the existing signalised intersection at TNR/Maxwell Street/Bringelly Road.
1.5	Not Used
1.6	Adjustment of the existing unsignalised intersection at Maxwell Street/Aspen Street.
1.7	Adjustment of the existing unsignalised intersection at Maxwell Street/Tania Avenue/Hiliger Raod.
1.8	Adjustment of the existing unsignalised intersection at TNR/Castle Road.
1.9	Adjustment of the existing unsignalised intersection at TNR/ Aspen Street.
1.10	Upgrade of the existing signalised intersection at TNR/Frogmore Road/Tukara Road.
1.11	Provide a Frogmore Road roundabout (located on Frogmore Road, west of Simeon Road, adjacent to Point 753 and 754).
1.12	Widening and upgrade of the TNR/M4 Motorway interchange, including on-ramps and off-ramps to provide additional vehicular movements and incorporate Smart Motorways requirements.
1.13	Adjustment of the existing unsignalised intersection at TNR/Homestead Road.
1.14	Adjustment of the existing unsignalised intersection at TNR/Garswood Road.
1.15	Upgrade of the existing signalised intersection at TNR/Glenmore Parkway/Wentworth Road.
1.16	A new U-turn facility at Glenmore Parkway/Penrith Golf Club intersection, including a new service road for access to and egress from Penrith Golf Club.
1.17	A new U-turn facility on Glenmore Parkway for Fairwater Court properties.
1.18	Upgrade and extension of Cross Road to connect Homestead Road to Wentworth Road.
1.19	Bus stop locations as detailed in Appendix 9 of this SWTC.
1.20	A new maintenance bay on each entry ramp to the M4 Motorway.
1.21	Retain or relocate existing emergency truck breakdown bay on the westbound M4

Item No.	Infrastructure Items
	Motorway carriageway impacted by the Project Works.
<b>2</b>	<b>Bridges and Other Structures</b>
2.1	New bridge and associated entry and exit ramps at the TNR/M4 Motorway interchange, to provide the interchange movements described in Appendix 9 of this SWTC.
2.2	New culvert on Glenmore Parkway, to facilitate widening and upgrades of Glenmore Parkway.
<b>3</b>	<b>Related Works</b>
3.1	Shared use paths, footpaths and pedestrian crossings in accordance with Appendix 9 of this SWTC.
3.2	Property accesses and adjustments.
3.3	Signage structures.
3.4	Incorporation of cycle facilities at all new or reconstructed signalised intersections.
3.5	All adjustments required to Other Roads.
3.6	Provisions for Intelligent Transport Systems (Smart motorways) in accordance with the requirements of Appendix 18 of this SWTC.
3.7	Soil and slope structures, including retaining walls.
3.8	Fencing, including fauna, security and boundary fencing.
3.9	Parking adjustments.
3.10	Street Sign Adjustments.
3.11	Utility Works including adjustment, modification, relocation, protection and removal of Services.
3.12	Drainage (including structures, detention and any other facilities required).
3.13	Architectural, urban and landscaping elements.
3.14	Permanent environmental mitigation measures.
3.15	Roadside furniture, including safety barriers.
3.16	Noise attenuation measures and structures, including mandatory noise walls as detailed in Appendix 9 of this SWTC.

Item No.	Infrastructure Items
3.17	Operation and maintenance access.
3.18	Any other infrastructure identified in the Environmental Documents.
3.19	Bus shelters at all bus stop locations in Appendix 9 of this SWTC.
3.20	Street lighting, including lighting at intersections.
3.21	All other associated infrastructure necessary to connect the Project to the surrounding road network.

## 2.4 Temporary Works

Temporary Works include:

- (a) temporary measures necessary to meet the needs of all road, public area and pathway users during all stages of construction of the Project Works or performance of the Landscaping Maintenance;
- (b) temporary arrangements to divert and control traffic and to provide public amenity, security and safety during all stages of construction of the Project Works or performance of the Landscaping Maintenance;
- (c) temporary arrangements for people and vehicles to access all property affected by construction of the Project Works or performance of the Landscaping Maintenance;
- (d) all environmental safeguards and measures necessary to mitigate environmental effects during construction of the Project Works;
- (e) cleaning, maintenance, repair, replacement and reinstatement, as required, of all areas occupied by the Contractor during construction of the Project Works;
- (f) the maintenance of Local Roads as scheduled in Appendix 25 of this SWTC;
- (g) temporary site facilities required for construction of the Project Works; and
- (h) temporary infrastructure installed or erected to undertake construction of the Project Works; and
- (i) all temporary measures necessary to meet the requirements in Appendix 3 of this SWTC.

## 2.5 Commissioning and testing

- (a) The Contractor must undertake comprehensive testing and commissioning of the Project Works and Temporary Works to ensure that the Project Works and Temporary Works comply with the requirements of the deed.
- (b) The testing and commissioning must be undertaken progressively to ensure that Opening Completion and Construction Completion are not avoidably delayed.

- (c) Off-site manufactured equipment must be tested at the point of manufacture prior to delivery wherever this is practical and further on site tests carried out during commissioning.

## **2.6 Environment**

### **2.6.1 Environmental Management System**

The Contractor must develop, implement and maintain an Environmental Management System (EMS) for the Contractor's Work which:

- (a) is in accordance with AS/NZS ISO 14000 Environmental Management Standards Set;
- (b) complies with RMS Specification D&C G36 in Appendix 6 of this SWTC;
- (c) complies with the Environmental Documents;
- (d) complies with NSW Government - Environmental Management Systems Guidelines, Third Edition, August 2013; and
- (e) is accredited by a NSW Government construction agency.

### **2.6.2 Environmental Manager**

- (a) The Contractor must provide a suitably qualified Environmental Manager until the Date of Construction Completion.
- (b) Until the Date of Construction Completion, the Environmental Manager must:
- (c) be engaged full time on the project exclusively for environmental management and environmental issues; and
- (d) not be allocated any other duties.

### **2.6.3 Environmental Review Group**

The Contractor must establish an Environmental Review Group (ERG) and maintain it for the duration of the Contractor's Work. The ERG must include representatives from the Contractor, regulatory Authorities, Council, the project soil conservationist and RMS. The ERG must be utilised as a proactive group for planning and review of environmental issues including:

- (a) upcoming work;
- (b) sensitive issues;
- (c) opportunities;
- (d) design issues;
- (e) monitoring data; and
- (f) innovations.

## **2.7 Work Health and Safety**

In addition to the requirements of clause 5.7 of the deed, and further to the requirements of section 5.3 of this SWTC, the Contractor must:

- (a) take account of, and incorporate all applicable, relevant or necessary requirements in relation to WHS in all aspects of the Contractor's Work including the Project Plans, the Maintenance Plan, the design of the Project Works and the Temporary Works, Landscaping Maintenance and the Design Documentation;
- (b) maintain a Corporate OHS Management System that complies with the New South Wales Government Occupational Health & Safety Management Systems Guidelines for the duration of the Contractor's Work. The Corporate OHS Management System must be accredited by RMS;
- (c) develop, implement and maintain a Project WHS Management Plan for the Contractor's Work and comply with this Project WHS Management Plan at all times;
- (d) comply with the requirements of RMS D&C G22;
- (e) prior to the development of the Project WHS Management Plan, hold and document the outcomes of a formal WHS risk assessment workshop, including workforce consultation. RMS's Representative must be invited and permitted to attend and participate in the workshop. The risk assessment workshop must identify and document a register of WHS risks and hazards and control measures associated with the Contractor's Works. Further separate workshops must be held at different stages of the Contractor's Work to address different trades / phases / work areas or processes not covered during the earlier risk assessment workshops, prior to the commencement of the relevant activity, phase or section of work; and
- (f) During construction hold monthly WHS meetings that include the contractors Safety Manager, Project Director and Construction Manager, a representative from the Project Verifier and at least one RMS representative. Safety initiatives to be implemented during the construction period must be identified at the meeting and monitored for implementation and effectiveness for the duration of the project.

## **2.8 Workplace relations**

The Contractor must develop, implement and maintain a Workplace Relations Management Plan and comply with this Workplace Relations Management Plan at all times.

## **2.9 Risk management**

The Contractor must implement risk management techniques to determine hazards and associated risks which could affect the delivery of the requirements of the deed and develop and implement risk management strategies to manage these risks and hazards. The risk management strategies must include a formal risk management plan as part of the Project Management Plan.

## **2.10 Reporting**

- (a) The Contractor must prepare and submit to RMS and the Project Verifier reports in accordance with Appendix 24 of this SWTC.
- (b) Reports and submissions that are required to be submitted by the Contractor to any Authority must be simultaneously submitted to the Project Verifier and RMS.

## 2.11 Training

The Contractor must:

- (a) comply with NSW Government Training Management Guidelines. For the purposes of these guidelines the project is a Category 1 project;
- (b) achieve the project training management targets identified in the NSW Government Training Management Guidelines for civil construction projects;
- (c) develop, implement and maintain a Project Training Management Plan for the Contractor's Work that is consistent with the Enterprise Training Management Plan which appears as Appendix 44 of this SWTC;
- (d) meet statutory obligations relating to WHS training;
- (e) provide induction on WHS for all employees and persons engaged in the Contractor's Work including persons nominated by RMS, which meets the requirements of the WHS Laws and otherwise perform and fulfil the functions and obligations of the "principal contractor" (as that term is defined in the WHS Laws) under the WHS Laws;
- (f) provide induction on environmental systems for all personnel engaged on the construction of the Project Works and the Temporary Works;
- (g) provide a structured training program to address the requirements of the deed, including environmental and Project specific requirements;
- (h) establish and maintain a training facility on the Construction Site until the Date of Construction Completion;
- (i) maintain on the Construction Site an up to date copy of the Project Training Plan, and provide RMS with access to all training management records (which must be retained on the Project Site or Temporary Areas);
- (j) assess and identify the competencies required to carry out the Contractor's Work and any gaps between workforce competencies and the required competencies;
- (k) develop and implement training and development programs to provide the workforce performing the Contractor's Work with the required competencies;
- (l) develop and implement strategies for knowledge and skills management, including staff turnover and handover management;
- (m) provide health and safety induction training in accordance with clause 4.7 of RMS D&C G22;
- (n) supplement the structured training program required by section 2.11(g) above with on the job training and training materials, that are specific to the Contractor's Work and are delivered throughout the performance on the Contractor's Work;
- (o) maintain records of training of all Contractor's personnel and Subcontractors' personnel;
- (p) provide RMS with access to all training management records, which must be retained on the Construction Site until the Date of Construction Completion, to enable RMS to undertake the implementation reviews identified in the NSW Government Training Management Guidelines; and

- (q) provide all reasonable assistance to the RMS reviewer during the review process, including attendance at and participation by the Contractor in the review process.

## 2.12 Project plans

- (a) The Contractor must prepare and update Project Plans in accordance with Appendix 21 of this SWTC and the requirements of the deed.
- (b) Each Project Plan must be a quality assured document prepared in accordance with “AS/NZS ISO 9001 Quality management systems - Requirements” and, where relevant, must be further developed from the Initial Project Plans included as Appendices 35 to 45 of this SWTC inclusive.
- (c) All Project Plans must recognise and adhere to the requirements of the Quality Plan and must incorporate the requirements and recommendations of the Project Verifier.

## 2.13 Information requirements

- (a) Subject to any specific requirements of the deed, final reports and submissions that are required to be submitted by the Contractor to any Authority must be submitted simultaneously to the Project Verifier and RMS Representative.
- (b) Copies of Approvals obtained by the Contractor must be issued immediately to the Project Verifier and RMS Representative.
- (c) The Contractor must prepare and submit to the Project Verifier and RMS Representative, reports, updates of the Contract Program and Subsidiary Contract Programs, durability assessment reports, Design Documentation, as constructed documentation and other documents in accordance with the deed, including Appendix 24 of this SWTC.
- (d) The Contractor must prepare and submit to the Project Verifier and RMS Representative the Maintenance Plan in accordance with the deed, including Appendix 21 of this SWTC.

## 2.14 Durability

- (a) The Contractor must ensure the durability of all Assets. Durability must be addressed throughout the design and construction of all Assets and must be reflected in the Design Documentation and the Project Plans, including the Maintenance Plan.
- (b) The durability portions of the Design Documentation and Project Plans (including the Maintenance Plan) must demonstrate how the selected design, materials, construction and maintenance will achieve the durability objectives and requirements for each Asset in conjunction with the specified Design Life for that Asset in section 5.5 of this SWTC. For each Asset which comprises part of the Project Works, the Project Plans (including the Maintenance Plan) must:
  - (i) define the characteristics of the environment;
  - (ii) identify the potential deterioration mechanisms in that environment;
  - (iii) determine the likely rate of deterioration;
  - (iv) assess the material life;



- (v) define the required material performance;
  - (vi) assess the need for further protection;
  - (vii) develop procedures for replacement of Asset Items and Asset Sub-Items at intervals consistent with the Design Lives specified in section 5.5 of this SWTC;
  - (viii) determine inspection and monitoring requirements for both critical and non-critical Assets; and
  - (ix) if appropriate, outline possible remedial measures.
- (c) The durability requirements must be applied diligently and continuously throughout the process of design, including in design reviews and design amendments, during the construction of the Project Works and during the performance of the Landscaping Maintenance.

## **2.15 Application of RMS and Contractor specifications**

- (a) Without limiting any other requirements of the deed, the Project Works, the Temporary Works and the Landscaping Maintenance must comply, as a minimum, with the requirements of RMS D&C specifications and the requirements of the Contractor's Specifications in Appendix 32 of this SWTC.
- (b) If Codes and Standards or suitable Australian Standards do not exist for any element of the Project Works, the Temporary Works, or the Landscaping Maintenance, the Contractor may use international standards that reflect industry best practice, subject to the written approval of RMS Representative.

## **2.16 Effects of Contractor's Work, the Project Works and the Temporary Works**

- (a) The Contractor must ensure that the Contractor's Work has no adverse impacts on the existing ground conditions, existing surface water and ground water conditions or on the performance of any infrastructure (including roads, railways, Services, buildings, slopes and heritage items) including any impact on the:
  - (i) amenity;
  - (ii) aesthetics;
  - (iii) durability;
  - (iv) function;
  - (v) user benefits;
  - (vi) safety during construction and operation; and
  - (vii) environmental performance,of that infrastructure, other than the impacts that are acknowledged in the Environmental Documents.
- (b) The Contractor must undertake a detailed and rigorous engineering assessment to predict the effects (the 'Predicted Effects') of the Contractor's Work on existing ground conditions and infrastructure (including roads, Services and buildings). The Contractor

must also determine the extent to which the existing infrastructure may be acceptably affected (the 'Acceptable Effects'), consistent with satisfying the requirements of section (a) above. If the Predicted Effects are greater than the Acceptable Effects, the Contractor must modify the Contractor's Work until the Predicted Effects are not greater than the Acceptable Effects

- (c) Throughout the Contractor's Work, the Contractor must monitor the actual effects of the Contractor's Work and compare the actual effects to both the Predicted Effects and the Acceptable Effects.
- (d) In the event that the actual effects of the Contractor's Work exceed the Predicted Effects, the Contractor must review and, if necessary, re-evaluate the Predicted Effects and make any adjustment subsequently necessary to any aspects of the manner in which the Contractor's Work are undertaken to ensure that the Acceptable Effects are not exceeded and to ensure full compliance with section (a) above.
- (e) Notwithstanding the Predicted Effects on infrastructure contemplated in paragraph (b), the Contractor must repair and reinstate infrastructure at the earliest opportunity so that the Contractor satisfies the requirements of section (a) above in respect of each item of infrastructure.
- (f) The Contractor must promptly and progressively provide the RMS and the Project Verifier, and where relevant, the Proof Engineer with:
  - (i) analysis, including any revisions, of the Contractor's Work; and
  - (ii) results of monitoring the actual effects of the Contractor's Work, in a form which is directly comparable to the Acceptable Effects and Predicted Effects.
- (g) The Contractor must submit, prior to the Date of Construction Completion, a final updated report detailing the Predicted Effects, Acceptable Effects and actual effects of the Project Works, the Temporary Works and the Contractor's Work on the existing ground conditions, including existing surface water and ground water conditions and infrastructure.

## 2.17 Maintainability

- (a) The Project Works must be designed and constructed so that it can be maintained effectively, safely and with minimum whole of life costs.
- (b) The design must provide adequate maintenance access to allow for ease of maintenance.
- (c) All equipment must have sufficient clear space on all sides to allow maintenance and replacement to take place.
- (d) As part of the design process, mechanical and electrical equipment removal routes must be identified to demonstrate that all major pieces of equipment can be removed and replaced without any modifications to infrastructure.

## 2.18 Traffic and transport management

- (a) The Contractor must manage the impacts of the Contractor's Work on the capacity and performance of the traffic and transport network. The Contractor must comply with the requirements of RMS D&C G10 and Appendix 27 of this SWTC.

- (b) Without limiting the requirements of the deed and the Environmental Documents, the Contractor must manage traffic and transport during the performance of the Contractor's Works
- (c) The Contractor must:
  - (i) develop and implement a Traffic Management and Safety Plan; and
  - (ii) update and develop the Traffic Management and Safety Plan in accordance with the deed based on the initial Traffic Management and Safety Plan which is Appendix 43 of this SWTC.
- (d) The Contractor's Traffic Management and Safety Plan must include provision for completion and opening to traffic of the following road network adjustments prior to removal or changing of any existing network movements (including property access) on the road network:
  - (i) Not Used
  - (ii) Maxwell Street/Aspen Street intersection upgrade (refer to section 1 of Appendix 9 of this SWTC for configuration requirements);
  - (iii) Maxwell Street/Tania Avenue/Hiliger Road intersection upgrade (refer to section 1 of Appendix 9 of this SWTC for configuration requirements);
  - (iv) Frogmore Road roundabout (refer to section 1 of Appendix 9 of this SWTC for configuration requirements);
  - (v) Glenmore Parkway/Penrith Golf Club intersection upgrade and new golf club access road (refer to section 1 of Appendix 9 of this SWTC for configuration requirements);
  - (vi) Glenmore Parkway/Fairwater Court intersection upgrade (refer to section 1 of Appendix 9 of this SWTC for configuration requirements); and
  - (vii) Cross Road extension to connect Homestead Road and Wentworth Road (refer to section 1 of Appendix 9 of this SWTC for configuration requirements).
- (e) The Contractor must provide a traffic management representative ("Traffic Representative") who has authority and responsibility for issues relating to traffic management, including liaison with the TMC, throughout the Contractor's Work. Until the Date of Construction Completion, the Traffic Representative must be allocated to the traffic management task on a full time basis.
- (f) Vehicles involved in the Contractor's Work must only enter, operate within or exit from a traffic flow in a manner which does not endanger the public or inhibit traffic flows and under suitably designed and appropriate traffic control measures.

## **2.19 Availability of project information and data**

### **2.19.1 Local area network**

- (a) The Contractor must establish, operate and maintain a local area network with a dedicated file control server in its site facilities on the Construction Site until the Date of Construction Completion, which includes RMS Representative and the Project Verifier as users. The network must operate at a reliability of better than 99%.

- (b) Information and data on the Contractor's Work must be stored in electronic format and be available, with access control and security, for searching, sharing and exchanging for all users of the local area network.
- (c) The Contractor must make the following information and data available, as a minimum, on the local area network for exchanging, searching and sharing with RMS Representative and the Project Verifier:
  - (i) general project information;
  - (ii) progress and other reports, minutes of meetings, photographs, programs issues, requests, Variations, correspondence register, site personnel and subcontract registers;
  - (iii) developed, amended and/or updated Project Plans;
  - (iv) quality registers, lot registers, inspection and test plans, work method statements, audit reports, non-conformity reports (NCRs), corrective action requests (CARs), checklists, conformity reports and test results;
  - (v) the issues management database as specified in section 3 of Appendix 21 of this SWTC;
  - (vi) environmental inspection reports, incidents, action notes, improvement notices, reports required by the Environmental Documents and other environmental data;
  - (vii) WHS induction registers, dangerous goods information, hazardous substances register, material safety data sheets, incident-accident registers and reports, safe work procedures and method statements, inspections, minutes of site safety meetings and records of toolbox sessions;
  - (viii) risk information, identification, assessment, actions and reports;
  - (ix) community complaints, comments, newsletters and notices, registers, fact sheets and records of meetings;
  - (x) training registers; and
  - (xi) environmental waste management and greenhouse gas data reports.

### **2.19.2 Information and data on an extranet**

- (a) The Contractor must establish, operate and maintain an "extranet" linked to a dedicated internet site for the duration of the Contractor's Work. Access must be controlled by the Contractor and be available for use to its agents, representatives of RMS, Project Verifier, Proof Engineer, Authorities, local councils including Penrith City Council, community groups and others as directed by RMS Representative.
- (b) The extranet must use a document management system with a vault structure and determined user access. Training must be provided in the use of the system by the Contractor for RMS personnel and all the other users identified in subsection (a) above.
- (c) The Contractor must control advanced functions of changing workflow and access rights from the internet site. Access to the documents must be via a web browser client.

- (d) Information and data must be made available on the extranet and must include general project information, Project Plans, reports, submissions, photographs and community newsletters and notices.

## **2.20 Aboriginal participation**

The Contractor must comply with the NSW Government “Aboriginal Participation in Construction Policy (“Policy”) (February 2015 or subsequent). For the purposes of the Policy the project is a Category 2 project. The Contractor must prepare and submit the Aboriginal Participation Plan and associated Aboriginal Participation Report in accordance with the deed, including Appendix 21 of this SWTC.

## **2.21 Project design office**

The Contractor must co-locate all of its design team members in a dedicated project design office. The design office must include dedicated space and furnishings for the Project Verifier, Proof Engineer and RMS personnel.

## **2.22 Leadership Planning and RMS Values and Objectives**

### **2.22.1 RMS Values and Objectives**

- (a) The Contractor recognises the importance to RMS of the Contractor maintaining RMS’ values and objectives as they relate to the Contractor’s Works. To ensure that these values and objectives are implemented and maintained, the Contractor must, as a part of the Contractor’s Works;
- (i) identify RMS’ values and objectives;
  - (ii) develop an ethical, positive, dynamic and results oriented culture amongst the Contractor’s personnel
  - (iii) align and take leadership of and encourage behavioural compliance of its personnel with RMS’ values and objectives;
  - (iv) be accountable for aligning the Contractor’s Works with RMS’ values and objectives;
  - (v) identify and implement measures to achieve the alignment, including appropriate and relevant cultural objectives and outcomes, alignment thinking, innovation and outcomes, growth and management behaviours and reinforcement and sustainability behaviours and coaching requirements;
  - (vi) identify and implement collaboration techniques, requirements and opportunities both within the Contractor’s team and between RMS and the Contractor;
  - (vii) implement honest, open and timely sharing of information between RMS and the Contractor;
  - (viii) drive innovation, encourage outstanding results and be accountable for solutions;
  - (ix) include all of its personnel in the alignment process; and

- (x) produce reports regularly on the Contractor's implementation, achievement and ongoing maintenance of RMS' values and objectives.
- (b) The Contractor must develop and implement a plan to ensure its alignment and compliance with RMS' values and objectives during the design and construction of the Project Works and the Temporary Works, which must include and address the requirements of section 2.22.1(a) of this SWTC. The plan must be continuously reviewed and updated to be current for the duration of the Contractor's Works.

### **2.22.2 Performance Coach**

- (a) The Contractor must provide a Project Performance Coach in accordance with the requirements of the Schedule 19 of the deed. The Project Performance Coach must be directly responsible to the Contractor's senior management and must have responsibility for the implementation, ongoing management and regular reporting on the Contractor's overall leadership strategy and alignment with RMS' values and objectives for the duration of the Contractor's Work.
- (b) Reports must be provided to the RMS Representative within 10 days of a request from the RMS Representative and on the closest Business Day to the following dates until the Date of Construction Completion:
  - (i) 31 March;
  - (ii) 31 July; and
  - (iii) 30 November.

## **2.23 Chain of Responsibility**

In addition to the requirements of clause 5.16 of the deed the Contractor must:

- (a) take account of, and incorporate all applicable, relevant or necessary requirements in relation to the chain of responsibility provisions of the Heavy Vehicle National Law (particularly provisions that govern the supply chain for the Works and for the bringing onto and removal from the Site of items requiring transport services) in all aspects of the Contractor's Work including the Project Plans, the Maintenance Plan, the design of the Project Works and the Temporary Works, Landscaping Maintenance and the Design Documentation;
- (b) develop, implement and maintain a Chain of Responsibility (CoR) Management Plan, in accordance with the requirements of Appendix 21 (Project Plan Requirements) of the SWTC, for the Contractor's Work and comply with this CoR Management Plan at all times; and
- (c) prior to the development of the CoR Management Plan, undertake and document the outcomes of a formal CoR risk assessment workshop. RMS Representative must be invited and permitted to attend and participate in the workshop. The risk assessment workshop must identify and document a register of CoR risks and hazards and control measures associated with the Contractor's Works. Further separate workshops must be held at different stages of the Contractor's Work to address different trades / phases / work areas or processes not covered during the earlier risk assessment workshops, prior to the commencement of the relevant activity, phase or section of work. The CoR risk assessment workshops can be combined with the WHS risk workshops.

## 2.24 Utilities Management Team

- (a) The Contractor must establish a utilities management team to pro-actively coordinate all Service Works with utility asset owners.
- (b) The purpose of the utilities management team is to coordinate, expedite and proactively resolve issues relating to the Service Works, including (but not limited to):
  - (i) facilitating outcomes in relation to the Service Works through strategic level decision making on significant and critical aspects of the Project;
  - (ii) coordinating the design and construction aspects of the Project Works with the Service Works;
  - (iii) review of resources, contracts and budgets to ensure delivery of Project Works milestones on time and on budget;
  - (iv) ensuring non-project utility works are communicated and coordinated with the Project;
  - (v) ensure that relocated utilities are located and accurately identified on construction drawings; and
  - (vi) ensure a management system is developed and implemented to mitigate the risk of utility strikes.
- (c) The Contractor must appoint a dedicated Utilities Manager to lead the utilities management team.
- (d) The utilities management team must comprise the following:
  - (i) Utilities Manager;
  - (ii) representatives of all relevant utility asset owners;
  - (iii) RMS utilities manager; and
  - (iv) RMS Representative.
- (e) The utilities management team must meet regularly, but not less than once every two weeks during the design and construction of the Service Works.

## 2.25 Australian Industry Participation Plan

- (a) Roads and Maritime Services are required to prepare and implement an Australian Industry Participation Plan (AIP) for the Project, in order to provide full, fair and reasonable opportunities to Australian entities through all tiers of the supply chain.
- (b) A copy of the certified Roads and Maritime Services AIP Plan is included as Appendix 28 (Certified AIP Plan) of this SWTC.
- (c) The Certified AIP Plan included as Appendix 28 of this SWTC covers:
  - (i) All stages associated with the upgrade of The Northern Road, including the Project; and
  - (ii) Bringelly Road Upgrade Stage 2.

The Contractor is only required to meet the obligations of the Certified AIP Plan with respect to this Project.

- (d) In addition to the requirements of clause 5.17 (Australian Industry Participation Plan) of the deed, the Contractor must:
  - (i) report on the Contractor's implementation of the certified AIP Plan as detailed in clause 1.4 of Appendix 24 (Contractor Documentation Schedule) of this SWTC; and
  - (ii) include a provision to ensure compliance with the certified AIP Plan in the subcontract documents for all subcontracts valued at or over \$100,000. When requested, the Contractor must provide evidence of this to the RMS Representative.
- (e) The Contractor must, in performing the Contractor's Work (as defined in the deed), comply with all of the obligations, conditions and requirements of the certified AIP Plan (included as Appendix 28 of this SWTC) to the extent as described in Table 2-2 (Contractor's Obligations with respect to the certified AIP Plan).



**Table 2-2: Contractor's Obligations with respect to the certified AIP Plan**

Certified AIP Plan section	Extent of Contractor's responsibility for the certified AIP Plan section specified
Section B.1 – question 3	The Contractor will comply with section B.1 – question 3 to the extent that the Contractor will appoint a procurement contact officer and promote the contract on its website. Details of the Contractor's contact officer and relevant website are to be provided to RMS at execution of the deed.
Section B.2 – question 1	The Contractor will comply with section B.2 – question 1 to the extent that the Contractor is to list all key goods and services (values above \$1million) it procures for the purposes of performing the Contractor's Work.
Section B.2 – question 3	The Contractor will comply with section B.2 – question 3 to the extent only that the Contractor is to consult with vendor identification agencies (such as the Industry Collaboration Network at <a href="http://www.icn.org.au">http://www.icn.org.au</a> ) to gain a current understanding of Australian capability and to identify capable competitive Australian entities suitable to supply the Contractor with goods or services to the Project.
Section B.2 – question 4	The Contractor will comply with section B.2 – question 4 to the extent only that the Contractor is to provide the link to the RMS' website shown under item B.2 question 4, on its company website.
Section B.3 – question 2	The Contractor will comply with section B.3 – question 2 to the extent only that the Contractor is to provide its procurement website details at execution of the deed and to report on timely publication of supply opportunities. This item is to be reported on by the Contractor in the 6 monthly compliance reports (refer to section 1.4 of Appendix 24 (Contractor Documentation Schedule) of this SWTC).
Section B.3 – question 3	The Contractor will comply with section B.3 – question 3 to the extent only that the Contractor is to provide publically accessible websites that include prequalification requirements, standards and contact details of the Contractors procurement contact officer.
Section B.4 – question 1 (Action 1)	The Contractor will comply with section B.4 – question 1 (Action 1) to the extent only that the Contractor is to ensure capable Australian companies have fair and reasonable opportunity to bid for work packages. This item is to be reported on and evidence of provided by the Contractor in the 6 monthly compliance reports (refer to section 1.4 of Appendix 24 (Contractor Documentation Schedule) of this SWTC).

<b>Certified AIP Plan section</b>	<b>Extent of Contractor's responsibility for the certified AIP Plan section specified</b>
Section B.4 – question 2	The Contractor will comply with section B.4 – question 2 to the extent only that the Contractor is to include the AIP Plan in a standing agenda item at regular Project meetings and the Contractor will be required to report against the certified AIP Plan at these meetings.
Section B.4 – question 3	The Contractor will comply with section B.4 – question 3 to the extent only that, in a timely manner, the Contractor is to publish on the Contractor's website, prequalification requirements with reference to the requirements of item B.3 - question 3.
Section B.4 – question 4	The Contractor will comply with section B.4 – question 3 to the extent only that the Contractor is to make tender opportunities available to all potential suppliers at the same time.
Section B.5 – question 2	The Contractor will comply with section B.5 – question 2 to the extent only that the Contractor is to engage with the Department of Industry's Entrepreneurs Infrastructure Programme to support the capability of the Contractor's subcontractors where relevant.
Section B.5 – question 3	The Contractor will comply with section B.5 – question 3 to the extent only that the Contractor is to debrief Australian entities unsuccessful in their tender to supply key goods and services to the Contractor for the Project.
Section B.6 – question 1	<p>The Contractor will comply with section B.6 – question 1 to the extent only that the Contractor must provide to the RMS Representative required Compliance Reports using the latest "Compliance Report – Project Phase" template. The Compliance Report template is available from the following Australian Government Department of Industry, Innovation and Science internet address:</p> <p style="text-align: center;"><a href="http://www.industry.gov.au/industry/IndustryInitiatives/AustralianIndustryParticipation/Pages/AIP-plans-required-Jobs-Act-2013.aspx">http://www.industry.gov.au/industry/IndustryInitiatives/AustralianIndustryParticipation/Pages/AIP-plans-required-Jobs-Act-2013.aspx</a></p> <p>The Contractor must provide evidence such as screenshots, websites, subcontractors and other documents demonstrating that they are implementing the Certified AIP Plan.</p>
Section B.6 – question 2	The Contractor will comply with section B.6 – question 2 to the extent only that the Contractor is to provide 6 monthly compliance reports against the Certified AIP Plan requirements as required under section 1.4(c) of Appendix 24 (Contractor Documentation Schedule) of this SWTC.

<b>Certified AIP Plan section</b>	<b>Extent of Contractor's responsibility for the certified AIP Plan section specified</b>
Section B.6 – question 3	The Contractor will comply with section B.6 – question 3 to the extent only that the Contractor is to report against the Certified AIP Plan, included as Appendix 28 to this SWTC, to show actual Australian Industry involvement for the Project and to report on any variations to the certified AIP Plan, during the progress of the Contractor's Works. As per section B.6 – question 2, the Contractor is also to provide 6 monthly compliance reports in accordance with the compliance reporting requirements of the Certified AIP Plan, as required under section 1.4(c) of Appendix 24 (Contractor Documentation Schedule) of this SWTC.

## 3 Quality, Project Plans and Project Verification

### 3.1 Quality assurance

#### 3.1.1 Quality system

- (a) The Contractor must provide a Quality Manager who is directly responsible to senior management of the Contractor and has responsibility for ensuring that the requirements of the Quality Plan are implemented and maintained during the performance of the Contractor's Work.
- (b) The Contractor must implement and maintain a quality system in accordance with the Project Deed.
- (c) The quality system must be in accordance with RMS D&C Q6 and AS/NZS ISO 9001-2008 'Quality management systems - Requirements'.
- (d) The Contractor must develop and implement a Quality Plan, which documents the quality system referred to in section 3.1.1(b).
- (e) The Contractor must comply with its quality system and its Quality Plan.
- (f) All quality system records and all records relating to the quality of the Project Works, the Temporary Works and the Contractor's Work must be freely accessible to RMS Representative, the Project Verifier and the Proof Engineer until the Date of Final Completion and must be held at the Construction Site until the Date of Construction Completion.
- (g) The Contractor must supply to RMS Representative all applicable Identified Records, as identified and required by RMS D&C Q6, as a condition precedent to Construction Completion.

#### 3.1.2 Quality Plan

- (a) Documents
  - (i) The Contractor must undertake surveillance, audit and review of its Quality Plan and report on all non-conformances in accordance with the requirements of RMS D&C Q6.
  - (ii) The Quality Plan must be prepared, updated and developed in accordance with the Project Deed and the requirements of Appendix 21 of this SWTC.
- (b) Contractor's Management Responsibilities

Without limiting section 3.1.1, the Quality Plan must:

  - (i) nominate the Quality Manager who has the defined authority and responsibility for ensuring that the requirements of the Quality Plan are implemented and maintained;
  - (ii) define the responsibility, authority and reporting function of personnel primarily responsible for upholding the quality assurance provisions of the deed;
  - (iii) identify how independent inspection, witnessing, monitoring and reporting must be carried out;

- (iv) identify the interfaces, if any, between corporate support and on-site personnel in relation to sections (i) and (ii) of this section 3.1.2 (b);
- (v) identify the qualifications, experience and required competencies of personnel who must undertake the duties required in each of sections (i), (ii) and (iii) of this section 3.1.2 (b);
- (vi) contain systems, processes and procedures which give effect to and co-ordinate the implementation of the Project Plan;
- (vii) address the durability of the Project Works in every aspect of the Contractor's Work; and
- (viii) address safety in every aspect of the Contractor's Work.

### **3.1.3 Hold points**

- (a) The Quality Plan must include a schedule of hold points (**Hold Points**) and witness points (**Witness Points**).
- (b) The schedule must include any Hold Points and Witness Points nominated in RMS Specifications and those nominated by the Project Verifier as contemplated by clause 2.4(c) of the deed. The schedule must contain sufficient additional Hold Points which are necessary to ensure that the Contractor's Work and related activities are undertaken in a manner consistent with the quality system implemented and maintained under section 3.1.1.
- (c) RMS and the Project Verifier may nominate persons to attend or witness the release of any Hold Point or to attend any Witness Point.
- (d) RMS may at any stage during the performance of the Contractor's Work nominate Witness Points for inclusion in the Quality Plan.
- (e) A Witness Point is a point in a work process where the Contractor must give prior notice to nominated individuals or organisations with the right to exercise an option of attendance.
- (f) RMS may nominate persons to attend Witness Points.
- (g) RMS must be given a minimum of three working days notice of all Hold Points and Witness Points that relate to testing and commissioning activities.

### **3.1.4 Release of hold points**

- (a) The nominated authority ("Nominated Authority") for the release of Hold Points is the Project Verifier with the exception of those Hold Points detailed in Table 3-1 for which the RMS Representative is the Nominated Authority.

**Table 3-1: Hold Points for which RMS is the Nominated Authority**

RMS Specification	Clause	Hold / Witness	Description	Nominated Authority
G4	1.3	Hold	Submission of details of RMS Site Facilities	RMS Representative
G7	8.1.4	Hold	Submission of details of modification required	RMS Representative
G10	1.5.4	Hold	Submission of traffic control personnel details	RMS Representative
G10	2.3.1	Hold	Submission of Traffic Management Plan (TMP) and associated documents	RMS Representative
G10	2.5.6	Hold	Submission of Temporary Road design drawings.	RMS Representative
G10	2.6.1	Hold	Submission of Traffic Control Plan (TCP), where submitted separately from TMP	RMS Representative
G10	3.2.2	Hold	Opening temporary roadway or detour to traffic	RMS Representative
G22	3.2	Hold	Submission of the Project WHS management Plan	RMS Representative
G22	3.2	Hold	Submission of the project WHS documentation not submitted under initial HOLD POINT	RMS Representative
G22	4.9.3	Hold	Verification of Corrective Action	RMS Representative
G36	3.1	Hold	Submission of CEMP and selected CEMS documents	RMS Representative
G36	3.2.2	Hold	Evidence of approvals, licences and permits obtained	RMS Representative
G36	3.10	Hold	Verification that environmental nonconformities has been rectified	RMS Representative
G36	4.2	Hold	Submission of Remediation Action Plan for contaminated land	RMS Representative
G36	4.7	Hold	Building Condition Inspection Reports and Vibration and Airblast Management	RMS Representative

RMS Specification	Clause	Hold / Witness	Description	Nominated Authority
			Sub-Plan	
G36	4.11	Hold	Copy of "s.143 Notice"	RMS Representative
G36	4.13	Hold	Working in or near environmentally sensitive areas	RMS Representative
G36	4.15.2	Hold	Submission of pre-construction land condition assessment report for each area you intend to occupy for your site facilities	RMS Representative
G38	3.1	Hold	Submission of an ESCP(s) and, where required, WQMP for a section of the work under the deed	RMS Representative
G38	3.1	Witness	Submission of written notice that measures set out in the ESCP for a section of the work have been installed	RMS Representative
R110	3	Hold	Submission of details for Nominated Design	RMS Representative
R132	1.4	Hold	Exposure of traffic to a barrier without operational end treatments.	RMS Representative
R201	4.3.2	Hold	Removal of trees with trunk diameter exceeding 100mm	RMS Representative
R271	7.6.1	Hold	Preparation of concrete pigment samples	RMS Representative
R271	7.6.2	Hold	Demonstration of reparability	RMS Representative
R271	7.6.3	Hold	Preparation of panel specimen	RMS Representative
B316	3.9	Hold	Commencement of Warranty Period	RMS Representative
3221	3.4	Hold	Submission of Nominated Mix, plant and delivery vehicle details	RMS Representative
3222	6.1	Hold	Submission of nominated mix design details.	RMS Representative

RMS Specification	Clause	Hold / Witness	Description	Nominated Authority
R155	4.4	Hold	Notify the RMS Representative: <ul style="list-style-type: none"> <li>- that the cableway route, including locations of pits, has been set out; and</li> <li>- of any changes to the design proposed by you.</li> </ul>	RMS Representative
R155	4.5.4	Hold	Notification that inadequate foundation material has been excavated to the extent directed.	RMS Representative
TS020	2.9	Hold	ITS Communications Network - Concept Design	RMS Representative
TS020	3.11	Hold	Detailed design documentation	RMS Representative
TS020	5.8	Witness	Site installation inspection	RMS Representative
TS020	6.1	Hold	Documentation to verify that the first ITS Communications System installation complies with RMS <i>D&amp;C</i> TS020	RMS Representative
TS020	6.2	Hold	System performance test results. NMS configuration documentation for switch terminal equipment, and channel site testing from the host system.	RMS Representative
TS020	6.3	Hold	NMS configuration documentation for ITS Field Site remote terminal equipment and ITS Field Site testing from the host system.	RMS Representative
TS020	6.4	Witness	All ITS Field Site operational user testing including fault insertion.	RMS Representative
TS104	5.6	Hold	First off site Civil Works type approval.	RMS Representative
TS104	6.1	Hold	Documentation to verify that the first VDS installation complies with RMS TS104.	RMS Representative
TS104	6.2	Witness	Notification to <i>Nominated Authority</i> of trial at least 3 working days prior to commencement.	RMS Representative



TS105	5.6	Hold	First off site Civil Works type approval.	RMS Representative
<b>RMS Specification</b>	<b>Clause</b>	<b>Hold / Witness</b>	<b>Description</b>	<b>Nominated Authority</b>
TS105	6.1	Hold	Type test reports where applicable; FAT Reports.	RMS Representative
TS105	6.2	Witness	First off EMS site installation.	RMS Representative
TS105	6.3	Witness	EMS Site commissioning and acceptance test	RMS Representative
TS106	5.6	Hold	Site Type Test approval	RMS Representative
TS106	6.1	Hold	FAT reports	RMS Representative
TS106	6.2	Witness	First off VSC Site installation.	RMS Representative
TS106	6.3	Witness	Commissioning test witnessed	RMS Representative
TS107	5.6	Hold	First Emergency Telephone installation	RMS Representative
TS107	6.1	Hold	Documentation to verify that the first Emergency Telephone installation complies with RMS D&C TS107.	RMS Representative
TS107	6.2	Witness	Notification of trial at least 3 working days prior to commencement.	RMS Representative

- (b) RMS may change the Nominated Authority for any Hold Point or Witness Point during the progress of the Contractor's Work
- (c) The Quality Manager must be satisfied that all activities in the Hold Point process (including methods of work, sequences of activities, inspections and tests preceding any Hold Point specified in the Quality Plan) comply fully with the requirements of the Project Deed and, once satisfied, must:
- (i) release that Hold Point, where authorised according to the schedule of Hold Points, in order that work may proceed on that part of the Project Works; or
  - (ii) obtain release from the Nominated Authority that work may proceed on that part of the Project Works.

- (d) The Contractor must not proceed beyond any Hold Point referred to in the Quality Plan without release by the Nominated Authority.
- (e) The release of a Hold Point by the Nominated Authority, allowing the work to proceed beyond that Hold Point, will not relieve the Contractor of any responsibility for carrying out all or any part of the Contractor's Work in accordance with the requirements of the Project Deed.
- (f) The Project Verifier must be given reasonable notice of the release of any Hold Point and must be given reasonable opportunity to witness any inspections and tests preceding the release of any Hold Points and the release of the Hold Point.

### **3.1.5 Non-conformities and continuous improvement**

- (a) Without limiting the requirements of the d, the Contractor must regularly update and develop the Quality Plan and the Project Plans in order to minimise the recurrence of any non-conformities.
- (b) RMS Representative and the Project Verifier may advise the Contractor of apparent non-conformities, including non-conformities in Design Documentation and Project Plans identified through design reviews and audits. In this event the Contractor must treat the matter as a non-conformity to be addressed within the Contractor's quality system.
- (c) The Contractor must review and analyse the cause of all non-conformities and develop a plan of preventative and corrective action to minimise the likelihood of recurrence. As minimum, the plan must include:
  - (i) Root Cause Analysis (RCA) of non-conformities;
  - (ii) evaluation of how the Contractor's management systems, leadership, organisational processes and the individual capability and personal commitment of the Contractor's personnel, in addition to any technical factors, have contributed to the occurrence of the non-conformity.
  - (iii) ongoing process of continuous improvement to improve the quality of the Contractor's Work; and
  - (iv) actions to be undertaken by the Contractor to address all matters arising out of the RCA.
- (d) Preventative and corrective action and continuous improvement must include, where appropriate, updates to the Quality Plan, amendments to procedures and work method statements or any other relevant project documentation as well as workforce training and skill development. Details of such corrective action must be entered in a NCR or CAR as appropriate and copies of such NCRs and CARs must be provided to RMS Representative, the ER and the Project Verifier.
- (e) The Contractor must prepare a template for NCR reports that includes a section to document any potential impact to the design, construction and operation of the Project Works arising from the proposed NCR disposition.
- (f) The Contractor must identify, address and document in the NCR report the potential impact of any proposed NCR disposition on the design, construction or operation of the Project Works, including the impact on:

- (i) Durability of the Project Works;
- (ii) whole of life performance and operational cost of the Project Works;
- (iii) safety issues relevant to the implementation of the disposition;
- (iv) any additional safety risk during the maintenance and operation of the Project Works;
- (v) stakeholders; and
- (vi) RMS' reputation.

### **3.1.6 Non-conformities**

- (a) The Quality Plan must make specific provision for recording and reporting non-conformances that may impact the future durability or performance of the Project Works.
- (b) All such non-conformances must be regularly reported to the Project Verifier and the RMS Representative.
- (c) Proposals for rectification work of such non-conformance must be reviewed by the relevant designer and the Project Verifier and must take all durability objectives and performance requirements into account.

### **3.1.7 Maintenance Plan**

The Contractor must:

- (a) develop all aspects of its Project Plans, including the Quality Plan, which impact upon or by the maintenance of the Works; and
- (b) incorporate the relevant developed components of the Project Plans identified in subsection (a) above, including the Quality Plan, into the Maintenance Plan.

### **3.1.8 Records**

The Contractor must satisfy the record management requirements of RMS D&C Q6, other RMS D&C specifications, the *State Records Act 1998* (NSW) and other relevant legislation.

### **3.1.9 Audits and Monitoring**

- (a) In addition to the requirements of the Project Deed, the Contractor must:
  - (i) have its compliance with any Project Plan audited, whenever reasonably requested by RMS, or by an independent auditor;
  - (ii) permit representatives of the RMS and the Project Verifier to be present during such audits; and
  - (iii) deliver copies of each audit report to the RMS and the Project Verifier within five Business Days of its completion.
- (b) In addition to the requirements of the Project Deed, the Contractor must permit the Project Verifier or RMS to conduct auditing, monitoring and testing of any aspect of the Contractor's Work at any time.

### 3.1.10 Proof Checking

- (a) Further to the requirements of clause 2.5(d)(ii) of the Deed, the Contractor must undertake a proof check and report on all the structural elements of structures in the Project Works and associated Temporary Works that are not identified in Item 14 of Schedule 1 of the Deed as structures to be certified by the Proof Engineer.
- (b) The proof check must include a full and independent assessment, without exchange of calculations or similar information, of all factors influencing the final integrity of those structures, including undertaking design calculations and modelling, reviewing the safety, durability and functional requirements of the identified elements, the Design Documentation and construction methodology and performing an independent dimensional check. The Contractor must provide a report on the assessment and the proof check in the Design Documentation.

### 3.1.11 Access for Independent Verification

- (a) Without limiting any other part of the Project Deed or the Project Verifier Deed, the Contractor must ensure that the Project Verifier is provided with access at all times to:
  - (i) continually monitor the integrity and efficiency of the Contractor's quality system, and verify the Contractor's quality system;
  - (ii) continually monitor and verify that the design and construction of the Project Works and Temporary Works comply with the requirements of the Project Deed;
  - (iii) ensure that non-compliances in any of the above is rectified in accordance with a structured verifiable process, including reporting protocols; and
  - (iv) verify compliance of these aspects of the Contractor's Work, the design and construction of the Project Works and Temporary Works in accordance with the Project Deed.

### 3.1.12 Planning Product Realisation

- (a) In addition to the requirements of clause 7.1 of RMS D&C Q6 the Contractor must:
  - (i) conduct planning sessions to develop work methods at least four weeks prior to commencing construction of the following elements of the Contractor's Works:
    1. bridgeworks excluding kerbs, barrier railing and minor components, elastomeric bearings and strips;
    2. roadworks including bridge sized culverts, pavements and wearing surfaces;
    3. traffic staging;
    4. flood mitigation works; and
    5. retaining structures.
  - (ii) invite RMS Representative and the Project Verifier to participate in each planning session; and
  - (iii) ensure the Contractor's Safety and Environmental Management staff are invited to, and involved in, the planning sessions.

- (b) Within 10 business days from the Contractor commencing construction on any of the elements referred to in section 3.1.12(a)(i) above, the Contractor must review the execution of its work methods and identify and implement continuous improvement to the work methods.

### **3.2 Project verification**

Without limiting any other part of the deed, including the Deed of Appointment of Project Verifier, the Contractor must ensure that the Project Verifier:

- (a) continually monitors the integrity and efficiency of the Contractor's quality system and certifies the Contractor's quality system;
- (b) continually monitors and verifies compliance of the design and construction of the Project Works and Temporary Works with the requirements of the deed;
- (c) until the Date of Final Completion, verifies the compliance of the Project Works and Temporary Works with the requirements of the deed;
- (d) ensures that any non-compliance in relation to subsections (a), (b) or (c) above is rectified in accordance with structured verifiable processes, including reporting protocols; and
- (e) certifies and verifies compliance of those aspects of the Contractor's Work and the design and construction of the Project Works and Temporary Works in the circumstances identified in the Project Verifier's certificates in the schedules to the deed.

## 4 Investigation, Survey and Condition Monitoring

### 4.1 General

- (a) Without limiting the requirements of the deed, the Contractor must undertake all site investigations, property and land surveys, and ground and infrastructure condition surveys required for the Contractor's Work.
- (b) The Contractor must promptly provide RMS and the Project Verifier with two copies of all site investigation reports, property and land surveys and ground and infrastructure conditions surveys, including progressive copies of such documents, as each is developed over a period of time.

### 4.2 Site investigation

- (a) Geotechnical site investigation work must be undertaken in accordance with AS 1726 Geotechnical Site Investigations. The Contractor must maintain records of all tests, site investigation and geotechnical reports (including position and elevation surveys).
- (b) The geotechnical site investigation, in conjunction with the design process, must identify all ground conditions and infrastructure conditions (including the condition of roads, parks and other publicly accessible areas, footpaths and cycle ways, Services, railways, buildings and other structures) which may be affected by the Project Works, Temporary Works or the Contractor's Work. Where it is expected that the Project Works, the Temporary Works or the Contractor's Work will affect ground conditions or infrastructure, the Contractor must diligently monitor the actual effects in accordance with section 2.16 of this SWTC.
- (c) All site investigations must be included in the Design Documentation in the following electronic formats:
  - (i) Pdf; and
  - (ii) ASCII data file in the latest AGS RMS format as defined on the website <http://www.rms.nsw.gov.au/business-industry/partners-suppliers/design-documents/geotechnical-information.html>.  
  
Information on the AGS format can also be obtained on the websites [www.ags.org.uk](http://www.ags.org.uk) and <http://www.datgel.com.au/AGSRTAFormat.aspx>.
- (d) Data for the GORA, GORB, GOSA, GOSB, and DISC fields of AGS RMS groups (tables) must be provided under individual field headings.
- (e) In addition to the requirements in sub-section (c) above, all in-situ test results, including cone penetration, stress, packer permeability and pressure meter test results, and groundwater monitoring and laboratory test results must be provided in .xls electronic format. All contamination laboratory test results must be provided in ESDAT electronic laboratory data format.
- (f) All GIS data produced for the project must be supplied to RMS in ESRI ArcGIS10 format Map Package (MPK). This is to be projected in MGA coordinate system in the appropriate zone. As a minimum, this data must include test site locations and the

geology map. All spatial information obtained as part of the investigations must be included.

- (g) All slopes must be assessed in accordance with “*RTA Guide to Slope Risk Analysis*” “Version 4” dated April 2014. All slope ratings must be carried out by personnel accredited by RMS in the use of the guide.

### **4.3 Condition surveys**

- (a) In addition to inspections and surveys required by the deed, including the Environmental Documents, and prior to commencing any activity which could affect existing ground conditions or infrastructure (including roads, parks and other publicly accessible areas, footpaths and cycle ways, Services, railways, buildings, slopes, heritage items and other structures), the Contractor must undertake ground and infrastructure condition surveys to establish the pre-construction conditions of all existing ground and infrastructure which could be affected by the Contractor’s Work.
- (b) Ground and infrastructure condition surveys must be conducted with the agreement of the property owner and any occupier. The outcomes of the surveys must be recorded in separate reports which include detailed records (including dated photographs) of the pre-construction conditions of the ground and infrastructure which could be affected. RMS Representative, the Project Verifier and the owner and / or occupier must each be issued with a copy of the reports prior to the Contractor commencing the relevant activity that could affect the existing ground or infrastructure.
- (c) Condition surveys must be carried out by an independent and appropriately qualified assessor acceptable to RMS Representative.
- (d) Building condition inspections must be undertaken in accordance with requirements of RMS D&C G36.
- (e) Road condition survey inspections must be conducted in consultation with the relevant local council. The condition survey inspections must be carried out jointly with RMS Representative and representatives from the local council and in accordance with the local council’s inspection and reporting requirements.

### **4.4 Survey requirements**

#### **4.4.1 General**

- (a) The Contractor must establish and verify the survey control for the Contractor’s Work.
- (b) Established survey marks may exist within or in the vicinity of the Construction Site. The Contractor must avoid (where reasonably possible) disturbance of such marks and must re-establish any such marks disturbed or affected by the Contractor’s Work, in accordance with the requirements of relevant Authorities and RMS D&C G71.
- (c) The Contractor must promptly provide RMS and the Project Verifier with two copies of all property and land surveys, including progressive copies of such documents as each is developed.
- (d) The Contractor must verify any boundary survey undertaken or provided to it and must undertake a consolidated boundary survey of the Site in a single document. As a

condition precedent to Construction Completion, the Contractor must undertake and provide to RMS Representative a consolidated as constructed survey of the Project Works detailing the actual location of the new infrastructure and demonstrating that the Works are within the Site.

- (e) All survey levels must refer to Australian Height Datum (AHD). All survey plan coordinates must refer to the MGA-94 Zone 56 coordinates, based on the Geocentric Datum of Australia (GDA).
- (f) Field survey data and final design strings must be supplied to RMS in electronic form as an MX database file (model.fil) or a genio file which can be used as input data in MX using MX Major Option Genio MX format. Any design data revisions are to be supplied to RMS to enable the RMS models to be updated.
- (g) 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 to the category of Member, are responsible for all surveys for the Contractor's Work.

#### **4.4.2 Control survey**

- (a) Control survey for the Contractor's Work must be conducted in accordance with the recommended survey and reduction practices specified in Part B of Standards and Practices for Control Surveys Version 1.7 (ICSM Publication SP1 on the website [www.icsm.gov.au/](http://www.icsm.gov.au/)) and in accordance with RMS D&C G71.
- (b) The standards of accuracy for control surveys must be in accordance with Table G71 in RMS D&C G71.
- (c) For the Contractor's Work, the existing permanent survey marks (PSMs) must be supplemented by new PSMs such that the spacing between adjacent PSMs is a maximum of 500 metres.
- (d) Prior to the Date of Construction Completion the Contractor must submit to RMS Representative a:
  - (i) breakdown of the existing state control survey network (MGA/AHD) affected by the Contractor's Work and carried out in accordance with the Surveying and Spatial Information Act 2002 (NSW) and Surveying and Spatial Information Regulation 2006 (NSW). The existing PSMs must be connected into the Contractor's control survey;
  - (ii) Survey documentation must be in accordance with the recommended documentation practices specified in Part D of Standards and Practices for Control Surveys Version 1.7 and RMS D&C G71. A copy of the adjustment (e.g. HAVOC) input files used for adjustments must be submitted;
  - (iii) plan of the control survey showing all marks adopted and values assigned; and
  - (iv) locality sketch for each new mark that has been placed and for any existing marks that need to be re-drawn because of substantial access changes.



## 4.5 Infrastructure Monitoring Strategy

- (a) In order to comply with the requirements of section 2.16 and prior to commencing any part of the Contractor's Work, the Contractor must implement a monitoring strategy. The monitoring strategy must include any monitoring requirements identified in the Environmental Documents and any requirements of relevant Authorities.
- (b) As part of the monitoring strategy, the Contractor must:
  - (i) determine the devices for and the locations of monitoring stations and devices necessary to comply with section (a) above and section 2.16;
  - (ii) make arrangements with owners and any occupier as required to install and access monitoring stations and devices; and
  - (iii) install and secure the monitoring stations and devices referred to in section (b)(i) above.
- (c) As a part of the monitoring strategy at locations that may be affected by the Contractor's Work, the Contractor must:
  - (i) where not provided in the Environmental Documents, establish the baseline conditions of the ground and/or infrastructure; and
  - (ii) establish the initial levels of and make provisions to measure in-situ stress, strain and deformation.

## 5 Performance and Design Requirements

---

### 5.1 General

- (a) The Project Works must be designed and constructed so that the road furniture on the Project Works is compatible with the surrounding road network, except to the extent required otherwise by the deed, including this SWTC.
- (b) The Contractor must ensure that all investigation, design, construction, operation and maintenance activities are entirely integrated and compatible and that together they mutually satisfy all the requirements of the deed, including this SWTC. The required performance of the Project Works, Temporary Works and Landscaping Maintenance must be taken into account and addressed during all stages of the Contractor's Work.
- (c) Other sections of this SWTC provide details of further specific requirements for the design and construction of the Project Works and the Temporary Works and the performance of the Landscaping Maintenance.
- (d) The Contractor must design and construct the Project Works and perform the Landscaping Maintenance to deliver the performance requirements of the deed, including this SWTC, and the maintenance diaries for drainage, structures, pavements and batters contained or identified in Appendix 12 and Appendix 30 of this SWTC.
- (e) Without limiting any other requirements of the deed, the Project Works, Landscaping Maintenance and the Temporary Works must comply with the performance and design requirements in this section 5 of this SWTC.

### 5.2 Road safety audits

- (a) Road safety must be integrated into all aspects of the design, construction, operation and maintenance of the Project Works and the Temporary Works in accordance with the deed including this SWTC.
- (b) The Contractor must arrange for independent road safety audits to be undertaken, in accordance with "RMS Guidelines for Road Safety Audit Practices" at the Developed Concept Design and Substantial Detailed Design stages in the development of the Design Documentation and immediately prior to and after the opening any part of the Project Works or Temporary Works to traffic. RMS must be invited to attend and allowed to participate in, all road safety audits undertaken by the Contractor. All issues and deficiencies identified in the road safety audits are non-conformities which must be addressed by the Contractor in accordance with the Quality Plan.
- (c) Road safety audits must be carried out by a team consisting of a lead auditor and a least one other member who is experienced in traffic management. The lead auditor must be considered by the Institute of Public Works Engineering Australia Ltd (NSW Division) to be a level 3 auditor.
- (d) The Contractor must consider and respond to the recommendations of the independent road safety audits and to the recommendations of any safety audits which may be undertaken by RMS.

- (e) Copies of all independent road safety audits must be issued within 20 Business Days of the audit report being completed to the RMS Representative and the Project Verifier.
- (f) Provision must be made for the safe movement of all road users at all times.

### **5.3 Safety in design**

- (a) The Contractor must comply with the WHS Laws, including section 22 of the Work Health and Safety Act 2011, to ensure that the Project Works and Temporary Works are without risk to the health and safety of persons, including people who use, operate, decommission, inspect or maintain the Project Works, the Temporary Works and the Contractor's Work.
- (b) The Contractor must identify and address all safety issues and requirements relating to safety during the entire lifecycle of the Project Works, Temporary Works and Landscaping Maintenance.
- (c) The Contractor must adopt a systematic approach that incorporates the risk management process in the design phases and encourages collaboration, consultation and coordination.

#### **5.3.1 Establishing context**

The Contractor must:

- (a) identify the purpose of the Project Works, Temporary Works and Landscaping Maintenance, as well as the scope and complexity of the project;
- (b) identify relevant legislation, codes of practice and standards that need to be considered;
- (c) identify the roles and responsibilities of various parties in relation to the project; and
- (d) conduct consultation and research to assist in identifying hazards, and assessing and controlling risks.

#### **5.3.2 Hazard identification**

The Contractor must:

- (a) undertake hazard identification from the early stages of the design process and continue to undertake throughout the design process;
- (b) consider and address in the Design Documentation all hazards that can be affected, introduced or increase by the design, construction or maintenance of the Project Works, Temporary Works and Landscaping Maintenance; and
- (c) ensure that the hazard identification process is systematic and not limited to one or two people's experiences of situations. Common practices for the identification of hazards include workshops such as risk workshop or Safety in Design workshops.

#### **5.3.3 Assessing risk**

The Contractor must consider the consequence and likelihood of a person being exposed to hazards in order to allocate the appropriate resources to designing out the

hazards. The more serious the risk, the more time and effort the Contractor should dedicate to eliminating or minimising the risk.

#### **5.3.4 Controlling risks**

The Contractor must, using the hierarchy of control:

- (a) consider known solutions for common hazards. However where a new or complex hazard has been identified, the Contractor must consider whether a risk assessment is required to determine the most effective control; and
- (b) consider where residual risks remain, and ensure that these residual risks are communicated to organisations including the client, constructor and maintenance providers.

#### **5.3.5 Other Requirements**

- (a) The Contractor must, at various points in the design process, review design solutions to confirm the effectiveness of risk controls and, if necessary, redesign to minimise the risks.
- (b) Key information about identified hazards and action taken or required to control risks should be recorded and transferred from the design phase to those involved in later stages of the lifecycle.
- (c) The Design Documentation must include specific construction site rules to address the issues identified in section 5.3(b) of this SWTC, and any other issues that require such rules. These construction site rules must include specific permit-to-work rules and emergency procedures. The Contractor must develop the Design Documentation to assist in the implementation of the construction site rules.
- (d) Safety issues must also be addressed in the WHS Development Plan in accordance with the requirements of Appendix 21 of this SWTC.

### **5.4 Reference Documents and Standards**

#### **5.4.1 General**

- (a) Unless otherwise expressly stated in the deed, the Project Works, the Temporary Works and the Contractor's Work, including materials, manufactured articles and workmanship, must, as a minimum, conform to and meet the requirements of the versions of the Reference Documents that are current at the time at which the relevant Contractor's Work is undertaken.
- (b) Unless otherwise expressly stated in the deed, the Project Works, the Temporary Works and the Contractor's Work must also, as a minimum, conform to and meet the requirements of all relevant RMS, RTA and AUSTRROADS publications and all relevant Australian Standards and Standards Australia handbooks that are current at the time at which the relevant Contractor's Work is undertaken.
- (c) If there are no applicable Reference Documents, or relevant RMS, RTA and AUSTRROADS publications or relevant Australian Standards or Standards Australia handbooks for an element of the Project Works, the Temporary Works or the

Contractor's Work, the Contractor may use international standards that reflect world's best practice.

- (d) The "RTA Road Design Guide" has been superseded by "RTA Supplements".

#### **5.4.2 Order of precedence**

Unless otherwise expressly stated in the deed, including this SWTC, in the event of:

- (a) any inconsistency, ambiguity or discrepancy between the deed and any publications and standards which the Contractor must comply with; or
- (b) any inconsistency, ambiguity or discrepancy between any publications and standards that the Contractor must comply with;

the following order of precedence must apply:

- (c) any specific provisions in the deed, including this SWTC and the Reference Documents;
- (d) other RMS and RTA publications (excluding "RTA Road Design Guide");
- (e) other AUSTROADS publications;
- (f) other Australian Standards;
- (g) other Standards Australia handbooks; and
- (h) other international standards that reflect world's best practice which are not identified as Reference Documents where no applicable Reference Documents, relevant RMS, RTA or AUSTROADS publications or relevant Australian Standards or Standards Australia handbooks exist.

#### **5.4.3 Standard units**

Unless otherwise specified, SI units must be used in the performance of the Contractor's Work, including on the Project Works, Temporary Works and in all Design Documentation.

#### **5.4.4 Design datum**

Design datum levels and Design Documentation must be produced in accordance with sections 4.4.1(e) and (f) of this SWTC.

#### **5.4.5 Works classification**

All Works associated with the Main Carriageway must be regarded as a Main Road for the purposes of the Roads Act 1993 (NSW).

All Works associated with the Other Roads must be regarded as a Secondary Road for the purposes of the Roads Act 1993 (NSW).

### **5.5 Design life**

#### **5.5.1 General**

- (a) Design Life is defined for the purposes of the deed as the period over which an Asset must perform its intended function without replacement, refurbishment or significant

maintenance. Assets include Asset Items and Asset Sub-Items which for the purpose of project Asset management are also identified by Asset Element and Asset Type.

- (b) Assets must have, as a minimum, the Design Life specified in Table 5-1.

**Table 5-1: Asset Design Life**

Item Number	Asset	Minimum Design Life
(i)	Inaccessible drainage elements	100 years
(ii)	Drainage elements that are accessible for refurbishment and maintenance including water quality basins	20 years
(iii)	Sign faces	10 years
(iv)	Sign support structures and other roadside furniture	40 years
(v)	Fences, including fauna fences	20 years
(vi)	Lighting and electrical equipment	20 years
(vii)	Structures, excluding sign support structures and noise barriers	100 years
(viii)	Retaining walls, including reinforced soil walls	100 years
(ix)	Noise barriers, noise attenuation devices and headlight screens	50 years
(x)	Flexible pavements Main Carriageway Cross carriageway access and heavy vehicle stopping bays Other Roads	40 years 40 years 40 years
(xi)	Rigid pavements Main Carriageway Cross carriageway access and heavy vehicle stopping bays Other Roads	40 years 40 years 40 years
(xii)	Other Roads embankment and support structures	100 years
(xiii)	Embankments, including reinforced embankments	100 years
(xiv)	Cutting batters, including batter treatments	100 years
(xv)	Timber furniture	30 years
(xvi)	Other Assets not detailed in item numbers (i) to (xv) inclusive above or in Appendix 29 of this SWTC must have a design life consistent with typical industry values for similar Assets of a high standard and quality.	

- (c) Where Asset Items and Asset Sub-Items are defined in Appendix 29 of this SWTC as having a Design Life less than specified in Table 5-1 or where they are determined as being accessible for the purposes of Table 5-1, the Design Documentation and Maintenance Plan must detail the methodology of replacement, including all access

provisions for both inspection and replacement. Asset Items which cannot be replaced without lane closures or disruption to road or rail traffic must be deemed to be inaccessible.

- (d) The design must detail those Asset Items and Asset Sub-Items that are not designed to meet the design life specified in Table 5-1 above. For example, although all bridges require a design life of 100 years some elements will require replacement and refurbishment at shorter intervals (i.e. bearings at say 50 years).

### 5.5.2 Retained Infrastructure

- (a) Notwithstanding the requirements of clause 13.1(a)(ii)A of the deed, the elements in Table 5-2 are defined as Retained Infrastructure, and may be incorporated into the Project Works subject to the requirements of section 5.5.2 (b) and 5.5.2(c) below.

**Table 5-2: Retained Infrastructure List**

Item Number	Retained Infrastructure Description
1	2 x 1050mm RCP Drainage Culvert across M4 Motorway, east of existing M4 bridge. ~Ch. 350 of M4 Eastbound Entry Ramp
2	1200mm RCP Drainage Culvert west of The Northern Road and south of Aspen St. ~Ch. 2270

- (b) Retained Infrastructure identified in section 5.5.2(a) above is not required to comply with any minimum specified Design Life criteria or other durability requirements of this SWTC but must comply with all other design and performance requirements of the deed, including:
- (i) functional requirements;
  - (ii) drainage and flooding performance requirements;
  - (iii) environmental requirements;
  - (iv) geometric requirements, including clear zone requirements;
  - (v) structural requirements;
  - (vi) delineation, signposting and roadside furniture requirements; and
  - (vii) lighting requirements.
- (c) The Contractor must connect, modify, make arrangements and undertake all improvements necessary to link and incorporate the Retained Infrastructure with the other elements of the Project Works, including the adjacent Local Roads, and other surrounding infrastructure.
- (d) Despite section 5.5.2(b) where RMS or the RMS Representative issues a direction or instruction in accordance with the deed such that the Contractor's Work extends to modification, repair, redesign or reconstruction of elements of the Retained Infrastructure, then those elements of Retained Infrastructure to which the Contractor's Work extends are required to comply with the minimum specified Design Life criteria and durability requirements of this SWTC and all other design and performance requirements of the deed, except to the extent otherwise specified in the relevant direction or instruction, or agreed by RMS in writing.

## 5.6 Traffic

As a minimum the Project Works and Temporary Works must be designed and constructed to cater for:

- (a) the design speeds specified in Appendix 9 of this SWTC;
- (b) the design and performance criteria for interchanges and intersections identified in Appendix 9 of this SWTC;
- (c) the requirements of section 5.11 of this SWTC;
- (d) all possible traffic conditions associated with the operation of the Project Works;
- (e) the design loadings in Appendix 12 of this SWTC;
- (f) personnel movement associated with breakdowns and other incidents;
- (g) access by emergency service vehicles, personnel and plant;
- (h) access by maintenance vehicles, personnel and plant;
- (i) pedestrian, pedal cyclist and disabled persons movements identified in the Environmental Documents;
- (j) turning movements of a B-Double truck except where specified otherwise in the Environmental Documents or Appendix 9 of this SWTC; and
- (k) full integration with the traffic management control systems operated by the TMC.

## 5.7 Aesthetics

- (a) All visible elements of the Project Works, and the Temporary Works, must have an attractive appearance of no lesser standard than the urban and landscape design requirements for the Contractor's Work as described in Appendix 15 and Appendix 31 of this SWTC.
- (b) The urban and landscape design must:
  - (i) be consistent with the urban and landscape design concepts contained in the Environmental Documents;
  - (ii) comply with the requirements of Appendix 15 of this SWTC; and
  - (iii) be generally as shown in the Contractor's urban and landscape design in Appendix 31 of this SWTC subject to such changes as may be necessary to ensure compliance with the deed.

## 5.8 Environmental design

- (a) A high standard environmental design must be developed for the Project Works, Temporary Works and Landscaping Maintenance and must include as a minimum:
  - (i) erosion, sedimentation and water quality infrastructure;
  - (ii) management and mitigation measures for environmentally sensitive areas and cultural heritage sites; and
  - (iii) construction noise measures.



- (b) Without limiting the requirements of the deed, the environmental design must be developed in consultation with appropriate Authorities and in accordance with the deed, including the requirements of the Environmental Documents, Appendix 4 of this SWTC and RMS D&C G36.

## 5.9 Durability

- (a) The Contractor must ensure the durability of all Assets so as to comply with the deed and the specified Design Life for each Asset.
- (b) Durability must be considered and properly addressed throughout the design and construction of all Assets and in the Project Plans and O&M Manuals.
- (c) The Contractor must make its own assessment of the performance requirements of the deed (including this SWTC) in relation to each Asset, including Asset Items and Asset Sub-Items in terms of:
  - (i) the micro-environment;
  - (ii) operational conditions including drying and wetting, vibration and heat;
  - (iii) potential deterioration mechanisms in this micro-environment;
  - (iv) rate of deterioration;
  - (v) the likely material life;
  - (vi) risks and variability of the constructed product;
  - (vii) the feasibility and cost of insitu monitoring, maintenance and/or repair and replacement;
  - (viii) the necessity of providing additional protection including coatings; and
  - (ix) the significance of failure.
- (d) The Contractor must make its own determination of whether the performance requirements of the deed (including this SWTC) are satisfied by RMS Specifications or the Contractor's Specifications, or if additional controls are required.
- (e) The Contractor must incorporate all controls, including additional controls necessary to ensure the specified Design Life for each Asset is met. All controls must be included in the Design Documentation.
- (f) The Contractor must develop procedures in the Maintenance Plan for replacement of Asset Items and Asset Sub Items at intervals consistent with the Design Life of that Asset Item or Sub Asset Item.

## 5.10 Functional requirements

### 5.10.1 Noise mitigation measures and structures

- (a) Noise mitigation measures and structures must be provided in accordance with the requirements of the Environmental Documents and Appendix 9 of this SWTC.
- (b) The design of noise barriers must be in accordance with the requirements of the RMS Specification D&C R271 "Design and Construction of Noise Walls" and must be in accordance with Appendices 13 and 15 of this SWTC.

### **5.10.2 Authorities and emergency services**

- (a) The Contractor's Work, the Project Works, and the Temporary Works must satisfy the requirements of all relevant Authorities, including emergency service providers.
- (b) The Project Works must include the necessary infrastructure to provide access for Authorities and emergency service providers to all relevant parts of the Site and Local Road Corridors for operation and maintenance purposes, including incident responses.
- (c) The Contractor must consult with, and address any concerns raised by Penrith City Council and NSW Health if any aspect of the Contractor's Work is expected to impact on Nepean Hospital access routes.

### **5.10.3 Pedal cyclists and pedestrians**

- (a) Infrastructure for pedal cyclists and pedestrians must be provided in accordance with the requirements of the Environmental Documents and the deed including Appendix 9 of this SWTC.
- (b) Approaches to underpasses and to footpaths and cycleways under bridges must be open and clearly visible.
- (c) Access must be provided for existing pedestrian movements and for incidents and emergencies on the Works as identified in the Environmental Documents.

## **5.11 Geometric design**

### **5.11.1 General Standards and Applications**

- (a) The visual and functional aspects of the Project Works must be designed to form an integral part of the New South Wales road network.
- (b) The Project Works must comply with the "RTA Supplements" and Appendix 9 of this SWTC.
- (c) The road geometry design must be integrated with the urban and landscape design to gain benefits from the views and to reduce the adverse effects of glare from sunlight and opposing vehicle headlights.

## **5.12 Drainage**

### **5.12.1 General**

- (a) The Contractor must develop, implement and maintain design solutions for the drainage systems which comply with the requirements of the Environmental Documents and avoid or minimise any potential damage or loss that may result from, or be contributed to by, water discharge as a consequence of the Contractor's Work or from the Construction Site, the Project Works, the Temporary Works or the Landscaping Maintenance.
- (b) The Contractor must provide a water management and drainage system in the Project Works that requires a minimum of maintenance consistent with the need to ensure appropriate water quality discharge from the Project Works, the Temporary Works or Landscaping Maintenance.

- (c) The drainage system must:
  - (i) preserve existing elements, including natural channels and wetland and riparian vegetation;
  - (ii) manage both the quality and quantity of stormwater, including by providing devices which treat the stormwater and retain the run-off, as close as possible to its sources so that the drainage system changes the existing water regime to the smallest amount practicable;
  - (iii) be integrated with the construction process and drainage requirements so that the total investment in drainage infrastructure is minimised and maintenance access is available to all devices during the performance of the Contractor's Work and after the Date of Construction Completion;
  - (iv) be designed for ease of maintenance;
  - (v) be structurally safe in any storm;
  - (vi) ensure that additional runoff, stormwater or spillage is not directed onto other roadways outside of the Site; and
  - (vii) ensure that flood levels meet the requirements of section 5.12.2 of this SWTC.
- (d) The Design Documentation must include an analysis of the whole of life costs of the drainage system that has been designed, including the development of predicted maintenance diaries for the drainage system. Predicted maintenance diaries must be developed from the initial maintenance diaries included in Appendix 30 of this SWTC.
- (e) The drainage system must be designed to comply with the requirements of Appendix 10 and Appendix 13 of this SWTC and RMS D&C specifications.
- (f) The design of scour protection must adopt a flexible and adaptive approach in accordance with the requirements of Appendix 10 of this SWTC to achieve the best possible outcomes in terms of the project and the environment. The design must take into account the existing and potential for regrowth of riparian vegetation.
- (g) Bridge drainage must be connected to the road drainage system.
- (h) The drainage system must separate cross drainage from pavement drainage systems.
- (i) Approval of the drainage design must be obtained from relevant Authorities.
- (j) The drainage system design must:
  - (i) model pit entry capacity;
  - (ii) model pit entry and exit losses;
  - (iii) model by-pass flow to next pit;
  - (iv) model detention basins;
  - (v) model overland flow times;
  - (vi) model infiltration rates;
  - (vii) provide a routed reach outlet hydrograph; and
  - (viii) Provide water levels with respect to time for a 1 in 100 flood event wherever predicted flood levels will be higher than the existing conditions.

### **5.12.2 Flood Levels**

- (a) The Contractor must comply with the afflux requirements specified in Appendix 10 of this SWTC.
- (b) Approval of the drainage design must be obtained from the relevant Authorities.

## **5.13 Geotechnical design**

- (a) The Contractor must develop a geotechnical design for the Project Works and Temporary Works. The geotechnical design must address structures, including the earthworks formation which consists of cuttings, embankments, topsoil and spoil and any other changes to the ground surface, including all foundation and structural treatments. The geotechnical design must include a strategy to investigate, design, construct, monitor, maintain and repair the earthworks formation. The strategy must be documented in the Earthworks Plan and must be developed in conjunction with the urban and landscape design to ensure that the Project Works integrate harmoniously with the environment.
- (b) The geotechnical design in the Design Documentation must be continuously reviewed, updated and developed during the construction of the Project Works and Temporary Works to take account of the actual physical conditions encountered.
- (c) The earthworks formation must be designed to achieve the required Design Life identified in section 5.5 of this SWTC. The design must include an analysis of the whole of life costs of the design, including the development of predicted maintenance diaries for all slopes and batters. The predicted maintenance diaries must be developed from the initial maintenance diaries included in Appendix 30 of this SWTC.
- (d) All slopes and batters affected by the Contractor's Work, must have an Assessed Risk Level (ARL) in accordance with "RTA Guide to Slope Risk Analysis Version 4" April 2014 of ARL 4 or better for the specified Design Life.
- (e) Foundations and the earthworks formation and structures must be designed to comply with the requirements of Appendix 11 of this SWTC and RMS D&C specifications.
- (f) The Contractor must provide slope inventory details to RMS Representative. The slope inventory details must be developed in accordance with the requirements of the "Guide to Slope Risk Classifications RTA Draft" and in consultation with RMS Representative.

## **5.14 Pavements**

### **5.14.1 General**

- (a) Pavements must:
  - (i) incorporate drainage practices that maintain a constrained moisture regime which prevents significant variations in the capacity of the subbases and subgrades to support the pavements;
  - (ii) accommodate movements of the subgrades associated with changes in moisture content (particularly near batters);

- (iii) accommodate settlements and deformations of the embankments and subgrades resulting from settlements of foundations;
  - (iv) deliver the performance levels for the wearing surfaces specified in Appendix 12 of this SWTC;
  - (v) separate surface and subsurface drainage systems to avoid overloading subsurface systems;
  - (vi) at all times conform to the surface flow requirements detailed in Appendix 10 of this SWTC; and
  - (vii) have wearing surfaces which produce noise levels and tonal noise characteristics that contribute to noise mitigation and compliance with the noise level requirements of the deed.
- (b) The Design Documentation for each pavement type must include an analysis of the whole of life costs, including the development of predicted maintenance diaries for each pavement type as detailed in Appendix 12 of this SWTC.
  - (c) Pavements must be designed to comply with the requirements of Appendix 12 of this SWTC and RMS D&C specifications.

#### **5.14.2 Pavement types and extents**

- (a) Structural pavements must comprise one or more of the following pavement types:
  - (i) steel fibre reinforced concrete (SFRC) for roundabouts only;
  - (ii) deep strength asphalt over cemented subbase;
  - (iii) deep strength asphalt over lean mix concrete subbase; and
  - (iv) full depth asphalt.
  - (v) Other Roads only may be based on a granular pavement with thin bituminous surfacing, in accordance with Penrith City Council requirements.

For the purposes of this SWTC, the pavement type identified in section (i) above is regarded as rigid pavement and pavement types identified in sections (ii), (iii) and (iv) above are regarded as flexible pavements.

- (b) Pavement configurations must be in accordance with Appendix 12 of this SWTC and must be provided at the locations and to the extent shown in section 11.3 of Appendix 12 of this SWTC. Notwithstanding any other requirements of this SWTC, including those in section 4 of Appendix 12 of this SWTC, pavement layer constructed thicknesses and dimensions must not be less than those shown in the configurations in section 11.1 of Appendix 12 of this SWTC.
- (c) Structural pavements must be provided for the full pavement width, which includes all lanes, auxiliary lanes, shoulders, outside shoulders and median shoulders identified in Appendix 9 of this SWTC.

### **5.15 Structures**

- (a) This section 5.15 applies to the design of structures in the Project Works and Temporary Works. Structures include:

- (i) bridges;
  - (ii) overpasses and underpasses;
  - (iii) sign support structures including overhead gantries;
  - (iv) soil and slope structures;
  - (v) traffic barriers on top of soil and slope structures;
  - (vi) noise walls;
  - (vii) culverts with openings of six metres or more when measured along the road centre line, spring lines of arches or the extreme ends of openings for multiple cells; and
  - (viii) fauna crossings.
- (b) The Design Documentation for each bridge must include design summary drawings and bridge load ratings sufficient to assess the bridge's ability to accommodate wide, high and / or heavy loads.
  - (c) The Design Documentation for each bridge must include an analysis of the whole of life costs including the development of predicted maintenance diaries for each structure. Predicted maintenance diaries must be developed from the initial maintenance diaries included in Appendix 30 of this SWTC.
  - (d) Bridges and other structures must be designed to comply with the requirements of Appendix 9 and Appendix 13 of this SWTC and RMS D&C specifications.
  - (e) Further to the requirements of clause 2.5(d)(ii)B of the deed, the Proof Engineer's report must identify all non-conformities and inconsistencies between the design of the relevant elements identified in Item 14 of Schedule 1 of the deed and the requirements of this SWTC.

## **5.16 Delineation and signposting**

### **5.16.1 General**

- (a) Delineation and signposting must be appropriate to the climatic, lighting and traffic conditions reasonably expected on the Project Works, on associated connections, Local Roads that require adjustment and in all areas accessible by the public, which are affected by the Project Works.
- (b) Delineation and signposting must be designed to comply with the requirements of this section 5.16, the Environmental Documents and Appendix 16 and RMS D&C specifications.

### **5.16.2 Delineation**

The Contractor must install delineation that provides:

- (a) a high standard of definition of the Main Carriageway, associated connections and Other Roads that require adjustment, particularly in adverse weather conditions;

- (b) well sited intersections and interchanges with layouts that clearly identify to motorists the permitted manoeuvres, including those manoeuvres required to enter and exit the Main Carriageway, associated connections and Other Roads that require adjustment;
- (c) clear visibility of merge and diverge areas; and
- (d) visual warnings that vehicles are moving out of a through lane.

### **5.16.3 Signposting**

- (a) Directional, regulatory, warning, advisory and information signposting must be provided in accordance with the Codes and Standards.
- (b) Directional, regulatory, warning, advisory and information signposting must include the signposting specified in Appendices 16 and 26.
- (c) The Contractor must:
  - (i) remove any existing signposting that will show incorrect information as a result of the Project Works;
  - (ii) make any modifications to existing signposting and associated signposting infrastructure required as a result of the Project Works, and supplement it with new signposting and associated infrastructure;
  - (iii) provide all new regulatory signs;
  - (iv) provide all signage for pedestrian and cycling facilities;
  - (v) ensure legibility of signposting at the posted speeds of the road taking into account the possible range of climatic conditions;
  - (vi) ensure consistency and compatibility between the signs provided for the Project Works with those on the surrounding road network;
  - (vii) provide signs associated with warnings of speed zones, place names, height clearances, feature names and appropriate symbols;
  - (viii) provide motorists with progressive information (particularly where intersections and interchanges occur); and
  - (ix) provide supporting structures that are designed to collapse on impact where they are free standing and install protection to supporting structures where they are not designed to collapse.

## **5.17 Urban Design and Landscape Requirements**

- (a) The urban design and landscape design must comply with the requirements of Appendix 15 of this SWTC and the Environmental Documents.
- (b) The urban design and landscape design must be based upon the Contractor's Urban and Landscape Design included in Appendix 31 of this SWTC.
- (c) In respect of architectural and landscape design outcomes, the Contractor must provide integrated design solutions for all components of the Project Works including the integration of all visible elements such as signage, electrical and mechanical plant, acoustic controls, communications, traffic management system and road furniture.

- (d) The Contractor must engage suitably qualified and experienced urban and landscape designers in the design process from commencement of design.
- (e) The Contractor must ensure that the development of the design is such that appropriate urban and landscape design is developed for all visible features of the Project Works and that the designs of all visible features are endorsed by the Contractor's urban and landscape designers.
- (f) The structures, fixtures and fittings required for Services must be coordinated with the Contractor's urban and landscape design for the Project Works.

## **5.18 Roadside furniture**

### **5.18.1 General**

- (a) The roadside areas must comply with the requirements of parts 3.6 and 3.7 of section 6 of the Austroads Guide to Road Design.
- (b) Road furniture must be positioned in a way which is compatible with other sections of the surrounding road network.
- (c) The Contractor must design and install all fixed and variable signage and barriers required for the operation of:
  - (i) The Project Works;
  - (ii) Local Roads affected by the Project Works; and
  - (iii) traffic management (including diversions) required to maintain the Project Works.
- (d) Unprotected ends of concrete barriers and railings, bridge piers and other non-frangible objects, including trees which (when mature) will be non-frangible, must comply with section 5.18.1(a).

### **5.18.2 Roadside Furniture**

- (a) No roadside furniture is to be placed within shoulders of any roads.
- (b) Any road furniture within the design clear zone (refer to Austroads Guide to Road Design) that is non-frangible must be protected using a safety barrier, which must be designed for impact from a passenger car travelling at the relevant design speed.
- (c) Batters or walls of cuttings must be shaped and constructed to provide either a clear zone run-off area, or a rigid safety barrier, or features that emulate a rigid safety barrier.
- (d) Bridge piers will only be permitted in the clear zone if they incorporate an appropriate safety barrier that satisfies the requirements of Appendix 13 of this SWTC.
- (e) Safety barriers must follow design practices detailed in Austroads Guide to Road Design - Part 6: Roadside Design, Safety and Barriers.
- (f) Guideposts must be provided in accordance with section 1.2 of Appendix 16 of this SWTC.



## 5.19 Fences and gates

- (a) Fencing must be designed to comply with the requirements of Appendix 3 and Appendix 4 of this SWTC.
- (b) Controlled access fencing is required in rural areas and must comprise “stockproof” type fencing with prestressed concrete strainer and intermediate posts with fence panels comprising five barbed wires constructed in accordance with the requirements of RTA Roadworks Model Drawings MD.R201.A01.A, MD.R201.A02.A and MD.R201.A03.A. The controlled access fence must be located on the Site boundary.
- (c) Gates must be provided where required for maintenance or for access by relevant Authorities, including emergency services and for access by property owners. Entry gates must be constructed in accordance with the requirements of RTA Roadworks Model Drawing MD.R201.A04.A.
- (d) Security fencing is required around any pump stations and detention basins in urban areas, and must be designed to prevent unauthorised persons from accessing the Works.

## 5.20 Lighting

### 5.20.1 General

- (a) Street lighting must be provided as a minimum for the carriageways, interchanges, ramps, intersections and roundabouts.
- (b) All roads must be lit in accordance with the requirements of AS/NZS 1158 - 2007 “Code of Practice for Public Lighting” and RMS specification D&C R151 and RMS Specification 3851. The lighting must be continuous.
- (c) All wiring, except that internal to poles, must be underground and must be installed in accordance with AS/NZS 3000 Wiring Rules and any further requirements of relevant Authorities. Heavy duty rigid conduit to AS/NZS 2053 Conduits and fittings for electrical installations must be used throughout.
- (d) Low loss control gear must be used for all lighting.
- (e) The design of lighting must ensure that light spillage into residential and commercial properties, and other sensitive areas is avoided or minimised.
- (f) Where existing street lighting is modified, the final lighting must not result in a standard of lighting less than that existing prior to the modifications and must comply with AS/NZS 1158 Lighting for roads and public spaces. Without limiting the requirements of AS/NZ 1158 the minimum required levels of lighting are detailed below:
  - (i) Main Carriageway - lighting specification V3, with no lighting specification for adjacent pathways;
  - (ii) Shared path bridges - P3;
  - (iii) Shared paths if not adjacent to roadway, hence requiring independent lighting - P3; and
  - (iv) Other Roads - lightning specification V5.

- (g) Lighting along the M4 Motorway, ramps and any bridge structure are to be treated as RMS private lights and designed in accordance with RMS specification D&C R151.
- (h) All lighting other than that specified in covered by section 5.20.1(g) is to be designed in accordance with the requirements of the relevant authorities.
- (i) It is the Contractor's responsibility to determine the ownership of all lighting affected by Contractor's Work.

### **5.20.2 Lighting for Bridges**

- (a) Lighting on bridge structures must be from the side of the deck with poles aligned behind the bridge rail so that they are clear of the "working width" as defined in Austroads Guide to Road Design including RTA supplement and Appendix 9 of this SWTC.
- (b) Lighting must be installed on the underside of bridges where required for Other Roads, walkways, cycle paths, public spaces and public transport facilities.

### **5.20.3 Lighting for Short Underpasses**

- (a) Short Underpass lighting must comply with the requirements of AS/NZS 1158 – Part 5 and the requirements of RMS QA Specification TS914.
- (b) Light fittings must be vandal proof or housed in vandal-proof enclosures. Enclosures must not affect lighting performance of the luminaires.

### **5.20.4 Lighting for Footpaths and Shared Use Paths**

- (a) Shared use paths must be illuminated to the levels specified in Section 5.20.1.
- (b) Pedestrian footpaths must be provided with lighting to the levels specified in Section 5.20.1.

## **5.21 Emergency Telephones**

Motorist Emergency Telephones must be installed on the Project Works in accordance with RMS Specification D&C R152.

## **5.22 Traffic Control Signals**

- (a) Traffic control signals must comply with the requirements in Appendix 20 of this SWTC.
- (b) Traffic control signals must be provided to provide the functionality of the Intersection and Interchange Design Criteria identified in Appendix 9 of this SWTC

## **5.23 Intelligent Transport Systems**

The Contractor must provide Intelligent Transport Systems (including the infrastructure, plant, equipment, systems and the like) as specified in Appendix 18 of this SWTC.

## 5.24 Electrical

- (a) All voltage drop calculations must be based on a maximum voltage drop under the maximum expected load from any operational condition of five per cent calculated from the point of supply to any point in the installation. Cable sizes must be selected accordingly.
- (b) All cables must be colour coded for the appropriate phase as per AS/NZS 3000 Wiring Rules and must be fitted with permanent labels at the point of connection in the switchboard identifying the destination and circuit number.
- (c) Circuit protection devices must be fully coordinated to achieve complete discrimination so that in the event of a fault there is no interruption to upstream supplies to earthed circuits.
- (d) Traffic control systems must be connected to a different sub-main switch to lighting. The traffic control systems power circuit must be provided with a warning “not to turn off” attached next to the switch.
- (e) All electrical switchboard doors must be fitted with a three point locking system.
- (f) The design and installation of electrical components must be to the standards documented in AS/NZS 3000 Wiring Rules and to the standards required by the relevant Authorities.

## 5.25 Future works

- (g) In the future RMS shall modify the Works to accommodate infrastructure (**RMS Future Requirements**) for:
  - (i) The M4 Motorway and Ramps at The Northern Road to enable the operation of the M4 Motorway corridor as a SMART Motorway; and
  - (ii) The Stage 3 South upgrade of The Northern Road between Chainage 0 and Littlefields Road, Luddenham to provide an eight lane carriageway.
- (h) The Contractor’s Concept Design and Developed Concept Design of the Project, must:
  - (i) include the Contractor’s solution for accommodation of RMS Future Requirements without the need for substantial modification of the Project (**Contractor’s Solution**); and
  - (ii) identify features of the Contractor’s Solution for accommodation of RMS Future Requirements required to be provided by the Contractor in its design of the Project under clause 5.25b(i) to facilitate and accommodate construction by others of RMS Future Requirements (**Contractor’s Provisions**).
- (i) The Contractor’s Provisions must be fully detailed in the Contractor’s Substantial Detailed Design and Final Design for the Project. For the avoidance of doubt, the Proof Engineer’s role under clause 2.5 of the deed includes the Contractor’s Solution to Developed Concept Design and the Contractor’s Provisions at all design stages.

## 5.26 Maintenance

- (a) The Contractor must design and construct the Project Works so that, wherever practicable, maintenance can be performed without restricting traffic flow on

carriageways. In particular batters must be designed to enable maintenance to be carried out from outside the carriageways and without impacting on traffic.

- (b) The design of the Project Works must allow for and accommodate all accesses required for maintenance vehicles, personnel, plant and equipment to perform future maintenance work. As a minimum, access for maintenance work must be provided to all structures, including bridges, soil and slope structures, noise walls and operational water quality basins.
- (c) The Project Works must be designed and constructed to ensure that future maintenance work can be undertaken using commonly available and used maintenance plant, equipment and methods and without the use of specialised maintenance plant, equipment and methods.

## 5.27 Safety Screens

- (a) Safety screens must be provided at accessible locations adjacent to and above the carriageways to reduce the risk of a projectile being thrown or dropped onto the roadway below.
- (b) Safety screens must be provided on new and existing bridges over roads within the Construction Site to reduce the risk of a projectile from a bridge being thrown or dropped to the roadway below.
- (c) Safety screens must be integrated into the architectural design of the elements where fitted.
- (d) Safety screens on new bridges and existing bridges must be provided in accordance with the technical requirements of RTA Technical Direction TD 2002/RS02 - Policy for safety screening of bridges, section 31 of RTA's Structural Drafting and Detail Manual, and Appendices 15 and 30. Notwithstanding the requirements of section 31.3 of RTA's Structural Drafting and Detailing Manual, all vertical joints or overlaps in safety screen mesh panels must be located at the safety screen posts.

## 5.28 Bus Lane Requirements

Refer to Appendix 9 of this SWTC for geometric requirements for bus lanes.

## 5.29 Southern Tie-in

- (a) The Contractor must tie the southern end of the Main Carriageway into the existing northbound and southbound carriageways. The tie-in shall be designed and constructed in accordance with the requirements of the Deed and minimise the construction of infrastructure (including line-marking and wearing course) that may become redundant during the future construction of the Stage 3 South Upgrade of The Northern Road (refer section 5.25 (Future Works), Scope of Works and Technical Criteria). The tie in must incorporate:
  - (i) Complete construction of the Main Carriageway north of Chainage 0 (including the minimum configuration requirements provided in Table 9-1 (Minimum Configuration Requirements) of Appendix 9 (Geometric Performance and Design Requirements) of the Scope of Works and Technical Criteria, to allow future connection to the Stage 3 South Upgrade of The Northern Road at Chainage 0.

1. With the exception of the final wearing course which shall not be placed between Chainage 0 and Chainage 150.
  2. A raised median should not be provided between Chainage 0 and Chainage 100, however the median pavement in this area must be designed to meet the traffic criteria in accordance section 9 (Traffic Criteria - Main Carriageway), of Appendix 12 of the SWTC.
- (ii) Line marking to tie-in into the existing northbound and southbound carriageways; and
- (iii) Signposting to tie-in into the existing northbound and southbound carriageways.

## 6 Property Works, Local Road Works and Service Works

---

### 6.1 Property Works

- (a) The Contractor must carry out all Property Works arising from the Contractor's Work including work as may be necessary to satisfy RMS obligations arising from the Environmental Documents and property acquisitions within the boundaries of private properties and land controlled by Authorities.
- (b) The Contractor must repair any damage to property caused by the Contractor's Work as soon as practicable and at no cost to the owner or occupier of the relevant property. The property must be reinstated to a condition at least equivalent to the condition it was in immediately prior to the occurrence of the damage.
- (c) The Property Works must be designed, constructed and implemented to the standards specified in the deed or, in the absence of any such specification, to reasonable engineering standards and must be fit for their intended purpose and capable of performing without deterioration under normal usage conditions. Access to properties from roads within the Works must be in accordance with the requirements of all relevant Authorities and property owners.
- (d) The Contractor must provide notice to the owner and occupier of the relevant property where Property Works are to be carried out to obtain access prior to commencing any Property Works.
- (e) The Contractor must ensure that RMS has access to properties affected by the Property Works at all times while the Contractor has access to the relevant property.

### 6.2 Local Road Works

- (a) The Contractor must carry out the modification, reinstatement and improvement of Local Roads as described in section 2.3 of this SWTC.
- (b) The Local Road Works must be carried out in accordance with the standards and requirements specified in this SWTC and must be in accordance with the requirements of all relevant Authorities and RMS.
- (c) The Contractor must carry out the Local Road Works in such a way that it minimises delay and disruption to local and through traffic, including pedestrians, pedal cyclists and public transport services, and must maintain access to and minimise disruption to affected businesses, properties and land throughout construction. Appropriate signposting must be provided to assist safe movements and to demonstrate access arrangements.
- (d) The Contractor must communicate its planned processes, solutions and program to the tenants, occupiers and owners of properties that have the potential to be affected by Local Road Works.
- (e) The form and finishes of footpaths, land, public areas, street furniture and landscape areas must be constructed at least to the standards specified in Appendices 15 and 31 of this SWTC.

### 6.3 Service Works

- (a) The Contractor must identify all the existing and redundant Services potentially affected by the Contractor's Work to determine requirements for adjustment, relocation, protection, support, modification, enhancement, disconnection or removal of these Services. This must be undertaken in consultation with the relevant Service owner or Authority.
- (b) The Contractor must identify all Services required for the Contractor's Work, Project Works and Temporary Works and must do all things necessary to provide and/or connect to such Services.
- (c) The Contractor must investigate, adjust, protect, support, relocate, enhance, provide, connect to and / or remove all existing and redundant Services that are affected by the Contractor's Work or required for the Contractor's Work or for the operation and maintenance of the Project Works, whether or not the existence or extent of the existing or redundant Services were known prior to the execution of the deed.
- (d) The Contractor must ensure that there are no unplanned disruptions to Services resulting from the Contractor's Work and that planned disruptions are minimised. The Contractor must advise local residents and businesses prior to any disruption of any Service.
- (e) The Contractor must arrange, coordinate and manage the adjustment, relocation, protection, support modification, enhancement, disconnection or removal of all Services affected by the Contractor's Work, Project Works and Temporary Works and the provision and connection of Services in consultation with the relevant Service owner or Authority. The Contractor must ensure that the requirements of each Service owner or Authority are met. The Contractor must obtain written notice from the relevant Authority in respect of all works to and around any Service that those works are complete, pursuant to clause 16.8(a)(i)A of the deed.
- (f) The Contractor must approach all relevant Service owners and Authorities to determine what allowance they require for provision of future Services on or in any of the proposed Project Works structures. If so, the Contractor must adequately provide for such future Services and advise RMS of such provisions unless directed otherwise by RMS' Representative.
- (g) The Contractor must regularly inform RMS Representative of the status of the Service owner or Authority arrangements and must arrange for RMS Representative to attend Service owner or Authority meetings as may be required from time to time
- (h) Permanent access must be provided to all Services and to all provisions for future Services (referred to in section 6.3(f) above) for maintenance purposes. Maintenance access to Services and to and along Services easements must not be provided from the Main Carriageway. Maintenance accesses must be located so that maintenance work does not impact traffic on the Main Carriageway.
- (i) Permanent location markers must be provided as required by the relevant Service owner or Authority. As constructed details of the locations of Services must be provided to RMS Representative on completion of each section of the Project Works.

- (j) The Contractor must develop a three dimensional model showing the existing and proposed Services and the Substantial Detailed Design. The Contractor must use the three dimensional model to identify and remove any conflicts.
- (k) The Contractor must undertake all survey work required by the relevant Service owner or Authority to allow Services which are adjusted, modified, relocated, enhanced, provided or connected by the Contractor to be handed over to Service owners and Authorities.
- (l) All Services exposed to view as a consequence of the Contractor's Work, must be permanently concealed in a manner consistent with the Contractor's urban design and landscape design prepared in accordance with the deed (including this SWTC).
- (m) Further to the requirements of clause 5.1(a)(iii) of the deed, the Contractor must pay all fees, levies and the like required by Service owners and Authorities related to the investigation, adjustment, relocation, protection, support, modification, enhancement of infrastructure related to Services which are affected by the Contractor's Work, Project Works and Temporary Works and the provision and connection of Services.



## 7 Construction

---

### 7.1 General

The Contractor must construct the Project Works and the Temporary Works in a manner and to standards which meet the requirements of the deed, including this SWTC.

### 7.2 Work methods

Without limiting the requirements of the deed, the work methods used by the Contractor in carrying out the Contractor's Work must result in the use and application of materials and workmanship which, as a minimum, comply with RMS D&C Specifications and Australian Standards.

### 7.3 Quality of material and workmanship

All workmanship and materials must be of the quality necessary to meet the requirements of the deed.

### 7.4 Working Hours

- (a) Subject to sections 7.4(b) and (c) below, working hours must be in accordance with the Environmental Documents.
- (b) Without limiting the requirements of the deed, the Contractor must obtain all necessary Approvals from the Environment Protection Authority and any other relevant Authority in order to carry out any work outside the working hours identified in the Environmental Documents and must provide a copy of all Approvals to RMS prior to the commencement of such work.
- (c) Except in emergencies in the interest of safety or to protect life or property, work must not be executed outside of the working hours in the Environmental Documents or any other working hours approved by the relevant Authority. In such emergencies the Contractor must promptly notify affected residents and must immediately notify RMS of the circumstances giving rise to any emergency work undertaken outside of the approved working hours and must confirm the advice in writing as soon as practicable.

### 7.5 Special events

- (a) A special event is a local or regional event which generates increased traffic volumes, reduces traffic speed or lowers the capacity of the road network.
- (b) Where special events are expected to generate additional vehicle or pedestrian traffic in any areas directly or indirectly affected by the construction of the Project Works or Temporary Works, the Contractor must cooperate with RMS Representative and other Authorities to facilitate traffic and pedestrian flows on the existing road network or through the Construction Site.

## 7.6 Advertising and signs

- (a) All temporary signs must be maintained in good condition for the full period of display and must be removed no later than the Date of Construction Completion or when directed by RMS Representative.
- (b) The Contractor must supply and install six (6) Building Our Future signs on the approaches to the Site. The project signs must be located as directed by RMS Representative. RMS will supply sign designs similar to those described in Appendix 26 of this SWTC, for installation by the Contractor.
- (c) The Contractor must supply and install six (6) project induction signs on the Construction Site or on the existing surrounding road network. The information signs must be located as directed by RMS Representative. RMS will supply project information sign designs similar to those described in Appendix 26 of this SWTC, for installation by the Contractor.
- (d) The Contractor must provide a minimum of six (6) trailer mounted variable message signs (which comply with RMS D&C No. P3074A) on the Construction Site from the start of any construction activity on the Construction Site until the Date of Construction Completion. The signs must be used to aid traffic safety and delay management and to provide information to road users.
- (e) No advertising is permitted by the Contractor on or near the Construction Site without the approval of RMS Representative. RMS may install signage at its own discretion on or near the Construction Site.

## 7.7 Stockpiling of materials

- (a) The Contractor must make its own arrangements for temporary or permanent stockpiles of earthworks materials arising from or in connection with the Contractor's Work.
- (b) Materials which are surplus to or are not suitable for incorporation in the Project Works must be properly disposed of outside the Site and Local Road Works Areas. Stockpiles located on land outside the Site and Local Road Works Areas are subject to the land owners and occupiers written consent, compliance with the Law, consent of relevant Authorities and compliance with the Environmental Documents.
- (c) Stockpiles must not be placed in drainage lines, channels or paths or in locations that will restrict or interfere with property accesses and in areas that are subject to flooding.

## 7.8 Not Used

## 7.9 As constructed documentation

The Contractor must provide RMS with the as constructed information required by Appendix 24 of this SWTC.

## 7.10 Construction vehicle loads

- (a) The Contractor must comply with the requirements of the Roads Act 1993 when operating vehicles on public roads.

- (b) The Contractor may operate vehicles with axle loads in excess of the requirements of the Roads Act 1993 (NSW) within the Construction Site subject to the following conditions:
- (i) the operation of vehicles with axle loads that are above legal limits must be limited to vehicles that remain within the Site and Temporary Areas;
  - (ii) the vehicles must not be permitted to travel along or across any existing pavement or over any structure unless the pavement or structure has been designed to carry the vehicle or has been otherwise protected from damage; and
  - (iii) the operation of vehicles with excess axle loads, with the exception of purpose designed compaction equipment, is not permitted on any partially or fully completed pavement work.

## 7.11 Temporary site facilities

- (a) The Construction Site must be maintained in a clean and tidy manner throughout the duration of the Contractor's Work. The extended storage of rubbish or loose items on the Construction Site or elsewhere is not permitted.
- (b) Site sheds must be "as new" and must be maintained in excellent condition. Site facilities must be established at locations and positions that minimise the impact on adjoining properties. All facilities utilised for the purpose of the Contractor's Work must be sited, constructed and maintained to meet the requirements of RMS and relevant Authorities.
- (c) The Contractor must install and maintain temporary fencing and hoardings on the Site boundaries, any Local Road boundaries and at other locations as necessary to provide for safety and security in the performance of the Contractor's Work and to prevent motorist distraction. The fences must be erected prior to work commencing in the affected areas.
- (d) The Contractor must establish, provide and maintain the RMS facilities detailed in Appendix 22 of this SWTC for use by RMS Representative and other personnel. RMS site facilities must adjoin the Contractor's main site administration facilities. RMS site facilities must be available for occupation and use on or by the date that the Contractor's main site administration facilities are available for occupation until four months after the Date of Construction Completion.

## 7.12 Site restoration, regeneration and planting

- (a) The Contractor must reinstate the Construction Site and undertake and complete its urban design and landscaping works progressively as each part of the Project Works and Temporary Works is completed. Without limiting the preceding sentence, all such reinstatement work, except that at the site of RMS site facilities, must be completed as a condition precedent to Construction Completion.
- (b) The Contractor must undertake regeneration works and planting progressively as each part of the Project Works and Temporary Works is completed. The regeneration works and planting must be in accordance with the requirements of RMS D&C specifications and must comply with the Contractor's urban and landscape design in Appendix 31 of this SWTC.

- (c) All parts of the Construction Site and any land outside the Construction Site which has been occupied by the Contractor for the purpose of the Contractor's Work, including storage and site facilities, must be reinstated to a condition at least equivalent to that existing immediately before that occupation by the Contractor.
- (d) The Contractor must:
  - (i) prepare a landscape works program detailing all landscape implementation actions, including:
    1. vegetation clearance and protection;
    2. ground preparation;
    3. plant sourcing;
    4. seed collection;
    5. seeding and planting; and
    6. maintenance and landscape management;
  - (ii) ensure that the landscape design is implemented and maintained;
  - (iii) ensure planting is completed on time, thrives and achieves design objectives; and
  - (iv) prepare landscape progress reports in accordance with Appendix 24 of this SWTC.

### **7.13 Discharge water quality**

- (a) Water to be discharged from the Project Site and Temporary Areas must not be directed to the stormwater system unless it meets NSW Environment Protection Authority requirements.
- (b) The Contractor must monitor the quality of water discharged from the Construction Site. All water to be discharged from the Construction Site must be directed to holding tanks or ponds for treatment.

### **7.14 Maintenance during construction**

- (a) As a part of the Contractor's Work and except as identified in section 7.14(e)(iii), the Contractor must maintain and repair, from the commencement of Construction until the Date of Construction Completion:
  - (i) the Project Works when in use by traffic and by members of the public;
  - (ii) the Temporary Works when in use by traffic and by members of the public;
  - (iii) all existing road infrastructure within the Construction Site;
  - (iv) all other areas and infrastructure affected by the Contractor's Work.
- (b) The Contractor must ensure that all infrastructure, assets, facilities, amenities and areas identified in subsection (a) above are at all times fit for their intended purpose, including being clean and, tidy and in a condition that satisfies the required functionality, performance and safety requirements for the operation of such items of infrastructure, assets, facilities, amenities and areas.

- (c) Prior to commencement of Construction of the Project Works and/or Temporary Works, the Contractor must undertake a preconstruction survey to record the condition of the existing road and all existing infrastructure. The survey inspections must be carried out jointly with RMS Representative and relevant Authorities and in accordance with the inspection requirements detailed in this section 7.14.
- (d) The maintenance and repair of the infrastructure, assets, facilities, amenities and areas identified in section 7.14(a) must:
- (i) include the identification, planning, programming, design, scheduling, delivery, recording and reporting on all the required maintenance and repair activities;
  - (ii) as a minimum and subject to section 7.14(d)(iii) below, maintain functional performance of the infrastructure, assets, facilities, amenities and areas identified in section 7.14(a) above to the condition and standards that existed at the time of the preconstruction survey required by section 7.14(c) of this SWTC; and
  - (iii) for the infrastructure, assets, facilities, amenities and areas identified in Appendix 25 of this SWTC, be performed in accordance with the requirements of Appendix 25 of this SWTC.
- (e) The Contractor must:
- (i) ensure that only appropriately trained and skilled personnel are engaged on any maintenance and repair activities;
  - (ii) provide sufficient resources to satisfy the requirements of Appendix 25 of this SWTC, including the specified intervention levels and response times; and
  - (iii) undertake maintenance and repair work, 24 hours per day, seven days per week, as necessary, except for maintenance work necessitated by a Force Majeure Event or work to be performed by others. The following work may be performed by others:
    1. urgent responses to sudden events to prevent any occurrences which may compromise the safety of any person or property. For the avoidance of doubt, the urgent response work performed by others does not include the prevention of further damage to the Project Works and/or Temporary Works or the protection or repair of the Project Works and/or Temporary Works; and
    2. removal of abandoned vehicles.
- (f) Where damage is caused directly to the infrastructure, assets, facilities, amenities and areas identified in section 7.14 (a) above by a Force Majeure Event or a traffic incident:
- (i) RMS Representative may, but is not obliged to, direct the Contractor in writing to carry out remedial work with respect to the damage (Force Majeure maintenance work);
  - (ii) the Contractor must comply with any direction of RMS Representative to carry out Force Majeure Maintenance Work; and
  - (iii) the Contractor will be entitled to payment for the performance of the Force Majeure maintenance work in accordance with clause 15 of the deed.

- (g) The Contractor must undertake periodic inspections of the infrastructure, assets, facilities amenities and areas identified in section 7.14 (a) above to ensure that these infrastructure, assets, facilities, amenities and areas are maintained at all times in accordance with the requirements of Appendix 25 of this SWTC.
- (h) Inspections must be carried out periodically to ensure that the Contractor maintains the infrastructure, assets, facilities, amenities and areas identified in subsection (a) above at all times in accordance with the requirements of Appendix 25 of this SWTC.
- (i) Inspections must be undertaken, as a minimum, at the frequencies identified in Appendix 25 of this SWTC and at any greater frequencies that are required to ensure that the Contractor complies with all the requirements of this SWTC.
- (j) Within four weeks prior to the anticipated Date of Construction Completion, the Contractor must undertake a survey to record the condition of the existing road and bridge infrastructure described in section 7.14(a) to determine compliance with section 7.14(d) above. The surveys must be carried out jointly with RMS Representative and relevant Authorities and in accordance with the inspection requirements detailed in this section 7.14. Compliance with section 7.14(d) above is a condition precedent to Construction Completion.
- (k) Inspections must include:
  - (i) incident inspections, which are generally visual, to assess the condition of infrastructure, assets, facilities, amenities and areas identified in section 7.14(a) above after any incident likely to have had a detrimental effect on the infrastructure, assets, facilities, amenities and areas; and
  - (ii) defect identification inspections, to identify defects in any of the infrastructure, assets, facilities, amenities and areas identified in section 7.14(a) above. These inspections are visual and are typically performed by designated inspectors on foot, or from a vehicle. However, any person may identify a Defect at any time, in the course of performing the Contractor's Work.
- (l) The Contractor must develop standard report forms and check lists for the recording of all inspections. These forms of records of inspections must include the following information:
  - (i) nature and extent of any defects present;
  - (ii) appropriate maintenance activity (including estimated duration);
  - (iii) required timing for any maintenance activity;
  - (iv) location of defect (segment, carriageway code, distance from start of segment and offset from centreline);
  - (v) inspector(s) name and position; and
  - (vi) date and time of inspection.
- (m) The Contractor must develop and implement a system to:
  - (i) maintain a current record of all the infrastructure, assets, facilities, amenities and areas identified in section 7.14 (a) above to be maintained and repaired;
  - (ii) maintain a record of the current and historical condition of the infrastructure, assets, facilities, amenities and areas identified in section 7.14(a) above;

- (iii) maintain a record of the quantity, location, date and type of any maintenance or repair work performed by, or programmed to be performed by the Contractor;
- (iv) maintain the inspection records to enable reporting on:
  - 1. outstanding repairs;
  - 2. scheduled repairs; and
  - 3. timeliness of actions in relation to the nominated response times; and
- (v) ensure reporting to RMS Representative, at least quarterly, on the performance standards by analysis of the specific condition and/or Defect information recorded;
- (n) Summary records on the maintenance and repair activities must be provided as part of the monthly progress reports required by this SWTC.
- (o) The contractor must maintain all ITS systems and traffic facilities in accordance with *QA Specification R300 - ITS Maintenance Services - General Requirements*.

## 7.15 Security during Construction

- (a) The Contractor must secure the Site and Temporary Areas with screening to prevent motorist distraction and with fencing to prevent unlawful access.
- (b) The fencing and screening must be made from “as-new” materials and must at all times be maintained in a neat and tidy condition and be sympathetic with the surroundings.

## 7.16 Acid Sulphate Soils and Rocks

The Contractor must treat and dispose of any acid sulphate soils and rocks in accordance with:

- (a) RTA Guidelines for the Management of Acid Sulfate Materials: Acid Sulfate Rock and Monosulfidic Black Ooze, April 2005;
- (b) NSW Acid Sulfate Soil Management Advisory Committee - Acid Sulfate Soils Manual, August 1998;
- (c) NSW Environment Protection Authority - Assessing and Managing Acid Sulphate Soils, June 1995;
- (d) Environment Protection Authority, Victoria - Information Publication 655 - Acid Sulphate Soil and Rock, July 2009; and
- (e) the requirements of the deed.

## 7.17 Road conditions

- (a) The Contractor must ensure that any road, footpath or cycleway which is open to the public is at all times free of mud, dirt, deleterious material or debris arising from the Contractor’s Work.
- (b) Any spillage or build-up of such material or debris must be cleaned up promptly and any damage caused by such an occurrence must be immediately repaired.

## 7.18 Traffic safety and traffic management

- (a) Work practices and equipment must provide for the safe passage of all road users, including public transport, pedestrians and pedal cyclists, at all times during the performance of the Contractor's Work.
- (b) The Contractor's use and care of roads within the Site must be approved by the relevant Authority.
- (c) As a minimum, all traffic management must comply with the Environmental Documents and RMS D&C G10, traffic management practices set out in relevant Australian Standards, the "RTA Traffic Control at Worksites Manual" and the Traffic Management and Safety Plan.
- (d) The Contractor must define the traffic and safety management responsibilities of all relevant construction and maintenance staff in regard to all aspects of construction and maintenance.
- (e) The Contractor must carry out road safety audits of all temporary traffic management proposals.
- (f) The Contractor must carry out regular inspections of all traffic control measures, including traffic control devices, at a minimum frequency of twice per day, including both mornings and evenings of shifts, weekends and public holidays.
- (g) The Contractor must obtain approval from RMS Representative and relevant Authorities prior to implementing any traffic adjustments or interruption. Further to the requirements of Appendix 27 of this SWTC, traffic changes or lane closures which are considered by RMS as likely to cause unnecessary delay or disruption to traffic will generally not be permitted.
- (h) Traffic control plans must be issued to RMS Representative for approval and must be regularly reviewed and modified in conjunction with RMS Representative and traffic management personnel and emergency services personnel. Traffic control plans must include as a minimum:
  - (i) comprehensive details of all traffic movements on the Construction Site and on areas affected by the Contractor's Work;
  - (ii) Arrangements that reflect the current site arrangements;
  - (iii) Locations of any proposed traffic controllers;
  - (iv) Locations of all traffic control devices clearly identifying the distance of the devices to the start of the work site;
  - (v) Location of any speed zones proposed;
  - (vi) Lane widths provided on any temporary diversions or road ways; and
  - (vii) Detail the location of any traffic control devices in relation to the permanent signposting regime.
- (i) RMS Representative may order removal, or cessation of any activity, which causes delay to traffic or threatens the safety of the public, notwithstanding that approval has been given to the traffic change.



- (j) All activities associated with the Contractor's Work must be planned to avoid delays and detours that will inconvenience motorists and other road users or interfere with traffic during periods of heavy traffic flows. Prior to undertaking any activity that will inconvenience motorists or interfere with traffic, the Contractor must prepare a traffic control plan that addresses the movement of traffic affected by the Contractor's Work.
- (k) Details of proposed changes to traffic flow, vehicle and pedestrian / cycle movements and arrangements for control of traffic on arterial roads must be to the satisfaction of RMS Representative and must be submitted in writing at least fourteen days before the proposed change. Advertising, in accordance with section 7.6 of this SWTC, must be undertaken to advise the local community and road users of the proposed changes.
- (l) Temporary pavements must comply with requirements of Annexure G10/A of RMS D&C G10.
- (m) Traffic control plans for any activity associated with the Contractor's Work, including the use of temporary warning signs, must be developed on the basis of the following documents and in the order of precedence listed:
  - (i) RMS D&C G10;
  - (ii) "RTA Traffic Control at Worksites Manual";
  - (iii) AS 1742.3 - 2009 "Manual of uniform traffic control devices - Traffic control for works on roads"; and
  - (iv) Traffic Management and Safety Plan.
- (n) All emergency work for incidents must be covered by Traffic Management and Safety Plans, to the satisfaction of the relevant Authorities. The Contractor must ensure that appropriate resources are available and are able to respond as quickly as possible to any incidents that may occur during the performance of the Contractor's Work.
- (o) The Contractor must maintain all construction vehicles to prevent any loss of fuels, lubricants, loads or other substances, whether in the form of dust, liquids and solids or otherwise, and also must cover loads as required to prevent loss / nuisance.
- (p) The Contractor must install, maintain and utilise wheel wash facilities or other devices to ensure that no mud, dirt or other material is deposited onto any road which is open to the public.
- (q) Vehicles involved in the Contractor's Work must only enter, operate within or exit from a traffic flow in a manner which does not endanger the public and under suitably designed and appropriate traffic control measures. Accesses to and from the Construction Site must be designed to minimise the potential increase in risks associated with the movements of the vehicles using the accesses.
- (r) Intersections used by the Contractor for vehicles to enter or leave the Construction Site and at existing intersections where the traffic volumes are increased as a result of the Contractor's Work, must satisfy the following requirements:
  - (i) the capacities of all intersections must be maintained, as a minimum, at the levels that existed at the original intersection prior to the commencement of Construction for the duration of the Contractor's Work;

- (ii) the intersection treatments must comply with the requirements of "RTA Supplements"; and
- (iii) deceleration and acceleration lanes associated with access points for construction vehicles must have sufficient storage lengths to ensure that construction vehicles using these access points do not cause delays to users of the M4 Motorway during the performance of the Contractor's Work.

## **7.19 Road occupancies, detours and closures**

- (a) The Contractor must obtain approval for all road occupancies, detours and closures in accordance with the deed. Road occupancies must comply, as a minimum, with the requirements of Appendix 27 of this SWTC. RMS may elect to prohibit road or lane closures due to special events or other high traffic demands.
- (b) When any unplanned closure of a lane or a restriction in the flow of traffic occurs as a consequence of the Contractor's Works, the Contractor must immediately advise RMS Representative of the nature of the closure or restriction and of the schedule for reopening of the lanes. The Contractor must take all required measures to open the lane as quickly as possible.

### **7.19.1 Compliance with Traffic Instructions during Construction**

- (a) The Contractor must comply with any traffic direction or instruction given by a relevant Authority (including the New South Wales Police Force) or RMS Representative in respect of any traffic control proposal or arrangement.
- (b) A relevant Authority (including the New South Wales Police Force) or RMS Representative may, at any time, instruct the Contractor to re-open any traffic lane or shoulder to traffic without delay, whether or not that lane or shoulder was closed by prior agreement. The Contractor must immediately comply with such instructions.

### **7.19.2 Bicycle Provisions**

The Contractor must plan and execute the Contractor's Work to ensure safe bicycle conditions are maintained at all times during the Contractor's Work. The Contractor must comply with Austroads Guide to Traffic Engineering Practice - Part 14 - Bicycles in relation to the measures to be taken to ensure safe bicycle conditions.

### **7.19.3 Transport of over-dimensional loads**

Transport of over-dimensional loads, including bridge girders and other bridge components, must be undertaken at times approved by the New South Wales Police Force and RMS and in a safe manner and at times which cause the least disruption to traffic. The Contractor must develop strategy that details the supply and transportation of over-dimensional loads as part of the Traffic Management and Safety Plan.

TMC will not issue any Road Occupancy Licences for obstructions, restrictions, closures and/or interferences associated with the free flow of traffic on any lane or shoulder of the Main Carriageways or the Works as a consequence of the transportation of over-dimensional loads during low visibility and light conditions at night.

#### **7.19.4 Traffic Controllers**

- (a) The Contractor must ensure that all persons who are required to perform the duties of a traffic controller undertake the relevant training package(s) and are examined and certified as competent to perform their respective traffic controller duties including:
  - (i) Package T89.4 Guidelines for the Selection of Traffic Controllers; and
  - (ii) Package T89.5 So You Think You are Going to be a Traffic Controller?

#### **7.19.5 Design and Monitoring**

- (a) The Contractor's temporary traffic management design must include:
  - (i) a summary of temporary traffic management design and performance requirements and details of how these requirements have been addressed, including the requirements in:
    - the Project Plans including the Traffic Management and Safety Plan;
    - this SWTC;
    - Appendix 27 of this SWTC; and
    - RMS D&C G10.
  - (ii) analysis of the traffic volumes, traffic speeds, traffic flow and peaks of all affected roads;
  - (iii) determination of the level of service of all temporary traffic arrangements including intersections and merges; and
  - (iv) investigation and monitoring requirements to establish and verify design criteria and level of service.
- (b) The Contractor must monitor, and report to RMS monthly, the impact of temporary traffic management on traffic volumes, traffic speeds, traffic flow and peaks of all affected roads. Where monitoring identifies that any temporary traffic management measures do not comply with the temporary traffic management design and performance requirements, including the requirements in the documents identified in section (i) of subsection (a) above or the Environmental Documents, the performance deficiency must be treated as a nonconformity to be addressed within the Contractor's quality system.

#### **7.20 Traffic accidents on worksites during Construction**

- (a) In the event of a traffic accident occurring within the Construction Site or at other locations affected by the Contractor's Work, the Contractor must immediately notify RMS Representative of the occurrence of the accident, record its knowledge of the facts and photograph the approach to the accident site, including the location of all safety devices and signs, as soon as possible after the accident. A report with this information must be forwarded to RMS Representative within two (2) days of the occurrence of the accident.
- (b) During construction, the Contractor must nominate a breakdown and towing service which must, where agreed by the vehicle owner or as permitted by Law, remove

vehicles which obstruct the free flow of traffic. The towing service must be able to respond and attend site within 20 minutes of being notified of an incident.

## **7.21 Construction Noise**

- (a) Without limiting the requirements of the deed or section 7.21(c), the Contractor must take all reasonable action to reduce the emission of construction noise and construction traffic noise, including minimising excavation by hydraulic hammer and its impacts to the extent reasonably practical.
- (b) The Contractor must ensure that all site vehicles and vehicles which frequent the location of construction of the Project Works or Temporary Works, and which require reversing alarms, are fitted with an alarm which provides a noise level appropriate to varying background noise levels.
- (c) The Contractor must take all measures necessary to comply with the noise constraints contained in the Environmental Documents, including the erection of appropriate temporary noise barriers.

## **7.22 Access to Public Roads**

The Contractor must arrange access to public roads for the purposes of performing the Contractor's Work in accordance with Appendix 27 of this SWTC.

## **7.23 Access for Contractor's Work**

The Contractor must minimise its use of Local Roads which contain or are adjacent to residences.

## **7.24 Fire precautions**

- (a) The Contractor must not light fires within or adjacent to the Construction Site.
- (b) The Contractor must ensure that a supply of water for firefighting purposes is available at the Construction Site during periods of high to extreme fire danger.
- (c) Spark arresters must be fitted to all items of plant used during any prohibition periods or any other period proclaimed under the Rural Fires Act 1997 (NSW).
- (d) The Contractor must not undertake cutting, welding, grinding or other activities which have the potential to generate fires on total fire ban days.

## **7.25 Property access and services**

- (a) The Contractor must ensure that suitable access, to a standard at least equivalent to the existing access, is maintained at all times to all properties and between severed portions of properties. Appropriate detours must be arranged and provided.
- (b) The Contractor must comply with section 7.25(a) above unless it has obtained approval otherwise from all persons having legal access to the affected property.
- (c) The Contractor must make all arrangements with all affected persons in relation to the impacts and consequences of the interruption of any Services.

- (d) The Contractor must provide access to properties with appropriate traffic management in terms of signage, segregation from the construction works and traffic control at points where the access road crosses the Construction Site.

## 7.26 Protection and preservation of fauna

The Contractor must protect and preserve fauna in accordance with the requirements of the deed, the Environmental Documents and Appendix 4 of this SWTC.

## 7.27 Construction completion report and pavement report

The Contractor must prepare and submit to RMS Representative, and the Project Verifier a construction completion report and pavement report in accordance with the requirements of Appendix 24 of this SWTC.

## 7.28 Project Testing

- (a) The Contractor must establish a laboratory or engage the services of an existing laboratory, in either case located within 30 minutes travel time by road of the Construction Site, for the purposes of conducting project testing (**Project Testing**).
- (b) For the purposes of this SWTC Project Testing comprises the following testing activities, including sampling and testing undertaken for the purposes of retesting, auditing or testing for the Contractor's convenience:
  - (i) compaction and moisture testing of layers of earthworks (including foundation preparation and backfill for structures, culverts and pipes) and pavements;
  - (ii) testing properties of materials and layers for earthworks, backfill and pavements identified in section 7.28(b)(i);
  - (iii) testing properties of unbound and bound base and subbase materials;
  - (iv) testing concrete constituent materials and concrete mixed on the Construction Site or off the Construction Site;
  - (v) testing surface characteristics, including deflection testing of earthworks and pavement layers; and
  - (vi) testing proportion and / or spread rates of additives and strength of stabilised earthworks and pavement layers.
- (c) Project Testing must conform to the requirements in Annexure Q/L of RMS D&C Q6 and must only be carried out by the Contractor (including Subcontractors and suppliers) using a laboratory:
  - (i) that is independent as defined by Annexure Q/L of RMS D&C Q6; and
  - (ii) with appropriate registration under RMS pre-qualification and registration procedures.
- (d) The Project Testing Laboratory must:
  - (i) operate a laboratory information management system (LIMS) capable of promptly providing records in spreadsheet readable electronic format for all routine quality assurance testing undertaken as a part of the Contractor's Work;

- (ii) be responsible for and have sole control of the LIMS, including all calculations for which it has no other record;
- (iii) provide RMS Representative and the Project Verifier with access to all data for audit and analysis purposes;
- (iv) include all calculations undertaken as a part of the testing in the LIMS;
- (v) comply with AS/ISO 17025 clause 4.13.2 and National Association of Testing Authorities (NATA) supplementary requirements. Audit trails and electronic equivalents to record the required details of all changes to data must exist and be in operation. Separate written logs of changes to records are not acceptable;
- (vi) comply with the requirements NATA Supplementary Requirements for Accreditation (Construction Materials Testing) with respect to NATA Approved Signatories; and
- (vii) comply with AS/ISO 17025 clause 5.2.1.

## **7.29 Cement sampling**

Without limiting the Contractor's obligations in respect of testing, cement used in the Project Works and the Temporary Works must be sampled and submitted to RMS for testing in accordance with RMS D&C 3211.

## **7.30 Design resources**

- (a) The Contractor must provide sufficient design resources during construction to ensure effective monitoring and clarification of design issues, review of design changes and release of Hold Points. The Contractor must provide, as a minimum, on the Construction Site:
  - (i) a suitably qualified and experienced road design representative (Road Design Representative) from the commencement of Construction until completion of all earthworks and pavement for the Works; and
  - (ii) a suitably qualified and experienced structures design representative (Structural Design Representative) from commencement of piling until completion of construction of the bridge over the M4 Motorway.

## 8 Community Involvement Obligations

### 8.1 General community involvement obligations

- (a) Further to the requirements of clause 1.3(a)(i) of the deed and without limiting the deed, the Contractor must, as a minimum, comply with the requirements of the NSW State Government and RMS guidelines, policies and the following Reference Documents (contained in Appendix 8 of this SWTC) in relation to its community relations obligations:
- (i) Privacy and Personal Information Protection Act 1998; (NSW);
  - (ii) NSW (Government) Advertising Handbook (December 2015);
  - (iii) RMS Project Communications Templates;
  - (iv) C2012-08 NSW Government Website Management.
  - (v) RMS Community Engagement and Communications - A resource manual for staff, October 2012
  - (vi) RMS Communications and Stakeholder Engagement Toolkit which contains communications templates that are kept up to date with the latest RMS branding and style guides;
  - (vii) "Roads and Maritime Services brand guidelines. March 2014" (or subsequent edition);
  - (viii) "Roads and Maritime Services Editorial Style Guide" March 2014 (or subsequent edition);
  - (ix) "Roads and Maritime Splice Brand Style Guide" April 2015;
  - (x) "Transport for NSW Use of Social Media Policy" 18 November 2013; and
  - (xi) "NSW Government Social Media Policy and Guidelines.
- (b) The Contractor must develop and implement a Community Involvement Plan, in accordance with the deed and Appendix 21 of this SWTC. The Community Involvement Plan must be based on the Initial Community Involvement Plan, which is attached as Appendix 40 of this SWTC. The Community Involvement Plan must ensure that community involvement by the Contractor meets the desired outcomes detailed in the delivery section of the RMS Communications and Stakeholder Engagement Toolkit and the "RMS Community Engagement and Communications - A resource manual for staff".
- (c) The Contractor must meet the reasonable needs and desires of the community and provide:
- (i) information on the project objectives, scope and timeframe and opportunities for input on the design and construction of the Project Works;
  - (ii) information on any of the construction investigations and activities that may affect them including work required outside the nominated working hours and noisy work;

- (iii) information regarding the issues raised in discussions with stakeholders and indirectly or directly affected landowners; and
  - (iv) information on the progress of the Contractor's Work, significant milestones, design changes, changed traffic conditions including temporary detours and temporary road closures, and other matters that could either affect or concern the community
  - (v) the contractors contact information including a toll-free telephone number and postal address.
- (d) The Community Involvement Plan must provide specific information in relation to community involvement and engagement activities during:
- (i) the design development phase;
  - (ii) the construction phase;
  - (iii) the project opening phase; and
  - (iv) any period outside the above involving works such as defect corrections, and any works deferred by agreement.
- (e) The Community Involvement Plan must also include:
- (i) a listing of the community stakeholders potentially affected by the Contractor's Work and the potential impacts the Contractor's Work may have on the identified stakeholders, including the timing of those impacts. The list of community stakeholders must include, as a minimum, relevant councils, State and Federal MPs, emergency services, relevant public transport operators, relevant taxi services, freight and transport unions, local chambers of commerce, local businesses, local residents, property owners, Local Schools, Health Infrastructure and all sensitive receivers;
  - (ii) the level of involvement and engagement of community stakeholders for all of the Contractor's Work which may have impacts in the community, including the level of information to be provided and consultation activities to be undertaken by the Contractor;
  - (iii) a map that indicates the locations of all properties that are potentially impacted on by the Contractor's Work, which must identify all potential impacts the Contractor's Work may have on the identified community stakeholders, including the timing of those impacts;
  - (iv) a risk assessment and proposed actions to mitigate or minimise the impact of the Contractor's Work on these stakeholders;
  - (v) the external (i.e. community stakeholders) and internal communication protocols and procedures to manage and implement the Community Involvement Plan up to the Date of Construction Completion;
  - (vi) procedures for consulting and engaging with local businesses to ensure the concerns and issues of local businesses are identified, addressed and reviewed regularly as part of the risk assessment referred in section (iv) above, and the Contractor's strategy for resolving these concerns and issues and the controls to be implemented during the Contractor's Works;



- (vii) procedures for dealing with complaints and enquiries, including out of hours complaints and enquiries, and response requirements;
  - (viii) procedures for early notification to the community, the Project Verifier and the RMS Representative of Contractor's Work that may impact on the identified community stakeholders;
  - (ix) procedures for publicising the details of the Contractor's Work;
  - (x) procedures for training employees and subcontractors on the requirements of the Community Involvement Plan at induction sessions and regular tool box meetings; and
  - (xi) a crisis communications sub-plan.
- (f) The Contractor is responsible for overall management and coordination of community information and involvement.
- (g) RMS reserves the right to amend any public document generated by the Contractor.
- (h) The Community Involvement Plan must ensure that:
- (i) the local community is informed of decisions taken on the details of the Contractor's Work which will affect the community;
  - (ii) all relevant Authorities are informed of planned construction activities;
  - (iii) users of the affected road network are informed of planned traffic arrangements, including any temporary traffic switches or other activities resulting in likely delays. Users of the affected road network include emergency services, the road transport industry, public transport operators, driving community, cyclists and pedestrians;
  - (iv) affected and concerned local residents and local businesses are informed of all investigation and construction operations and the potential impact on residents;
  - (v) unless otherwise advised by the RMS Representative, the Contractor arranges and facilitates all group and public meetings and workshops relating to the Contractor's Work; and
  - (vi) the RMS Representative is informed of all community issues, consulted on all decisions affecting the local and wider (including driving) community, and invited to all sessions attended by members of the community. The Contractor must not commit to a specific date for a presentation or site tour to a community group without prior approval of the RMS Representative.
- (i) RMS Representative must be contacted immediately in relation to planned or unplanned local community protests that may arise during the Contractor's Work.
- (j) The Contractor must not release any information, in any form, regarding the Project Works, the Temporary Works or the Contractor's Work to any organisation or person without the prior approval of RMS Representative.
- (k) The Contractor must refer all enquiries from Federal, State and/or local government representatives to RMS Representative. Any briefings for the above representatives will be arranged by RMS Representative.

- (l) The Contractor must recognise and identify RMS's role in any promotional material or award submissions that it develops in relation to the Contractor's Work, the Project Works or the Temporary Works. All written material, including award submissions, on the project must be approved by the RMS Representative prior to publication.
- (m) If the Contractor produces a professional video, the video objectives, format and content must be as agreed with the RMS Representative. All proposed video content requires approval by the RMS Representative prior to commencing the video production.
- (n) The Contractor must provide a 24 hour toll free telephone service, for the period from eight weeks after the date of the deed until eight weeks after the Date of Construction Completion, for the community to report incidents and register complaints. The Contractor must also provide a continuously operated business hours telephone service for the community to obtain information, report incidents or register complaints.
- (o) During the period detailed in subsection (m) above, staff must receive and respond to telephone calls relating to the community reporting incidents and registering complaints.
- (p) The Contractor must ensure the availability of Community Relations Manager and/or support staff, 24 hours a day 7 days per week from the date of the deed until eight weeks after the Date of Construction Completion or any period outside the above involving works such as defect corrections, and any works deferred by agreement.
- (q) All communications activities are subject to RMS approval according to the timeframes specified in Table 8-1 (end of this section 8).

## **8.2 Personnel and resources**

### **8.2.1 Community Relations Manager and support staff**

- (a) The Contractor must provide a full-time Community Relations Manager and any necessary support staff from the date of the deed until eight weeks after the Date of Construction Completion. If the Community Relations Manager is not available, the Contractor must provide an alternative Community Relations Manager satisfactory to the RMS Representative.
- (b) The Community Relations Manager must be based on site full time.
- (c) The Community Relations Manager must be available for contact by community members and stakeholders and RMS staff to answer any questions and to address any concerns in relation to the Project Works, Temporary Work or the Contractor's Work.
- (d) The Community Relations Manager must have up-to-date information on:
  - (i) planned traffic arrangements, including any temporary traffic switches;
  - (ii) field investigations
  - (iii) planned construction activities; and
  - (iv) current landowner discussions with members of the Contractor's staff.

- (e) The Community Relations Manager will be responsible for community relations coordination and reporting including:
  - (i) coordinating responses to community and stakeholder complaints and enquiries;
  - (ii) coordinating the Contractor's input into Government reporting and correspondence, including Ministerial correspondence;
  - (iii) interface with the Transport Management Centre; and
  - (iv) coordinating site tours.
- (f) RMS will retain responsibility for direct contact and liaison with Members of Parliament and their staff, including the Minister for Roads and Freight and Minister for Transport. The Contractor will provide staff, information and advice as required to assist RMS in this capacity.

### **8.2.2 Community contacts database**

- (a) RMS will provide to the Contractor a copy of RMS's community contacts database (Consultation Manager™), in electronic format. The Contractor must maintain and input into this database from eight weeks after the date of the deed through to eight weeks after the Date of Construction Completion.
- (b) The Contractor must ensure that all affected and concerned local residents and businesses, property owners adjacent to the Project Works and Temporary Works, emergency services, relevant public transport operators, relevant road transport operators, and other key stakeholders are included in the database.
- (c) All interactions with stakeholders and the community including registers at staffed or public displays, letters, phone calls, emails or conversations in person must be recorded in the contact database within 24 hours of the interaction taking place.
- (d) The Contractor must provide registers at any staffed or public display locations and on the project website to enable the community to be included on the community contacts database.
- (e) The Contractor must provide stakeholder contact data to RMS upon request in a manageable format, such as Word or Excel. The data provided must analyse and identify trends including but not limited to:
  - (i) The frequency and location of issues and complaints raised by the community and stakeholders; and
  - (ii) The frequency, type and location of communication and community engagement activities.

## **8.3 Displays**

### **8.3.1 Community Information**

- (a) The Contractor will be responsible for the graphic design and supply of larger or semi-permanent display material including outdoor signage and hoarding, the Contractor must provide proofs to the RMS Representative at least 4 weeks prior to the proposed date of display of the material.

- (b) Any materials provided for display purposes by the Contractor must be in plain English, have layouts that comply with the requirements of “RMS Project Communication Templates” and “Branding Guidelines” and encourage and enable the public to inform themselves comprehensively about the Contractor’s Work. The display material must include, as a minimum:
- (i) The toll-free, 24 hour telephone number;
  - (ii) The Contractor’s postal address;
  - (iii) The Contractor’s email address;
  - (iv) Access information for temporary and permanent works, including pedestrian/cyclist access and temporary traffic arrangements;
  - (v) details of proposed urban and landscape treatments and designs, including concepts, cross section treatments, and perspective views and details;
  - (vi) details on significant structures or structures of interest to the community;
  - (vii) details on construction and operational water quality treatment;
  - (viii) information on noise and retaining walls and headlight screens, including artist impressions, and plans showing locations, details and finishes;
  - (ix) information on recent and upcoming community involvement activities, including photographs of site tours and school visits;
  - (x) information on measures to protect environmental and cultural features;
  - (xi) contact details for obtaining more information; and
  - (xii) other items of interest as identified by the RMS Representative.
- (c) Updated project display material must be provided monthly and when key project milestones are reached.

### **8.3.2 Public Displays**

- (a) The Contractor must establish limited duration public displays in accessible locations. Timing and venues for such displays must be nominated in the Community Involvement Plan. These display locations may include local council offices, libraries and other appropriate locations. The displays must be designed to update and inform the local community of the status of the Contractor’s Work and to describe significant events or changes in relation to the Contractor's Work.
- (b) The public displays must be held when significant milestones are achieved and if significant changes occur in the design or construction of the Project Works or Temporary Works or any aspect of the Contractor’s Work.
- (c) The public displays must accommodate the needs of members of the community from non-English speaking backgrounds.
- (d) The Community Relations Manager and other relevant Contractor’s personnel must staff the public displays as required by RMS.
- (e) The Contractor must participate with RMS in promotional displays associated with key local events and activities, including local fairs, festivals and exhibitions, as required by

- the RMS Representative. The Contractor must not participate in any promotional displays, local events or activities without prior approval of the RMS Representative.
- (f) The Contractor must prepare a mobile display kit for public display events, suitable and safe for use at indoor and outdoor events. The kit must include:
    - (i) mobile display banners, suitable for outdoor use;
    - (ii) brochure holders;
    - (iii) the latest printed community information material; and
    - (iv) community contact register and feedback forms.
  - (g) The Contractor will co-ordinate the graphic design component, format and layout of larger or semi-permanent display material, in consultation with RMS and subject to RMS approval of the production material. The Contractor must provide all materials for approval to the RMS Representative at least 4 weeks prior to the proposed date of display of the material.

## **8.4 Community information**

### **8.4.1 General**

- (a) The Contractor must keep the community informed of the Contractor's Work, the Project Works and the Temporary Works. Information to be provided to the community must as a minimum include:
  - (i) information on the progress of the Project Works and the Temporary Works;
  - (ii) urban design and landscaping;
  - (iii) work required outside the nominated working hours;
  - (iv) noisy works;
  - (v) traffic information including any traffic disruptions and restrictions including temporary detours and the temporary road closures;
  - (vi) a general description of the traffic information provided by TMC and the methods for accessing this information.
  - (vii) The toll-free, 24 hour telephone number;
  - (viii) the Contractor's postal address; and
  - (ix) the Contractor's email address.
- (b) Methods to keep the community informed must be appropriate for the level of information to be provided and the timeframe for the delivery of this information. Methods may include, but are not limited to:
  - (i) notifications and flyers;
  - (ii) door knocking;
  - (iii) advertisements in local and metropolitan newspapers and online;
  - (iv) radio advertisements;
  - (v) Australian Traffic Network alerts;

- (vi) variable Message Sign (VMS) boards including temporary VMS supplied by the Contractor and via TMC permanent VMS;
  - (vii) community update newsletters at key milestones and at regular intervals as agreed by the RMS Representative;
  - (viii) the project website;
  - (ix) visualisation tools (including artist's impressions)
  - (x) emails to persons and entities on community contacts database;
  - (xi) social media developed in accordance with the Transport for NSW Social Media Management Policy (January 2013) and approved by the RMS Representative;
  - (xii) banners on approved overhead structures; and
  - (xiii) via traffic alerts on livetraffic.com.
- (c) The Contractor must notify and consult local residents and businesses about construction activities that will affect access or otherwise significantly disrupt use of their residences and premises.
- (d) Notice must be given at least 5 Business Days before commencing work affecting the residences and premises and must advise the nature of the work, why it is necessary, indicate the expected duration plus any changes to arrangements for traffic, property access or parking arrangements (as per section 8.4.2 of this SWTC). In addition to the Project's toll-free, 24 hour telephone service, contact details for Contractor's staff responsible for particular activities may also be provided.
- (e) Communication packages relating to key project milestones or major impact construction work involving traffic-switches, ramp-closures, 24 hour, high-impact work or other work involving significant impact to the traffic network and nearby community must be submitted to RMS at least 20 Business Days before the commencement of work. Unless specified by RMS, these communication packages should include:
- (i) a work/event specific communication implementation plan including a description of the work/event, the key impacts and issues, key messages, key stakeholder and community audiences and the communication activities and material that will be used to communicate with these audiences; and
  - (ii) final drafts of all communication material prepared for the work/event including web-text updates, flyers, advertising artwork and scripts, door-knocking scripts, stakeholder letters, VMS scripts and signage.
- (f) Unless stated otherwise, all material proposed to be used for community information must be submitted to the RMS Representative as a final draft for approval a minimum of 10 Business Days prior to the proposed print date in the case of printed media, and a minimum of 10 Business Days prior to the proposed distribution date for other types of media. Proposed distribution dates and background information must be provided on covering information accompanying each approval submission.
- (g) The Contractor is responsible for the print and distribution of printed communication materials.

### 8.4.2 Notifications

- (a) During construction, the Contractor must prepare and distribute colour notifications providing details of each event that will impact the local community and businesses. This would include any changes (or potential changes) to local traffic, out of hours working, noise, or other local issues as a consequence of the Contractor's Work, in keeping with a 'no surprises' approach to communications.
- (b) The Notifications must include maps, diagrams, illustrations and photos which enhance the reader's understanding of the event or work. The Contractor is responsible for any graphic design required to produce customer-friendly maps, diagrams or artists impressions.
- (c) The notifications must adhere to RMS templates, style and branding guidelines and must be written in plain English. The notifications must accommodate the needs of members of the community from non-English speaking backgrounds through the inclusion of information on translation services.
- (d) The notifications must be distributed to all local residents, local businesses and other community stakeholders assessed as being potentially affected by the activities described in the notice. The notification delivery must occur at least five Business Days prior to the proposed activity described in the leaflets.
- (e) The final draft of all proposed leaflets, and proposed leaflet distribution ranges, must be submitted to the RMS Representative for approval a minimum of 10 Business Days prior to the proposed print date. Distribution dates and background information must be provided on covering information accompanying each approval submission.
- (f) The Contractor is responsible for the print and distribution of the notifications.

### 8.4.3 Advertising

- (a) During construction, the Contractor must advertise significant issues that will affect the community including detours, significant traffic disruptions, significant changes to traffic arrangements and work outside of the working hours at least 7 days before the commencement of that disruption, detour or change.
- (b) The Contractor must prepare the content of all advertisements and submit this to RMS.
- (c) RMS will place all advertisements, including radio advertisements and online advertisements.
- (d) In consultation with RMS, the Contractor must identify the appropriate media outlets for the placement of advertisements including newspapers that are read and used by the community and stakeholders identified in the Community Involvement Plan, including, but not limited to: the local community, road transport industry, public transport operators, the driving community, cyclists and pedestrians.
- (e) Printed advertisements must conform to NSW (Government) Guidelines for Advertising. Draft advertisements, including text and line drawings, and must be provided to the RMS Representative for approval a minimum of 20 Business Days prior to the proposed printing copy deadline, unless otherwise agreed with RMS.
- (f) The Contractor must provide all electronic media advertisements, including draft radio scripts, to the RMS Representative for approval at least 20 Business Days prior to when

the subject matter of the advertisement is forecast to occur, unless otherwise agreed with RMS.

- (g) Advertising via social media must be developed in accordance the Transport for NSW Social Media Management Policy (January 2013) and approved by the RMS Representative and the advertising content forwarded to the RMS Representative at least 20 Business Days prior to when the subject matter of the advertisement is forecast to occur, unless otherwise agreed with RMS.
- (h) Where the Contractor becomes aware that any part of the Project Works or Temporary Works that is the subject of an advertisement is to be changed or varied so as to make the advertisement substantially incorrect, it must immediately advise RMS CSE representative.

#### **8.4.4 Community update newsletters**

- (a) The Contractor must prepare Community Update newsletters for each major construction milestone from the commencement of Construction of the Project Works until the Date of Construction Completion but not less frequently than every four months. Each major construction milestone must be identified in the Community Involvement Plan.
- (b) The Contractor will be responsible for managing the graphic design of the newsletters and will ensure they adhere to necessary templates and branding guidelines. The Contractor must provide the final materials to the RMS Representative for approval at least 4 weeks prior to the proposed date for print of the Community Update.
- (c) The Contractor will print and distribute the Community Updates to all community members on the community contacts database current at the time of distribution of the community update, and to all relevant Authorities as agreed with RMS.
- (d) The Contractor must ensure that the Community Updates are available at the Contractor's site office , staffed and public display points, displayed on community noticeboards in locations approved by the RMS Representative and posted on the project website.
- (e) The content of Community Updates must include:
  - (i) The project's toll-free, 24 hour staffed telephone service number;
  - (ii) the project website address;
  - (iii) a summary of pertinent information contained on the website;
  - (iv) the Contractor's email address;
  - (v) the Contractor's postal address;
  - (vi) details on sources of other information available to the community including display locations;
  - (vii) commencement of construction information including the date;
  - (viii) future significant changes to traffic;
  - (ix) opening of the Works or sections of the Works to traffic; and
  - (x) any other requirements of the RMS Representative.



- (f) The community updates may include, but is not limited to:
  - (i) the status of construction including construction progress;
  - (ii) upcoming construction stages;
  - (iii) environmental management initiatives; and
  - (iv) community involvement achievements associated with the Contractor's Work, the Project Works and the Temporary Works.

#### **8.4.5 Design Development and Community Involvement**

- (a) The Contractor must consult the community and stakeholders on any design development that differs from that presented in the environmental assessment documents. This consultation must include as a minimum a community update, public displays and a website content update. The public displays are in addition to the number and frequency of public displays stated in section 8.3.2 above. Graphic design for any larger or semi-permanent display material must be in accordance with section 3.1 above.
- (b) The Contractor must proactively seek community feedback and involvement in changes to the design, on urban design and other major visual features of the project and as required by RMS.
- (c) Consultation periods with community feedback must be outlined in the Community Involvement Plan.
- (d) As a minimum, a two week period must be allowed for community feedback when community involvement is possible.
- (e) Following consultation periods, the Contractor must prepare a Consultation Outcomes Report to:
  - (i) outline community feedback and issues raised;
  - (ii) respond to each of the issues raised during consultation;
  - (iii) provide information on any changes to the proposal resulting from consultation;
  - (iv) articulate the decision about the element of the project consulted on.
- (f) Consultation Outcomes Reports must be available on the project website and must be provided to community members and stakeholders who provided feedback, accompanied by a personalised letter.
- (g) A notification must be issued to the community advising of the availability of the Consultation Outcomes Report.

#### **8.4.6 Project Website**

- (a) RMS will maintain and operate the existing project website to assist in disseminating community information, receiving feedback and providing generic responses to common enquiries. The Contractor must not maintain or operate any other website accessible to the public relating to the project.
- (b) The Contractor must provide the RMS Representative with material for the website including updated material as new information becomes publicly available, and in any

event at least monthly unless advised otherwise by RMS. All material for the website must comply with requirements of the WC3 Web Content Accessibility Guidelines (WCAG) 2.0 Level AA. Documents must be optimised for the web and supplied in both Word 2003.doc and PDF format. The Contractor must utilise the following RMS accessibility checklists, contained within Project Communication Templates, to ensure content compliance:

- (i) Accessibility checklist for content;
  - (ii) Accessibility checklist for Word documents; and
  - (iii) Accessibility checklist for PDF documents.
- (c) RMS will upload all website material at its discretion. The Contractor must submit all proposed website material to the RMS Representative for approval at least 10 Business Days prior to the Contractor's planned date for RMS to upload of the material.
- (d) The Contractor must, as a minimum, provide to RMS for the project website:
- (i) notifications and community updates before they are distributed to the community and stakeholders
  - (ii) background information on the Project Works;
  - (iii) a description of the various approval authorities and their areas of authority;
  - (iv) a monthly photo gallery containing images of current and recent construction, community and environmental management activities associated with the Contractor's Work;
  - (v) current and past display information, community updates, advertisements, and other publications;
  - (vi) PDFs of reports that are relevant to the Contractor's Work, Project Works and Temporary Works, including documents on environmental investigations;
  - (vii) information for the driving community, including road transport operators and public transport operators and users, which includes predicted periods of delay and alternative routes. This information must be updated weekly or more often when traffic conditions change;
  - (viii) a document of frequently asked questions and responses as agreed with the RMS Representative;
  - (ix) the project's toll-free, 24 hour staffed telephone service number;
  - (x) the Contractor's email address;
  - (xi) the Contractor's postal address;
  - (xii) any other relevant items or information of interest; and
  - (xiii) a means of allowing people to apply to be included on the community contacts database register.
- (e) The Contractor must continue to submit the required website material to RMS for eight weeks following the Date of Final Construction Completion.

#### **8.4.7 Site tours**

- (a) Site tours or visits arranged by the Contractor at which more than five people will be in attendance, or include industry advocates or representatives of key stakeholder groups including local council officers and Councillors, with the exception of site tours or visits consisting only of members of the Contractor's staff, must have prior approval of the RMS Representative.
- (b) The RMS Representative may elect to nominate a person to accompany any site tour or visit.
- (c) RMS may also arrange site tours or visits. These may include members of the media and/or elected representatives at a local, state or federal level. All such site tours or visits will be subject to coordination with Contractor and will be subject to the Contractor's WHS requirements. The Contractor must give reasonable access to site tours or visits at all reasonable times. These site tours or visits arranged by RMS will, at all times, be accompanied by representatives of RMS or other persons authorised in writing by the RMS Representative.
- (d) The Contractor must employ a Community Engagement Officer responsible for coordinating site tours and visits. Other personnel involved in the coordination and management of site tours or visits should be identified in the Community Involvement Plan.
- (e) A visitor safety plan must be developed and implemented, including consideration of the requirements for site inductions and protective clothing and ensuring that the person or persons conducting each tour have knowledge of the location of nearest first aid facilities.
- (f) The Contractor must provide appropriate protective clothing, sunscreen and water refreshment for all visitors.

#### **8.4.8 Notification of traffic conditions**

- (a) The Contractor must provide information on forecasted changes to traffic conditions, as a consequence of the Works, to the RMS Representative, to facilitate traffic alerts for major traffic changes or disruptions.
- (b) For Works involving major traffic changes or disruptions, the Contractor must prepare and submit a communication package to RMS at least 20 Business Days before the commencement of the work. Unless specified by RMS, the communication package should include:
  - (i) a work specific communication implementation plan including a description of the work, the key impacts and issues, key messages, key stakeholder and community audiences and the communication activities, communication materials and methods for distribution;
  - (ii) specific radio, print, electronic media organisations and other outlets identified for distribution to be agreed with RMS;
  - (iii) range of distribution for each type of media; and

- (iv) final drafts of all communication materials prepared for the work/event including notifications, door knocking scripts, advertising artwork and scripts, stakeholder letters, traffic alerts, VMS scripts and signage.
- (c) Advertising must be managed in accordance with section 8.4.3.
- (d) Where the Contractor becomes aware that any part of the Works that is the subject of the traffic alert is to be changed or varied so as to make the traffic alert substantially incorrect, it must immediately advise the RMS Representative.

## 8.5 Complaints management

- (a) A complaint is defined as an expression of dissatisfaction made to RMS or the Contractor, related to the Contractor's Work, services, or the complaints-handling process itself, where a response or resolution is explicitly or implicitly expected.
- (b) The Contractor must provide for community enquiries and complaints handling and investigation 24 hours per day 7 days per week for the period from eight weeks after the date of the Project Deed until eight weeks after the Date of Final Construction Completion, ensuring the following are available:
  - (i) The toll-free, project specific phone number as stipulated in section 8.1 (n) on which complaints and enquiries may be registered;
  - (ii) a postal address to which complaints and enquiries may be sent; and
  - (iii) an email address to which electronic complaints and enquiries may be transmitted;
- (c) The telephone number, postal address and email address must be published in newspaper(s) circulating in the local area prior to the commencement of construction and prior to the commencement of operation.
- (d) The Contractor must ensure that the Community Relations Manager, or a person delegated by the Community Relations Manager, is available 24 hour per day 7 days per week to receive, manage and take appropriate action in relation to community enquiries and complaints.
- (e) The Contractor must ensure that the community is adequately informed about the project's toll-free, 24 hour staffed telephone service number.
- (f) The Contractor must establish and maintain a complaints register, which must include the following records:
  - (i) date, time and nature of complaint;
  - (ii) type of communication (telephone, letter, meeting, other);
  - (iii) name, address and contact number of complainant;
  - (iv) nature of the complaint;
  - (v) action taken in response, including follow up contact with the complainant;
  - (vi) details of whether resolution was reached;
  - (vii) details of whether mediation was required or used; and
  - (viii) any monitoring to confirm that the complaint has been satisfactorily resolved.

- (g) The Contractor must report on the receipt and responses to complaints in the Contractor's monthly progress report.
- (h) The Contractor must expeditiously address and seek the early resolution of all complaints and claims, directed against the Contractor, or any persons engaged on the Contractor's Work, by members of the community in relation to the Contractor's Work. The Contractor must make use of dispute resolution mechanisms and procedures to enable the prompt resolution of any claims that are not quickly solved bilaterally.
- (i) Notwithstanding the requirement to expeditiously address and seek early resolution of all complaints and claims, the Contractor's Complaints Management System must receive, record, track and respond to all complaints and enquiries within the specified timeframe.
- (j) All complaints received must be acknowledged within 2 hours. When a complaint or enquiry cannot be resolved immediately, a follow-up verbal response on what action is proposed must be provided to the complainant/enquirer within 24 hours of a complaint or enquiry being received.
- (k) The Contractor's Complaints Management System must also include a process for the provision of a written response to the complainant/enquirer within 10 days Business Days, if the complaint or enquiry cannot be resolved by the initial or follow-up verbal response.

## **8.6 Responding to community representations**

- (a) The Contractor must register and track progress of all forms of representation from the community using the contacts database as stipulated in section 8.2.2.
- (b) The Contractor must make customer feedback forms available at all staffed and public displays to enable members of the community to provide comments.
- (c) Representations received by the RMS Representative and forwarded to the Contractor must be recorded and monitored by the Contractor, together with any representations received directly by the Contractor.
- (d) The Contractor must acknowledge all representations within five Business Days of receipt.
- (e) The Contractor must respond to representations within 10 Business Days of receipt.
- (f) The Contractor must maintain a register of all representations, written, electronic and verbal, concerning the Contractor's Work. The Contractor must provide a report on the status of responses to representations in the Contractor's monthly progress reports. The report must include the average and maximum times taken to respond to representations.

## **8.7 Project documentation**

- (a) The Contractor must take, and provide the RMS Representative with, quarterly photographs (digital) of the progress of the Contractor's Work, the Project Works and the Temporary Works. The photographs must be of a professional quality (minimum 300 dpi) suitable for RMS and the Contractor's use in publications, project communications and promotions of a broader nature and for enlargement to use in

display materials. Photographs must be provided on a monthly basis of all substantial works.

- (b) The Contractor must budget for monthly aerial photographs (digital) of the progress of the Contractor's Work, the Project Works and Temporary Works. The photographs must be of a professional quality (minimum 300 dpi) suitable for RMS and the Contractor's use in publications, project communications and promotions of a broader nature and for enlargement to use in display materials. Photographs must be provided on a monthly basis in electronic format.
- (c) The Contractor must facilitate access to its work sites for the installation of infrastructure for time-lapse photography, remote controlled cameras or other project documentation devices at RMS's request.
- (d) The Contractor must provide the RMS Representative with monthly forecasts of predicted milestones (forecasting three months in advance). The forecast must include detailed information about upcoming activities that may create media attention, or that require pro-active communication tools to accompany the activities or events including media releases, traffic alerts or advertising.

## **8.8 Media liaison and events**

### **8.8.1 Media liaison**

- (a) The Contractor must immediately notify the RMS Representative of any approach by the media (including industry magazines).
- (b) The Contractor must not contact, respond to enquiries or release information about the Contractor's Work to the media, political representatives or their staff.
- (c) The Contractor must ensure that all of its personnel and all personnel engaged on the Contractor's Work are aware of, and abide by, the requirements of this section 8.8. Evidence of compliance with this requirement must be provided to the RMS Representative in the Contractor's monthly progress reports.

### **8.8.2 Media / community events**

- (a) On-going discussions must be held with the RMS Representative regarding dates, commencing at least 3 months prior to the anticipated occurrence of the event, for major milestones, including traffic switches, bridge lifts and the opening of the Works or any stage of the Works and Local Road Works to traffic.
- (b) The Contractor must give the RMS Representative at least 8 weeks written notice of the date for commencement of construction and at least 8 weeks written notice of the date of opening of the Works or any stage of the Works and Local Road Works to traffic, to enable the RMS Representative to organise any associated official media/community events.
- (c) The Contractor must plan for and provide resources for any events notified by the RMS Representative associated with the opening of the Works to traffic. The RMS Representative will organise any events associated with opening the Project Works to traffic. The Contractor must develop and provide collateral in support of the event/s as required by RMS.

- (d) The Contractor must not announce the proposed opening of the Works and/or any stage of the Project Works or Local Road Works to traffic without the prior approval of the RMS Representative. The announcement of proposed opening of the Works or any stage of the Works or Local Road Works will be carried out by RMS in conjunction with the Federal and/or NSW State governments.
- (e) The Contractor must anticipate a high level of interest in the project opening and must facilitate and assist with the coordination of an opening event for the community. The event is likely to include a public walk-through of the project.
- (f) Other opportunities for media events, including the achievement of other project milestones and the opening of Local Roads to traffic must be discussed with the RMS Representative at least four weeks prior to the expected event.
- (g) RMS will manage all official media events and will be responsible for coordinating community, media and political participation in such events, in consultation with the Contractor.
- (h) The Contractor must cooperate with RMS in the running of the media events and must provide information on the logistics associated with any event.
- (i) The Contractor must not erect or display company specific promotional banners during media events.

## 8.9 Project branding

- (a) The Contractor must use “RMS project communication templates” for the preparation of community information to be published. These templates provide clear instruction on logo placement and visual style.
- (b) The Contractor’s logo must not appear on any public project communications, including project publications, display material, website, project videos, non-moving plant (including containers) or roadside signage without prior approval of the RMS Representative.
- (c) The Contractor’s logo or banners must not appear on bridges, retaining walls or other structures on the Site or areas where the Contractor’s Work is being undertaken without the prior approval of the RMS Representative.
- (d) The Contractor must provide access to suitable fencing, hoardings and buildings for the purposes of display of RMS’s promotional material.
- (e) The Contractor must confirm with the RMS Representative to ensure that the most recent templates are being used for communication materials.

## 8.10 Staff training

- (a) The Contractor must ensure that all its personnel involved in the Contractor’s Work behave in a courteous and professional manner when in dialogue with any community member. All of the Contractor’s personnel involved in the Contractor’s Work must be:
  - (i) trained on how to respond to community queries;
  - (ii) aware of and abide by the requirements for the release of information detailed in sections 8.5 and 8.8 of this SWTC; and

- (iii) advised on the identity of the community within which they are working,
  - (iv) by the Contractor prior to their involvement in the Contractor's Work.
- (b) Community involvement obligations must be included in the site induction of all personnel engaged in the Contractor's Work.
- (c) Records of personnel training and induction in community obligations must be provided as part of the community liaison reports within the Contractor's monthly progress reports required by section 1.1.8 of Appendix 24 of this SWTC.

**Table 8-1 Summary Table of RMS Approvals for Communication Activities**

<b>Communication activity</b>	<b>Timeframe for RMS approval</b>	<b>Notification requirements prior to work commencing</b>
<b>Notifications/letter box drops</b>	Submit final no less than 10 business days before distribution	5 business days before activity. Distribute within 750m radius, or lesser distance, if agreed with Principal
<b>Community Update newsletters</b>	Submit final materials 4 weeks prior to proposed print date	5 business days prior to activity or as agreed with RMS
<b>Major work communication packages (includes major traffic changes or disruptions, major milestones)</b>	Submit communication package at least 20 days prior to the proposed activity date.	5 business days prior to activity or as agreed with RMS
<b>Community Information Sessions plans and display material</b>	Submit at least 20 days prior to the proposed activity date.	5 business days prior to activity or as agreed with RMS
<b>Advertisements - traffic (see major work communication packages)</b>	Submit no less than 20 business days before distribution	5 business days prior to activity or as agreed with RMS
<b>Advertisements - project see major work communication packages)</b>	Submit no less than 20 business days before distribution	5 business days prior to activity or as agreed with RMS
<b>Website content</b>	At least 10 business days prior to upload date (all content including photos)	Update as needed (minimum monthly)



Communication activity	Timeframe for RMS approval	Notification requirements prior to work commencing
<b>Media/community events</b>	Provide RMS with 8 weeks written notice of construction commencement and date of opening of any stage of the work (including local roads). Provide RMS with a monthly forecast of predicted milestones.	n/a
<b>Weekly traffic update</b>	Submit 5 business days before planned distribution date	Issue weekly
<b>Site tours</b>	Approval required, timeframe not specified	n/a
<b>Promotional video</b>	Approval required, timeframe not specified	n/a
<b>Promotional material and award submissions</b>	Approval required, timeframe not specified	n/a

# Appendix 1      Locality Map and Route

---

## **Appendix 2      Site, Local Road Works Areas and Temporary Works Areas**

---

## **Appendix 3      Property Adjustments**

---

## **Appendix 4      Additional Environmental Requirements**

---

# **Appendix 5      Not Used**

---

# **Appendix 6      RMS General Specifications**

---

# **Appendix 7      RMS Technical Specifications**

---



# Appendix 8      Reference Documents

---

# **Appendix 9      Geometric Performance and Design Requirements**

---

# **Appendix 10    Drainage Performance and Design Requirements**

---

# **Appendix 11    Geotechnical Performance and Design Requirements**

---

# **Appendix 12    Pavement Performance and Design Requirements**

---

# **Appendix 13    Structural Performance and Design Requirements**

---

# Appendix 14 Not Used

---

# **Appendix 15    Urban Design Performance and Design Requirements**

---



# **Appendix 16 Delineation and Signposting Performance and Design Requirements**

---

# Appendix 17 Not Used

---

# **Appendix 18    Intelligent Transport Systems**

---

# **Appendix 19 Provisional Sum Work**

---

## **Appendix 20 Traffic Control Signals**

---

## **Appendix 21 Project Plan Requirements**

---

## **Appendix 22    RMS Site Facilities**

---

## **Appendix 23    Not Used**

---



## **Appendix 24 Contractor Documentation Schedule**

---

# **Appendix 25    Maintenance Standards During Construction**

---

## **Appendix 26 Information Signs**

---

## **Appendix 27 Road Occupancy**

---

# **Appendix 28    Not Used**

---

# **Appendix 29    Asset Items and Sub-Items – Specified Design Lives**

---

# Appendix 30 Concept Design

---

# **Appendix 31 Contractor's Urban and Landscape Design**

---



## **Appendix 32 Contractor's Specifications**

---

# Appendix 33 Not Used

---

# **Appendix 34 Not Used**

---

# **Appendix 35 Initial Project Management Plan**

---

# **Appendix 36 Initial Environmental Management Plan**

---

# Appendix 37 Initial Design Plan

---

## **Appendix 38 Initial Construction Plan**

---

# **Appendix 39 Initial Chain of Responsibility Management Plan**

---



# **Appendix 40 Initial Community Involvement Plan**

---

# **Appendix 41 Initial Project WHS Management Plan**

---

## **Appendix 42 Initial Earthworks Plan**

---

# **Appendix 43 Initial Traffic Management and Safety Plan**

---

# **Appendix 44 Initial Enterprise Training Management Plan**

---

# **Appendix 45 Initial Workplace Relations Management Plan**

---