

# Contract Documents

## - Road Maintenance Performance Contract (RMPC)

**Invitation Number** DC\_20\_21

**District** Wide Bay/ Burnett

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<b>Local Government</b>	Various Regional Councils
<b>Fund Category</b>	Schedule 1 – National Network Schedule 2 – Callouts - NN Schedule 3 - Other State-controlled Roads Schedule 4 – Callouts - SN
<b>Period</b>	1 July 2020 to 30 June 2021
<b>Documents for</b>	Road Maintenance Services

# Attachment

# A

RMPC - Invitation to Offer

Released under RTI - DTMR

Released under RTI - DTMR

C6081

**Road Maintenance Performance Contract (RMPC)  
Invitation to Offer**

April 2020



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## 1 Introduction

Through this Invitation to Offer, the Principal is requesting an offer to provide road maintenance on the Network included within this document.

## 2 Definitions and interpretations

In these conditions and rules and in the Offer Documents (as defined), all words and expressions shall have the meaning assigned to them in the *Road Maintenance Performance Contract (RMPC) General Conditions*, and the words and expressions defined here shall have the meanings assigned here to them, except where the context otherwise requires.

Term	Definition
Offer	An Offer by the Offerer to perform the services in accordance with the offer documents.
Offerer	Any person who submits an Offer to the Principal pursuant to the uncompleted form C6094.
Offer Documents	The documents listed in Table 7 which are issued by the Principal to the Offerer for the purpose of inviting the Offerer to make an Offer.

Any reference to 'Clauses' and 'Parts' are references to clauses and parts of this Invitation to Offer.

Words in the singular include the plural and words in the plural include the singular, according to the requirements of the context.

Words importing a gender include every gender.

## 3 Compliance with laws and other requirements

The Offerer must comply in all aspects with:

- a) legislative requirements
- b) any applicable government codes, policies or guidelines
- c) any current Australian/New Zealand standard and, where an Australian/New Zealand standard does not exist, the relevant and current International Standard (ISO) shall apply.

## 4 General

All liability for stamp duties shall be with the Principal.

Offers must be in writing on a duly completed form C6094, supplemented by other nominated signed and dated documents. There shall be no adjustment to the Total Contract Amount as a result of fluctuations in the cost of labour and material during the Contract Period except that where materials are being purchased in a competitive environment and:

- a) are subject to substantial price changes
- b) such changes have a significant effect on the Total Contract Amount
- c) the Principal may consider a price adjustment.

Any Offer or altered Offer shall remain open for acceptance by the Principal for a period of three months.

## 5 Objectives

The objectives of the proposed Contract are to:

- a) provide a safe and serviceable network for users
  - i. create a sustainable network using asset preservation principals.
- b) obtain greater value from the existing funding using:
  - i. a holistic approach to asset management
  - ii. innovation
- c) build the Department of Transport and Main Roads' asset management knowledge and skills.

## 6 Scope of works

The scope of work within these Contracts covers:

- a) all pavement-related routine maintenance
- b) roadside signage and furniture maintenance
- c) vegetation management
- d) minor drainage and culvert maintenance
- e) incident management, including after hours and emergency call outs
- f) flood damage initial response works where the works are emergency in nature only and not restoration works
- g) environmental corridor management – this includes such items as graffiti control, litter control, some herbicide spraying, fire breaks and some vegetation control
- h) inspection and monitoring of the road Network
- i) Work with the department in providing asset management services for maintenance and rehabilitation activities.

These services are to be provided for the National Highway Network and the Other State-Controlled Network.

Activities considered out of scope are:

1. route lighting
2. network and traffic management systems — the Contractor will be required to manage the traffic safely through any work Sites
3. programmed line marking — the Contractor will be responsible for line marking associated with any routine maintenance
4. bridge and major culvert rehabilitation
5. other transport infrastructure maintenance – this includes tunnel mechanical/electrical, lift maintenance and so on
6. annual network condition surveys.

## 7 Schedules to be completed

The Offerer must complete the Network and/or individual Schedule(s) by providing the unit rates to perform the Activity quantities as denoted in the Schedule(s) and in accordance with the Activity Standards (either defined in the Principal's *Guidelines for Undertaking Routine Maintenance* or contained in the Offerer's Quality Plan). The quantities of the Activities and the associated Intervention Level(s) for the Schedule(s) will have been established in the Joint Maintenance Requirement Assessment. Table 7 summarises the Schedule requirements.

The Network Schedule Total(s) and the Total Contract Amount must not exceed the amount(s) as advised by the Principal.

**Table 7 – Schedule requirements**

No.	Section	Requirements	Schedule no.
1	Conditional Agreement	Mandatory	C6094
2	Schedule Summary	Mandatory	C6084.1
3	Network Schedule	If applicable	C6084.2
4	Minor Works Schedule	Mandatory	C6084.3
5	Standing Offer Rates	Mandatory	C6086
6	Dayworks Schedule	Mandatory	C6087
7	Programmed Expenditure Flow	Mandatory	C6088
8	Intervention Level/Response Time Schedule	Mandatory	C6095
9	Queensland Government Compliance Schedule	Mandatory	C7810.S6
10	Ethical Supplier Threshold	Mandatory	C7810.S10.RMPC
11	ISO 9001: 2008 Quality management systems – Requirements or <i>Implementation Plan for Evidence Guide</i>	Mandatory	C6089
12	Quality Plan	Mandatory	
13	Environmental Management Plan (Maintenance) (EMP Maintenance)	Mandatory	
14	Safety Plan	Mandatory	

## 8 Agreement Negotiation

The Principal may enter into oral or written negotiations with the Offerer after the opening of the Offer.

Where the Offerer or Principal is prepared to amend or add to the Offer Documents, this must be done in writing. Where such an amended Offer is made, any Offer previously lodged will remain unaffected and open for acceptance in accordance with Clause 4.

In particular, if the Network Schedule Total(s) exceeds the indicative Network Schedule Total(s), the parties will negotiate to reconcile the difference by a consideration of:

- a) the appropriateness of the offered rates (includes reflection of the previously agreed productivity target and comparison with the statewide benchmarks of rates for each Activity)
- b) whether the quantities should be varied (with commensurate adjustment of Intervention Level(s))



- c) whether Activity Standards should be modified
- d) whether the indicative Network Schedule Total(s) should be varied.

Where the Principal and the Offerer agree, the parties will both sign form C6094. The parties, on signing the Conditional Agreement, must indicate whether any ratification of the Conditional Agreement is required and, if ratification is required, the latest date for such ratification.

If ratification is not required, the Contract will come into effect on the date of the signing of the Conditional Agreement or other nominated date. Where ratification is required, the Contract will come into effect on the date of the last dated ratification notice or other nominated date.

## **9 Resolution of non-agreement**

Where the parties have not been able to reach agreement before the start date of the Contract Period (in the Conditional Agreement), then:

- a) where the Offerer is a Local Government Authority, Partners in Government Agreement will be activated
- b) where the Offerer is a Service Delivery Unit, the person nominated as the Referee in the Conditional Agreement will, after notice from one or both of the parties, make a final decision on the matter after convening a meeting where both parties must provide information requested by the Referee.

Where a matter is referred in accordance with this Clause 9, the parties shall perform the Contract in accordance with the rates, terms and conditions that applied in the previous Contract Period (subject to retrospective changes).

Subject to this Clause 9, if no agreement is reached within three months of the start of the Contract Period, the Contract will be deemed to be terminated and the rates for the previous Contract Period will apply to any completed work up to that date.

## **10 Goods and Services Tax**

Where the Contractor is a Local Government Authority, agreements must include a separate lump sum amount in form C6084.1, which represents the federal goods and services tax (GST) that applies to the goods and services to be provided by the Contractor.

Individual rates and lump sums in the Network Schedules, Minor Works Schedules and Daywork Schedules must not include any allowance for GST.

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# Attachment

# B

Supplementary Conditions of Contract

## 1. PROGRESS CLAIMS

Further to Part 6 of the General Conditions of Contract, the following shall apply for the twelve (12) months of the contract period (1 July 2020 to 30 June 2021): -

- Progress claims for each month are to be submitted within ten working days after the end of the month for which the works are claimed;
- A Payment Certificate will be produced within 10 working days after a progress claim is submitted. At this time a tax invoice for the certified amount will be requested and payment will be made within 10 business days after the receipt of the tax invoice.
- Works completed although not claimed within any month are to be detailed and submitted with the claim for that month unless otherwise arranged. This detail is to include all the usual information (e.g. works order and location of work) as if the works were to be claimed;
- Where work on a works order is incomplete at the end of the month the works order is to be closed and a new works order raised for any outstanding work.
- Where no costs are intended to be claimed for a particular month, a 'Nil' claim is to be submitted using the standard Form F6088.

## 2. CALL OUT AND EMERGENCY CALL OUT – FORM 450/452

Where the Contractor is required to perform call out activities as per RMPC activity numbers 450 or 452 the Contractor shall complete the 'Form 450/452' detailing the following:

- The type of activity claimed
- The date and time of: the start of the call out, arrival on site and when the call out was finished.
- Road ID
- Chainage
- Geographical location
- Who requested the call out
- Who attended
- The nature of the call out
- Vehicle registration details
- Length of time of delays
- Detour information

This form must be completed onsite at the time of the call out and provided as supporting documentation at the time of the progress claim for that month.

A copy of this form is attached to this Supplementary Conditions of Contract as appendix A.

## 3. RECORD OF PERMANENT SIGNAGE REPLACEMENT – ACTIVITY 502

Where the Contractor has replaced a sign face under the RMPC activity 502 – Repair signs (excluding guide signs) the details of the sign face must be recorded and provided at the time of the progress claim for that month on the form 'Record of Permanent Signage Replacement.' The details required consist of:

- Road ID
- Chainage
- Side of the road with gazettal
- Direction sign faces
- Sign code
- Sign size
- Sign description
- Date of manufacture

A copy of this form is attached to this Supplementary Conditions of Contract as appendix B.

## 4. PAVEMENT REPAIRS

### 4.1 Warranty Period

A Warranty period of 180 days will apply to pavement repairs performed under activities 143, 146 and 153 from the date of completed repairs work. During this period the Principal may direct the Contractor to rectify any defect or failure in the work that exists or becomes apparent prior to the expiration of the Warranty period. This direction may be disputed if it can reasonably be demonstrated that a significant change in conditions outside the control of the Contractor have caused the defect or failure to occur.

The direction to rectify repair work shall identify the defect and state a reasonable date by which the Contractor shall complete rectification. If the rectification work is not commenced or completed by the stated date, the Principal may defer payment of monies for the original repair from subsequent payment certificates until the rectification work is completed.

### 4.2 Bitumen Sealing of Repairs

Further to the requirements of the Guidelines for Undertaking Routine Maintenance - Volume 3, where a granular pavement repair has been carried out, it shall be sealed with a two-coat bitumen emulsion seal followed by a hot C170 final seal within 6 months after completion. The pavement repair shall have the date of the seal marked on the road surface with paint to ensure the seal integrity can be monitored over time.

Notwithstanding Clause 4.1, if the bitumen emulsion seals fail through stripping of stone, flushing or shows an inability to prevent water ingress into the underlying pavement after 180 days but prior to the application of the hot C170 seal, then it shall be remedied at no cost to the Principal.

Remedies consisting of cold mix patching of seal failures are not accepted.

Individual seal designs are to be submitted for pavement repairs greater than 50m in length with an indicative seal design on each individual road for pavement repairs less than 50m in length.

## 5. DISCRETIONARY LIMITS

Further to Part 6 of the General Conditions of Contract, the following shall apply for the twelve (12) months of the contract period (1 July 2020 to 30 June 2021).

Delete paragraph one (1) of Clause 6.2 and insert: -

*"The Contractor may vary the quantity for each of the Activities according to the prioritised needs of the network. Variations within the Network Schedule(s) is allowable under the following conditions: -*

- the Network Schedule(s) Total(s) is not exceeded*
- notification of variations is given monthly"*
- the transfer of funds between schedules is not permitted without the approval of the Administrator.*

It should be noted that where it is evident to the Principal that undue utilisation of particular activities is being carried out by the Contractor, the reimposition of the  $\pm 20\%$  discretionary limits will occur.

## 6. PRODUCTIVITY IMPROVEMENT

No statewide productivity target has been established, however the contractor shall provide a commitment to maintaining or improving productivity already gained and demonstrates that the department is receiving best value for money committed to Sole Invitee RMPC's, when compared to the value that could be achieved via open tender.

The district has set a productivity target greater than 0% for its RMPC contracts.

Productivity for individual sole invitees will be negotiated based on –

- productivity targets already achieved
- Scope for further productivity improvements
- Comparison of unit rates with other comparable RMPC contractors
- Initiatives that increase the life of finished work by changing work practices e.g.
  - mulching/wide slash v's traditional clearing
  - sealing of shoulders preventing continuing edge brake and shoulder grading.

## 7. FORWARD LIST OF WORKS

Further to Part 3 of the General Conditions of Contract, the following shall apply for the twelve (12) months of the contract period (1 July 2020 to 30 June 2021).

As required by Clause 3.3, the Contractor must maintain an accurate up to date forward list of works. A copy of this forward list of works is to be forwarded to the Principal by noon of the 6<sup>th</sup> last working day of each month for the forthcoming month.

The appropriate email address for which this is to be forwarded to, is BUND\_PPS@tmr.qld.gov.au

## 8. ACCURALS

The following shall apply for the twelve (12) months of the contract period (1 July 2020 to 30 June 2021).

The contractor shall submit to the Principal an accrual value for works completed in that month but not paid for in that month, by noon of the 6<sup>th</sup> last working day of each month.

**Appendix A**  
Form 450/452

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## Appendix B

### Record of Permanent Signage Replacement Form

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**Appendix C**  
Supplementary Specifications

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## 1. SHOULDER GRAVEL / UNSEALED FORMATION GRAVEL

### 1.1 General

Gravel imported for shoulder grading, shoulder resheeting or shoulder pothole patching shall meet the requirements of either Section 1.2 or Section 1.3 of this Supplementary Specification.

### 1.2 Specification for Supplementary Materials

Imported shoulder gravel shall meet the specifications for Supplementary Materials as per MRTS05 Clause 7.6 with the exceptions noted below:-

- *Grading*

The grading envelope shall be Type 2.5 from Table 7.2.4(a) of MRTS05.

- *Linear Shrinkage*

Linear Shrinkage shall be a minimum of 4 and a maximum of 10%.

- *Grading Coefficient*

The grading coefficient is to be a minimum of 15 and a maximum of 35 and is to be determined as follows:

$$\text{Grading coefficient} = (\% \text{ passing AS } 26.5\text{mm sieve} - \% \text{ passing AS } 2.36\text{mm sieve}) \times (\% \text{ passing AS } 4.75\text{mm sieve} / 100)$$

- *Shrinkage Coefficient*

The shrinkage coefficient is to be a minimum of 100 and a maximum of 350 and is to be determined as follows:

$$\text{Shrinkage coefficient} = \% \text{ passing AS } 0.425\text{mm sieve} \times \text{Linear shrinkage } (\%)$$

- *CBR*

CBR (soaked) to be a minimum of 15.

### 1.3 Proven Material Approved by the Principal

Gravel which has been proven to perform satisfactorily for shoulders in the past may continue to be used subject to the approval of the Principal.

A request for approval of such material shall be accompanied by the following information:-

- the name of the source;
- the source material group (as defined in Table 2 of MRTS05);
- evidence of past performance (i.e. locations where the material is currently in use, the time since last treatment of those locations and the average time between treatments);
- test results on 3 samples of the material (from stockpile) showing:-
  - grading
  - linear shrinkage
  - grading coefficient
  - shrinkage coefficient
- results of one CBR test;
- a target specification against which this material shall be tested should its use be approved.

The specification shall be based on the test results provided and, as a minimum, consist of:-

- a grading envelope
- minimum and maximum values for linear shrinkage
- minimum CBR

The Principal shall not be responsible for the cost of providing this information.

In considering a request to approve such material, the Principal shall consider:

- results of inspections of the material in use;
- the past performance of the material compared to the likely performance of gravel conforming to Section 1.2 above;
- the price offered by the Contractor for the material compared to the price of a material conforming to Section 1.2 above.

## 2. TRAFFIC AND DELAYS

Attachment D sets out the latest traffic volumes for each section of each road in scope under this contract. For maximum allowable traffic delays, see offer form C6095.

The Contractor is to be aware of, and avoid programming planned maintenance operations that require delays to traffic during morning and afternoon peak traffic flow periods. Emergency works or callouts are exempt from this requirement

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**3. ACTIVITY 407 HERBICIDE  
SPRAYING**

Should sufficient rain be received in the last ten (10) calendar days of November or the first ten (10) calendar days of December to promote vegetation growth, and the RMPC contractor has not undertaken a herbicide application in the previous two (2) months in accordance with the applicable specifications for Activity 407 including culvert Headwalls, inlets and outlets, then the RMPC contractor is to ensure that a herbicide application in accordance with the applicable specifications for Activity 407 including culvert Headwalls, inlets and outlets is carried out prior to any general closedown for the Christmas/ new year holiday period.

At all other times, the general Intervention Level for Activity 407 shall be Vegetation 200 mm high.

**4. HAZARD RISK ASSESSMENT**

Where required under Intervention Level and Response Times, the Contractor shall undertake a hazard risk assessment in accordance with the format or of one similar to the template provided

The risk assessment must be documented and kept as evidence of having determined the risk that a particular defect presents to the public in terms of safety.

The guidelines or where and when to undertake a hazard risk assessment are provided on page three of the risk template.

# Activity 450 and 452 - Call Out/ Emergency Call Out Works

Please attach this form as well as applicable day works sheets to the submitted RMPC pay claim

Please tick which applies

450

452

Start date & time of call out: \_\_\_/\_\_\_/\_\_\_ at \_\_\_ am/pm

Date & time of arrival onsite: \_\_\_/\_\_\_/\_\_\_ at \_\_\_ am/pm

Finish date & time of call out: \_\_\_/\_\_\_/\_\_\_ at \_\_\_ am/pm

Road ID:

Work Order No:

Road Name:

Chainage:

Geographical location:

Who requested the call out:

Name & organisation

Workers who attended:

1.	5.	9.
2.	6.	10.
3.	7.	11.
4.	8.	12.

Nature of the call out:

1. What happened?
2. What did you carry out?
3. How did you do it?

Registration of vehicles involved in the incident (if any):

Length of time delay for traffic disruption:

Detour information (if any):



# Attachment

Offer Forms

Record of Principal Contractor Form

**Schedule Summary**  
RMPC



C6084.1

Invitation Number	DC_20_21
District	Wide Bay/Burnett

**Summary of Schedules**

Fund Category

1

(National Highways)

Funding Element	Sch. #	Sch. Total
15	1	N/R
34	2	
Fund Category Total	\$	

Fund Category Total

\$1,749,953.88

Fund Category

2

(Other State-Controlled Roads)

Funding Element	Sch. #	Sch. Total
15	3	N/R
34	4	
Routine Maintenance Total	\$	

Fund Category Total

\$1,403,508.55

**Additional Minor Works**

Minor Works Schedule(s)  
National Highways

pages

A

\$

Minor Works Schedule(s)  
(Other State-Controlled Roads)

pages

B

\$

Total Contract Amount

\$

Total GST Tax Amount

\$

N/R

Authorisation

Chris Van Den Kieboom

Name

Operations Manager

Position

RoadTek Wide Bay

N/R

Signature

N/R

Date

9/6/20



**Network Schedule**  
RMPC



C6084.2

Fund Category

1

Invitation Number

DC\_20\_21

- 1. National Highway
- 2. Other State Controlled Roads

District

Wide Bay/Burnett

Funding Element\*

15

Schedule Number

1

\* Activities in each Schedule will bill to one Funding Element only. Refer to the RMPC Activities Mapped to Elements document.

Activity	Description of Activity	Unit	Unit Rate	Estimated Quantity	Discretionary		Extended Amount (\$)	Element #
					+	-		
Amount carried forward from page (where applicable)								
			\$ c					
101.00	Edge Repair (Manual)				0	0	\$0	15
105.00	Pothole Patching				0	0	\$0	15
111.00	Surface Correction, Premix / A/C (Mech. <				0	0	\$0	15
118.00P	Seal Coating (<150 lin.m per 1km)	\$			0	0	\$0	15
130.00P	Surface Sweeping	\$			0	0	\$0	15
135.00P	Surface Debris Removal	\$			0	0	\$0	15
139.00P	Other Bituminous Surface Work	\$			0	0	\$0	15
143.02	Pave.Repairs Gravel Depth up to 200mm	m2			0	0	\$0	15
143.03	Pave.Repairs Gravel Depth up to 300 mm	m2			0	0	\$0	15
144.00P	Subgrade Treatment, with Pavement Rep	\$			0	0	\$0	15
146.02	Pave.Repairs Asphalt Depth up to 200mm	m2			0	0	\$0	15
153.00	Insitu Stabilisation-Minor (<500m2)	m3			0	0	\$0	15
215.00	Light Shoulder Grading - Rural	Sh.km			0	0	\$0	15
216.00	Heavy Shoulder Grading - Rural	Sh.km			0	0	\$0	15
219.00P	Gravel Supply - Heavy Shoulder Grading	\$			0	0	\$0	15
221.00	Shoulder Resheeting	m3			0	0	\$0	15
229.00P	Other Unsealed Shoulder Work	\$			0	0	\$0	15
302.00	Repair Earth Surface Drains	m			0	0	\$0	15
305.00	Clean Earth and Concrete Surface Drains	m			0	0	\$0	15
319.00P	Other Surface Drain Work	\$			0	0	\$0	15
329.00P	Other Minor Culverts, Pipe and Pit Work	\$			0	0	\$0	15
330.00P	Other Subsoil Drain Work	\$			0	0	\$0	15
401.00	Tractor Slashing, Rural	ha			0	0	\$0	15
403.00	Tractor Slashing - Boom Mower	m2			0	0	\$0	15
405.00P	Clearing	\$			0	0	\$0	15
407.00	Herbicide Spraying	L			0	0	\$0	15
419.00P	Other Vegetation Control Works	Lump Sum			0	0	\$0	15
420.00P	Roadside Litter Collection - Rural	\$			0	0	\$0	15
429.00P	Other Roadside Work	\$			0	0	\$0	15
440.00P	Rest Area Servicing	\$			0	0	\$0	15
441.00P	Service Driver Reviver sites	\$			0	0	\$0	15
502.00P	Repair Signs (excluding Guide Signs)	\$			0	0	\$0	15
506.00P	Repair Guide Signs	\$			0	0	\$0	15
509.00P	Other Sign Work	\$			0	0	\$0	15
512.00P	Repair or Replace Guide Markers	\$			0	0	\$0	15
519.00P	Other Road Guide Post and Marker Work	\$			0	0	\$0	15
522.00P	Repair or replace Guardrail, Barrier Furni	\$			0	0	\$0	15
559.00P	Other Furniture Repairs	\$			0	0	\$0	15
903.00P	Inspections for Forward List of Work	\$			0	0	\$0	15

If Multiple Schedule Upper Limit

\$0.00

Network Schedule

Lower Limit

\$0.00

Chris Van Den Kieboom

Operations Manager

Authorisation

Name

Signature

Bay

Position

Date

N/R

N/R

8/6/20

Government Use Only	
3PCM Contract ID	CN-14427
3PCM Project ID	1626154 (NN-E34)

**Network Schedule  
RMPC**



C6084.2

Fund Category

Invitation Number

- 1. National Highway
- 2. Other State Controlled Roads

District

Funding Element\*

Schedule Number

\* Activities in each Schedule will bill to one Funding Element only. Refer to the RMPC Activities Mapped to Elements document.

Activity	Description of Activity	Unit	Unit Rate	Estimated Quantity	Discretionary		Extended Amount (\$)	Element #
					+	-		
Amount carried forward from page (where applicable)								
450.00P	Call Out	\$			0	0	\$0	34
452.00P	Emergency Call Out Activities	\$			0	0	\$0	34
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
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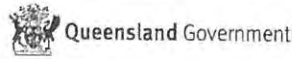
If Multiple Schedule Upper Limit  Network Schedule

Lower Limit

Authorisation  
Name   
Position

Signature    
Date

**Network Schedule**  
RMPC



C6084.2

Fund Category

Invitation Number

- 1. National Highway
- 2. Other State Controlled Roads

District

Funding Element\*

Schedule Number

\* Activities in each Schedule will bill to one Funding Element only. Refer to the RMPC Activities Mapped to Elements document.

Activity	Description of Activity	Unit	Unit Rate	Estimated Quantity	Discretionary		Extended Amount (\$)	Element #
					+	-		
Amount carried forward from page (where applicable)								
101.00	Edge Repair (Manual)				0	0	\$0	15
105.00	Pothole Patching				0	0	\$0	15
111.00	Surface Correction, Premix / A/C (Mech. <				0	0	\$0	15
118.00P	Seal Coating (<150 lin.m per 1km)	\$			0	0	\$0	15
130.00P	Surface Sweeping	\$			0	0	\$0	15
135.00P	Surface Debris Removal	\$			0	0	\$0	15
139.00P	Other Bituminous Surface Work	\$			0	0	\$0	15
143.02	Pave.Repairs Gravel Depth up to 200mm	m2			0	0	\$0	15
143.03	Pave.Repairs Gravel Depth up to 300 mm	m2			0	0	\$0	15
144.00P	Subgrade Treatment, with Pavement Rep	\$			0	0	\$0	15
146.02	Pave.Repairs Asphalt Depth up to 200mm	m2			0	0	\$0	15
153.00	Insitu Stabilisation-Minor (<500m2)	m3			0	0	\$0	15
215.00	Light Shoulder Grading - Rural	Sh.km			0	0	\$0	15
216.00	Heavy Shoulder Grading - Rural	Sh.km			0	0	\$0	15
219.00P	Gravel Supply - Heavy Shoulder Grading	\$			0	0	\$0	15
221.00	Shoulder Resheeting	m3			0	0	\$0	15
229.00P	Other Unsealed Shoulder Work	\$			0	0	\$0	15
302.00	Repair Earth Surface Drains	m			0	0	\$0	15
305.00	Clean Earth and Concrete Surface Drains	m			0	0	\$0	15
319.00P	Other Surface Drain Work	\$			0	0	\$0	15
329.00P	Other Minor Culverts, Pipe and Pit Work	\$			0	0	\$0	15
339.00P	Other Subsoil Drain Work	\$			0	0	\$0	15
401.00	Tractor Slashing, Rural	ha			0	0	\$0	15
402.00	Tractor Slashing, Urban	ha			0	0	\$0	15
403.00	Tractor Slashing - Boom Mower	m2			0	0	\$0	15
405.00P	Clearing	\$			0	0	\$0	15
407.00	Herbicide Spraying	L			0	0	\$0	15
419.00P	Other Vegetation Control Works	Lump Sum			0	0	\$0	15
420.00P	Roadside Litter Collection - Rural	\$			0	0	\$0	15
429.00P	Other Roadside Work	\$			0	0	\$0	15
502.00P	Repair Signs (excluding Guide Signs)	\$			0	0	\$0	15
506.00P	Repair Guide Signs	\$			0	0	\$0	15
509.00P	Other Sign Work	\$			0	0	\$0	15
512.00P	Repair or Replace Guide Markers	\$			0	0	\$0	15
519.00P	Other Road Guide Post and Marker Work	\$			0	0	\$0	15
522.00P	Repair or replace Guardrail, Barrier Furni	\$			0	0	\$0	15
559.00P	Other Furniture Repairs	\$			0	0	\$0	15
903.00P	Inspections for Forward List of Work	\$			0	0	\$0	15

If Multiple Schedule Upper Limit  Lower Limit

Network Schedule

Chris Van Den Kerkhof  
Operations Manager  
RoadTel Wide Bay

Authorisation

Name

Signature

Position

Date

Government Use Only	
3PCM Contract ID	CN-14427
3PCM Project ID	1626153 (SN-E34)

**Network Schedule  
RMPC**



Queensland Government

C6084.2

Fund Category

Invitation Number

- 1. National Highway
- 2. Other State Controlled Roads

District

Funding Element\*

Schedule Number

\* Activities in each Schedule will bill to one Funding Element only. Refer to the RMPC Activities Mapped to Elements document.

Activity	Description of Activity	Unit	Unit Rate	Estimated Quantity	Discretionary		Extended Amount (\$)	Element #
					+	-		
			\$ c		%	%		
Amount carried forward from page (where applicable)								
450.00P	Call Out	\$			0	0	\$0	34
452.00P	Emergency Call Out Activities	\$			0	0	\$0	34
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	
							\$0	

If Multiple Schedule Upper Limit  Lower Limit

Network Schedule

Authorisation  
Name **Chris Van Den Kieboom**  
Operations Manager  
RoadTek Wide Bay  
Ph: (07) 4131 2501 Mob:

Position

Signature

Date

Release under RTI

# Daywork Schedule

## RMPC



**C6087**

The Tenderer's attention is directed to the Invitation to Offer document and General Conditions of Contract. The following rates shall apply to Daywork performed in accordance with the General Conditions.

**Labour Daywork Rates:** The rates provided below must include, and will be deemed to include, all employment costs including, without limitation, all wages, salaries, leave allowances, bonuses, site mobilisation and disability allowances, workers' compensation insurance premiums, induction cost, payroll tax, fringe benefit tax, superannuation costs, travelling and accommodation costs, onsite and off-site overheads, administrative costs, site supervision, establishment costs, attendance and profit.

**Plant Daywork Rates:** The rates provided below must include, and will be deemed to include, all operation costs (employment costs including, without limitation, all wages, salaries, leave allowances, bonuses, site mobilisation and disability allowances, workers' compensation insurance premiums, induction cost, payroll tax, fringe benefit tax, superannuation costs, travelling and accommodation costs and the cost related to operating and maintaining of plant and equipment for the Daywork), all necessary safety equipment, overheads, administrative costs, site supervision, establishment and demobilisation costs, attendance and profit.

Please include mobilisation and demobilisation cost for light machineries and heavy machineries rate (\$/km) as two separate line items.

Invitation Number

District

Reference No.	Description	Unit	Daywork Rate (\$)	Stand-down Rate (\$)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				

Note:

- Any applicable stand-down rates should be included.
- Before executing the daywork activities prior agreement need to be made with the Principal

Authorisation

Name

Chris Van Den Kieboom

Position

Operations Manager  
adTek Wide Bay  
31 2501 Mob.

Sign

N/R

Date

2/6/20

# Programmed Expenditure Flow RMPC

C6088

Contractor

Invitation Number

DC\_20\_21

RoadTek Wide Bay

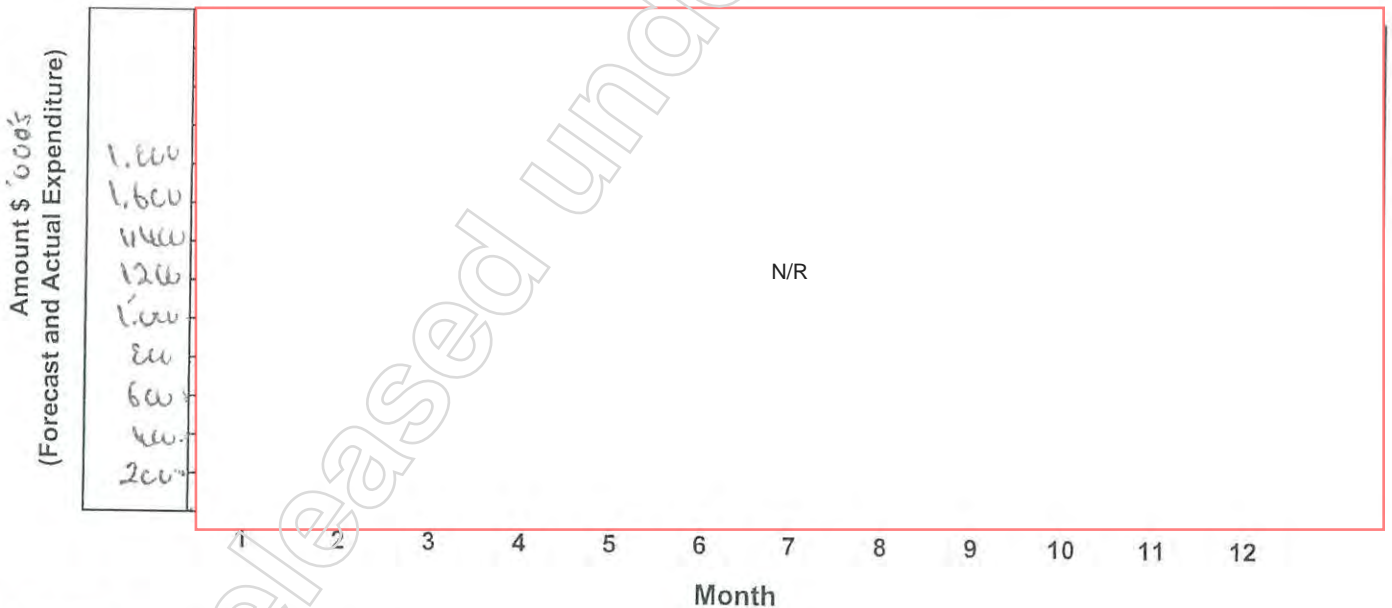
District

Wide Bay/Burnett

Network Schedule

1

Month	Period		Forecast Expenditure (Accumulative Total) (\$)	Amount Claimed for Month (\$)	Actual Expenditure (Accumulative Total) (\$)
	From	To			
1		July	N/R		
2		Aug			
3		Sep			
4		Oct			
5		Nov			
6		Dec			
7		Jan			
8		Feb			
9		Mar			
10		Apr			
11		May			
12		Jun			



Authorisation

Name/Position

Chris Van Den Kieboom

Operations Manager

RoadTek Wide Bay

Ph: (07) 4131 2501 Mob:

N/R

S

N/R

Date

9/6/20

# Programmed Expenditure Flow RMPC

C6088

Contractor

Invitation Number

DC\_20\_21

RoadTek Wide Bay

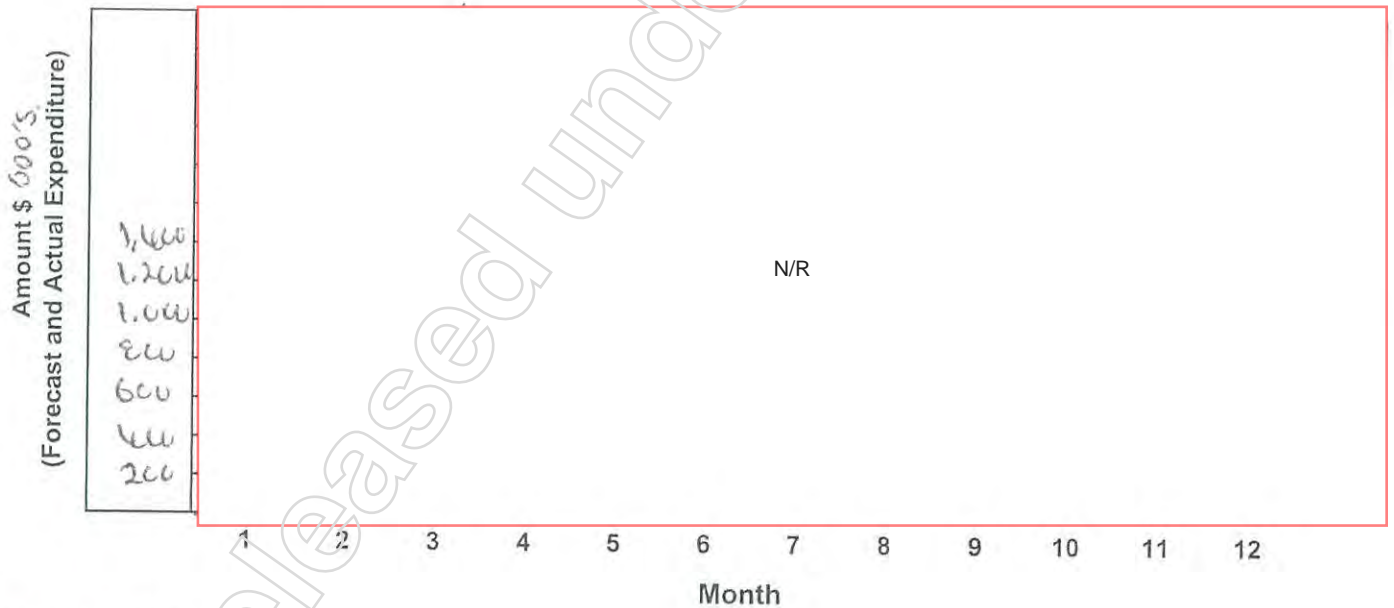
District

Wide Bay/Burnett

Network Schedule

3

Month	Period		Forecast Expenditure (Accumulative Total) (\$)	Amount Claimed for Month (\$)	Actual Expenditure (Accumulative Total) (\$)
	From	To			
1		July	N/R		
2		Aug			
3		Sep			
4		Oct			
5		Nov			
6		Dec			
7		Jan			
8		Feb			
9		Mar			
10		Apr			
11		May			
12		June			



Authorisation

Name/Position: Chris Van Den Kieboom

Operations Manager  
RoadTek Wide Bay

Signature

N/R

Date

8/6/20

Ph: (07) 4131 2501 Mob:

N/R



# Conditional Agreement

RMPC



Queensland Government

C6094

### Agreement Between

RoadTek Wide Bay

referred to as the Contractor, and

The State of Queensland through Queensland Department of Transport & Main Roads

referred to as the Principal

Invitation Number

DC\_20\_21

District

Wide Bay/Burnett

Ratified by (✓ if required)

Principal

✓

Contractor

### Recitals

1 The Principal invited the Contractor to offer to perform the road maintenance services in accordance with the Contract Documents.

2 The Contractor has offered to carry out the road maintenance services in accordance with the Contract Documents.

3 Payment under the Contract will be part Schedule of Rates / Part Lump Sum / Part Provisional Sum with a Total Contract Amount of

N/R

and a Total GST Amount of

\$0.00

4 Does the Queensland Code apply

Yes

5 Does the Queensland Government Procurement Policy (including Ethical Supplier Threshold and Mandate) apply

Yes

6 The Contract Period will be from

1/7/20

to 30/6/21

with

1

year(s)

guaranteed renewal period (subject to Clause 4.3 of General Conditions).

### Agreement

Subject to any required ratification of this Agreement within 28 days of the date of this Conditional Agreement, both

the Principal and the Contractor agree that they will comply with all the conditions and matters as set out or reasonably inferred in this Agreement.

The Contractor agrees that it will not commence road maintenance operations until it receives a notice of Ratification (where required) from the Principal or, alternatively, until the start date of the Contract Period.

### Authorisation

#### For the Contractor

Name/Position

Chris Van Den Kieboom

Operations Manager

RoadTek Wide Bay

Signature

N/R

Date

2/6/20

#### For the Principal

(07) 4131 2501 Mob:

N/R

Name/Position

Brendan Clancy, Manager (Delivery & Operations)

Signature

N/R

Date

Digitally signed by Brendan Clancy  
Date: 2020.06.07 12:21:28 +10'00'

# Conditional Agreement

## RMPC

C6094

List of Contract Documents

Invitation Number

DC\_20\_21

A. This Conditional Agreement dated

21/6/20

B. Documents to be completed by the Contractor

Description	Identification	Description	Identification
Schedule Summary	C6084.1	Minor Works Schedule(s) (if applicable)	C6084.3
Network Schedule 1	C6084.2	Network Schedule 2	C6084.2
Standing Offer Rates	C6086	Daywork Schedule	C6087
Programmed Expenditure Flow for Network 1	C6088	Programmed Expenditure Flow for Network 2	C6088
Intervention Levels / Response Time Schedule for Network 1	C6095	Intervention Levels / Response Time Schedule for Network 2	C6095
Queensland Code Compliance	C7810.S6	Environmental Plan	
Quality Plan		Safety Plan	
Implementation Plan for Evidence Guide	C6089	Ethical Supplier Threshold	C7810.S10.RMPC

C. Documents that apply directly

Description	Identification	Description	Identification
Invitation to Offer (C6081)	C6081 March 2020		
General Conditions (C6083)	C6083 March 2020		

D. Documents incorporated by Reference

Description	Identification	Description	Identification
Standard Specifications	Latest version as published on TMR website	Road Maintenance Performance Contract - Manual	Latest version as published on TMR website
The Roads & Transport Alliance	2013/18 or current	Routine Maintenance Guidelines	Latest version as published on TMR website
Mutual Obligation Agreement (if applicable)		Manual of Uniform Traffic Control Devices	Latest version as published on TMR website

# Conditional Agreement RMPC



Queensland Government

C6094

Contractor's Details

Invitation Number

DC\_20\_21

To be completed by the Offerer

Local Government

TMR Service Delivery Unit

Name (Full Name in Block Letters)

DEPARTMENT OF TRANSPORT & MAIN ROADS

of

Street Address

2nd Flr 7 TAKALVAN ST BUNDABERG 4670

Postal Address

P.O. Box 1890, BUNDABERG 4670

Contractor's Delegate

Name

Chris Van Den Kieboom

Operations Manager

RoadTek Wide Bay

Ph: (07) 4131 2501 Mob:

N/R

Telephone Number

Email

Chris.vandenkieboom@  
tmr.qld.gov.au

Insurance

Workers Compensation

Policy Number

GAA100744508

Expiry Date

30/9/20

Public Liability

Insurer/Policy Number

DTMR 19/20

Expiry Date

30/6/20

Insured Amount

\$

N/R

Professional Indemnity

Insurer/Policy Number

Expiry Date

Insured Amount

\$

Note: Public Liability and Professional Indemnity Insurance not required where the Contractor is a TMR Service Delivery Unit.

The Department of Transport and Main Roads collects personal information on this form so that you may execute the contract for and on behalf of the contractor. The information on this form is accessible by authorised departmental officers and third parties engaged to administer the contract or resolve disputes who will not disclose your personal details to a third party without your consent unless required to do so by law.

# Conditional Agreement

RMPC



Queensland Government

C6094

Details of Network

Invitation Number

DC\_20\_21

## 1. National Highways

Road Section No.	Road Section Name †	Through Start Distance	Through Distance End	Length (kms)	Applied to Schedule Nos.
10A					
10B					
10C					
10D					

N/R

† If parts of the Network are to be excluded, this should be noted here.

## 2. Other State Controlled Roads

Road Section No.	Road Section Name †	Through Start Distance	Through Distance End	Length (kms)	Applied to Schedule Nos.
141					
1411					
1413					
143					
1603					
162					
163					
1632					
164					
166					
1703					
171					
172					
1720					
174					

N/R

N/R

† If parts of the Network are to be excluded, this should be noted here.

## Principal Details

Name

The State Government of Queensland acting through the Department of Transport and Main Roads

Street Address/Postal Address (if different)	Progress Claim/Electronic File Transfer Address (if different)
23 Quay St, Bundaberg  Locked Bag 466 Bundaberg QLD 4670	BUND_PPS@tmr.qld.gov.au

## Principal's Delegate

Name	Telephone No.	Email
Hendrik Roux, District Director (Wide Bay Burnett)	4154 0200	Bundaberg.office@tmr.qld.gov.au

# Conditional Agreement

RMPC



Queensland Government

C6094

Details of Network

Invitation Number

DC\_20\_21

## 2. Other State Controlled Roads

Road Section No.	Road Section Name †	Through Start Distance	Through Distance End	Length (kms)	Applied to Schedule Nos.
175					
1751					
176					
1761					
177					
179					
19A					
19B					
19C					
40C					
41A					
41B					
41C					
41D					
4161					
419					
4196					
4202					
4206					
426					

N/R

† If parts of the Network are to be excluded, this should be noted here.

### Principal Details

Name

The State Government of Queensland acting through the Department of Transport and Main Roads

Street Address/Postal Address (if different)

23 Quay St, Bundaberg

Locked Bag 426

Bundaberg

QLD 4670

Progress Claim/Electronic File Transfer Address (if different)

BUND\_PPS@tmr.qld.gov.au

### Principal's Delegate

Name

Telephone No.

Email

Hendrik Roux, District Director (Wide Bay Burnett)

4154 0200

Bundaberg.office@tmr.qld.gov.au

**Conditional Agreement**  
**RMPC**



C6094

Details of Network

Invitation Number DC\_20\_21

**2. Other State Controlled Roads**

Road Section No.	Road Section Name †	Through Start Distance	Through Distance End	Length (kms)	Applied to Schedule Nos.
428					
429					
435					
4356					
436					
4364					
4365					
437					
439					
44A					
45A					
45B					
4511					
454					
4702					
4706					
471					
4715					
474					
475					
476					
477					

N/R

† If parts of the Network are to be excluded, this should be noted here.

**Principal Details**

Name

The State Government of Queensland acting through the Department of Transport and Main Roads

Street Address/Postal Address (if different)	Progress Claim/Electronic File Transfer Address (if different)
23 Quay St, Bundaberg  Locked Bag 486 Bundaberg QLD 4670	BUND_PPS@tmr.qld.gov.au

**Principal's Delegate**

Name	Telephone No.	Email
Hendrik Roux, District Director (Wide Bay Burnett)	4154 0200	Bundaberg.office@tmr.qld.gov.au

# Conditional Agreement RMPC



Queensland Government

C6094

Details of Network

Invitation Number

DC\_20\_21

## 2. Other State Controlled Roads

Road Section No.	Road Section Name †	Through Start Distance	Through Distance End	Length (kms)	Applied to Schedule Nos.
478					
479					
480					
4806					
4807					
4808					
481					
482					
483					
4832					
485					
486					
487					
488					
491					
914					

N/R

† If parts of the Network are to be excluded, this should be noted here.

### Principal Details

Name

The State Government of Queensland acting through the Department of Transport and Main Roads

Street Address/Postal Address (if different)	Progress Claim/Electronic File Transfer Address (if different)
23 Quay St, Bundaberg  Locked Bag 486 Bundaberg QLD 4670	BUND_PPS@tmr.qld.gov.au

### Principal's Delegate

Name

Telephone No.

Email

Hendrik Roux, District Director (Wide Bay Burnett)

4154 0200

Bundaberg.office@tmr.qld.gov.au

RoadTek  
 Wide Bay Operations  
 PO Box 1890  
 Bundaberg, QLD, 4670  
 Enquiries: 07 4131 2500

# Submission Schedule



Queensland  
 Government

Department of  
 Transport and Main Roads

Wide Bay/Burnett Region  
 MAIN ROADS-BUNDBERG  
 BUNDBERG, QLD, 4670

Contract Number: 6110009869  
 Customer Number: 500119  
 Customer Reference: CN-14427  
 Date: 09.06.2020

## CN-14427 RMPC Roads Schedule 1

Item	Description	Unit	Quantity	Unit Rate	Amount(AUD)
10100	Edge Repair (manual)	prov sum	1.00		N/R
10500	Pothole Patching	prov sum	180,000.00		
11100	Surface Correction with Premix/asphalt (mechanical) - Minor (<150m per 1km)	prov sum	20,000.00		
11800	Seal Coating - minor (>1500m2 per 1km)	prov sum	10,000.00		
13100	Surface Sweeping	prov sum	0.001		
13600	Surface Debris Removal	prov sum	0.001		
13900	Other Bituminous Surface Work	prov sum	50,000.00		
14320	Depth up to 200mm	m2	1		
14330	Depth up to 300mm	m2	1		
14400	Subgrade Treatment with Pavement Repair	prov sum	10,000.00		
14620	Depth up to 200mm (Actual 120mm)	m2	1,750		
15300	Insitu Stabilisation	m3	350		
22900	Other Unsealed Shoulder Work	prov sum	30,000.00		
30200	Repair earth surface drains	prov sum	25,000.00		
30500	Clean earth and concrete surface drains	m	200		
31900	Other surface drain work	prov sum	30,000.00		
32900	Other culvert, pipe and pit work	prov sum	5,000.00		
33900	Other subsoil drain work	prov sum	5,000.00		
40100	Tractor slashing - Rural	hectare	350		
40300	Tractor slashing - boom mower	prov sum	20,000.00		
40500	Clearing	prov sum	20,000.00		
40700	Herbicide Spraying	litre	37,500		
41900	Other vegetation control works	prov sum	15,000.00		
42000	Roadside litter collection - rural	prov sum	165,000.00		
42900	Other roadside work	prov sum	5,000.00		
44000	Rest area servicing	prov sum	150,000.00		

N/R

Tenderer's signature

Name of Tenderer: RoadTek

Witness: Chris Van Den Kieboom  
 Operations Manager  
 RoadTek Wide Bay  
 Ph: (07) 4131 2501 Mob: N/R



**Contract Number:** 6110009869  
**Customer Number:** 500119  
**Customer Reference:** CN-14427  
**Date:** 09.06.2020

Item	Description	Unit	Quantity	Unit Rate	Amount(AUD)
44100	Service driver reviver sites	prov sum	25,000.00		N/R
50200	Repair signs (excl guide signs)	prov sum	7,500.00		
50600	Repair Guide Signs	prov sum	12,500.00		
50900	Other Sign work	prov sum	5,000.00		
51200	Repair or replace guide markers	prov sum	20,000.00		
51900	Other guide post and marker work	prov sum	20,000.00		
52200	Repair or replace guardrail, barrier furniture	prov sum	100,000.00		
55900	Other furniture repairs	prov sum	0.001		
90300	Inspections for forward list of works	prov sum	69,995.55		

Total for project(excluding GST)

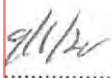
GST for project(GST rate =10.00 %)

Total for project(including GST)

N/R

Tenderer's signature

N/R



Witness

Name of Tenderer: RoadTek

**Chris Van Den Kieboom**  
 Operations Manager  
 RoadTek Wide Bay

Ph: (07) 4131 2501 Mob

N/R

ABN 39407690291

RoadTek  
Wide Bay Operations  
PO Box 1890  
Bundaberg, QLD, 4670  
Enquiries: 07 4131 2500

# Submission Schedule



Department of  
Transport and Main Roads

Wide Bay/Burnett Region  
MAIN ROADS-BUNDBERG  
BUNDBERG, QLD, 4670

Contract Number: 6110009870  
Customer Number: 500119  
Customer Reference: CN-14427  
Date: 09.06.2020

CN-14427 RMPC Roads Schedule 2

Item	Description	Unit	Quantity	Unit Rate	Amount(AUD)
45000	Call out	prov sum	10,000.00		N/R
45200	Emergency call out activities	prov sum	3,333.33		

Total for project(excluding GST)

GST for project(GST rate =10.00 %)

Total for project(including GST)

N/R

Page 1 of 1

Tenderer's signature

N/R

9/6/20

Witness

Name of Tenderer: RoadTek

Chris Van Den Kieboom

Operations Manager

RoadTek Wide Bay

Ph: (07) 4131 2501 Mob:

N/R

RoadTek  
 Wide Bay Operations  
 PO Box 1890  
 Bundaberg, QLD, 4670  
 Enquiries: 07 4131 2500

# Submission Schedule



Queensland  
 Government

Department of  
 Transport and Main Roads

Wide Bay/Burnett Region  
 MAIN ROADS-BUNDBERG  
 BUNDBERG, QLD, 4670

Contract Number: 6110009871  
 Customer Number: 500119  
 Customer Reference: CN-14427  
 Date: 09.06.2020

CN-14427 RMPC Roads Schedule 3

Item	Description	Unit	Quantity	Unit Rate	Amount(AUD)
10100	Edge Repair (manual)	prov sum	10,000.00		N/R
10500	Pothole Patching	prov sum	150,000.00		
11100	Surface Correction with Premix/asphectarelt (mechectarenel) - Minor (<150m per 1km)	prov sum	10,000.00		
11800	Seal Coating - minor (>1500m2 per 1km)	prov sum	7,500.00		
13100	Surface Sweeping	prov sum	7,500.00		
13500	Surface Debris Removal	prov sum	0.001		
13900	Other Bituminous Surface Work	prov sum	50,000.00		
<del>143200</del>	Depth up to 200mm	m2	25		
14400	Subgrade Treatment with Pavement Repair	prov sum	0.001		
<del>146200</del>	Depth up to 200mm (Actual 120mm)	m2	650		
15300	Insitu Stabilisation	m3	250		
22900	Other Unsealed Shoulder Work	prov sum	100,000.00		
30200	Repair earth surface drains	prov sum	20,000.00		
30500	Clean earth and concrete surface drains	m	1		
31900	Other surface drain work	prov sum	75,000.00		
32900	Other culvert, pipe and pit work	prov sum	75,000.00		
33900	Other subsoil drain work	prov sum	0.001		
40100	Tractor slashing - Rural	hectare	325		
40300	Tractor slashing - boom mower	prov sum	10,000.00		
40500	Clearing	prov sum	100,000.00		
40700	Herbicide Spraying	litre	40,000		
41900	Other vegetation control works	prov sum	10,000.00		
42000	Roadside litter collection - rural	prov sum	37,500.00		
42900	Other roadside work	prov sum	7,500.00		
50200	Repair signs (excl guide signs)	prov sum	2,500.00		
50600	Repair guide signs	prov sum	75,000.00		

Tenderer's signature.

N/R

Name of Tenderer: RoadTek

Chris Van Den Kieboom

Witness ..... Operations Manager....

RoadTek Wide Bay

Ph: (07) 4131 2501 Mob:

N/R

**Contract Number:** 6110009871  
**Customer Number:** 500119  
**Customer Reference:** CN-14427  
**Date:** 09.06.2020

Item	Description	Unit	Quantity	Unit Rate	Amount(AUD)
50900	Other Sign work	prov sum	20,000.00		N/R
51200	Repair or replace guide markers	prov sum	30,000.00		
51900	Other guide post and marker work	prov sum	25,000.00		
52200	Repair or replace guardrail, barrier furniture	prov sum	110,000.00		
55900	Other furniture repairs	prov sum	0.001		
90300	Inspections for forward list of works	prov sum	64,711.88		

Total for project(excluding GST)

GST for project(GST rate =10.00 %)

Total for project(including GST)

N/R

Tenderer's signature

N/R

9/6/20

Witness

Name of Tenderer: RoadTek

Van Den Nieboom  
 Operations Manager  
 Road Tek Wide Bay  
 07) 4151 2501 Mob

N/R

RoadTek  
Wide Bay Operations  
PO Box 1890  
Bundaberg, QLD, 4670  
Enquiries: 07 4131 2500

# Submission Schedule



Queensland  
Government

Department of  
Transport and Main Roads

Wide Bay/Burnett Region  
MAIN ROADS-BUNDBERG  
BUNDBERG, QLD, 4670

Contract Number: 6110009872  
Customer Number: 500119  
Customer Reference: CN-14427  
Date: 09.06.2020

CN-14427 RMPC Roads Schedule 4

Item	Description	Unit	Quantity	Unit Rate	Amount(AUD)
45000	Call out	prov sum	24,166.67		N/R
45200	Emergency call out activities	prov sum	2,500.00		

Total for project(excluding GST)

GST for project(GST rate =10.00 %)

Total for project(including GST)

N/R

Tenderer's signature

N/R

Name of Tenderer: RoadTek

*Chris Van Den Kieboom*  
Witness ..... Chris Van Den Kieboom  
Operations Manager  
RoadTek Wide Bay

Ph: (07) 4131 2501 Mob:

N/R

# Intervention Level/Response Time Schedule RMPC



C6095

Invitation Number

These values apply to Network Schedule

District

### Intervention Levels

Intervention Levels as per Routine Maintenance Guidelines

### Response Time

Response Times as per Routine Maintenance Guidelines

Road Number/Description	Defect Code	Intervention Level	Defect/Activity Code	Response Time	Comments

As detailed in the Routine Maintenance Guidelines published on the TMR website

### Traffic Delays

Maximum Traffic Delays will be  minutes except for

Road Number/Description	Delay (minutes)	Road Number/Description	Delay (minutes)

### Authorisation

For the Contractor

**Chris Van Den Kieboom**

Name  Operations Manager Position

Signature  Date

For the Principal

Name  Position

Signature  Digitally signed by Brendan Clancy Date: 2020.06.07 19:20:49 +10'00' Date



# Record of appointment of a Principal Contractor

## Owner's details

Owner's name	Department of Transport & Main Roads	ABN	39 407 690 291
Registered address	23 Quay Street Bundaberg Qld 4670		
Telephone	07 4154 0200	Facsimile	07 4152 3878
Email	Bundaberg.office@tmr.qld.gov.au		
Signature	N/R	<small>Digitally signed by Brendan Clancy Date: 2020.06.07 19:20:16 +10'00'</small>	Date

## Construction work details

Project address, Project & Contract No.	2020/2021 RoadTek Roads RMPC OPPM No. 1468014 (D12/D004 - NN), 1626154 (D12/D002 - NN Callout), 1468015 (D12/D001 - SN) & 1626153 (D12/D001 - SN Callout): Contract No. CN-14427		
Primary construction type	<input checked="" type="checkbox"/> Road Construction	<input type="checkbox"/> Bridge Construction	Project valuation (GST Excl.) N/R
Start date	1 July 2020	Proposed finish date	30 June 2021

## Principal Contractor's details

Legal name	RoadTek Wide Bay	ABN	39 407 690 291
Registered address	PO Box 1890 Bundaberg	State	Qld
		Postcode	4670
Telephone	07 4131 2500	Telephone (after hrs)	
Facsimile	07 4153 6148	Mobile	
The person authorised by the principal contractor	N/R		
Name	Ch	Position	Operations Manager
Signature		Date	2/6/20

# Attachment

D

Road Inspection Frequency Data  
AADT Data and Road Category Data  
Hazard Risk Assessment



## Hazards Procedure

### HAZARD IDENTIFICATION AND ASSESSMENT:

Identification and risk assessment (determining whether defect is a danger or hazard)

When a DEFECT is identified (following inspection, complaint, notification by the PRINCIPAL or otherwise), determine whether the DEFECT constitutes an immediate danger or HAZARD to traffic, road users or other members of the public or is likely to become a danger or HAZARD before the expiry of the time during which it would be rectified in the normal course of events

If it is unlikely that that a HAZARDOUS situation exists, the emergency crew should not be mobilised until YOU have determined that this is the appropriate type of response required in the circumstances.

This risk assessment procedure is provided as guide. This is intended to provide assistance in determining whether the DEFECT constitutes an immediate danger or HAZARD. When a defect's criteria as defined in RMPC standards crosses or is about to cross upper defect level of a SAFETY nature, it is highly likely that it would be HAZARDOUS.

In determining if a DEFECT is or is likely to become a danger or a HAZARD to the users, the following must be considered, as a minimum following by likelihood and consequences assessment:

1. Severity and nature of the DEFECT.
2. Extent of DEFECT (combined effect of multiple occurrences of the DEFECT within localised area).

### HAZARD ACTION:

#### Time allowed to assess need for emergency action

You must assess the need for emergency action within the following times:

1. 5 minutes during NORMAL WORKING TIMES plus normal travel time to site
2. 10 minutes outside NORMAL WORKING TIMES plus normal travel time to site

#### Time allowed to mobilise crew and start work

If the DEFECT continues an immediate danger or HAZARD to traffic, take all steps reasonably available to rectify or remove the DEFECT or HAZARD. A crew must be called out or reassigned as soon as possible in accordance with this clause.

The time to mobilise and start work on site commences after YOU have determined that an EMERGENCY response is necessary.

Mobilise a crew and start work on-site within:

1. 20 minutes during NORMAL WORKING TIMES plus normal travel time to site
2. 40 minutes outside NORMAL WORKING TIMES plus normal travel time to site

#### Take all actions necessary to safeguard road users

At the site of any HAZARD, undertake necessary work to make the site safe and trafficable. If it is not possible to rectify or remove the DEFECT immediately upon identification, take all measures reasonably necessary to safeguard road users and others (including the erection of warning signs, barriers and the provision of traffic control) until such time as repair or removal can be effected or a relevant AUTHORITY directs otherwise.

Complete the rectification of the DEFECT in accordance with the applicable RECTIFICATION STANDARD as soon as practicable.

### **Alternative emergency action**

If it is not possible to provide any measure required under this clause at the time when the DEFECT, HAZARD or incident is identified, then YOU must:

1. Immediately notify the local Police and request assistance (for a DEFECT constituting an immediate danger), or
2. Arrange measures or action within a timeframe YOU consider reasonable in order to protect person and property.

Advise the PRINCIPAL OF DEFECTS, HAZARDS or incidents where YOU were unable to immediately dispatch the necessary resources.

This sub-clause is intended to apply only in exceptional circumstances where YOU are genuinely unable to respond due to resource constraints and the need to meet competing priorities, which are beyond YOUR reasonable control. Noting in this clause is intended to limit YOUR EMERGENCY response obligations.

### **Incident Response**

In an EMERGENCY, advise the appropriate EMERGENCY response agency and request assistance.

- For injured persons contact the Queensland Ambulance Service.
- For bush fires, contact appropriate fire fighting authority (either Qld Fire Brigade, Rural Fire Brigade, fire control officer of the Forestry Commission or the National Parks and Wildlife Services).
- For hazardous materials contact the Qld Fire Brigade
- For Pollution Incidents, contact the Qld Environment Protection Authority
- For stray animals contact the police

Promptly advise the Traffic Management Centre (TMC) of the following incidents:

- A fatal accident.
- Known or suspected hazardous material spillage.
- Significant delays (> 15 minutes) to traffic.
- Illegally parked, abandoned or unattended vehicles hazardous or obstructing traffic or pedestrian movement.

## Hazards Procedure

Inspection Date/Time: \_\_\_\_\_  
 Road ID: \_\_\_\_\_  
 Road Name: \_\_\_\_\_  
 Defect Description: \_\_\_\_\_  
 Defect Chainage: \_\_\_\_\_  
 Defect Offset from CL: \_\_\_\_\_

### Part A: Likelihood

What is the likelihood that a defect will cause a crash/accident due to a combination of individual factors?

Maximum Intervention Level	Score	Your Score	Likelihood Rating
> maximum intervention level	3	3	
< maximum intervention level	1		
<b>Traffic Flow Rate</b>	<b>Score</b>	<b>Your Score</b>	
>1000vph	3	3	
>100vph	2		
<100vph	1		
<b>Traffic Composition</b>	<b>Score</b>	<b>Your Score</b>	
>20% cyclists and motor cyclists	3	3	
>10% cyclists and motor cyclists	2		
<10% cyclists and motor cyclists	1		
<b>Speed Environment</b>	<b>Score</b>	<b>Your Score</b>	
>100km/h	3	1	
>80km/h <100km/h	2		
<80km/h	1		
<b>Location (lateral position)</b>	<b>Score</b>	<b>Your Score</b>	
Within wheel path	5	1	
Adjacent to wheel path	3		
On the shoulder	1		
<b>Visibility because of the terrain, prevailing weather conditions or local factors such as roadwork</b>	<b>Score</b>	<b>Your Score</b>	
Hidden	5	1	
Less than safe stopping distance	3		
Greater than safe stopping distance	1		
<b>Weather Conditions</b>	<b>Score</b>	<b>Your Score</b>	
Flooding	5	1	
Ongoing wet conditions	3		
Showers	1		
Fine	0		
<b>Road Configuration</b>	<b>Score</b>	<b>Your Score</b>	
2 Lane	3	3	
> 2 lane - lane undivided	2		
> 2 lane - land divided	1		
<b>Trafficable width per carriageway</b>	<b>Score</b>	<b>Your Score</b>	
<6m	3	3	
6m < 8m	2		
>8m	1		

>20 = High  
 12 to 20 = Medium  
 <12 = Low

<b>YOUR SCORE</b>	<b>YOUR RATING</b>
19	<b>Medium</b>

### Part B: Consequence

Considering the above criteria, What is the consequence of not mitigating the defect?

On People	Score	Your Score	Consequence Rating  >20 = High  10 to 20 = Medium  <10 = Low
Death or serious injury	20	20	
Total disruption	8		
Property damage or major inconvenience	5		
Minor inconvenience, delay or restricted access	3		
Local Economy	Score	Your Score	
Major Impact	3	3	
Moderate impact	2		
Minor impact	1		
Local Environment	Score	Your Score	
Major Impact	3	3	
Moderate Impact	2		
Minor Impact	1		
Road Agency	Score	Your Score	
Judicial Enquiry (for example, Coroner's Inquest)	20	3	
Potential Litigation	10		
Ministerial or Mayoral Complaint	5		
Complaint	3		

YOUR SCORE	YOUR RATING
29	High

Is the defect currently a hazard or is it likely to become a hazard before the next inspection?

**HAZARD**

Assessment carried out by: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Likelihood			
High (>20)			
Medium (12 - 20)			
Low (<12)			
	Low (<20)	Medium (10 - 20)	High (>20)
	Consequence		

2020/2021 RMPC Inspection Frequency, Intervention Levels and Response Times

LGA	ROAD_SECTION_ID	TDIST_START	TDIST_END	AADT	AADT_YEAR	Geographical Location	Inspection Frequency	Intervention/ Response Time Category
211	171	0	1,758	2009	2019		Weekly	C
211	171	1,758	9,086	3531	2019		Weekly	C
211	171	9,086	17,868	3365	2019		Weekly	C
211	171	17,868	39,343	3742	2019		Weekly	C
211	171	39,343	47,288	4050	2019		Weekly	C
211	171	47,288	50,74	9454	2019		Weekly	C
211	171	50,74	51,107	13128	2019	171/ Sims Road Intersection (includes)	Weekly	B
211	171	51,107	51,943	12580	2019	171/ 174 Intersection (includes)	Weekly	B
211	172	0	1,048	7467	2019		Weekly	C
211	172	1,048	2,702	5874	2019		Weekly	C
211	172	2,702	9,339	4982	2019		Weekly	C
211	172	9,339	11,945	2075	2019		Weekly	C
211	172	11,945	17,969	2223	2019		Weekly	C
211	174	0	0,942	28617	2019	174/ 19A Intersection (excludes)	Weekly	B
211	174	0,942	1,042	11217	2019		Weekly	B
211	174	1,042	2,208	18559	2019		Weekly	B
211	174 *	2,208	3,309	16642	2019		Weekly	B
211	174	3,309	4,066	17061	2019		Weekly	B
211	174	4,066	5,34	14896	2019	174/ 177 Intersection (includes)	Weekly	B
211	174	5,34	8,18	8906	2019		Weekly	C
211	174	8,18	9,763	9532	2019		Weekly	C
211	174	9,763	11,887	9636	2019		Weekly	C
211	174	11,887	13,159	11139	2019		Weekly	C
211	174	13,159	14,417	9262	2019		Weekly	C
211	175	0	1,136	8269	2019		Weekly	C
211	175	1,136	2,138	11986	2019	175/ Banyan St Intersection (includes)	Weekly	B
211	175	2,138	2,46	13662	2019		Weekly	B
211	175	2,46	3,478	15958	2019		Weekly	B
211	175	3,478	4,729	11505	2019		Weekly	B
211	175	4,729	8,291	10053	2019	175/ Windermere Rd Intersection (includes)	Weekly	B
211	175	8,291	9,99	5578	2019		Weekly	C
211	175	9,99	15,24	4175	2019		Weekly	C
211	175	15,24	19,74	1076	2019		Weekly	C
211	176	0	0,61	17900	2019	174/ 176 Intersection (excludes)	Weekly	B
211	176	0,61	1,78	13240	2019		Weekly	B
211	176	1,78	3,977	14339	2019		Weekly	B
211	176	3,977	5,908	10560	2019	176/ 179 Intersection (includes)	Weekly	B
211	177	0	6,89	3630	2019		Weekly	C
211	177	6,89	10,562	5554	2019		Weekly	C
211	177	10,562	12,362	6544	2019		Weekly	C
211	177	12,362	13,411	4845	2019		Weekly	C
211	177	13,411	14,3	2982	2019		Weekly	C
211	179	0	4,518	5521	2019		Weekly	C
211	179	4,518	15,739	4316	2019		Weekly	C
211	179	15,739	25,935	3367	2019		Weekly	C
211	179	25,935	46,405	2375	2019		Weekly	C
211	474	0	30,983	928	2019		Fortnightly	C
211	474	30,983	42,47	501	2019		Fortnightly	C
211	477	0	6,87	682	2019		Fortnightly	C
211	1703	0	9,166	1504	2019		Weekly	C
211	1720	0	1,74	2959	2019		Weekly	C
211	1761	0	4,295	3031	2019		Weekly	C
211	1761	0	3,381	4834	2019		Weekly	C
211	1761	3,381	11,655	3598	2019		Weekly	C
211	1761	11,655	15,428	2737	2019		Weekly	C
211	10C	41,01	54,253	8144	2019		Twice Weekly	C
211	10C	54,253	55,365	7726	2019		Twice Weekly	C
211	10C	55,365	57,212	7747	2019		Twice Weekly	C
211	10C	57,212	63,605	6865	2019		Twice Weekly	C
211	10C	63,605	83,905	3938	2019		Twice Weekly	C
211	10C	83,905	101,82	3958	2019		Twice Weekly	C
211	10C	101,82	111,56	5190	2019		Twice Weekly	C
211	19A	0	1,966	10244	2019	19A/ 176 Intersection (includes)	Weekly	B
211	19A	1,966	3,174	17500	2019		Weekly	B
211	19A	3,174	4,241	20031	2019		Weekly	B
211	19A	4,241	5,529	22083	2019		Weekly	B
211	19A	5,529	12,779	20219	2019	19A/ Park Estate Drive (includes)	Weekly	B
211	19A	12,779	18,169	6689	2019		Weekly	C
211	19A	18,169	20,314	5751	2019		Weekly	C
211	19A	20,314	21,379	5000	2019		Weekly	C
211	19A	21,379	30,595	4281	2019		Weekly	C
211	19A	30,595	47,513	4145	2019		Weekly	C
211	19B	0	0,839	1211	2019		Fortnightly	C
211	19B	0,839	1,914	1018	2019		Fortnightly	C
211	19B	1,914	11,819	892	2019		Fortnightly	C
211	19B	11,819	20,233	1115	2019		Fortnightly	C
228	163	0	0,249	5267	2019		Weekly	C
228	163	0,249	1,448	8602	2019		Weekly	C
228	163	1,448	3,183	15707	2019	163/ Teddington Road Intersection (includes)	Weekly	B
228	163	3,183	4,09	16660	2019	163/ South St Intersection (includes)	Weekly	B
228	163	4,09	4,963	9736	2019	163/ 165/ 478 Intersection (excludes)	Weekly	C
228	163	4,963	5,36	7860	2019		Weekly	C
228	163	5,36	7,65	8326	2019		Weekly	C
228	163	7,65	8,503	14349	2019	163/ Pallas St Intersection (includes)	Weekly	B
228	163	8,503	12,46	12777	2019		Weekly	B
228	163	0	0,585	12636	2019		Weekly	B
228	166	0,585	1,162	5449	2019	166/ Lennox St (excludes)	Weekly	B
228	166	1,162	1,601	3068	2019		Weekly	C
228	166	1,601	2,038	7790	2019		Weekly	C
228	166	2,038	3,127	9064	2019		Weekly	C
228	166	3,127	3,409	5448	2019		Weekly	C
228	166	3,409	5,505	3891	2019		Weekly	C
228	166	5,505	18,383	2658	2019		Weekly	C
228	166	18,383	45,75	1549	2019		Weekly	C
228	478	0	2,562	9102	2019		Weekly	C
228	478	2,562	3,38	7891	2019		Weekly	C
228	478	3,38	4,139	7473	2019		Weekly	C
228	478	4,139	7,3	5542	2019		Weekly	C
228	478	7,3	53,325	762	2019	478/ 479 Intersection (includes)	Fortnightly	C

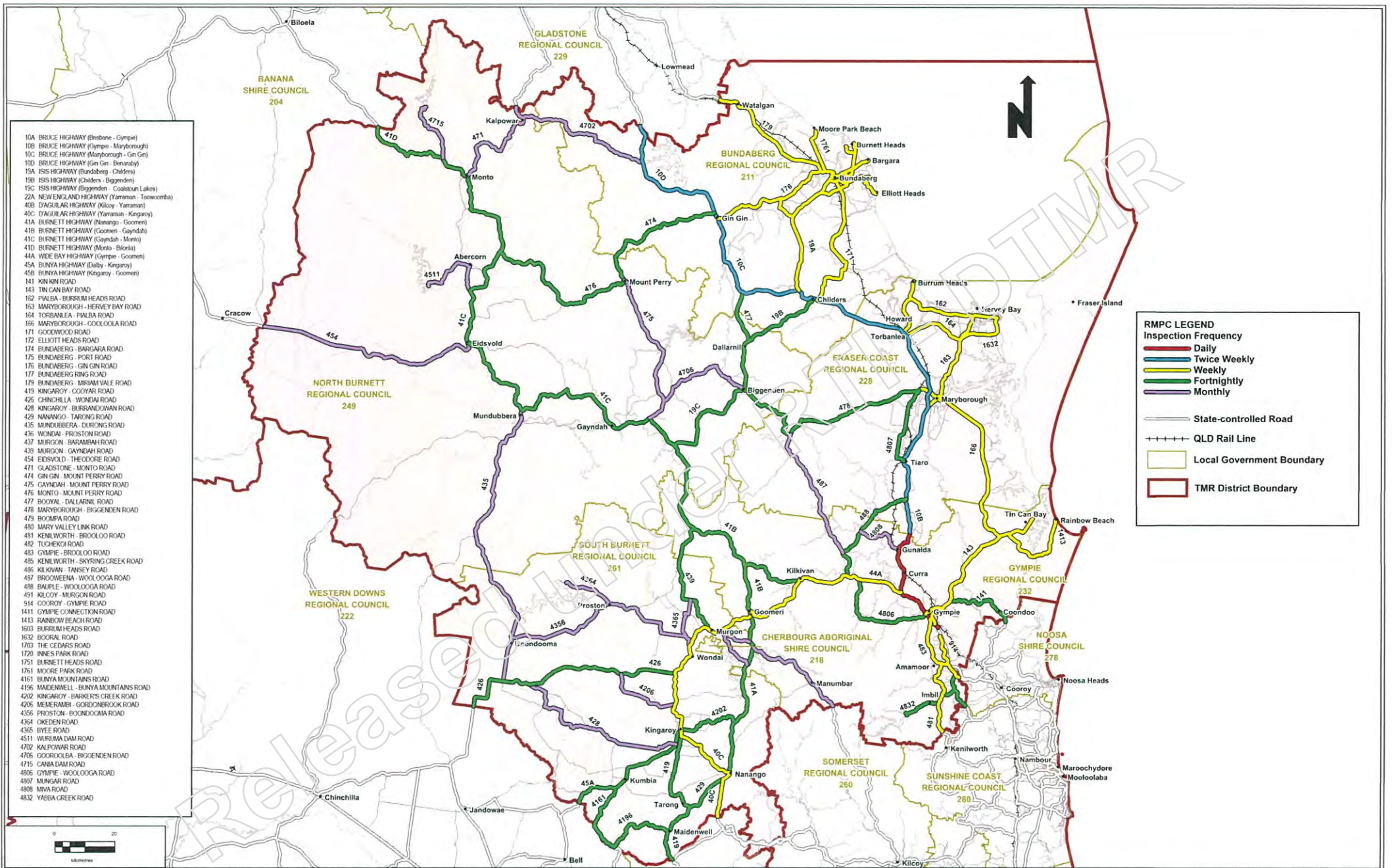
228	479	0	8.85	482	2019		Fortnightly	D
228	487	0	6.47	290	2019		Fortnightly	D
228	487	6.47	13.716	290	2019		Monthly	D
228	487	13.716	40.933	228	2019		Monthly	D
228	488	0	5.682	431	2019		Fortnightly	D
228	488	5.682	15.05	352	2019	488/ Netherby Road Intersection (includes)	Fortnightly	D
228	4807	0	2.864	506	2019		Fortnightly	C
228	4807	2.864	10.662	308	2019		Fortnightly	C
228	4807	10.662	16.459	517	2019		Fortnightly	C
228	4807	16.459	25.292	788	2019		Fortnightly	C
228	4807	25.292	28.038	2244	2019		Fortnightly	C
232	141	0	7.78	811	2019		Fortnightly	C
232	141	7.78	26.32	258	2019	141/ Neusavale Road intersection (exclude)	Fortnightly	D
232	143	0	1.74	8574	2019		Weekly	C
232	143	1.74	2.33	12015	2019		Weekly	C
232	143	2.33	3.39	11375	2019		Weekly	C
232	143	3.39	4.35	5341	2019		Weekly	C
232	143	4.35	7.35	4081	2019		Weekly	C
232	143	7.35	8.26	6706	2019		Weekly	C
232	143	8.26	11.66	6043	2019		Weekly	C
232	143	11.66	25.26	4820	2019		Weekly	C
232	143	25.26	29.85	4189	2019		Weekly	C
232	143	29.85	42.11	4084	2019		Weekly	C
232	143	42.11	46.5	3978	2019		Weekly	C
232	143	46.5	52.5	4708	2019		Weekly	C
232	143	52.5	56.14	1905	2019		Weekly	C
232	166	45.75	55.72	1549	2019		Weekly	C
232	166	55.72	60.01	1292	2019		Weekly	C
232	439	31.36	42.05	604	2019		Fortnightly	C
232	480	0.7	2.98	2237	2019		Weekly	C
232	481	6.75	14.21	655	2019		Weekly	C
232	482	0	4.58	883	2019		Fortnightly	C
232	483	0	0.43	11725	2019		Weekly	C
232	483	0.43	2.66	6162	2019		Weekly	C
232	483	2.66	15.1	3058	2019		Weekly	C
232	483	15.1	17.54	2045	2019		Weekly	C
232	483	17.54	24.27	1562	2019		Weekly	C
232	483	24.27	29.96	583	2019		Weekly	C
232	483	29.96	34.48	1092	2019		Weekly	C
232	483	34.48	37.37	731	2019		Weekly	C
232	485	0	5.62	1177	2019		Fortnightly	C
232	485	5.62	9.2	413	2019		Fortnightly	C
232	485	9.2	12.67	519	2019		Fortnightly	C
232	486	0	22.63	580	2019		Fortnightly	D
232	487	40.933	54.18	228	2019		Monthly	D
232	488	15.05	30.765	594	2019		Fortnightly	C
232	488	30.765	40.051	913	2019		Fortnightly	C
232	491	67.92	105.82	61	2019		Monthly	E
232	914	10.85	12.34	1200	2019		Weekly	C
232	914	12.34	17.19	1200	2019		Weekly	C
232	914	17.19	28.13	1625	2019		Weekly	C
232	1411	0	0.92	7623	2019		Weekly	D
232	1411	0.92	2.15	6217	2019		Weekly	C
232	1411	2.15	2.91	7952	2019		Weekly	D
232	1411	2.91	3.47	7263	2019		Weekly	C
232	1411	3.47	6.32	3058	2019		Weekly	C
232	1413	0	10.07	1459	2019		Weekly	C
232	1413	10.07	29.24	2026	2019		Weekly	C
232	1413	29.24	29.477	3106	2019		Weekly	C
232	4806	0	0.8	12807	2019	4806/ Bruce Hwy Intersection (exclude)	Fortnightly	B
232	4806	0.8	1.33	12172	2019		Fortnightly	B
232	4806	1.33	1.72	10811	2019		Fortnightly	B
232	4806	1.72	2.32	6531	2019	4806/ Eel Creek Road intersection (exclude)	Fortnightly	C
232	4806	2.32	7.39	2648	2019		Fortnightly	C
232	4806	7.39	18.74	1090	2019		Fortnightly	C
232	4806	18.74	23.78	1010	2019		Fortnightly	C
232	4806	23.78	38.128	329	2019	4806/ Upper Widgee Road intersection (exclude)	Fortnightly	D
232	4808	0	6.788	305	2019		Monthly	D
232	4808	6.788	10.82	27	2019		Monthly	D
232	4808	10.82	17.77	21	2019	Dickabram Bridge abutment A (include)	Monthly	E
232	4832	0	2.14	1016	2019		Fortnightly	C
232	4832	2.14	3.52	1882	2019		Fortnightly	C
232	4832	3.52	5.11	629	2019		Fortnightly	C
232	4832	5.11	8.95	474	2019		Fortnightly	C
232	4832	8.95	13.35	328	2019		Fortnightly	C
232	10A	138.3	140.96	18259	2019		Daily	B
232	10A	140.96	143.24	21758	2019		Daily	B
232	10A	143.24	143.95	20937	2019		Daily	B
232	10A	143.95	144.19	20937	2019		Daily	B
232	10A	144.19	144.43	20937	2019		Daily	B
232	10B	0	0.22	26916	2019		Daily	B
232	10B	0.22	0.92	21241	2019		Daily	B
232	10B	0.92	2.73	16999	2019		Daily	B
232	10B	2.73	7.13	16722	2019		Daily	B
232	10B	7.13	12.2	11886	2019		Daily	B
232	10B	12.2	14.02	12294	2019		Daily	B
232	10B	14.02	27.43	11876	2019		Daily	B
232	10B	27.43	34.041	10203	2019	10B/ Wards Rd (includes)	Daily	B
232	41A	35.418	38.718	1890	2019		Fortnightly	C
232	41A	38.718	43.768	1440	2019		Fortnightly	C
232	41A	43.768	48.831	1105	2019		Fortnightly	C
232	41A	48.831	58.009	1513	2019		Fortnightly	C
232	41A	58.009	59.776	3952	2019		Fortnightly	C
232	41B	0	2.54	1346	2019		Fortnightly	C
232	41B	2.54	17	971	2019		Fortnightly	C
232	41B	17	41.9	1409	2019		Fortnightly	C
232	41B	41.9	58.19	1469	2019		Fortnightly	C
232	44A	0	0.23	3098	2019		Weekly	C
232	44A	0.23	10.472	2963	2019		Weekly	C
232	44A	10.472	20.422	2671	2019		Weekly	C
232	44A	20.422	35.731	2735	2019		Weekly	C
232	44A	35.731	37.051	2844	2019		Weekly	C

232	44A	37,051	62,731	2015	2019		Weekly	C
232	45B	52,66	60,03	1876	2019		Weekly	C
249	435	0	2,4	1280	2019		Monthly	C
249	435	2,4	8,999	1644	2019		Monthly	C
249	435	8,999	14,517	475	2019	435/ Wagners Road intersection (excludes)	Monthly	D
249	435	14,517	62,54	290	2019		Monthly	D
249	454	0	2,971	627	2019		Monthly	C
249	454	2,971	77,4	272	2019	454/ Ross Crossing Road intersection (excludes)	Monthly	D
249	471	88,623	94,003	116	2019		Monthly	D
249	471	94,003	115,931	225	2019	471/ 4702 intersection (includes)	Monthly	D
249	471	115,931	130,492	364	2019		Monthly	D
249	471	130,492	132,097	659	2019		Monthly	C
249	474	42,47	50,573	1478	2019		Fortnightly	C
249	475	0	11,295	564	2019		Monthly	D
249	475	11,295	26,741	100	2019		Monthly	E
249	475	26,741	55,672	381	2019		Monthly	E
249	476	0	33,44	139	2019		Fortnightly	D
249	476	33,44	40,781	213	2019		Fortnightly	D
249	476	40,781	58,843	570	2019		Fortnightly	C
249	477	6,87	18,18	682	2019		Fortnightly	C
249	478	53,235	66,078	482	2019		Fortnightly	C
249	478	66,078	68,37	588	2019	478/ National Park Road intersection (includes)	Fortnightly	C
249	4511	0	28,824	109	2019		Monthly	D
249	4702	6,43	51,095	56	2019	End of seal to Kalpowar	Monthly	E
249	4706	0	25,109	247	2019		Monthly	D
249	4706	25,109	36,711	296	2019		Monthly	D
249	4715	0	20,654	261	2019		Monthly	D
249	4715	20,654	24,13	73	2019	4715/ Park Road intersection (excludes)	Monthly	D
249	19B	20,233	31,884	1115	2019		Fortnightly	C
249	19B	31,884	43,996	1662	2019		Fortnightly	C
249	19B	43,996	45,244	1439	2019		Fortnightly	C
249	19B	45,244	45,732	1660	2019		Fortnightly	C
249	19C	0	0,81	1442	2019		Fortnightly	C
249	19C	0,81	23,455	1431	2019		Fortnightly	C
249	19C	23,455	27,574	1276	2019		Fortnightly	C
249	19C	27,574	37,764	1190	2019		Fortnightly	C
249	41B	58,19	74,05	1469	2019		Fortnightly	C
249	41B	74,05	86,89	1545	2019		Fortnightly	C
249	41B	86,89	95,892	1845	2019		Fortnightly	C
249	41B	95,892	99,46	1754	2019		Fortnightly	C
249	41B	99,46	100,66	2166	2019		Fortnightly	C
249	41C	0	0,47	3250	2019		Fortnightly	C
249	41C	0,47	7,348	1562	2019		Fortnightly	C
249	41C	7,348	23,847	923	2019		Fortnightly	C
249	41C	23,847	43,71	1030	2019		Fortnightly	C
249	41C	43,71	78,461	1204	2019		Fortnightly	C
249	41C	78,461	117,417	662	2019		Fortnightly	C
249	41C	117,417	139,584	674	2019		Fortnightly	C
249	41C	139,584	150,961	962	2019		Fortnightly	C
249	41C	150,961	151,686	1260	2019		Fortnightly	C
249	41D	0	3,518	1578	2019		Fortnightly	C
249	41D	3,518	11,688	936	2019		Fortnightly	C
249	41D	11,688	41,473	677	2019	41D/ 4715 intersection (excludes)	Fortnightly	C
261	419	0	29,79	1155	2019		Fortnightly	C
261	419	29,79	51,6	707	2019		Fortnightly	C
261	426	71,62	132,47	414	2019		Fortnightly	D
261	426	132,47	151,7	709	2019	426/ 4202 intersection (includes)	Fortnightly	C
261	428	0	6,96	643	2019		Monthly	C
261	428	6,96	64,39	143	2019		Monthly	D
261	429	0	15,59	654	2019		Fortnightly	C
261	435	62,54	89,64	209	2019		Monthly	D
261	435	89,64	104,86	257	2019		Monthly	D
261	436	0	36,31	461	2019		Monthly	D
261	437	0	14,09	625	2019		Monthly	C
261	439	0	12,93	582	2019		Fortnightly	C
261	439	12,93	31,36	548	2019		Fortnightly	C
261	491	105,82	116,92	107	2019		Monthly	E
261	4161	31,27	58,21	225	2019		Fortnightly	D
261	4196	0	25,52	89	2019		Fortnightly	D
261	4202	0	2,01	3864	2019		Fortnightly	C
261	4202	2,01	22,39	778	2019		Fortnightly	C
261	4206	0	25,15	252	2019		Monthly	D
261	4356	0	39,46	193	2019		Monthly	D
261	4364	0	17,3	148	2019		Monthly	D
261	4365	0	14,47	370	2019		Monthly	D
261	40C	4,72	17,65	4099	2019		Weekly	C
261	40C	17,65	21,67	5477	2019		Weekly	C
261	40C	21,67	42,97	4740	2019		Weekly	C
261	40C	42,97	45,72	6429	2019		Weekly	C
261	41A	0	17,178	1619	2019		Fortnightly	C
261	41A	17,178	35,418	1440	2019		Fortnightly	C
261	45A	62,37	82,45	855	2019		Fortnightly	C
261	45A	82,45	104,42	1111	2019		Fortnightly	C
261	45A	104,42	108,26	2599	2019		Fortnightly	C
261	45A	108,26	109,96	4736	2019		Fortnightly	C
261	45B	0	5,92	5234	2019		Weekly	C
261	45B	5,92	21,41	4424	2019		Weekly	C
261	45B	21,41	33,5	3423	2019		Weekly	C
261	45B	33,5	45,82	3567	2019		Weekly	C
261	45B	45,82	52,66	1842	2019		Weekly	C
DC	162	0	1,014	13028	2019	162/163 Intersection (includes)	Weekly	B
DC	162	1,014	4,894	11044	2019	163/ Wide Bay Drive intersection (excludes)	Weekly	B
DC	162	4,894	6,945	9502	2019		Weekly	C
DC	162	6,945	9,185	7078	2019		Weekly	C
DC	162	9,185	12,017	6009	2019		Weekly	C
DC	162	12,017	15,859	3968	2019		Weekly	C
DC	162	15,859	23,739	2261	2019		Weekly	C
DC	163	12,46	27,087	12238	2019	163/ Prawle Road intersection (excludes)	Weekly	B
DC	163	27,087	35,009	8590	2019	163/ 164/ 1632 Roundabout (excludes)	Weekly	B
DC	163	35,009	36,21	10178	2019		Weekly	B
DC	163	36,21	36,824	18127	2019	163/ 162 intersection (includes)	Weekly	B
DC	163	36,824	38,817	18013	2019		Weekly	B

DC	163	38,817	41,083	19198	2019		Weekly	E
DC	163	41,083	42,769	10997	2019		Weekly	E
DC	163	42,769	44,497	11136	2019		Weekly	E
DC	164	0	0.6	3564	2019		Weekly	C
DC	164	0.6	14,949	2418	2019		Weekly	C
DC	164	14,949	21,688	3470	2019		Weekly	C
DC	176	5,908	18,026	5539	2019		Weekly	C
DC	176	18,026	23,518	2744	2019		Weekly	C
DC	176	23,518	34,18	2895	2019		Weekly	C
DC	176	34,18	48,341	3143	2019		Weekly	C
DC	1603	0	1,664	2504	2019		Weekly	C
DC	1603	1,664	14,71	1304	2019		Weekly	C
DC	1603	14,71	20,84	2513	2019		Weekly	C
DC	1632	0	6,484	7070	2019		Weekly	C
DC	1632	6,484	12,634	5993	2019		Weekly	C
DC	1632	12,634	14,798	7469	2019		Weekly	C
DC	1632	14,798	18,393	9585	2019		Weekly	C
DC	4702	0	6,43	56	2019	Start of road to end of seal section	Monthly	E
DC	10B	34,041	46,639	10203	2019		Twice Weekly	E
DC	10B	46,639	60,309	10855	2019		Twice Weekly	E
DC	10B	60,309	67,229	9253	2019		Twice Weekly	E
DC	10B	67,229	76,568	10288	2019		Twice Weekly	E
DC	10B	76,568	80,364	11978	2019		Twice Weekly	E
DC	10B	80,364	85,509	9318	2019		Twice Weekly	E
DC	10C	0	3,357	10239	2019		Twice Weekly	E
DC	10C	3,357	6,54	8513	2019		Twice Weekly	C
DC	10C	6,54	26,515	7850	2019		Twice Weekly	C
DC	10C	26,515	41,01	8144	2019		Twice Weekly	C
DC	10D	0	2,152	5230	2019		Twice Weekly	C
DC	10D	2,152	37,363	2934	2019		Twice Weekly	C
DC	10D	37,363	50,383	3484	2019		Twice Weekly	C

Released under RTI -





- 10A BRUCE HIGHWAY (Beebane - Gympie)
- 10B BRUCE HIGHWAY (Gympie - Maryborough)
- 10C BRUCE HIGHWAY (Maryborough - Gin Gin)
- 10D BRUCE HIGHWAY (Gin Gin - Einarahy)
- 15A ISIS HIGHWAY (Bundaberg - Childers)
- 15B ISIS HIGHWAY (Childers - Biggenden)
- 15C ISIS HIGHWAY (Biggenden - Coalstoun Lakes)
- 22A NEW ENGLAND HIGHWAY (Yarraman - Toowoomba)
- 40B DAGILLAR HIGHWAY (Kilcoy - Yarraman)
- 40C DAGILLAR HIGHWAY (Yarraman - Kingaroy)
- 41A BURNETT HIGHWAY (Nunawong - Goonem)
- 41B BURNETT HIGHWAY (Coomen - Gayndah)
- 41C BURNETT HIGHWAY (Gayndah - Monto)
- 41D BURNETT HIGHWAY (Monto - Biloela)
- 44A WIDE BAY HIGHWAY (Gympie - Goonem)
- 45A BUNYA HIGHWAY (Easby - Kingaroy)
- 45B BUNYA HIGHWAY (Kingaroy - Goonem)
- 141 KINKIN ROAD
- 143 TIN CAN BAY ROAD
- 152 PALBA - BURRUM HEADS ROAD
- 153 MARYBOROUGH - HERVEY BAY ROAD
- 154 TORBANLEA - PALBA ROAD
- 156 MARYBOROUGH - COOLOOLA ROAD
- 171 GOODWOOD ROAD
- 172 ELLIOTT HEADS ROAD
- 174 BUNDABERG - BARGARA ROAD
- 175 BUNDABERG - PORT ROAD
- 176 BUNDABERG - GIN GIN ROAD
- 177 BUNDABERG RING ROAD
- 178 BUNDABERG - MIRIAM VALE ROAD
- 415 KINGAROY - COOYAR ROAD
- 426 CHINCHILLA - WONDAL ROAD
- 428 KINGAROY - BURRANDEWAN ROAD
- 429 NANANGO - TARONG ROAD
- 435 MUNDEBERA - DURONG ROAD
- 436 WONDAL - PROSTON ROAD
- 437 MURGON - BARAMBAH ROAD
- 439 MURGON - GAYDAH ROAD
- 454 EIDSVOLD - THEODORE ROAD
- 471 GLADSTONE - MONTA ROAD
- 474 GIN GIN - MOUNT PERRY ROAD
- 475 GAYDAH - MOUNT PERRY ROAD
- 476 MONTA - MOUNT PERRY ROAD
- 477 BOOYAL - DALLARNIL ROAD
- 478 MARYBOROUGH - BIGGENDEN ROAD
- 479 BOOMPA ROAD
- 480 MARY VALLEY LINK ROAD
- 481 KENILWORTH - BROOLOO ROAD
- 482 TUGHEKOL ROAD
- 483 GYMPIE - BROOLOO ROAD
- 485 KENILWORTH - SKYRING CREEK ROAD
- 486 KILKIVAN - TANSY ROAD
- 487 BROOMEENA - WOOLLOOGA ROAD
- 488 BAUPLE - WOOLLOOGA ROAD
- 491 KILCOY - MURGON ROAD
- 514 COOROY - GYMPIE ROAD
- 411 GYMPIE CONNECTION ROAD
- 1413 RAINBOW BEACH ROAD
- 1603 BURRUM HEADS ROAD
- 1632 BOORAL ROAD
- 1703 THE CEDARS ROAD
- 1720 INNES PARK ROAD
- 1751 BURNETT HEADS ROAD
- 1761 MOORE PARK ROAD
- 4161 BUNYA MOUNTAINS ROAD
- 4196 MADENWELL - BUNYA MOUNTAINS ROAD
- 4200 KINGAROY - BARKERS CREEK ROAD
- 4206 MECHERABER - GOONDODOMA ROAD
- 4356 PROSTON - BOONDODOMA ROAD
- 4364 OKEDEN ROAD
- 4365 BYEY ROAD
- 4511 WURUMA DAM ROAD
- 4702 KALPOWAR ROAD
- 4705 GOORODUBA - BIGGENDEN ROAD
- 4715 CANIA DAM ROAD
- 4806 GYMPIE - WOOLLOOGA ROAD
- 4897 MUNGAR ROAD
- 4808 MVA ROAD
- 4832 YESSA CREEK ROAD

**RMPC LEGEND**

**Inspection Frequency**

- Daily
- Twice Weekly
- Weekly
- Fortnightly
- Monthly

- State-controlled Road
- QLD Rail Line
- Local Government Boundary
- TMR District Boundary

Branch/Unit: Technical Services, Bundaberg, Wide Bay Burnett District, Southern Queensland Region

Projection/ Datum: Map Grid of Australia (MGA) Zone 56, Geocentric Datum of Australia (GDA) 1994

Data Source: Traffic Data (2019) - sourced from ARMS (April 2020)

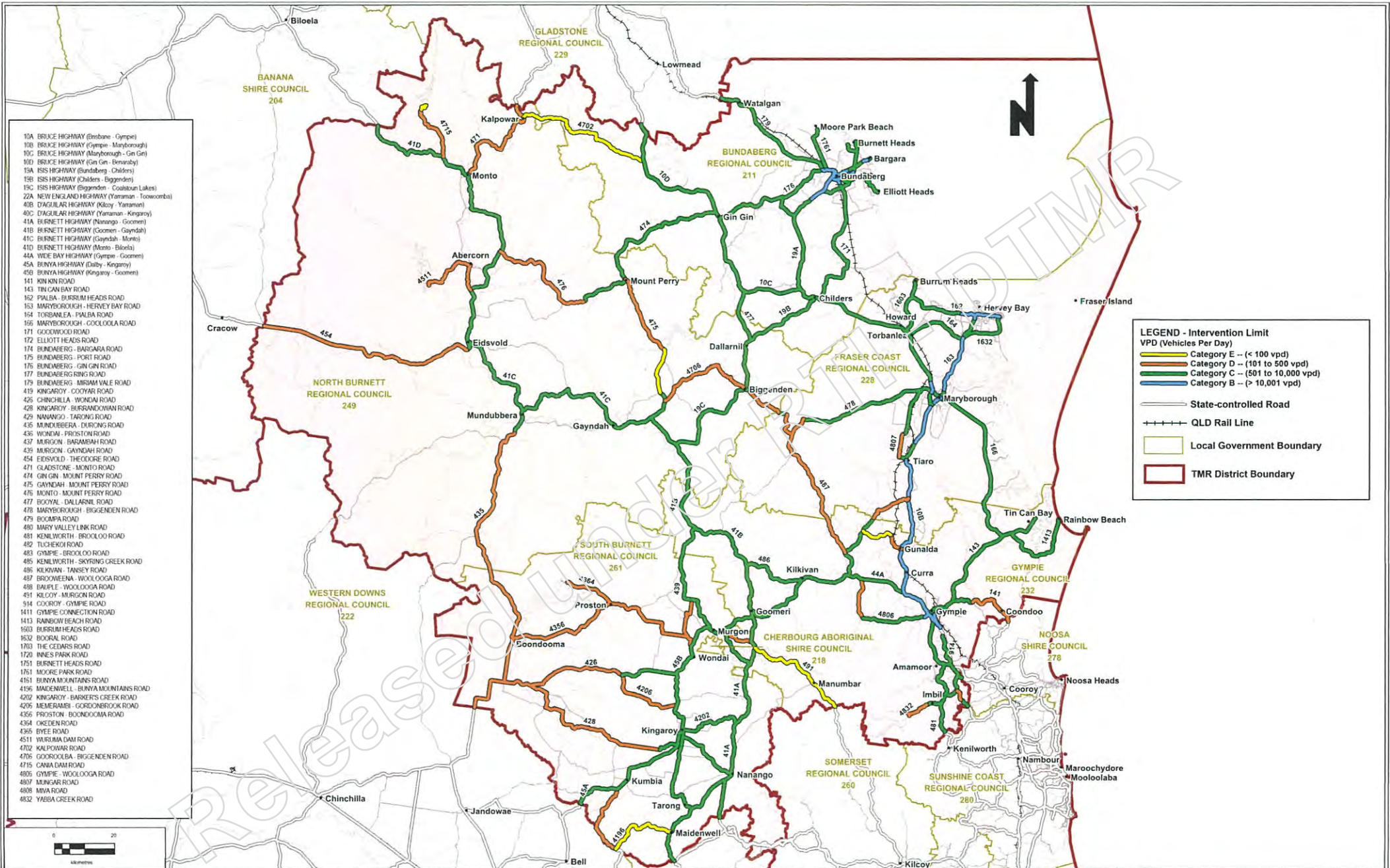
File location: G:\BUND\GIS\General Use Workspaces\1\_WBR\_RMPC\RMPC\_2020-2021\_Inspections\_RoadCategory\RMPC\_WBB\_MTCE\_MapB\_A3\_L.wor

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## WIDE BAY BURNETT DISTRICT 2020 - 2021 RMPC Inspection Frequency

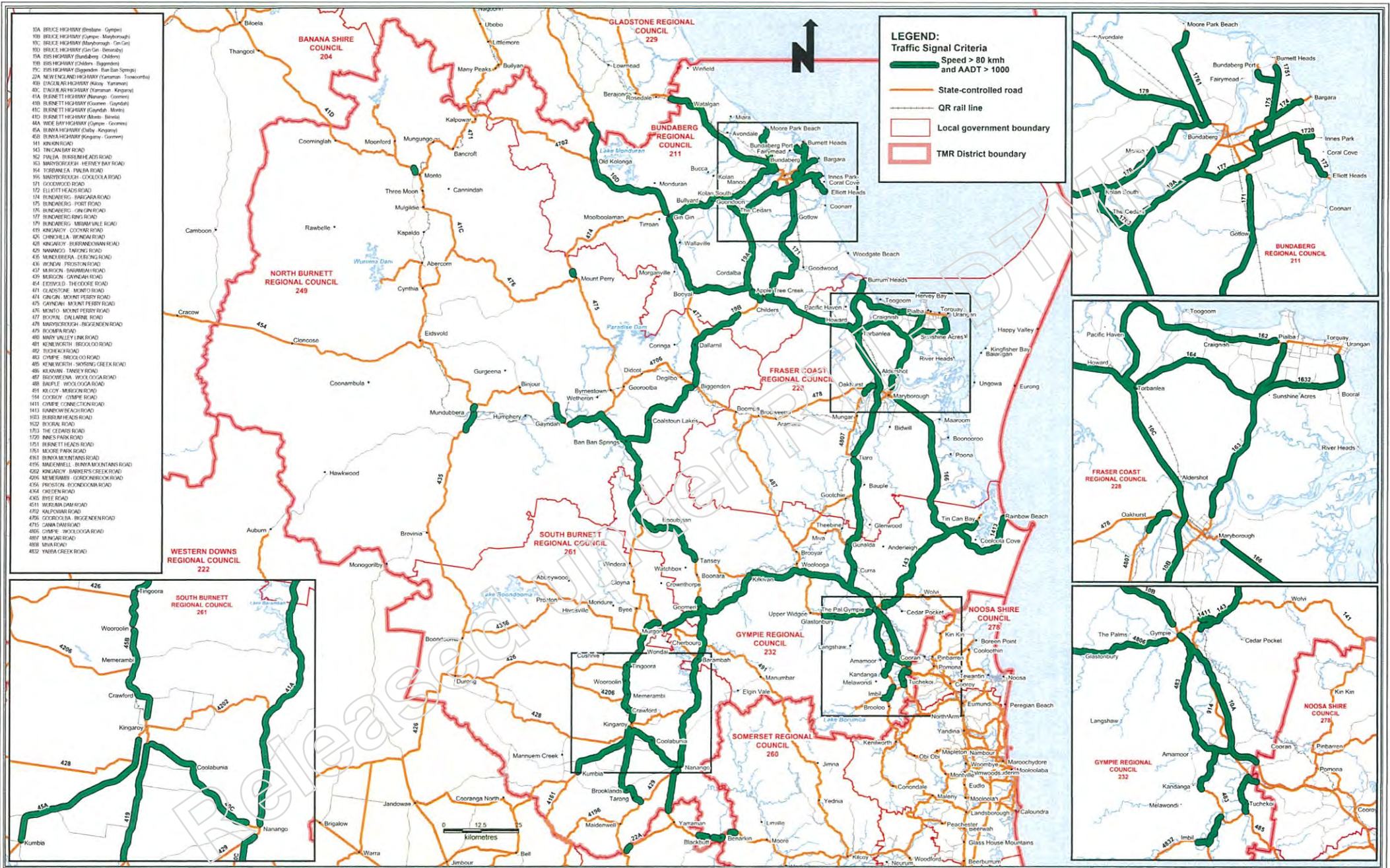
Queensland Government		
Transport and Main Roads		
Plan No/ Job No:	<b>RMPC</b>	Issue Date
		B 11/05/2020
Drawn by:	D. K. Barney	Checked by:
		M. G. Curd



Branch/Unit :	Technical Services, Bundaberg, Wide Bay Burnett District, Southern Queensland Region		
Projection/ Datum :	Map Grid of Australia (MGA) Zone 56, Geocentric Datum of Australia (GDA) 1994	Data Source :	Traffic Data (2019) - sourced from ARMS (April 2020)
File Location :	G:\BUND\GIS\General Use Workspaces\1_WBR_RMPC\RMPC_2020-2021_Inspections_RoadCategory\RMPC_WBB_ResponseTimes_A3_L_wor		

## WIDE BAY BURNETT DISTRICT 2020 - 2021 RMPC Intervention / Response Time

Queensland Government			
Transport and Main Roads			
Plan No/ Job No:	RMPC	Issue:	A
Drawn by:	D. K. Barney	Checked by:	M. G. Curd
Date:	06/05/2020		



Branch/Unit : Bundaberg Office, Wide Bay/Burnett District

Projection/ Datum : Map Grid of Australia (MGA) Zone 56, Geocentric Datum of Australia (GDA) 1994

Data Source : Traffic Data (2017) - sourced from ARMIS in June 2018

File location : G:\BUND\GIS\General Use\Workspaces\Mch\_Workspaces\Road Network AADT and speed

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## WIDE BAY / BURNETT DISTRICT 2018 - TRAFFIC SIGNAL CRITERIA AT ROADWORK SITES



Transport and Main Roads

Plan No/ Job No: <b>WBUD_SS0032</b>	Issue: <b>B</b>	Date: <b>26/06/2018</b>
Drawn by: <b>D. K. Barney</b>	Checked by: <b>M. G. Curd</b>	

# Attachment

E

Performance Assessment

**RMPC Performance Assessment Template**

REGION: Wide Bay/ Burnett		RMPC CONTRACT NUMBER /	DC_20_21								
		ASSESSMENT PERIOD	Target Score	February Assessment			Target Score	July Assessment			
TARGET CONTRACT SCORE			8.5	#DIV/0!				#DIV/0!			
PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	Agreed Measures	State(Mandatory)		Local		State(Mandatory)		Local		COMMENTS ATTACHED Yes/No
			Answer Y for Yes / N for No (to be filled)	Mandatory Criteria	please put Y or N for local questions only (Others will Automatically filled once column E filled)	Local Contract Score	Answer Y for Yes / N for No (to be filled)	Mandatory Criteria Score	please put Y or N for local questions only (Others will Automatically filled once column I filled)	Local Contract Score	
PRODUCTIVITY	Has the target productivity gain been achieved or surpassed?	<input type="checkbox"/>		#DIV/0!			#DIV/0!		#DIV/0!		
	Has the contractor documented any applied initiatives?	<input type="checkbox"/>									
	<i>Insert Local Contract Question</i>	<input type="checkbox"/>									
WORKPLACE HEALTH & SAFETY	Do you have a safe work method checklist?	<input type="checkbox"/>									
	Do you have regular tool box meetings?	<input type="checkbox"/>									
	Do all operators have the appropriate tickets and licenses for relevant plant/processes?	<input type="checkbox"/>									
	Has all plant been maintained to industry safety standards?	<input type="checkbox"/>		#DIV/0!			#DIV/0!		#DIV/0!		#DIV/0!
	Do you have a system for documenting/reporting workplace near misses/accidents/incidents?	<input type="checkbox"/>									
	Do you have an approved traffic guidance scheme before undertaking maintenance activities?	<input type="checkbox"/>									
<i>Insert Local Contract Question</i>	<input type="checkbox"/>										
ROAD USER RELATIONSHIP	Is there a register for public communications?	<input type="checkbox"/>		#DIV/0!				#DIV/0!			
	Have issues been recorded and actioned?	<input type="checkbox"/>									
	<i>Insert Local Contract Question</i>	<input type="checkbox"/>									
DELIVERY SYSTEM MANAGEMENT - Stewardship	Have roles and responsibilities been clearly defined in the Project Quality Plan?	<input type="checkbox"/>									
	Have all roles and responsibilities been followed as detailed in the Project Quality Plan?	<input type="checkbox"/>									
	Have all funds been wisely invested in the best interests of the Principal?	<input type="checkbox"/>									
	Has advice to the Principal been done in a timely manner and of an adequate standard?	<input type="checkbox"/>									
	Have accurate records been kept for inspection reports?	<input type="checkbox"/>									
	Have accurate records been kept for forward lists of work?	<input type="checkbox"/>		#DIV/0!			#DIV/0!		#DIV/0!		#DIV/0!
	Have accurate records been kept for works orders?	<input type="checkbox"/>									
	Have accurate records been kept for completed activities?	<input type="checkbox"/>									
	Does the contractor's quality system meet the contract document requirements?	<input type="checkbox"/>									
	Has the Programmed Expenditure Flow for each Network Schedule been provided during July, October and February reviews/monthly claims?	<input type="checkbox"/>									
<i>Insert Local Contract Question</i>	<input type="checkbox"/>										
DELIVERY SYSTEM MANAGEMENT - Process	Is there a submitted Quality Plan?	<input type="checkbox"/>									
	Is there a submitted Traffic Management Plan?	<input type="checkbox"/>									
	Is there a submitted Environmental Management Plan?	<input type="checkbox"/>									
	Is there a submitted Emergency Response Plan?	<input type="checkbox"/>									
	Is there a submitted Network Inspection Schedule?	<input type="checkbox"/>									
	Is there a submitted Communication Plan?	<input type="checkbox"/>									
	Is there a submitted Safety Plan?	<input type="checkbox"/>									
	Has a detailed Organisational structure been submitted?	<input type="checkbox"/>									
	Has a quality/policy statement been submitted?	<input type="checkbox"/>									
	Have all testing records been supplied within the allocated timeframe?	<input type="checkbox"/>									
	Have education and training records been maintained?	<input type="checkbox"/>									
	Has the appropriate level of training been provided to ensure the skills of the people carrying out RMPC work are current?	<input type="checkbox"/>		#DIV/0!			#DIV/0!		#DIV/0!		#DIV/0!
	Has the network inspection schedule been adhered to?	<input type="checkbox"/>									
	Is the backlog report up to date with defects matched to Intervention Levels?	<input type="checkbox"/>									
	Have activity standards been achieved for undertaking maintenance?	<input type="checkbox"/>									
	Have progress claims been submitted on time?	<input type="checkbox"/>									
	Have all principal requested works orders been completed?	<input type="checkbox"/>									
Have non-conforming materials been recorded?	<input type="checkbox"/>										
Have non-conformances been recorded?	<input type="checkbox"/>										
Have non-conformances been closed out?	<input type="checkbox"/>										
Have all corrective actions been reported to the Principal's representative?	<input type="checkbox"/>										
<i>Insert Local Contract Question</i>	<input type="checkbox"/>										
DELIVERY SYSTEM MANAGEMENT - Operational	Have details of learnings been captured during the contract?	<input type="checkbox"/>									
	Have all changes to relevant documents been maintained, documented and controlled?	<input type="checkbox"/>									
	Have hazards/safety related issues been documented/captured as per intervention standards during backlogging inspections?	<input type="checkbox"/>		#DIV/0!			#DIV/0!		#DIV/0!		#DIV/0!
	Have all internal audits scheduled for the contract taken place?	<input type="checkbox"/>									
<i>Insert Local Contract Question</i>	<input type="checkbox"/>										
<b>SUPPLIER SCORE</b>			<b>STATE</b>	#DIV/0!	<b>CONTRACT</b>	#DIV/0!	<b>STATE</b>	#DIV/0!	<b>CONTRACT</b>	#DIV/0!	

PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	Selected Mandatory Score	February Assessment				July Assessment				COMMENTS ATTACHED Yes/No	
			Mandatory (State)		Local		Mandatory (State)		Local			
			Answer Y for Yes / N for No (to be filled)	Mandatory Criteria Score	please put Y or N for local questions only (Others will automatically filled once column E filled)	Local Contract Score	Answer Y for Yes / N for No (to be filled)	Mandatory Criteria Score	please put Y or N for local questions only (Others will automatically filled once column I filled)	Local Contract Score		
PRINCIPAL RESPONSIBILITIES	Have all updates to relevant documents been deemed suitable by the Principal?	<input type="checkbox"/>										
	Have all documents resulting from any meetings been circulated within the appropriate timeframe?	<input type="checkbox"/>										
	Have all contract variations been approved/rejected in the allocated timeframe?	<input type="checkbox"/>										
	Have the details of learnings from previous years been actioned accordingly?	<input type="checkbox"/>										
	Have all RMPC documents and specifications been approved?	<input type="checkbox"/>										
	Have progress claims been approved on time?	<input type="checkbox"/>										
	Have all responses and approvals been completed within a timely period?	<input type="checkbox"/>		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		
	Is there a suitable Quality Plan?	<input type="checkbox"/>										
	Is there a suitable Traffic Management Plan?	<input type="checkbox"/>										
	Is there a suitable Environmental Management Plan?	<input type="checkbox"/>										
	Is there a suitable Emergency Response Plan?	<input type="checkbox"/>										
	Is there a suitable Network Inspection Schedule?	<input type="checkbox"/>										
	Is there a suitable Safety Plan?	<input type="checkbox"/>										
	Is there a suitable Communications Plan?	<input type="checkbox"/>										
	Have all public notices/consultations been communicated to the public?	<input type="checkbox"/>										
	Do you think all funds have been wisely invested by the Contractor?	<input type="checkbox"/>										
	<i>Insert Local Contract Question</i>		<input type="checkbox"/>									
<b>PRINCIPAL SCORE</b>			<input type="checkbox"/>	STATE	#DIV/0!	CONTRACT	#DIV/0!	STATE	#DIV/0!	CONTRACT	#DIV/0!	

<b>CONTRACT SCORE</b>	STATE	#DIV/0!	CONTRACT	#DIV/0!	STATE	#DIV/0!	CONTRACT	#DIV/0!
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INITIATIVE S	KEY INITIATIVE INDICATOR	Answer Yes/No	Score		Answer Yes/No	Score	COMMENTS ATTACHED Yes/No
	Have progress pay claims been consistently submitted on time with correct supporting information						
	Has a forward list of works been continuously updated and provided to the Principal in accordance with CI 7 of the SCoC?		#DIV/0!			#DIV/0!	
	Has the Contractor provided timely monthly accrual values to the Principal in accordance with CI 8 of the SCoC?						

<b>WEIGHTING</b>	20	<b>WEIGHED SCORE</b>	CONTRACT	#DIV/0!	#DIV/0!
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**COMMENTS**

This to acknowledge that above assessment has been carried out jointly between the contractor and the principal.

\_\_\_\_\_/ / 20 \_\_\_\_\_ / / 20

Signed by the Contractor's Representative      date      Signed by the Principal Representative      Date

Released under

# Attachment

**F**

C6089 – Implementation Plan for Evidence Guide

# Implementation Plan for Evidence Guide

## RMPC Sole Invitee



### C6089

All requirements stated herein are minimum requirements to be met by the Contractor as an alternative to compliance with ISO 9001, only where this alternative method of compliance has been agreed to between the parties, in writing, at the commencement of the Contract. These requirements are to be categorised according to their level of risk as assessed by the parties on a case by case basis to reach mutual agreement. The agreed requirements shall at all times be complied with by the Contractor in accordance with the following legend:

**Mandatory (M)** these minimum mandatory requirements are considered high risk and must be complied with accordingly. Non-compliance shall constitute a breach unless specifically excepted in writing, following consultation between the parties on a case by case basis. Where compliance with state minimum requirements has been so excepted, the Contractor must take documented steps to prioritise and implement the requirements in accordance with the terms contained in the written varied requirement and within the time stated therein.

**Desirable (D)** these minimum mandatory requirements are considered lower risk and the Contract parties shall, prior to the commencement of the works, evaluate the risk of these requirements and shall agree in writing on the action accordingly required. Where the risk is assessed as high, the Contractor shall address the requirement as mandatory and shall accordingly be subject to the same requirements, and follow the same processes as required under (M). Where the risk is assessed as lower than that assessed under (M), the action agreed must at all times be commensurate with the risk of the requirement as assessed by the parties and must be implemented within the timeframe agreed upon. The parties must assess the risk as required throughout the Contract as risks may change from time to time depending on the works being carried out in the Contract.

**Optional (O)** these minimum mandatory requirements are considered low risk and may be addressed accordingly following similar consultation as required under (D).

ISO 9001 Elements	Evidence Guide	Priority	Has the Contractor agreed to implement on commencement (Yes/No)?	If No, provide reasons	Provide new timeframe/milestones agreed upon with the Contractor for Implementation (with any comments)
4.2.2 QA Manual	Organisational structure for RMPC works	M			
	Quality policy/statement	M			
	Roles/Responsibilities/Accountabilities for RMPC works	M			
	Simple RMPC map/diagram	O			
	Cross-reference table of RMPC doc's detailing ISO 9001 requirements	O			
	Supporting check lists/procedures/forms	M			
4.2.3 Control of Documents	RMPC documents and specifications (for example, signed documents, drawings approved for Minor Works, manuals)	M			
	Document distribution controlled	M			
	Reference library list/web sites used	D			
	Control on obsolete documents (as required)	D			
	Circulation of communication/updates to all	D			
	Removal of obsolete documents	D			
4.2.4 Control of Records	Access to technical data	D			
	Records of various inspections including complaints/defects/road-runs	M			



ISO 9001 Elements	Evidence Guide	Priority	Has the Contractor agreed to Implement on commencement (Yes/No)?	If No, provide reasons	Provide new timeframe/milestones agreed upon with the Contractor for Implementation (with any comments)
	Program of works	M			
	Contract variations & correspondence	M			
	Test records when required (for example, material supply)	M			
	Records of meetings for example, focus meeting, toolbox talks, team meeting, quality committee, pre-start meeting, monthly meeting, and post construction meeting, and so on	M			
	Register of Issues for example, complaints and feedback	M			
	Job related records (for example, work orders, completed works) See 7.5	M			
	IT backups, tapes, CDs, Backup reports, and so on	D			
<b>5.0 Management Responsibility</b>	Council role as Network steward, maintenance manager and supervisor and operations contractor – as defined in Part 3 of RMPC General Conditions of Contract – Volume 1	M			
	Business/Operational Plan	O			
	Review of objectives/KPIs of Council	D			
	Roles & responsibilities are defined in the Project Quality Plan	M			
	Minutes of Management Review	M			
<b>6.2.2 Competence Awareness &amp; Training</b>	Competent and appropriately skilled people carry out RMPC works	M			
	Maintained appropriate records of education, training, skills & experience for RMPC works	M			
<b>6.3 Plant &amp; Equipment</b>	Appropriately maintained infrastructures	D			
<b>6.4 Work Environment</b>	Suitable work environment for example, "Safe Plan" scheme includes Site Inductions, safety committee, PPE, track attenuators, and so on	M			
<b>7.1 Planning of Product Realisation (Planning the work)</b>	Project quality system plans are interconnected with addresses.				
	Quality (for example, 8.2.4)	M			
	Safety including Traffic Management	M			
	Environmental Management	M			
	Emergency Response	M			
	Communication	M			
	Network inspection schedule	M			

ISO 9001 Elements	Evidence Guide	Priority	Has the Contractor agreed to Implement on commencement (Yes/No)?	If No, provide reasons	Provide new timeframe/milestones agreed upon with the Contractor for Implementation (with any comments)
7.1 Planning of Product Realisation (Planning the work)	Activity Standards	M			
	Planning prior to agreement	M			
	Reaching agreement	M			
7.2 Customer Related Process (Contract Review)	Contract Performance Report	M			
	Minutes of Meetings	M			
	Update relevant documentation	M			
	Subsequent changes are maintained and controlled	M			
7.3 Design & Development	Evidence of approved design (for example, seal design, pavement design, and so on)	M			
7.4 Purchasing	Proof of approved suppliers used and materials used	D			
7.5 Product & Service Provision (Doing the work)	List of prioritised work in the road network	M			
	Records of defects matched to Invention Levels (backlog report)	M			
	Activity standards for undertaking maintenance	M			
	Work instruction/forms used/procedures to manage work	M			

ISO 9001 Elements	Evidence Guide	Priority	Has the Contractor agreed to Implement on commencement (Yes/No)?	If No, provide reasons	Provide new timeframe/milestones agreed upon with the Contractor for Implementation (with any comments)
	Job records (for example, works orders, test results, traffic management record, and so on)	M			
	Job Diary notes/Inspection records	M			
	Progress Claims	M			
	Accident/Incident reports for safety and legal requirements	M			
7.5.3 Identification & Traceability (Job Numbering)	Completed activity report (ASCII format)	M			
	Reporting Completed Maintenance	M			
	Completed works orders	M			
7.5.4 Customer Property	Due care taking of departmental property (for example, materials)	M			
	Records of non-conforming materials	M			
7.5.5 Preservation of product	Material Safety Data Sheet (MSDS) are available	M			
	Stock take results from Depot/Store	O			
	"Safe Plan" Inspections	M			
7.6 Calibrations of Monitoring & Measuring Practices	Records of calibration/2 peg tests for levels, theodolites, survey equipment	D			
	Survey equipment maintenance schedule	D			
	Maintenance/servicing records	D			
	Calibration of equipment for high risk operations (for example, setting drainage lines in built-up areas)	D			
8.2.1 Customer Satisfaction	Complaints/correspondence/project review minutes	M			
	Issue management actions & records (for example, records, correspondence, media releases, public notices, register, and so on)	M			
	Correspondence/records as appropriate	M			
	Phone contacts with public/MR	M			
	Rate payer survey results (if available)	O			
	Accident/Incident reports	M			
	Client's feedback	M			
8.2.2 Internal Audit	Internal audit records – safety, quality, environmental and traffic management	M			
	Internal audit action taken, reporting of results to senior managers/project managers for management review purposes	M			

ISO 9001 Elements	Evidence Guide	Priority	Has the Contractor agreed to Implement on commencement (Yes/No)?	If No, provide reasons	Provide new timeframe/milestones agreed upon with the Contractor for Implementation (with any comments)
	Improvements made as recommended from previous audit	M			
	Surveillance records and inspection records	D			
	Self-checking records	D			
<b>8.2.3 Monitoring and Measurement of Process</b>	Issues management	M			
	Regular verification of processes (for example, site inspection records, meeting minutes and so on)	M			
	Reporting to senior management	D			
<b>8.2.4 Monitoring and Measurement of Product</b>	Test results/records/conformance reports/corrective action reports where necessary	M			
	Completed ITPs/Hold Points approved (where required)	M			
	Job Diary/Overseer records	M			
<b>8.3 Control of Non-Conforming Products</b>	Evidence of managing non-conforming product (for example, non-conforming reports, corrective action reports and action taken)	M			
	Report to senior managers/project managers	M			
	Register of Corrective Actions Requests (CARs/Issues updates with action taken for close out)	M			
<b>8.4 Analysis of Data</b>	Minutes of regularly held meetings	M			
	Records from customer feedback system	M			
	Data is analysed to solve recurring problems (if any)	D			
	Identification of trends and cause, monitoring and improving customer satisfaction and process capability	M			
	Results of data analysis are discussed in Management review meetings	D			
<b>8.5.1 Continual Improvement</b>	Any improvement initiative including:				
	Review of work practices	M			
	No accidents/incidents	M			
	Productivity changes	M			
	Hierarchy of Control when and where required	M			
<b>8.5.2 Corrective Action</b>	Evidence of managing non-conforming product (for example, non-conforming reports, corrective action reports and action taken)	M			
	Report to senior managers/project managers	M			

ISO 9001 Elements	Evidence Guide	Priority	Has the Contractor agreed to Implement on commencement (Yes/No)?	If No, provide reasons	Provide new timeframe/milestones agreed upon with the Contractor for Implementation (with any comments)
8.5.3 Preventive Action	Register of CARs/Issues updated with action taken for close out	M			
	Evidence of managing non-conforming product (for example, non-conforming reports, correction action reports and action taken)	M			
	Report to senior managers/project managers	M			
	Register of CARs/Issues updated with action taken for close out	M			
Agreed by Local Government	Agreed by Transport and Main Roads				
Signature	Signature				

Released under RTI - DTMR



Our ref 450/116 MGC/JLG

Enquiries Hazel Mauga

Department of  
Transport and Main Roads

29 June 2020

Mr Chris Van Den Kieboom  
Operations Manager  
RoadTek Wide Bay  
PO Box 1890  
Bundaberg Qld 4670

Dear Chris

**Ratification of Routine Maintenance Performance Contract  
OPPM No. 1468014 (D12/D004), 1626154 (D12/D002), 1468015 (D12/D001), 1626153  
(D12/D001): Contract No. CN-14427  
2020/2021 RMPC RoadTek Roads**

Thank you for your offer to undertake the above project. Your offer, in accordance with the Invitation Documents, has been accepted.

In accordance with Clause 2.7 of the *General Conditions, Road Maintenance Performance Contract (RMPC) – April 2020*, the Contract commencement date shall be the 1 July 2020 as specified in Form C6094 – Conditional Agreement.

Please find enclosed a copy of the executed contract documentation for your information. Please note, the RMPC Contract ID is DC\_20\_21 and the project numbers are as follows:-

Schedule 1	NN Roads	52-01468014.O.E.15.2
Schedule 2	NN Callouts	52-01626154.O.E.34.3.1
Schedule 3	SN Roads	52-01468015.O.E.15.2
Schedule 4	SN Callouts	52-01626153.O.E.34.3.1

If you have any queries, please contact Graduate Engineer, Hazel Mauga on 4154 0217.

Yours sincerely

N/R

Hendrik Roux  
District Director (Wide Bay Burnett)

Enc (1)

Program Delivery And Operations  
Wide Bay / Burnett District / Bundaberg Office  
Locked Bag 486  
Bundaberg Qld 4670

Telephone +61 7 4154 0217  
Facsimile +61 7 4152 3878  
Website [www.tmr.qld.gov.au](http://www.tmr.qld.gov.au)  
Email [bundaberg.office@tmr.qld.gov.au](mailto:bundaberg.office@tmr.qld.gov.au)  
ABN 39 407 690 291



# Road Maintenance Performance Contracts CONTRACT DETAILS

Contract Office Bundaberg & Gympie	3PCM Contract Id CN-14427	Contract Period 01-Jul-2020 - 30-Jun-2021
Contract DC 20 21 Roadtek Roads Contract Maintenance 2020/2021 (Rmpc)		Display Old Activities <input type="checkbox"/>
Supplier 148973 Roadtek Wide Bay	Total Scheduled N/R	

Fund 1 National Highways Maintenance	Schedule 1 ROM+Knockdowns+guardrails Wide Bay
3PCM Project Id 1468014	

Activity	Pay Method	Measr	Rate	Quantity	+	-	Amount	
101 00 Edge Repair (Manual)	Normal	Unit Rate	t	.000				
105 00 Pothole Patching	Normal	Unit Rate	t	1.00	180000.000			
111 00 Surface Correction, Premix / A/C (Mech.	Normal	Unit Rate	t	1.00	20000.000			
143 00 Pavement Repairs, Gravel (Mech, <500m	Normal	Unit Rate	m2	.000				
143 02 Pave.Repairs Gravel Depth up to 200mm	Normal	Unit Rate	m2	1.00	175.000			
143 03 Pave.Repairs Gravel Depth up to 300 m	Normal	Unit Rate	m2	1.00	200.000			
146 00 Pavement Repairs, Asphalt (Mech. <500	Normal	Unit Rate	m2	.000				
146 02 Pave.Repairs Asphalt Depth up to 200m	Normal	Unit Rate	m2	220.00	1750.000			
153 00 Insitu Stabilisation-Minor (<500m2)	Normal	Unit Rate	m3	570.00	350.000			
215 00 Light Shoulder Grading - Rural	Normal	Unit Rate	Sh.km	.000				
216 00 Heavy Shoulder Grading - Rural	Normal	Unit Rate	Sh.km	.000				
221 00 Shoulder Resheeting	Normal	Unit Rate	m3(l)	.000				
302 00 Repair Earth Surface Drains	Normal	Unit Rate	m	1.00	25000.000			
302 01 Repair Earth Surface Drains	Normal	Unit Rate	m	.000				
305 00 Clean Earth and Concrete Surface Drain	Normal	Unit Rate	m	5.00	200.000			
401 00 Tractor Slashing, Rural	Normal	Unit Rate	ha	270.00	350.000			
403 00 Tractor Slashing - Boom Mower	Normal	Unit Rate	m2	1.00	20000.000			
407 00 Herbicide Spraying	Normal	Unit Rate	L	1.50	37500.000			
118 00 Seal Coating (<150 lin.m per 1km)	Provis Sum	Fixed Price	m2	.000				
130 00 Surface Sweeping	Provis Sum	Fixed Price	m2	.000				
135 00 Surface Debris Removal	Provis Sum	Fixed Price	\$	.000				
139 00 Other Bituminous Surface Work	Provis Sum	Fixed Price	\$	.000				
144 00 Subgrade Treatment, with Pavement Re	Provis Sum	Fixed Price	m3	.000				
219 00 Gravel Supply - Heavy Shoulder Grading	Provis Sum	Fixed Price	m3	.000				
229 00 Other Unsealed Shoulder Work	Provis Sum	Fixed Price	\$	.000				
319 00 Other Surface Drain Work	Provis Sum	Fixed Price	\$	.000				
329 00 Other Minor Culverts, Pipe and Pit Work	Provis Sum	Fixed Price	\$	.000				
339 00 Other Subsoil Drain Work	Provis Sum	Fixed Price	\$	.000				
405 00 Clearing	Provis Sum	Fixed Price	\$	.000				
419 00 Other Vegetation Control Works	Provis Sum	Fixed Price	\$	.000				
420 00 Roadside Litter Collection - Rural	Provis Sum	Fixed Price	m3	.000				
429 00 Other Roadside Work	Provis Sum	Fixed Price	\$	.000				
440 00 Rest Area Servicing	Provis Sum	Fixed Price	\$	.000				
441 00 Service Driver Reviver sites	Provis Sum	Fixed Price	\$	.000				
502 00 Repair Signs (excluding Guide Signs)	Provis Sum	Fixed Price	\$	.000				
506 00 Repair Guide Signs	Provis Sum	Fixed Price	\$	.000				
509 00 Other Sign Work	Provis Sum	Fixed Price	\$	.000				
512 00 Repair or Replace Guide Markers	Provis Sum	Fixed Price	each	.000				
519 00 Other Road Guide Post and Marker Wor	Provis Sum	Fixed Price	each	.000				
522 00 Repair or replace Guardrail, Barrier Furn	Provis Sum	Fixed Price	m	.000				
559 00 Other Furniture Repairs	Provis Sum	Fixed Price	\$	.000				
903 00 Inspections for Forward List of Work	Provis Sum	Fixed Price	\$	.000				
Total Amount								N/R

Location	RPC	Offset	Start Tdist	RPC	Offset	End Tdist
BRISBANE - GYMPIE	10A	C	40D	12.727	138.300	46 .000 144.430
GYMPIE - MARYBOROUGH	10B	C	1	.000	.000	7 .000 14.020
GYMPIE - MARYBOROUGH	10B	C	7	.000	14.020	23A .000 85.509
MARYBOROUGH - GIN GIN	10C	C	1A	.000	.000	23A 2.023 110.100
MARYBOROUGH - GIN GIN	10C	C	23A	2.023	110.100	24A .000 111.560
GIN GIN - BENARABY	10D	C	1A	.000	.000	3 1.323 9.585
GIN GIN - BENARABY	10D	C	3	1.323	9.585	3 7.648 15.910
GIN GIN - BENARABY	10D	C	3	7.648	15.910	4 8.504 27.500
GIN GIN - BENARABY	10D	C	4	8.504	27.500	8 6.402 46.955
GIN GIN - BENARABY	10D	C	8	6.402	46.955	9A .000 50.383



# Road Maintenance Performance Contracts CONTRACT DETAILS

Contract Office Bundaberg & Gympie	3PCM Contract Id CN-14427	Contract Period 01-Jul-2020 - 30-Jun-2021
Contract DC_20_21 Roadtek Roads Contract Maintenance 2020/2021 (Rmpc)		Display Old Activities <input type="checkbox"/>
Supplier 148973 Roadtek Wide Bay		Total Scheduled N/R

Fund 1 National Highways Maintenance	Schedule 2 Callout&Emergency Callouts FCRC&BRC
3PCM Project Id 1626154	

Activity	Pay Method	Measr	Rate	Quantity	+	-	Amount
450 00 Call Out	Provis Sum	Fixed Price	\$	.000			N/R
452 00 Emergency Call Out Activities	Provis Sum	Fixed Price	\$	.000			
Total Amount							

Location	RPC	Offset	Start Tdist	RPC	Offset	End Tdist
GYMPIE - MARYBOROUGH 10B C	1	.000	.000	7	.000	14.020
GYMPIE - MARYBOROUGH 10B C	7	.000	14.020	23A	.000	85.509
MARYBOROUGH - GIN GIN 10C C	1A	.000	.000	23A	2.023	110.100
MARYBOROUGH - GIN GIN 10C C	23A	2.023	110.100	24A	.000	111.560
GIN GIN - BENARABY 10D C	1A	.000	.000	3	1.323	9.585
GIN GIN - BENARABY 10D C	3	1.323	9.585	3	7.648	15.910
GIN GIN - BENARABY 10D C	3	7.648	15.910	4	8.504	27.500
GIN GIN - BENARABY 10D C	4	8.504	27.500	8	6.402	46.955
GIN GIN - BENARABY 10D C	8	6.402	46.955	9A	.000	50.383

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# Road Maintenance Performance Contracts CONTRACT DETAILS

Contract Office Bundaberg & Gympie	3PCM Contract Id CN-14427	Contract Period 01-Jul-2020 - 30-Jun-2021
Contract DC 20 21 Roadtek Roads Contract Maintenance 2020/2021 (Rmpc)		Display Old Activities <input type="checkbox"/>
Supplier 148973 Roadtek Wide Bay	Total Scheduled N/R	

Fund 2 Other State-Controlled Roads Maintenance	Schedule 3 ROM-Selected OSCR Roads+Knowkdown
3PCM Project Id 1468015	

Activity	Pay Method	Measr	Rate	Quantity	+	-	Amount
101 00 Edge Repair (Manual)	Normal	Unit Rate	t	1.00	10000.000		
105 00 Pothole Patching	Normal	Unit Rate	t	1.00	150000.000		
111 00 Surface Correction, Premix / A/C (Mech.	Normal	Unit Rate	t	1.00	10000.000		
143 00 Pavement Repairs, Gravel (Mech, <500r	Normal	Unit Rate	m2		.000		
143 02 Pave.Repairs Gravel Depth up to 200mn	Normal	Unit Rate	m2	175.00	25.000		
143 03 Pave.Repairs Gravel Depth up to 300mn	Normal	Unit Rate	m2		.000		
146 00 Pavement Repairs, Asphalt (Mech. <500	Normal	Unit Rate	m2		.000		
146 02 Pave.Repairs Asphalt depth up to 200mr	Normal	Unit Rate	m2	250.00	650.000		
153 00 Insitu Stabilisation-Minor (<500m2)	Normal	Unit Rate	m3	570.00	250.000		
215 00 Light Shoulder Grading - Rural	Normal	Unit Rate	Sh.km		.000		
216 00 Heavy Shoulder Grading - Rural	Normal	Unit Rate	Sh.km		.000		
221 00 Shoulder Resheeting	Normal	Unit Rate	m3(l)		.000		
302 00 Repair Earth Surface Drains	Normal	Unit Rate	m	1.00	20000.000		
305 00 Clean Earth and Concrete Surface Drain	Normal	Unit Rate	m	5.00	1.000		
401 00 Tractor Slashing, Rural	Normal	Unit Rate	ha	270.00	325.000		
402 00 Tractor Slashing, Urban	Normal	Unit Rate	ha		.000		
403 00 Tractor Slashing - Boom Mower	Normal	Unit Rate	m2	1.00	10000.000		
407 00 Herbicide Spraying	Normal	Unit Rate	L	1.50	40000.000		
118 00 Seal Coating (<150 lin.m per 1km)	Provis Sum	Fixed Price	m2		.000		
130 00 Surface Sweeping	Provis Sum	Fixed Price	m2		.000		
135 00 Surface Debris Removal	Provis Sum	Fixed Price	\$		.000		
139 00 Other Bituminous Surface Work	Provis Sum	Fixed Price	\$		.000		
144 00 Subgrade Treatment, with Pavement Re	Provis Sum	Fixed Price	m3		.000		
219 00 Gravel Supply - Heavy Shoulder Grading	Provis Sum	Fixed Price	m3		.000		
229 00 Other Unsealed Shoulder Work	Provis Sum	Fixed Price	\$		.000		
319 00 Other Surface Drain Work	Provis Sum	Fixed Price	\$		.000		
329 00 Other Minor Culverts, Pipe and Pit Work	Provis Sum	Fixed Price	\$		.000		
339 00 Other Subsoil Drain Work	Provis Sum	Fixed Price	\$		.000		
405 00 Clearing	Provis Sum	Fixed Price	\$		.000		
419 00 Other Vegetation Control Works	Provis Sum	Fixed Price	\$		.000		
420 00 Roadside Litter Collection - Rural	Provis Sum	Fixed Price	m3		.000		
429 00 Other Roadside Work	Provis Sum	Fixed Price	\$		.000		
502 00 Repair Signs (excluding Guide Signs)	Provis Sum	Fixed Price	\$		.000		
506 00 Repair Guide Signs	Provis Sum	Fixed Price	\$		.000		
509 00 Other Sign Work	Provis Sum	Fixed Price	\$		.000		
512 00 Repair or Replace Guide Markers	Provis Sum	Fixed Price	each		.000		
519 00 Other Road Guide Post and Marker Wor	Provis Sum	Fixed Price	each		.000		
522 00 Repair or replace Guardrail, Barrier Furn	Provis Sum	Fixed Price	m		.000		
559 00 Other Furniture Repairs	Provis Sum	Fixed Price	\$		.000		
903 00 Inspections for Forward List of Work	Provis Sum	Fixed Price	\$		.000		
Total Amount							

Location	RPC	Offset	Start Tdist	RPC	Offset	End Tdist
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N/R						
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BOORAL ROAD	1632 C	1A	.000	.000	3A	.000	18.393
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N/R						
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# Road Maintenance Performance Contracts CONTRACT DETAILS

Contract Office Bundaberg & Gympie	3PCM Contract Id CN-14427	Contract Period 01-Jul-2020 - 30-Jun-2021
Contract DC 20 21 Roadtek Roads Contract Maintenance 2020/2021 (Rmpc)		Display Old Activities <input type="checkbox"/>
Supplier 148973 Roadtek Wide Bay	Total Scheduled N/R	

Fund 2 Other State-Controlled Roads Maintenance	Schedule 3 ROM-Selected OSCR Roads+Knowkdown
3PCM Project Id 1468015	

Location	RPC	Offset	Start Tdist	RPC	Offset	End Tdist
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N/R						
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# Road Maintenance Performance Contracts CONTRACT DETAILS

Contract Office	3PCM Contract Id	Contract Period
Bundaberg & Gympie	CN-14427	01-Jul-2020 - 30-Jun-2021
Contract		Display Old Activities <input type="checkbox"/>
DC_20_21 Roadtek Roads Contract Maintenance 2020/2021 (Rmpc)		
Supplier	Total Scheduled	
148973 Roadtek Wide Bay		
Fund	Schedule	
2 Other State-Controlled Roads Maintenance	3 ROM-Selected OSCR Roads+Knowkdown	
3PCM Project Id 1468015		
Location	RPC	Offset
	Start Tdist	RPC
	Offset	End Tdist

Location	RPC	Offset	Start Tdist	RPC	Offset	End Tdist
N/R						

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## Road Maintenance Performance Contracts CONTRACT DETAILS

Contract Office Bundaberg & Gympie	3PCM Contract Id CN-14427	Contract Period 01-Jul-2020 - 30-Jun-2021
Contract DC_20_21 Roadtek Roads Contract Maintenance 2020/2021 (Rmpc)		Display Old Activities <input type="checkbox"/>
Supplier 148973 Roadtek Wide Bay	Total Scheduled N/R	

Fund 2 Other State-Controlled Roads Maintenance	Schedule 3 ROM-Selected OSCR Roads+Knowkdown
3PCM Project Id 1468015	

Location	RPC	Offset	Start Tdist	RPC	Offset	End Tdist
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Fund 2 Other State-Controlled Roads Maintenance	Schedule 4 Callout&Emergency callout FCRC&BRC
3PCM Project Id 1626153	

Activity	Pay Method	Measr	Rate	Quantity	+%	-%	Amount
450 00 Call Out	Provis Sum	Fixed Price	\$	.000			N/R
452 00 Emergency Call Out Activities	Provis Sum	Fixed Price	\$	.000			
Total Amount							

Location	RPC	Offset	Start Tdist	RPC	Offset	End Tdist
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N/R						
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BOORAL ROAD	1632 C	1A	.000	.000	3A	.000	18.393
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N/R						
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**Manual**

**Road Maintenance Performance Contract (RMPC)**

**April 2020**



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## **1 Preliminary**

### **1.1 Introduction**

This *Road Maintenance Performance Contract (RMPC)* manual provides information for those responsible for the delivery of the Department of Transport and Main Roads' (the department) routine road maintenance program. The manual replaces a previous version known as *Volume 1 RMPC Sole Invitee*. The department can realise its objective to achieve maximum efficiency in the delivery of maintenance services through the productivity-based contractual agreement.

The department offers Routine Maintenance works to Local Governments (LGs) and RoadTek on a single invitee basis. This arrangement is subject to value for money being achieved from the negotiated Contracts. In the context of road works delivery, value for money is defined as 'the achievement of maximum overall benefit to the users of the facility and the wider community (including the broader social aspects) at a suitable agency cost'. These Contracts are benchmarked against other sector performance, thus the department is assured of obtaining 'best value' for its maintenance dollar.

Price is not the sole determinant of maximum overall benefit. It is expected that non-price factors, such as performance of the stewardship role, productivity and provision of a safe user environment, would also be considered in determining value for money and the maximum overall benefit under RMPC single invitee arrangements.

Both parties acknowledge that, notwithstanding the contractual nature of the single invitee relationship, emphasis is also placed on goodwill, good faith and cooperation between the parties for the attainment of mutual goals. They acknowledge the intention to adopt a 'partnering-type approach' to administering the contractual arrangements under single invitee arrangements.

As part of this approach, the negotiations of unit prices in the Contract shall be on an open-book basis so that a better appreciation of costs is understood by both parties, with a view to implementing strategies to keep track of price increase or decrease and operational cost.

It is expected that value for money will be facilitated by the adoption of this relational approach to RMPC works delivery.

### **1.2 RMPC operating arrangements**

#### **1.2.1 Historical**

Maintenance of state-controlled roads have been carried out by Local Governments and RoadTek for over 70 years. Each local government has been reimbursed for the actual cost of work undertaken, as the agent of the department. Maintenance by RoadTek has also been at cost plus arrangement.

Single invitation arrangements for capital works have recently been replaced by the Transport Infrastructure Contract – Sole Invitee (TIC-SI) (formally known as Road Performance Contract (RPC)) and Minor Infrastructure Contract – Sole Invitee (MIC-SI) (formerly known as Minor Works Performance Contract (MWPC)). Similar to RMPC, TIC-SI and MIC-SI are used on a single invitee basis in delivering construction works by LGs or RoadTek.

The original RMPC documentation consisted of four volumes, but these have now been replaced, as shown in Table 1.2.1.

**Table 1.2.1 – RMPC documents**

Pre-April 2015	Post-April 2015
Volume 1 RMPC – Sole Invitee	<ul style="list-style-type: none"> <li>• Manual RMPC</li> <li>• General Conditions</li> <li>• Invitation to Offer and Forms</li> </ul>
Volume 2 RMPC – Open Market	Replace with Road Asset Management Contract (RAMC)
Volume 3 RMPC – Guidelines for Undertaking Routine Maintenance	Routine Maintenance Guidelines (available on the department's website)
Volume 4 RMPC – Management System User Guide	Deleted

### 1.2.2 Competitive environment and best value

The *Transport Infrastructure Act* requires the department to obtain 'best value' in the expenditure of maintenance funds on State Controlled Roads. In addition, the federal department responsible for transport has required all works on National Highways to be subject to contract since 1 July 1994.

The RMPC, as a result of the ongoing productivity-based, single invitee arrangements with LGs and RoadTek, satisfies these requirements by providing the department with 'best value' for its maintenance dollar while giving Contractors the opportunity to increase efficiency in their maintenance operations.

### 1.2.3 Strategy-driven maintenance

The maintenance strategy is an integral part of the road network strategy. The maintenance strategy provides guidelines to provide the appropriate level of maintenance investment in infrastructure. It focuses on the implementation of efficient and effective maintenance practices to enable the goals and objectives of the road network strategy to be addressed.

Key maintenance strategies include:

- Recognise the identified industry requirements for maintenance of the Network.
- Economically justify the maintenance investment in the Network and the need for additional funding.
- Identify the split between the maintenance expenditure and capital expenditure and show the implications of a change of the margin between the two can be determined on the basis of economic benefit.
- Establish guidelines linked to the broader road network strategy, which indicates those parts of the Network on which current levels of maintenance could be increased or decreased.
- Identify technical guidelines that will indicate appropriate Intervention Levels and standards of treatments.
- Review maintenance practices to deliver projects on time, at cost and with appropriate quality.
- Assist regions in developing maintenance programs to provide the best economic return on investment and supporting industry requirements.

- Identify changes in maintenance funding allocations to local areas and the employment implications which result from these changes, having considerations to the Queensland Charter for Local Content, the Queensland Code of Practice for the Building and Construction Industry and the Queensland Government Building and Construction Training Policy as applicable.
- Determine the measures necessary to minimise any short-term unemployment in rural communities by planning maintenance programs with the purpose of providing continued employment of maintenance personnel.
- Embrace initiatives to enhance the efficiency and effectiveness of cooperative maintenance ventures between the department and the RoadTek or Local Government.
- Maintain a safe road environment for road users.
- Integrate environmental considerations with economic analysis when selecting maintenance activities.

### **1.3 Vision statement for RMPC delivery**

The vision statement for RMPC is:

*The department's vision is working actively and collaboratively with its suppliers to deliver projects that:*

- *achieve the quality desired within the desired timeframe*
- *meet value for money objectives based on the Queensland Procurement Policy and other government priorities*
- *are completed efficiently at least cost to suppliers and to Transport and Main Roads subject to the above, and*
- *provide adequate remuneration for the industry to be both sustainable and capable of enhancing its ability to improve the quality of its products and the efficiency of its performance.*

*It is fundamental to achievement of the above vision that the following principles of equitable project delivery are embraced:*

- *building of long term supplier networks which improve responsiveness and flexibility,*
- *reduction of non-productive disputes and litigation, and*
- *improved whole-of-life product quality.*

*Three major philosophical outlooks are at the core of the above principles as follows:*

- *trust and trustworthiness are central to all team relationships*
- *client commitment to equity between the parties and active support for continuous improvement – project benefits shared amongst the parties, and*
- *an approach to risk management, which focuses on reducing risk, not increasing it – risk is shared among the parties.'*

The visioning statement is consistent with the requirements under the RMPC, where there is a strong emphasis on partnering and the stewardship role of the Contractor. Delegation of the Network stewardship role to the Contractor, embodies the close working relationships expected between the parties. To meet the desired future state espoused by the vision for RMPC works, behaviours and attitudes held by the parties to the works need to be aligned and appropriate.

Both parties to the Contract need to acknowledge and embrace the key principles of:

- risk allocation to the party best able to manage each identified risk
- issue resolution process in place that prevents disputes
- focus to be on project rather than individual goals
- open communication in place, respecting roles and responsibilities
- profit is a necessity for the supplier to remain viable and provide the expected services
- continuous improvement of processes to enhance efficiency and effectiveness
- strong and cooperative project relations that value a collaborative approach.

The scope of 'business agreement' documentation should be suitable and consistent with the value of trust characterising the relationship between the parties. The overriding focus is to reduce administration costs and to reduce impediments so more money can be spent where it is needed in maintaining the Network.

Consistent with this relational approach is the adoption of a 'one team' approach to the Contract. This could be expected to apply more with those RMPCs where RoadTek is the supplier. The adoption of a 'one team' approach is encouraged in:

- surveillance activities
- knowledge sharing
- joint resource sharing, program development, Network inspections and problem solving.

Duplication of roles during the Contract Period is to be avoided in the climate of goodwill and trust expected to operate under these RMPC arrangements.

#### **1.4 Defined terms in the RMPC documents**

The words used in the RMPC Contract Documents shall have the meanings set out here unless the context indicates otherwise. To ease the ongoing maintenance of RMPC documents, defined terms included in the RMPC General Conditions are not included in the manual.

<b>Term</b>	<b>Definition</b>
Maintenance Management System (MMS)	The Systematic Approach, supported by computer systems, to the Management of Road Maintenance cost effectively and efficiently.
Maintenance Needs Survey	A survey undertaken to identify the work required to maintain a Network to a specified standard for a nominated future period.
Maintenance Works Order	An order for the carrying out of a Maintenance Activity which is produced from the Contractor's Systematic Approach to the Management of Maintenance.

<b>Term</b>	<b>Definition</b>
National Highway Network (NHN)/National Highways	That part of the Network comprising federally funded State Controlled Roads or parts of those roads.
Other State Controlled Network (OSCN)	That part of the Network excluding the National Highways.
Response Time	The given time limit to complete a Maintenance Activity once the Upper Intervention Level for the related Defect has been reached.
Restoration Standard	The standard to which an Activity shall be completed as specified in the Maintenance Activity Standards in the Routine Maintenance Guidelines.
Road Maintenance Performance Contract (RMPC)	The agreement between the department and a Contractor where the Contractor is responsible for the Maintenance of a Network.
Road Reference System (RR)	The department's system that can be used to determine the location within the Road Network.
Routine Maintenance Guidelines (the Guidelines)	The department's technical document that provides the technical guidance to deliver Routine Maintenance works on state-controlled road network, incorporating: <ul style="list-style-type: none"> <li>• Defect Register</li> <li>• Intervention Level and Response Time (IL/RT) criteria</li> <li>• Maintenance Activity Standards</li> <li>• Other routine maintenance related technical information available at departmental website.</li> </ul>
Routine Maintenance Amount	The total sum of the Network Schedule(s).
Systematic Approach to the Management of Maintenance (SAMM)	The documented Systematic Approach used by the Contractor in complying with the requirements of the RMPC.
Work (or Works)	The physical works delivered on the Network which includes Routine Maintenance, Minor Works, Emergency Maintenance and any other variations.
Work Cycle	Repetitive cycle where all activities from the Road Inspection to the submission of Payment claim are performed to deliver Maintenance.
Work Item	A Work Item is a component task of a Maintenance Activity.

## **2 RMPC process - key features**

### **2.1 Roles of the parties**

Both parties acknowledge that, notwithstanding the contractual nature of the Single Invitee relationship, major importance and value is placed on goodwill, good faith and cooperation between the parties for the attainment of mutual goals. They acknowledge the intention to adopt a 'partnering-type approach' to administering the contractual arrangements under Single Invitee arrangements.

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## 2.2 Partnering

It is expected that parties carrying out works under RMPC – Sole Invitee-type arrangements adopt a relational approach to their operations. More information related to Partnering can be found in Appendix A of the *Transport Infrastructure Project Delivery System Manual (TIPDS) Volume 1*. The document is published at:

<https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/TIPDS/Volume-1>

## 2.3 Partners in Government Agreement (State and local governments)

The *Partners in Government Agreement (an agreement for the partnership and the relationship between the State Government and local government in Queensland)* exists, which:

- formalises a set of principles underpinning the relationship between the parties
- encourages positive and productive relations between the parties based on mutual respect and achieved through partnership and cooperation, and
- provides a process to implement other arrangements between the parties, covering specific services and functions.

## 2.4 The department's role

The department's role under RMPC includes:

- owner of the Road Network
- administration of the Contract in accordance with Contract Conditions, including re-allocation of funds, consideration of variation applications, auditing of quality systems and provision of relevant available information
- assessment of payment claims and authorising payment
- cooperation with the Contractor in its stewardship role, and
- assessment of the Contractor's performance.

## 2.5 The Contractor's roles

The Contractor performs three key roles under RMPC. These are:

- Network steward
- Maintenance Manager and Supervisor, and
- Operations Contractor.

### 2.5.1 Network steward

In the context of the Contract, "stewardship principles" are a broad set of values, attitudes and behaviours required of the Contractor to effectively manage the Network on the Principal's behalf. The Contractor, as the network steward and the department's local representative, must act professionally in the department's interest and must ensure:

- that maintenance funds are wisely invested and that the infrastructure asset is maintained in the best interests of the department
- that discretionary changes to the agreed Network Schedule(s) are sound and justifiable

- performing the Work under the Contract in the best interests of the Principal as the owner as well as the users of the Network
- being responsible and accountable for the outcomes resulting from the management of the Network
- working collaboratively with the Principal to deliver the Work under the Contract in a way tailored to best meet the Principal's evolving needs
- acting with integrity and transparency in the performance of the Work under the Contract and all other obligations under the Contract
- that Maintenance concerns are addressed at Contractor level and only referred to the department when necessary
- that timely advice of a high standard is provided to the department as necessary, and
- that the Network is in a safe condition for Road users.

The Network stewardship role of the Contractor does not involve owner-type functions, such as operating a pavement management system or designing rehabilitation works; however, the Contractor's ongoing inputs to future Work will be welcomed.

The Principal must ensure that the Principal's Representative and its staff or representatives involved in managing the Contract observe the Network stewardship principles.

The Contractor must ensure that its staff or representatives involved in the Contract observe the Network stewardship principles.

### **2.5.2 Maintenance Manager and Supervisor**

The Contractor, as the Maintenance Manager and Supervisor, must plan and manage Maintenance efficiently.

The Contractor is responsible for:

- ensuring a Systematic Approach to Management (identification, prioritisation, scheduling, planning and doing) of Maintenance and reporting to the Principal in accordance with the Contract
- accuracy of records
- adequacy of quality systems
- sound financial and contractual management.

### **2.5.3 Operations Contractor**

The Contractor is responsible for undertaking Maintenance efficiently and in accordance with quality procedures and the Quality Plan.

## **2.6 *Emphasis on planning***

### **2.6.1 General**

Under the RMPC arrangements, there is a clear focus on the Contractor knowing what is to be undertaken as the most important Work, and then planning its operations so Work is completed in the most cost effective and efficient way.

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## **2.6.2 Planning prior to Contract Period (by the department and Contractor)**

Prior to the commencement of each Contract Period, a realistic Schedule of Routine Maintenance Work must be agreed. It is recommended that both the Contractor and the department jointly inspect all roads on the Network to determine the type and quantities of Maintenance required for the following Contract Period. This process is called the Joint Maintenance Requirements Assessment (JMRA) and more details on JMRA can be found in the Routine Maintenance Guidelines.

The indicative Network Schedule Total(s) should reflect the intent of the road network strategy and the output of the JMRA.

The Contract may also include:

- Network Schedule(s) – generally preferred.
- Schedules for individual road sections.
- Schedules for remote Works or Works in close proximity to the Contractor's depot.
- Schedules for specific Maintenance Activities where economy of scale considerations provide best value.
- Any combination of these as agreed with the department.

If both parties agreed to establish a contract for 24 months, then the Contractor will have to submit yearly Network Schedules based on the allocated funding. The type of Maintenance Activities and quantities can be modified after the first year (subject to JMRA being done in the beginning of the second year).

## **2.6.3 Planning during the Contract Period**

The Contractor needs to plan the Maintenance operations to maximise the efficiency of field operations. The RMPC requires Work to be identified and planned in advance and performed using a systematic approach.

In addition to JMRA inspections, the Contractor and the department should jointly inspect Roads in the Network on a regular basis throughout the Contract Period to monitor the performance of assets on the Network.

## **2.7 Systematic Approach to the Management of Maintenance**

### **2.7.1 General**

The Contractor shall adopt a Systematic Approach to the Management of Maintenance (SAMM) i.e. any system which is quality assured and complies with the generic processes outlined in Clauses 2.7.2 to 2.7.3.

The Contractor is strongly recommended to utilise a propriety Maintenance Management System (MMS) as recommended by the Department.

### **2.7.2 System procedures**

#### **Identification of Maintenance in advance**

Outstanding Maintenance needs, including exact location, shall be identified before Defects have reached the Upper Intervention Level. The Contractor is required to record details of Maintenance Work into the 'Defect log', once the Defect Initial Intervention Level is reached, to assist in work planning.



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The process of Work identification shall be based on the IL/RT criteria. Sometime maintenance requirement will vary due to local issues and such works can be captured by using "Ordered Work" corporate priority group in IL/RT criteria.

To keep this process manageable, it is preferable that the Contractor aggregates Work into reasonable packages of Work and estimates resources necessary to perform those Maintenance Activities while still in the field.

A schedule of routine inspections shall be included in the Contractor's Quality Plan and the Contractor must carry out inspections as agreed. All remaining defects (Backlog) are to be revisited during the next inspection cycle in order to determine the right priority in accordance with IL/RT criteria. All inspection reports are to be retained by the Contractor and make them available to the Principal upon request.

### **Planning and prioritising of Maintenance**

The Contractor shall do their best to plan and prioritise Work in advance to achieve operational efficiencies. The Contractor is to maintain a prioritised Forward List of Work to demonstrate tangibly that Works are being prioritised.

It is not mandatory for Defects to be recorded with the Maintenance Activity in the prioritised Forward List of Work. Where Defects are recorded, they will be prioritised having regard to the IL/RT priority requirement.

When scheduled, Work shall be documented on Works orders. A Work order may contain multiple Defects, but not multiple Activities.

Work on adjoining LG Roads are not to be included in the RMPC Works order.

Copies of the Forward List of Work and Works orders are to be retained for audit by the department.

### **Undertaking Maintenance**

All Maintenance must be undertaken to appropriate standards, including compliance with the Maintenance Activity Standards included in the Contractor's Quality Plan.

The Contractor is required to be at least third-party quality accredited or have completed form C6089 and have a quality system for the performance of Maintenance, with Quality Plans, including the procedures to undertake Maintenance.

The Contractor must prepare its Quality plan in accordance with Routine Maintenance Guidelines and this manual.

The use of the department's Road Reference (RR) system is mandatory. The level of detail required will be at the discretion of the department. A copy of the RR conventions is included at Appendix 1 of this manual.

### **Recording completed Maintenance**

All Work performed, including its location, is to be captured and recorded. Where Work is carried out without a Works order being available in advance, a Works order is to be completed retrospectively, to capture a record of all completed work.

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Where the Work actually performed differs from that scheduled on the Works order, the as-completed Works order is to be prepared and submitted to show the Work actually performed. All completed Activities must be located using the RR system. The level of detail required will be at the discretion of the department.

Works that are unable to be completed due to time or budget constraints, for example, are to be listed in a backlog for future consideration for the Forward List of Works.

The Contractor needs to retain records for at least five years.

### **Reporting completed Maintenance**

All completed Maintenance Works, including the locations, should be the subject of regular reports in the system outputs to allow Network and Contract performance monitoring to be undertaken. The level of detail required will be at the discretion of the department.

#### **2.7.3 System outputs**

The SAMM must produce outputs of:

- Network inspection reports
- Forward List of Works – refer Clause 2.7.2
- Work Orders – refer Clause 2.7.2
- Record of completed Activities
- Payment claims including:
  - signed Form C6096
  - Form C6097 (mandatory requirement) or details of completed Activities in an electronic format (mandatory requirement)
  - Form C6098 and variations (as required by the department).
- Completed, updated programmed expenditure report (as required by the department)
- Backlog Report
- Minor Works, including itemised Minor Works Schedules
- Emergency Maintenance, including completed relevant Schedules
- Progress Reports prepared regularly (every three months or as otherwise directed by the department). Unsatisfactory or unclear Progress Reports may result in a formal progress meeting.

## **2.8 Financial management**

### **2.8.1 Discretionary management of expenditures**

The Contractor, as the Network steward, is to make many of the day-to-day decisions which would previously have been referred to the department and has a responsibility to manage the varying Maintenance needs and priorities of its Network over the Contract Period. This includes actively maintaining expenditure within the Network Schedule Total(s).

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To help the Contractor manage these constraints, payment will be made on a Network and/or individual Schedule basis as determined locally. The Contractor has flexibility to vary the agreed quantity of each Maintenance Activity and/or individual Schedule total, where multiple Schedules are used, by  $\pm 20$  per cent (or any other figure as determined locally by the department).

Beyond the locally agreed discretionary level, prior authorisation from the department will be required. The department may:

- re-allocate funds from some other Maintenance Activity in the Schedule(s), retaining the original Network Schedule Total(s)
- varying Activity quantities outside the discretionary limits but maintaining the agreed Network Schedule Total(s)
- approve the Work as a variation to the Contract
- not approve the Work.

On a cautionary note, the department's delegation of the Network maintenance management role to the Contractor should not be seen by the Contractor as an opportunity to undertake more profitable activities at the expense of higher priority, less profitable activities. The Contractor is to act in the best interests of the owner of the asset. The department may audit the Contractor's performance in this area.

The Contractor must advise the department as soon as possible if a financial loss is anticipated under the Contract.

### **2.8.2 Variations**

Variations to the Contract involving a change to the Total Contract Amount, including providing additional funds, are at the department's discretion and apply in a limited number of situations (such variations may involve changes to scheduled rates and/or lump sums):

- quality changes to scheduled Activities
- nominated additional Activities (not in the Schedules)
- nominated new or additional Minor Works items
- Emergency Maintenance
- omission or decrease in Work
- defective work accepted by the department at a reduced cost
- public notification of significant traffic changes (if ordered by the Principal)
- alterations of Public Utility Plant or ancillary Works and encroachments.

### **2.8.3 Payment claims**

While payment claims will be made on a monthly basis (or other agreed period), consideration will be given in hardship cases only for interim payments to be made to the Contractor.

Claims are to be on a Schedule of rates basis for quantities actually completed during the claim period, except for lump sum Activities which are to be claimed on a pro rata basis, and Provisional Sum Activities which are to be claimed on an agreed quotation basis.

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The Queensland Government has introduced new payment laws under *Building Industry Fairness (Security of Payment) Act (BIF Act)* to make the building industry fairer. The BIF Act has changed the current requirements for payment claims, subcontractor's charges and adjudication.

## **2.9 Initiation of Work**

### **2.9.1 Intervention Level / Response Time**

All routine maintenance defects are to be logged once the defect has reached the Initial Intervention Level and Maintenance is to be undertaken before the Defect reaches the Upper Intervention Level. There may be instances outside the norm where, in some locations on the Network, Maintenance may not be able to undertake due to lack of funding or other reasons, before the Upper Intervention Level is reached.

The Response Time for carrying out a Maintenance Activity on each individual road within the Network, after the relevant Upper Intervention Level is reached, shall be as set out in the Guidelines.

It may be appropriate for the Upper Intervention Levels of one Road to differ from that of another Road within the same Network because of the road category as given in the IL/RT criteria.

If a defect becomes hazardous to road users as per hazardous defects identification methodology indicated in the Guidelines, then such defect must be actioned within the given timeframe.

### **2.9.2 Department initiation**

The department may direct the Contractor to carry out scheduled Maintenance Activities, at specific locations within nominated time limits, as ordered Work. Rates / lump sums for such Work may be increased if warranted and approved by the department.

## **3 Key contractual elements**

### **3.1 Type of Contract**

#### **3.1.1 General**

RMPC can be categorised by:

- the duration of the Contract
- the composition of the Network.

#### **3.1.2 Duration**

There are two different aspects of duration:

- Unless agreed in writing by the parties, there is a fixed Contract Period of up to 24 months, corresponding to two financial years. The fixed Contract Period should not exceed 24 months.
- The department guarantees to renew the RMPC for a period of up to one year (the Guaranteed Renewal Period), provided the Contractor performs satisfactorily and achieves agreed performance targets.

Either party may withdraw from the agreement without cause by giving the appropriate notice:

- the department – one year, or
- the Contractor – one year.

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Grounds for earlier termination or modification to the agreement period would include:

- by mutual agreement
- fraud, maladministration or gross misconduct by either party (immediate termination)
- failure by the Contractor to attain agreed productivity targets (possible termination of the Contract at the end of the Contract Period)
- failure by either party to abide by the conditions of the Contract (possible termination), or
- unacceptable performance by the Contractor (possible termination of the Contract at the end of the Contract Period).

### **3.1.3 Composition**

The Network for the Contract Period will generally comprise those roads maintained by the Contractor under previous arrangements; however, the Network may be subject to minor redistribution by the department.

The composition of the Network can only be changed for subsequent Contract Periods where at least 12 months' notice is given to the Contractor, such that, unless otherwise agreed, those changes will apply from the first day of the following Contract Period.

Changes to the Network cannot be made during a Contract Period except where the parties agree.

### **3.1.4 Extent of changes**

For other than Australian Government-influenced changes to National Highways, any deletions from the Network must not be such as to reduce significantly the extent of maintenance to be carried out by the Contractor.

## **3.2 Work included under RMPC**

### **3.2.1 Routine Maintenance**

RMPC is predominantly an arrangement for carrying out Routine Maintenance on the Network.

Routine Maintenance Activities are listed in the department's Routine Maintenance Guidelines. Wherever possible, Activities included in RMPC Schedules should ensure that the agreements remain predominately output-based. See Clause 4.1 regarding monitoring of Works on an output basis.

The department will, in the case of Routine Maintenance, determine, as appropriate, indicative Network Schedule Total(s) for:

- the National Highway Network
- the Other State-Controlled Network.

as well as discretionary percentage limits that apply to each Maintenance Activity (on a Network basis) and/or individual Schedule totals where multiple Road Schedules are used. The Contractor, in carrying out its various roles, will be required to adapt to the changing Maintenance needs of the Network by varying the various Network Activity quantities and/or individual Schedule totals, so not to exceed the relevant Network Schedule Total(s). Changes outside this discretion require the department's approval.

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### **3.2.2 Emergency Maintenance**

The RMPC will also include Emergency Maintenance. The Contractor must advise the department no later than the morning of the next working day of Emergency Maintenance involving fatalities.

The estimated expenditure of the Emergency Maintenance is to be advised to the Principal once known, so that any effect on the agreed Network total funding can be determined.

There are two elements of Emergency Maintenance.

#### **'Make Safe' Work**

This Work is to be performed immediately by the Contractor when the emergency occurs. The department must be notified as soon as possible after the emergency situation arises. The claim for the Work can be included in the next payment claim and the department will treat that part of the claim as a variation.

In general, there will be some provisional amount within RMPC to pay for Emergency Maintenance Activities, listed under Maintenance Activity Numbers 450 and 452. The department may allocate a reasonable amount based on previous years expenditure to manage emergency maintenance efficiently. Works stemming from an emergency call out will need to be approved by the Principal. If approved, the Works will be funded on an as-required basis and priced by reference to existing Activity scheduled rates, standing offers or daywork schedules unless otherwise agreed.

#### **Substantial further Work**

After making the Network condition safe, the Contractor shall notify the department for any further Work and seek approval prior to undertaking.

### **3.2.3 Minor Works (applicable to Contractors with single invitee status)**

For Minor Works to be included under the conditions of the RMPC, such Works must have an estimated annual aggregate amount of \$500,000 or less for each Contract. Only Contractors which have been assessed with Single Invitee status will be able to be included for Minor Works with RMPC Works. This provision simply provides a further option to facilitate efficient Contract Documents and does not remove or override the assessment of Single Invitee delivery under the policy statement.

The Contractor and the department will agree on the quantities, rates and lump sums to complete the Works and the relevant design and construction standards, including any drawings and Specifications.

The Minor Works should also be given a separate job number so that accounting of the value of this Work can be undertaken.

### **3.2.4 Dayworks**

Daywork Schedules include rates which may be used for payment of completed unscheduled Activities, Emergency Maintenance or other agreed work. Clause 7 Variations of the General Conditions sets out where daywork rates may apply.

### **3.2.5 Provisional Sums**

Where Activity quantities are difficult to estimate and pay on a unit rate or a lump sum pro rata basis, because of the unpredictable nature of the Work, the parties may agree to use a Provisional Sum in the Network Schedules where permitted (Attachment 3 of the Guidelines indicates those Activities that may be subject to a Provisional Sum). These Provisional Sums may be subject to discretionary changes by the Contractor.

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### 3.3 *Liability for non-performance of Maintenance*

The law relating to non-feasance (that is, not liable for damages for negligence for failing to carry out road maintenance) was changed as a result of the High Court decision made in *Brodie v Singleton Shire Council*. Australian states and territories have responded to this landmark case in differing ways through individual legislation and amendments to Acts.

In Queensland, the situation is:

- The *Civil Liability Act* (Qld) (the Act) amends the law concerning the liability of road authorities.
- In particular, one provision of the Act (Section 37), in effect, partly overrules the High Court decision of *Brodie v Singleton Shire Council* and partially returns the law to the former 'non-feasance' principle.
- The Act applies to both personal injury and property damage.
- The Act also acknowledges the limited resources available to public authorities, such as the Department of Transport and Main Roads – see Section 35 of the Act.
- Notwithstanding the Act, RMPCs, with their obligations between the department as Principal and the Contractor, take effect in their own terms. RMPCs contain a series of indemnities between the department and Contractors that impose obligations on each party and which depend on each case.

The department and Contractors should remain vigilant in performing their duties under RMPCs and maximise the use of the limited resources available to them.

Districts should be aware that RMPCs contain indemnities between the parties for liability arising out of non-performance of maintenance of an RMPC. Indemnities flow both ways under the RMPC – some in favour of the department as Principal and some in favour of the Contractor.

Risks, insurance requirements (including public liability) and indemnities are covered in Clause 8 of the General Conditions. Clause 8 provides that the Contractor shall indemnify the Principal for loss and damage (including costs), whether for property damage or personal injury, arising out of the performance of the Contract by the Contractor. The Contractor's liability is reduced to the extent that an act or omission of the Principal contributed to such loss.

Clause 8 also contains an indemnity given by the Principal in favour of the Contractor.

Under this Clause, provided the Contractor is fulfilling his inspection and recording obligations, the risks associated with non-performance of Maintenance for Defects that were:

- unknown to the Contractor, or
- known to the Contractor and below the Upper Intervention Level and not a hazardous defect at the time of inspection, or
- known to the Contractor and exceeded the Upper Intervention Level, but where the Contractor fulfilled its obligations under the Contract by prioritising and delivering works as per IL/RT or formally seeking a reallocation.

In addition, where the Contractor has performed its obligations in accordance with the Maintenance Activity Standards, then the risks will be with the department.

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The indemnity given by the Principal to the Contractor does not cover the situations where:

- the Contractor is negligent in carrying out any work, or
- the Contractor failed to identify any Defect which should have been identified as part of the stewardship role, or
- the Contractor failed to carry out inspections as agreed in the Contractor's Quality Plan, or
- the Contractor knows of the Defect, but fails to remedy the Defect within the times prescribed under the Contract or approved Maintenance Activities Schedule

Under above circumstances, any legal costs will not be covered which the Contractor may incur in responding to these negligence Claims.

The best protection against liability for a Contractor carrying out Maintenance is:

- to have demonstrated procedures for the identification of Defects in accordance with IL/RT criteria and the scheduling of Maintenance Activities to remedy the Defects.
- to have appropriate Maintenance Activity Standards
- to have appropriate MMS in practice
- to adhere to these procedures and standards.

Under no circumstances should identification or planning of Maintenance Activities be carried out on an ad hoc basis.

### **3.4 Quality, safety and environmental requirements**

The Contractor is required to have a third-party quality system or have completed Form C6089. For compliance with the RMPC, Quality Plans may be added to the system or guide.

Specific Quality Plans for the RMPC are required for:

- a SAMM
- maintenance operations
- safety, including traffic management
- environmental management.

For operational quality, the Contractor may build on the department's Activity Standards which are included in the Guidelines.

The emphasis of the safety plan for RMPC revolves around the control and consequences of traffic in the vicinity of Maintenance operations and the provisions of the current *Work Health and Safety Act* (Qld). The Contractor shall guide traffic safely past the Work in accordance with traffic guidance schemes based on the department's *Manual of Uniform Traffic Control Devices*. The department may require the Contractor to notify the public of significant changes to normal traffic in advance. The Contractor shall advise the department of any notifiable incident under the *Work Health and Safety Act* (Qld) as detailed in Clause 9 of the General Conditions.

The department is committed to implementation of best practice environmental management. The current *Environmental Protection Act* (Qld) states that all members of the community are subject to a general environmental duty of care to take all reasonable and practical measures to prevent or minimise environmental harm.



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To ensure the department complies with all relevant legal obligations at each Work Site, the Contractor shall be responsible for environmental management associated with the Works. This includes:

- obtaining all licences, permits and approvals (not already obtained by the Principal) and to pay all fees due as required by all relevant Acts, Regulations and local laws from the appropriate authorities and departments
- preparation of an Environmental Management Plan (EMP) (Maintenance) in accordance with the requirements set out under Clause 10.5 General Conditions
- implementation of the EMP (Maintenance), including at least one internal environmental audit during the Contract.

Contractors with an accredited environmental management system may submit their EMP (Maintenance) in a format compatible with their existing system.

The Contractor must notify the Principal's Representative of an environmental incident that occurs during the performance of the Work under the Contract as soon as practicable. This does not negate the Contractor's responsibility for reporting the incident to the administering Authority as per the *Environmental Protection Act (Qld)*.

Where works involve with the quarrying activities, special conditions will apply under the *Mining and Quarrying Safety and Health Act (MQSH Act)*. The MQSH Act will not apply if the quarrying pit is directly adjoining the road area under construction. The MQSH Act is in addition of existing obligations and liabilities under the contract as detailed in Clause 9.5 of the General Conditions.

### **3.5 Other significant features**

#### **3.5.1 Insurance**

Where the Contractor is a Local Government (LG), the Contractor is required to arrange its own insurance under RMPC. This includes:

- workers' compensation
- insurance of the Works (including Minor Works if required)
- public liability, and
- professional indemnity (where Minor Works incorporating design is included).

Where the Contractor is RoadTek, the Queensland Government policy of self-insurance applies, except that workers' compensation coverage is required.

#### **3.5.2 Rework**

The Contractor may use its discretion as a first approach to undertake a low-cost attempt to remedy a Defect. If that approach results in premature failure and requires a subsequent high cost thorough solution, then the department, where it agrees that this approach was an attempt to achieve best value for the department, will include the costs of both approaches within the Network Schedules Total(s).

Both Activities must previously be included in the Schedule or the parties may agree in advance to such an approach.

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### **3.6 Dispute resolution**

It is expected that any disputes that may arise under RMPC will be settled promptly:

- where the Contractor is a LG — in accordance with the current Partners in Government Agreement between the state government and Local Government Association of Queensland
- where the Contractor is RoadTek — in accordance with the dispute resolution process as set out in a mutual obligations agreement between local delegates of the RoadTek and the district.

## **4 The RMPC process**

### **4.1 General**

There are a number of processes involved with forming the Contract and undertaking Works under RMPC arrangements. The processes are depicted in Figure 4.1.1-A, which show the steps involved with forming the RMPC SAMM.

#### **4.1.1 Planning prior to agreement**

##### **Budget and Intervention Levels**

The department will advise the Contractor of an indicative Network Schedule Total(s) based on:

- JMRA and other Maintenance Needs assessments
- Actual funding strategy
- previous Maintenance Needs Surveys
- the current departmental Road Network strategy
- planned future programmed Maintenance, rehabilitation and reconstruction Works
- current backlog list for the Network
- historical levels of Maintenance expenditure.

Intervention Level and Response Time parameters in the IL/RT must not be negotiated to maintain the network with the constrained budget. Instead defect prioritisation as per IL/RT criteria should be carried out once all the Defects have been captured in inspection cycles. Cash flow forecast based on JMRA and historical maintenance delivery is critically important to deliver consistent maintenance throughout the year.

##### **Joint Maintenance Requirements Assessment**

This assessment is a joint departmental/Contractor assessment of the Network for the purpose of determining the extent of the Maintenance Activities for the forthcoming Contract Period.

The JMRA will identify, for each road on the Network:

- the specific Maintenance Activity required
- the priority for Works
- approximate Work quantities for Maintenance Activities and any Minor Works necessary.

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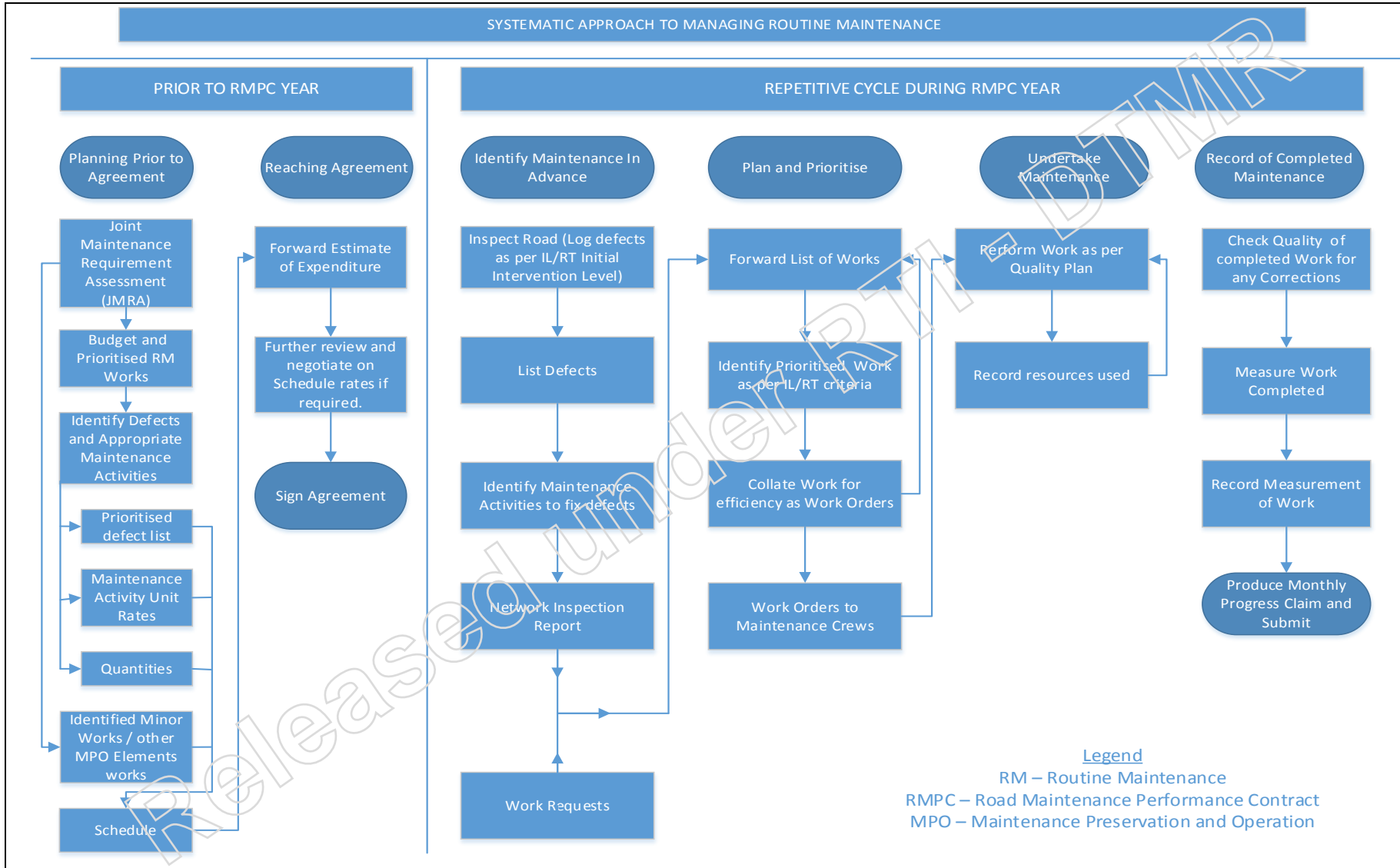
The value of the Work identified and agreed during the JMRA is to match the indicative Network Schedule Total(s) that reflect the intent of the road network strategy. However, work delivery during the RMPC cycles should be performed based on the identified priority works. Refer to the Guidelines for further information about the JMRA.

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**Figure 4.1.1-A – Management of RMPC processes (example for a 12-month Contract Period)**

	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun		
<b>1. Summary of Contract Period / Negotiations</b>	<b>Pre-Agreement Process (April-June) and Reaching Agreement by the end of June</b>			RMPC CONTRACT PERIOD 1 July to 30 June										
										<b>Pre-Agreement Process (April-June) and Reaching Agreement by the end of June</b>			Next RMPC Contract Period 1 July to 30 June	
<b>2. Recommended Progress Report Periods</b>	Progress Period #1 (July-Sept)			Progress Period #2 (Oct-Dec)			Progress Period #3 (Jan-Mar)			Progress Period #4 (Apr-Jun)				
				<b>X</b>	Progress Report #1		<b>X</b>	Progress Report #2		<b>X</b>	Progress Report #3		<b>X</b>	Progress Report #4
	Notes: (1) X indicates that the Contractor must prepare and present Progress Reports to the Principal no later than 2 weeks after the completion of the relevant Progress Period. (2) The Contractor will be given two weeks' notice of any Progress Meetings to consider unsatisfactory / unclear Progress Reports. Such meetings are at the Principal's discretion.													
<b>3. Recommended Contract Review Periods / Meetings</b>	Contract Review Period A (July-Dec)						^Contract Review Meeting must be held before mid-February							
	Note: Performance Report (Form C6092) and RMPC Performance Assessment Template to be completed prior to each Contract Review Meeting						Notes (1) ^ indicates Contract Review Meeting						Contract Review Period B (Jan-June)	

**Figure 4.1.1-B – System approach to management of maintenance**



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## **Identify Defects, relative priorities, Maintenance Activities, Maintenance Activity rates and quantities**

It can be expected that the needs of the Network established during the JMRA process will vary from the indicative Network budget figure. During the planning phase, an iterative process based on the work priority, is carried out in reaching agreement to a conforming Network Schedule(s).

The iterative process for reaching agreement has the aim of identifying Defects, Maintenance Activities, Maintenance Activity quantities, unit rates, lump sums and Provisional sums to ensure the indicative Network Schedule Total(s) are not exceeded.

The use of work priority in balancing Network needs to available budget is detailed in Clause 4.1.2.

### **Schedule**

The outcome of the iterative process is agreement by the department and Contractor to Network Schedule(s) and Intervention Level Schedules to apply for the forthcoming Contract Period.

#### **4.1.2 Reaching agreement**

##### **Sign agreement**

After agreement on the contents of the Network Schedule(s), there are a number of documents to be completed by both parties to create the agreement.

##### **Form C6084.1**

It should be noted that the Schedules included in the Contract can be based on a number of criteria. These are Network Schedule(s) – generally identified, individual road sections, Works remote or in close proximity to the Contractor's depot, specific Maintenance Activities where economy of scale considerations provide best value and any combination of these approaches, as agreed with the department.

##### **Form C6084.2**

Prior to completion of this Schedule, it is necessary for the Contractor and the department to agree on the proposed discretionary limits for various Maintenance Activities and/or individual Schedule totals where multiple Schedules are used.

##### **Form C6095**

It should be noted that, the Upper Intervention Levels contained in the Guidelines are the approved Intervention Levels for the Contract.

##### **Form C6084.3**

Minor Works up to an estimated annual aggregate amount of \$500,000 for each Contract may only be included in the RMPC where the Contractor is also a Single Invitee.

It should be noted that the process for reaching agreement is similar to that used for Single Invitee capital works projects such as Transport Infrastructure Contract – Sole Invitee (TIC-SI) or Minor Infrastructure Contract – Sole Invitee (MIC-SI).

##### **Forms C6086 and C6087**

All items of labour, plant, equipment and materials likely to be used in managing and carrying out the works under the Contract should be included by the Contractor, together with associated rates agreed with the department.

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## **Supplementary conditions of Contract**

These conditions will generally be initiated by the department to cater for local circumstances associated with the Contract.

### **Ratification notice**

When required by either party, these notices should be received by the other party before the start of the Contract Period to allow time for authorisation of financial programs and the authorisation by appropriate staff or local government.

### **Form C6094**

This agreement sets out in writing all matters agreed by the parties during the 'reaching agreement' stage. Some matters could be hours and Days of work and information required by the department for inclusion in Progress Reports. Commencement of work may be conditional on ratification of the agreement by either party using a ratification notice.

### **Schedule C7810.S10.RMPC – Ethical Supplier Threshold**

The new updated Queensland Procurement Policy includes two key new provisions – the Ethical Supplier Threshold and the Ethical Supplier Mandate.

It is now mandatory that the Tenderer must comply with the Ethical Supplier Threshold. Failure to comply with the requirements of the Ethical Supplier Threshold is a 'substantial breach' as detailed in Clause 12.4 of the General Conditions.

### **Forward estimate of expenditure**

Once the agreement is signed, the department is required to forward an estimate of expenditure for the Contract.

#### **4.1.3 Identify Maintenance in advance**

##### **Survey Road Network and Network inspection reports**

The Contractor shall use a systematic approach to manage Routine Maintenance as required under the Contract; Maintenance works, including Defect, Maintenance Activity, location- and son on, should be identified through regular Network inspections. The Contractor is required under RMPC to include, in the management Quality Plan, its procedures for the identification of Work in advance.

Details from these Network inspections are to be detailed in Network inspection reports. These reports must be kept up-to-date to demonstrate compliance with the Quality Plan and to provide any information on the Network the department requires.

##### **List Defects and identify Activities to fix**

The Guidelines list Defects and associated Maintenance Activity combinations to repair the Defect.

In addition, the Guidelines also list the initial Intervention Levels for recording works into the Forward List of Works and the Upper Intervention Levels which Defect is to be repaired before reaching it. If a Defect was unable to fix before reaching the Upper Intervention Level due to valid reason, then the Defect should be fixed within the Response Time.

Clause 4.1.2 details the use of Intervention Levels for recording of Works.

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## **Routine Maintenance Performance Assessment and Strategic Analysis**

The department will require information to assess routine maintenance element performance and effectiveness of revised Intervention Level and Response Time (IL/RT) criteria contained within the Guidelines. This will require inspection details, Defect information and defect rectification details from the Contractor to be collected annually or as required during the contract period.

### **Work requests**

In addition to Works being identified through Road Network Surveys, outstanding Works will be reported to the Contractor through Work requests.

These requests may be raised by the department based on, the public or a road user complaint or other means. The requests need to be investigated by the Contractor and included in the prioritised Forward List of Works if justified. Such work requests are also considered as "Ordered Work" Defects and get corporate priority 2 for rectification.

#### **4.1.4 Plan and prioritise**

##### **Forward list of Works, identify priority Works and collate Work as Work orders**

It is a mandatory requirement that, to the maximum extent possible, prioritised Works are planned in advance. The Forward List of Work is used for this purpose. The Contractor is required to maintain a current Forward List of Works for inspection by the department at any time.

Defects should be recorded in the Forward List of Works, and be prioritised having regard to the Defect Scoring methodology explained in the IL/RT criteria in the Guidelines.

It is not mandatory to record Defects with the Maintenance Activity into the Forward List of Works; however, if not recorded, the Contractor's quality system should clearly demonstrate the way Works are delivered in the field.

An up-to-date Forward List of Works for the Network also allows the Contractor to plan Works to achieve operational efficiencies.

The Contractor uses the prioritised Forward List of Works to schedule Works onto Works orders for action by Work crews. In scheduling the prioritised Work to Work orders, the Contractor should aim to achieve operational efficiencies such as reducing the proportion of travelling time in the day, economy of scale considerations, use of specialised Work crews and timing of preventative type maintenance.

#### **4.1.5 Undertake Maintenance**

##### **Perform Work as per Quality Plan and record resources used**

The Contractor undertakes the prioritised work detailed on the Works orders in accordance with Activity Work procedures included in the Contractor's Quality Plan. These Work procedures may be based on the Guidelines.

The Contractor, in carrying out Works, is also required to observe the procedures contained in the safety and environmental management plans for the Works, as well as recording resources used to provide actual costs of the Works for internal performance assessment.

The quality system requirements for undertaking RMPC Works are set out in Clause 10 of the C6083 General Conditions.



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## Provisional Sums

The procedure for using Provisional Sum Activities shall be:

- Where Provisional Sums are permitted, the parties agree, at the time of the RMPC negotiation, those Maintenance Activities that are difficult to estimate and pay on a lump sum or unit rate basis in view of the unpredictable nature of the Work.
- For the Maintenance Activities identified, a Provisional Sum allowance is made in the Schedule for the Work, based on records of past Works and field inspections.
- When Work is required during the year for these Maintenance Activities, the Contractor provides a quotation to the department for approval to carry out the Work.
- Work undertaken by the Contractor is reimbursed as per the agreed quotation as part of the payment claim for that period.
- Quotations for the Work may be based on RMPC Network Schedule rates, standing offer rates or daywork rates.

The department may provide blanket approval for Provisional Sum work undertaken on a repetitive basis during the term of the Contract or for Provisional Sum work of relatively low dollar value where:

- the risks associated with not obtaining a quotation are less than the cost of administering before approval
- the department does not wish to delay the supplier unnecessarily for each component of work
- dissections of costs incurred are provided with each payment claim.

### Monitoring of Works on an output basis

The levels of unit rate/lump sum and daywork / Provisional Sum expenditure will be monitored each year to assess the extent to which RMPCs facilitate delivery on an outputs basis. As a guide, it is expected that no more than 10 per cent of the value of any individual Contract will be delivered on a daywork / Provisional Sum basis.

#### 4.1.6 Record of completed Works

##### Measure and record Work completed and produce Payment claim

The Contractor is required to measure the extent of all Work undertaken in terms of the Maintenance Activity unit of measure. It is in the Contractor's interest to measure the Work done accurately as payment will be based on these records. It is possible that audit surveillance checks will be undertaken by the department on the reasonableness of work claimed for reimbursement.

Payment claims are normally made on a monthly basis unless otherwise agreed by the department. Claims are on a Schedule of rates basis for quantities completed during the claim period, except for lump sum Maintenance Activities (which are claimed on a pro rata basis) and Provisional Sum Maintenance Activities (which are claimed on an agreed quotation basis).

Details of the payment claim format and supporting documentation required to accompany the claim is set out in Clause 5 of the C6083 General Conditions. In addition to details of work done under the various Schedules, a completed revised program expenditure flow for each Schedule, with progress against each Network and/or individual Schedules, dayworks and variations, may be required if directed by the department.

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Progress payment should be made by the department within 20 Business Days of receipt of the claim. Progress payments are the subject of Clause 5.7 of the C6083 General Conditions.

## **4.2 Administration of the Contract**

### **4.2.1 Contractor**

The major aspect of Contract administration by the Contractor revolves around discretionary changes to the Network or individual Schedule quantities, within the nominated percentage limits, to reflect the needs of the Network. When a discretionary change is made, the Contractor does not need to refer the matter to the department, but any changes must not exceed the Network Schedule Total(s).

When unexpected situations arise, or there is no scope for further discretionary changes, the Contractor must obtain the department's approval before undertaking the work.

The Contractor is required to present regular (every three months or any period as determined by the department) Progress Reports to the department that highlight stewardship, management, financial or operational aspects for the progress period. The department may require a formal progress meeting to discuss the content of the report.

### **4.2.2 The department**

Under the RMPC's performance approach, it is necessary for the department to certify payment claims, as well as provide detailed assessment of the Contractor's performance at the Contract Review Meetings, which is to be held at a time determined in the initial Contract negotiation.

### **4.2.3 Additional Activities**

The Contractor must advise the department as soon as possible of any recommendation to add or change Maintenance Activities to the existing list of Maintenance Activity types (as listed in the chapter 5 of the Guidelines).

## **4.3 Renegotiation**

For other than the initial Contract Period, there will be sufficient information available for:

- the Contractor to demonstrate its productivity achievements
- the department to assess the Contractor's performance.

This should be available in May / June, prior to each new RMPC Contract begins.

Such information is fundamental to the formation of each new RMPC, especially the Guaranteed Renewal Period. The formal reviews provide a forum for demonstrating the partnering and stewardship features of RMPCs.

## **5 Productivity and performance**

### **5.1 General**

RMPCs are required to demonstrate value for money and be competitive with the value that could be achieved via open tender.

Contract productivity and performance needs to be considered from a number of perspectives. Value is multidimensional as reflected in the Queensland Procurement Policy and the reporting requirements in the *Transport Infrastructure Act (Qld)*, which indicates the need to demonstrate efficiency and effectiveness and to achieve best quality work for the department's Network.

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In the past, emphasis was placed on productivity improvement and other benchmark performance assessment. These measures are still used, but have been modified. Productivity improvement is still used, but other outcomes that need to be understood and measured are safety, Work effectiveness, Road user satisfaction and administrative efficiency. The achievement and improvement of these outcomes is facilitated by a cooperative and relational approach by the parties to the Contract. Improved performance should be driven by the setting of challenging, but achievable, targets underpinned by an effective benchmarking system, which facilitates improvement in all the identified areas.

## **5.2 Performance assessment methodology**

The performance assessment methodology includes productivity gains measurement and the assessment of the Contract performance, based on rating key performance indicators (KPIs). Two instruments that measure performance of RMPCs are:

- productivity improvement, measured annually and expressed in terms of dollar gains and percentage improvement (this is a continuation of the current approach)
- performance assessment, based on qualitative and quantitative assessments of KPIs.

The objective of performance assessment methodology is to provide a basis to assess overall Contract performance and establish benchmarks so efficient practices and systems are adopted.

The methodology requires districts to form their own targets while measuring achievement against state-wide targets. In return, Contracts will be measured against each other to indicate a snapshot of the current compliance within RMPCs which can be used in determining future performance targets.

Performance assessment measures have a twofold purpose in quantifying ongoing productivity improvement and to rate Contract performance in broader contractual and community outcomes which the department requires from these Contracts.

Measuring performance assessment quantifies subjective and objective outputs of RMPCs through the management of risks associated by this type of Contract delivery. Outputs measured are 'productivity', 'workplace health and safety', 'Road user relationship', and 'delivery system management'. Delivery system management summarises contractual obligations and measures the management of stewardship, process management and operational systems.

### **5.2.1 Determining key performance indicators**

The main steps in determining KPIs for Routine Maintenance may involve:

#### **Pre-assessment**

- identify scope of KPI assessment (choose important or expensive processes, such as the planning and ordering of works or pavement repairs)
- understand existing processes, levels of performance and data attributes for comparison
- establish the team members representing those involved in the process
- organise a KPI partner (could consider a best practice operator in a related field).

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## Assessment

- visit the Site of a KPI partner, discuss issues and collect data
- compare processes, identify differences in process and performance, and establish best practice
- assess cause / effect link between differences in process and the performance variation
- review process to eliminate redundant steps, reduce resource wastage and, where possible, reduce time taken.

## Post-assessment

- document recommendations for change and consult as agreed with partner
- gain necessary approvals and implement change
- monitor performance
- repeat KPI process at regular intervals.

### 5.2.2 Performance initiatives

Performance improvements are not demonstrated solely by a reduction in rates, but can be achieved through improvements to the life of the finished works by changing work practices and by improving standards, Work quality and Response Times. Improvements are also gained through changes in Network geometry and packaging of Works.

The examples of performance initiatives listed are provided to encourage and exchange information, technology and skills that promote the adoption of better processes and achieve improvement in Contract delivery. It is suggested that the Contractor and the department discuss productivity initiatives.

#### Improved Work practices

- rationalisation of plant / personnel
- use of mobile traffic lights to control traffic
- multi-skilling and attention to a number of activities in the same gang trip – for example, litter retrieval, mowing and illegal sign collection by the same crew
- use of specialist Contractors where appropriate
- delegation of detailed Works programming to gangs
- adoption of night work on heavily trafficked roads.

#### New and innovative products

- material substitution and better use of materials – for example, stabilisation to improve substandard materials, use of improved surfacing, use of natural materials where appropriate, substitution with long-life alternatives
- phasing out solvent-based paint and converting equipment to accept water-based paint
- use of longer-lasting traffic control products – for example, rubber kerbstones
- use of herbicides, where appropriate, as an alternative to hand mowing / chipping

- 
- use of Thormajoint on bridge repairs with life expectancy of 15 years.

### **Use of technology**

- better use of plant and use of improved plant – for example, Flocon machines, Matthews Spreaders, asphalt pavers, front deck mowers, Jetpatchers, and mechanical sign post driving systems
- systematic approach to collect Defects information, including use of computer logged Defects in conjunction with improved Maintenance Management Systems
- Better measurement, using more accurate material-measuring equipment, such as load cells, and devices for measuring the area of grass slashed.

### **Improved project management**

- reduced Intervention Levels and Response Times through improved operation frequency
- quality assurance – implementation of quality recommendations from the department's inspector
- improved Works programming – for example, activities to suit seasons
- combining RMPC Works with council works
- enhanced cost control through use of the new list of Work and Maintenance Activity payment types.

### **Geometry of Network**

- better balance of Network between Contractors
- redistribution of Maintenance Activities among Contractors
- reassessment of responsibilities (Road Network, boundaries of responsibility)
- agreements (for example, aesthetic Maintenance Agreement for grass cutting)
- elimination of repetitive work – for example, landscaping / concreting of medians.

### **Packaging of Works**

- bulking up of Works to reduce establishment costs
- cooperative arrangements between Contractors (share resources, Works, staff)
- combining ordinary Maintenance Works with the Transport Infrastructure Contract – Sole Invitee (TIC-SI) or other Works programs
- use of community groups to save litter collection costs ('Adopt-a-Highway')
- reducing Work – for example, by replacing grass median strips with low maintenance vegetation.

### **Technology and skills transfer**

- undertake benchmarking, seminars and workshops to share ideas for increased productivity
- adoption of partnering approach (as opposed to adversarial)
- active participation in regular reviews, audits and discussions to ensure that implementation of new procedures are progressing, and to share suggestions for improvements.

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### 5.2.3 Supplier benchmarking for key performance indicators

Comparisons of performance of the RMPC suppliers are required for two reasons:

- the process of negotiating rates can take account of the relative performance of Contractors and their peers
- reviews of productivity targets for subsequent years can consider the efficiency of the Contractor and the best value obtained from the Contractor's peers.

The supplier benchmarking process involves assessment at two levels:

- at the local level — where districts compare rates of neighbouring suppliers during the negotiation process
- at the state level — where statistical analysis is proposed.

The state-wide analysis procedure initially undertakes multi-factor regression of Contract rates for 19 of the major Activities of the 80 plus Contracts signed each year. This process involved the normalisation of the components of Work Activities which contribute to differences or variability in rates and which are not directly related to productivity. This may include:

- economy of scale (surrogate – quantity of an Activity)
- travel time (surrogate – the mean travel distance from the depot to Contract Roads)
- traffic control (surrogate – the mean Average Annual Daily Traffic (AADT) for all Contract Roads)
- materials and costs (surrogate – the location of the Contract in Queensland).

The resulting relationship may be used to predict typical or average rates for that Activity for each Contract.

### 5.3 Rating and scoring calculations of Contractors

#### 5.3.1 Productivity gains

The calculation of productivity gains is determined by comparing unit rates of recurring activities from the current Contract year to its previous Contract year, excluding lump sum, daywork and Provisional Sum Activities. To analytically correct the comparison, previous years' rates are inflated to align with today's value using the Australian Bureau of Statistics' Road and Bridge Cost Index (RBCI).

The inflation factor used is calculated by:

$$\text{Inflation factor} = \text{Current RBCI} / \text{Previous RBCI}$$

where the RBCI value is represented as the December value for each year. This reflects costs mid-term in a Contract and is available prior to Contract renewal. This value is supplied by the Transport System Asset Management Unit in Transport and Main Roads prior to any analysis being undertaken.

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The productivity gain delivered by rate reductions for unit rate Contract Activities can be calculated using the following formula:

$$\text{Gains}_{\text{Activity}} = \text{Quantity}_{\text{current}} \times [(\text{Unit Rate}_{\text{previous}} \times \text{Inflation factor}) - \text{Unit Rate}_{\text{current}}]$$

This is to be done for each unit rate Activity that is used in both Contract years. From this calculation, productivity is achieved by:

$$\text{Productivity (\%)} = [(\sum \text{Gains}_{\text{Activity}}) / (\text{Contract cost}_{\text{current}})] \times 100$$

The total Contract cost for the later year is required to gauge the savings achieved if the previous year's unit rates had been used during the current Contract year.

Districts are required to document the results obtained from this equation as it is a requirement for auditing purposes and will be used in the 'Performance Area – Productivity' in the performance assessment template.

To assist districts with calculating productivity, a revised worksheet has been created in the performance assessment file. To ensure ease of use, all calculations have been formulated into the spreadsheet. Users are required to insert data consisting of the Contract number, Contract amount (\$), Contract target (% gain), Activity numbers, previous (years) unit rate, current (years) unit rate and the current (years) quantity. From this information, the productivity gain or loss will be automatically calculated.

### **5.3.2 Work health and safety**

Safety in the workplace is the department's number one priority for its employees, Contractors and the public. As such, work health and safety is an important element in ensuring that best practice is achieved in Maintenance delivery.

For mandatory criteria, all assessments in work health and safety require the Contractor to conform to all current *Work Health and Safety legislations*, including:

- address appropriate systems for recording incidents and accidents
- ensure appropriate actions are in place to prevent or rectify work health and safety issues
- incorporate a traffic guidance scheme.

For the local criteria, the Principal's Representative and Contractor are able to include issues that cascade from mandatory questions with the level of detail required to ensure local issues are delivered and addressed.

### **5.3.3 Road user relationship**

Public consultation and feedback is the area to be measured under Road user relationship. This includes the measurement of systems in place to collect public communications and to undertake any actions deemed necessary to achieve a positive outcome in the mandatory criteria.

Road user satisfaction and public perception are important for the RMPC, due to the potential for political influence at the local level and increased road user understanding of sound Maintenance delivery. It is essential that measuring feedback and responding to information supplied is a key principle in reporting on Contract compliance.

Contract-specific assessment criteria should be included for assessment as deemed relevant by both the Principal's Representative and Contractor at the beginning of the Contract.

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#### **5.3.4 Delivery system management**

Assessment of Contractors in this key performance area is completed in three parts: stewardship, process and operational. Each of these areas relate to how Contracts are delivered, with emphasis on the management requirements of RMPC to ensure Maintenance Works are undertaken within the appropriate guidelines and Work methods.

#### **5.3.5 Stewardship**

Network stewardship of the Contract (see Clause 2.4 of this manual) requires the Contractor to always act professionally in the best interests of the department, such that funds are wisely invested and the asset is maintained accordingly. Assessment of stewardship requires the Contractor to indicate its ability to accept and act on its requirements as detailed in the Contract Documents. Knowledge of the responsibilities associated with the Contractor role, along with evidence of record keeping and reporting, are criteria to be addressed.

#### **5.3.6 Process**

RMPC requires a systematic approach to manage a Contract, as detailed in Clause 4 of this manual. As such, details stipulating the mandatory quality practice requirements are to be addressed, based on their existence and implementation. Assessments primarily focus on whether the Contractor has adhered to all process requirements, including any supporting documentation. This also includes record keeping, which details process driven activities (such as detailing non-conforming materials) through systems developed for undertaking such tasks.

#### **5.3.7 Operational**

Measures for operational compliance are guided around criteria that enable the transfer of captured knowledge to be shared between parties to the Contract. Applications capturing the results of Maintenance operation, such as the use of data collection systems, control of documentation and details of audits and inspections, make up the assessment critique.

### **5.4 Rating and scoring calculations of Principal's Representative**

The assessment of the Principal's Representative (the department) is a new concept which has not been undertaken previously for RMPCs. Questions in the Principal's Representative section complement a selection of those in the Contractor's section which need to be actioned or noted to achieve compliance (for example, Contractor supplied payment claims in the agreed timeframe – Principal's Representative finalised payment of Claims in agreed timeframe). In this manner, any non-compliance in the Contract can be tracked to where the responsibility resides, and comments are included to justify an action.

### **5.5 Performance assessment template scoring**

KPIs are intended to indicate how well the Contract is performing against nominated compliances. The ratings consist of two sections: 'mandatory assessment' and 'local assessment'. The new system has removed the previous scoring system (of score criteria between 1 and 5) and replaced it with a less subjective method of assessment. Each assessment criterion is listed as a question, with only a 'Yes' or 'No' answer. The final tally for each criterion, including mandatory and local assessments, reflects on the level of compliance achieved for each key performance area by the Contract out of a score of 10. The calculation is as follows:

$$\text{KPI score} = [(\text{count of 'Yes' assessment ratings}) / (\text{number of all assessment criteria})] \times 10$$



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The mandatory assessment criteria are taken from the *Quality System Requirements – Evidence Guide*, as *Table 1 ISO 9001 Elements for RMPC Works – Evidence Guide*. The value achieved at the end of assessment indicates the level of compliance to the mandatory requirements for the Contract and highlights the level of risk to the department for each Contract. For state-wide comparisons and reporting, the compliance to the mandatory assessment will be used. This will highlight the level of risk that is being incurred by the department or by Contractors.

The local assessment is a combination of selected mandatory assessments, with the inclusion of any local specific questions. All mandatory questions to be used in the analysis are to be checked in the 'tick-box' located in the green column. This is to indicate which questions have been selected for the local assessment. Those not ticked imply the Principal's Representative acknowledges that suppliers are not able to comply with those topics and, therefore, liability issues as a result of non-compliance to these are to be borne by the department.

The purpose of developing criterion such as this is an indicator that the localised issues, which have greater importance to the delivery of Maintenance, can be the focus for the Contract team and delivery based on practical assessment can be monitored.

All assessment questions must be derived and agreed before the Contract commences.

All Contracts must undertake a minimum of two assessments (mid and end of Contract year) per Contract; however, additional assessments can be undertaken during the Contract year if required.

#### **5.6 Reporting on performance assessment**

Performance of each RMPC Contract must be assessed regularly to ensure compliance with the intent of RMPCs — ongoing satisfactory performance by the Contractor. Performance assessment methodology forms constitute the tool to be used. Results achieved from the reports will enable local managers and Contract parties to understand the risks associated with the level of compliance and to decide how to manage this risk so liabilities lie with the party best able to manage the risk. A risk and consequence profile assessment matrix is being developed, with the aim to assist Principal's Representatives and Contractors in understanding the risk from the level of compliance and to provide a mechanism to assist in managing their Contracts at a local level.

Performance assessments should be undertaken at least twice per year. Principal's Representatives are encouraged to use this monitoring tool more frequently where the risk is considered high.

**Appendix 1: Road Reference system (RR) conventions**  
**Road referencing system**  
**Lane and Carriageway Numbering**

<b>DEFINITION OF LANE AND CARRIAGEWAY NUMBERS</b> (AS VIEWED IN THE GAZETTED DIRECTION)														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"><b>LEGEND</b></td> </tr> <tr> <td style="text-align: center;"> <div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">#</div>  <b>CARRIAGEWAY NUMBER</b>                      (#)  <b>LANE NUMBER</b> </td> </tr> <tr> <td style="text-align: center;">                     (E) &amp; (U)  <b>ALWAYS SHOULDERS</b> </td> </tr> </table>	<b>LEGEND</b>	<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">#</div> <b>CARRIAGEWAY NUMBER</b> (#) <b>LANE NUMBER</b>	(E) & (U) <b>ALWAYS SHOULDERS</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 5px;">Two Lane (No Median)</td> <td style="text-align: center; padding: 5px;"> </td> </tr> <tr> <td style="text-align: center; padding: 5px;">Four Lane (No Median)</td> <td style="text-align: center; padding: 5px;"> </td> </tr> <tr> <td style="text-align: center; padding: 5px;">Four Lane With Median (Concrete or Grassed)</td> <td style="text-align: center; padding: 5px;"> </td> </tr> <tr> <td style="text-align: center; padding: 5px;">Eight Lane (No Median)</td> <td style="text-align: center; padding: 5px;"> </td> </tr> <tr> <td style="text-align: center; padding: 5px;">Multi Lane With Service Roads</td> <td style="text-align: center; padding: 5px;"> </td> </tr> </table>	Two Lane (No Median)		Four Lane (No Median)		Four Lane With Median (Concrete or Grassed)		Eight Lane (No Median)		Multi Lane With Service Roads	
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Eight Lane (No Median)														
Multi Lane With Service Roads														

Lane and Carriageway Numbering

## Glossary of terms

Term	Meaning
Carriageway	The part of a road section that conveys traffic on a single formation and is delineated into one or more lanes.
Carriageway Code	The code representing the allowable carriageway name(s) for a carriageway on a road section.
Lane	That part of a carriageway that conveys a single stream of traffic in the direction of gazettal or opposing it.
Lane Code	The code representing the allowable lane name(s) for a lane on a carriageway section. The lane code is an alphanumeric code which will never be repeated across a road section width. Numeric codes will be used for through-lanes. Alpha codes will be used for lanes other than "through" lanes, such as median strips, parking and turning lanes.
Major Culvert	<ul style="list-style-type: none"> <li>• metal culverts (steel and aluminium): <ul style="list-style-type: none"> <li>○ at least one barrel (cell) with span, height or diameter <math>\geq 1.2</math> m, or</li> </ul> </li> <li>• all other culverts: <ul style="list-style-type: none"> <li>○ pipes with at least one barrel (cell) with diameter <math>\geq 1.8</math> m, or</li> <li>○ rectangular/oval/arch culverts at least one barrel (cell) with span <math>&gt; 1.8</math> and height <math>&gt; 1.5</math> m.</li> <li>○ stock and pedestrian underpasses</li> </ul> </li> </ul> <p>(refer to structure definitions in Part 1 of the Structures Inspection Manual, which is published online at <a href="https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Structures-Inspection-Manual">https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Structures-Inspection-Manual</a>)</p>
Minor Culvert	All other culverts that do not meet the definition of major culvert (as above) or not identified as in high risk, are then classified as minor culverts
Permanent Reference Point (PRP)	A nine-character identifier historically used by the Department to reference the declared road network. Their usage is declining in favour of Reference Points, which have a code derived from the road number.
Reference Point	A convenient way of referencing or locating points on a road section. Reference points are commonly located at identifiable features, such as an intersection or bridge abutment. They are given a code that is usually allocated sequentially in the direction of the road. Reference points provide convenient points of known location, from which to locate other features or information (by measuring distance from the reference point).
Reference Point Code	The name or code given to a reference point. Reference Point Codes (RPC) enable the identification of known point on a road section. RPCs contain information including a name, textual description and a distance measured from the start of the road section.

Term	Meaning
Road Section	This is the gazetted road section within a major road. It always starts and ends on a permanent reference point. Larger roads are broken down into sections for easier data collection and reporting (especially when the road is in more than one district). A road section has a suffix (e.g. A, B, C, D) added to the ID code of the whole road to enable easy differentiation.
Thru Dist. (Through Distance)	The distance in kilometres from the beginning of a road section to the current point.

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**C6083 – General Conditions**

**Road Maintenance Performance Contract (RMPC)**

**April 2020**

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## Part A: Contract overview and fundamentals

### 1 Definitions and interpretations

#### 1.1 Definitions

In the Contract, except where the context otherwise requires, specific definitions for words or phrases used in this document are listed in this table.

Term	Definition
Adjustment Events	Those events that will result in changes to the Total Contract Amount defined in 'Part F: Variations'.
Affected Utilities	A Public Utility Plant (PUP) that may be affected by Work under the Contract.
Asset Information	Any document, information, data, report, material, sample or whatever its form regarding: <ol style="list-style-type: none"> <li>a) the Road infrastructure or its surroundings</li> <li>b) the condition of the Road infrastructure or the historical data relating to:                             <ol style="list-style-type: none"> <li>i. Maintenance Work required to maintain the Road infrastructure</li> <li>ii. Incident Response Activities</li> </ol> </li> <li>c) a Site or its surroundings or the subsurface conditions (including topographical, geological, environmental and hydrological conditions) or subsurface services at a Site or its surroundings</li> </ol>
Authority	All federal, state or territory and local government councils, parliaments, departments, offices, bodies and instrumentalities and all public or statutory bodies, corporations, instrumentalities, authorities, Persons or entities which in any way govern, regulate, control or affect any aspect of the Work under Contract or Works.
Business Day	has the meaning given in the <i>Payments Act</i>
Claim	Includes any Claim, demand, action, proceeding or suit which the Contractor may make or bring against the Principal or any of its agents or employees or any Claim which the Principal may have against the Contractor relating to the construction of the Contract or as to any fact, matter or thing arising out of, or in connection with, the Contract or the Work under the Contract, including (without limitation) any Claim, demand, action, proceeding or suit seeking the payment of money or any costs, expenses, loss or damages on any ground whatsoever, including (without limitation) pursuant to the Contract, on a quantum meruit basis, for unjust enrichment, in tort and insofar as is permitted by law pursuant to any other principle of law.
Confidential Information	Any information which is confidential to the Principal, and of which the Contractor is aware for the purpose of providing the Road Maintenance services or otherwise, and which includes (without limitation) information concerning or relating to past, present or contemplated activities, internal or external business operations or other information of the Principal or which may, either directly or indirectly, be relevant to the Principal's business and which includes any compilation of otherwise public information that is in a form not in the public domain.
Consequential Loss	Any: <ol style="list-style-type: none"> <li>a) indirect or Consequential Loss or damage of any nature</li> <li>b) loss of profit, revenue, business, Contracts or anticipated savings, except any liquidated damages or lane rentals payable under the Contract, which may have been calculated with reference to, or which otherwise includes, such loss.</li> </ol>
Contract	means the agreement between the Principal and the Contractor and comprising the documents set out or referred to in the completed RMPC forms.
Contractor	A Local Government (LG), RoadTek or joint venture with local government(s) or RoadTek).
Contract Documents	Comprises: <ol style="list-style-type: none"> <li>a) the completed Offer Documents (Conditional Agreement Schedules)</li> <li>b) other Offer Documents (not requiring completion)</li> </ol>

Term	Definition
	c) any ratification notice(s) d) Contractor's quality system, including its Quality Plan, Environmental Management Plan (Maintenance) and Safety Plan e) latest versions of referenced corporate documents, including: <ul style="list-style-type: none"> <li>i. the Roads and Transport Alliance Memorandum of Agreement between the Department of Transport and Main Roads and Local Government Association of Queensland Ltd, <i>The Roads and Transport Alliance Agreement</i> (where the Contractor is a Local Government)</li> <li>ii. the current Mutual Obligations Agreement between RoadTek and the Principal's district delegate (only where the Contractor is RoadTek)</li> </ul> f) any variation or other written agreements under the Contract.
Contract Period	The period (up to 24 months) shown in the Contract Documents.
Day	means calendar day.
Daywork Rates	Where the Contract specifies that a valuation is to be made using Daywork Rates (including in relation to prime cost items and variations) such a valuation will be made using the corresponding Daywork Rates (as supplied) and actual quantities.
Defect	Any undesirable condition of the transport infrastructure identified as per Intervention Level/Response Time (IL/RT) criteria.
Defect Log	List of Defects identified as per IL/RT criteria during the inspection
Defect Backlog	Remaining unfunded Defects in the current Defect Log.
Department	The Queensland Department of Transport and Main Roads
Emergency Maintenance	Maintenance Activities undertaken by the Contractor in response to an emergency situation.
Engineering Innovation document	The Principal's document, <i>Engineering Innovation in the Department of Transport and Main Roads</i> as amended from time to time.
Excepted Risks	has the meaning given in Clause 3.2
Forward List of Work	The list of works, programmed to be completed on the Network due to Defects having reached the Initial Intervention Level.
GST	means the goods and services tax imposed under the GST Legislation. A reference to an amount of GST is reference to the GST liability in respect of the supply in question
GST Legislation	<i>A New Tax System (Goods and Services Tax) Act 1999</i> (Cth), associated legislation and any additional or substituted legislation providing for a value added tax, consumption tax, retail tax or other goods and services tax.
Guaranteed Renewal Period	The guaranteed period for renewal of the Contract as shown in the Contract Documents.
Guidelines	The department's technical document for Routine Maintenance Guidelines, incorporating: <ul style="list-style-type: none"> <li>a) Intervention Level and Response Time (IL/RT) criteria</li> <li>b) Hazardous Defects Identification Procedure</li> <li>c) corporate Maintenance Activity Standards.</li> </ul>
Incident Response Activities	All activities required to comply with the notifiable incidents.
Initial Intervention Level	The magnitude of a Defect as set out in the Guidelines that should be used by the Contractor for recording Defects into the Forward List of Works to assist in Work planning.
Intellectual Property Right	Any patent, registered design, trademark or name, copyright or other protected right.

<b>Term</b>	<b>Definition</b>
Intervention Level/Response Time (IL/RT) criteria	As defined in the Routine Maintenance Guidelines (Guidelines).
Invitation to Offer	The department's invitation to the Contractor to prepare and submit an Offer in accordance with the Contract Documents.
Joint Maintenance Requirement Assessment (JMRA)	A joint department/Contractor assessment of the Network for the purpose of determining the extent of Maintenance Activities required for Routine Maintenance for the forthcoming Contract Period.
LG	Local Government in Queensland
Maintenance Activity	Describes how a Defect is rectified. The word 'Activity' in the document has the same meaning of Maintenance Activity.
Maintenance Activity Standard	<p>The department's requirements for a Maintenance Activity, including:</p> <ul style="list-style-type: none"> <li>• unique reference number (mandatory)</li> <li>• description (mandatory)</li> <li>• applicable specifications</li> <li>• restoration standards</li> <li>• units of measurement (mandatory)</li> <li>• work items (if applicable)</li> <li>• testing requirements</li> <li>• work preparation or work operations details in lieu</li> <li>• work planning, particular points to consider</li> <li>• work procedures, particular points to consider or work operations details in lieu.</li> </ul> <p>Note: These Activity Standards are not mandatory requirements (except where indicated) but may be used in preparing the Contractor's Quality Plan. They are detailed in the Principal's Routine Maintenance Guidelines (the Guidelines).</p>
Maintenance	All activities, as indicated in the RMPC Manual and the Guidelines, to rectify Defects.
Minor Works	Specific minor enhancement works, generally preidentified during the JMRA in order to reduce further deterioration of transport infrastructure. The total estimated cost for all minor works schedules must be less than \$500,000 per year per contract.
Network	Comprises those Roads included in the Contract.
Network Schedule	The financial limit that applies for each year for Routine Maintenance Schedule of Rates items (but excluding the prime cost items), as adjusted from time to time in accordance with the Contract.
Network Schedule Total	The sum of the extended amounts for the Network Schedule (form C6084.2). The amount agreed by the parties for completion of Maintenance Activities on the National Highway Network and the Other State-Controlled Network respectively.
Payments Act	means the <i>Building Industry Fairness (Security of Payment) Act 2017 (Qld)</i> and any relevant regulations and includes any amendments to that Act and those regulations.
Person	Includes a firm or body corporate or un-incorporate or an individual.
Planned Routine Maintenance Work	<p>The items of Work specified in the Joint Maintenance Requirement Assessment (JMRA): where an item of Work is specified in the JMRA Schedule of Rates and the:</p> <ol style="list-style-type: none"> <li>a) Routine Maintenance Lump Sums or</li> <li>b) Routine Maintenance Schedule of Rates</li> </ol> <p>applies, that item of Work is only Planned Routine Maintenance Work where the Intervention Level specified in the JMRA for the relevant item of Work is exceeded.</p>
Planned Routine Maintenance Work Schedule of Rates	Set out in form C6086.

<b>Term</b>	<b>Definition</b>
Principal	The State of Queensland acting through the Queensland Department of Transport and Main Roads
Principal Delegate	means the person or position delegated by the Principal with the authority to enter into the Contract.
Principal's Representative	means the person or position delegated by the Principal's Delegate and shall represent the interests of the Principal when required under the Contract. The Principal's Representative shall have a good knowledge and understanding of the requirements of the Works.
Progress Report	Includes: a) signed form C6096 b) form C6097 (mandatory requirement) or a disk(or other electronic media) containing details of completed Activities in the format as set out in the RMPC Activity Numbering System (mandatory requirement) c) form C6098 and variations (as required by the department) and d) completed updated Programmed Expenditure Report (as required by the department).
Provisional Sum	The amounts agreed in the Schedules for difficult to measure Activities.
Public Utility Plant (PUP)	means any railway, monorail, tramway, viaduct, aqueduct, conduit, water channel, pipeline (water, stormwater, gas, sewerage or otherwise), fixed mechanical conveyor, tower, pole, cable (electrical, fibre optic, telecommunications or otherwise), electrical installation or telecommunications plant that is: a) on, in, over, under or adjacent to the Site, or b) affected by the Work Under the Contract but does not include Constructional Plant
Quality Plan	The plan required under 'Part I: <i>Quality System</i> ' detailed in Clause 10.2.
RoadTek	RoadTek is a commercial business branch within the Department of Transport and Main Roads (TMR).
Routine Maintenance	Those Activities as set out in the Guidelines.
Routine Maintenance Works	All Maintenance Works and related services necessary to maintain the Road infrastructure, such that the intervention limits specified in the Maintenance levels of service are not exceeded.
Schedules	List of priced Maintenance Activities.
Site	The nominated Road Network and any other places where the Road Maintenance services or any part of the Road Maintenance services are to be carried out.
Single Invitee	Where the department offers Routine Maintenance Works to its traditional suppliers, Local Government (LG) and RoadTek without any competition from other Contractors.
Specifications	The Principal's Standard Specifications.
Subcontractor	means any Contractor, consultant or supplier (including their personnel), engaged by or on behalf of the Contractor with respect to the Work Under the Contract and includes the Contractor's designers and any supplier or hirer of materials, plant or equipment
Total Contract Amount	The sum of the amounts for the Network Schedule Totals and Minor Works Schedule Totals.
Traffic Control Accreditation Scheme	The Traffic Controller Accreditation Scheme is the scheme which authorises traffic controllers who are accredited under by the Department of Transport and Main Roads to control traffic at road worksites and other events where a road closure or part road closure is necessary.
Upper Intervention Level	As defined in the Routine Maintenance Guidelines.
Works	means the whole, or part of, the work to be executed in accordance with the Contract, including variations provided for by the Contract,



## 1.2 Interpretations

Where a doubt arises as to the correct interpretation of any words, phrases, sentences, clauses or parts of the Contract, the Principal will notify the Contractor in writing of the interpretation that will apply. Such an interpretation may be subject to the issue resolution procedures as set out in the Partners in Government.

Any reference to 'Clauses' and 'Parts' are references to Clauses and parts of these General Conditions.

The law governing the Contract, its interpretation, any agreement to arbitrate and the conduct of any arbitration or litigation is the law of the State of Queensland.

Unless otherwise provided, prices are in Australian currency and payments shall be made in Australian currency.

Communications between the Principal, the Principal's Representative and the Contractor shall be in the English language.

Measurements of physical quantities shall be in Australian legal units of measurement within the meaning of the *National Measurement Act 1960* (Cth) as amended from time to time.

Any provision of the Contract which purports to, or has the effect of, limiting or excluding a liability of the Principal shall be construed as limiting or excluding that liability only to the extent permitted by law.

The Clause headings and subheadings in the Contract are for convenience only and shall not be used in the interpretation of the Contract.

Words in the singular include the plural and words in the plural include the singular, according to the requirements of the context.

Words importing a gender include every gender.

Where a provision in the Contract states that the Principal 'may' do something, it shall be read as permitting, but not obliging, the Principal (as applicable) to do that thing.

The meaning of general words is not limited by specific examples introduced by 'including', 'for example' or similar expressions.

## **Part B: General contract framework**

### **2 Nature of contract**

#### **2.1 Term**

The Contract commences on the date of award or from the signing of the Conditional Agreement and continues for the term. The Contractor's obligations for the term are set out in this Contract.

#### **2.2 Cooperative approach**

The Principal and the Contractor shall, at all times:

- a) act in a manner which will contribute to the planning, management and completion of Maintenance Activities to the required quality, within acceptable timeframes, to achieve the best value for the Principal
- b) cooperate in the resolution of any disputes as soon as possible after they arise
- c) be dedicated to achieving agreed common goals and the Contract objectives
- d) act in good faith
- e) foster a 'partnering' approach in their relationship. For local governments (LGs), this is set out in the *Partners in Government Agreement (an agreement for the partnership and the relationship between the State Government and local government in Queensland)* published by the Department of Local Government.

#### **2.3 Objectives**

The parties acknowledge that the Principal's objectives under this Contract are to:

- a) create a framework under which the Contractor has a high level of stewardship for the Road Network
- b) ensure the Road Network is safe and serviceable and remains safe and serviceable to users while the Work under the Contract is being carried out
- c) increase the sustainability of the Road Network, including the ongoing preservation and improvement work such as rehabilitation of the Road Network as directed
- d) obtain greater value for money from the funds provided to maintain the Road infrastructure, including the adoption of a holistic approach to Maintenance and innovation, and
- e) identify and implement innovations in connection with the Work under the Contract in accordance with the department's Engineering Innovation document.

#### **2.4 Order of precedence of documents**

The order of priority to be used in resolving ambiguities in the Contract Documents is:

- a) Notice of ratification (if applicable) of the Conditional Agreement or the Conditional Agreement itself
- b) correspondence between the parties by which the terms and conditions contained in the Contract Documents are agreed to be varied
- c) supplementary conditions of Contract (if supplied)
- d) this document: Form C6083

- e) documents incorporated by reference
- f) drawings (if applicable)
- g) invitation to Offer
- h) Schedules.

Any ambiguity between documents shall be resolved by reference to the highest ranking document.

## **2.5 Notices**

All notices under the Contract shall be in writing.

- a) Where the Contractor is the receiving party, the address for service of notice shall be the street or postal address, or facsimile number, as indicated in the Offer Documents or last notified in writing by the Contractor to the Principal.
- b) Where the Principal is the receiving party, the address for service of notice shall be the street address or postal address, or facsimile number, issued to the Contractor by the Principal in the Offer Documents or last issued in writing by the Principal to the Contractor.
- c) Notice may be served:
  - i. by hand delivery to the Principal or Contractor at their respective address, in which case notice is deemed to be served at the time the document is handed over
  - ii. by pre-paid post, in which case notice is deemed to be served at the time when such notice is received
  - iii. by email, in which case notice is deemed to have been received on the day of transmission, except where the receiving party notifies the sending party by 4:00pm on the day following transmission that the copy received is not legible, in which case no service shall have been affected.

## **2.6 Assignment and subcontracting**

### **2.6.1 Consent for assignment**

The Contractor shall not assign the Contract, or any payment, or other benefit under the Contract without prior written consent of the Principal and except on such terms and conditions as may be imposed by the Principal.

### **2.6.2 Consent for subcontractors**

The Contractor shall not subcontract the whole or any part of the Work to be performed by the Contractor under the Contract without prior written consent of the Principal.

Where the Contractor seeks the Principal's consent under Clause 2.6.1, the Contractor must supply to the Principal:

- a) details of the identity, financial standing, experience and business reputation of the proposed assignee or Subcontractor
- b) any other information that is relevant to assessing the ability of the proposed assignee, or Subcontractor, to carry out any part of the Work under the Contract.

Subject to the Contractor complying with Clause 2.6.2, the Principal's consent shall not be reasonably withheld.

### **2.6.3 Contractor remains liable**

The consent of the Principal under Clause 2.6.2 shall not relieve the Contractor from any liability or obligation under the Contract and the Contractor shall be liable to the Principal for the acts, defaults and omissions of all Subcontractors and assignees, or any of their employees or agents, as if they were the acts, defaults and omissions of the Contractor.

### **2.7 Contract period**

The Contract shall commence on the date specified in form C6094 for a specified period of up to 24 months unless otherwise agreed in writing by the parties.

#### **2.7.1 Continuation of work after expiration of current contract**

If a new contract has not been established, the Principal may direct the Contractor to continue work under the existing conditions and rates during the transition period.

This transition period shall not be more than two months from the end of the previous contract. The Contractor shall fulfil their obligation during this transition period.

#### **2.7.2 Guaranteed renewal period**

The Principal warrants that additional Contract Periods will apply for the Guaranteed Renewal Period, subject to satisfactory performance, achievement of agreed productivity targets and agreement on rates/lump sums.

#### **2.7.3 Working days and hours**

For other than Emergency Maintenance Activities, the Contractor shall carry out Work on the Days and during the hours:

- a) in accordance with the agreement or in the absence of such a provision in the agreement
- b) the Days and hours that will result in the most efficient operation, having due regard to the effect on traffic, adjacent land owners and the environment.

### **2.8 Royalties, fees and intellectual property rights**

#### **2.8.1 Copyright vested in contractor**

Intellectual Property Rights in all Contract material prepared by, or on behalf of, the Contractor in the performance of the Contract, shall vest in the Contractor.

The Contractor, as owner of Intellectual Property Rights of such Contract material, grants a royalty-free licence to the Principal to use the Contract material for the full period for which such rights subsist.

#### **2.8.2 Royalties and other fees**

All payments (whether or not accrued due and payable at the date of the Contract) for royalties and patent rights, registered designs, trademarks or names, copyright and other protected rights and all fees then or thereafter to become payable for or in connection with any land, matter or thing used, or required to be used, in the performance of the Contract or to be supplied under the Contract, shall be the responsibility of the Contractor and shall be paid by the Contractor to those to whom and at the time at which they become payable.

### **2.8.3 Contractor's warranty**

The Contractor warrants that all designs, materials, documents and methods of working provided by the Contractor in the performance of the Contract will not infringe any patent, registered design, trademark or name, copyright or other protected right.

Released under RTI - DTMR

## Part C: Contractor's obligations and warranties

### 3 Contractor's roles

The Contractor is responsible under the Contract for the Maintenance of existing Road infrastructure assets on the Road Network. This responsibility may include identifying the need to provide new assets and further works on the Network other than Maintenance to existing assets.

The Contractor, in its various roles under the Contract, must act in the best interests of the Principal.

#### 3.1 Network stewardship

The Contractor shall be responsible for stewardship of the Network. This will include:

- a) ensuring Maintenance funds are wisely invested and the infrastructure asset is maintained in the best interests of the Principal
- b) ensuring discretionary changes within the Network Schedule Total(s) are sound and justifiable
- c) dealing with Maintenance concerns at a local level and only referring such concerns to the Principal when necessary
- d) ensuring that any advice to the Principal is both timely and of a high standard
- e) encouraging its employees to report any need to provide new assets and Works other than Maintenance to existing assets. This information may then be reported to the Principal for possible action.

#### 3.2 Principles for routine maintenance works

The Guidelines set out Initial Intervention Level, Upper Intervention Level and Response Time for Routine Maintenance Defects identified on the Road Network. The Contractor is required to prioritise the works as per Intervention Level/Response Time (IL/RT) criteria provided in the Guidelines. The general Defect priority has been assembled into six groups as summarised in Table 3.2.1. Routine Maintenance Activities are required to be prioritised as described in the Guidelines.

**Table 3.2.1 – Defects priority**

Priority no.	Defect type	Definition
1	Hazard	Defects where the likelihood of harm occurring and its consequences is greater than a safety Defect (as determined by the hazardous defect identification procedure)
2	Ordered Works	Work undertaken in accordance with the Principal's order and direction
3	Safety	Defects that are considered to be of a safety nature
4	Legislative	Defects to be repaired as required by legislation.
5	Preventative	Defects that, if treated, prevent further asset deterioration.
6	Appearance/usability	Defects that are considered to be a nuisance or unsightly

1. The Principal shall give the Contractor at least two weeks' notice of the Contract Review Meeting/s (CRM/s) and shall indicate in such notice the time and place of a CRM, the agenda, documents, records, reports and other information to be made available at a CRM.

2. The Contractor must:
  - a) Undertake all necessary inspections as per the inspection frequency to identify Defects in the transport infrastructure.
  - b) From the initial Joint Maintenance Requirement Assessment (JMRA), in the planning phase of the Contract until the end of the term, analyse Defects as explained in the Guidelines and plan and carry out the Routine Maintenance Work so that the Defects in the Network can be managed consistently and appropriately across the state.
  - c) Provide the Principal with reports every three months as a minimum for the CRM, listed on the agenda the Principal produces and submitted to the Principal within two weeks of the end of the Contract period, after which the Principal may require a formal CRM to discuss the reports.
  - d) Attend the CRM and provide information requested in the notice from the Principal, which may include:
    - i. Network inspection reports
    - ii. prioritised current Defect Log
    - iii. Activities programmed for the following Month and a forecast of the amount payable for those Activities
    - iv. a forecast of the amount payable for the anticipated Routine Maintenance Work for the remainder of the current year
    - v. all other information relevant to the condition of the Road infrastructure and the Defects identified in the Road infrastructure, including details of the severity of each Defect by reference to the corresponding intervention limits and Response Times for each asset class
    - vi. other information and details as may be agreed.
3. The Contractor must ensure:
  - a) the Network Schedule Total is wisely invested and not exceeded and that the road network is maintained in the best interests of the Principal
  - b) discretionary changes within the Network Schedule Total (which are permitted but notifiable under this Contract) are sound and justifiable.
4. The Contractor shall carry out the Maintenance under the Contract in accordance with:
  - a) quality system plans, the requirements for which are set out in Part I in Clause 10.2
  - b) other relevant provisions in the Contract Documents.
5. Where Defects not listed in the Guidelines are encountered on the Network, the Contractor shall use its judgement, taking into account safety and asset useability requirements in adopting an appropriate Intervention Level/Response Time as part of its stewardship role.
6. Routine Maintenance Performance Assessment and Strategic Analysis: The Contractor will be required to provide further information to assess routine maintenance element performance and effectiveness of revised Intervention Level and Response Time (IL/RT) criteria. This will require some defect information and inspection details from the contractors to be obtained annually.

### **3.3 Design standards for minor works (if applicable)**

The Contractor shall carry out any design work that is necessary under the Contract consistent with, but not limited to, those standards described in the latest versions of the department's design references, including any referred documents. If in doubt, the Contractor should request details of applicable references from the Principal. Design references include all manuals, texts, guidelines, Specifications, standards and policies the department uses currently in the design of Road transport infrastructure. Where the Contractor wishes to base any design on other design references, it shall obtain prior written agreement from the Principal before carrying out such design.

### **3.4 Construction standards for minor works**

The Contractor shall adopt construction standards for Minor Works based on those in the Maintenance Activity Standards contained in the Guidelines (referring to the department's Specifications/standard drawings) or, in the absence of such Standards, the appropriate Australian standard or as otherwise previously agreed in writing between the parties.

The Contractor shall address construction standards and procedures for Minor Works in the Quality Plans, Safety Plans and Environmental Management Plans (EMP - Maintenance) for RMPCs generally, in accordance with Part I: *Quality System*.

### **3.5 Warranties**

The Contractor:

- a) warrants that the Maintenance will be carried out in accordance with the Contract Documents and will be fit for the purpose or purposes for which it is intended
- b) warrants that the Contractor, its employees and any approved Subcontractors or assignees have the necessary skills, experience and expertise to carry out the Work under the Contract
- c) warrants that any design work necessary under the Contract will be fit for purpose and the designer will exercise the skill, care and diligence and the final design to be certified by a Registered Professional Engineer of Queensland (RPEQ)
- d) warrants that all materials used by the Contractor or incorporated into any Work performed by the Contractor shall be (unless inconsistent with any express requirement of the Contract) new, in conformity with its description, of merchantable quality and fit for the purpose or purposes for which they are used or supplied.

### **3.6 Labour, materials, plant and equipment**

#### **3.6.1 Supply of labour, materials, plant and equipment**

The Contractor shall supply everything, including labour, materials, plant and equipment, necessary to complete the Contract unless otherwise provided under the Contract or agreed in writing.

#### **3.6.2 Removal of materials, plant and equipment**

The Principal may, from time to time, by notice in writing, direct the Contractor:

- a) to remove, or
- b) not to remove

from the Site, any materials, plant and equipment; the Contractor shall comply with such a direction in accordance with specified time limits.



### **3.6.3 Removal of persons**

The Principal may, from time to time, direct the Contractor to remove from the Site, or from any Work under the Contract, any Person (including a Subcontractor) employed in connection with Work under the Contract.

The Principal must provide details of an employee's misconduct, incompetence or negligence and time limits and the Contractor shall comply with such direction. Such a Person shall not be re-employed by the Contractor for Work under the Contract without the written approval of the Principal.

### **3.6.4 No agency, relationships or representation**

Where the Contractor is an LG:

- a) The Contractor shall not represent itself and shall take all steps to ensure its employees and any approved Subcontractors or assignees do not represent themselves as being employees or agents of the Principal. It is the express intention of the parties that such relationships do not exist.
- b) Nothing in the Contract will be deemed or construed by the parties or any third party as creating the relationship of partnership, joint venture or Principal and agent and, accordingly (except the extent permitted and provided for in the Contract Documents), neither party shall enter into any agreement, make any representation or warranty on behalf of or otherwise bind the other party to such an agreement, representation or warranty.

### **3.6.5 Manufacture and supply of materials**

The Principal may direct the Contractor to supply particulars of:

- a) the mode and place of manufacture
- b) the source of supply
- c) the performance capacities
- d) other information

for any materials, machinery or equipment to be supplied by the Contractor under or used in connection with the Contract.

### **3.6.6 Use of proprietary, trade or brand names**

The description in the Contract of any materials, plant, equipment, Work or other items by a proprietary, trade or brand name, supplier or manufacturer name, model number or other specific means, does not in any way relieve, limit or exclude any of the Contractor's obligations or liabilities under the Contract for the materials, plant, equipment, Work or any other items (including, but not limited to, obligations and liabilities under any warranties, performance guarantees or Defects liability provisions of the Contract).

## **3.7 Materials and work**

### **3.7.1 Quality of materials and work**

Without limiting Clause 10.3 and the Contractor's obligation to comply with the Quality Plan, the Contractor shall use the materials and standards of workmanship the Contract requires. In the absence of any requirement to the contrary, the Contractor shall use suitable new materials.

### 3.7.2 Quality assurance

The Contractor shall:

- a) plan, establish, implement and maintain a quality system which conforms to the requirements of this Contract and the Quality Plan
- b) provide the Principal with access to the quality system of the Contractor and each of the Subcontractors of the Contractor to enable monitoring and quality auditing.

Any such quality system shall be used only as an aid to achieving compliance with the Contract and to document such compliance. Such a system shall not relieve the Contractor of the responsibility to comply with the Contract. Failure by the Contractor to establish, implement or maintain its quality system shall constitute a substantial breach for the purposes of the operation of Clause 11.2.

### 3.7.3 Contractor's obligations unaffected

Notwithstanding any statements to the contrary in the Contractor's quality system documentation, or in the Quality Plan, no part of the quality system shall be used to pre-empt, preclude or otherwise negate the requirements of any part of the Contract, nor relieve the Contractor of its obligations under the Contract. The Contractor's quality system shall be used as an aid to achieving compliance with the Contract and in documenting such compliance, and in no way shall it relieve the Contractor of responsibility to comply with the requirements of the Contract.

### 3.7.4 Defective work

If the Principal becomes aware of Routine Maintenance Work done (including material provided) by the Contractor which does not comply with the Contract, the Principal shall, as soon as practicable, give the Contractor written details of the non-compliance.

If the subject Work has not been rectified, the Principal may direct the Contractor (including times for commencement and completion) to do any one or more of:

- a) remove the material from the Site
- b) demolish the Work
- c) reconstruct, replace or correct the Work, and/or
- d) not deliver it to the Site.

If:

- a) the Contractor fails to comply with such a direction, or
- b) that failure has not been made good within seven Days after the Contractor receives written notice from the Principal that the Principal intends to have the subject Work rectified by others

the Principal may have that Work rectified by others and certify the cost incurred as moneys due from the Contractor to the Principal.

### 3.7.5 Acceptance of defective work

Instead of a direction pursuant to defective Work, the Principal may direct the Contractor that the Principal elects to accept the subject Work, whereupon the consequential reduction in:

- a) the project Contract sum shall be valued by the Principal, or
- b) the amount payable for Routine Maintenance Work shall be valued in accordance with Part F.

### **3.8 Work directed by the Principal**

Where the Principal directs the Contractor to carry out Schedule Maintenance Activities at specific locations, the Contractor shall program and carry out the Work in accordance with the Principal's time constraints.

Where warranted, the Principal shall increase the rates for such Work and indicate any appropriate reallocation, in accordance with Clause 5.3.

Where the Contractor refuses, or fails, or is otherwise unable to complete the Work within the nominated time, the Principal may have the Work carried out by others and the Contractor shall make a discretionary change in accordance with Clause 5.2 or, where this is not possible, initiate action for a reallocation in accordance with Clause 5.3.

## **Part D: Principal's responsibilities**

### **4 Principal's role**

#### **4.1 Duties and accountability**

The Principal's role is to:

- a) set policy and give philosophical and strategic direction for the Work under the Contract within the boundaries set out in the Contract
- b) provide leadership and set a visible example of the Principal's commitment to the Contract objectives and the cooperative approach to partnering
- c) ensure a transparent governance framework is developed and deployed across the Work under the Contract
- d) ensure obligations under the Contract are delivered or performed
- e) ensure reporting is timely, accurate and comprehensive
- f) initiate or approve the commitment of resources to the Work under the Contract and provide corporate support as necessary
- g) consider fee Offers, Planned Routine Maintenance recommendations and project proposals referred for consideration under Clause 5
- h) ensure a culture necessary to achieve all key performance indicators is created and sustained
- i) ensure directions from the Principal (under the Contract) are implemented
- j) monitor the performance of the Contractor and implement appropriate measures to correct undesirable trends
- k) issue directions, approvals and decisions as required by the Contract
- l) make recommendations in relation to changes to the levels of service
- m) attempt to resolve any differences or issues that are referred under Clause 6.

#### **4.2 Contract review meetings**

##### **4.2.1 Timing**

The Principal shall convene at least quarterly Contract Review Meetings (CRMs) with the Contractor for each year of Contract Period: preferably one within two months after the completion of each year of the Contract Period. Any additional CRMs shall be held at the discretion of the Principal.

##### **4.2.2 Notice of meetings**

The Principal shall give the Contractor at least two weeks' notice of such CRMs and shall indicate in such notice:

- a) the time and place of the meeting
- b) agenda
- c) documents, records, reports and other information to be made available at the meeting.

The Contractor shall attend such CRMs and provide information requested in the notice.

#### **4.2.3 Purpose of meetings**

The purpose of such meetings is to discuss the contents of form C6092 and any matters that may arise from the performance report.

#### **4.3 Contract performance reports**

##### **4.3.1 General**

The Principal shall prepare a performance report on the Contractor using form C6092 prior to a CRM.

The Contractor must be given the opportunity to read and acknowledge a completed performance report before a CRM. The performance report template is available at the below link:

<https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Road-maintenance-performance-contract-manual>

##### **4.3.2 Less than satisfactory performance**

Where the Contractor is given a less than satisfactory assessment in at least one of the assessment criteria and the Contractor fails to improve for the following assessment period, the Principal may review the Guaranteed Renewal Period.

##### **4.3.3 Unacceptable performance**

Where the Contractor incurs three successive unsatisfactory assessments for the same performance criteria, such performance is deemed to be unacceptable and may result in termination of the Contract.

#### **4.4 Principal supplied information**

The Principal shall, on request, make available relevant existing information on the Network to the Contractor.

## **Part E: Claims and dispute resolution**

### **5 Certificates and payments**

#### **5.1 Total contract amount**

The Total Contract Amount, which comprises the total of the amounts for the Network Schedule Total(s) and Minor Works Schedule total(s), shall not be exceeded except by a variation approved in accordance with Clause 7.

#### **5.2 Discretionary changes**

The Contractor may vary the quantity for each of the Activities and for individual Schedule totals (within the agreed discretionary limit(s) in each of the Network Schedule Total(s), provided each of the Network Schedule Total(s) is not exceeded.

Discretionary limits must not be exceeded without the prior written approval of the Principal.

The Contractor must keep current, up-to-date Network Schedule(s) to reflect any discretionary changes.

#### **5.3 Reallocation**

Where the Contractor cannot satisfy the requirements of the Defects priorities by discretionary changes to the Schedules, the Contractor must give notice to the Principal that there is no further scope for discretionary changes to the Network Schedule Totals and Minor Work Schedules.

The Contractor should clearly set out the current state of the Schedule(s) and indicate where reallocation could take place in the best interests of Maintenance of the Network.

In doing so, the Contractor must indicate the consequential changes due to Defect priority that would result from such action.

The Principal may authorise:

- a) a change of quantities / lump sums outside the agreed discretionary limits within a Network Schedule, such that the Network Schedule Total is not exceeded
- b) addition or deletion of Maintenance Activities
- c) changing Defect priority for certain Defects.

The Contractor shall update the Network Schedule Total(s) and Intervention Level/Response Time Schedule(s) to reflect any reallocation.

Any reallocation shall not entitle the Contractor to any additional payment because of a change in scope.

Where the Principal does not authorise a reallocation, the Principal may authorise a variation in accordance with Clause 7.

#### **5.4 Payment claims**

The Contractor shall submit a payment Claim for each month within 10 Business Days after the end of the month for which the works are claimed to the Principal (or such other period as agreed in writing).

Each Claim shall include:

- a) for each Schedule of rates Activity for the Network or Minor Works Schedule(s) the quantity completed since the certified quantity in the previous payment Claim, together with the amount claimed for each item
- b) for each lump sum Activity in the Network or Minor Works Schedule(s) a pro rata amount based on the period of time since the period included in the previous payment
- c) for each Provisional Sum Activity in the Network Schedule — the amount based on the rates (Daywork rates or as otherwise agreed) and/or lump sums agreed with the Principal relevant to the Claim period
- d) for any variations ordered by the Principal in accordance with Part F the amount based on the rates (see Clause 7.2.2) and/or sums nominated in the variation relevant to the Claim period
- e) the total completed Work amount
- f) the total amount paid to the Contractor in previous payments
- g) amount claimed by the Contractor for emergency Maintenance Activities relevant to the Claim period
- h) the payment now claimed by the Contractor.

#### **5.5 Supporting documents for payment Claims**

The Contractor must provide with each payment Claim:

- a) a signed payment Claim
- b) an itemised list of all completed Maintenance Activities in a specified electronic format (ASCII) or as otherwise notified in writing by the Principal; where the Contractor uses one of the department's recommended Maintenance Management Systems, it will provide the necessary data by electronic file transfer (not on computer disk) to the nominated address of the Principal as set out in the Conditional Agreement
- c) progress against Network/individual Schedule(s), Daywork and variations as required by the Principal
- d) completed revised programmed expenditure flow for each Network as required by the Principal.

#### **5.6 Payment certificate**

- a) Within 10 Business Days after receipt of a payment Claim, the Principal shall issue to the Contractor a payment certificate setting out:
  - i. the amount of the payment which, in the opinion of the Principal, is to be made by the Principal to the Contractor or by the Contractor to the Principal
  - ii. the calculations employed to arrive at the amount and, if the amount is more or less than the amount claimed by the Contractor, the reasons for the difference.
  - iii. Within two Business Days of the issue of the payment certificate by the Principal, the Contractor shall issue to the Principal or the Principal shall issue to the Contractor, as the case may be, a tax invoice complying with the GST Legislation in respect of the relevant Supply.

## **5.7 Payment**

Subject to the provisions of the Contract, within 20 Business Days after receipt of the payment Claim by the Principal, the Principal shall pay to the Contractor or the Contractor shall pay to the Principal, as the case may be, an amount not less than the amount shown in the payment certificate as due to the Contractor or to the Principal as the case may be or if no payment certificate has been issued, the Principal shall pay the amount of the Contractor's Claim.

## **5.8 Emergency maintenance**

Where the Contractor is required to carry out Emergency Maintenance, the Contractor shall include details with the next payment Claim, based on the provisions set out in Clause 5.2.

## **5.9 Payments Act**

- a) For the purposes of the *Payments Act*, the Principal is authorised to receive payment Claims and issue payment schedules.
- b) If a Claim is a payment Claim under the *Payments Act*, the corresponding payment certificate will be deemed to be a payment schedule for the purposes of the *Payments Act*.
- c) If an adjudicator makes a decision under the *Payments Act* with respect to a payment Claim which differs from the payment certificate in respect of that payment Claim, the Principal shall promptly issue an amended payment certificate to adopt the decision of the adjudicator.  
Either party may dispute the amended payment certificate.
- d) The Contractor shall ensure that within one Business Day after any notice (other than a payment Claim or payment schedule) under the *Payments Act* is given or received by the Contractor or any Subcontractor, a copy of that notice is given to the Principal.

## **6 Dispute resolution**

### **6.1 Notice of dispute**

If a dispute between the Contractor and the Principal arises out of, or in connection with, the Contract (including a dispute concerning a direction given by the Principal), either party shall deliver by hand, or send by registered post, to the other party, a notice of dispute in writing, adequately identifying and providing details of the dispute.

### **6.2 Partners in Government Agreement requirements**

Where the Contractor is a local government, the parties shall comply with the underlying principles as set out in the *Partners in Government Agreement (an agreement for the partnership and the relationship between the State Government and local government in Queensland)* published by the Department of Local Government.

### **6.3 Disputes involving with RoadTek**

Where the Contractor is RoadTek, either or both of the parties shall proceed to resolve the dispute in accordance with the dispute resolution process set out in the current Mutual Obligations Agreement between the RoadTek and the relevant district delegate of the Principal.

### **6.4 Work to continue during dispute**

Notwithstanding the existence of a dispute, the Contractor shall continue to carry out Work under the Contract and the Principal shall continue to make payments in accordance with the Contract.



## **Part F: Variations**

### **7 Variations to the contract**

#### **7.1 Allowable variation events**

This Clause outlines the only allowable Adjustment Events that will result in changes to the Total Contract Amount.

##### **7.1.1 Additional funds**

The Principal provides additional funds for:

- a) nominated additional quantities / lump sums for scheduled Maintenance Activities
- b) nominated additional Maintenance Activities (which are not in the Schedules)
- c) nominated new or additional Minor Works Items.

##### **7.1.2 Advice to public**

The Principal directs that Work related to dissemination of information to the community of significant traffic changes is undertaken by the Contractor in accordance with Clause 9.6.

##### **7.1.3 Emergency maintenance**

The Contractor completes an Emergency Maintenance Activity.

##### **7.1.4 Defective work**

The Contractor completes Work to a standard less than that indicated or referred in the Quality Plan and the Principal accepts such defective Work at a reduced cost.

##### **7.1.5 Omission or decrease in work**

The Principal omits or decreases a quantity of Work or reduces the funds available for certain Work.

##### **7.1.6 Public Utility Plant, ancillary works and encroachments**

The Contractor must carry out alterations in accordance with Clause 9.8.

### **7.2 Notification**

#### **7.2.1 Contractor's initiative**

Where the Contractor determines no further discretionary changes to the Network Schedule(s) are possible and refers the matter to the Principal for reallocation (in accordance with Clause 5.3); and where the decision is that reallocation is not appropriate and it is essential that Work be carried out under the Contract, the Principal may advise the Contractor that additional funds will be made available for such Work.

Such additional funds may involve changes to the rates / lump sums for scheduled Maintenance Activities in situations where there is a significant change of scope affecting those Maintenance Activities during the course of the Contract.

#### **7.2.2 Principal's initiative**

Where the Principal determines additional Work is required, or additional funds are available, the Principal may advise the Contractor that such additional funds will be made available for additional Maintenance Activities or Minor Works and the Contractor must complete such Work.

Such additional funds may involve changes to the rates/lump sums for scheduled Maintenance Activities in situations where there is a significant change of scope affecting those Maintenance Activities during the course of the Contract.

### **7.2.3 Defective work**

Where the Principal becomes aware that Work has not been completed by the Contractor in accordance with the standards in the Contractor's Quality Plan, the Principal shall give notice to the Contractor of its acceptance or rejection of the Work and indicate any reduction in the quantities or lump sum that will apply to the next payment.

### **7.2.4 Emergency maintenance**

The Contractor must advise the Principal no later than the next working day after completing Emergency Maintenance that involves:

- a) a callout for an accident involving fatalities, or
- b) a likely Claim from the Contractor of more than that specified in form C6094.

All Claims for payment must include sufficient detail to verify type of Work carried out and costs and must be notified to the Principal on or before the end of that Claim period.

### **7.2.5 Quantification of variations**

Where a variation event arises in accordance with Clause 7.1, the value / quantity of charged Work shall be determined as:

- a) where the Work involves a Schedule of rates Maintenance Activity in a Network Schedule or Minor Works Schedule, the agreed rates shall apply unless the Maintenance Activity involves a significant change of scope
- b) where the Work involves a Schedule of rates Maintenance Activity in the standing Offer Schedule, the agreed rates shall apply
- c) where the Work involves a low value/low quantity Schedule of rates Maintenance Activity, the parties may agree on a lump sum amount, or
- d) for all other cases, the agreed Daywork rates shall apply unless the parties otherwise agree in writing.

### **7.2.6 Reduced payment for defective work**

Where a variation event occurs in accordance with Clause 7.1, the Principal shall determine the reduced payment that shall apply, having regard to the expected life of such Work if it had been completed to the required standard.

## **Part G: Insurances**

### **8 Insurance of the Works**

#### **8.1 Care of uncompleted Work, materials and the Site**

The Contractor shall be responsible for:

- a) any Work done (including temporary Work) from the time such Work is commenced until the time such Work is completed (unless otherwise agreed in writing)
- b) any materials, goods or other things in the possession of the Contractor from time of possession until time of completion of Work that incorporates such materials, goods or other things
- c) the Site or other land occupied by the Contractor for the purpose of doing Work under the Contract from time of possession until the possession ceases and where any loss or damage (except loss or damage arising directly from an excepted risk) occurs to any Work, materials, Site or other land, while under the Contractor's care, such loss or damage shall be made good at the expense of the Contractor.

#### **8.2 Excepted Risks**

The Excepted Risks are:

- a) any negligent act or omission of the Principal or the employees, consultants or agents of the Principal (except the Contractor)
- b) any risk specifically excepted in the Contract
- c) war, invasion, act of foreign enemies act of terrorism, hostilities, (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power, martial law or confiscation by order of any government or public Authority
- d) ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel not caused by the Contractor or the Contractor's employees or agents
- e) use or occupation by the Principal or the employees or agents of the Principal or other Contractors to the Principal (not being employed by the Contractor), or
- f) defects in the design of the Work Under the Contract other than a design provided by the Contractor.

#### **8.3 Professional indemnity**

The Contractor shall indemnify the Principal, its employees and agents against any Claims by Persons for personal injury or death or loss of or damage to property due to any design Work under the Contract of the Contractor, its employees or agents.

#### **8.4 Public liability**

##### **8.4.1 Damage to persons and property other than the Work under the Contract**

The Contractor shall indemnify the Principal against:

- a) loss of, or damage to, property of the Principal, including existing property in, or upon which, Work under the Contract is carried out

- b) Claims (and costs associated with such Claims) by any Person against the Principal for personal injury or death or loss of or damage to any property

arising out of, or as a consequence of, the performance of the Contract by the Contractor.

The Contractor's liability to indemnify the Principal shall be reduced proportionally to the extent that any act or omission of the Principal, or its employees or agents, may have contributed to such loss, damage, injury or death.

This indemnity shall not apply to:

- a) exclude any other right or remedy of the Principal against the Contractor, including any other right to be indemnified
- b) things for the care of which the Contractor is responsible under Clause 8.1
- c) damage which is the unavoidable result of the performance of the Contract, or
- d) loss or damage to property, injury or death referred in Clause 8.4.4.

#### **8.4.2 Public liability insurance**

Where the Contractor is an LG, before commencing Work, the Contractor shall take out a public liability policy of insurance in the name of the Contractor in relation to the Work under the Contract for its rights and interests to cover its liabilities to third parties.

The policy must also cover the Contractor's liability to the Principal for loss of, or damage to, property and the death of, or injury to, any Person (other than liability which is required by law to be insured under a workers' compensation policy of insurance). The Contractor shall ensure that all Subcontractors employed from time to time in relation to the Contract are similarly covered by a public liability policy of insurance. The public liability policy shall include a Clause in which the insurer agrees to waive all rights of subrogation or action against the Principal and its employees.

The public liability policy of insurance shall be for an amount for any one occurrence not less than the sum stated in the Invitation to Offer and, unless otherwise specified in the Contract, shall be effected with an insurer and in a form both approved in writing by the Principal, which approval shall not be unreasonably withheld. The policy shall be maintained during the term of the Contract.

Before commencing Work and whenever requested in writing from time to time after that by the Principal, the Contractor shall produce evidence to the satisfaction of the Principal of the insurances effected and maintained by the Contractor, for the purposes of this Clause.

The Contractor must:

- a) provide to the Principal, a copy of any notice of cancellation of any notice under or in relation to the policy, that the Contractor receives from the Contractor's insurer within seven Days of receiving the notice(s) from the Contractor's insurer
- b) provide to the Principal, a copy of any notice of Claim made by the Contractor to the Contractor's insurer within seven Days of making that Claim to the Contractor's insurer
- c) inform the Principal in writing of the occurrence of any event that may give rise to a Claim under the policy of insurance affected pursuant to this Clause within seven Days of the occurrence of any such event, and shall ensure that the Principal is kept fully informed of subsequent action and developments concerning the Claim.

#### **8.4.3 Principal's indemnity for non-performance**

The Principal shall indemnify the Contractor against Claims (and costs associated with such Claims) by a Person against the Contractor for personal injury and death or loss of, or damage to, any property arising from or a direct consequence of the Contractor's non-performance of Maintenance, but only in circumstances where such non-performance:

1. Is a direct consequence of complying with a direction of the Principal, or
2. Related to any Defect of which the Contractor had no knowledge, provided the Contractor:
  - a) undertook inspections in accordance with its agreed Inspection Schedule
  - b) maintained accurate, up-to-date Network inspection reports under Clause 3.2
3. Related to Defects (and scheduled Maintenance Activities) known to the Contractor:
  - a) which were below the Upper Intervention Level, or
  - b) which were above the Upper Intervention Level but
    - i. the Contractor had complied with its Response Times and Maintenance Activity Standards included in the Contractor's Quality Plan (as referred in Clauses 3.2 and 10 for the Defect), or
    - ii. the Contractor had formally sought a reallocation, beyond discretionary changes pursuant to Clause 5.3 for the Defect, or
    - iii. having regard to road user safety considerations (the Defect having been prioritised in accordance with the Routine Maintenance Guidelines, the failure by the Contractor to remedy the Defect did not place it in breach of its Maintenance Activity Standards.

#### **8.4.4 Indemnity for Contractor's Work**

The Principal shall indemnify the Contractor for personal injury or death or loss or damage to any property arising from completed Maintenance where such Work had been carried out in accordance with the Maintenance Activity Standards.

#### **8.5 Insurance of employees – workers' compensation**

Before commencing Work, the Contractor shall insure against liability for death of, or injury to, Persons employed by the Contractor, including liability by statute and at common law. The insurance cover shall:

- a) be unlimited in amount
- b) be maintained until at Work, including remedial Work is completed
- c) extend indemnity to the Principal for the Principal's statutory liability to Persons employed by the Contractor.

The Contractor shall ensure that every Subcontractor employed from time to time under the Contract is similarly insured.

## **Part H: Site and execution of Work under the Contract**

### **9 The Site**

#### **9.1 Extent of Site**

The Site shall comprise the Road Network as indicated in form C6094 as the Network, as well as other land used by the Contractor, including depots, quarries and other land use directly related to delivery of the Contract.

Unless otherwise agreed in writing, the Principal shall not add or delete Roads to the Network during the Contract Period and must give at least 12 months' notice of such an addition or deletion. This period of notice may be waived in the case of federally funded National Highways where the federal department responsible for transport demands a shorter notice period.

#### **9.2 Nature of possession**

##### **9.2.1 Sufficiency of possession**

The Contractor shall have such possession of the Site as defined in Clause 9.1 to enable the Contractor to carry out the Work under the Contract for the Contract Period.

##### **9.2.2 Public use of Site**

The Contractor acknowledges and accepts that public use (as well as use by the Principal and owners of Public Utility Plant) of the Site will continue during the performance of the Contract (unless alternative arrangements have been made).

##### **9.2.3 Necessary possession**

Possession of the Site shall confer on the Contractor a right to only such use and control as is necessary to enable the Contractor to perform the Work under the Contract.

##### **9.2.4 Approval for removal**

The Contractor shall not destroy or remove naturally-occurring materials, trees, shrubs or other vegetation on, or from, the Site (except where such destruction or removal is part of the Work under the Contract) without prior approval of the Principal.

##### **9.2.5 Joint use of the Site**

Work may be carried out on the Site by the Principal or by Person(s) engaged or approved by the Principal. The Contractor shall cooperate with such Persons and coordinate the Contractor's Work with their Work.

##### **9.2.6 Principal's materials**

All materials suitable for reuse shall remain the property of the Principal and be securely stored by the Contractor. The types of materials include signs and sign components, guardrail and components, pipes.

When the materials are reused, a reduction in the scheduled rate for the relevant Activity may be negotiated, taking into account the costs for storing the materials. Where gravel materials removed from the Road pavement during Maintenance Activities are suitable for reuse, the Contractor shall stockpile these materials in the nearest practical gravel pit or stockpile area unless otherwise agreed. Within one month of the start of the Contract, the Contractor shall advise the Principal of the quantity stored at the gravel stockpile Sites.

### **9.3 Protection of people and property**

#### **9.3.1 Contractor's responsibilities**

The Contractor shall:

- a) provide required materials, plants and labours and take all measures necessary to protect people and property using or on the Site
- b) avoid unnecessary interference with the passage of Road users through the Site
- c) prevent nuisance and unreasonable noise and disturbance to persons using or adjoining the Site.

#### **9.3.2 Damage to property**

If the Contractor or its Subcontractors, employees or agents damage property including, but not limited to, Public Utility Plant and property on or adjacent to the Site, the Contractor shall promptly make good the damage and pay any compensation which the law requires the Contractor to pay.

#### **9.3.3 Maintain clean and tidy Site**

The Contractor shall keep the Site clean and tidy at the location where, and at all times during which, Work is being performed.

#### **9.3.4 Failure to comply**

If the Contractor fails to comply with an obligation under this Clause, the Principal may, in addition to any other right or remedy it may have, perform the obligation on the Contractor's behalf and the costs incurred by the Principal shall be a debt due from the Contractor to the Principal. The Contractor shall indemnify the Principal against cost, loss, liability or damage which the Principal may suffer or incur as a result of the Contractor's failure to comply with this Clause.

#### **9.3.5 Urgent protective Work**

If it becomes necessary for the Principal to carry out urgent protective, remedial or similar Work to protect, or prevent damage to or loss of, any Work under the Contract, and the obligation to provide the protection or carry out the remedial or other Work was the Contractor's responsibility, then the costs incurred by the Principal shall be a debt due from the Contractor to the Principal.

### **9.4 Safety**

#### **9.4.1 Definitions**

For the purposes of the Clause 9.4, the words 'Person with management and control', 'construction project', 'notifiable incident' and 'workplace' have the meanings assigned to them by the *Work Health and Safety Act 2011* (Qld) (*WHS Act*) and the *Work Health and Safety Regulation 2011* (Qld) (*WHS Regulation*).

#### **9.4.2 General**

Without limiting the remainder of this Clause, the Contractor shall:

- a) Be the Person with management and control of each workplace at which the Work under the Contract is to be carried out.
- b) Ensure that it complies with the Principal's work health and safety requirements when performing the Work under the Contract.

- c) Ensure that it complies with its obligation under the *WHS Act* to consult, cooperate and coordinate activities with all other Persons who have a work health and safety duty in relation to the same matter.
- d) Comply with the requirements of the *WHS Act*, *WHS Regulation* and the workplace health and safety management plan.
- e) Ensure the health and safety of any Person affected by the Work under the Contract including, but not limited to:
  - i. the Contractor's employees, agents and Subcontractors
  - ii. the Principal's employees and agents
  - iii. users of the Road infrastructure
  - iv. occupiers of adjoining land

while carrying out the Work under the Contract.

#### **9.4.3 Specific obligations – management and control**

The Contractor agrees that:

- a) The Work under the Contract may include construction Work that is a 'construction project' for the purposes of the *WHS Regulation*.
- b) If the Work under the Contract is a construction project, the Principal engages the Contractor as the Principal Contractor, as defined in the *WHS Regulation*, for the Site at which the construction project is to be carried out.
- c) Where it is engaged as the Principal Contractor, the Contractor is:
  - i. responsible for discharging its duties as a Person conducting a business or undertaking in accordance with the *WHS Act* and *WHS Regulation*
  - ii. responsible for discharging the duties of a Principal Contractor in accordance with the *WHS Regulation*
  - iii. authorised to have management and control of the workplace
  - iv. required to consult with the Principal in relation to matters of safety that the Contractor cannot resolve to the standard imposed by the *WHS Act* and the *WHS Regulation* and to cooperate and coordinate with the Principal to ensure any issues are resolved to the required standard.

#### **9.4.4 Responsibilities and liabilities**

The Contractor is responsible for, and assumes liability for, the duties under the *WHS Act* and the *WHS Regulation* for which the Contractor is responsible and liable as between the parties in accordance with this Clause.

Nothing contained in this Clause shall in any way limit or exclude any of the Contractor's obligations or liabilities under the Contract.



#### **9.4.5 Notifiable incidents**

The Contractor shall, regardless of whether or not it is appointed as Principal Contractor:

- a) comply with its obligations under the *WHS Act* in relation to any notifiable incident arising out of, or in connection with, the conduct of the business or undertaking of the Contractor
- b) notify the Principal of every notifiable incident in relation to or in connection with the Site within a time period that ensures the Principal can comply with its obligations under the *WHS Act* in relation to any notifiable incident
- c) keep the Principal informed of the status of any incidents related to safety or health that have occurred in relation to or in connection with the Site
- d) do all that is necessary to assist the Principal with any investigations into any incident related to safety or health in relation to, or in connection with, the Site, including requiring, to the extent possible, the Contractor's agents and Subcontractors to assist the Principal
- e) as soon as practicable, but no later than within seven Days of receiving a request from the Principal to do so, provide the Principal with a copy of any notification to the regulator for work health and safety of an incident related to safety or health
- f) consult, cooperate and coordinate with the Principal at progress meetings in relation to any health or safety matters arising out of, or in connection with, the Site.

#### **9.4.6 Indemnities**

To the extent permitted by law, the Contractor indemnifies, and will keep indemnified, the Principal from and against all loss which may be brought against or made on the Principal or which the Principal may pay, sustain or be put to arising by reason of or in connections with:

- a) any breach of the *WHS Act* or the *WHS Regulation* at a Site caused, or contributed to, by the Contractor or its employees, agents, Subcontractors and other Persons authorised by the Contractor to be at the Site
- b) any breach by the Contractor of its obligations under the Clause 9.4 or its duties under the *WHS Act* or the *WHS Regulation*
- c) if the Contractor has been appointed as Principal Contractor for the relevant Site, the Principal being deemed under the *WHS Act* to be the Person with management and control of the Site or the Person with management and control of any fixtures, fittings and plant in relation to or in connection with the Site.

It is not necessary for the Principal to incur expense or make a payment before enforcing any indemnity conferred by this Clause.

#### **9.5 Mining and Quarrying Safety and Health Act 1999**

This Clause 9.5 is to be used where any quarrying activities which may be caught by the *Mining and Quarrying Safety and Health Act 1999* are undertaken. It is not required if the quarrying pit is directly adjoining the road area under construction.

### **9.5.1 Application of special conditions in addition to existing work health and safety obligations**

Nothing in this clause 9.5 shall in any way limit or exclude any of the Contractor's obligations or liabilities under the Contract, including the application of Clause 9.4 of the Contract.

### **9.5.2 Appointment of Contractor as Operator**

- a) From the date of the possession of site, the Principal relinquishes, and the Contractor assumes, control of the Quarry Site for all purposes.
- b) The Contractor acknowledges and agrees that from the date of the possession of site the Contractor will be the Operator for the purposes of the *Mining and Quarry Safety and Health Act*.
- c) The Contractor shall appoint a Site Senior Executive for the Quarry Site.
- d) The Quarrying Activities shall not be carried out unless:
  - i. Site Senior Executive has been, and remains, properly appointed; and
  - ii. the Contractor has ensured that the Site Senior Executive has developed and implemented an appropriate Safety and Health Management System in place for the Quarrying Activities.
- e) The Contractor is authorised by the Principal to have Management and Control of the Quarry Site and to discharge its obligations as Operator under Part 3 of the *Mining and Quarry Safety and Health Act*.
- f) The Contractor shall discharge its duties and comply with all relevant obligations under the *Mining and Quarry Safety and Health Act*, including the duties of an Operator.

### **9.5.3 Discharge of duties under *Mining and Quarry Safety and Health Act***

Without limiting the obligations in Clause 9.4 of the Contract or this Item 9.5:

the Contractor shall ensure the Contractor, and its officers, employees, agents and Subcontractors are familiar with and comply with all their obligations and exercise due diligence in discharging all their duties under the *Mining and Quarry Safety and Health Act*.

### **9.5.4 Definitions for this special condition**

In this Item 9.5:

- a) *MQSH Act* means the *Mining and Quarrying Safety and Health Act 1999 (Qld)* as amended from time to time;
- b) Operator has the meaning provided in the *Mining and Quarry Safety and Health Act*;
- c) Quarrying Activities means the operations to produce road building material within the meaning provided by the *Mining and Quarry Safety and Health Act*;
- d) Quarry Site means the part of the Site which is a quarry within the meaning provided by the *Mining and Quarry Safety and Health Act*;
- e) Safety and Health Management System has the meaning provided in the *Mining and Quarry Safety and Health Act*;

- f) Site Senior Executive has the meaning provided in the *Mining and Quarry Safety and Health Act*.

## **9.6 Traffic management at Work Sites**

### **9.6.1 Traffic guidance schemes**

The Contractor shall make all arrangements and do all things necessary to guide traffic safely past any of the Work under the Contract and take all precautions for the safety of workers and Road users.

The Contractor shall supply, install and maintain all traffic signs and control devices and make arrangements for control of traffic in accordance with a traffic guidance scheme (TGS) based on Part 3 of the *Manual of Uniform Traffic Control Devices* (Queensland).

The Contractor shall also comply with the *WHS Act* and any relevant prohibition notices.

The Contractor shall ensure that any individual who controls traffic within the Works shall be licensed under the Principal's traffic control accreditation scheme.

Where any Work under the Contract involves:

- a) expected traffic delays exceeding the times as set out in form C6095
- b) closure of the normally travelled access from residential or commercial premises
- c) likely traffic queues across intersections
- d) detours using local roads
- e) closure of the normally travelled carriageway
- f) Maintenance of side tracks, detours, and so on

then the TGS shall be documented and submitted at least two working Days in advance, or as otherwise agreed, to the Principal for direction as to its suitability.

### **9.6.2 Public notification**

Where directed by the Principal, dissemination of information to the community regarding significant changes on the nature and effect of Work under the Contract to traffic shall be provided to the public.

The Contractor shall ensure:

- a) adequate information is advertised publicly to keep the community informed of significant changes to normal traffic movements, such as detours over other Roads, and of any possible disruptions
- b) as much notice as possible of such changes must be given to the public, but it must not be less than 24 hours or as otherwise agreed
- c) the agreement of the Principal to the extent and nature of all such publicity prior to implementation is obtained.

The cost of any dissemination of information ordered and agreed by the Principal shall be included as a variation in accordance with Part F.

### **9.6.3 Other traffic management issues**

No motor vehicle traffic lane shall be left closed overnight without first obtaining the Principal's written approval of the closure and of the traffic arrangements to apply.

### ***Minerals, fossils and relics on Site***

The Contractor, his agent or employees shall not take any action to exploit the discovery of valuable minerals on the Site, but shall immediately advise the Principal of such discovery.

Any fossils, articles of antiquity or of anthropological or archaeological interest, treasure trove, coins and articles of value found on the Site shall be the property of the Principal.

## **9.7 Public Utility Plant, ancillary Works and encroachments**

### **9.7.1 Liaise with owner and Principal**

Where any of the Work under the Contract involves the alteration (including relocation, repairs and protection) of Public Utility Plant (PUP) or significant ancillary Works and encroachments (AWEs) as nominated by the Principal located on the Site, the Contractor shall liaise with the owner of such plant or AWE and the Principal and accept responsibility for arranging and coordinating such alteration.

Subject to the prior written approval of the Principal, the cost of any alteration shall be included as a variation in accordance with Clause 7.

### **9.7.2 Cost of alteration**

Where PUP or AWEs are altered as a result of the Contractor's activities, or to facilitate the Contractor's Work, and such Work is not necessary for the Work under the Contract, the cost of such Work shall be borne by the Contractor and paid directly to the relevant owner by the Contractor.

### **9.7.3 Indemnity**

The Contractor shall indemnify the Principal against any damage or loss of PUP or AWEs caused by the Contractor while executing Work under the Contract.

## **9.8 Suspension of the Work**

### **9.8.1 Suspension by Principal**

The Principal may direct the Contractor to suspend the progress of the whole or part of the Work under the Contract for such time as the Principal thinks fit, if the Principal considers that the suspension of the whole or part of the Work under the Contract is necessary:

- a) Because of an act or omission of:
  - i. the Principal or an employee, consultant or agent of the Principal
  - ii. the Contractor, a Subcontractor or an employee or agent of either.
- b) For the protection or safety of any Person or property.
- c) To comply with an order of a court.

### **9.8.2 Suspension by Contractor**

If the Contractor wishes to suspend the whole or part of the Work under the Contract, otherwise than under Clause 11.8 or as required by a statutory requirement, the Contractor shall obtain the prior written approval of the Principal.

The Principal may approve of the suspension and may impose conditions of approval. The Principal is not obliged to approve the suspension.

### **9.8.3 Recommencement of Work**

As soon as the Principal becomes aware that the reason for any suspension no longer exists, the Principal shall direct the Contractor to recommence Work on the whole or on the relevant part of the Work under the Contract.

If Work is suspended by the Contractor under Clause 11.8, the Contractor may recommence Work at any time after reasonable advance notice to the Principal.

### **9.8.4 Cost of suspension**

Any cost incurred by the Contractor by reason of a suspension under this Clause shall be borne by the Contractor, but if the suspension is due to an act or omission of the Principal, the Principal or an employee, consultant or agent of the Principal not authorised by the Contract, and the suspension causes the Contractor to incur more or less cost than otherwise would have been incurred but for the suspension, the difference shall be valued as a variation under Clause 7.

The Contractor must use all reasonable efforts to mitigate any such cost and must, on request of the Principal, provide documentary evidence of such cost.

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## **Part I: Quality system**

### **10 Requirements of the quality system**

#### **10.1 General**

RMPC quality system requirements may be satisfied by addendums to the Contractor's existing quality management systems. The Contractor's quality system should be accredited to ISO 9001: 2015 *Quality management systems – Requirements*. If this has not been achieved, the Contractor must either submit a plan to gain/regain certification or, with the written consent of the Principal, adopt the use of the department's form C6089 which sets out the department's minimum quality requirements for RMPC Works.

If the Contractor's quality system is not certified, or the Contractor is unable to maintain its certification, the Contractor must seek approval from the Principal to continue Works under RMPCs.

The Contractor must include, in its Quality Plan, details of its Maintenance organisation structure, clearly setting out the nominated Persons and their responsibilities for achieving the Quality Plan requirements.

#### **10.2 Quality system**

The Contractor shall establish, review, maintain and update the various plans comprising the quality system, including:

- a) Quality Plan
- b) Safety Plan
- c) EMP (Maintenance).

The Contractor shall submit any changes to its existing plans (and quality system) to the Principal for direction as to their suitability immediately after any audit and, in any case, at least four weeks prior to commencement of any Work under the renewed Contract.

In the case of the Principal indicating that any of the plans is not suitable, the Contractor must amend and resubmit the relevant plans to the Principal as part of its quality system.

#### **10.3 Quality Plan**

##### **10.3.1 Systematic Approach to the Management of Maintenance**

The Contractor's Quality Plan for management must evidence a Systematic Approach to the Management of the Maintenance of the Network.

The Contractor must include, in its Quality Plan, its procedures for:

- a) identification of Work in advance
- b) planning, prioritising and scheduling of Maintenance
- c) recording all completed Work
- d) making payment Claims
- e) managing the process
- f) changing/improving the system
- g) auditing the Contractor's management/supervision procedures.

The Contractor must maintain accurate, up-to-date files (whether computer-based or manual) of:

- a) Network inspection reports
- b) Forward List of Work including:
  - i. issued Works orders
  - ii. list of completed Activities.

The Contractor must submit these files (including the Forward List of Works) to the Principal on the 25<sup>th</sup> of each month, unless requested otherwise by the Principal.

### **10.3.2 Operations**

The Contractor must provide its standards and procedures in its Quality Plan for recording of Defects and carrying out the various Maintenance Activities. Standards must be in accordance with the Maintenance Activity Standards and Intervention Level/Response Time standards as set out respectively in Chapter 4 and Chapter 5 of the Guidelines.

Unless the Principal approves otherwise, the Quality Plan must adopt the Principal's Activity Standards as set out in the Guidelines for undertaking Routine Maintenance for Maintenance Activity numbers and descriptors and units of measurement, including sequential steps and check points. These procedures may be based on the details contained in the Maintenance Activity Standards.

### **10.4 Work health and safety management plan (safety plan)**

The safety plan must clearly indicate the Contractor's hierarchy and responsibility for managing safety and include details of the Contractor's procedures, including safety matters (as detailed in Part H) of:

- a) advice to the Principal of incidents involving third parties
- b) management of traffic at Work Sites in accordance with Part 3 of the *Manual of Uniform Traffic Control Devices* (Queensland).

### **10.5 Environmental management**

#### **10.5.1 General obligations**

The Contractor shall:

- a) At all times during the term, comply with the requirements of:
  - i. all relevant environmental and heritage statutory requirements
  - ii. the Environmental Management Plan (EMP (Maintenance))
  - iii. any environmental requirements set out in the Specifications.
- b) Identify activities that have the potential to cause environmental harm and implement and maintain measures to preserve and protect the natural environment (including the protection of cultural heritage) on and adjacent to a Site.
- c) Pay all penalties, costs and expenses that may be incurred concerning offences committed or alleged to be committed under any other statutory requirements relating to environmental management.
- d) Ensure all applicable environment protection measures are implemented prior to proceeding with any relevant Work under the Contract.

### **10.5.2 EMP (Maintenance)**

The Contractor shall be responsible for environmental management associated with the activities of the Contract and shall develop and implement an EMP (Maintenance) for that purpose. This shall include auxiliary activities under the control of the Contractor, such as the obtaining of resources (water, gravel) for Works associated with the Contract, and activities at auxiliary Sites used by the Contractor, such as stockpile Sites.

The EMP (Maintenance) is the Contractor's management plan to ensure that all Works undertaken by the Contractor, its employees, agents and Subcontractors shall have minimal impact on the environment. The EMP (Maintenance) shall be in accordance with all relevant state, federal and local government laws, regulations and rules, and shall comply with and incorporate the requirements of this Contract.

As a minimum, the EMP (Maintenance) should include the administrative and management requirements outlined below.

### **10.5.3 Administrative requirements**

Administrative requirements are:

- a) A statement of the Contractor's environmental management policy relevant to activities carried out under the Contract.
- b) The Contractor's environmental training and/or induction programs for relevant staff, including staff acting as environmental representatives for Activities.
- c) A list of permits and licences obtained, relevant to the Maintenance Works, including Principal exemptions or licences being used for undertaking of the Work — where exemptions, permits or licences have a reporting requirement, the EMP (Maintenance) shall clearly state who is responsible for reporting (Principal or Contractor) and how and when the Contractor will provide necessary information to the Principal.
- d) Details of the Contractor's system to manage complaints, undertake inspections and conduct audits, including undertaking and recording corrective actions.
- e) Details of the Contractor's document control procedures for monitoring, review and periodic update of the EMP (Maintenance).

### **10.5.4 Management measures**

The EMP (Maintenance) shall contain the Contractor's proposed environmental protection measures and strategies for activities under the Contract. This should include standard measures to address all activities which are to be included as part of the Contract, as well as the triggers for additional Site-specific environmental assessment and/or control measures.

The strategies shall address:

- a) Cultural Heritage – including potential effects on indigenous and historical heritage.
- b) Biodiversity – minimising the effects on flora and fauna and managing the effects of activities, such as slashing on weed spread.
- c) Amenity – managing potential nuisance issues such as dust, vehicle emissions, noise, vibration and lighting.



- d) Resource use – ensuring that obtaining resources for Maintenance (water, quarry material) is done in a legal and sustainable manner and that storage of goods, including fuels and paints, is undertaken in a suitable manner.
- e) Waste management – including Contractor's location and method for storage and/or disposal of waste collected under the Contract (for example, litter, tyres, dead animals) and waste or unsuitable material produced through activities of the Contract (including stockpile management).
- f) Water quality – minimising effects on water quality, including erosion and sediment control methods and procedures.
- g) Any specific environmental measures nominated by the Principal.
- h) Details of the Contractor's environmental preparedness and response procedures, including:
  - i. procedures for minor incidents such as a burst hydraulic hose
  - ii. procedures for significant incidents, including notification to the Principal, the state Department of Environment and Heritage and/or other relevant state or federal departments, regarding incidents including, but not limited to, those causing 'material' or 'serious environmental harm' (*Environmental Protection Act 1994* (Qld)) as a result of Works carried out.

#### **10.5.5 Requirements**

The Contractor should be aware of requirements for environment and heritage management, but the Principal may impose additional Contract-specific requirements within the Contract.

#### **10.5.6 Environmental representative**

All crews and projects shall have a nominated environmental representative. This representative shall have undergone environmental training, including information on general environmental duty, under the *Environmental Protection Act 1994* (Qld), within the last two years.

#### **10.5.7 Burning**

Burning of material is prohibited within the Road reserve without the written approval of the Principal.

#### **10.5.8 Weed management**

The Contractor must take all precautions to ensure that activities undertaken under the Contract do not cause the spread of weeds or new weed infestations.

The Contractor shall rectify any weed infestations (including at stockpile Sites) caused by its activities at the Contractor's cost.

Where declared weed management is being completed under the Contract, the Contractor's representative shall be competent in the identification of declared weeds within the Network.

#### **10.5.9 Erosion and sediment control**

Where the area of disturbance of natural ground to be open at any one time is greater than 2500 m<sup>2</sup>, the Contractor shall prepare an erosion and sediment control plan. The plan shall include location of all proposed erosion and sediment control devices.

#### **10.5.10 Stockpile Sites**

The use of old stockpile Sites is preferred over the creation of new Sites. Stockpile Sites should be delineated and not expanded without the written approval of the Principal. Stockpiles of any material type shall be located a minimum distance of 100 m away from any watercourse and a minimum 10 m away from remnant vegetation.

The Sites should be located on relatively flat, well drained ground. Appropriate sediment controls (for example, bunding or sediment control fencing) must be installed. Temporary stockpile Sites are to be remediated at the completion of construction Works.

#### **10.5.11 Cultural heritage**

Where the proposed Works will affect previously undisturbed ground, the Contractor shall ensure that an assessment as required by the *Aboriginal Cultural Heritage Act 2003 (Qld)* has been undertaken.

If, during an Activity, items of cultural heritage significance are discovered, construction shall cease immediately in the vicinity of the find. Any items found shall be left in an as-found condition and a temporary barrier shall be erected to prevent access to the find.

The Contractor shall immediately notify the Principal who will inform the department's cultural heritage officer.

#### **10.6 Audits**

The Principal may carry out audits of the Contractor's quality system at any time. Such an audit may be one or a combination of:

- a) compliance with the Principal's quality system requirements
- b) compliance with the Contractor's quality procedures
- c) independent testing on completed Activities.

The Principal may carry out an audit of the EMP (Maintenance) and its implementation at any time.

The Contractor and/or its environmental representative shall be present during the audit and shall supply the Principal with all documentation, access and assistance as required.

The Contractor shall undertake at least one internal audit as part of the EMP (Maintenance) during the term of the Contract so relevant operational changes are made to reduce the risk of environmental harm.

##### **10.6.1 Keeping records**

The Contractor must keep all records for a period of at least six years, notwithstanding the requirements of any relevant legislation (including the *Local Government Finance Standard 2005 (Qld)*).

## **Part J: Default and termination**

### **11 Default**

#### **11.1 General**

If a party breaches or repudiates the Contract, nothing in this Clause shall prejudice the right of the other party to recover damages or exercise any other right.

#### **11.2 Default by the Contractor**

If the Contractor commits a substantial breach of the Contract and the Principal considers that damages may not be an adequate remedy, the Principal may give the Contractor a written notice to show cause.

Substantial breaches include:

- a) failing to comply in any respect with Clause 2.7
- b) failing to use the materials or standards of workmanship required by the Contract, in breach of Clause 3.7
- c) failing to provide satisfactory performance, in breach of Clause 4.3
- d) failing to provide evidence of insurance, in breach of Clause 8
- e) suspension of Work, in breach of Clause 9.9
- f) any other substantial breach nominated in the Contract.

#### **11.3 Requirements of a notice by the Principal to show cause**

A notice under Clause 11.2 shall:

- a) state that it is a notice under this Clause
- b) specify the alleged substantial breach
- c) require the Contractor to show cause in writing why the Principal should not exercise a right referred in Clause 11.4
- d) specify the time and date by which the Contractor must show cause (which time shall be no fewer than seven Days after the notice is given to the Contractor)
- e) specify the place at which cause must be shown.

#### **11.4 Rights of the Principal**

If, by the time specified in a notice under Clause 11.3, the Contractor fails to show reasonable cause why the Principal should not exercise a right referred in Clause 11.4, the Principal may by notice in writing to the Contractor:

- a) take out of the hands of the Contractor the whole or part of the Work remaining to be completed, or
- b) terminate the Contract.

Upon giving a notice under Clause 11.2, the Principal may suspend payments to the Contractor until the earlier of:

- i. the date upon which the Contractor shows reasonable cause

- ii. the date upon which the Principal takes action under Clause 11.4(a) or Clause 11.4(b)
- iii. the date which is seven Days after the last day for showing cause in the notice under Clause 11.3.

If the Principal exercises the right under Clause 11.4(a), the Contractor shall not be entitled to any further payment for the Work taken out of the hands of the Contractor unless a payment becomes due to the Contractor under Clause 11.5.

#### **11.5 Procedure and adjustment on completion when the Principal takes over Work**

If the Principal takes Work out of the hands of the Contractor under Clause 11.4(a), the Principal shall complete that Work.

When Work taken out of the hands of the Contractor under Clause 11.4(a) is completed, the Principal shall ascertain the cost incurred by the Principal in completing the Work and shall issue a certificate to the Contractor certifying the amount of that cost.

If the cost incurred by the Principal is greater than the amount which would have been paid to the Contractor if the Work had been completed by the Contractor, the difference shall be a debt due and owing from the Contractor to the Principal.

If the cost incurred by the Principal is less than the amount that would have been paid to the Contractor if the Work had been completed by the Contractor, the difference shall be a debt due and owing to the Contractor from the Principal. The Principal shall keep records of the cost.

If the Contractor is indebted to the Principal, the Principal may retain constructional plant or other things taken under Clause 11.5 until the debt is satisfied.

If, after reasonable notice, the Contractor fails to pay the debt, the Principal may sell the constructional plant or other things and apply the proceeds to the satisfaction of the debt and the costs of sale. Any excess shall be paid to the Contractor.

#### **11.6 Default of the Principal**

If the Principal commits a substantial breach of the Contract and the Contractor considers that damages may not be an adequate remedy, the Contractor may give the Principal a written notice to show cause.

Substantial breaches include, but are not limited to:

- a) failing to make a payment in breach of Clause 5.4, or
- b) failing to give the Contractor sufficient access to a Site in breach of Clause 9, but only if the failure continues for longer than 28 Days.

#### **11.7 Requirements of a notice by the Contractor to show cause**

A notice under Clause shall:

- a) state that it is a notice under Clause 11
- b) specify the alleged substantial breach
- c) require the Principal to show cause in writing why the Contractor should not exercise a right referred in Clause 11.8

- d) specify the time and date by which the Principal must show cause (which shall not be fewer than seven Days after the notice is given to the Principal)
- e) specify the place at which cause must be shown.

### **11.8 Rights of the Contractor**

If, by the time specified in a notice under Clause 11.3, the Principal fails to show reasonable cause why the Contractor should not exercise a right referred in Clause 11.8, the Contractor may, by notice in writing to the Principal, suspend the whole or any part of the Work under the Contract.

The Contractor shall lift the suspension if the Principal remedies the breach, but if, within 28 Days after the date of suspension under Clause 11.8, the Principal fails to remedy the breach or, if the breach is not capable of remedy, fails to make other arrangements to the reasonable satisfaction of the Contractor, the Contractor may, by notice in writing to the Principal, terminate the Contract.

The Contractor shall be entitled to recover from the Principal any damages incurred by the Contractor by reason of the suspension.

### **11.9 Rights of the parties on termination**

If the Contract is terminated under Clause 11.4 or Clause 11.8, the rights and liabilities of the parties shall be the same as they would have been at common law had the defaulting party repudiated the Contract and the other party elected to treat the Contract as at an end and recover damages.

### **11.10 Termination without cause**

Either party may terminate the Contract without cause by giving the other party notice in accordance with Clause 2.5 and nominating the period of notice.

- a) Notice by the Contractor shall be for a minimum period of two years.
- b) Notice by the Principal shall be for a minimum period of one year.
- c) Where the Contractor is an LG, the Contractor is dissolved under the provisions of the *Local Government Act 2009*.

In each case, where the Guaranteed Renewal Period is less than the nominated minimum period, then the minimum notice requirement will be the Guaranteed Renewal Period.

## **Part K: General provisions**

### **12 Miscellaneous**

Contractor shall comply with all state and federal government policies where applicable.

#### **12.1 Confidential information**

##### **12.1.1 Contractor's responsibility**

The Contractor shall:

- a) treat as confidential and not disclose, copy, use or permit the use of, at any time, or in any way, the Confidential Information, other than for the purpose of performing this Contract
- b) ensure and protect the confidentiality of the Confidential Information
- c) limit the disclosure of the Confidential Information to those Persons to whom such disclosure is strictly necessary for the performance of this Contract and shall ensure that those Persons are bound by obligations of confidentiality for the Confidential Information equal to those contained in this Clause and shall use its best endeavours to ensure that those Persons abide by such obligations of confidentiality
- d) accept full liability for, and indemnify the Principal against, any loss, cost or damage which it may suffer or incur as a result of any wrongful use, copying or disclosure of the Confidential Information.

##### **12.1.2 Termination**

The obligations of the Contractor under Clause 12.1 survive the termination of the Contract by either party upon any grounds whatsoever.

#### **12.2 Information Privacy Act**

For the purposes of this Clause 12.2, the words 'bound contracted service provider', 'compliance notice', 'document', 'information commissioner', 'personal information', 'privacy complaint' and 'privacy principles' have the meanings given in the *Information Privacy Act 2009* (Qld).

The Contractor acknowledges that the Contractor is a bound contracted service provider and the information commissioner's functions include conducting reviews into personal information handling practices of bound contracted service providers and conducting compliance audits to assess bound contracted service providers' compliance with the privacy principles.

The Contractor shall promptly advise the Principal of any:

- a) enforcement of the Contractor's obligations under the *Information Privacy Act 2009* (Qld) in connection with the Contract, including enforcement through compliance notices given to the Contractor, or
- b) privacy complaints in connection with the Contractor's discharge of its obligations under the Contract, including any privacy complaints to which the Contractor is a respondent.

The Contractor shall take any actions reasonably required by the Principal in connection with these matters, including steps to comply with any compliance notice.

The Contractor shall keep the Principal informed about actions of the information commissioner in connection with the Contract of which the Contractor becomes aware.

The Contractor shall immediately notify the Principal if the Contractor becomes aware that disclosure of personal information held in relation to this Contract is, or may be, required or authorised by law, for, or in connection with:

- a) an individual's application to the Principal for access to, or amendment of, a document containing the individual's personal information, whether the application is made under the *Information Privacy Act 2009* (Qld) or otherwise
- b) privacy complaints made to the Principal, including any privacy complaints to which the Principal is a respondent
- c) the Contractor shall, as soon as possible following the Principal's request, but no later than two business Days after such request from the Principal:
  - i. submit to the Principal a document specified by the Principal
  - ii. amend or notate a document specified by the Principal
  - iii. provide information to the Principal concerning the Contractor's discharge of its obligations under this Clause 12.2
  - iv. take other reasonable actions required by the Principal

The Principal may make a written request to the Contractor to comply with privacy and security measures under the *Information Privacy Act 2009* (Qld) and the *Right to Information Act 2009* (Qld).

In relation to this Clause, the Principal's Representative shall act as an agent of the Principal.

### **12.3 The Queensland Code**

Where stated in Item 4 of form C6094, the *Queensland Code of Practice for the Building and Construction Industry* (the Queensland Code) apply to this Contract.

The Queensland Code is available on the following website:

<https://www.treasury.qld.gov.au/resource/building-construction-code-practice-2000/>

The 'Client Agency' in relation to this Contract is the Department of Transport and Main Roads.

#### **12.3.1 Primary obligation**

The Contractor shall comply with, and meet any obligations imposed by the Queensland Code.

The Contractor shall notify the Australian Building Construction Commission (ABCC) (or nominee) and the Client Agency of any alleged breaches of the Queensland Code and of voluntary remedial action taken within 24 hours of becoming aware of the alleged breach.

Where the Contractor is authorised to engage a Subcontractor or consultant, and it does so, the Contractor shall ensure that any secondary Contract imposes on the Subcontractor or consultant are equivalent obligations to those in this 'Primary Obligation', including that the Subcontractor or consultant shall comply with, and meet any obligations imposed by, the Queensland Code.

The Contractor shall not appoint or engage another party in relation to the project where that appointment or engagement would breach a sanction imposed on the other party in relation to the Queensland Code.

### 12.3.2 Access and information

The Contractor shall maintain adequate records of compliance with the Queensland Code by it, its Subcontractors, consultants and related entities.

The Contractor shall allow, and take reasonable steps to facilitate, Queensland Government-authorized personnel (including personnel of the ABCC) to:

- a) enter and have access to Sites and premises controlled by the Contractor, including the project Site
- b) inspect any Work, material, machinery, appliance, article or facility
- c) access information and documents
- d) inspect and copy any record relevant to the project
- e) have access to personnel
- f) interview any Person

as is necessary for the authorized personnel to monitor and investigate compliance with the Queensland Code by the Contractor, its Subcontractors, consultants and related entities.

The Contractor, and its related entities, shall agree to, and comply with, a request from Queensland Government-authorized personnel (including personnel of the ABCC) for the production of specified documents by a certain date, whether in person, by post or electronic means.

### 12.3.3 Sanctions

The Contractor warrants that, at the time of entering into this Contract, neither it, nor any of its related entities, are subject to a sanction in connection with the Queensland Code that would have precluded it from tendering for Work to which the Queensland Code apply.

If the Contractor does not comply with, or fails to meet any obligation imposed by, the Queensland Code, a sanction may be imposed against it in connection with the Queensland Code.

### 12.4 Ethical Supplier Threshold and Ethical Supplier Mandate

- a) In this clause 12.4,
  - i. Ethical Supplier Mandate means the Queensland Government policy titled 'Ethical Supplier Mandate' or any policy that replaces that policy
  - ii. Ethical Supplier Threshold means the Ethical Supplier Threshold in paragraph 2.3 of the Queensland Procurement Policy
  - iii. Government Department or Instrumentality means any governmental regulator, including Work Health Safety Queensland, the Queensland Building and Construction Commission, the Fair Work Commission and the Australian Building and Construction Commission, and
  - iv. QPP Compliance Unit means the Queensland Procurement Policy (QPP) Compliance Unit, Office of the Chief Advisor – Procurement, Department of Housing and Public Works.
- b) The Contractor shall comply with the Ethical Supplier Threshold.



- c) The Principal may obtain information about the Contractor relevant to the Contractor's compliance with clause 12.4(b) that may be held by the QPP Compliance Unit or any Government Department or Instrumentality and take the information into account in assessing the offer.
- d) The Contractor acknowledges that a failure to comply with the Principal's policies that apply to the work under the proposed contract or the Contractor's obligations under the proposed contract may result in the imposition of a demerit or sanction under the Ethical Supplier Mandate, in addition to any other remedies available to the Principal under this Contract.
- e) Failing to comply with the requirements of this clause 12.4(b) is a substantial breach of Contract for the purpose of Clause 11.2(f) of this General Conditions of Contract.

## Appendix A: Schedules

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## Appendix B: Activity Standard

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**Guideline**

**Routine Maintenance Guidelines**

**November 2017**



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## **1 Chapter 1: Routine Maintenance and Routine Maintenance Delivery**

### **1.1 Introduction**

Routine Maintenance Guidelines is the document that provides routine maintenance related technical information to use on road routine maintenance on Queensland's State-controlled Road Network (SCRN).

Road conditions across the state differ. Pavement structures, materials, traffic and climate are all important variables that need to be considered when selecting Intervention Level and Response Time (IL/RT). In addition, a balance is required between a safe, efficient road network and responsible maintenance and environmental practice. For these reasons there are no absolute solutions. The aim of this guideline is to assist the maintenance personnel to apply sensible and appropriate risk based methods to carry out the necessary maintenance actions as per the Intervention Level and Response Time (IL/RT) criteria and Maintenance Activity Standards.

Contractors undertaking Road Maintenance Performance Contract's (RMPCs) are required to refer to this guidelines, the RMPC Manual, General Condition of Contract, Invitation to Offer and their approved Quality for operational requirements. Road Asset Management Contractors (RAMC) may use these guidelines to manage routine maintenance related works in their contract.

### **1.2 Purpose**

The intention of this document is to provide technical guidance that will assist the maintenance contractors to consider the various aspects of road maintenance priorities and the use of an effective maintenance program to manage road user safety, road usability, road deterioration, environmental and legislative requirements. An effective and efficient maintenance program can be achieved by following the RMPC process explained in RMPC Manual.

These guidelines shall apply to the maintenance of a road Network by a Contractor for the Queensland Department of Transport and Main Roads under RMPC Sole Invitee, (Road Asset Management Contract (RAMC) and for any other form of contract if it is established.

Purpose of the guidelines is to provide required technical standards and guidance to deliver consistent routine maintenance across the State.

As such these guidelines will contribute to the management of processes, to achieve value for money maintenance delivery, and to make informed business decisions.

### **1.3 Scope**

The procedures and requirements for the following types of maintenance are described in this Routine Maintenance Guidelines document and the RMPC Sole Invitee Manual:

- Routine Maintenance
  - Routine maintenance work activities identified as per IL/RT

- Minor Works
  - Maintenance works that are beyond the routine maintenance scope, however may not be identified as other Element works such as Programmed Maintenance works, Rehabilitation works due to the size of the defect. Repairing of such defects will improve pavement life and reduce pavement deterioration. Therefore it is recommended to fix these defects under RMPC as a Routine Maintenance Minor Works Scheme.
- Emergency Maintenance
  - Activities are taken in response to an emergency situation on the road network.

#### **1.4 Routine Maintenance Minor Works (Minor Works within routine maintenance space)**

Minor enhancement works in order to improve life of road assets within routine maintenance space are considered as Routine Maintenance Minor Works. These Minor Works can be delivered using Routine Maintenance Performance Contract (RMPC) and should be funded by the relevant funding element which the defect belongs to. Routine Maintenance Minor Works should be delivered using the right maintenance activity given in the Maintenance Activity Standards or by using relevant design and construction standards including any departmental Standard Drawings and Technical Specifications.

Transport and Main Roads Districts and contractors should identify Routine Maintenance Minor Works by taking into consideration:

- Associated cost for the particular Minor Work
- Degree of improvement to asset's life due to that enhancement
- Contractors' resources and capability
- Contractor's total contract value for the year.

It is recommended that Routine Maintenance Minor Works value be kept within the manageable limit depending on the contractors' resources and capability. The current Routine Maintenance Minor Works limit is \$500,000 per contract per one year contract period.

#### **1.5 Emergency Maintenance**

Emergency maintenance are to be carried out as instructed in RMPC Manual.

## 2 Chapter 2: Defects, Maintenance Activities and Road Inspections Overview

### 2.1 Defects

A defect refers to the visible evidence of an undesirable condition in the road infrastructure asset. The defect may affect the safety, serviceability, structural capacity or appearance of the asset. Road defects that are identified only as per the routine maintenance Intervention Level and Response Time (IL/RT) are considered as routine maintenance defects in this guideline. Further information about defects is available in Chapter 3 and Chapter 4 of this guideline.

Contractors are required to prioritise defects as directed by the routine maintenance IL/RT criteria in terms of their importance for maintenance action. The basis used by the department for prioritisation of defects is explained in Chapter 4. The General Defect Priority listing has been assembled into six groups. These groups are intended to represent the maintenance priorities and the basic order in which Works should be undertaken.

Recommended Maintenance Activities to rectify the defects are given in the Routine Maintenance Activities list in Chapter 5.

These groups are in order of priority as given below:

- **Priority 1 – Hazard**

Defects where the likelihood of harm occurring is greater than a safety defect as determined by the hazardous defect identification procedure given in Chapter 4, Section 4.1.8.

Action is mandatory in complying with departmental requirements for repairing the identified defect (e.g. water ponding), that is hazardous or likely to create an unsafe situation to road users or likely to damage the road asset.

- **Priority 2 – Ordered Works**

Work undertaken in accordance with the Principal's order and directions.

Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous or likely to create unsafe situation to road users or likely to damage the road asset.

- **Priority 3 – Safety**

Defects that are considered to be of a safety nature.

These activities cover Defects which constitute a safety problem to the road user and for which the Intervention Level is reached without significant warning, as opposed to usability Defects which occur over a period of time and can be planned for repair well in advance of the Intervention Level being reached (e.g. pavement repairs).

- **Priority 4 – Legislative**

Defects that are required to be repaired by legislation.

These activities also cover Special Defects that are illegal, completely unacceptable (e.g. offensive graffiti) or required to fulfil obligations as part of the works (e.g. inspections). They also cover legislative requirements for which certain actions are mandatory in complying with the requirements (e.g. spraying of declared plants).

- **Priority 5 – Preventative**

Defects that if treated will reduce asset's rate of deterioration.

An example of this is the resealing of cracked areas to prevent potholes and pavement failures forming. Preventative maintenance will hopefully reduce the occurrence of the more costly Defect repairs.

- **Priority 6 – Appearance/Usability**

Defects that are considered a nuisance or unsightly.

These activities generally cover the maintenance of time related useability or appearance Defects and those Defects which do not fall into either of the above five categories.

The Defects within each group have not been assigned an individual priority. It is intended that the network operator would assign the appropriate Field Weighting to a defect in order to get the Corporate Score which will decide the actual priority to fix the defect. There is no Field Weighting to Hazardous defects (Corporate Priority 1) and Ordered Works defects (Corporate Priority 2) in order to manage those defects consistently across the state. Refer to Chapter 4 of this guideline (Routine Maintenance Intervention Level and Response Time) for further information.

IL/RT criteria in Chapter 4 contains the list of Defects that is expected to be repaired by the Contractor under RMPC. A two digit alpha code descriptor is used to identify each particular Defect and five digit code descriptor is used to identify the each Sub Defect

The defect code descriptors in IL/RT must be used to ensure the reporting accuracy across the State.

## **2.2 Maintenance Activities**

Maintenance activity describes how a defect is to be repaired. Primarily Maintenance Activities are used to deliver Routine Maintenance Works, however there are few activities that can be used to deliver other Maintenance Preservation and Operation (MPO) Element's Works that are beyond routine maintenance. For example, Maintenance Activity Number 147 is to be used to deliver pavement repair works that are beyond the routine maintenance scope. One maintenance activity links to only one Element and therefore no activity that can be used to deliver two Elements' Works. "Maintenance Activities mapped to Element" document provides all the maintenance activities with their relevant MPO Element.

A three character numeric code is used to identify each maintenance activity.

These corporate code descriptors as well as the activity unit of measure are to be used as specified to ensure there is consistency of reporting across the State.

The unique three character numeric code may be expanded with the addition of a further two numerals at the end of the unique code, if required, to meet Contract specific requirements.

## **2.3 Valid Defect/Activity Combinations**

Once the defects on the State Controlled Road Network (SCRN) have been identified, the Contractor can select a recommended activity to repair the defect.

Any particular defect can be repaired by a number of different activities as set out in IL/RT model.

For example, the defect AG (Potholes) could be repaired by a number of different activities:

- Pothole Patching (Activity Number 105) or,
- Pothole Patching with Emulsion/Aggregate (Activity Number 106) or,
- Heavy Patching (Activity Number 107) or,
- Emergency Temporary Pavement Repairs (Activity Number 142)

#### **2.4 Maintenance Activity Standards**

Maintenance Activity Standards are set out in Chapter 5 and includes a complete listing of Maintenance Activities to be used by the Contractors.

These Activity Standards provide information to the Contractor for the planning, execution and reporting of Maintenance Activities. It is expected these Maintenance Activity Standards will form the basis of the Contractor's Quality Plan for maintenance operations.

The following details for each of the possible activities are contained in the Maintenance Activity Standards:

- unique three character reference code
- applicable Queensland Department of Transport and Main Roads Technical Specifications
- restoration standards
- units of measurement
- Activity Work Items, if applicable (see Section 2.5)
- testing requirements
- work preparation or work operation details in lieu
- work planning and particular points to consider
- work execution, particular points to consider or work operations details in lieu

These Maintenance Activity Standards may be varied with the approval of the department to suit local circumstances. Variations must be agreed with the department prior to commencement of work.

#### **2.5 Supplementary Work Items**

If required by the Preferred Supplier Contractor some Maintenance Activities have been broken down to possible component tasks. These discreet tasks are called Supplementary Work Items. For example, Maintenance Activity 110, Surface Correction with Premix/Asphalt (Manual), is composed of the following Supplementary Work Items with the Department of Transport and Main Roads schedule Item Numbers where relevant:

- 955810 Preparation of existing surface
- 955820 Tack Coat
- 955860 Dense Graded Asphalt pavement, 14 mm mix
- 955870 Dense Graded Asphalt pavement, 20 mm mix.

Supplementary Work Items allow more detailed cost information to be obtained on important/high cost Maintenance Activities if required by the Contractor.

## **2.6 Restoration Standards**

Defects are required to be repaired to a stated degree of completion in the Routine Maintenance Activity Standards. Contractors may be asked to redo the work if the required restoration as per Activity Standards has not been achieved.

## **2.7 Defect Liability Period**

All Routine Maintenance Works should be carried out in accordance with the Routine Maintenance Activity Standards. Defective Works that are due to nonconforming materials or work procedures are to be fixed at contractors' cost. Defect liability period for some of the Maintenance Activities may be available in district supplementary condition of the contract.

## **2.8 Typical RMPC Process**

Appendix 1 indicates a process to manage routine maintenance works through Road Maintenance Performance Contract (RMPC). All the activities in this process are to be performed to a reasonably acceptable level in order to achieve efficient and effective routine maintenance work. In developing processes desecration of overheads such as travel and traffic control and also any work time restrictions may be considered to improve work efficiency.

## **2.9 Road Inspection and Inspection Frequency**

Regular road inspection is an essential part of delivering the Routine Maintenance Work. Therefore, road inspections must be carried out by the contractors based on agreed inspection frequency with the Department. Carrying out road inspection as agreed is critically important in order to capture and prioritise defects, as per IL/RT criteria, on the road Network.

The agreed inspection frequency must be included into the contractor's quality plan.

## **2.10 Defect Log**

The Defect Log is a list of defects that are captured as per IL/RT requirements during regular routine maintenance inspections. All routine maintenance defects that have reached their initial intervention level must be logged. No defects that are below initial intervention level should be logged unless the defect is in the monitoring stage.

## **2.11 Defect Backlog**

Remaining defects in the Defect Log that are not fixed during the relevant work cycle is called Defect Backlog. Unavailable funding is the primary reason for defect backlog. However permitting other work programs to rectify the defects later in order to have cost effective maintenance delivery could also be reason for the defect backlog. Defect Backlog must be revisited every inspection cycle in order to get the right priority as the defect may have deteriorated since last inspection.

## **2.12 Routine Maintenance Needs Assessment**

### **2.12.1 Joint Maintenance Requirement Assessment**

A Joint Maintenance Requirement Assessment (JMRA) is a joint departmental / Contractor assessment of the Network to determine the extent of the activities required for the forthcoming contract period. It is a critical factor in the implementation of the routine maintenance management strategy.

From the contractor's perspective, the JMRA is a key component in the negotiation process necessary with the department to reach an agreement on funding required for contract works on the network.

As the administrator of the contract the JMRA provides an opportunity for Districts to design a maintenance program that ensures funds are effectively distributed within the District.

From the department's perspective as the owner of the Network, the JMRA provides the necessary data to ensure realistic state-wide routine maintenance needs assessment and appropriate fund distribution to districts.

To ensure consistency of assessments across Districts, the JMRA for all contracts should be undertaken by an experienced departmental officer such as a senior inspector. While alternative arrangements may be suitable, the critical issue is to ensure consistency of maintenance needs assessment across the District.

### **2.12.2 Routine Maintenance Needs Assessment using JMRA data**

In order to have consistent JMRA data collection in state-wide level, a new JMRA methodology has been adopted by involving maintenance contractors, Transport and Main Roads district and Transport and Main Roads statewide team. Consistently collected JMRA data is crucial to develop JMRA trends over the years and can be used to predict improved JMRA and routine maintenance element performance against the element investments.

#### **2.12.2.1 JMRA data collection methodology**

Over one hundred defect types are known within the road corridor under routine maintenance. All the defects that have been reached to its initial intervention level, as described in IL/RT, should be logged. However defect log collected in this way represents a snapshot of the Network condition and therefore cannot be solely used as JMRA of the Network for the forthcoming financial year.

However this defect log along with other data can be used to develop JMRA for the forthcoming financial year for districts and also to estimate routine maintenance needs in state-wide level.

Other required data needed to develop the JMRA is:

- Delivered Routine Maintenance works during previous 11 months (fixed defects)
- The current Forward List of Works for the Network progressed to the forthcoming financial year (if any)
- Any relevant work programs planned for the Network (if any)

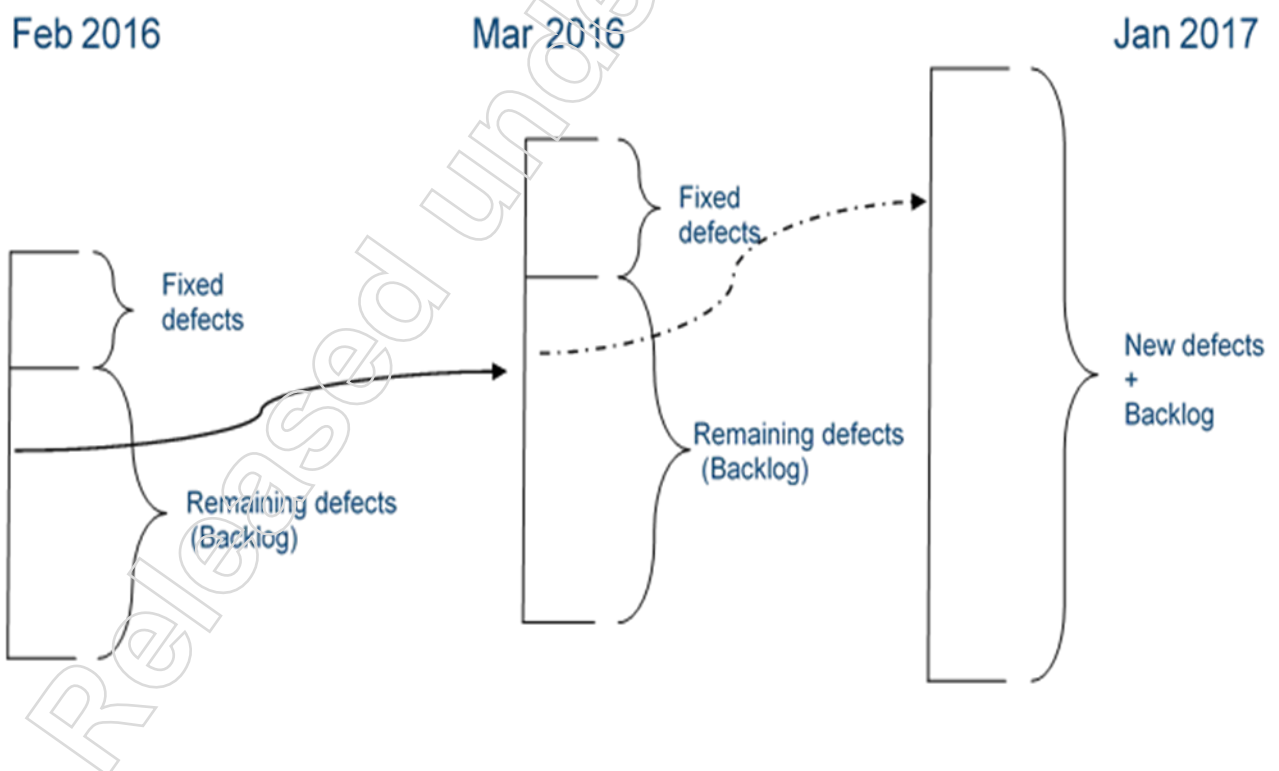
The JMRA will identify, for each road on the network:

- the specific Maintenance Activities required
- the defects and appropriate priorities for works
- approximate quantities required, and
- any necessary Routine Maintenance Minor Works.

### 2.12.2.2 Routine Maintenance Needs Assessment by using JMRA data – New approach

RMPC data such as monthly defect log, fixed defects, and defect backlog is primarily used to develop JMRA in the new approach. More accurate data with lesser resources is vital to achieve JMRA from all the districts. Following illustration explains how JMRA can be created by using previous 11 months RMPC data:

- Defect backlog (for any month) = Defect Log for the month – Fixed defects during the month.
- Defect log for the month = New defects captured in the month + Previous month's defect backlog.
- If maintenance needs for year (0) = Needs (0).
- Needs (0) = 11x fixed defects for the last 11 months of the year (0) + last month defect log of the year (0) (Jan 2017 in the illustration).
- Fixed defects mean all routine maintenance works, including planned vegetation control works, delivered during the month.
- Therefore it is reasonably accurate to calculate JMRA for the year (1) as per below equation:
  - JMRA for the year 1 = Needs (1) = needs (year 0) x Inflation – Reductions.
- Reductions = any RM Forward List of Work from previous year + percentage of Needs (1) for the road sections which has planned rehab, reseal or other works in year 1.
- The Template given in the next page can be used to enter all the required data in order to calculate JMRA.














### 3 Chapter 3: Routine Maintenance Defects Register




Routine Maintenance Element is responsible for maintaining all the routine maintenance defects identified as per IL/RT on the road corridor. There are over 100 defects in the IL/RT model. This chapter provides technical background of all routine maintenance defects. Clear understanding about the defect and cause for the defects is very important to select the appropriate maintenance activity or work program for the rectification.




**Table 3 – Routine Maintenance Defects Register**




Defect Code	Defect Name	Image	Description	Possible Causes
AA	Isolated Depressions and Bumps in Bituminous Surface		<p>Localised depressed sections within a pavement. The depression not necessarily limited to wheel paths and may extend to entire lane width. Depressions are clearly visible after a rain when they fill with water.</p> <p>Bumps is a localised upward movement in a pavement.</p>	<p>Settlement of widening trenches. Poorly compacted isolated sections of subgrade or base. Volume changes in subgrade materials due to various reason such as drying out due to tree roots, or change in moisture content of expansive soil.</p> <p>Settlement or failure of utility assets underneath the pavement.</p> <p>Poorly treated abandoned mining holes/ditches underneath/next to the pavement. Settlement due to the instability of embankment.</p>
AB	Ruts in Bituminous Surface		<p>Ruts in pavements are channelised depressions in the wheel paths, generally appears in long sections due to consolidation or lateral movement of pavement or subgrade due to traffic action.</p>	<p>Pavement age, frequent presence of overloaded vehicles and/or heavy vehicles on the pavement.</p> <p>Inadequate pavement layer thickness. Inadequate compaction in surfacing or base layers. Inadequate strength in surfacing or base layers.</p>




Defect Code	Defect Name	Image	Description	Possible Causes
AD	Shoving of Pavement or Asphalt		<p>Shoving is the formation of swells generally found in the edge of the wheel path due to traffic actions. Shoving also occurs at locations having severe horizontal stresses, such as intersections.</p>	<p>Inadequate strength in surfacing or base layers due to a number of reasons such as poor compaction, inadequate layer thickness. Poor bond between pavement layers.</p>
AF	Very Rough Surface (Isolated sections) in Bituminous Surface		<p>Localised area within a pavement that have affected the wearing course of the bituminous surface.</p>	<p>Loss, damage or corrugated surface course due to surface or underlying base course failure.</p>
AG	Potholes in Bituminous Surface		<p>Irregular bowl shaped cavity extending into pavement layers. Small, bowl-shaped cavity in the pavement surface that penetrate all the way through the surfacing layer down to the base course.</p>	<p>Untreated crocodile cracking permitting to loss the surface course. Moisture ingress to pavement layers through a cracked surface. Disintegration of base due to heavy loading. Loss/damage surfacing layer due to binder adhesion to tyres.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
AG	Delamination in Bituminous Surface		<p>Loss of a large, discrete area of the surfacing layer.</p> <p>Surfacing layer separation from the below layer is clearly visible in most situations.</p>	<p>Poor bond between upper surfacing layer and layer below due to inadequate cleaning or inadequate tack coat before placement of upper surfacing layers.</p> <p>Weakening of the bond between surfacing layer and the below layer due to various reasons such as water ingress, traffic action.</p> <p>Loss/damage surfacing layer due to binder adhesion to tyres.</p>
BG	Crocodile Cracking in Bituminous Surface		<p>Small irregular shape polygons formed generally in wheelpaths. Plate/cell sizes are normally less than 150 mm.</p> <p>Crocodile cracking is load-related and it normally starts in the wheel path as longitudinal cracking and ends up as crocodile cracking after severe distress.</p>	<p>Insufficient pavement layer thickness.</p> <p>Brittle base or wearing course due to age or cemented base.</p> <p>The failure can be due to weakness in the surface, base or sub grade or poor drainage.</p>



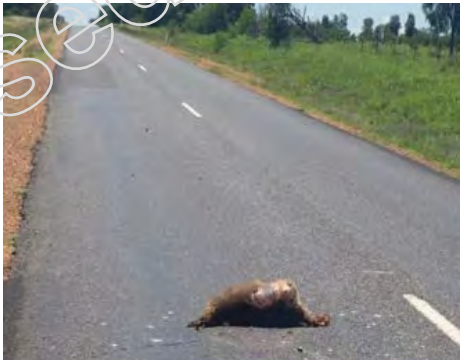
Defect Code	Defect Name	Image	Description	Possible Causes
BZ	Bituminous Surface Cracks General			
BZ	Block Cracks		<p>Block cracks generally form large interconnected rectangles on the pavement. Block cracks are not due to traffic loading.</p> <p>Block size and the shape generally reflect the joints of the base layer cause for the cracks.</p>	<p>These cracks are primarily due to shrinkage and fatigue of underlying cemented materials.</p> <p>Shrinkage of the asphalt pavement due to temperature cycles over the time.</p> <p>Joints in underlying base layer.</p>
BZ	Transverse Cracks		<p>Unconnected cracks run laterally across the pavement. Transverse cracks are non-related cracks.</p>	<p>These cracks are primarily due to shrinkage of the surfacing layer or reflection of shrinkage cracks or joints in underlying base layer.</p>
BZ	Diagonal Cracks		<p>Unconnected cracks run diagonally across a pavement.</p>	<p>Shrinkage of the surfacing layer or reflection of shrinkage cracks or joints in underlying base layer.</p> <p>Differential settlements between embankments, cuts or structures or any other. Tree roots. Service installation.</p>




Defect Code	Defect Name	Image	Description	Possible Causes
BZ	Longitudinal Cracks		<p>Crack running longitudinally along the pavement. Longitudinal cracks are non-load related and can happen singly or as series of almost parallel cracks. Some limited branching may occur.</p>	<p>These cracks are primarily due to contraction and shrinkage of the surfacing layer or reflection from the underlying base layer joints, poorly constructed surfacing layer joints or subgrade settlement.</p>
BZ	Meandering Cracks		<p>Non-load related unconnected irregular cracks on the pavement usually singly and varying in direction.</p>	<p>Reflection of a shrinkage crack in underlying pavement base material (cemented or fine granular materials). Weakening of the pavement edge through moisture entry. Differential settlements between embankments, cuts or structures. Tree roots.</p>
CA	Edge Break in Bituminous Surface		<p>Edge of the bituminous surface fretted, broken or irregular</p>	<p>Inadequate pavement width. Alignment which encourages drivers to travel on pavement edge. Inadequate edge support. Edge drop-off. Weak seal coat, loss of adhesion to base.</p>




Defect Code	Defect Name	Image	Description	Possible Causes
CC	Edge Drop-off in Bituminous Surface		<p>The vertical distance from the surface of the seal at the edge to the surface of the shoulder.</p>	<p>Inadequate pavement width. Shoulder material with inadequate resistance to erosion and abrasion. Resurfacing of pavement without resurfacing of shoulder.</p>
CC	Edge Rollover in Bituminous Surface		<p>The vertical distance from the new overlay / resealed pavement surface to the existing sealed pavement layer.</p>	<p>Inadequate new overlay / resealed pavement surface width. New overlay / resealed pavement not replaced over full width of existing pavement. New overlay edge has not appropriately constructed to make safe transition to previous surfacing layer or shoulder.</p>
DC	Flushing, Bleeding Seal	 <p style="font-size: small; color: blue;">R3A_1(Diamantina Developmental Road 23.41-03/03/2016)</p>	<p>Presence of excess bitumen in the pavement surface layer which creates patches with low skid resistance due to inadequate tyre-to-stone contact.</p>	<p>Excessive application rate of binder, with respect to stone size. Excessive prime coat being incorporated into the seal. Excess binder in underlying patch or flushed area. Penetration of aggregate into low strength base. Primer seal covered before volatiles in primer binder have evaporated.</p>



Defect Code	Defect Name	Image	Description	Possible Causes
DE	Ravelling Seal		<p>Initially fine aggregate breaks loose and leave small patches in the pavement surface. That leads to progressive disintegration of the pavement surface by loss of both binder and aggregates.</p>	<p>Insufficient adhesion between the asphalt and the aggregate. Deterioration of binder and/or stone. Inadequate compaction or construction during wet or cold weather. Hydrophilic aggregates used during the constructions.</p>
DE	Stripping Seal		<p>Removal of the course aggregate of a sprayed seal leaving the binder exposed to tyre contact - can happen at the loss of individual stones, or as the complete loss of stone in a localised area.</p>	<p>Low binder contents. Poor binder to stone adhesion (dirty or hydrophilic aggregates, without effective precoating with adhesion agent or wet stone etc.). Aging or absorption of binder. Stone deterioration. Incorrect blending of binder. Inadequate rolling before opening the seal to traffic.</p>
DZ	Other Bituminous Surface Texture Defects (i.e. Polishing Seal)		<p>Smoothing and rounding of the upper surface of the roadstone, usually occurs in the wheel tracks. Identified partly by relative appearance and feel of trafficked and un-trafficked areas. Polished areas will feel relatively smooth and will sometimes be noticeably shiny.</p>	<p>Inadequate resistance to polishing of surface aggregates, particularly in areas of heavy traffic movements, or where high stresses are developed between surface and tyres (e.g. corners, grades). Use of naturally smooth uncrushed aggregate (e.g. water-worn gravel).</p>



Defect Code	Defect Name	Image	Description	Possible Causes
EA	Loose Stones or Debris on Sealed Roadway		Debris / foreign material / loose stones on roadway.	Wind, water, vehicle or road user made transportation of loose stones or debris onto or away from the roadway surface.
EB	Grass on Sealed Roadway		Vegetation growth around kerb and channel, along fence lines and on the road pavement that create unsafe road condition.	Lack of vegetation control measures in place.
ED	Deceased Animals on Roadway		Carcass on the Roadway.	Livestock, pets & native animals struck and/or killed by vehicles travelling on Roadway.




Defect Code	Defect Name	Image	Description	Possible Causes
EE	Rough Manhole Covers and Grates (Rough Service access facility)		Manhole cover or Grates which are not vertically align with the road surface.	Damage to manhole covers and grates caused by environmental issues, lack of maintenance or a range of light, medium & heavy class vehicles travelling on Roadway. Pavement repairs or surface correction around the manhole covers or grates.
RV	Debris on Sealed Shoulders		Debris / foreign material / litter on sealed shoulders.	Wind, water, vehicle or road user made transportation of debris onto or away from the shoulder surface.
ZB	Depressions Service Reinstatement (Rough Service Trench Reinstatement)		An area of pavement surface where the original has been replaced. Reconstruction patches are usually straight sided.	Excavation for new and/or existing services.

Defect Code	Defect Name	Image	Description	Possible Causes
GA	Insufficient (Adverse) Crossfall in Unsealed Shoulder		Insufficient camber or slope of the unsealed shoulder from the edge line.	Initial insufficient crossfall during the construction. Lack of shoulder maintenance.
GB	Excessive Crossfall in Unsealed Shoulder		Excessive camber or slope of the unsealed shoulder from the edge line.	Erodible shoulder surfacing materials. Excessive pavement thickness. Inadequate compaction in sub-base or subgrade. Inadequate strength (Stability) in sub-base or subgrade.
GC	Lateral Scour Channels in Unsealed Shoulders		Steep, irregularly sided, relatively linear feature, commonly in the direction of maximum slope or along a wheelpath.	Erodible surfacing materials. Concentration of water flows owing to: a) blocked or inadequate road drainage system b) rutting and corrugations.

Defect Code	Defect Name	Image	Description	Possible Causes
GE	Hazardous Dry Loose Material in Unsealed Shoulders		<p>Unbound fine or coarse gravel materials on the pavement surface. Can occur as a variable thickness layer (sheet) over the whole surface, or in narrow continuous mounds between wheelpaths or lanes, or between the outer wheel path and table drains.</p>	<p>Ravelling of weakly bound pavement materials owing to environment composition (e.g. grading, plasticity) or lack of compaction. Wind or water transportation of materials onto or away from the roadway surface.</p>
GH	Ruts in Unsealed Shoulders		<p>Longitudinal and relatively smoothly shaped deformation on the shoulder. Wet weather ruts tend to be steep sided and reflect the impression of the tyre into the road surfaces.</p>	<p>Inadequate wet strength of subgrade or pavement layer. Wear by attrition due to traffic or erosion of surface material. Excessive loose material. Traffic compaction of pavement or subgrade.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
GG	Debris on Unsealed Shoulder		Foreign material or debris on unsealed shoulder.	Wind, water or manmade transportation of debris onto or away from the shoulder surface.
GK	Reduced Shoulder Width in Unsealed Shoulders		Inadequate shoulder width to accommodate road user safety or pavement integrity.	Inadequate initial compaction. Variable quality of paving materials. Reduction of shoulder design width.
GL	Potholes in Unsealed Shoulder		A bowl shaped depression in the unsealed shoulder. Potholes can have steep or gently sloping sides and be of irregular shape.	Ponding of water. Blocked or inadequate road drainage system. Excessive weakening of pavement by moisture. Inadequate initial compaction. Variable quality of paving materials.



Defect Code	Defect Name	Image	Description	Possible Causes
GZ	Shoulder Defects, General		Any shoulder defects likely to create unsafe road condition.	Accumulation of foreign materials or debris on the shoulder. Lack of shoulder maintenance.
GZ	Coarse surface		Bulge of very coarse aggregate or rock (particle size usually greater than 75 mm) from the shoulder surface, some loose on surface.	Attrition or erosion of coarse pavement material. Accumulation of foreign materials or debris on the shoulder.




Defect Code	Defect Name	Image	Description	Possible Causes
HD	Wheel Ruts in Unsealed Roadways		<p>Longitudinal and relatively smoothly shaped deformation at the wheelpaths. Wet weather ruts tend to be steep sided and reflect the impression of the tyre into the road surfaces.</p>	<p>Inadequate wet strength of subgrade or pavement layer. Wear by attrition due to traffic or erosion of surface material. Excessive loose material. Traffic compaction of pavement or subgrade.</p>
HE	Shoving in Unsealed Roadways		<p>Plastic bulging of pavement surface commonly occurring in association with depression or rutting.</p>	<p>Plastic deformation of pavement or subgrade.</p>
HF	Insufficient Crossfall in Unsealed Roadways		<p>Insufficient camber or slope from the crown of the road to sides of the road.</p>	<p>Erodible surfacing materials. Inadequate initial compaction. Variable quality of paving materials. Poor drainage system allowing water to flow on the road.</p>




Defect Code	Defect Name	Image	Description	Possible Causes
HG	Excessive Crossfall in Unsealed Roadways	<p>February 20, 2017 11:29 AM                      -21.691378, 139.552861                      Cloncurry - Dajarra Road   7708   165.46</p> 	Excessive camber or slope from the crown of the road to sides of the road.	Excessive pavement thickness due to design and/or construction failure. Inadequate compaction in sub-base or subgrade. Inadequate strength (Stability) in sub-base or subgrade.
HM	Potholes in Unsealed Roadways	<p>November 30, 2016 9:46 AM                      -16.525829, 143.923382                      Burke Dev Road   89B   455 64</p> 	A bowl or irregular shaped cavity extending into the pavement layers.	Ponding of water. Excessive weakening of pavement by moisture, traffic action or environmental actions. Inadequate initial compaction.









Defect Code	Defect Name	Image	Description	Possible Causes
HN	Insufficient Formation Height Above Natural Surface		Insufficient formation height above natural surface. Loss of formation shape.	Erodible surfacing materials. Insufficient pavement thickness. Inadequate compaction in sub-base or subgrade. Inadequate strength (Stability) in sub-base or subgrade.
HP	Loss of Pavement Running Course		Loss of pavement running course due to traffic or environmental actions.	Erodible surfacing materials. Insufficient pavement thickness. Inadequate compaction in sub-base or subgrade. Inadequate strength (Stability) in sub-base or subgrade.




Defect Code	Defect Name	Image	Description	Possible Causes
HZ	Unsealed roadway defects, general			
HZ	Corrugations		<p>Transverse undulations, closely and regularly spaced on the pavement.</p>	<p>Inadequate quality of base material for prevailing climatic and traffic conditions. Inadequate compaction in pavement layers. Most common in dry conditions.</p>
HZ	Scour channels		<p>Steep, irregularly sided, relatively linear feature, commonly in the direction of maximum slope or along a wheelpath.</p>	<p>Erodible surfacing materials. Concentration of water flows owing to:</p> <ul style="list-style-type: none"> <li>a) blocked or inadequate road drainage system</li> <li>b) rutting and corrugations.</li> </ul>




Defect Code	Defect Name	Image	Description	Possible Causes
HZ	Loose material		<p>Unbound fine or coarse gravel materials on the pavement surface. Can occur as a variable thickness layer (sheet) over the whole surface, or in narrow continuous mounds between wheelpaths or lanes, or between the outer wheel path and table drains.</p>	<p>Loosening of weakly bound pavement materials due to environmental or traffic actions. Wind or water transportation of materials onto or away from the roadway surface.</p>
HZ	Course surface		<p>Protrusion of very coarse aggregate or rock (particle size usually greater than 75 mm) from the pavement surface, some loose on surface.</p>	<p>Attrition or erosion of fines from coarse pavement material. Exposure of rock subgrade.</p>
KZ	Surface Drain Defects		<p>Blocked or defect of surface drain causing or likely to cause flooding to the roadway or private property.</p>	<p>Blocked or defect of surface drain which restricts flow or causes grade change.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
LA	Drainage Obstructed		Any drainage obstruction creating water ponding and not free draining on pavement edge or on shoulder (free draining means water disperses without action of traffic)	Damaged or missing sections of drain. Blocked by debris, stones, roots and branches caused by environmental or human intervention.
LP	Silt or Debris on Floodway Sections		Any silt or debris encroaching into floodway sections of roadway.	Wind, water or manmade transportation of silt or debris onto or away from the floodway surface.
LZ	Culvert, Pipe, Pit & Floodway Defects, Other			
LZ	Damaged or missing drainage pit lids, surrounds, grates, in pedestrian areas or traffic lanes.		Damaged or missing drainage pit lids, surrounds, grates, in pedestrian areas or traffic lanes.	Pit lids, surrounds, grates moved or damaged due to heavy flows or manmade actions. Pipe, Culvert, Pit, Floodway and associated drainage works not constructed / installed in accordance with approved design. Proper Inspections during construction & maintenance period not carried out.




Defect Code	Defect Name	Image	Description	Possible Causes
LZ	Cracking in culvert components or visible movement.		Cracking > 5 mm in culvert components or visible movement. Cracking in end structures.	Traffic, environmental or manmade actions on the culvert or culvert components. Inspections during construction & maintenance period not carried out.
LZ	Misalignment/ separation of culvert components.		Misalignment and /or separation of culvert components.	Settling or movement of the culvert components due to traffic loading, environmental actions or aging. Culvert and associated drainage works not constructed / installed in accordance with approved design. Inspections during construction & maintenance period not carried out.
LZ	Corrosion/ loss of section of steel components (including reinforcement in concrete structures).		Corrosion/ loss of section of steel components. Peeling off the reinforcement cover in concrete structures.	Peeling off concrete cover due to extended cracking in the culvert components. Pipe, Culvert, Pit, Floodway and associated drainage works not constructed / installed in accordance with approved design. Proper inspections during construction & maintenance period not carried out.

Defect Code	Defect Name	Image	Description	Possible Causes
LZ	Culvert or end structure silted up		Visible movement of culvert, component or end structure.	Culvert blocked by debris, stones, roots and branches caused by environmental or human intervention.
LZ	Scouring around culvert components.		Scouring around culvert components.	Culvert blocked by debris, stones, roots and branches caused by environmental or human intervention. Outlet not free flowing.
YA	Cracks in Concrete Roadway			
YA	Block Cracks		Interconnected cracks forming a series of blocks, approximately rectangular in shape, commonly distributed over the full pavement. Cell sizes are usually greater than 1 m.	Generally a combination of traffic loading and loss of support. Insufficient slab thickness. Loss of sub-base or subgrade support. Subgrade settlement.




Defect Code	Defect Name	Image	Description	Possible Causes
YA	Longitudinal Cracks		<p>Unconnected crack running longitudinally along the pavement. Can occur singly or as series of almost parallel cracks.</p>	<p>Generally a combination of traffic loading and loss of support. Differential settlement. Lateral shrinkage associated with excessive slab width. Longitudinal joint too close to traffic lane. Longitudinal joint too shallow. Insufficient slab thickness.</p>
YA	Transverse Cracks		<p>Unconnected crack running transversely across the pavement/slab.</p>	<p>Normal shrinkage. Shrinkage of slab during curing, associated with excess slab lengths or joints sawn too late. Insufficient slab thickness. Rocking of slab.</p>
YA	Corner Cracks		<p>A crack that intersects the slab joints near the corner. A crack extending diagonally from a longitudinal edge to a transverse joint.</p>	<p>Severe corner stresses caused by load repetitions combined with a loss support, poor load transfer across the joint. Insufficient slab thickness. Loss of sub-base or subgrade support.</p>




Defect Code	Defect Name	Image	Description	Possible Causes
YB	Spalling of Joints - Concrete Pavement		Cracking, breaking or chipping of joint/crack edge.	<p>Reduces slab contact area and provides incompressible materials fill the joint or crack. Severe corner stresses caused by load repetitions combined with a loss support, poor load transfer across the joint.</p> <p>Corrosion of reinforcing or dowel bars. Misalignment of dowel bars. Sub-base movement. Poor quality concrete aggregate.</p>
YB	Joint Sealant Defects in Concrete Pavement		Loss and/or cracking of the seal resulting in foreign material in the joints. Extrusion of sealant leaving mound at the joint.	<p>Ageing and weathering of sealant. Poor preparation or quality of sealant (for example, overheating of poured sealant). Lack of adhesion of sealant to joint wall. Poor cyclic tension and compression properties. Too much sealant in the joint. Poor shape of sealing joint. Insufficient sealant in the joint. Pumping. Slab rocking.</p>
YC	Potholes in Concrete Pavement		A bowl shaped depression in the pavement surface. A depression or broken part of the slab.	<p>Can indicate the localised construction defect such as placement of reinforcement too close to the surface. Pavement cracking and disintegration of concrete. Localised cracks inside the openings of reinforcement. Local overworked area.</p>




Defect Code	Defect Name	Image	Description	Possible Causes
YD	Sunken Concrete Pavement Slab (Stepping)		A difference in elevation across a joint or crack. Usually the approach slab is higher than the leave slab due to pumping.	Stepping is commonly due to slab settlement, slab pumping, curling and warping. Poor compaction of sub-base layers. Poor subgrade support. Differential settlement of subgrade. Loss of fines from sub-base or subgrade through pumping.
YE	Patches in Concrete Pavement		An area of pavement that has been replaced with new material to repair the existing pavement.	Previous localised pavement deterioration that has been removed and patched. Correction of surface or structural deficiencies. Reinstatement after excavation for services.
MZ	Subsoil Drain Defects		Any non-functional, blocked or inoperable decayed element of the subsoil drainage system causing reduced flow capacity or drainage integrity.	Damaged or missing sections of subsoil drain. Blocked by soil, stones, roots and any other caused by environmental or human intervention.




Defect Code	Defect Name	Image	Description	Possible Causes
NC	Grass not in sight line		<p>Excessive roadside vegetation not in the sightline however may impact on drainage system and/or may create fire hazard in rural and urban areas.</p>	<p>Roadside vegetation not maintained and encroaches into the road reserve.</p>
NE	Large Trees and Shrubs Close to Roadway		<p>Unattended trees grown in road reserve close to the trafficked lanes.</p>	<p>Ongoing maintenance not carried out in accordance with departmental requirements &amp; standards.</p>
NF	Declared Plants		<p>Identification of plants declared under the legislation have been ranked on the basis of: declared status, propensity for dispersion through the road Network and feasibility of treatment.</p>	<p>Declared Plants allowed to propagate throughout the Network.</p>




Defect Code	Defect Name	Image	Description	Possible Causes
NG	Trees or Limbs Likely to Fall on Roadway		<p>Trees, branches, and vegetation that intrudes in the traffic envelope. Vegetation that impacts the normal operation of vehicles (including cycles) or may impact vehicles.</p>	<p>Ongoing maintenance not carried out in accordance with departmental requirements &amp; standards.</p>
NH	Grass, Trees and Shrubs in Sight Line, in Drain or Obstructing Roadside Furniture		<p>Any vegetation obscuring sight distance, minimum stopping distance or obstructing road furniture or drainage system.</p>	<p>Ongoing maintenance not carried out in accordance with departmental requirements &amp; standards. Roadside vegetation not maintained and encroaches into the road reserve.</p>
NK	Landscaping Defects		<p>Any road side landscaping that has impact on road functionality.</p>	<p>Neglected landscaping or ongoing maintenance not carried out in accordance with departmental requirements &amp; standards.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
NL	Grass Growth on Medians		Visible grass growing in medians that has impact on road usability or aesthetic performance.	<p>Ongoing vegetation maintenance not carried out in accordance with departmental requirements &amp; standards.</p> <p>Sweeping and maintenance on road side medians not carried out appropriately.</p>
PA	Litter, Below Standard Amenity Furniture in Rest Area		Unusable amenity, furniture or overflowing litter bins in rest areas.	<p>Person or persons leave or abandon litter and/or rubbish within the Rest Area.</p> <p>Timely litter bins emptying, maintaining rest area amenity and furniture process not in place.</p>
PB	Dead Trees or Limbs in Rest Area		Dead trees, trees, overhanging branches or broken limbs most likely to fall on rest areas.	Ongoing maintenance not carried out in accordance with departmental requirements & standards.




Defect Code	Defect Name	Image	Description	Possible Causes
PC	Routine amenity servicing		Damaged, vandalised or cleanliness facility unusable.	Person or persons leave or abandon litter and/or rubbish, damage or vandalise the Rest Area Facility.
PZ	Rest Area Defects Other		Any rest area defects, that are not covered in above, make facility unsafe or unusable.	Ongoing maintenance not carried out in accordance with departmental requirements & standards.
RA	Unauthorised Signs		Unauthorised signs erected within the road corridor	Signs installed by unauthorised person or persons without proper approval.




Defect Code	Defect Name	Image	Description	Possible Causes
RB	Unstable Batter/ Embankment, Missing Material		Cut or Embankment with cracks, erosion or instability that may create dangerous or unsafe road environment.	Material of poor quality, insufficient compaction of material, material scoured away due to excessive water run-off. Unstable batter or cut due wet weather conditions.
RC	Damaged Concrete or Paving Blocks		Damaged, displaced concrete or paving blocks in pedestrian areas, road environment.	Damage to concrete or pavement block caused by environmental, human or vehicular intervention.




Defect Code	Defect Name	Image	Description	Possible Causes
RD	Loose earth, Rock in Sight Line		Loose earth, rock or any materials in sight Line within the road corridor.	Earth, rocks or material on the road reserve due to environmental or human intervention. Materials scoured away due to excessive water run-off.
RE	Litter on Road Reserve		Litter dumped on the road reserve.	Person or persons leave or abandon litter and/or rubbish within the road reserve.
RF	Graffiti		Any graffiti considered offensive and highly visible to public. Graffiti affects road signs legibility.	Person or persons graffiti signs, buildings, fences, structures, vehicles with highly visible or offensive material.



Defect Code	Defect Name	Image	Description	Possible Causes
RG	Scoured Areas on the Road Reserve		<p>Steep, irregularly sided, relatively linear feature, commonly in the direction of maximum slope or along a wheelpath on unsealed roads.</p>	<p>Water flows over the road reserve due to blocked culverts caused by environmental or human intervention. Lack of proper drainage facility.</p>
RH	Abandoned Vehicles		<p>Abandoned vehicle or equipment in road reserve.</p>	<p>Person or persons leave or abandon vehicle in road reserve.</p>
RK	Illegal Accesses		<p>An access that doesn't comply with the <i>Transport Infrastructure Act 1994</i> (TIA) to lawfully construct, maintain and use a vehicle property access onto a State-controlled road.</p>	<p>Illegal access to State controlled road installed by unauthorised person or persons without proper approval.</p>



Defect Code	Defect Name	Image	Description	Possible Causes
RL	Illegal Turning Areas		<p>A turning area that doesn't comply with the <i>Transport Infrastructure Act 1994</i> (TIA) to lawfully construct, maintain and use a vehicle turning area onto a State-controlled road.</p>	<p>Illegal turning area onto State controlled road installed by unauthorised person or persons without proper approval.</p>
RM	Landscape Vegetation Defects		<p>Landscape Vegetation in any visually sensitive locations is likely to compromise road user safety.</p>	<p>Fallen trees or tree branches to road reserve due to severe weather conditions. Ongoing maintenance not carried out in accordance with departmental requirements &amp; standards.</p>
RN	Damaged Qld Dept. of Main Roads Fencing		<p>Missing or damaged Transport and Main Roads fencing in road reserve.</p>	<p>Fencing is missing or damaged due to environmental, human or vehicular intervention. No proper periodic maintenance program in place. The damage to the fence due to environmental effects.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
RP	Damaged Qld Dept. of Main Roads Noise Barrier Fencing		Missing or damaged departmental Noise Barrier Fencing in road reserve.	Noise Barrier Fencing is missing or damaged due to environmental, human or vehicular intervention. No proper periodic maintenance program in place.
RR	Damaged or Unserviceable Bus Shelters		Bus shelter is unserviceable or damaged.	Bus Shelter is unserviceable or damaged due to environmental, human or vehicular intervention. No proper periodic maintenance program in place.
RT	Sediment Pond Defects General		Silted or unserviceable Sedimentation Pond Facilities.	Sediment pond not acting in accordance with design. No proper periodic maintenance program in place.

Defect Code	Defect Name	Image	Description	Possible Causes
RW	Damaged Roadside Weighing Area		Damaged or unserviceable Roadside Weighing Area.	<p>Roadside Weighing Area is unserviceable or damaged due to environmental, human or vehicular intervention.</p> <p>No proper periodic maintenance program in place.</p>
SA	Missing, Damaged or Dirty Regulatory, Warning or Hazard Sign		Missing, damaged or dirty signs.	Signage has become dirty due to environmental issues, damaged by environmental, human or vehicular intervention and/or missing due to human or vehicular intervention.
SB	Missing or Defective Guide Sign		Any Guide sign dirty or damaged beyond repair or if after cleaning, sign is still not legible.	Signage is missing, dirty or damaged due to environmental, human or vehicular intervention.

Defect Code	Defect Name	Image	Description	Possible Causes
SC	Sign Misalignment		<p>Sign is on a noticeable lean, inclined to line of sight or reflecting glare from vehicles lights at night.</p>	<p>Signage has become misaligned due to environmental, human or vehicular intervention.</p>
TA	Guide Post or Delineator Defects		<p>Any missing guide posts in a hazardous location. The post is on a noticeable lean or there is an inability at night to see delineators ahead due to guide post location or any missing delineators on guardrail installation. (Above relates to observation after cleaning the post and delineator, on low beam).</p>	<p>Guide post or delineators is missing or damaged due to environmental, human or vehicular intervention.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
TB	Reference Marker Defects		Reference Marker not visible or missing	Reference Marker is missing or damaged due to environmental, human or vehicular intervention.
TC	Guardrail, Fencing and Concrete Barrier Structural Defects		Damaged and/or missing guardrail, guardrail components, fencing or concrete barriers.	Guardrail, Fencing or Concrete Barrier is missing or damaged due to environmental, human or vehicular intervention.

Defect Code	Defect Name	Image	Description	Possible Causes
TD	Kerb or Dyke Defects		Continuous kerbing damaged or missing.	Kerb or Dyke is missing or damaged due to environmental, human or vehicular intervention.
TE	Guardrail, Fencing and Concrete Barrier Appearance Defects		Damaged and/or missing guardrail, guardrail components, fencing or concrete barriers.	Guardrail, Fencing or Concrete Barrier is missing or damaged due to environmental, human or vehicular intervention.



Defect Code	Defect Name	Image	Description	Possible Causes
UA	Missing or Faded Painted Road Lines and Markings		Road marking are faded, missing, incomplete or unsatisfactory.	Road Lines and Markings are missing or damaged due to environmental, human or vehicular intervention.
UE	Raised Pavement Marker Defects		Loss of, or loss of reflectivity (%) of markers or any consecutive markers are missing.	Raised Pavement Marker is missing or damaged due to environmental, human or vehicular intervention.

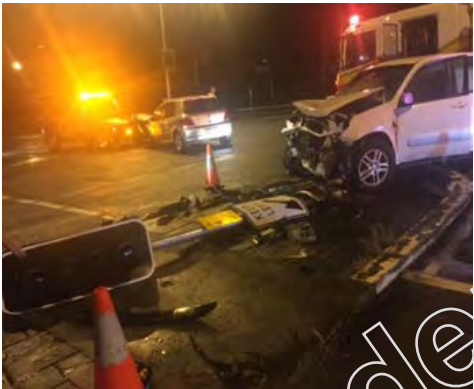
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Defect Code	Defect Name	Image	Description	Possible Causes
VA	Traffic Signal Controller Defects		<p>Flashing Yellow:</p> <ul style="list-style-type: none"> <li>• Site blacked out</li> <li>• Confusing signal displays</li> <li>• Controller knocked down</li> <li>• Stuck in phase/ not cycling</li> <li>• Safety critical times too short</li> <li>• Skipping phase, not serving vehicle or pedestrian demands</li> <li>• Train (Heavy Rail) interface not operating correctly</li> <li>• Tram (Light Rail) interface not operating correctly</li> <li>• Two lamps out or more per signal group failure</li> <li>• Twisted &amp; non conflicting lantern arrangement;</li> <li>• Lamps out (other than pedestrian "Don't Walk" lamps);</li> <li>• Visors or louvres missing or damaged;</li> <li>• Lenses damaged;</li> <li>• Missing/defaced labelling.</li> <li>• Security access lock damaged</li> <li>• facility switch damaged / jammed / inoperable</li> <li>• conflicting signal groups activated (conflict monitor fault)</li> <li>• loop detector module not operational.</li> </ul>	<p>Broken or operationally degraded traffic signal controller due to one or a number of internal components being compromised. Access compromised as a result of vandals.</p>




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Defect Code	Defect Name	Image	Description	Possible Causes
VB	Traffic Signal Lantern Defects		<p>Flashing Yellow:</p> <ul style="list-style-type: none"> <li>• Confusing signal displays</li> <li>• Misaligned lantern causing confusing signal displays</li> <li>• Damaged or open door on lantern</li> <li>• Damaged lantern or lantern parts at risk of falling</li> <li>• Twisted &amp; non Confusing lantern arrangement</li> <li>• Missing or damaged hardware (i.e. missing pole and/or associated hardware)</li> <li>• Lamp outages</li> <li>• Visors, cowls, louvers or target boards missing or damaged</li> <li>• poor lantern aiming</li> <li>• loss of displays.</li> </ul>	Broken or operationally degraded signal lanterns.
VC	Traffic Signal Electrical Defects		<p>Flashing Yellow:</p> <ul style="list-style-type: none"> <li>• Damaged or missing finial cap/traffic signal mast arm junction box/ JU pole terminal panel cover/controller cabinet door</li> <li>• Hanging or damaged cables</li> <li>• Exposed terminals wires/cables</li> <li>• Audio tactile unit fault.</li> <li>• Excessive heat load or high impedance joints (poor electrical conductivity) as detected through thermal imaging</li> <li>• any electrical touch potential present on poles</li> </ul>	Electrical faults or damage of the traffic signal.



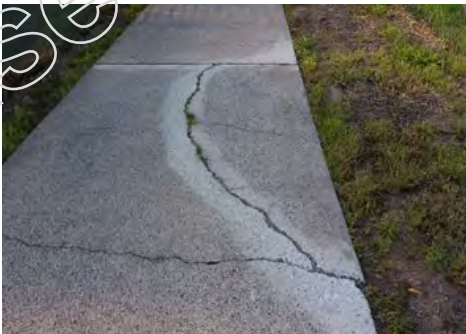
Defect Code	Defect Name	Image	Description	Possible Causes
VD	Traffic Signal Hardware Defects		<ul style="list-style-type: none"> <li>• Confusing signal displays</li> <li>• Damaged and dangerous post/pole (including knockdowns)</li> <li>• Controller knocked down;</li> <li>• Damaged push button</li> <li>• Push button not operating and not placing a demand</li> <li>• Stuck in phase/ not cycling</li> <li>• Skipping phase, not servicing vehicle or pedestrian demands</li> <li>• Trivision sign fault causing confusion</li> <li>• Audio tactile unit fault</li> <li>• Misaligned &amp; non confusing lantern arrangement</li> <li>• Missing or damaged hardware (i.e. missing pole and/or associated hardware).</li> <li>• Lamp outages</li> <li>• Visors, louvers or target boards missing or damaged</li> <li>• poor lantern aiming</li> <li>• loss of displays</li> <li>• failed inductive loops or loop feeder cables.</li> <li>• Finish, controller obviously out of plumb, pole obviously out of plumb, signal hardware out of plumb, Tidiness, Cleanliness, and so on</li> <li>• Pedestrian walk phase lanterns failed / mis-aligned.</li> </ul>	Broken or missing traffic signal hardware.




Defect Code	Defect Name	Image	Description	Possible Causes
VE	Traffic Signal Defects other		<ul style="list-style-type: none"> <li>• Vehicle detector is manually or through fault ,locked-on operating and placing a traffic phase demand</li> <li>• Heavy Rail detector locked on or not operating</li> <li>• Queue detection equipment on ramp metering (on Ramps &amp; Off Ramps</li> <li>• UPS Failure</li> <li>• Misaligned &amp; non confusing lantern arrangement</li> <li>• Missing or damaged hardware (i.e. missing pole and/or associated hardware).</li> <li>• Lamp outages</li> <li>• Loss of displays</li> <li>• Failed inductive loops.</li> <li>• Finish, controller obviously out of plumb, pole obviously out of plumb, signal hardware out of plumb, Tidiness, Cleanliness, etc.</li> <li>• Detector failures causing phases to be called and/or extended unnecessarily</li> <li>• Communications failure</li> <li>• Timing fault (not safety critical times)</li> <li>• Button failures causing phases to be called and/or extended unnecessarily Any defect such as given</li> <li>• Traffic Signal pedestal damaged</li> <li>• loss of grouting on poles</li> </ul>	<p>Below have potential to cause dangerous or hazardous situation.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
VG	Electrical Cables Defects		<p>Unsafe and/or operationally degraded electrical cable pit or missing/damaged electrical cable pit lid located in areas of road reserve not accessible by pedestrians.</p>	<p>Cable pits damaged by environmental, human and vehicular impacts.</p>
VH	Inductive Loop Defects (Not at a traffic signal installation)		<p>Broken or operationally degraded Inductive loop:</p> <ul style="list-style-type: none"> <li>• damaged pits or conduits.</li> </ul>	<p>Cable pits damaged by environmental, human and vehicular impacts.</p>
VJ	Emergency Phone Defects		<p>Unsafe, broken and/or operationally degraded emergency phone site.</p>	<p>a) Handset off holder b) Missing, damaged or faulty hardware.</p>


Defect Code	Defect Name	Image	Description	Possible Causes
QA	Lighting switchboard defects		<p>Unsafe, unrestricted, broken and/or operationally degraded lighting switchboard. (e.g. failure of switchboard, door open or pillar cover dislodged).</p>	<p>Lighting switchboard is missing or damaged due to environmental, human or vehicular intervention.</p>
QB	Lighting hardware defects		<p>Unsafe, missing, broken and/or operationally degraded lighting hardware. (e.g. pole knocked down, luminaire visor/diffuser not secure/hanging Or light is displaced/ re-aligned).</p>	<p>Lighting hardware is missing or damaged due to environmental, human or vehicular intervention.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
QC	Lighting electrical defects		<p>Pole or pole hatchway missing, exposed cables in pit, and/or road lighting circuit failure (repairs to circuit in field):</p> <ul style="list-style-type: none"> <li>• Damaged pits or conduits</li> </ul>	<p>Cable pits damaged by environmental, human and vehicular impacts.</p>
QD	Lighting general defects		<p>Failed navigation lights connected to a public lighting switchboard.                      Vegetation shading road lighting.                      Individual road lighting defect regarding luminaire or mounting e.g. outreach not correctly aligned/perpendicular, luminaire not horizontal or a single lamp failure (excluding flag or stand-alone emergency stopping bay lighting).                      Any graffiti, vandalism or unauthorised banners.</p>	<p>Wind damage, vegetation obstruction.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
WD	Bridge Defects General - Debris on Bridges		<p>Debris on bridges that is likely to interrupt the drainage facility, operation of expansion joints or affect the usability of the bridge. Debris on overpass that can be used as projectiles that can be hazardous to travelling public or pedestrians.</p>	<p>Bridge defects caused by environmental, human or vehicular intervention.</p>
ZZ	Emergency Call Out		<p>Any reported emergency incidents that likely to create an unsafe situation to road users or likely to damage the road asset.</p>	<p>Ongoing maintenance &amp; testing not carried out in accordance with departmental requirements &amp; standards.</p>
JA	Bike path/lanes Surface defects		<p>Accumulation of loose stones, sand or debris on the bike path. Potholes / delamination / isolated slab failure on the Bike path. Shoving, depressions, rutting, lumps or ridges on the Bike path.</p>	<p>Bike Path / Lane Surface is missing or damaged due to environmental, human or vehicular intervention.</p>

Defect Code	Defect Name	Image	Description	Possible Causes
JB	Vegetation defects - Bike paths		<p>Trees, overhanging branches or broken limbs most likely to fall on bike path to be a hazard. Unwanted trees and shrubs or grass obscures in sightlines.</p>	<p>Ongoing maintenance not carried out in accordance with departmental requirements &amp; standards.</p>
JC	Drainage defects - Bike paths		<p>Culverts, pipes and pits defects likely to impact on the integrity of the unit. Obstructed drainage cause water ponding on or adjacent to bike path or private property.</p>	<p>Drainage system not acting in accordance with design. Periodic maintenance not carried out in accordance with departmental guidelines.</p>
JD	Bike path Defects General		<p>Damaged bike path fencing creates unsafe riding environment to cyclists. Missing or defective regulatory, warning or guide signs.</p>	<p>Bike Path / Lane is damaged due to environmental, human or vehicular intervention.</p>



Defect Code	Defect Name	Image	Description	Possible Causes
XA	Inspection Needed		<p>Additional inspection needed by complaints, specific reason or incidents.</p>	<p>Any issue or defect not already covered in this document.</p>

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## 4 Chapter 4: Routine Maintenance Intervention Level and Response Time (IL/RT)

### 4.1 IL/RT model parameters

#### 4.1.1 Road Categories

With the current levels of maintenance funds, keeping uniform intervention levels and response times across the whole Network is considered unsustainable and with the move to a risk management approach is also considered incorrect. From a road management perspective, the same defect represents a higher risk on a high traffic road than a low traffic road. Therefore it is logical to have a higher maintenance standards for road sections where the traffic volumes are high.

The adoption of road categories will ensure:

- Improved consistency across districts
- A transparent, rigorous and rational process for ranking roads for routine maintenance purposes
- Provide an ability to develop strategies, funding distributions, condition analysis and reporting for roads of similar importance
- Ease in developing intervention standards, prioritisation and funding flow
- Tighter intervention standards for high end roads
- Improved layout and ease in understanding, and
- Ease in comparison.

Five major road maintenance categories are adopted across whole of the Queensland State Controlled Road Network based on Annual Average Daily Traffic (AADT). Those road categories are:

- Road Category A: AADT  $\geq 30,000$
- Road Category B: AADT  $\geq 10,000$  &  $< 30,000$
- Road Category C: AADT  $\geq 500$  &  $< 10,000$
- Road Category D: AADT  $\geq 100$  &  $< 500$
- Road Category E: AADT  $< 100$

#### 4.1.2 Corporate Priorities

- **Priority 1 – Hazard**

Defects where the likelihood of harm occurring is greater than a safety defect as determined by the hazardous defect identification procedure.

- **Priority 2 – Ordered Works**

Work undertaken in accordance with the Principal's order and directions.

- **Priority 3 – Safety**

Defects that are considered to be of a safety nature.

- **Priority 4 – Legislative**

Defects that are required to be repaired by legislation.

- **Priority 5 – Preventative**

Defects that if treated will reduce asset's rate of deterioration.

- **Priority 6 – Appearance/Usability**

Defects that are considered a nuisance or unsightly.

Section 2.1 provides further information about the defect corporate priorities.

#### **4.1.3 Initial Intervention Level**

Defect's minimum physical dimension or minimum severity, as given in the IL/RT model, that qualifies a defect being considered as routine maintenance defect. Such defects must be logged during the RMPC inspection cycle as indicated in the RMPC quality plan.

#### **4.1.4 Upper Intervention Level**

Maximum desirable physical dimensions or severity of a defect that can be left on the Network without rectifying unless the defect is a hazard. All the defects must be rectified before breaching the upper intervention level under unconstrained budget. In the case of constrained budget, defects must be prioritized as per IL/RT criteria and rectified.

Upper Intervention Levels indicate the maximum undesirable condition for each defect requiring a Contractor to fix the defect before breaching the upper intervention level. However, in some locations on the network, maintenance should be undertaken for obvious safety reasons before the Upper Intervention Level is reached. Hazardous defect in the IL/RT model is an example for that.

These defect intervention levels are set out in IL/RT model in Chapter 4.

These intervention levels must be used by the Contractor for recording and rectifying the defects that will be subsequently included into the Forward List of Works as an aid to work planning.

#### **4.1.5 Response Time**

It is required that Defects are to be logged once that defect's initial intervention level is reached and are to be fixed before breaching its upper intervention level. However due to lack of funding or other practical reasons, some defects may not be rectified before breaching their upper intervention limit. Such defects are to be fixed within their Response Time.

Response time starts when a defect has reached to its upper intervention limits. If a defect has reached to its upper intervention limit between two inspection cycles, then the response time starts from the latest inspection date. Therefore fulfilling Network inspection as per the agreed frequency is critically important.

#### **4.1.6 Defect code**

Two digit defect code is used to distinguish the routine maintenance defects in the IL/RT model. Below are examples for defect codes used in IL/RT model:

- AA - Isolated Depressions
- DE - Ravelling or Stripping Seal
- HD - Wheel Ruts in Unsealed Roadways

#### 4.1.7 Defect sub code

Defects are grouped into further level by considering their physical dimensions or severity level. There are six sub defects types in the IL/RT model:

- H: defect in hazardous level
- P: defect in Principal ordered Works
- I: defect within intervention levels
- R: defect in response time
- M :defect in monitoring stage
- W: defect to be treated under unsealed roads Work Program

Below are the examples for typical sub defects:

- AA1\_H: Isolated depression in hazardous level
- DE2\_P: Ravelling or Stripping within Principal ordered Works
- AA1\_I: Isolated depression within intervention levels
- AA2\_R: Isolated depression within response time
- AA2\_M: Isolated depression in monitoring stage
- HD2\_W: Wheel ruts in unsealed roadways to be treated under unsealed roads Work Program

#### 4.1.8 Defect Scoring

All the defects captured during the road inspections are to be prioritized and treated as per corporate priorities given in the IL/RT model. Practically this is a difficult task to carry out due to limited routine maintenance funds. For example; once the defects have been prioritized, all the safety defects (corporate priority 3) may not be fixed due to lack of funding and as a result, contractor doesn't know which safety defects should be repaired as all of them have a same priority level.

Therefore it is essential to extend the defect prioritising methodology to prioritise the defects that sit within the corporate priority. The Defect Scoring methodology in IL/RT model enable contractors to prioritize defects found within the corporate priority.

Defect ranking score which is called Corporate Score is the combination of Corporate Weighting, Field Weighting and Location Score as given below:

$$\text{Corporate Score} = \text{Corporate weighting} + \text{Field weighting} + \text{Location Score}$$

##### **Corporate weighting**

Corporate weighting is based on road user safety and the appropriate weighting is allocated to all the defects in the IL/RT model. Corporate weighting can vary from 1 to 5.

##### **Field Weighting**

Field weighting should be allocated by the road inspectors during the defect logging in the road inspection. The defects' impact on road deterioration is the sole influence factor for field weighting. Field weighting varies from 1 to 4 as given below:

- Asset rapid deterioration due to defect – 4

- Asset moderate deterioration due to defect - 3
- Asset low deterioration due to defect – 2
- The defect is in the monitoring stage - 1

### **Location Score**

Location score is allocated varying from 2 to 8 based on the road category; as given below:

- Road category A – 8
- Road category B – 6
- Road category C – 4
- Road category D – 3
- Road category E – 2

### **4.1.9 Hazardous defects identification and management procedure**

#### **4.1.9.1 Identification and risk assessment (determining whether defect is a danger or hazard)**

When a defect is identified (following inspection, complaint, notification by the Principal or otherwise), determine whether the defect constitutes an immediate danger or hazard to traffic, road users or other members of the public or is likely to become a danger or hazard before the expiry of the time during which it would be rectified in the normal course of events.

If it is unlikely that a hazardous situation exists, the emergency crew should not be mobilised until the relevant inspector/back logger has determined that this is the appropriate type of response required given the circumstances.

The risk assessment procedure is provided as a guide. This is intended to provide assistance in determining whether the defect constitutes an immediate danger or hazard.

In determining if a defect is or is likely to become a danger or a hazard to the users, the following must be considered, as a minimum following by a likelihood and consequences risk assessment procedure:

1. Severity and nature of the defect
2. Extent of defect (combined effect of multiple occurrences of the defect within localised area).

**Figure 4.1.9.1 – Hazard matrix**

Likelihood	High			
	Medium			
	Low			
		Low	Medium	High
	Consequences			
Hazard		Not a Hazard		

**Likelihood**

Likelihood of exposure to a defect is dependent on the number of factors which are given in the below Table 4.1.9.1(a). Defect Likelihood is the probability that a defect will cause a crash/accident due to a combination of individual factors

**Table 4.1.9.1(a) – Factors contribute to likelihood**

Maximum Intervention Level	Score	Your Score	Likelihood Rating
> maximum intervention level	3		
< maximum intervention level	1		
Traffic Flow Rate	Score	Your Score	<p>&gt; 20 = High</p> <p>12 to 20 = Medium</p> <p>&lt;12 = Low</p>
> 1000 vph	3		
> 100 vph	2		
< 100 vph	1		
Traffic Composition	Score	Your Score	
> 20% cyclists and motor cyclists	3		
> 10% cyclists and motor cyclists	2		
< 10% cyclists and motor cyclists	1		
Speed Environment	Score	Your Score	
> 100 km/h	3		
> 80 km/h < 100 km/h	2		
< 80km/h	1		

Location (lateral position)	Score	Your Score	Likelihood Rating
Within wheel path	5		
Adjacent to wheel path	3		
On the shoulder	1		
Other	0		
Visibility because of the terrain, prevailing weather conditions or local factors such as roadwork	Score	Your Score	
Hidden	5		
Less than safe stopping distance	3		
Greater than safe stopping distance	1		
Weather Conditions	Score	Your Score	
Flooding	5		
Ongoing wet conditions	3		
Showers	1		
Fine	0		
Dust Conditions	Score	Your Score	
High	5		
Medium	3		
Low	1		
Fine	0		
Road Configuration	Score	Your Score	
2 lane	3		
> 2 lane - lane undivided	2		
> 2 lane - land divided	1		
Trafficable width per carriageway	Score	Your Score	
< 6 m	3		
6 m < 8 m	2		
> 8 m	1		

> 20 = High  
 12 to 20 = Medium  
 <12 = Low

<b>Your Score</b>	<b>Your Rating</b>
	Low

**Consequence**

Considering the above criteria, what is the consequence of not mitigating the defect?

**Table 4.1.9.1(b) – Factors contribute to consequences**

On People	Score	Your Score	Consequence Rating
Death or serious injury	20		
Total disruption	8		
Property damage or major inconvenience	5		
Minor inconvenience, delay or restricted access	3		
Local Economy	Score	Your Score	
Major Impact	3		
Moderate impact	2		
Minor Impact	1		
Local Environment	Score	Your Score	
Major Impact	3		
Moderate Impact	2		
Minor Impact	1		
Road Agency	Score	Your Score	
Judicial Enquiry (for example, Coroner's Inquest)	20		
Potential Litigation	10		
Ministerial or Mayoral Complaint	5		
Complaint	3		

> 20 = High  
 12 to 20 = Medium  
 < 12 = Low

Your Score	Your Rating
	Low

Is the defect currently a hazard or is it likely to become a hazard before the next inspection?

**4.1.9.2 Hazardous Defects Management**

**Hazard Action**

Below are the recommended hazard actions to be taken by the inspector or the authorised maintenance personnel when a hazardous defect has been identified on the road network. However these actions may vary from district to district based on the local circumstances or local emergency management procedures.

**Time allowed to assess need for emergency action**

Inspector or authorised maintenance personnel must assess the need for emergency action within the following times:

1. During normal working times – 5 minutes plus normal travel time to site.
2. Outside normal working times – 10 minutes plus normal travel time to site.



### **Time allowed to mobilise crew and start work**

If the defect creates an immediate danger or hazard to traffic, take all steps reasonably available to rectify or remove the defect or hazard. A crew must be called out or reassigned as soon as possible in accordance with this section.

The time to mobilise and start work on site commences after the inspector or authorised maintenance personnel has determined that an emergency response is necessary.

Mobilise a crew and start work on-site within:

1. During normal working times – 20 minutes plus normal travel time to site.
2. Outside normal working times – 40 minutes plus normal travel time to site.

### **Take all actions necessary to safeguard road users**

At the site of any hazard, undertake necessary work to make the site safe and trafficable. If it is not possible to rectify or remove the defect immediately upon identification, take all measures reasonably necessary to safeguard road users and others (including the erection of warning signs, barriers and the provision of traffic control) until such time as repair or removal can be effected or a relevant authority directs otherwise.

Complete the rectification of the defect in accordance with the applicable rectification standards, as soon as practicable. The rectification standards may not be the maintenance activity standards for all hazardous defects/situations on network.

### **Alternative emergency action**

If it is not possible to provide any measures required under this clause at the time when the defect, hazard or incident is identified, then the inspector or authorised maintenance personnel must:

1. Immediately notify the local Police and request assistance (for a defect constituting an immediate danger), or
2. Arrange measures or action within a reasonable timeframe in order to protect person and property.

Advise the Principal of defects, hazard or incidents where the inspector or authorised maintenance personnel was unable to immediately dispatch the necessary resources.

This sub-clause is intended to apply only in exceptional circumstances where inspector or authorised maintenance personnel is genuinely unable to respond due to resource constraints and the need to meet competing priorities, which are beyond their reasonable control. Noting in this clause is intended to limit inspector or authorised maintenance personnel emergency response obligations.

### **Incident Response**

In an emergency, advise the appropriate emergency response agency and request assistance:

- For injured persons contact the Queensland Ambulance Service.
- For bush fires, contact appropriate firefighting authority (either Qld Fire Brigade, Rural Fire Brigade, fire control officer of the Forestry Commission or the National Parks and Wildlife Services).
- For hazardous materials, contact the Qld Fire Brigade.
- For Pollution Incidents, contact the Qld Environment Protection Authority.
- For stray animals contact the police.

Promptly advise the Traffic Management Centre (TMC) of the following incidents:

- A fatal accident.
- Known or suspected hazardous material spillage.
- Significant delays (> 15 minutes) to traffic.
- Illegally parked, abandoned or unattended vehicles hazardous to or obstructing traffic or pedestrian movement.

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**4.2 Routine Maintenance Intervention Level and Response Time (IL/RT) criteria**

**Defect Intervention Level & Response Time(IL/RT) criteria for Routine Maintenance**

Defect No	Defect Code	Defect Intervention Level Criteria / Description	Initial Intervention level	Corporate Priorities	Road Category →		Category A vpd > 30000	Category B vpd 10000-30000	Category C vpd 500 - 10000	Category D vpd 100-500	Category E vpd < 100	Maintenance Activity Number	Remarks					
					Location Score → (C)		8	6	4	3	2							
					Corporate Priorities and Defect Scoring		Upper Intervention Level :: Maximum Response Time :: Defect Final Score											
					Corporate Priority weighting (A)	Field Weighting (B)	Code Score (A+B)	Upper Intervention Level / Response Time	Corporate Score (A+B+C)	Upper Intervention Level / Response Time	Corporate Score (A+B+C)			Upper Intervention Level / Response Time	Corporate Score (A+B+C)	Upper Intervention Level / Response Time	Corporate Score (A+B+C)	Code Score (A+B)
<b>Defect Category 01 - Deformation and Potholes in Bituminous Surface</b>																		
1	AA	<b>Isolated Depressions and Bumps in Bituminous Surface</b>																
	AA1_H	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard					20	110 111	See Hazard procedure			
	AA2_I	Area of ponding of water (not free draining) in the wheel path exceeds 3 m <sup>2</sup> : (free draining means water disperses without action of traffic)	3 m <sup>2</sup>	3 - Safety	2	2	5 m <sup>2</sup>	10	10 m <sup>2</sup>	8	15 m <sup>2</sup>	6	20 m <sup>2</sup>	5	20 m <sup>2</sup>	4	161 155 157	

	<b>AA2_R</b>	Area of ponding of water (not free draining) in the wheel path the exceeds upper intervention level in AA2_I. (free draining means water disperses without action of traffic)	Upper IL	3 - Safety	3	3	4 weeks	11	2 months	9	3 months	7	4 months	6	6 months	5	169			
	<b>AA3_I</b>	Depression or bump on sealed pavements measured using a 1.2 m straight edge exceeds 20 mm:	20mm	3 - Safety	2	2	30 mm	10	40 mm	8	50 mm	6	75 mm	5	100 mm	4	141			
	<b>AA3_R</b>	Depression or bump on sealed pavements measured using a 1.2 m straight edge exceeds upper intervention level in AA3_I:	Upper IL	3 - Safety	4	4	4 weeks	12	4 weeks	10	3 months	8	4 months	7	6 months	6	147			
	<b>AA4_M</b>	Depression or bump on sealed pavements measured using a 1.2 m straight edge is less than 20 mm:	20mm	5 - Preventative	1	1	Log the defect and monitor if ponding area is greater than 1 m <sup>2</sup> or depth exceeds 10mm										1	148		
																	139			
																	140			
<b>2</b>	<b>AB</b>	<b>Ruts in Bituminous Surface</b>																		
	<b>AB1_H</b>	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	110	See Hazard procedure
	<b>AB2_I</b>	Area of ponding of water: (not free draining) in the wheel path exceeds 3 m <sup>2</sup> : (free draining means water disperses without action of traffic)	3 m <sup>2</sup>	3 - Safety	3	3	5 m <sup>2</sup>	11	10 m <sup>2</sup>	9	15 m <sup>2</sup>	7	20 m <sup>2</sup>	6	20 m <sup>2</sup>	5	145			
																	146			
																	155			
																	157			

	AB2_R	Area of ponding of water (not free draining) in the wheel path exceeds the upper intervention level in AB2_I: (free draining means water disperses without action of traffic)	Upper IL	3 - Safety	5	5	4 weeks	13	2 months	11	3 months	9	4 months	8	6 months	7	160		
	AB3_I	Depth of rut on sealed pavements measured laterally from top of ridge using a 1.2 m straight edge exceeds 20 mm:	20 mm	3 - Safety	2	2	30 mm	10	40 mm	8	50 mm	6	75 mm	5	100 mm	4	137		
	AB3_R	Depth of rut on sealed pavements measured laterally from top of ridge using a 1.2 m straight edge exceeds the upper intervention level in AB3_I	Upper IL	3 - Safety	4	4	4 weeks	12	4 weeks	10	3 months	8	4 months	7	6 months	6	140		
	AB4_M	Depth of rut on sealed pavements measured laterally from top of ridge using a 1.2 m straight edge is less than 20 mm:	20 mm	5 - Preventative	1	1	Log the defect and monitor if ponding area is greater than 1 m <sup>2</sup> or depth exceeds 10 mm										1	143	
																	144		
3	AD	<b>Shoving of Pavement or Asphalt</b>																	
	AD1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	See Hazard procedure

	AD2_I	Area of ponding of water (not free draining) in the wheel path exceeds 3 m <sup>2</sup> : (free draining means water disperses without action of traffic)	3 m <sup>2</sup>	3 - Safety	3	3	5 m <sup>2</sup>	11	10 m <sup>2</sup>	9	15 m <sup>2</sup>	7	20 m <sup>2</sup>	6	20 m <sup>2</sup>	5	140					
																169						
																	143					
	AD2_R	Area of ponding of water (not free draining) in the wheel path exceeds the upper intervention level in AD2_I: (free draining means water disperses without action of traffic)	Upper IL	3 - Safety	5	5	4 weeks	13	4 weeks	11	3 months	9	4 months	8	6 months	7	144					
																	141					
																			151			
	AD3_I	Height/depth of shove on sealed pavements measured laterally from top of ridge using a 1.2 m straight edge exceeds 20 mm:	20 mm	3 - Safety	2	2	50 mm	10	75 mm	8	75 mm	6	100 mm	5	100 mm	4	113					
																			129			
																				145		
	AD3_R	Height/depth of shove on sealed pavements measured laterally from top of ridge using a 1.2 m straight edge exceeds the upper intervention level in AD3_I	Upper IL	3 - Safety	4	4	4 weeks	12	4 weeks	10	3 months	8	4 months	7	6 months	6	147					
																				148		
																					153	
	AD4_M	Height/depth of shove on sealed pavements measured laterally from top of ridge using a 1.2 m straight edge is less than 20 mm:	20 mm	5 - Preventative	1	1	Log the defect and monitor if ponding area is greater than 1 m <sup>2</sup> or depth exceeds 10 mm										1	110				
																						111
	AD5_I	Height/depth of shove on sealed pavements measured longitudinally from top of ridge using a 1.2 m straight edge exceeds 50 mm:	50 mm	3 - Safety	3	3	75 mm	11	100 mm	9	125 mm	7	125 mm	6	150 mm	5						

	<b>AD5_R</b>	Height/depth of shove on sealed pavements measured longitudinally from top of ridge using a 1.2 m straight edge exceeds the upper intervention level in AD5_I	Upper IL	3 - Safety	5	5	2 days	13	1 week	11	2 weeks	9	4 weeks	8	5 weeks	7				
	<b>AD6_M</b>	Height/depth of shove on sealed pavements measured longitudinally from top of ridge using a 1.2 m straight edge is less than 50 mm:	50mm	5 - Preventative	1	1	Log the defect and monitor if depth exceeds 30 mm										1			
<b>4</b>	<b>AF</b>	<b>Very Rough Surface (Isolated sections) in Bituminous Surface</b>																		
	<b>AF1_H</b>	Any verified defect (not meeting the requirements of AA, AB, AD or AG) identified by inspections or complaint that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	110 107 111 143 161 145 155 157 160 169 112	See Hazard procedure





	<b>AG4_R</b>	Depth on sealed pavements exceeds the upper intervention level in AG4_I	Upper IL	3 - Safety	5	5	24 hours	13	1 week	11	2 weeks	9	3 weeks	8	4 weeks	7				
	<b>AG5_M</b>	Depth on sealed pavements is less than 30 mm	30 mm	5 - Preventive	1	1	Log the defect and monitor if depth exceeds 20 mm										1			
	<b>AG6_P</b>	Any pothole in the wearing surface that results in the loss of material under traffic	NA	2 - Ordered work	9	9	18	As advised by Principal												
<b>Defect Category 02 - Cracks in Bituminous Surface</b>																				
<b>6</b>	<b>BG</b>	<b>Crocodile Cracking in Bituminous Surface</b>																		
	<b>BG1_H</b>	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	145 146	See Hazard procedure
	<b>BG2_M</b>	Plate size is less than 100 mm	100 mm	5 - Preventive	1	1	Log the defect and monitor if plate size exceeds 50 mm										1	122 143 144 120		
	<b>BG3_R</b>	Moisture is entering/leaving the pavement	NA	5 - Preventive			1	9 months	9	9 months	7	12 months	5	12 months	4	12 months	3	139		

7	BZ	Bituminous Surface Cracks General																		
	BZ1_H	Cracking that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	120 123	
	BZ2_R	Individual crack width exceeds 3 mm or fine pumping	3mm	5 - Preventative	1		1	9 months	9	9 months		12 months	5	12 months	4	12 months	3	118 117 115 122 121 101 110 111 112 139	Manage at local level(6 months or before wet weather)	
<b>Defect Category 03 - Edge Defects Bituminous Surface</b>																				
8	CA	Edge Break in Bituminous Surface																		
	CA1_H	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	101 102 103	
	CA2_I	Unsealed Shoulder From the average existing seal width, edge break exceeds 75 mm	75 mm	3 - Safety	1		1	NA	9	100 mm	7	125 mm	5	150 mm	4	150 mm	3	169 139	Edge break with narrow lanes (less	

	CA2_R	Unsealed Shoulder From the average existing seal width, edge break exceeds the upper intervention level in CA2_I	Upper IL	3 - Safety	2	2	NA	10	4 week	8	4 week	6	4 weeks	5	4 weeks	4		140 221	then 3 m wide lanes) to be prioritised on case to case basis
	CA3_M	Unsealed Shoulder From the average existing seal width, edge break is less than 75 mm	75 mm	5 - Preventative	1	1	Log the defect and monitor if depth exceeds 30 mm										1		
	CA4_I	Sealed shoulder (at least 500 mm width) From the average existing seal width, measured from each side of the seal (from shoulder end), edge break exceeds 100 mm or encroaching into the edge line of road:	100 mm	3 - Safety	2	2	125 mm	10	125 mm	8	125 mm	6	150 mm	5	150 mm	4			
	CA4_R	Sealed shoulder (at least 500 mm width) From the average existing seal width, measured from each side of the seal (from shoulder end), edge break exceeds the upper intervention level in CA4_I or encroaching into the edge line of road:	Upper IL	3 - Safety	3	3	4 weeks	11	4 weeks	9	4 weeks	7	4 weeks	6	6 weeks	5			

	CA5_M	Sealed shoulder (at least 500 mm width) From the average existing seal width, measured from each side of the seal (from shoulder end), edge break is less than 100 mm and not encroaching into the edge line of road:	100 mm	5 - Preventative	1	1	Log the defect and monitor if deviation exceeds 70 mm										1			
9	CC	Edge Drop off in Bituminous Surface																		
	CC1_H	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	101 102 103	See Hazard procedure
	CC2_I	Unsealed shoulder Depth of edge drop-off measured using a 1.2 m straight edge as vertical distance from the surface at edge of seal to the surface of the shoulder exceeds 40 mm:	40 mm	3 - Safety	2	2	NA	NA	60 mm	8	75 mm	6	75 mm	5	75 mm	4	169 215 221 222	Edge drop-off with narrow lanes (less than 3m wide lanes) to be prioritised on case to case basis		
	CC2_R	Unsealed shoulder Depth of edge drop-off measured using a 1.2 m straight edge as vertical distance from the surface at edge of seal to the surface of the shoulder exceeds the upper intervention level in CC2_I	Upper IL	3 - Safety	4	4	NA	NA	4 weeks	10	2 months	8	2 months	7	2 months	6	216 217 218 219 229 139			

	<b>CC3_I</b>	Sealed shoulder (at least 0.5 m width) Depth of edge drop-off measured using a 1.2 m straight edge as vertical distance from the surface at edge of seal to the surface of the shoulder exceeds 40 mm:	40 mm	3 - Safety	3	3	50 mm	11	60 mm	9	75 mm	7	75 mm	6	75 mm	5				
	<b>CC3_R</b>	Sealed shoulder (at least 0.5 m width) Depth of edge drop-off measured using a 1.2 m straight edge as vertical distance from the surface at edge of seal to the surface of the shoulder exceeds the upper intervention level in CC3_I	Upper IL	3 - Safety	4	4	4 weeks	12	4 weeks	10	2 months	8	2 months	7	2 months	6				
	<b>CC4_M</b>	Edge drop-off measured using a 1.2 m straight edge as vertical distance from the surface at edge of seal to the surface of the shoulder is less than 40 mm:	40 mm	5 - Preventative	1	1	Log the defect and monitor if depth exceeds 30 mm										1			
<b>Defect Category 04 - Surface Texture Deficiencies Bituminous Surface</b>																				
<b>10</b>	<b>DC</b>	<b>Flushing, Bleeding Seal</b>																		
	<b>DC1_H</b>	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20		See Hazard procedure

	<b>DC2_R</b>	Bleeding leads to bitumen pick up on vehicle tyres likely to result in complaints	NA	3 - Safety	5	5	1 day	13	1 day	11	1 day	9	1 day	8	2 days	7	118		
																	117		
	<b>DC3_P</b>	Any fatty strips is greater than 10 m on a horizontal curve or approach to a curve or within an intersection or 15 m on straights or 10% of lane km is fatty	10 m	2 - Ordered works	9	9	18	As advised by Principal									119		
																	139		
<b>11</b>	<b>DE</b>	<b>Ravelling or Stripping Seal</b>																	
	<b>DE1_H</b>	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard									20	118	See Hazard procedure
																	155		
	<b>DE2_P</b>	Any ravelling on a horizontal curve or approach to or within an intersection exceeds 5 m <sup>2</sup>	5 m <sup>2</sup>	2 - Ordered works	9	9	18	As advised by Principal									18	117	
	<b>DE3_R</b>	Any stripping in an area exceeds 10 m <sup>2</sup>	10 m <sup>2</sup>	5 - Preventative	1	1	1	Log the defect monitor and inform to Principal									1	115	
																	114		
	<b>DE4_R</b>	Any ravelling or stripping where the gravel pavement visibility exceeds 1 m <sup>2</sup>	1 m <sup>2</sup>	5 - Preventative			1	Log the defect monitor and inform to Principal									1	119	
																	139		

12	DZ	Other Bituminous Surface Texture Defects																	
	DZ1_M	Safety problem exists where loss of skid resistance is evident and or complaint received regarding excessive surface noise	NA	3- safety	1	1	1	Log the defect monitor and inform to principal								1	118		
<b>Defect Category 05 - Other Bituminous Surface</b>																			
13	EA	Loose Stones or Debris on Sealed Roadway																	
	EA1_H	Any verified defect (debris, foreign material, loose stones, litter on roadway) identified by inspections, complaint or notification by Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard								20	130	See Hazard procedure	
	EA2_R	Any verified defect (debris, foreign material, loose stones, litter) identified by inspections, complaint or notification by Principal that is unsafe	NA	3- safety	5	5	1 week	13	1 week	11	4 week	9	4 week	8	4 week	7		135	

14	EB	<b>Grass on Sealed Roadway</b>																		
	EB1_R	Control of vegetation growth around kerb and channel, along fence lines and on the road pavement that create unsafe road condition	NA	3- safety	5	5	5	3 days	13	3 days	11	2 weeks	9	4 weeks	8	6 weeks	7		407	
	EB2_R	Control of vegetation growth around kerb and channel, along fence lines and on the road pavement	NA	6 - Appearance /Usability	2	2	2	12 months	10	12 months	8	12 months	6	12 months	5	12 months	4		135	
15	ED	<b>Dead Animals on Roadway</b>																		
	ED1_H	Dead animals on roadway that are hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	429	See Hazard procedure
	ED2_R	Dead animals on roadway	NA	3 - Safety	5	5	5	1 day	13	1 week	11	1 week	9	4 weeks	8	4 weeks	7			
16	EE	<b>Rough Manhole Covers and Grates</b> (Rough Service access facility)																		
	EE1_H	Any verified defect (tolerance relative to surrounding ground etc.) identified by inspection, complaint or notification by Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	139	See Hazard procedure



	EE2_I	Height or depth relative to surrounding ground exceeds 20 mm	20 mm	3 - Safety	4	4	30 mm	12	30 mm	10	40 mm	8	40 mm	7	50 mm	6			
	EE2_R	Height or depth relative to surrounding ground exceeds the upper intervention level in EE2_I	Upper IL	3 - Safety	5	5	4 week	13	4 week	11	6 weeks	9	8 weeks	8	8 weeks	7			
17	RV	<b>Debris on Sealed Shoulders</b>																	
	RV1_H	Any verified defect (debris / foreign material / litter on sealed surface) identified by inspection, complaint or notification by Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard								20	135	See Hazard procedure	
	RV2_M	Any verified defect (debris / foreign material / litter on sealed surface) identified by inspection, complaint or notification by Principal that is unsafe	NA	3 - Safety	1	1	Log the defect monitor and inform to Principal								1	423			
18	ZB	<b>Depressions Service Reinstatement (Rough Service Trench Reinstatement)</b>																	
	ZB1_H	Any verified defect identified by inspection, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard								20	110	111	See Hazard procedure
	ZB2_I	Depth of depression, using a 1.2 m straight edge exceeds 20 mm	20 mm	3 - Safety	3	3	40 mm	11	40 mm	9	50 mm	7	60 mm	6	80 mm	5			112

	ZB2_R	Depth of depression using a 1.2 m straight edge exceeds <i>the upper intervention level in ZB2_I</i>	Upper IL	3 - Safety	4	4	24 hours	12	1 week	10	2 weeks	8	3 weeks	7	4 weeks	6	430		
<b>Defect Category 06 - Unsealed Shoulder Defects</b>																			
19	GA	<b>Insufficient (Adverse) Crossfall in Unsealed Shoulder</b>																	
	GA1_H	Any verified defect identified by inspection, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	As a hazard								20	215	See Hazard procedure
	GA2_I	Area of ponding of water (not free draining) in the wheel path exceeds 3 m <sup>2</sup> : (free draining means water disperses without action of traffic	3 m <sup>2</sup>	3 - Safety	2	2	NA	N/A	10 m <sup>2</sup>	8	15 m <sup>2</sup>	6	20 m <sup>2</sup>	5	20 m <sup>2</sup>	4	221	222	
	GA2_R	Area of ponding of water (not free draining) in the wheel path exceeds <i>the upper intervention level in GA2_I</i> : (free draining means water disperses without action of traffic	Upper IL	3 - Safety	3	3	NA	N/A	2 months	9	3 months	7	4 months	6	6 months	5	216	217	
	GA3_M	The defect causing water ponding on pavement edge or on shoulder	NA	5 - Preventative	1	1	Log the defect and monitor if plan dimension exceeds 1 m2								1	218	219	229	

20	GB	Excessive Crossfall in Unsealed Shoulder																	
	GB1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is likely to become hazardous	NA	1 - Hazard	10	10	20	NA	As a hazard								20	See Hazard procedure	
	GB2_I	Pavement without superelevation: the crossfall of shoulders is less than 6%	6%	5 - Preventative	1		1	NA	N/A	10%	7	10%	5	10%	4	10%	3	215	
	GB3_I	Pavement with superelevation: low side of pavements : the crossfall of shoulders is less than 6%	6%	5 - Preventative	1		1	NA	N/A	10%	7	10%	5	10%	4	10%	3	221 222 216	
	GB4_I	Pavement with superelevation: high side of pavements, the difference between the crossfall of the shoulder and the crossfall of the adjacent pavement is less than 3%	3%	5 - Preventative	1		1	NA	N/A	7%	7	7%	5	7%	4	7%	3	217 218 219	
	GB5_I	Pavement with superelevation: high side of pavements, the difference between the crossfall of the shoulder and the crossfall of the adjacent pavement is less than -1%	1%	5 - Preventative	1		1	NA	N/A	-5%	7	-5%	5	-5%	4	-5%	3	229	

21	GC	Lateral Scour Channels in Unsealed Shoulders																		
	GC1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is likely to become hazardous	NA	1 - Hazard	10	10	20	NA	As a hazard								20		See Hazard procedure	
	GC2_I	Where the seal width is less than 6, the depth exceeds 40 mm	40 mm	3 - Safety	3		3	NA	N/A	NA	N/A	100 mm	7	125 mm	6	125 mm	5		215	
	GC2_R	Where the seal width is less than 6, the depth exceeds the upper intervention level in GC2_I	Upper IL	3 - Safety	4		4	NA	N/A	NA	N/A	5 weeks	8	2 months	7	3 months	6		221	
	GC3_M	Where the seal width is less than 6, the depth is less than 40 mm	40 mm	5 - Preventative	2		2	Log the defect and monitor if depth exceeds 20 mm								2				
	GC4_I	Where the seal width is 6 -8 m, the depth exceeds 40 mm	40 mm	5 - Preventative	2		2	NA	N/A	75 mm	8	100 mm	6	125 mm	5	150 mm	4		216	
	GC5_M	Where the seal width is greater than 8 m, the depth exceeds 60 mm	60 mm	5 - Preventative	2		2	Log the defect and monitor if depth exceeds 20 mm								2				
22	GE	Hazardous Dry Loose Material in Unsealed Shoulders																		
	GE1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	N/A	As a hazard								20	215 221 222	See Hazard procedure

	<b>GE2_I</b>	Loose shoulder material depth exceeds 40 mm	40 mm	3 - Safety	2	2	2	NA	N/A	75 mm	8	75 mm	6	100 mm	5	125 mm	4	216	
	<b>GE2_R</b>	Loose shoulder material depth exceeds the upper intervention level in GE2_I	Upper IL	3 - Safety	3	3	3	NA	N/A	4 week	9	4 weeks	7	2 months	6	3 months	5	217	
																		218	
																		219	
																		229	
<b>23</b>	<b>GH</b>	<b>Ruts in Unsealed Shoulders</b>																	
	<b>GH1_H</b>	Any verified defect identified by inspections, complaint, notification by the Principal that is likely to become hazardous	NA	1 - Hazard	10	10	20	NA	N/A	As a hazard							20	215	See Hazard procedure
	<b>GH2_I</b>	Where the seal width is less than 6, the depth exceeds 75 mm	75 mm	3 - Safety	2	2	2	NA	N/A	NA	N/A	100 mm	6	150 mm	5	200 mm	4	221	
	<b>GH2_R</b>	Where the seal width is less than 6, the depth exceeds upper intervention level in GH2_I	Upper IL	3 - Safety	4	4	4	NA	N/A	NA	N/A	6 weeks	8	2 months	7	3 months	6	216	
	<b>GH3_M</b>	Where the seal width is less than 6, the depth is less than 75	75 mm	5 - Preventative	2	2	2	Log the defect and monitor if depth exceeds 50 mm							2	217			
	<b>GH4_I</b>	Where the seal width is 6-8 m, the depth exceeds 75 mm	75 mm	5 - Preventative	1	1	1	NA	N/A	75 mm	7	150 mm	5	200 mm	4	250 mm	3	218	
																		219	
																		229	

	<b>GH5_M</b>	Where the seal width is greater than 8 m, the depth exceeds 100 mm	100m m	5 - Prevent ative	1	1	Log the defect and monitor if depth exceeds 50 mm										1										
<b>24</b>	<b>GG</b>	<b>Debris on Unsealed Shoulder</b>																									
	<b>GG1_H</b>	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	N/A	As a hazard							20	215	221	See Hazard procedure							
	<b>GG2_I</b>	Any debris on shoulder exceeds 40 mm in height	40 mm	3 - Safety	2		2	NA	N/A	75 mm	8	75 mm	6	100 mm	5	125 mm	4	222									
	<b>GG2_R</b>	Any debris on shoulder exceeds upper intervention level in GG2_I	Upper IL	3 - Safety	3		3	NA	N/A	4 weeks	9	4 weeks	7	2 months	6	3 months	5	216	217	218	219	229	230	231	130	135	

Released under RTI - DTMR

25	GK	Reduced Shoulder Width in Unsealed Shoulders																				
25	GK1_I	Reduction of shoulder design width in general vicinity exceeds 20%	20%	5 - Preventative	2	2	2	NA	N/A	30%	6	30%	6	30%	5	30%	4	215				
																				221		
																					222	
																					216	
																					217	
																					218	
																					219	
																					229	
																	230					
																		231				
26	GL	Potholes in Unsealed Shoulder																				
	GL1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	N/A	As a hazard						20	220	See Hazard procedure				

	<b>GL2_I</b>	Depth of isolated holes exceeds 60 mm in 2 meters	60 mm	3- Safety	2		2	NA	N/A	100 mm	8	125 mm	6	150 mm	5	150 mm	4												
	<b>GL2_R</b>	Depth of isolated holes exceeds upper intervention level in GL2_I	Upper IL	3- Safety	3		3	NA	N/A	4 weeks	9	4 weeks	7	2 months	6	3 months	5												
<b>27</b>	<b>GZ</b>	<b>Shoulder Defects, General</b>																											
	<b>GZ1_P</b>	Any shoulder defects likely to creates unsafe road condition to travelling public or accelerates shoulder deterioration	NA	2 - Order works	9		9	18		As advised by Principal								18	215	221	222	216	217	218	219	229	230	231	169



Defect Category 07 - Unsealed Roadway Defects

28	HD	Wheel Ruts in Unsealed Roadways																								
	HD1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	N/A	As a hazard								20	204	See Hazard procedure						
	HD2_W	Depth of wheel ruts and shoves using a 1.2 m straight edge (measured valley to crest in case of shoves and ruts) exceeds 80 mm	80mm	5 - Preventative	4	4	4	NA	N/A	NA	N/A	as a part of programmed works*								4	206	203	202	208	207	214
29	HE	Shoving in Unsealed Roadways																								
	HE1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	N/A	As a hazard								20	204	See Hazard procedure						
	HE2_W	Depth of wheel ruts and shoves using a 1.2 m straight edge (measured valley to crest in case of shoves and ruts) exceeds 80 mm	80mm	5 - Preventative	4	4	4	NA	N/A	NA	N/A	as a part of programmed works*								4	206	203	202	208		

																			207 214	
30	HM	<b>Potholes in Unsealed Roadways</b>																		
	HM1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	N/A	NA	N/A	As a hazard					20	204 201 206	See Hazard procedure	
	HM2_W	Any potholes	NA	5 - Preventative	3		3	NA	N/A	NA	N/A	as a part of programmed works*					3	203 202 208 207 214		
31	HF	<b>Insufficient Crossfall in Unsealed Roadways</b>																		
	HF1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	N/A	NA	N/A	As a hazard					20	204 201 205	See Hazard procedure	
	HF2_W	Any insufficient crossfall	NA	5 - Preventative	1		1	NA	N/A	NA	N/A	as a part of programmed works*					1	203 202 208		

32	HG	<b>Excessive Crossfall in Unsealed Roadways</b>																	
	HG1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	N/A	NA	N/A	As a hazard					20	204 201 205 203	See Hazard procedure
	HG2_W	Any excessive crossfall	NA	5 - Preventative	1		1	NA	N/A	NA	N/A	as a part of programmed works*					1	202 208	
33	HP	<b>Loss of Pavement Running Course</b>																	
	HP1_W	Any loss of pavement running course	NA	5 - Preventative	1		1	NA	N/A	NA	N/A	as a part of programmed works*					1	205 g	
34	HN	<b>Insufficient Formation Height Above Natural Surface</b>																	
	HN1_H	Water ponds or Possibility of creating Water ponds on the roadway that cannot be drained off naturally	NA	1 - Hazard	10	10	20	As a hazard					20	205	See Hazard procedure				
	HN2_P	Loss of formation shape	NA	2 - Ordered work	9	9	18	NA	N/A	NA	N/A	As advised by Principal					18		

35	HZ	Unsealed roadway defects, general (such as wind rows of material, scour channels, corrugations, soft slippery areas, course surface texture, loose material, roughness)																	
	HZ1_H	Any isolated defects identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	NA	N/A	NA	N/A	As a hazard					20	204 201 205 206	See Hazard procedure
	HZ2_M	Any other unsealed road defects unsafe for road user	NA	3 - Safety	3		3	NA	N/A	NA	N/A	Log the defect monitor and inform to principal					3	203 202 208 207 214	
<b>Defect Category 08 - Surface Drain Defects</b>																			
36	KZ	Surface Drain Defects																	
	KZ1_H	Blocked surface drain cause flooding to the roadway is identified by inspection, complaint or notification by the Principal that is hazardous	NA	1- Hazard	10	10	20	As a hazard					20	301 305	See Hazard Procedure				
	KZ2_P	Blocked surface drain cause flooding to the private property	N/A	2 - Ordered work	9	9	18	As advised by Principal					18	302 303 304					
	KZ3_M	Blocked surface drain increase shoulder/pavement deterioration	NA	5 - Preventative	1		1	log the defect and monitor drainage performance					1	319 429					

	KZ4_M	Scouring of drains	NA	5 - Preventative	1	1	log the defect and monitor drainage performance										1			
<b>Defect Category 09 - Concrete Roadway, Culvert, Pipe, Pit &amp; Floodway Defects</b>																				
37	LA	<b>Drainage Obstructed</b>																		
	LA1_H	Any drainage obstruction creating water ponding and not free draining (free draining means water disperses without action of traffic) on pavement edge or on shoulder that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	301 305	See Hazard Procedure
	LA2_P	Any drainage obstruction endangering private property	NA	2 - Order works	9	9	18	As advised by Principal										18	302 303	
	LA3_I	Amount of waterway area obstructed exceeds 20 %	20%	5 - Preventative	1	7	30%	9	30%	7	50%	5	50%	4	50%	3	304 319 341			
38	LP	<b>Silt or Debris on Floodway Sections</b>																		
	LP1_H	Any silt or debris encroaching into floodway sections of roadway identified by inspections, complaint that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	340	See Hazard Procedure

39	LZ	Culvert, Pipe, Pit & Floodway Defects, Other									
	LZ1_H	Damaged or missing drainage pit lids, surrounds, grates, in pedestrian areas or traffic lanes	NA	1- Hazard	10	10	20	As a hazard	20		See Hazard Procedure
	LZ2_M	Cracking > 5 mm in culvert components or visible movement	5mm	3 - Safety	4		4	Log the defect monitor and inform to principal	4		
	LZ3_M	Misalignment/ separation of culvert components > 20 mm incl head wall separation	20mm	3 - Safety	4		4	Log the defect monitor and inform to principal	4	320	
	LZ4_M	Corrosion/ loss of section of steel components (including reinforcement in concrete structures)	visible corrosion	3 - Safety	4		4	Log the defect monitor and inform to principal	4	322 323 324 325 327	
	LZ5_M	possibility of reduction of structural integrity due to spalling over the concrete surface	NA	3 - Safety	4		4	Log the defect monitor and inform to principal	4	321 328 329 341 342	
	LZ6_M	Cracking in end structures (less than 5mm wide and no forward movement)	NA	5 - Preventative	1		1	Log the defect monitor and inform to principal	1	349 319	
	LZ7_M	Misalignment/ separation of culvert components < 20 mm incl head wall separation	visible separation	5 - Preventative	1		1	Log the defect monitor and inform to principal	1		
	LZ8_M	Culvert or end structure silted up	NA	5 - Preventative	1		1	Log the defect monitor and inform to principal	1		

	LZ9_M	Scouring around culvert components	NA	5 - Preventative	1	1	Log the defect monitor and inform to principal										1		
40	YA	<b>Cracks in Concrete Roadway (diagonal, block, transverse, corner cracks, longitudinal, meandering and surface cracks)</b>																	
	YA1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is likely to become hazardous	NA	1 - Hazard	10	10	As a hazard										20	124	See Hazard Procedure
	YA2_I	Individual crack width exceeds 3 mm or there is excessive cracking and moisture is penetrating the pavement	3 mm	5 - Preventative	1	1	5 mm	9	5 mm	7	10 mm	5	20 mm	4	20 mm	1		125	
41	YB	<b>Spalling of Joints - Concrete Pavement</b>																	
	YB1_H	Evidence of spalling of concrete occurring adjacent to slab joints that is hazardous	NA	1 - Hazard	10	10	As a hazard										20		See Hazard Procedure
	YB2_R	When the plan dimension of spalling of joints exceeds 100 mm	100 mm	5 - Preventative	1	1	4 weeks	9	6 weeks	7	6 weeks	5	3 months	4	6 months	3		124	
	YB3_P	Any spalling in wheel path attracts complaints due to unacceptable ride quality	NA	2 - Order works	9	9	As advised by Principal										18		

42	YC	<b>Joint Sealant Defects in Concrete Pavement</b>																	
	YC1_I	Percentage of missing sealant between concrete slabs exceeds 20%	20%	5 - Preventative	1	1	30%	9	30%	7	40%	5	40%	4	50%	3			126
43	YD	<b>Potholes in Concrete Pavement</b>																	
	YD1_H	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	See Hazard Procedure
	YD2_I	Plan dimension on sealed pavements exceeds 100 mm	100 mm	3 - Safety	3	3	300 mm	11	400 mm	9	500 mm	7	500 mm	6	600 mm	5			
	YD2_R	Plan dimension on sealed pavements exceeds the upper intervention level in YD2_I	Upper IL	3 - Safety	5	5	24 hours	13	1 week	11	2 weeks	9	3 weeks	8	4 weeks	7			127
	YD3_M	Plan dimension on sealed pavements is less than 100 mm	100 mm	5 - Preventative	1	1	Log the defect and monitor if plan dimension exceeds 50 mm												129
	YD4_I	Depth on sealed pavements exceeds 30 mm	30 mm	3 - Safety	3	3	40 mm	11	40 mm	9	50 mm	7	60 mm	6	80 mm	5			
	YD4_R	Depth on sealed pavements exceeds the upper intervention level in YD4_I	Upper IL	3 - Safety	5	5	24 hours	13	1 week	11	2 weeks	9	3 weeks	8	4 weeks	7			



	YD5_M	Depth on sealed pavements is less than 30 mm	30 mm	5 - Preventative	1	1	Log the defect and monitor if depth exceeds 20 mm										1			
	YD6_P	Any pothole in the wearing surface that results in the loss of material under traffic	NA	2 - Ordered work	9	9	18	As advised by Principal										18		
44	YE	<b>Sunken Concrete Pavement Slab (Stepping)</b>																		
	YE1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	128	See Hazard Procedure
	YE2_I	Any abrupt difference in height to adjacent slab/surface exceeds 3 mm	3 mm	3- Safety	2	2	15 mm	10	20 mm	8	20 mm	6	20 mm	5	20 mm	4				
<b>Defect Category 10- Subsoil Drain Defects</b>																				
45	MZ	<b>Subsoil Drain Defects</b>																		
	MZ1_M	Any non functional or missing or decayed element of the subsoil drainage system including flush points and outlets cause reducing flow capacity or sub soil drainage integrity	NA	5 - Preventative	1	1	Log the defect monitor and inform to principal										1	330 331 332 339 329		
<b>Defect Category 11- Roadside Vegetation Defects</b>																				

46	NC	Grass not in sight line																
	NC1_P	Excessive Roadside Vegetation in rural area to control fire hazard or drainage, applies to designated areas only	NA	2 - Ordered work	9	9	18	As advised by Principal								18	401 408 402 403 415	discuss with element leader
47	NE	Large Trees and Shrubs Close to Roadway (in consultation with environmental management staff)																
	NE1_H	Large trees close to roadway which are considered to be a hazard	NA	1 - Hazard	10	10	20	As a hazard								20		See Hazard Procedure
	NE2_P	At Medians: Trees and shrubs with a trunk diameter exceeds 50 mm measured 300 mm above ground level within clear zone	50 mm	2 - Ordered work	9	9	18	As advised by Principal								18	405 419	
	NE3_P	Other: Previously cleared area where regrowth is evident	NA	2 - Ordered work	9	9	18	As advised by Principal								18		

48	NF	Declared Plants																		
	NF1_P	Remove Noxious weeds and environmental weeds before they flower	NA	4- Legislative	1	10	20	As advised by Principal										1	407 406 460 405	discuss with element leader
49	NG	<b>Trees or Limbs Likely to Fall on Roadway</b>																		
	NG1_H	Trees, overhanging branches or broken limbs most likely to fall on roadway to be a hazard	NA	1 - Hazard	10	10	20	As a hazard										20		See Hazard Procedure
	NG2_R	Limbs exceeds 100 mm in diameter with > 50% of foliage die back or evidence of dead or rotting or damaged timber hanging over any portion of the carriageway lane width	100 mm	3 - Safety	4	4	2 weeks	12	1 month	10	1 month	8	2 months	7	3 months	6		405		
50	NH	<b>Grass, Trees and Shrubs in Sight Line, in Drain or Obstructing Roadside Furniture</b>																		
	NH1_H	Any vegetation obscure sight distance, minimum stopping distance that is hazard	NA	1 - Hazard	10	10	20	As a hazard										20	401	See Hazard Procedure

	NH2_R	Any vegetation obscure sight distance and minimum stopping sight distance	NA	3 - Safety	4	4	2 weeks	12	1 month	10	1 month	8	2 months	7	3 months	6		407	
	NH3_R	Vegetation obscures sight lines of accesses or intersections or sight distances of previously cleared areas or any signs or guide posts	NA	3 - Safety	4	4	2 weeks	12	1 month	10	1 month	8	2 months	7	3 months	6		405	
	NH4_R	Any vegetation within 3.6 m of edge of roadway exceeds 500 mm on national highways and 700 mm in State roads	500 mm or 700 mm	3 - Safety	4	4	1 month	12	2 months	10	3 months	8	6 months	7	6 months	6		408	
																		403	
																		319	
																		404	
51	NK	Landscaping Defects																	
	NK1_M	50% loss of asset	NA	6- Appearance /Usability	1	1												1	409
																			411
																			412
																			419
																			410
																			401
																			403

52	NL	Grass Growth on Medians																		
	NL1_I	Grass in urban areas	NA	6- Appearance /Usability	1	1	200 mm	9	200 mm	7	200 mm	5	200 mm	4	200 mm	3				
	NL1_R	Urban areas growth exceeds 200mm in height	200 mm	6- Appearance /Usability	1	1	1 month s	9	1 Month	7	1 Month	5	2 Months	4	2 Months	3		407		
	NL2_I	Grass in rural Areas	NA	6- Appearance /Usability	1	1	500 mm	9	500 mm	7	500 mm	5	500 mm	4	500 mm	3		404		
	NL2_U	Rural Areas growth exceeds 500 mm in height	500 mm	6- Appearance /Usability	1	1	1 Month	9	2 Months	7	2 Months	5	3 Months	4	3 Months	3		402 403		
<b>Defect Category 12- Rest Area Defects</b>																				
53	PB	Dead Trees or Limbs in Rest Area																		
	PB1_H	Trees, overhanging branches or broken limbs most likely to fall on rest areas	NA	1 - Hazard	10	10	20	As a hazard										20	405 440	See Hazard Procedure

54	PC	Routine amenity servicing																		
	PC1_R	Any verified defect identified by inspection, complaint, or notification by principal that renders the facility unusable	NA	Special	3		3	24 hrs	11	24 hrs	9	twice a week	7	weekly	6	Twice a month	5		440	
	PC2_P	Routine amenity services	NA	2 - Ordered work	9		9	18	As advised by Principal									18		
55	PA	Litter, Below Standard Amenity Furniture in Rest Area																		
	PA1_R	Litter bins collection	NA	Special	2		2	24 hrs	10	24 hrs	8	weekly	6	weekly	5	Twice a month	4		440	
56	PZ	Rest Area Defects Other																		
	PZ1_P	Rest area building maintenance (painting, plumbing, roofing etc.)	NA	2 - Ordered work	9		9	18	As advised by Principal									18		440
	PZ2_R	Height of vegetation 200mm	200 mm	3 - Safety	1		1	1 month	9	1 month	7	1 month	5	1 month	4	6 weeks	3		441	
	PZ3_R	Any pavement related defects	NA	3 - Safety	1		1	1 month	9	2 months	7	3 months	5	4 months	4	4 months	3		449	
																			405	

**Defect Category 13- Other Roadside Defects**

57		RA																	Unauthorised Signs			
	RA1_P	Any verified unauthorized sign identified by inspection, complaint or notification by principal	NA	2 - Ordered work	9	9	18	As advised by Principal										18	424			
58		RB																	Unstable Batter/ Embankment, Missing Material			
	RB1_P	Unstable cut/ embankment to be filled to manage scour, cracks, erosion or instability	NA	2 - Ordered work	9	9	18	As advised by Principal										18	426	427	339	875
59		RC																	Damaged Concrete or Paving Blocks			
	RC1_H	Damaged, displaced concrete or paving blocks in pedestrian areas, identified by complaint, inspection or notification by the principal that is hazardous	NA	1- Hazard	10	10	20	As a hazard										20		refer to defect 45(YE) in new standards		
	RC2_R	Damaged, displaced concrete or paving blocks in pedestrian areas potential unsafe situation to pedestrian	NA	3 - Safety	4	4	1 week	12	1 week	10	2 weeks	8	2 weeks	7	2 weeks	6	306	429				
	RC3_R	Damaged, displaced concrete or paving blocks potential unsafe situation to travelling public	NA	3 - Safety	2	2	2 weeks	10	2 weeks	8	4 weeks	6	4 weeks	5	6 weeks	4						

60	RD	Loose earth, Rock in Sight Line																		
	RD1_R	Earth, rock and loose material in sight line	NA	3 - Safety	4		0	1week	8	1week	6	2 weeks	4	2 weeks	3	2 weeks	2		425 429	
61	RE	Litter on Road Reserve																		
	RE1_H	Any verified litter(dumped tyres, oil waste etc.) on road reserve identified by inspection, complaint, or notification by principal that deemed a health hazard	NA	1- Hazard	10	10	20	As a hazard										20		420 421
	RE2_P	Offensive litter on road reserve	NA	2 - Ordered work	9	9	18	As advised by Principal										18		429 440
	RE3_M	Litter on environmentally sensitive locations	NA	4- Legislative	1		1	Log the defect monitor and inform to principal										1		
62	RF	Graffiti																		
	RF1_P	Any graffiti considered offensive and highly visible to public	NA	2 - Ordered work	9	9	18	As advised by Principal										18		422
	RF2_R	Road user safety compromised by the graffiti	NA	3 - Safety	3		3	1 day	11	1 days	9	1 day	7	2 weeks	6	4 weeks	5			



	RF3_R	Any other graffiti	NA	6- Appearance /Usability	1	1	1 week	9	2 weeks	7	4 weeks	5	6 weeks	4	8 weeks	3				
63	RG	Scoured Areas on the Road Reserve																		
	RG1_H	Scour is likely to affect the structural capacity of the roadway	NA	1- Hazard	10	10	20	As a hazard										20	880	
	RG2_P	Any scour is likely to cause environmental damage or likely to affect adjoining private property	NA	2 - Ordered work	9	9	18	As advised by Principal										18	310	
64	RH	Abandoned Vehicles																		
	RH1_H	Any abandoned vehicle or equipment likely to be hazardous to travelling public or pedestrians	NA	1- Hazard	10	10	20	As a hazard										20	429	
	RH2_P	Any other abandoned vehicle or equipment in road reserve.	NA	2 - Ordered work	9	9	18	As advised by Principal										18	418	
65	RK	Illegal Accesses																		
	RK1_P	Any illegal accesses to TMR road network	NA	2 - Ordered work	9	9	18	As advised by Principal										18	429	

66	RL	Illegal Turning Areas																		
	RL1_P	Any illegal turning Areas within TMR road network	NA	2 - Ordered work	9	9	18	As advised by Principal										18	429	439
67	RM	Landscape Vegetation Defects																		
	RM1_M	Landscape Vegetation in any visually sensitive locations is likely to compromise road user safety	NA	3 - Safety	1		1	Log the defect monitor and inform to principal										1		
	RM2_M	Landscape Vegetation in any visually sensitive locations	NA	6- Appearance /Usability	1		1	Log the defect monitor and inform to principal										1	429	
68	RN	Damaged Qld Dept. of Main Roads Fencing																		
	RN1_H	Fence damage that is a hazard	NA	1- Hazard	10	10	20	As a hazard										20		
	RN2_M	Damage affecting effectiveness or purpose of the fence	NA	3 - Safety	3		3	Log the defect monitor and inform to principal										3	880	
	RN3_M	Poor aesthetics to travelling public or pedestrians	NA	6- Appearance /Usability	1		1	Log the defect monitor and inform to principal										1	429	

69	RP	Damaged Qld Dept. of Main Roads Noise Barrier Fencing																
	RP1_P	One panel is missing or damage	NA	2 - Ordered work	9	9	18	As advised by Principal								18	870	
70	RR	Damaged or Unserviceable Bus Shelters																
	RR1_M	Damaged or Unserviceable Bus Shelters likely to compromise public safety	NA	3 - Safety	1		1	Log the defect monitor and inform to principal								1	890 891	
71	RT	Sediment Pond Defects General																
	RT1_P	Silted or Unserviceable Sedimentation Pond Facilities	NA	2 - Ordered work	9	9	18	As advised by Principal								18	312	
	RT2_M	Any defect likely to affect the proper functioning of the asset	NA	5 - Prevent ative	1		1	Log the defect monitor and inform to principal								1	313	
72	RW	Damaged Roadside Weighing Area																
	RW1_P	Facility is not functional	NA	2 - Ordered work	9	9	18	As advised by Principal								18	429	

**Defect Category 14 - Traffic Sign Defects**

73	SA	Missing, Damaged or Dirty Regulatory, Warning or Hazard Sign																		
	SA1_H	Any sign or footing damage (including sign being unstable) that is hazard	NA	1 - Hazard	10	10	20	As a hazard										20	TBA	
	SA2_R	Regulatory signs (R1, R2, R3 and R4 series) missing, damaged or dirty sign face (after cleaning sign is not clearly legible from 150 m at night with lights on low beam in rural areas or legible within 2.5 secs of travel at the operational speed in urban areas)	NA	3- Safety	5	5	1 day	13	1 day	11	1 day	9	1 day	8	1 day	7		501		
	SA3_R	Regulatory signs (R5 Series e.g. parking limits) missing, damaged or dirty face (after cleaning sign is not clearly legible from 150 m at night with lights on low beam in rural areas or legible within 2.5 secs of travel at the operational speed in urban areas)	NA	3- Safety	3	3	2 months	11	3 months	9	3 months	7	3 months	6	3 months	5		502 503 504 509		

	<b>SA4_R</b>	Any hazard or warning sign missing, damaged or dirty sign face (after cleaning sign is not clearly legible from 150 m at night with lights on low beam in rural areas or legible within 2.5 secs of travel at the operational speed in urban areas)	NA	3- Safety	4	4	4	2 months	12	3 months	10	3 months	8	3 months	7	3 months	6			
<b>74</b>	<b>SB</b>	<b>Missing or Defective Guide Sign</b>																		
	<b>SB1_H</b>	Any verified defect on sign or support identified by inspection, complaint, or notification by principal that is likely to become hazardous to public	NA	1- Hazard	10	10	20	As a hazard										20	504	
	<b>SB2_R</b>	Any Guide sign missing , damaged or dirty sign face (after cleaning sign is not clearly legible from 150 m at night with lights on low beam in rural areas or legible within 2.5 secs of travel at the operational speed in urban areas) is likely to create unsafe road environment to travelling public	NA	3 - Safety	2	2	2	1 week	10	1 week	8	2 weeks	6	3 weeks	5	4 weeks	4	506	505	
																		507	512	

75	SC	Sign Misalignment																		
	SC1_H	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20		See Hazard Procedure
	SC2_R	Sign is reflecting glare from vehicles lights at night back to the motorist	NA	3- Safety	2		2	2 months	10	3 months	8	3 months	6	3 months	5	3 months	4		509	
	SC3_R	Sign is on a noticeable lean (greater than 15 degrees)	15°	3- Safety	1		1	2 months	9	3 months	7	3 months	5	3 months	4	3 months	3		502	
	SC4_R	Fix sign inclined to line of sight (twisted) by more than 30 degrees)	30°	3- Safety	2		2	2 months	10	3 months	8	3 months	6	3 months	5	3 months	4		503	
																			559	
<b>Defect Category 15- Traffic Furniture Defects</b>																				

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76	TA	Guide Post or Delineator Defects																		
	TA1_H	Any verified defect identified by inspections, complaint or notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20	525	
	TA2_R	Any missing guide posts in a hazardous location for the travelling public <u>or</u> the post is on a noticeable lean <u>or</u> there is an inability at night to see at least two delineators ahead (both red, both white, or red and white) from a guide post location <u>or</u> any missing delineators on guardrail installation. (Above relates to observation after cleaning the post and delineator, on low beam)	NA	3- Safety	3	3	1 month	11	1 month	9	1 month	7	1 month	6	1 month	5		510		
																	511			
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77	TC	Guardrail, Fencing and Concrete Barrier Structural Defects																		
	TC1_H	Damaged guardrail <u>or</u> components (e.g. terminal sections) are a potential hazard to traffic	NA	1 - Hazard	10	10	20	As a hazard										20	522	
																		523		
																		524		
	TC2_R	Guardrail, Fencing or Concrete barrier facility has a loss of structural integrity	NA	3 - Safety	5	5	1 week	13	2 week	11	3 weeks	9	2 months	8	3 months	7		530		
																		532		

TC3_R	Guardrail panel is bent exceed 200 mm out of alignment	200 mm	5- Preventative	2	2	1 month	10	2 months	8	3 months	6	6 months	5	6 months	4	534	
TC4_P	Aesthetic appearance decreased by accumulation of dirt, peeling paint etc.	NA	2 - Ordered work	9	9	18	As advised by Principal									18	520 531 559 429 525
78	TB	Reference Marker Defects															
TB1_R	Reference Marker not visible or missing	NA	6- Appearance /Usability	1	1	3 months	9	3 months	7	4 months	5	6 months	4	6 months	3	512	
TB2_R	Illegible when viewed from vehicle travelling at 80km/hr	NA	6- Appearance /Usability	1	1	3 months	9	3 months	7	4 months	5	6 months	4	6 months	3		
79	TD	Kerb or Dyke Defects															
TD1_H	Any verified defect identified by inspection, complaint, or notification by principal that likely to cause accidents	NA	1- Hazard	10	10	20	As a hazard									20	306 429



	<b>TD2_I</b>	Damaged, misaligned kerbing or median noses $\geq$ 20 mm, interrupted longitudinal drainage flow, tripping hazards.	20 mm	3 - Safety	2	2	50 mm	10	50 mm	8	50 mm	6	50 mm	5	NA	0				
	<b>TD2_R</b>	Damaged, misaligned kerbing or median noses exceeds the upper intervention level in TD2_I that interrupted longitudinal drainage flow, tripping hazards.	Upper IL	3 - Safety	3	3	1week	11	1week	9	2 Weeks	7	4 Weeks	6	NA	0				
	<b>TD3_M</b>	Continuous kerbing damaged or missing	NA	6- Appearance /Usability	2	2	Log the defect monitor and inform to principal										2			
<b>80</b>	<b>TE</b>	<b>Guardrail, Fencing and Concrete Barrier Appearance Defects</b>																		
	<b>TE1_H</b>	Poor visibility of guardrail, fencing, concrete barriers and its components due to dirt, peeling of paint or due to vegetation is verified by complaint, inspection or notify by principal that likely to cause accidents	NA	1- Hazard	10	10	20	As a hazard										20	521 522 559	see defect no 42

Defect Category 16 - Traffic Marking Defects

81	UA	Missing or Faded Painted Road Lines and Markings																		
	UA1_M	Any verified defect identified by inspections, complaint or notification by the Principal that is unsafe	NA	3 - Safety	4		4	Log the defect monitor and inform to principal										4	701 702 703 704 705 709 707 710 711 712 713 714 719 720 721 722 723 724 725 729 730 731	See Hazard Procedure

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82	UE	<b>Raised Pavement Marker Defects</b>																	
	UE1_M	Loss of, or loss of reflectivity(%) of markers on straights exceeds 25% on curves and exceeds 50% on straights in 100 m or any consecutive markers are missing	25% on curve or 50% on straights	3 - Safety	4	4	Log the defect monitor and inform to principal										4	740 429 559	
<b>Defect Category 17 - Traffic Signal Defects</b>																			
83	VA	<b>Traffic Signal Controller Defects</b>																	
	VA1_H	Any reported defect such as given below have potential to cause dangerous or hazardous situation: (I) Flashing Yellow (II) Site blacked out (III) Confusing signal displays (IV) Controller knocked down (V) Stuck in phase/ not cycling (VI) Safety critical times too short (VII) Skipping phase, not serving vehicle or pedestrian demands (VIII) Train (Heavy Rail) interface not operating correctly (IX) Tram (Light Rail) interface not operating correctly	NA	1 - Hazard			4 hours											650	

		(X) Two lamps out or more per signal group failure								
84	VA2_P	<p>Any reported defects where the installation is safe but is operationally degraded, including but not limited to ground mounted and overhead mounted traffic signals:</p> <p>(I) Twisted &amp; non conflicting lantern arrangement;</p> <p>(II) Lamps out (other than pedestrian "Don't Walk" lamps);</p> <p>(III) Visors or louvres missing or damaged;</p> <p>(IV) Lenses damaged;</p> <p>(V) Missing/defaced labeling.</p>	NA	2 - Ordered work			2 business days		650 602 619 610 950	



	<b>VB2_P</b>	(i) Twisted & non Confusing lantern arrangement (ii) Missing or damaged hardware (i.e. missing pole and/or associated hardware) (iii) Lamp outages (iv) Visors, louvers or target boards missing or damaged (v) poor lantern aiming (vi) loss of displays	NA	2 - Ordered work				Missing pole and associated hardware (without footing damage) - 12 Business Days Missing pole and associated hardware ( <u>with</u> footing damage) - 16 Business Days Otherwise monthly (Traffic Signal Lamp Failure Program)											650 602 619 610 950	
<b>86</b>	<b>VC</b>	<b>Traffic Signal Electrical Defects</b>																		
	<b>VC1_H</b>	Any reported defect such as given below have potential to cause dangerous or hazardous situation: (1) Flashing Yellow (II) Damaged or missing finial cap/traffic signal mast arm junction box/ JU pole terminal panel cover/controller cabinet door (III) Hanging or damaged cables (IV) Exposed wires/cables (V) Audio tactile unit fault.	NA	1 - Hazard				4 hours											650	

87	VD	Traffic Signal Hardware Defects														
	VD1_H	Any reported defect such as given below have potential to cause dangerous or hazardous situation: (I) Confusing signal displays (II) Damaged and dangerous post/pole (including knockdowns) (III) Controller knocked down; (IV) Damaged push button (V) Push button not operating and not placing a demand (VI) Stuck in phase/ not cycling (VII) Skipping phase, not servicing vehicle or pedestrian demands (VIII) Trivision sign fault causing confusion (IX) Audio tactile unit fault.	NA	1 - Hazard						4 hours				650		

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	<p><b>VD2_P</b></p>	<p>(I) Misaligned &amp; non confusing lantern arrangement                  (II) Missing or damaged hardware (i.e. missing pole and/or associated hardware).                  (III) Lamp outages                  (IV) Visors, louvers or target boards missing or damaged                  (V) poor lantern aiming                  (VI) loss of displays                  (VII) failed inductive loops.                  (VIII) Finish, controller obviously out of plumb, pole obviously out of plumb, signal hardware out of plumb, Tidiness, Cleanliness, etc.</p>	<p>NA</p>	<p>2 - Ordered works</p>			<p>Missing pole and associated hardware (without footing damage) - 12 Business Days                  Missing pole and associated hardware (with footing damage) - 16 Business Days                  Otherwise monthly (Traffic Signal Lamp Failure Program)</p>		<p>650 619 602 610 950</p>	
	<p><b>VD3_R</b></p>	<p>(1) Detector failures causing phases to be called and/or extended unnecessarily                  (II) Communications failure                  (III) Timing fault (not safety critical times)                  (IV) Button failures causing phases to be called and/or extended unnecessarily</p>	<p>NA</p>	<p>3 - Safety</p>			<p>2 business days</p>		<p>650 619</p>	
	<p><b>VD6_P</b></p>	<p>Any reported defect not impinging the operation of the traffic equipment</p>	<p>NA</p>	<p>6- Appearance /Usability</p>			<p>Monthly (Traffic Signal Lamp Failure Program)</p>		<p>602 610</p>	

88	VE	Traffic Signal Defects other																
	VE1_H	Any reported defect such as given below have potential to cause dangerous or hazardous situation: (I) Vehicle detector on operating and placing a demand (II) Heavy Rail detector locked on or not operating (III) Queue det equipment on ramp metering (on Ramps & Off Ramps (IV) UPS Failure	NA	1 - Hazard						4 hours					650			
	VE2_P	(I) Misaligned & non confusing lantern arrangement (II) Missing or damaged hardware (i.e. missing pole and/or associated hardware). (III) Lamp outages (IV) loss of displays (V) failed inductive loops. (VI) Finish, controller obviously out of plumb, pole obviously out of plumb, signal hardware out of plumb, Tidiness, Cleanliness, etc.	NA	2 - Ordered works							Missing pole and associated hardware (without footing damage) - 12 Business Days Missing pole and associated hardware ( <u>with</u> footing damage) - 16 Business Days Otherwise monthly (Traffic Signal Lamp Failure Program)				650	602	619	610 950

	<b>VE3_R</b>	(1) Detector failures causing phases to be called and/or extended unnecessarily (II) Communications failure (III) Timing fault (not safety critical times) (IV) Button failures causing phases to be called and/or extended unnecessarily	NA	3 - Safety				2 business days											650 619	
<b>89</b>	<b>VG</b>	<b>Electrical Cable Pit Defects</b>																		
	<b>VG1_P</b>	Electrical cable pit is not safe for public	NA	2 - Ordered works				Readily accessible by public pedestrians - 4 hours <u>Not</u> readily accessible by public pedestrians (i.e. Motorway, rural road environment) - 5 business days											650 635 640	
	<b>VG2_R</b>	Electrical cable pit has been made safe but is operationally degraded. Any reported missing/damaged electrical cable pit lid located in areas of the road reserve that are not readily accessible by pedestrian traffic (i.e. Motorway, rural road environment) ("make safe work").	NA	3 - Safety				18 business days											635 640	
<b>90</b>	<b>VH</b>	<b>Inductive Loop Defects (Not at a traffic signal installation)</b>																		
	<b>VH1_H</b>	Any reported defects where the equipment that is likely to cause personal injury/property damage	NA	1 - Hazard				5 business days	5 business days	2 business days	2 business days	2 business days						621		



93	QB	Lighting hardware defects																
	QB1_H	Damaged or missing electrical cable pit lid located in areas of the road reserve that are accessible by pedestrians.	NA	1 - Hazard														651 635 640
	QB2_H	Lighting pole knocked down and in path of traffic. Or pole falling imminent e.g. hit by mower/vehicle causing partial slip of slip base pole. Visibly loose nuts at the base of the pole. Signs of imminent danger e.g. significant swaying, leaning, soil erosion at footing, pole creaking, pole dented >20% pole diameter. Significant corrosion of pole. Outreach bracket hanging.	NA	1 - Hazard														651
	QB3_H	Luminaire visor/diffuser not secure/hanging. Or light is displaced/ re-aligned and as a result is causing disability glare to traffic. E.g. Pedestrian floodlight that was overslung is now underslung on outreach and now directs light onto approaching traffic and away from pedestrian crossing.	NA	1 - Hazard														651

	<b>QB4_R</b>	Lighting pole knocked down and NOT in path of carriageway. Route lighting scheme is operationally degraded <95% service, due to: Missing, damaged or failed hardware.	NA	3 - Safety				Missing pole and associated hardware (without footing damage) - 10 business days Missing pole and associated hardware ( <u>with</u> footing damage) - 15 business days		950	Failure of isolated lighting installations fall under this defect code.
	<b>QB5_R</b>	Road lighting circuit continuously on (i.e. photoelectric (PE) cell failure)	NA	5 - Preventative				5 business days		609	
	<b>QB6_R</b>	Light cycling (intermittent switching on and off)	NA	5 - Preventative				as per public lighting lamp run schedule		603 604	
	<b>QB7_R</b>	Damaged or missing electrical cable pit lid located in areas of the road reserve that are not accessible by pedestrian traffic. Includes flooded cable pits.	NA	5 - Preventative				5 business days		650 635 640	
	<b>QB8_R</b>	Lighting pole identified with cut/tear or dent <20% of pole diameter. Pole damaged but NO visible imminent danger e.g. pole leaning, significant swaying, pole creaking. Loss of galvanisation and or surface rust.	NA	5 - Preventative				As advised by Principal		609	
<b>94</b>	<b>QC</b>	<b>Lighting electrical defects</b>									
	<b>QC1_H</b>	Pole or pole hatchway missing, exposing potentially live cables.	NA	1 - Hazard				4 hours		651	

	<b>QC2_H</b>	Exposed cables in pit	NA	1 - Hazard				4 hours											651	
	<b>QC3_R</b>	Road lighting circuit failure (repairs to circuit in field). No electrical shock risk to people.	NA	3 - Safety				road lighting sites requiring access via low level level traffic - 5 business days road lighting sites requiring access via high level level traffic - 15 business days											609	
<b>95</b>	<b>QD</b>	<b>Lighting general defects</b>																		
	<b>QD1_H</b>	Failed navigation lights connected to a public lighting switchboard	NA	1 - Hazard				As advised by Principal											603 604 609	
	<b>QD2_R</b>	Miscellaneous e.g. vermin infestation	NA	2 - Ordered works				As advised by Principal											609	
	<b>QD3_R</b>	Vegetation shading road lighting	NA	2 - Ordered works				As advised by Principal											609	
	<b>QD4_R</b>	Individual road lighting defect regarding luminaire or mounting e.g. outreach not correctly aligned/perpendicular, luminaire not horizontal or a single lamp failure (excluding flag or stand alone emergency stopping bay lighting).	NA	3 - Safety				as per public lighting lamp run schedule											603 604	
	<b>QD5_R</b>	Any reported graffiti, vandalism, unauthorised banners.	NA	6 - Appearance/ Usability				As advised by Principal											609	

**Defect Category 19 - Bridge & Miscellaneous Structure Defects**

96	WD	Bridge Defects General- Debris on Bridges																	
	WD1_H	Any debris on overpass that can be used as projectiles that can be hazardous to travelling public or pedestrians	NA	1- Hazard	10	10	20	As a hazard										20	455
	WD2_R	Debris on bridges that is likely to interrupt the drainage facility, operation of expansion joints or affect the usability of the bridge	NA	5 - Preventative	2		2	2 days	10	3 days	8	1 week	6	2 weeks	5	4 weeks	4		455

**Defect Category 20 - Emergency**

97	ZZ	Emergency Call Out																					
	ZZ1_H	Any reported emergency incidents that likely to create unsafe situation to road users or likely to damage the road asset	NA	1- Hazard	10	10	20	report on site within 1 hr	20	report on site within 1 hr	20	mobilise in 1 hr	20	mobilise in 1 hr	20	mobilise in 1 hr	20		452	860	450	889	455

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Defect Category 21 - Bike Path Defects

98	JA	Bike path/lanes Surface defects																									
JA1_H	Any verified defect identified by inspections, complaint, notification by the Principal that is hazardous	NA	1 - Hazard	10	10	20	As a hazard										20										
JA2_I	Accumulation of loose stones, sand or debris on the bike path exceeds 5mm in depth or area exceeds 1m <sup>2</sup>	5 mm	3 - Safety	4	4	4	10 mm	12	10 mm	10	10 mm	8	10 mm	7	10 mm	6							140				
JA2_R	Accumulation of loose stones, sand or debris on the bike path exceeds the upper intervention level in JA2_I	Upper IL	3 - Safety	5	5	5	3 days	13	3 days	11	3 days	9	3 days	8	3 days	7							151				
JA3_I	Accumulation of loose stones, sand or debris on the bike path exceeds 5mm in depth or area exceeds 1m <sup>2</sup>	1 m <sup>2</sup>	3 - Safety	4	4	4	2m <sup>2</sup>	4	2m <sup>2</sup>	4	2m <sup>2</sup>	4	2m <sup>2</sup>	4	2m <sup>2</sup>	4							105				
JA3_R	Accumulation of loose stones, sand or debris on the bike path exceeds the upper intervention level in JA3_I	Upper IL	3 - Safety	5	5	5	3 days	5	3 days	5	3 days	5	3 days	5	3 days	5							107				
JA4_I	Potholes / delamination / isolated slab failure exceeds 10mm in depth	10 mm	3 - Safety	4	4	4	20 mm	12	20 mm	10	20 mm	8	20 mm	7	20 mm	6							142				
JA4_R	Potholes / delamination / isolated slab failure exceeds the upper intervention level in JA4_I	Upper IL	3 - Safety	5	5	5	3 days	13	3 days	11	3 days	9	3 days	8	3 days	7							106				
																							130				
																							423				
																							306				
																							110				
																							111				
																							161				
																							155				
																							157				
																							169				
																							143				
																							144				
																							112				
																							141				

	JA5_I	Shoving, depressions, rutting, lumps or ridges exceeds 20mm in 1.2m straight edge	20 mm	3 - Safety	4	4	30 mm	12	30 mm	10	30 mm	8	30 mm	7	30 mm	6				
	JA5_R	Shoving, depressions, rutting, lumps or ridges exceeds the upper intervention level in JA5_I	Upper IL	3 - Safety	5	5	3 days	13	3 days	11	3 days	9	3 days	8	3 days	7				
99	JB	Vegetation defects - Bike paths																		
	JB1_H	Trees, overhanging branches or broken limbs most likely to fall on bike path to be a hazard	NA	1 - Hazard	10	10	20	As a hazard										20	405	
	JB2_P	Previously cleared area where regrowth is evident	NA	2- Ordered works	9	9	18	As advised by Principal										18	404	
	JB3_R	Unwanted trees and shrubs or grass obscures in sightlines	NA	3 - Safety	2	2	2 weeks	10	2 weeks	8	2 weeks	6	2 weeks	5	2 weeks	4		405		
	JB4_M	Trees or limbs likely to fall on bike path	NA	3 - Safety	3	3	3	Log the defect and monitor if it become critical										3	403	
100	JC	Drainage defects - Eike paths																		
	JC1_I	Obstructed drainage cause water ponding on bike path exceeds 1m <sup>2</sup> or private property is endangered.	1 m <sup>2</sup>	3 - Safety	3	3	2m <sup>2</sup>	11	2m <sup>2</sup>	9	2m <sup>2</sup>	7	2m <sup>2</sup>	6	2 m <sup>2</sup>	5		301		
	JC1_R	Obstructed drainage cause water ponding on bike path exceeds the upper intervention level in JC1_I	Upper IL	3 - Safety	3	3	2 days	11	2 days	9	2 days	7	2 days	6	2 days	5		302		
																		303		
																		304		
																		319		

	JC2_R	Obstructed drainage cause water ponding adjacent to bike path	NA	5 - Preventative	1	1	2 weeks	9	2 weeks	7	2 weeks	5	2 weeks	4	2 weeks	3		
	JC3_I	Blocked drainage, culverts or pipes over 20% of the capacity	20%	5 - Preventative	1	1	30%	9	30%	7	30%	5	30%	4	30%	3		
	JC3_R	Blocked drainage, culverts or pipes exceeds the upper intervention level in JC3_I	Upper IL	5 - Preventative	1	1	2 weeks	9	2 weeks	7	2 weeks	5	2 weeks	4	2 weeks	3		
	JC4_R	Culverts, pipes and pits defects likely to impact on the integrity of the unit	NA	5 - Preventative	1	1	4 weeks	9	4 weeks	7	4 weeks	5	4 weeks	4	4 weeks	3		
101	JD	<b>Bike path Defects General</b>																
	JD1_R	Damaged bike path fencing creates unsafe riding environment to cyclists	NA	3 - Safety	1	1	2 days	9	2 days	7	2 days	5	2 days	4	2 days	3		880
	JD2_R	Missing or defective regulatory or warning sign	NA	3 - Safety	1	1	2days	9	2 days	7	2 days	5	2 days	4	2 days	3		504
	JD3_R	Missing or defective guide sign	NA	6 - Appearance/ Usability	1	1	2 weeks	9	2 weeks	7	2 weeks	5	2 weeks	4	2 weeks	3		506
																		505
																		509

Defect Category 22 - Common Defects

102	XA	Inspection Needed																	
	XA1_P	Additional inspection needed by complaints, specific reason or incidents	NA	2 - Ordered work	9	9	18	As advised by Principal										18	901 RM PC Joint Maintenance Requirements Assessment 322

- Note 1: Priority group definition: 1 Hazard, 2 Ordered work, 3 Safety, 4 Legislative, 5 Preventative, 6 Appearance /Usability
- Note 2: Road Cat A >= 30000 AADT, Road Cat B >= 10000 & <30000 AADT, Road Cat C >=500 & < 10000 AADT, Road Cat D >= 100 & < 500 AADT, Road Cat E < 100 AADT
- Note 3: \* Program of works must be in place for unsealed roads.
- Note 4: All criteria where intervention limit is given as "as advised by Principal" must be reported to Principal in 4 weeks.
- Note 5: One month is equal to 30 days

Note 6: defect sub code acronym;

H - Hazard

P - Principal Ordered

I - defect within the Intervention level

R - defect breached upper intervention level

M - defect in monitoring stage

W - Program of works for unsealed roads

Note 7: Corporate priority weighting;

Priority 1 defects (Hazardous ) - 20

Priority 2 defects (Ordered works) - 18

Priority 3 to 6 defects - 5 to 1

Note 8: Field weighting;

Asset rapid deterioration due to defect - 4

Asset moderate deterioration due to defect - 3

Asset low deterioration due to defect - 2

The defect is in the monitoring stage - 1

Note 9: Response time starts when the defect has reached to its upper intervention level

Released under RTI - DTMR

## 5 Chapter 5: Recommended Maintenance Activities

This chapter provides all recommended maintenance activities to rectify routine maintenance and some of other elements (rehabilitation, resurfacing and so on) defects. Maintenance Activity Payment Types (Section 5.2) and Maintenance Activity Standards (Section 5.3) provide in-depth knowledge to use maintenance activities. Contractors may use alternative cost effective maintenance activity standards that suits better for local conditions. However such maintenance activity standards must fully comply with departmental technical requirements and prior approval must be sought from Transport and Main Roads in order to use such activities to deliver maintenance works.

### 5.1 Maintenance Activity Descriptions - Summary

#### 100 SEALED SURFACES

##### 101 Edge Repair (Manual)

The manual repair with asphalt or premix, of isolated lengths of sealed pavement to restore the edges to line and level. Includes surface preparation and tack coating and the placing of shoulder material against the repair and compaction.

##### 102 Edge Repairs (Mechanical)

The machine repair with asphalt or premix of sealed pavement edges to line and level. Includes surface preparation and tack coating.

##### 103 Edge Repair with Emulsion/Aggregate

The machine repair with graded aggregate and emulsion using blower type compaction equipment of sealed pavement bituminous edges to line and level. Includes surface preparation and tack coating.

##### 105 Pothole Patching

The repair with asphalt or premix of an isolated hole or series of holes in the roadway surface due to loss of material including:

- the removal of any cracked or loose material
- forming a vertical face at least 25 mm deep, on the hole edges, and
- surface preparation and tack coating.

##### 106 Pothole Patching with Emulsion/Aggregate

The machine repair with graded aggregate and emulsion using blower type compaction equipment of an isolated hole or series of holes in the roadway bituminous surface.

##### 107 Heavy Patching

The repair with asphalt or premix of any hole or series of holes on the roadway surface which results in a total patched area greater than 10 m<sup>2</sup>. Repair includes:

- the removal of any cracked or loose material
- forming a vertical face at least 25 mm deep, on the hole edges, and
- surface preparation and tack coating.

**110 Surface Correction with Premix/Asphalt (Manual)**

The application by hand of a premix or asphalt levelling course to distorted and rutted areas of the bituminous surface.

**111 Surface Correction with Premix/Asphalt (Mechanical)**

The application by machine of a premix or asphalt levelling course to distorted and rutted areas of the roadway bituminous surface.

**112 Surface Correction with Emulsion/Aggregate**

The application of graded aggregate and emulsion using blower type compaction equipment to level distorted and rutted areas of the roadway bituminous surface.

**115 Surface Enrichment**

A light application of bituminous material, with or without fine aggregate cover, to increase the binder content of a bituminous surfacing.

**116 Slurry Seal**

The application of a slurry of polymer-modified bitumen emulsion and aggregate to an existing bituminous surface.

**117 Reseal**

The mechanical surface treatment of the existing roadway surface to seal the surface and restore surface life and/or skid resistance.

**118 Seal Coating (Minor)**

The surface treatment of short sections of existing roadway surface by resealing to seal the surface and restore surface life and/or skid resistance. Includes the supply of all materials and the protection of service box lids.

**120 Fill Cracks**

The cleaning and filling of cracks not wider than 20 mm in bituminous pavements with polymer-modified bitumen products.

**121 Crack Treatment with Emulsion/Aggregate**

The cleaning and filling of cracks in bituminous pavements with graded aggregate and emulsion using blower type compaction equipment.

**122 Treat with Strain Alleviating Product**

The application of a polymer-modified bitumen strain alleviating product to an existing bituminous surface to treat cracking.

**123 Surface Strip Treatment of Cracks**

The cleaning and filling of cracks wider than 20 mm in bituminous pavements and sealing with a surface strip treatment, such as:

- stick-on proprietary strips (polymer bitumen and/or geotextile based), or
- proprietary grids.

**124 Concrete Joint and Crack Treatment**

The routing, cleaning and filling of joints and cracks in concrete pavements to prevent infiltration of moisture into the underlying pavement structure.

**125 Stitch Treat Cracks in Concrete Roadways**

The stitching of cracks on concrete roadway surface using staple tie bars. Includes the provision of cleaned out chase out slots, appropriate resin mortar and a sealed crack groove.

**126 Replacement of concrete joint sealant**

Includes all activities in relation to the replacement of concrete joint sealant in concrete pavements

**127 Concrete Pothole patching**

Includes all associated activities involved in patching potholes in concrete pavements.

**128 Jacking of concrete slabs**

Includes all associated activities involved in jacking of concrete pavement slabs.

**130 Surface Sweeping**

The removal of all loose material accumulated on the road surface, by hand or mechanical sweeping, including hand removal or larger debris.

**135 Surface Debris Removal**

The removal of foreign debris from the roadway surface that may cause a safety hazard to the road user.

**139 Other Bituminous Surface Work**

Work carried out on the bituminous roadway surface not covered by Activities numbered 101, 102, 103, 105, 106, 107, 110, 111, 112, 115, 116, 117, 118, 120, 121, 122, 123, 130, 135 and 161.

**140 Pavement Repairs (Manual)**

The repair by hand of shoving pavement or asphalt surfacing (less than 1 m<sup>2</sup> in area) by removal of deteriorated pavement and/or asphalt and replacement with new pavement material and asphalt or an appropriate seal, to profile. May include treatment of subgrade materials and re-working, as appropriate.

**141 Temporary Pavement Repairs (Mechanical)**

The temporary repair of failed pavement through shoving by mechanical trimming of raised pavement to the level of the surrounding bitumen seal surface level. Includes the application of bituminous seal coat and cover aggregate over the trimmed areas.

**142 Emergency Temporary Pavement Repairs**

The emergency temporary repair to the roadway surface to eliminate hazardous conditions until permanent repairs can be made.

**143 Pavement Repairs (Mechanical) - Minor**

The repair by machine of shoving pavement or asphalt surfacing of size less than 500 m<sup>2</sup> by removal of deteriorated pavement and/or asphalt and replacement with new pavement material and asphalt, to profile. May include treatment of subgrade materials and re-working, as appropriate. Nominal depth of treatment is 200 mm. Treatment greater than this depth is covered by Activity numbered 144.



**144 Pavement Repairs (Mechanical) - Major**

The repair by machine of shoving pavement or asphalt surfacing of size less than 500 m<sup>2</sup> by removal of deteriorated pavement and/or asphalt and replacement with new pavement material and asphalt, to profile. May include treatment of subgrade materials and re-working, as appropriate. Refers to pavement repairs greater than 200 mm nominal depth.

**145 Scarify and Reshape Existing Pavement**

The repair by machine of out of shape bituminous pavement (less than 500 m<sup>2</sup>), by scarifying and reshaping the existing pavement to profile including appropriate bituminous surfacing works. May include the addition of some additional paving material to maintain road profile, as appropriate.

**150 Insitu-stabilisation**

The stabilisation in place of a subgrade or an existing pavement (less than 500 m<sup>2</sup>). May include the addition of paving material to maintain profiles as appropriate. See Activities numbered 151 and 152 for the supply and cartage of paving material respectively.

**151 Gravel Supply-Insitu Stabilisation**

The supply of paving material for Activity numbered 135, Insitu Stabilisation. Includes all costs associated with the winning of the material for the works.

**152 Gravel Cartage-Insitu Stabilisation**

The cartage of paving material for Activity numbered 150, Insitu Stabilisation. Includes all costs associated with the loading and cartage of the material to the work site.

**155 Asphalt Overlay**

Application of an asphalt overlay to an existing distressed pavement (less than 500 m<sup>2</sup>).

**156 Replace Excavated Asphalt**

The restoring to level with new asphalt of areas where deteriorated asphalt has been excavated.

**157 Excavate and Replace Asphalt**

The excavation of deteriorated asphalt and the restoration to profile with new asphalt in one operation.

**160 Recycling**

The heating and removal of an existing asphalt surface, the incorporation of rejuvenating agent and new hot-mixed asphalt, and the relaying and compaction of the mixed material.

**161 Profile Planing**

The planing back of asphaltic concrete roadway surface profile to sound material or specified depth. Does not include replacement with new asphaltic concrete material.

**169 Other Pavement Work**

Any work on the sealed roadway pavement not covered by Activities numbered 140, 141, 142, 143, 144, 145, 150, 151, 152, 155, 156, 157 and 160.

**200 UNSEALED SURFACES**

**201 Light Formation Grading**

The light trimming by grader of unsealed formation surface to restore rideability.

**202 Medium Formation Grading**

The grading of unsealed formation to reinstate the correct profile. Includes degrassing, incorporation of water and compaction. Does not include scarifying or addition of imported gravel/material from outside the worksite to build up existing material. A nominated maximum one way lead distance of twenty (20) km applies for water cartage.

**203 Heavy Formation Grading**

The grading of unsealed formation to reinstate the correct profile. Includes degrassing, scarifying, the incorporation of water and proper compaction. May include the addition of imported gravel/material in isolated areas where the gravel crust is broken or there is change in the surface composition. Also includes treatment of adjacent surface drainage. A nominated maximum one way lead distance of twenty (20) km applies for water cartage.

**204 Gravel/Material Supply - Heavy Formation Grading**

The supply on site of imported gravel/material that may be required to reinstate the correct profile and or level when carrying out Activity numbered 203, Heavy Formation Grading. Includes all operations involved with winning, loading and cartage of the gravel/material to the job site.

**205 Resheeting**

The addition of imported gravel/material to the running surface to reinstate to the correct profile/height above the natural surface, improve the quality of the surface material or to obtain an acceptable running course depth. Includes degrassing, scarifying and preparation of the existing formation and the incorporation of water and proper compaction of the formation and imported gravel/material.

A nominated maximum one way lead distance of twenty (20) km applies for water and gravel/material cartage. For greater cartage distances, see Activities numbered 230 and 231.

**206 Remove Formation Material and Replace if Required**

The removal of unsuitable formation material and the reinstatement to correct profile. May include the actual replacement of the existing formation material.

**207 Formation Mechanical Stabilisation**

The addition of selected imported gravel/material to existing formation material to improve the mechanical stability of the material. Includes winning, loading and cartage of imported gravel/material, degrassing, scarifying and preparation of the existing formation, the incorporation of water and the proper mixing and compaction of the stabilised formation material.

**208 Accessibility Grading**

The light trimming by grader of unsealed formation material to restore access for light vehicles.

**214 Other Formation Work**

Any work on formation not covered by Activities numbered 201, 202, 203, 204, 205, 206, 207, 208, 230 and 231.

**215 Light Shoulder Grading - Rural**

The grading of unsealed shoulders located in a rural environment (greater than 60 kph speed restriction) to remove vegetation. Includes the removal of any windrows of vegetation and other debris that may otherwise impede drainage or encourage scour.

**216 Heavy Shoulder Grading - Rural**

The grading of unsealed shoulders located in a rural environment (greater than 60 kph speed restriction) to reinstate the correct profile. Includes the incorporation of water and proper compaction of the shoulder material. May include the addition of imported gravel/material. A nominated maximum one way lead distance of twenty (20) km applies for water cartage.

**217 Light Shoulder Grading - Urban**

The grading of unsealed shoulders located in an urban environment to remove vegetation. Includes the removals of any windrows of vegetation and other debris that may otherwise impede drainage or encourage scour.

**218 Heavy Shoulder Grading - Urban**

The grading of unsealed shoulders located in an urban environment to reinstate the correct profile. Includes the incorporation of water and proper compaction of the shoulder material. May include the addition of imported gravel/material.

**219 Gravel/Material Supply-Heavy Shoulder Grading**

The supply on site of imported gravel/material that may be required to reinstate the correct profile and or level when carrying out Activities numbered 216, Heavy Shoulder Grading-Rural and 218, Heavy Shoulder Grading-Urban. Includes all operations involved with winning, loading and cartage of the gravel/material to the job site.

**220 Shoulder Pothole Patching**

The manual placement and compaction of gravel into an isolated pothole or series of potholes in a gravel shoulder.

This Activity would normally be undertaken as a temporary measure to make a road shoulder safe until Activities numbered 221 or 216, Resheeting or Heavy Shoulder Grading, can be completed.

**221 Resheeting**

The addition of material to unsealed shoulders to correct excess shoulder crossfall and/or reduced shoulder width. A nominated maximum one way lead distance of twenty (20) km applies for water and gravel/material cartage. For greater cartage distances, see Activities numbered 230 and 231. Work includes:

- removal of vegetation
- scarifying, shaping existing material and compacting, and
- incorporation of water, if required and compaction and trimming of added material, and
- reinstatement of roadside furniture.

**222 Remove Shoulder Material and Replace if Required**

The removal of unsuitable shoulder material and the reinstatement to correct profile. May include the replacement of the existing shoulder material.

**229 Other Unsealed Shoulder Work**

Any work on unsealed roadway shoulder not covered by Activities numbered 215, 216, 217, 218, 219, 220, 221, 222, 230 and 231.

**230 Abnormal Water Cartage**

The cartage of water over lead distances greater than the nominated maximum limit for normal cartage of twenty (20) km: Applies to works carried out under Activities numbered 202, 203, 205, 216 and 221.

**231 Abnormal Gravel/Material Cartage**

The cartage of gravel/material over lead distances greater than the nominated maximum limit for normal cartage of twenty (20) km: Applies to works carried out under Activities numbered 221 and 215.

**300 DRAINAGE**

**301 Install Earth Surface Drain**

All work and materials associated with the installation of new, or the improvement of existing, earth surface drains. Includes diversion, catch, batter and table drain work. Does not include work associated with the installation of new culvert structures, see Activity numbered 320.

**302 Repair Earth Surface Drains**

The repair to correct profile and level of damaged earth surface drains.

**303 Install Concrete Surface Drains**

All work and materials associated with the installation of new, or the improvement of existing, concrete surface drains. Includes diversion, catch, batter and table drain work. Does not include work associated with the installation of new culvert structures. See Activity numbered 320.

**304 Repair Concrete Surface Drains**

The repair to correct profile and level of damaged concrete surface drains.

**305 Clean Earth and Concrete Surface Drains**

The restoration of existing earth and concrete drains that are ineffective due to insufficient depth or insufficient grade.

**306 Repair or Replace Concrete Slabs or Paving Blocks, Kerbs and Dykes**

The repair or replacement of concrete or paving blocks, kerbs and dykes.

**310 Installation and Removal of Erosion and Sediment Control Measures**

All works associated with the installation of erosion and sediment control devices to control run off from areas of exposed earth resulting from maintenance operations.

**311 Maintenance of Erosion and Sediment Control Measures**

All works associated with the maintenance of erosion and sediment control devices installed under Activity numbered 769 to ensure proper functioning of the facility in service.

**312 Service Sedimentation Ponds**

All works associated with the routine servicing of roadside sedimentation ponds to ensure their planned operation in service is not compromised.

**313 Repair Sedimentation Ponds**

All works associated with the repair of sedimentation ponds to ensure the facility operates effectively in service.

**319 Other Surface Drain Work**

Any work related to earth and concrete surface drains not covered by Activities numbered 301, 302, 303, 304, 305, 306, 310, 311, 312, 313 and 326.

**320 Install Culverts and Pipes**

All work associated with the installation of a new culvert or pipe facility. Includes back filling to profile and the provision of associated catch and outlet surface drains.

**321 Clean Culverts, Pipes and Pits - Minor**

The cleaning by hand tools of debris and silt impeding the free flow of water through culverts, pipes and pits and their inlets and outlets.

**322 Clean Culvert, Pipes and Pits General - Major**

The cleaning by machine of debris and silt impeding the free flow of water through culverts, pipes and pits and their inlets and outlets.

**323 Repair Concrete Culverts, Pipes and Pits**

The repair of damaged concrete culverts, pipes and pits.

**324 Repair Steel Drainage Structures**

The repair of damaged or deteriorated steel culverts structures or pipes.

**325 Repair Inlet and Outlet Scour**

All work associated with restoring scoured areas of drainage inlet and outlets to a stable condition.

**326 Repair or Install Scour Blocks**

All work and materials associated with the installation of new or the repair of existing scour blocks.

**327 Replace or Install Cut Off Walls**

The replacement or installation of cut off walls to drainage structures.

**329 Other Culvert, Pipe and Pit Work**

Any work carried out to Culverts, Pipes or Pits not covered by Activities numbered 320, 321, 322, 323, 324, 325 and 327.

**330 Install Subsoil Drains**

Excavate the road formation and install subsoil drains, backfill and restore pavement and shoulder as required. Does not include work carried out in conjunction with pavement repair works - see Activities numbered 140, 143 and 144.

**331 Inspect and Service Subsoil Drains**

Inspection and servicing of subsoil drains. Includes routine drain flush out and the removal of all vegetation and other material which could restrict the flow of water from the subsoil drains as well as the repair or replacement of missing or damaged marker posts.

**332 Repair Subsoil Drains**

Excavate the road formation and repair subsoil drains, backfill and restore pavement and shoulder as required.

**339 Other Subsoil Drain Work**

Includes work carried out on subsoil drain systems not included under Activities numbered 330, 331 and 332.

**340 Clean Floodways**

The cleaning of debris, silt and regrowth of vegetation from floodway sections.

**341 Repair Floodways**

The reinstatement of damaged or deteriorated floodway structures. Includes work carried out on scour repairs to concrete and stone pitched batter and apron protection.

**342 Repair Floodway Slopes and Margins**

The repair of deteriorated or damaged concrete slopes and margins to original cross section. Includes the supply of all materials.

**349 Other Floodway Work**

Includes work carried out on floodway structures not included under Activities numbered 340, 341 and 342 inclusive.

**400 ROADSIDE**

**401 Tractor Slashing, Rural**

The tractor slashing of vegetation within the road reserve in a rural environment. Excludes herbicide spraying around guide posts, refer Activity numbered 407.

**402 Tractor Slashing, Urban**

The tractor slashing of vegetation within the road reserve in urban built up areas.

**403 Tractor Slashing - Boom Mower**

The tractor slashing of vegetation within the road reserve using a boom mower attachment.

**404 Hand-Mowing**

The mowing of grass and vegetation by hand-mower and/or brush cutter.

**405 Clearing**

The removal or pruning of all roadside vegetation, other than grass, for the purpose of aesthetic or visibility clearing. Includes trees too close to the road and branches/trees likely to fall on the road. Also includes chipping, grading, weeding and burning operations.

**406 Herbicide Spot Spraying Declared Plants**

The identification and eradication of declared plants within the road reserve (including rest areas owned by TMR) includes either sprayed or manual application of chemical herbicide. Excludes the spraying of other plants carried out under Activity No 407.

**407 Herbicide Spraying**

The supply and application by spraying of chemical herbicide for the control of declared plants and other vegetation.

**408 Tractor Treatment, Chemical**

The chemical treatment of vegetation within the road reserve by tractor mowing.

**409 Seeding or Planting**

The supply, planting and maintenance of shrubs and trees including fertilising, watering, mulching and weeding.

**410 Landscape Planting - Urban**

The supply, planting and maintenance of shrubs and trees including fertilising, watering, mulching and weeding in an urban environment.

**411 Maintain Landscaped Shrubs**

All works associated with the ongoing maintenance of plants, shrubs and trees planted under Activity No 410. Includes fertilising, watering and weeding of facility.

**412 Mulching**

The treatment of roadside by mulching to eliminate the growth of vegetation. Includes poisoning of existing ground cover supply and placing of a weed inhibiting membrane and laying of mulch material.

**415 Roadside Burning Off**

All works associated with the treatment of vegetation on the road reserve through a management burn program. The works may be required as a hazard reduction measure or for ecological purposes.

**419 Other Vegetation Control Works**

Any work carried out to control vegetation on the road reservation not covered by Activities numbered 182, 765 and 411 to 418 inclusive.

**420 Roadside Litter Collection - Rural**

The collection and disposal of litter and rubbish, whether from bins located along the right of way or from the right of way itself, in rural areas. Includes the repair and maintenance of receptacles. See Activity numbered 421 for litter collections in urban built up areas.

**421 Roadside Litter Collection - Urban**

The collection and disposal of litter and rubbish, whether from bins located along the right of way or from the right of way itself in urban build up areas. Includes the repair and maintenance of receptacles.

**422 Graffiti Removal**

The removal of graffiti from road infrastructure assets.

**423 Roadside Sweeping**

The removal of all loose material from the edges of the road surface and from the road lines by mechanical means, including hand removal of larger debris. Does not include sweeping of large areas or intersections, refer Activity numbered 130.

**424 Removal of Unauthorised Signs**

The removal of unauthorised signs from the road reservation.

**425 Earthworks, Visibility Clearing**

Excavation undertaken to clear visibility lines.

**426 Repair Stability Problems**

Excavate unstable material, install geotextile, rockfill and/or subsoil drains, backfill the road formation and restore pavement and shoulder as required by the design approved by the District Manager.

**427 Exclusion Zone Fencing (Cultural Heritage Sites)**

All activities associated with isolating cultural heritage sites including fencing.

**429 Other Roadside Work**

Any work carried out on the roadside not covered by Activities numbered 420, 421, 422, 423, 424, 425 and 426.

**430 Services Restoration**

All works necessary to restore the roadway to an acceptable condition resulting from works undertaken by Service Authorities in the road reserve. Includes cost of necessary traffic control.

**439 Other Restoration Work**

Any other restoration work done not covered by Activities numbered 430 and 452.

**440 Rest Area Servicing**

The servicing of all aspects of rest areas controlled by Queensland Department of Main Roads, necessary for the safety and convenience of the public.

**441 Driver Reviver Site Servicing**

The routine servicing of locations on the road reserve used as "Driver Reviver Sites". Excludes servicing work carried out where a Rest Area is used as a "Driver Reviver" site, refer Activity numbered 440.

**449 Other Services Work**

All works associated with any other roadside service type Activity undertaken in addition to that associated with Activities numbered 440 and 441.

**450 After Hours Call Out Service**

All activities undertaken following an after hours call out, by the Police or other recognised authority, to an emergency situation on the road network.

**452 Emergency Call Out Activities**

All activities undertaken following a call out, by the Police or recognised authority, to an emergency situation on the road network.



**500 ROAD FURNITURE**

**501 Install New Signs (excluding Guide Signs)**

The installation of new signs excluding guide signs where none previously existed. Work includes supply of posts and fittings.

**502 Repair Signs (excluding Guide Signs)**

The repair of damaged or deteriorated sign faces excluding guide signs and supports. May include the replacement of damaged or deteriorated facilities with new sign facings and/or supports at that location.

**503 Relocate Existing Signs (excluding Guide Signs)**

All work associated with the relocation of existing signs excluding guide signs.

**504 Cleaning Signs**

The cleaning of sign faces to remove dirt and other contaminants to restore the reflectivity and appearance of signs.

**505 Install New Guide Signs**

The installation of new guide signs where none previously existed. See Activity numbered 501 for the installation of other types of signs.

**506 Repair Guide Signs**

The repair of damaged or deteriorated guide sign faces and supports. May include the replacement of damaged or deteriorated facilities with new sign facings and/or supports at that location.

**507 Relocate Guide Signs**

All work associated with the relocation of existing guide signs. See Activity numbered 503 for the relocation of other types of signs.

**509 Other Sign Work**

All other signwork not covered by Activities numbered 501, 502, 503, 504, 505, 506 and 507.

**510 Install New Guide Markers**

The provision of guide markers to delineate the road alignment.

**511 Clean and/or Paint Guide Markers**

The cleaning of guide markers to remove dirt and other contaminants and restore their white colour.

**512 Repair or Replace Guide Markers**

The repair or replacement of guide markers to restore delineation of the road alignment.

**513 Replace Guide Post Delineators**

The replacement of guide post delineators to restore delineation of the road alignment.

**514 Repair Guide Markers**

The repair of roadside guide markers to restore delineation of the road alignment.

**515 Replace Guide Markers**

The replacement of defective roadside markers with new markers to restore delineation of the road alignment.

**519 Other Guide Post and Marker Work**

Any other work carried out to guide posts and markers not covered by Activities numbered 510, 511, 512, 513, 514 and 515.

**520 Install New Guard Rail, Barrier Furniture**

The installation of steel beam guard-rail, including materials, and application of all protective coatings.

**521 Clean and/or Paint Guard Rail, Barrier Furniture**

The cleaning of guardrail and barrier furniture to remove dirt and other contaminants and/or its painting.

**522 Repair or Replace Guard Rail, Barrier Furniture**

The repair or replacement of damaged guardrails/barrier furniture.

**523 Repair Guardrail Barrier Furniture**

All works associated with the repair of damaged roadside guardrail or other barrier furniture.

**524 Replace Guardrail, Barrier Furniture**

All works associated with the replacement of damaged roadside guardrail or other barrier furniture with new barrier materials.

**525 Replace Guardrail Delineators**

All works associated with the replacement of defective delineators on roadside guardrail furniture.

**530 Repair Wire Rope Barrier**

All works associated with the repair of damaged roadside wire rope barrier furniture.

**532 Repair Ingal Barrier**

All works associated with the repair of damaged roadside ingal barrier furniture.

**534 Repair Impact Barrier Furniture**

All work associated with the repair or replacement of special purpose impact roadside facilities. Does not include the repair of damaged roadside barrier furniture, refer Activities numbered 522, 523, 524, 530 and 532.

**550 Emergency Roadside Phone Repairs**

The repair or replacement of emergency roadside phones to restore operation.

**551 Emergency Roadside Phone Servicing**

All works associated with the routine servicing of roadside emergency phones. Includes inspections to monitor serviceability of the phones, servicing and minor repair works.

**559 Other Furniture Repairs**

Any other work carried out to barrier furniture not covered by Activities numbered 520, 521, 522, 523, 524, 525, 530, 532, 534, 550 and 551.

**600 LIGHTING AND TRAFFIC SIGNALS**

**601 Replace Lamps and Clean Lenses (Bulk Change)**

The replacement of all lamps whether defective or otherwise and cleaning of lenses according to a regular maintenance program (Preventative Maintenance).

**602 Replacement Defective Lamps and Clean Lamps (Emergent Change)**

The replacement of any defective lamps and cleaning of lenses if necessary due to fault call-out (Response Maintenance).

**603 Replace Lamps and Clean Emitting and Reflecting Surfaces - Scheduled (Bulk)**

The replacement of all lamps whether defective or otherwise and the cleaning of emitting and reflective surfaces according to a regular maintenance program (Preventative Maintenance).

**604 Replace Lamps and Clean Emitting and Reflecting Surfaces - Individual (Unscheduled)**

The replacement of any defective lamps and cleaning of emitting and reflective surfaces due to a fault call-out.

**605 Clean Light Emitting and Reflecting Surfaces - Scheduled (Bulk)**

The cleaning of emitting and reflective surfaces of lighting and power installations according to a regular maintenance program (Preventative Maintenance).

**606 Modify Traffic Signals - Add Lanterns**

The installation of extra lanterns to existing posts, poles or outreaches including:

- disconnection of existing loop wire from detector feed cable
- cutting of new loop slot
- placing of new loop wire
- filling of slot after cleaning
- jointing of new loop wire to existing detector feed cable.

**607 Modify Traffic Signals - Remove Lanterns**

The removal of lanterns from posts, poles or outreaches including:

- disconnecting lantern cable cores from finial terminals
- removal of lantern including straps

**608 Routine Lighting and Power Servicing**

All routine servicing work carried out to lights including cleaning using relamping buckets. Includes street and bridge lighting, feature lighting, lighting on pedestrian structures and crossings and navigation lighting on bridges where applicable.

**609 Lighting and Power, General**

General work carried out to lighting facilities. Includes repairs (excluding associated electrical pits) and improvements, to facilities.

**610 Routine Signals Servicing**

Work carried out for Preventative Maintenance to designated items of signals installation according to a maintenance interval program.

**619 Traffic Signal Work, General**

General work carried out to traffic facilities. Includes non-routine servicing, repairs, improvements, call out activities, loop repairs and works associated with traffic performance investigations.

**620 Repair Inductive Loops**

The disconnection and rejoining of faulty connection of loop wire to detector feed cable.

**621 Inductive Loops (Re-cut Loop)**

The cutting of a new detector loop including:

- disconnection of existing loop wire from detector feed cable
- cutting of new loop slot
- placing of new loop wire
- filling of slot after cleaning
- jointing of new loop wire to existing detector feed cable

**622 PSC Controllers - Install New Personality**

The removal of existing personality, the installation of a new personality and viewing of at least one complete phase sequence of traffic signals to verify its correct operation.

**623 Replace Pedestrian Crossing Push Buttons**

The replacement of standard type pedestrian push buttons with audio tactile type including driver unit.

**624 Traffic Signal - Coordination Servicing**

To be advised.

**627 CCTV (Closed Circuit Television) Maintenance and Servicing**

All works associated with maintaining CCTVs.

**628 VMS (Variable Messaging Signs) Maintenance and Servicing**

Covers all activities associated with maintaining VMSs.

**629 Routine Traffic Management Equipment Servicing**

All works carried out for Preventative Maintenance to designated items of traffic management equipment according to a maintenance interval program.

**630 Accident Damage - Straighten Bent Post and Reinstate Post Foundation**

The straightening of a bent post and/or bent foundation bolts caused by an accident.

**631 Accident / Storm Damage - Re-aim Lanterns**

The re-aiming of lanterns displaced by an accident or storm.

**632 Accident Damage - Replace Lanterns, Posts and Foundations**

The replacement of any damaged lanterns, posts and foundations caused by an accident that are unable to be satisfactorily repaired.

**633 Accident Damage - Replace Post and Foundations and Reinstate Lanterns from Old Post**

The removal of lanterns not damaged, replacement of accident damaged post and foundation unable to be reinstated and reinstatement of existing lanterns.

**634 Reinstate Damaged Poles and Lighting**

All works associated with the reinstatement of damaged light and power pole supports and associated fittings.

**635 Repair Minor Damage to Electrical Pits**

All works associated with the repair of minor damage to electrical pits associated with lighting or power asset facilities.

**636 Replace Damaged Pit Covers**

The replacement of damaged pit cover/s with new cover and disposal of damaged cover.

**637 Replace Damaged Electrical Pit Covers**

The replacement of damaged electrical pit covers with new covers. Includes the proper disposal of the damaged cover.

**640 Repair Damaged Pits**

The removal, disposal and replacement of damaged pits including cover/s where necessary.

**641 Repaint Controller**

The cleaning down including removal of posters and repainting of controller cabinet.

**642 Repaint Mast Arms including Hardware**

The cleaning down including removal of posters and repainting of mast arms and associated hardware.

**643 Repaint Posts including Hardware**

The cleaning down including removal of posters and repainting of posts and associated hardware.

**650 After Hours Call Out**

The after hours inspection of a traffic signals site due to a fault report to ascertain fault and make site safe but not including remedial action required.

**700 TRAFFIC DELINEATION**

**701 Repaint Road Centre Lines, Minor**

**702 Repaint Road Centre Lines, Major**

**703 Repaint Double Barrier Lines – Day work**

**704 Paint New Yellow Line**

**705 Repaint Yellow Line**

**709 Repaint Double Barrier Line, General**

**710 Repaint Road Edge Lines, Minor**

**711 Repaint Road Edge Line, Major**

**712 Repaint Edge Lines, 100mm Width**

**713 Repaint Edge Lines – 150mm Width**

**714 Repaint Unbroken Lane Line, General**

**719 Repaint Single Barrier Line, General**

**720 Repaint Single Broken Lines**

**721 Repaint Barrier Broken Lines**

**722 Repaint Broken Lane Line, General**

**723 Repaint Continuity Line, General**

**724 Repaint Broken Line, General**

**725 Repaint 150 mm Outline, General**

All work associated with the renovation of road line marking in general. Includes sweeping, spotting, symbolising and repainting.

**729 Urban Line Marking - Minor**

All works associated with minor line marking of lines and markings in an urban built up environment.

**730 Repaint Lateral Markings**

All works associated with the renovation of road line marking using water based paint. Includes sweeping, spotting, symbolising and repainting.

**731 Remark Road Markings**

The renovation or replacement of road marking. Includes transverse lines, chevrons, arrows, legends and painted medians.

**735 Thermoplastic Line Marking**

All works associated with the use of thermoplastic material to mark new lines or markings or retreat deteriorated existing lines and markings.

**736 Audiotactile Linemarking**

All works associated with the use of audiotactile materials to mark new lines or markings or retreat existing lines or markings.

**740 Raised Pavement Markers**

The installation of new or replacement of missing raised pavement markers. Includes the supply of markers.

**745 Remove Unwanted Road Lines**

All works associated with the removal of unwanted roadlines.

**750 Remove Unwanted Markings by Grinding**

All works associated with the removal of unwanted road markings by grinding.

**759 Line Marking - General**

Any line marking works not covered by Activities numbered 701, 702, 703, 704, 705, 709, 710, 711, 712, 713, 714, 719, 720, 721, 722, 723, 724, 725, 729, 730, 731, 735, 736, 740, 745 and 750.

**800 STRUCTURES**

**801 Routine Bridge Servicing (Concrete)**

All works associated with the routine servicing of concrete components of bridges. Includes tightening of nuts, bolts and plates, clearing of the deck surface and scuppers of debris and other foreign materials and the cleaning of girder bearing areas.

**802 Routine Bridge Servicing (Steel)**

All works associated with the routine servicing of steel components of bridges. Include tightening of nuts, bolts and plates, clearing of the deck surface and scuppers of debris and other foreign materials and the cleaning of girder bearing areas.

**803 Routine Bridge Servicing (Timber)**

All works associated with the routine servicing of timber components of bridges. Include tightening of nuts, bolts and plates, clearing of the deck surface and scuppers of debris and other foreign materials and the cleaning of girder bearing areas.

**805 Reinstate/Repaint Handrails and Guardrails**

All works associated with the routine reinstatement-repainting of hand rails and guard railings along the bridge structure.

**806 Repair Deck Wearing Surface**

Details to be advised.

**807 Repair Footway Surface**

All works associated with the repair of damaged footway surfaces associated with structures on the roadway.

**809 Routine Bridge Servicing, General**

Minor maintenance works carried out to timber and concrete bridge structures of a Preventative Maintenance servicing nature. For example:

- tightening of nuts, bolts and plates etc.
- painting of hand rails and guard railings along the bridge structure
- routine clearing of the deck surface and scuppers of debris or other foreign materials
- minor emergency reinstatement-replacement of isolated items such as timber deck, running plank, kerb or rails and concrete kerbs, rail posts
- termite treatment in timber bridges
- minor works necessary to maintain a free flowing waterway such as the clearing of trees and vegetation, and
- cleaning of girder bearing areas
- minor repairs to spalled areas.

**810 Clean Out Expansion Joints and Associated Drains**

All works associated with the cleaning out of membranes and associated drains and the removal of foreign objects from deck expansion joints.

Note: Some joints may have membranes covered by plates. The works include the removal of plates, cleaning of the membrane and plate reinstatement in these instances.

**811 Clean Out Vent Holes in Superstructure**

All works associated with the cleaning out of vent holes in bridge superstructures and the removal of foreign objects.

**812 Clean Bearings, Bearing Sills and Sill Drains**

All works associated with the cleaning of bridge bearings, bearing sills and sill drains and the removal of foreign objects.

**813 Tighten / Replace Concrete Deck Joint Bolts**

All works associated with the tightening of loose bolts in bridge deck joints. Includes the replacement of any missing bolts.

**815 Replace/Repair Expansion Joints (Concrete)**

All works associated with the repair or replacement of missing or damaged bridge expansion joints of concrete deck bridge types to provide an adequate seal to protect the bridge components from the ingress of moisture and foreign material.

**819 Bridgework, Other Structural (Concrete)**

All other structural works carried out to concrete components of bridges not covered by Activities numbered 801, 815 and 851.

**820 Clean/Repaint Steel Elements**

The preparation by appropriate cleaning and repainting of steel elements of bridge structures.

**821 Clean Aggressive Contamination from Steel Girders**

All works associated with the removal by cleaning of aggressive materials from steel girders to prevent contamination of the material.

**822 Repair Minor Damage to Steel Elements**

All works associated with the repair of minor damage to steel elements of bridge structures.

**823 Replace/Repair Expansion Joints (Steel)**

All works associated with the repair or replacement of missing or damaged bridge expansion joints on bridges of predominately steel construction to provide an adequate seal to protect the bridge components from the ingress of moisture and foreign materials.

**829 Bridgework, Other Structural (Steel)**

Any other structural work carried out to steel elements of bridge structures not covered by Activities numbered 822 and 823.



**830 Tighten / Replace Timber Joint Bolts**

All works associated with the tightening of loose bolts on timber bridge components. Includes the replacement of any missing bolts.

**831 Timber Preservative / Water proofing Treatment**

All works associated with the water proofing of timber bridge components using a timber preservative product. Includes the coating of damaged areas, holes and exposed end grains with diffusing preservative and water proofing ends of timber members, if required.

**832 Temporary Propping of Defective Timber Components**

All works associated with the temporary propping of defective timber components on a structure until permanent repairs can be undertaken.

**833 Reinstate Timber Piles**

All works associated with the removal and replacement or splicing of deteriorated unserviceable timber piles of bridge structures.

**834 Repair/Replace Timber Corbels**

The removal and replacement or repair of any timber bridge corbel determined to be in an unserviceable structural condition.

**835 Repair / Replace Timber Headstocks**

All works associated with the removal and replacement or repair of any timber bridge headstock determined to be in an unserviceable structural condition.

**836 Replace Timber Girders**

The removal and replacement of any timber bridge girder in an unserviceable structural condition.

**837 Replace Deck Planks with New Planks**

The removal and replacement of any timber bridge deck plank in an unserviceable structural condition.

**838 Repair/Replace Kerbs**

The removal and replacement or repair of any timber or concrete bridge kerb determined to be in a dangerous or unserviceable structural condition.

**839 Treat for Termites**

All works associated with the treatment by poisoning of termite infestations in timber components of timber bridges.

**849 Bridgework, Other Structural (Timber)**

All other structural works carried out to timber components of bridges not covered by Activities numbered 803, 833, 834, 835, 836, 837, 838 and 852.

**850 Replace/Repair Relieving Slabs**

All works associated with the repair or replacement of cracked and unserviceable relieving slabs to bridge structures.

**851 Repair Spalled and Cracked Structural Concrete Elements**

All works associated with the refurbishment of spalled and cracked concrete sections of concrete components of bridges.

**852 Repair Spalled and Cracked Structural Concrete Elements**

All works associated with the refurbishment of spalled and cracked concrete elements on bridges of predominantly timber construction. Includes concrete kerbs and rail supports.

**853 Repair Spalled and Cracked Structural Concrete Elements**

All works associated with the refurbishment of spalled and cracked concrete elements on bridges of predominantly steel construction. Includes concrete kerbs and rail supports.

**854 Clean Out Abutment and Wing Wall Weepholes**

All works associated with the cleaning out of weepholes in abutments and wing walls to ensure the free flow of seepage waters.

**855 Repair/Replace Batter Protection**

All works associated with the reinstatement-replacement of deteriorated or damaged bridge batter protection works of bridge structures.

**856 Clean Out Waterways**

All works required to maintain a free flowing bridged waterway. Includes the clearing of trees and other vegetation and any debris load on the structure in the waterway. Includes the proper disposal of cleared materials away from the waterway.

**859 Bridge Work, General**

All general works of a non-routine nature carried out to timber, concrete and steel bridge components not covered by Activity numbered 809.

**860 Routine Grid Servicing**

All work of a routine nature necessary to maintain a sound and effective grid. Includes desilting of opening and up keep of grid hazard signs.

**861 Repair or Replace Grids**

All works associated with the repair of defective grids. Includes structural repair to rails and bearers and may involve complete structural replacement.

**862 Emergency Grid Repairs**

The unplanned repair of grid structures requiring immediate attention for safety reasons. Work includes welding loose grid rails and the installation of new rails where appropriate.

**865 Rail Crossing Servicing**

Works of a routine nature necessary to maintain a sound crossing. Includes pavement repairs where the defect has resulted from the presence of the rails.

**870 Repair Noise Barriers**

All works associated with the repair of roadside noise barrier facilities.

**875 Repair of Restraining Structures - Gabions, Reinforced Walls**

All work associated with the repair of restraining structures such as gabions and reinforced walls.

**880 Repair Roadside Fences**

All works associated with the repair of roadside fencing.

**890 Service Passenger Facilities**

All works associated with the routine servicing of roadside passenger facilities owned by the department.

**891 Repair Passenger Facilities**

All works associated with the repair of roadside passenger facilities owned by the department.

**899 Other Miscellaneous Structure Work**

Any other work to structures not covered by Activities numbered 860, 861, 862, 865, 870, 875, 880, 890 and 891.

**900 OVERHEADS**

**901 RMPC Joint Maintenance Requirement Assessment**

All works associated with the joint departmental/Contractor assessment of the network for the purpose of determining the extent of Activities required for the forthcoming Contract Period.

**907 Prepare Cultural Heritage Management Plan**

Covers all activities involved in preparing a cultural heritage management plan.

**908 Implement, Monitor and maintain Cultural Heritage Management**

All work associated with implementing, monitoring and maintaining a cultural heritage management plan.

**910 Preparation of Environmental Management Plan (Maintenance)**

All works associated with the preparation and submission (including any amendments required for approval) of an Environmental Management Plan (Maintenance) for the Contract.

**911 Implementation, Monitoring and Updating of Environmental Management Plan (Maintenance)**

All works associated with the implementation, monitoring and updating of an Environmental Management Plan (Maintenance) over the Contract Period.

**912 Payment of Permits and Fees (Environmental)**

The payment through reimbursement to the Contractor by the department of the value of permits and fees required for compliance with the applicable Federal, State and Local Government Environmental Legislation.

**920 Electricity Supply - Traffic Signals**

The cost incurred for electricity charges for the running of traffic signals.

**921 Electricity Supply, Lighting**

The cost of electricity supply incurred from a power authority for the operation of lighting asset facilities.

**922 Phone Charges - Traffic Signals**

The costs incurred for phone charges for the running of traffic signals.

**923 Phone Charges - Traffic Signal Coordination**

The costs incurred for phone charges for Traffic Area Response System connection from controllers to node base.

**930 Modify and Digitise Computerised As-constructed Drawings**

The updating of existing drawings to document as constructed changes to the design including the obtaining of electronic file from original source of design.

**931 Modify Paper-based As Constructed Drawings**

The updating of existing drawings to document as constructed changes to the design including the obtaining of drawings from original source of design.

**940 Major Bridge Inspections, General**

The detailed assessment of bridge structures, timber, concrete and steel types, to identify the present state of each bridge component. Includes the test boring of timber components.

**941 Level 1 Bridge Inspections**

All works associated with undertaking and recording a Level 1 type bridge inspection under RMPC.

**942 Prepare Bridge Information System Forms**

All works associated with the completion of structural/inventory verification forms compatible with the requirements of the Bridge Information System.

**943 Data Entry – Bridge Information System**

All works associated with the entry of verification, inspection and maintenance data into the Bridge Information System following inspections, see Activity numbered 941 and the recording of information compatible with the Bridge Information System, see Activity numbered 942.

**950 Damages Recovery**

The costs recovered as a result of claims for damages to the network road infrastructure assets.

**960 Alliance Performance Limb Payment**

The costs associated with performance limb payment for RMPC contract being undertaken through an alliance delivery approach

**970 Licence and Ongoing maintenance fees for Transport and Main Roads accepted Maintenance Management System (MMS)**

Ongoing MMS licence fees/maintenance cost /replacement cost of MMS field equipment

**5.2 Maintenance Activity Payment Types**

	<b>MAINTENANCE ACTIVITY Symbol &amp; Description</b>	<b>Work Type</b>	<b>Payment Type</b>	<b>ACTIVITY Payment Unit of Measure</b>
<b>100</b>	<b>Sealed Surfaces</b>			
101	Edge Repair (Manual)	Normal	Unit Rate	Tonnes
102	Edge Repair (Mechanical)	Normal	Unit Rate	Tonnes
103	Edge Repair with Emulsion/Aggregate	Normal	Unit Rate	m <sup>3</sup> (loose)

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
105	Pothole Patching	Normal	Unit Rate	Tonnes
106	Pothole Patching with Emulsion/Aggregate	Normal	Unit Rate	m <sup>3</sup>
107	Heavy Patching	Normal	Unit Rate	Tonnes
108	Edge Repair (RAMC Only)	Normal	Unit Rate	Tonnes
110	Surface Correction with Premix/Asphalt (Manual) - Minor < 150 linear metres per 1 kilometre	Normal	Unit Rate	Tonnes
111	Surface Correction with Premix/Asphalt (Mechanical)- Minor < 150 linear metres per 1 kilometre	Normal	Unit Rate	Tonnes
112	Surface Correction with Emulsion/Aggregate - Minor < 150 linear metres per 1 kilometre	Normal	Unit Rate	m <sup>3</sup>
113	Surface Correction - Major < 150 linear metres per 1 kilometre	Normal	Unit Rate	m <sup>2</sup>
114	Surface Enrichment – Major (≥ 150 linear metres per 1 kilometre)	Normal	Unit Rate	m <sup>2</sup>
115	Surface Enrichment – Minor (≤ 150 linear metres per 1 kilometre)	Normal	Unit Rate	m <sup>2</sup>
117	Reseal – Major (≥ 150 linear metres per 1 kilometre)	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
118	Seal Coating (Minor) - < 150 linear metres per 1 kilometre	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
119	Surface Correction (Skid Resistance)	Normal	Unit Rate	m <sup>2</sup>
120	Fill Cracks	Normal	Unit Rate	Litres
121	Crack Treatment with Emulsion/Aggregate	Normal	Unit Rate	m <sup>3</sup>
122	Crack Treatment with Strain Alleviating Product	Normal	Unit Rate	m <sup>2</sup>
123	Surface Strip Treatment of Cracks	Normal	Unit Rate	Linear Metres
124	Concrete Joint and Crack Treatment	Normal	Unit Rate	Linear Metres
125	Stitch Treat Cracks in Concrete Roads	Normal	Unit Rate	Linear Metres
126	Replacement of Concrete Joint Sealant	Prov. Sum	Fixed Price	Dollars
127	Concrete Pothole Patching	Normal	Unit Rate	m <sup>3</sup>
128	Jacking of Concrete Slab	Prov. Sum	Fixed Price	Dollars
129	Pavement Repairs, Concrete (Mechanical) – Minor (< 500 sq.m per km)	Normal	Unit Rate	m <sup>2</sup>
130	Surface Sweeping	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
135	Surface Debris Removal	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
137	Rut Correction- Minor (< 100 metres per 1 km)	Normal	Unit Rate	Tonnes
138	Rut Correction- Major (≥ 100 metres per 1 km)	Normal	Unit Rate	Tonnes

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
139	Other Bituminous Surface Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
140	Pavement Repairs (Manual)	Normal	Unit Rate	m <sup>2</sup>
141	Temporary Pavement Repairs (Mechanical)	Normal	Unit Rate	m <sup>2</sup>
142	Emergency Temporary Pavement Repairs	Normal	Unit Rate	Tonnes
143	Pavement Repairs Gravel (Mechanical) Minor	Normal	Unit Rate	m <sup>2</sup>
144	Subgrade Treatment in Conjunction with Pavement Repair Activity	Normal	Unit Rate	m <sup>3</sup>
145	Scarify and Reshape Existing Pavement	Normal	Unit Rate	m <sup>2</sup>
146	Pavement Repairs Asphalt (Mechanical) Minor (< 500 m <sup>2</sup> )	Normal	Unit Rate	m <sup>2</sup>
147	Pavement Repairs Gravel (Mechanical) – Major (≥ 500 m <sup>2</sup> )	Normal	Unit Rate	m <sup>2</sup>
148	Pavement Repairs Asphalt Gravel (Mechanical) – Major (≥ 500 m <sup>2</sup> per km)	Normal	Unit Rate	m <sup>2</sup>
151	Gravel Supply-Insitu Stabilisation	Normal	Unit Rate	m <sup>3</sup> (loose)
152	Gravel Cartage-Insitu Stabilisation	Normal	Unit Rate	m <sup>3</sup> (loose) - kms
153	Insitu-Stabilisation – Minor (< 500 m <sup>2</sup> )	Normal	Unit Rate	m <sup>3</sup>
154	Insitu-Stabilisation – Major (≥ 500 m <sup>2</sup> )	Normal	Unit Rate	m <sup>3</sup>
155	Asphalt Overlay – Major (≥ 150 linear metres)	Normal	Unit Rate	Tonnes
157	Excavate and Replace Asphalt – (Wearing Surface < 75 mm for areas, < 150 linear metres)	Normal	Unit Rate	Tonnes
158	Excavate and Replace Asphalt Wearing Surface (RAMC only)	Normal	Unit Rate	m <sup>2</sup>
160	Recycling	Normal	Unit Rate	m <sup>3</sup>
161	Profile Planing	Normal	Unit Rate	m <sup>2</sup>
		Normal	Lump Sum	Dollars
169	Other Pavement Work (inform Element Leader)	Prov. Sum	Fixed Price	Dollars
170	Pavement Repairs (RAMC Only)	Normal	Unit Rate	m <sup>3</sup>
<b>200</b>	<b>Unsealed Surfaces</b>			
201	Light Formation Grading	Normal	Unit Rate	Kilometres – Metres Width
202	Medium Formation Grading	Normal	Unit Rate	Kilometres
203	Heavy Formation Grading	Normal	Unit Rate	Kilometres
204	Gravel/Material Supply - Heavy Formation Grading	Normal	Unit Rate	m <sup>3</sup> (loose)
		Prov. Sum	Fixed Price	Dollars
205	Formation Resheeting – Minor (> 150 linear metre)	Normal	Unit Rate	m <sup>3</sup> (loose)

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
206	Remove Formation Material and Replace, if Required	Normal	Unit Rate	m <sup>3</sup> (loose)
207	Formation Mechanical Stabilisation – Minor (> 150 linear metre)	Normal	Unit Rate	m <sup>3</sup> (loose)
		Prov. Sum	Fixed Price	Dollars
208	Accessibility Grading	Normal	Unit Rate	Kilometres – Metres Width
214	Other Formation Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
215	Light Shoulder Grading - Rural	Normal	Unit Rate	Shoulder km Side
216	Heavy Shoulder Grading - Rural	Normal	Unit Rate	Shoulder km Side
217	Light Shoulder Grading - Urban	Normal	Unit Rate	m <sup>2</sup>
218	Heavy Shoulder Grading - Urban	Normal	Unit Rate	m <sup>2</sup>
219	Gravel Supply - Heavy Shoulder Grading	Normal	Unit Rate	m <sup>3</sup> (loose)
		Prov. Sum	Fixed Price	Dollars
220	Shoulder Pothole Patching	Normal	Unit Rate	m <sup>3</sup> (loose)
221	Shoulder Resheeting	Normal	Unit Rate	m <sup>3</sup> (loose)
222	Remove Shoulder Material and Replace, if Required	Normal	Unit Rate	m <sup>3</sup> (loose)
229	Other Unsealed Shoulder Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
230	Abnormal Water Cartage	Normal	Unit Rate	Mega Litre kms
231	Abnormal Gravel Cartage	Normal	Unit Rate	m <sup>3</sup> (loose) - kms
<b>300</b>	<b>Drainage</b>			
301	Install Earth Surface Drains	Normal	Unit Rate	Metres
302	Repair Earth Surface Drains	Normal	Unit Rate	Metres
303	Install Concrete Surface Drains	Normal	Unit Rate	Metres
304	Repair Concrete Surface Drains	Normal	Unit Rate	Metres
305	Clean Earth and Concrete Surface Drains	Normal	Unit Rate	Metres
306	Repair or Replace Concrete Slabs, Paving Blocks, Kerbs and Dykes	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
310	Installation and Removal of Erosion and Sediment Control Measures – Minor	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
311	Maintenance of Erosion and Sediment Control Measures	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
312	Service Sedimentation Ponds	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
313	Repair Sedimentation Ponds	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
319	Other Surface Drain Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
320	Replace Minor Culverts and Pipes	Normal	Unit Rate	Linear metres
321	Clean Culverts, Pipes and Pits - Minor	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
322	Clean Culverts, Pipes and Pits - Major	Normal	Unit Rate	m <sup>3</sup>
		Prov. Sum	Fixed Price	Dollars
323	Repair Minor Concrete Culverts, Pipes and Pits	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
324	Repair Minor Steel Drainage Structures	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
325	Repair Inlet and Outlet Scour	Normal	Unit Rate	m <sup>3</sup>
326	Repair Scour Blocks	Normal	Unit Rate	m <sup>3</sup>
327	Replace or Install Cut-off Walls	Normal	Unit Rate	m <sup>3</sup>
328	Minor Repairs to Erosion Sites	Prov. Sum	Fixed Price	Dollars
329	Other Minor Culvert, Pipe and Pit Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
330	Install Subsoil Drains	Normal	Unit Rate	Linear metres
331	Inspect and/or Cleanout Subsoil Drains	Normal	Unit Rate	Linear metres
332	Repair Subsoil Drains	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
339	Other Subsoil Drain Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
340	Clean Floodways	Normal	Unit Rate	m <sup>2</sup>
341	Repair Floodways	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
342	Repair Floodway Slopes and Margins	Normal	Unit Rate	m <sup>3</sup>
		Prov. Sum	Fixed Price	Dollars
349	Other Floodway Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
<b>400</b>	<b>Roadside</b>			
401	Tractor Slashing, Rural	Normal	Unit Rate	Hectares



MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
402	Tractor Slashing, Urban	Normal	Unit Rate	Hectares
403	Tractor Slashing - Boom Mower	Normal	Unit Rate	m <sup>2</sup>
		Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
404	Hand Mowing	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
		Normal	Lump Sum	Dollars
405	Clearing	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
406	Herbicide Spot Spraying – Declared Plants	Prov. Sum	Fixed Price	Dollars
407	Herbicide Spraying	Normal	Unit Rate	Litres
		Prov. Sum	Fixed Price	Dollars
408	Tractor Treatment, Chemical	Normal	Unit Rate	Hectares
409	Seeding or Planting	Normal	Unit Rate	m <sup>2</sup>
410	Landscape Planting - Urban	Normal	Unit Rate	Each (Plant)
411	Maintain Landscaping - Minor	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
412	Mulching	Normal	Unit Rate	m <sup>2</sup>
415	Roadside Burning Off	Normal	Unit Rate	Hectares
		Prov. Sum	Fixed Price	Dollars
418	Clearing of Roadside Hazards	Prov. Sum	Fixed Price	Dollars
419	Other Vegetation Control Works	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
420	Roadside Litter Collection - Rural	Normal	Unit Rate	m <sup>3</sup>
		Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
421	Roadside Litter Collection - Urban	Normal	Unit Rate	m <sup>3</sup>
		Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
422	Graffiti Removal	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
423	Roadside Sweeping	Normal	Unit Rate	Linear metres
424	Removal of Unauthorised Signs	Normal	Unit Rate	Each (Sign)
425	Earthworks, Visibility Clearing	Normal	Unit Rate	m <sup>3</sup>
426	Repair Minor Stability Problems	Normal	Unit Rate	m <sup>3</sup>

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
427	Maintenance of Cultural Heritage Site	Normal	Unit Rate	Metres
		Prov. Sum	Fixed Price	Dollars
429	Other Roadside Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
430	Service Restoration	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
439	Other Restoration Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
440	Rest Area Servicing	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
441	Driver Reviver Site Servicing	Normal	Lump Sum	Dollars
449	Other Services Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
450	Call Out	Prov. Sum	Fixed Price	Dollars
452	Emergency Call Out Activities	Prov. Sum	Fixed Price	Dollars
453	Incident Response (RAMC)	Prov. Sum	Fixed Price	Dollars
455	Call Outs Required as a result of normal defects	Prov. Sum	Fixed Price	Dollars
460	Management of Declared Plants	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
<b>500</b>	<b>Road Furniture</b>			
501	Install New and/or Relocate Existing Signs	Normal	Unit Rate	Each (Sign)
502	Repair Signs (excluding Guide Signs)	Normal	Unit Rate	Each (Sign)
		Prov. Sum	Fixed Price	Dollars
503	Relocate Existing Signs (excluding Guide Signs)	Normal	Unit Rate	Each (Sign)
504	Cleaning Signs	Normal	Unit Rate	Each (Sign)
505	Install New Guide Signs	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
506	Repair Guide Signs	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
507	Relocate Guide Signs	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
509	Other Sign Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
510	Install New Guide Markers	Normal	Unit Rate	Each (Marker)
511	Clean and/or Paint Guide Markers	Normal	Unit Rate	Each (Marker)

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
512	Repair or Replace Guide Markers	Normal	Unit Rate	Each (Marker)
		Prov. Sum	Fixed Price	Dollars
513	Replace Guide Post Delineators	Normal	Unit Rate	Each (Delineator)
514	Repair Guide Markers	Normal	Unit Rate	Each (Marker)
515	Replace Guide Markers	Normal	Unit Rate	Each (Marker)
519	Other Guide Post and Marker Work	Normal	Unit Rate	Each
		Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
520	Install New Guard Rail, Barrier Furniture	Normal	Unit Rate	Linear metres
		Prov. Sum	Fixed Price	Dollars
521	Clean and/or Paint Guardrail, Barrier Furniture	Normal	Unit Rate	Linear metres
522	Repair or Replace Guardrail, Barrier Furniture	Normal	Unit Rate	Dollars
		Prov. Sum	Fixed Price	Dollars
523	Repair Guardrail, Barrier Furniture	Normal	Unit Rate	Linear metres
524	Replace Guardrail, Barrier Furniture	Normal	Unit Rate	Linear metres
525	Replace Guardrail Delineators	Normal	Unit Rate	Each (Delineator)
530	Repair Wire Rope Barrier	Normal	Unit Rate	Linear metres
		Prov. Sum	Fixed Price	Dollars
531	Upgrade Existing Barrier End	Normal	Unit Rate	Each
532	Repair Ingal Barrier	Normal	Unit Rate	Linear metres
		Prov. Sum	Fixed Price	Dollars
533	Upgrade Existing Barrier	Normal	Unit Rate	Linear metres
534	Repair Impact Barrier Furniture	Normal	Unit Rate	Linear metres
		Prov. Sum	Fixed Price	Dollars
550	Emergency Roadside Phone Repairs	Normal	Unit Rate	Each (Phone)
		Prov. Sum	Fixed Price	Dollars
551	Emergency Roadside Phone Servicing	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
559	Other Furniture Repairs	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
<b>600</b>	<b>Lighting and Traffic Signals</b>			
601	Replace Traffic Signal Lamps and Clean Lanterns (Bulk Change)	Normal	Unit Rate	Each (Lamp)
		Prov. Sum	Fixed Price	Dollars
602	Replace Traffic Signals Defective Lamps and Clean Lanterns (Emergent Change)	Normal	Unit Rate	Each (Lamp)
		Prov. Sum	Fixed Price	Dollars

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
603	Replace Route Lighting Lamps and Clean Luminaries– (Bulk Scheduled)	Normal	Unit Rate	Each (Lamp)
		Prov. Sum	Fixed Price	Dollars
604	Replace Route Lighting Defective Lamps and Clean Luminaries - Individual (Unscheduled)	Normal	Unit Rate	Each (Lamp)
		Prov. Sum	Fixed Price	Dollars
605	Clean Traffic Signal Lanterns - Scheduled (Bulk)	Normal	Unit Rate	Each (Lamp)
606	Modify Traffic Signals - Add Lanterns	Normal	Unit Rate	Each (Lantern)
607	Modify Traffic Signals - Remove Lanterns	Normal	Unit Rate	Each (Lantern)
608	Routine Route Lighting and Power Servicing	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
609	Route Lighting and Power, General	Normal	Lump Sum	Each
		Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
610	Routine Traffic Signal Servicing	Normal	Lump Sum	Dollars
619	Traffic Signal Work, General	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
620	Repair Inductive Loops-Minor Damage	Normal	Unit Rate	Each (Joint)
621	Inductive Loops (Recut Loops)	Normal	Unit Rate	Each (Joint)
622	Replace PTF Controller	Normal	Lump Sum	Dollars
623	Replace Pedestrian Crossing Push Buttons	Normal	Unit Rate	Each (Set)
		Prov. Sum	Fixed Price	Dollars
624	Traffic Signal Co-ordination Servicing	Normal	Lump Sum	Dollars
625	Road Safety Camera Works - General	Prov. Sum	Fixed Price	Dollars
627	CCTV (Closed Circuit Television) Maintenance	Prov. Sum	Fixed Price	Dollars
628	VMS (Variable Messaging Signs) Maintenance	Prov. Sum	Fixed Price	Dollars
629	Routine Traffic Management Equipment Servicing	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
630	Accident Damage, Traffic Signals	Prov. Sum	Fixed Price	Dollars
		Prov. Sum	Fixed Price	Dollars
631	Accident/ Storm Damage- Re-aim Traffic Signal Lanterns	Normal	Unit Rate	Each (Lantern)
		Prov. Sum	Fixed Price	Dollars
632	Accident Damage - Replace Traffic Signal Lanterns, Posts and Foundations	Normal	Unit Rate	Each (Pole)
		Prov. Sum	Fixed Price	Dollars
633	Accident Damage - Replace Traffic Signal Post and Foundations and Reinstate Lanterns from Old Pole	Normal	Unit Rate	Each (Pole)
		Prov. Sum	Fixed Price	Dollars

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
634	Reinstate Damaged Route Lighting Poles and Lighting	Normal	Unit Rate	Each (Pole)
635	Repair Minor Damage to Electrical Pits	Normal	Unit Rate	Each (Pit)
637	Replace Damaged Electrical Pit Covers	Normal	Unit Rate	Each (Lid)
		Prov. Sum	Fixed Price	Dollars
638	Replace Damaged Electrical Pit Lids _Route Lighting	Normal	Unit Rate	Each (Pit)
		Prov. Sum	Fixed Price	Dollars
639	Replace/Repair Damaged Electrical Pit Lids _Route Lighting	Normal	Unit Rate	Each (Pit)
		Prov. Sum	Fixed Price	Dollars
640	Repair Damaged Electrical Pits	Normal	Unit Rate	Each (Pit)
		Prov. Sum	Fixed Price	Dollars
641	Repaint Traffic Signal Controller	Normal	Unit Rate	Each (Controller)
642	Repaint Traffic Signal Mast Arms including Hardware	Normal	Unit Rate	Each (Mast Arm)
643	Repaint Traffic Signal Poles including Hardware	Normal	Unit Rate	Each (Pole)
644	Repaint Route Lighting Poles including Hardware	Normal	Unit Rate	Each (Pole)
650	After Hours Call Out Service – Traffic Signals	Prov. Sum	Fixed Price	Dollars
651	After Hours Call Out Service – Route Lighting Signals	Prov. Sum	Fixed Price	Dollars
660	Electrical Safety Inspections – Traffic Signals	Prov. Sum	Fixed Price	Dollars
661	Electrical Safety Inspections – ITS Devices Signals	Prov. Sum	Fixed Price	Dollars
662	Electrical Safety Inspections – Route Lighting	Prov. Sum	Fixed Price	Dollars
<b>700</b>	<b>Traffic Delineation</b>			
701	Repaint Road Centre Lines, Minor	Normal	Unit Rate	Line Kms
702	Repaint Road Centre Lines, Major	Normal	Unit Rate	Line Kms
703	Repaint Double Barrier Lines, Daywork	Normal	Unit Rate	Line Kms
704	Paint New Yellow Line	Normal	Unit Rate	Line Kms
		Prov. Sum	Fixed Price	Dollars
705	Repaint Yellow Line	Normal	Unit Rate	Line Kms
		Prov. Sum	Fixed Price	Dollars
706	Supporting for Yellow Lines	Normal	Unit Rate	Line Kms
		Prov. Sum	Fixed Price	Dollars
707	Repaint Unbroken Road Centre Lines_ 150mm width	Normal	Unit Rate	Line Kms
		Prov. Sum	Fixed Price	Dollars
709	Repaint Double Barrier Line, General	Normal	Unit Rate	Line Kms
710	Repaint Road Edge Lines, Minor	Normal	Unit Rate	Line Kms
711	Repaint Road Edge Lines, Major	Normal	Unit Rate	Line Kms
712	Repaint Edge Line – 100 mm Width	Normal	Unit Rate	Line Kms

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
713	Repaint Edge Line – 150 mm Width	Normal	Unit Rate	Line Kms
714	Repaint Unbroken Lane Line, General	Normal	Unit Rate	Line Kms
719	Repaint Single Barrier Line, General	Normal	Unit Rate	Line Kms
720	Repaint Single Broken Lines	Normal	Unit Rate	Line Kms
721	Repaint Barrier Broken Lines	Normal	Unit Rate	Line Kms
722	Repaint Broken Lane Line, General	Normal	Unit Rate	Line Kms
723	Repaint Continuity Line, General	Normal	Unit Rate	Line Kms
724	Repaint 150 mm Outline, General	Normal	Unit Rate	Line Kms
725	Repaint 150mm Outline – General	Normal	Unit Rate	Line Kms
729	Urban Line Marking - Minor	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
730	Repaint Lateral Markings	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
731	Remark Road Markings	Normal	Unit Rate	m <sup>2</sup>
735	Thermoplastic Line Marking	Normal	Unit Rate	m <sup>2</sup>
736	Audiotactile Linemarking	Normal	Unit Rate	Line Kms
740	Raised Pavement Markers	Normal	Unit Rate	Each (Marker)
745	Remove Unwanted Road Lines	Normal	Unit Rate	Line Kms
750	Remove Unwanted Markings	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
759	Line Marking, General	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
760	Pavement New Lateral Markings, Bikeways	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
770	Retro Reflectivity Testing	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
<b>800</b>	<b>Structures</b>			
809	Routine Bridge Servicing (RAMC)	Normal	Unit Rate	Linear Metres
		Prov. Sum	Fixed Price	Dollars
815	Replace / Repair Expansion Joints (Concrete)	Normal	Unit Rate	Metres
		Prov. Sum	Fixed Price	Dollars
819	Bridgework, Other Structural (Concrete)	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
820	Clean / Repaint Steel Elements	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
822	Repair Minor Damage to Steel Elements	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
823	Replace / Repair Expansion Joints (Steel)	Normal	Unit Rate	Metres
829	Bridgework, Other Structural (Steel)	Normal	Lump Sum	Dollars
833	Reinstate Timber Piles	Normal	Unit Rate	Linear Metres
		Prov. Sum	Fixed Price	Dollars
834	Repair / Replace Timber Corbels	Normal	Unit Rate	Each
835	Repair / Replace Timber Headstocks	Normal	Unit Rate	Each
836	Replace Timber Girders	Normal	Unit Rate	Each
837	Replace Deck Planks with New Planks	Normal	Unit Rate	m <sup>2</sup>
838	Repair / Replace Kerbs	Normal	Unit Rate	Metres
		Prov. Sum	Fixed Price	Dollars
849	Bridgework, Other Structural (Timber)	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
850	Replace / Repair Relieving Slabs	Normal	Unit Rate	m <sup>3</sup>
		Prov. Sum	Fixed Price	Dollars
851	Repair Spalled and Cracked Structural Concrete Elements (Concrete Bridges)	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
852	Repair Spalled and Cracked Structural Concrete Elements (Timber Bridges)	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
853	Repair Spalled and Cracked Structural Concrete Elements (Steel Bridges)	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
855	Repair / Replace Batter Protection	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
859	Bridgework, General	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
860	Routine Grid Servicing	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
861	Repair or Replace Grids	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
862	Widen / Replace Narrow Grids	Prov. Sum	Fixed Price	Dollars
865	Rail Crossing Servicing	Normal	Lump Sum	Dollars
870	Repair Noise Barriers	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
875	Repair Restraining Structures - Gabions, Reinforced Walls	Normal	Unit Rate	m <sup>2</sup>

MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
876	Footway deck wearing surface repairs ( Manual or Mechanical)	Normal	Unit Rate	Tonnes
877	Repair scouring/deposition of waterway material	Normal	Unit Rate	m <sup>3</sup>
		Prov. Sum	Fixed Price	Dollars
878	Remove flood debris from waterways	Normal	Unit Rate	m <sup>3</sup>
879	Maintain clear waterways	Prov. Sum	Fixed Price	Dollars
880	Repair Roadside Fences	Normal	Unit Rate	Linear Metres
		Prov. Sum	Fixed Price	Dollars
882	Maintain existing waterway protection	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
883	Seal gaps between culvert elements/wingwalls	Normal	Unit Rate	Linear Metres
		Prov. Sum	Fixed Price	Dollars
884	Repair handrail/barrier/guardrail furniture	Normal	Unit Rate	Linear Metres
		Prov. Sum	Fixed Price	Dollars
885	Make safe accident damage to handrail/barrier/guardrail furniture	Prov. Sum	Fixed Price	Dollars
886	Install / Maintain bird control fencing	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
887	Place emergency propping	Prov. Sum	Fixed Price	Dollars
888	Clean aggressive contaminations from steel girders	Normal	Unit Rate	m <sup>2</sup>
		Prov. Sum	Fixed Price	Dollars
889	Emergency pavement repairs on structures (< 10 m <sup>2</sup> )	Normal	Unit Rate	m <sup>2</sup>
890	Service Passenger Facilities	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
891	Repair Passenger Facilities	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
892	Tunnel Maintenance / servicing - General	Normal	Unit Rate	Month
		Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
895	Tunnel maintenance / servicing General	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
899	Other Miscellaneous Structure Work	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
<b>900</b>	<b>Overheads</b>			
901	RMPC Joint Maintenance Requirement Assessment	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars



MAINTENANCE ACTIVITY Symbol & Description		Work Type	Payment Type	ACTIVITY Payment Unit of Measure
902	Open Tender Establishment Setup Works	Normal	Unit Rate	Each
		Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
903	Inspections for Forward List of Works	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
904	Asset Management Fee	Normal	Lump Sum	Dollars
905	Community Engagement – Program Maintenance	Prov. Sum	Fixed Price	Dollars
906	Community Engagement – Rehabilitation	Prov. Sum	Fixed Price	Dollars
907	Prepare Cultural Heritage Management Plan	Prov. Sum	Fixed Price	Dollars
908	Implement, Monitor and Maintain Cultural Heritage Plan	Prov. Sum	Fixed Price	Dollars
910	Preparation of Environmental Management Plan (Maintenance)	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
911	Implementation, Monitoring and Maintenance of Environmental Management Plan (Maintenance)	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
912	Payment of Permits and Fees (Environmental)	Prov. Sum	Fixed Price	Dollars
920	Electricity Supply, Traffic Signals	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
921	Electricity Supply, Lighting	Prov. Sum	Fixed Price	Dollars
922	Phone Charges, Traffic Signals	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
923	Phone Charges - Traffic Signal Coordination	Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
930	Modify and Digitise Computerised As Constructed Plans	Normal	Unit Rate	Each
		Normal	Lump Sum	Dollars
		Prov. Sum	Fixed Price	Dollars
931	Modify Paper-based As Constructed Plans	Normal	Unit Rate	Each
		Normal	Lump Sum	Dollars
932	Calibration of Road Safety Cameras	Prov. Sum	Fixed Price	Dollars
933	Survey Drawings for Road Safety Cameras	Prov. Sum	Fixed Price	Dollars
950	Damages Recovery	Prov. Sum	Fixed Price	Dollars
960	Alliance Performance Limb Payment	Prov. Sum	Fixed Price	Dollars
970	Licence and Ongoing maintenance fees for Transport and Main Roads accepted Maintenance Management Systems. ( Max \$5,000 per year per contract organisation)	Normal	Lump Sum	Dollars

### 5.3 Maintenance Activity Standards

#### 100 Sealed Surfaces

##### 101 Edge Repair (Manual)

#### Description

The manual repair with asphalt or premix of isolated lengths of sealed pavement to restore the edges to line and level. Edge Repair (Manual) should be used for isolated repairs which are less than or equal to 5 m in length and where the cumulative length of isolated repairs in any 100 m section is less than or equal to 25 m. Edge Repair (Mechanical) - Activity 102 shall be used for repairs where more than 5 m of continuous length is required; or where a combination of repair lengths (i.e. less than and greater than 5 m) occurs within any 100 m section; or where the cumulative length of isolated repairs (i.e. less than or equal to 5 m) is greater than 25 m in any 100 m section.

#### Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- preparation of the work area - refer to Applicable Specifications
- the supply and application of a bitumen emulsion -tack coat - refer to Applicable Specifications
- the supply, placement and compaction of the asphalt or premix - refer to Applicable Specifications
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS30	<i>Asphalt Pavements</i>
SS	<i>Premix Asphalt</i>
SS	<i>Shoulder Gravel</i>

All cracked or loose material shall be removed from the area to be repaired. A vertical face at least 20 mm high shall be formed along the edge of the existing sealed pavement.

The horizontal and vertical faces of the area to be repaired shall be sprayed with a tack coat of bitumen emulsion and the tack coat shall overlap slightly the existing seal.

### Restoration Standards

The seal width shall be restored to within 30 mm of the original line of the seal edge.

The finished surface shall be within +5 mm of the height of and conform to the shape of the surrounding road surface.

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
101	Edge Repair (Manual)	Tonnes

### Testing Requirements

Minimum test frequency	
Asphalt/Premix	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year -2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading of Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year
Horizontal Straightedge	
Transverse	2/lot min
Longitudinal Alignment	1/lot min
Max lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.

7. Determine whether a manual or mechanical edge repair method is more efficient. Manual - up to approximately 5 m isolated length. Mechanical - more than approximately 20 m continuous lengths.
8. Note if line marking will be required. Schedule another Activity.
9. Specify that the appropriate plant, material and crew (including quantities of materials) and organise these.
10. Schedule waterproofing (Activity Number 118) within four weeks if a cold laid premix is used and a reseal is not scheduled in that period.

## 102 Edge Repair (Mechanical)

### Description

The machine repair (e.g. using a profiler and flowcon equipment or similar) with asphalt or premix of sealed pavement edges to line and level. Edge Repair (Mechanical) - Activity 102 shall be used for repairs where more than 5 m of continuous length is required; or where a combination of repair lengths (i.e. less than and greater than 5 m) occurs within any 100 m section; or where greater than 25 m of isolated repairs (i.e. repairs that are less than or equal to 5 m in length) occurs within any 100 m section. Edge Repair (Manual) - Activity 101 shall be used for isolated repairs which are up to approximately 5 m in length (max).

### Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- preparation of the work area - refer to Applicable Specifications
- the supply and application of a bitumen emulsion tack coat - refer to Applicable Specifications
- the supply, placement and compaction of the asphalt or premix - refer to Applicable Specifications
- the supply and installation of TRPM's or line spotting as required
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste/excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of line marking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS21	<i>Bitumen Emulsion</i>

Reference	Title
MRTS30	<i>Asphalt Pavements</i>
SS	<i>Premix Asphalt</i>
SS	<i>Shoulder Gravel</i>

All cracked or loose material shall be removed from the area to be repaired. A vertical face at least 20 mm high shall be formed along the edge of the existing sealed pavement.

The horizontal and vertical faces of the area to be repaired shall be sprayed with a tack coat of bitumen emulsion and the tack coat shall overlap slightly the existing seal.

Where an item for establishment/disestablishment of paver and paving gang at paving site, is provided in the schedule of work items, the following work operations shall apply:

1. Transport of plant and personnel to the work site
2. Storage of plant adjacent to the site
3. Accommodation of personnel adjacent to the site
4. Transport of plant and personnel from the site

#### Restoration Standards

The seal width shall be restored to within 30 mm of the original line of the seal edge.

The finished surface shall be within +5 mm of the height of and conform to the shape of the surrounding road surface.

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

Install TRPM's and/or Spotting if required.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
102	Edge Repair (Mechanical)	Tonnes

#### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Establishment/disestablishment of paver and paving gang at paving site	each
955110	Preparation of existing surface	m <sup>2</sup>
955020	Tack Coat l/m <sup>2</sup>	litre
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne
955870	Dense Graded Asphalt pavement, 20 mm mix	tonne
	Cold-mixed asphalt pavement	tonne

**Testing Requirements**

<b>Minimum test frequency</b>	
<b>Asphalt/Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading of Asphalt Q308A or Q308	<200t/source/year-2 /source/year >200t/source/year-4/source/year
<b>Horizontal Straightedge</b>	
Transverse	2/lot min
Longitudinal Alignment	1/lot min
Max lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Determine whether a manual or mechanical edge repair method is more efficient. Manual - up to approximately 5 m isolated lengths. Mechanical - more than approximately 20 m continuous lengths.
8. Note if line marking will be required. Schedule another Activity.
9. Specify the appropriate plant, material and crew (including quantities of materials) and organise these. Ensure the surfacing material will give a texture consistent with the adjoining road, or schedule texturing.
10. Schedule waterproofing (Activity Number 118) within four weeks if a cold laid premix is used and a reseal is not rescheduled in that period.

**103 Edge Repair with Emulsion/Aggregate****Description**

The machine repair with graded aggregate and emulsion using blower type compaction equipment of sealed pavement edges to line and level. Includes surface preparation and tack coating.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>

All cracked or loose material shall be removed from the area to be repaired.

The horizontal and vertical faces of the area to be repaired shall be sprayed with a tack coat of bitumen emulsion and the tack coat shall overlap slightly the adjacent seal.

The aggregate shall be an approved mix of 5 mm, 7 mm and/or 10 mm crushed rock or crushed gravel conforming to MRTS22. It shall be uniformly coated with bitumen emulsion. The quantity of bitumen emulsion incorporated in the aggregate shall be sufficient to prevent aggregate stripping from the patch but not so much as to cause a fatty surface.

The coated aggregate shall be projected by the air jet onto the prepared surface so that it forms a compacted interlocking mass.

If required to prevent pick-up by traffic, a single layer of dry stone shall be spread over the coated aggregate.

Loose stone shall be swept from the patched area and the adjoining pavement.

**Restoration Standards**

The seal width shall be restored to within 30 mm of the original line of the seal edge.

The finished surface shall be within  $\pm 5$  mm of the height of and conform to the shape of the surrounding road surface.

The patch shall not exhibit stripping of aggregate or bleeding of bitumen.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
102	Edge Repair with Emulsion/Aggregate	m <sup>3</sup> (loose)

**Testing Requirements**

Minimum test frequency	
Aggregate	
Aggregate – 10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t

Minimum test frequency	
Horizontal Straightedge	
Transverse	2/lot min
Longitudinal Alignment	1/lot min
Max lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Determine whether a minor or major edge repair is more efficient. Minor - up to approximately 5 m isolated lengths. Major - more than approximately 20 m continuous lengths.
8. Note if line marking will be required. Schedule another Activity.
9. Specify the appropriate plant, material and crew (including quantities of materials) and organise these. Ensure the surfacing material will give a texture as consistent as possible with the adjoining road.

#### 105 Pothole Patching

##### Description

The repair with asphalt or premix of an isolated hole or series of holes in the sealed roadway surface that is in otherwise sound condition.

##### Note

*The repair of potholes in other than sound pavement (i.e. there is a presence of other defects such as cracking, shoving, rutting, etc.) should be carried out under a different Activity (e.g. Activity 142, 143 etc.) depending on the situation and the appropriate response time required. In deciding the most appropriate Activity to use, consideration should be given to any impending construction/rehabilitation that may be programmed for the area. This will help to achieve the most efficient choice of the maintenance Activity required (i.e. a temporary repair - 142 or a more permanent repair – 105 or 107).*

##### Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control



- determination of the work area
- the removal of any cracked or loose material from the area to be repaired
- the formation of a vertical face on the hole edges. The edges of the hole are to be cleaned and shaped in the form of a rectangle
- the supply and application of a bitumen emulsion tack coat – refer to Applicable Specifications
- the supply, placement and compaction of the asphalt or premix
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS30	<i>Asphalt Pavements</i>
SS	<i>Premix Asphalt</i>

#### Restoration Standards

The finished surface shall be within  $\pm 5$  mm of the height of and conform to the shape of the surrounding road surface.

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

No loose material shall be left on sealed carriageway.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
105	Pothole Patching	Tonnes

**Testing Requirements**

<b>Minimum test frequency</b>	
<b>Asphalt/Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading of Asphalt Q308A or Q308	<200t/source/year-2 /source/year >200t/source/year-4/source/year
<b>Horizontal Straightedge</b>	
Horizontal Straightedge	2 per lot min
Max lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, either:
  - a. schedule another Activity to repair it
  - b. extend the area of the pothole repair to include it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Remember when scheduling the work that potholes in the wheel path deteriorate rapidly.
8. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

**106 Pothole Patching with Emulsion/Aggregate****Description**

The machine repair of an isolated hole or series of holes in the roadway bituminous surface with graded aggregate and emulsion using blower type compaction equipment. Includes surface preparation and tack coating.

**Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>

All cracked or loose material shall be removed from the area to be repaired.

The horizontal and vertical faces of the area to be repaired shall be sprayed with a tack coat of bitumen emulsion and the tack coat shall overlap slightly the adjacent seal.

The aggregate shall be an approved mix of 5 mm, 7 mm and/or 10 mm crushed rock or crushed gravel conforming to MRTS22. It shall be uniformly coated with bitumen emulsion. The quantity of bitumen emulsion incorporated in the aggregate shall be sufficient to prevent aggregate stripping from the patch but not so much as to cause a fatty surface.

The coated aggregate shall be projected by the air jet onto the prepared surface so that it forms a compacted interlocking mass.

If required to prevent pick-up by traffic, a single layer of dry stone or sand shall be spread over the coated aggregate.

Loose stone shall be swept from the patched area and the adjoining pavement.

#### Restoration Standards

The finished surface shall be within  $\pm 5$  mm of the height of and conform to the shape of the surrounding road surface.

The patch shall not exhibit stripping of aggregate or bleeding of bitumen.

No loose material shall be left on the sealed carriageway.

Install TRPM's and/or Spotting if required

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
106	Pothole Patching with Emulsion/Aggregate	m <sup>3</sup> loose

#### Testing Requirements

Minimum test frequency	
<b>Aggregate</b>	
Aggregate – 10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
<b>Horizontal Straightedge</b>	
Horizontal Straightedge	2 per lot min
Max lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

## WORK PREPARATION

### Plant Requirements

Job truck

Blower type patching machine (including truck)

### Materials

Aggregate to MRTS22

Emulsion to MRTS21

TRPMs/paint

### Manpower Requirements

Leading hand	1
Labourer	1
Truck driver	1
Traffic controllers	2

### Average Daily Production

4 m<sup>3</sup> (loose aggregate)

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, either:
  - a. schedule another Activity to repair it.
  - b. extend the area of the pothole repair to include it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Remember when scheduling the work, that potholes in the wheel path deteriorate rapidly.
8. Specify the appropriate plant, material and crew (including quantities of materials) and organise these.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - see Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. should be marked out already.
3. Remove all loose and cracked material from within the edgebreak and around the pothole edges:
  - a. joint face at least 15 mm deep
  - b. clean face and base
  - c. solid base.
4. Tack coat the sides and bottom with emulsion:
  - a. light, even coat
  - b. avoid pooling
  - c. allow emulsion to break.
5. Pneumatically place bitumen emulsion coated aggregate:
  - a. spread evenly.
6. Apply dry cover material if specified by your supervisor.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
9. Re-establish line marking:
  - a. use TRPMs or spotting.
10. Remove traffic control:
  - a. clean/repair as necessary.

### **107 Heavy Patching**

#### **Description**

The repair with asphalt or premix of any hole or series of holes in the roadway surface that is in otherwise sound condition which results in a total patched area greater than 10 m<sup>2</sup>.

## Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the removal of any cracked or loose material from the area to be repaired
- the formation of a vertical face on the hole edges. The edges of the hole are to be cleaned and shaped in the form of a rectangle;
- the supply and application of a bitumen emulsion tack coat – refer to Applicable Specifications
- the supply, placement and compaction of the asphalt or premix
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS30	<i>Asphalt Pavements</i>
SS	<i>Premix Asphalt</i>

### Restoration Standards

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

The finished surface shall be within  $\pm 5$  mm of the height of and conform to the shape of the surrounding road surface.

No loose material shall be left on sealed carriageway.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
107	Heavy Patching	Tonnes

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
	Establishment/disestablishment of paver and paving gang at paving site	each
955810	Preparation of existing surface	m <sup>2</sup>
955820	Tack Coat l/m <sup>2</sup>	litre
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne
955870	Dense Graded Asphalt pavement, 20 mm mix	tonne
	Cold-mixed asphalt pavement	tonne

**Testing Requirements**

Minimum test frequency	
Asphalt/Premix	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading of Asphalt Q308A or Q308C	<200t/source/year-2 /source/year >200t/source/year-4/source/year
Horizontal Straightedge	
Horizontal Straightedge	2/lot min
Max lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified.

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, either:
  - a. schedule another Activity to repair it.
  - b. extend the area of the repair to include it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Note if road marking will be required. Schedule another Activity.

8. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
9. Arrange and specify a disposal area for excavated material.
10. Schedule waterproofing (Activity Number 118) within four weeks if a cold laid premix is used and a reseal is not scheduled in that period.

### **108 Edge Repair (RAMC Only)**

Details to be advised.

### **110 Surface Correction with Premix/Asphalt (Manual) - Minor < 150 linear metres per 1 kilometre**

#### **Description**

The application by hand of a premix or asphalt levelling course to distorted and rutted areas of the bituminous surface.

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- preparation of the work area - refer to Applicable Specifications
- the supply and application of a bitumen emulsion tack coat - refer to Applicable Specifications
- the supply, placement and compaction of the asphalt or premix - refer to Applicable Specifications
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS30	<i>Asphalt Pavements</i>
SS	<i>Premix Asphalt</i>



### Restoration Standards

The finished surface shall be within +5 mm of the height of and conform to the shape of the surrounding road surface.

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

Install TRPM's and/or Spotting if required.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
110	Surface Correction with Premix/Asphalt (Manual)	Tonnes

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
955810	Preparation of existing surface	m <sup>2</sup>
955820	Tack Coat l/m <sup>2</sup>	litre
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne
955870	Dense Graded Asphalt pavement, 20 mm mix	tonne
	Cold-mixed asphalt pavement	tonne

### Testing Requirements

Minimum test frequency	
Asphalt/Premix	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading of Asphalt Q308A or Q308C	<200t/source/year-2 /source/year >200t/source/year-4/source/year
Horizontal Straightedge	
Horizontal Straightedge	1 per repair

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?

4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair.
6. Determine whether a manual or mechanical correction repair is more efficient. Manual - up to approximately 10 m<sup>2</sup> in isolated areas. Mechanical - more than approximately 10 m<sup>2</sup> in one area.
7. Note if road marking will be required. Schedule another Activity.
8. Specify the appropriate plant, materials and crew (including quantities of material) and organise these.
9. Schedule waterproofing (Activity Number 118) within four weeks if a cold laid premix is used and a reseal is not scheduled in that period.

### **111 Surface Correction with Premix/Asphalt (Mechanical) - Minor < 150 linear metres per 1 kilometre**

#### **Description**

The application by machine (e.g. paver, flowcon) of premix or asphalt levelling course to distorted and rutted areas of the bituminous surface.

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and material
- establishment and disestablishment of traffic control
- determination of the work area
- preparation of the existing surface, including the installation of offset points for the spotting of the centre and edge lines upon completion of the overlay.
- the supply and application of a bitumen emulsion tack coat – refer Applicable Specifications
- the supply, placement and compaction of the asphalt
- the supply and installation of TRPM's or line spotting as required.
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS30	<i>Asphalt Pavements</i>

Reference	Title
SS	Premix Asphalt

### Restoration Standards

As per Applicable Specifications above.

The finished surface shall be within  $\pm 5$  mm of the height of and conform to the shape of the surrounding road surface.

Install TPRM in and/or Spotting if required.

The Contractor shall demonstrate compliance with the requirements of MRTS30 Asphalt Pavements with respect to rolling pattern requirements and temperature at time of rolling commencement.

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
111	Surface Correction with Premix/Asphalt (Mechanical)	Tonnes

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Establishment/disestablishment of paver and paving gang at paving site	each
955810	Preparation of existing surface	m <sup>2</sup>
955820	Tack Coat l/m <sup>2</sup>	litre
955850	Dense Graded Asphalt pavement, 10 mm mix	tonne
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne
955070	Dense Graded Asphalt pavement, 20 mm mix	tonne
	Cold-mixed asphalt pavement	tonne

### Testing Requirements

Minimum test frequency	
Asphalt/Premix	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading of Asphalt Q308A or Q308C	<200t/source/year-2 /source/year >200t/source/year-4/source/year
Temperature at time of rolling commencement	6 per lot
Horizontal Straightedge	
Horizontal Straightedge	1 per 10 m
Maximum lot size	One day

Minimum test frequency	
Asphalt/Premix Aggregate	
Aggregate -10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Polished Aggregate Friction Value Q203	1 per 400 t

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Determine whether a manual or mechanical correction repair method is more efficient. Manual - up to approximately 10 m<sup>2</sup> in *isolated areas*.  
Mechanical - more than approximately 10 m<sup>2</sup> in one area.
8. Note if road marking will be required. Schedule another Activity.
9. Consider sub-contracting options.
10. Specify the appropriate plant, materials and crew (including quantities of material) and organise these.
11. Schedule waterproofing (Activity Number 118) within four weeks if a cold laid premix is used and a reseal is not scheduled in that period.

#### 112 Surface Correction with Emulsion/Aggregate - Minor < 150 linear metres per 1 kilometre

##### Description

The application of graded aggregate and emulsion using blower type compaction equipment to level distorted and rutted areas of the roadway bituminous surface. Includes surface preparation and tack coating.

##### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>

All cracked or loose material shall be removed from the area to be repaired.

The area to be repaired shall be sprayed with a tack coat of bitumen emulsion and the tack coat shall extend slightly beyond the area to receive the coated aggregate.

The aggregate shall be an approved mix of 5 mm, 7 mm and/or 10 mm crushed rock or crushed gravel conforming to MRTS22. It shall be uniformly coated with bitumen emulsion. The quantity of bitumen emulsion incorporated in the aggregate shall be sufficient to prevent aggregate stripping from the patch but not so much as to cause a fatty surface.

The coated aggregate shall be projected by the air jet onto the prepared surface so that it forms a compacted interlocking mass.

If required to prevent pick-up by traffic, a single layer of dry stone shall be spread over the coated aggregate.

Loose stone shall be swept from the patched area and the adjoining pavement.

### Restoration Standards

The seal width shall be restored to within 30 mm of the original line of the seal edge.

The finished surface shall be within  $\pm 5$  mm of the height of and conform to the shape of the surrounding road surface.

The patch shall not exhibit stripping of aggregate or bleeding of bitumen.

No loose material shall be left on the sealed carriageway.

Install TRPM's and/or Spotting if required.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
112	Surface Correction with Emulsion/Aggregate	m <sup>3</sup> loose

### Testing Requirements

Minimum test frequency	
<b>Aggregate</b>	
Aggregate – 10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
<b>Horizontal Straightedge</b>	
Horizontal Straightedge	2 per lot min
Max lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

## **WORK PREPARATION**

### **Plant Requirements**

Job truck

Blower type patching machine (including truck)

### **Materials**

Aggregate to MRTS22

Emulsion to MRTS21

TRPMs/paint

### **Manpower Requirements**

Leading hand	1
Labourer	1
Truck driver	1
Traffic controllers	2

### **Average Daily Production**

4 m<sup>3</sup> (loose aggregate)

### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Determine whether a minor or major surface correction is more efficient. Minor - up to approximately 10 m<sup>2</sup> isolated area. Major - more than approximately 10 m in one area.
8. Note if line marking will be required. Schedule another Activity.
9. Specify the appropriate plant, material and crew (including quantities of materials) and organise these. Ensure the surfacing material will give a texture as consistent as possible with the adjoining road.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - see Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. should be marked out already.
3. Blow the area:
  - a. a clean dust free surface.
4. Tack coat the area with emulsion:
  - a. light, even coat
  - b. avoid pooling
  - c. allow emulsion to break.
5. Pneumatically place bitumen emulsion coated aggregate:
  - a. spread evenly.
6. Apply dry cover material if specified by your supervisor.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
9. Re-establish line marking:
  - a. use TRPMs or spotting.
10. Remove traffic control:
  - a. clean/repair as necessary.

### **113 Surface Correction - Major < 150 linear metres per 1 kilometre**

#### **Description**

The application by machine (e.g. paver, flowcon) of premix or asphalt levelling course to distorted and rutted areas of the bituminous surface or;

The application of graded aggregate and emulsion using blower type compaction equipment to level distorted and rutted areas of the roadway bituminous surface. Includes surface preparation and tack coating.

## Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and material
- establishment and disestablishment of traffic control
- determination of the work area
- preparation of the existing surface, including the installation of offset points for the spotting of the centre and edge lines upon completion of the overlay.
- for asphalt the supply and application of a bitumen emulsion tack coat – refer Applicable Specifications & the supply, placement and compaction of the asphalt
- for emulsion and aggregate the supply, application and compaction of the material – refer Applicable Specifications. All cracked or loose material shall be removed from the area to be repaired.  
The area to be repaired shall be sprayed with a tack coat of bitumen emulsion and the tack coat shall extend slightly beyond the area to receive the coated aggregate.  
The aggregate shall be an approved mix of 5 mm, 7 mm and/or 10 mm crushed rock or crushed gravel conforming to MRTS22. It shall be uniformly coated with bitumen emulsion. The quantity of bitumen emulsion incorporated in the aggregate shall be sufficient to prevent aggregate stripping from the patch but not so much as to cause a fatty surface.  
The coated aggregate shall be projected by the air jet onto the prepared surface so that it forms a compacted interlocking mass.  
If required to prevent pick-up by traffic, a single layer of dry stone shall be spread over the coated aggregate.  
Loose stone shall be swept from the patched area and the adjoining pavement.
- the supply and installation of TRPM's or line spotting as required.
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>
SS	<i>Premix Asphalt</i>



### Restoration Standards

For Emulsion / Aggregate:

As per Applicable Specifications above.

The finished surface shall be within  $\pm 5$  mm of the height of and conform to the shape of the surrounding road surface.

Install TPRM in and/or Spotting if required.

The Contractor shall demonstrate compliance with the requirements of MRTS30 *Asphalt Pavements* with respect to rolling pattern requirements and temperature at time of rolling commencement.

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

For Emulsion / aggregate:

The seal width shall be restored to within 30 mm of the original line of the seal edge.

The finished surface shall be within  $\pm 5$  mm of the height of and conform to the shape of the surrounding road surface.

The patch shall not exhibit stripping of aggregate or bleeding of bitumen.

No loose material shall be left on the sealed carriageway.

Install TRPM's and/or Spotting if required.

### Activity Item and Unit of Measurement

For Asphalt:

Item	Description	Unit of Measurement
111	Surface Correction with Premix/Asphalt (Mechanical)	Tonnes

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Establishment/disestablishment of paver and paving gang at paving site	each
955810	Preparation of existing surface	m <sup>2</sup>
955820	Tack Coat l/m <sup>2</sup>	litre
955850	Dense Graded Asphalt pavement, 10 mm mix	tonne
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne
955070	Dense Graded Asphalt pavement, 20 mm mix	tonne
	Cold-mixed asphalt pavement	tonne

**Testing Requirements**

<b>Minimum test frequency</b>	
<b>Asphalt/Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading of Asphalt Q308A or Q308C	<200t/source/year-2 /source/year >200t/source/year-4/source/year
Temperature at time of rolling commencement	6 per lot
<b>Horizontal Straightedge</b>	
Horizontal Straightedge	1 per 10 m
Maximum lot size	One day
<b>Asphalt /Premix Aggregate</b>	
Aggregate 10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Polished Aggregate Friction Value Q203	1 per 400 t

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Determine whether a manual or mechanical correction repair method is more efficient. Manual - up to approximately 10 m<sup>2</sup> in *isolated areas*.  
Mechanical - more than approximately 10 m<sup>2</sup> in one area.
8. Note if road marking will be required. Schedule another Activity.
9. Consider sub-contracting options.
10. Specify the appropriate plant, materials and crew (including quantities of material) and organise these.

11. Schedule waterproofing (Activity Number 118) within four weeks if a cold laid premix is used and a reseal is not scheduled in that period.

For Emulsion / Aggregate:

Item	Description	Unit of Measurement
112	Surface Correction with Emulsion/Aggregate	m <sup>2</sup> loose

### Testing Requirements

Minimum test frequency	
<b>Aggregate</b>	
Aggregate – 10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
<b>Horizontal Straightedge</b>	
Horizontal Straightedge	2 per lot min
Max lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### WORK PREPARATION

#### Plant Requirements

Job truck

Blower type patching machine (including truck)

#### Materials

Aggregate to MRTS22

Emulsion to MRTS21

TRPMs/paint

### Manpower Requirements

Leading hand	1
Labourer	1
Truck driver	1
Traffic controllers	2

### Average Daily Production

4 m<sup>3</sup> (loose aggregate)

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Determine whether a minor or major surface correction is more efficient. Minor - up to approximately 10 m<sup>2</sup> isolated area. Major - more than approximately 10 m in one area.
8. Note if line marking will be required. Schedule another Activity.
9. Specify the appropriate plant, material and crew (including quantities of materials) and organise these. Ensure the surfacing material will give a texture as consistent as possible with the adjoining road.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - see Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. should be marked out already.
3. Blow the area:
  - a. a clean dust free surface.
4. Tack coat the area with emulsion:
  - a. light, even coat
  - b. avoid pooling

- c. allow emulsion to break.
5. Pneumatically place bitumen emulsion coated aggregate:
  - a. spread evenly.
6. Apply dry cover material if specified by your supervisor.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
9. Re-establish line marking:
  - a. use TRPMs or spotting.
10. Remove traffic control:
  - a. clean/repair as necessary.

#### **114 Surface Enrichment – Major (≥150 linear metres per 1 kilometre)**

##### **Description**

A light application of bituminous material, with or without fine aggregate cover, to increase the binder content of a bituminous surfacing.

##### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS11	<i>Sprayed Bituminous Surfacing (excluding emulsion)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>

##### **Restoration Standards**

As per Applicable Specifications above.

Dimensions to be not less than, nor exceed by 150 mm, the length and width specified.

To present a uniform appearance.

No loose material shall be left on the sealed carriageway.

Install TRPM's and/or Spotting if required.

##### **Activity Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
114	Surface Enrichment	m <sup>2</sup>

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
956500	Enrichment (Class, rate, l/m <sup>2</sup> )	litre
956600	Spreading cover aggregate (Size mm, rate 1m <sup>3</sup> / m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170)	tonne
956910	Supply of material (Bitumen Emulsion) (Type)	tonne
956920	Supply of material (Bitumen Cutter)	tonne

**Testing Requirements**

Minimum test frequency	
Bitumen -sample	1 per tank
Application Rates - Spraying Records. Max. lot size:	1 day

If cover aggregate is used, testing requirements shall be as detailed for cover aggregate under Activity No. 161, Reseal.

**WORK PREPARATION****Plant Requirements**

Job truck

Bitumen sprayer

Front end loader

Multi-tyred roller

Rotary Broom

Drag Broom

Trucks with spreaders for cover if required

**Materials**

Precoated screenings to MRTS22

Bitumen to MRTS17

Bitumen emulsion to MRTS21

Cutter to MRTS19

Additive

TRPMs/paint

Sealing signs "Loose Stones" and "Avoid  
Windscreen Damage Drive Slowly"

### Manpower Requirements

Leading Hand	1
Labourers	2
Plant Operators	4
Truck Drivers	
Traffic Controllers	2

### Average Daily Production

< 3000 l sprayer 5000 m<sup>2</sup>

> 3000 l sprayer 9000 m<sup>2</sup>

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Check the area for surface defects. All defects (except minor cracking and chip loss) should be repaired before the enrichment.
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for enrichment.
6. Obtain Engineer's advice on the appropriate treatment, binder and additives. Specify these.
7. Calculate spray rate.
8. Specify the appropriate plant, material and crew (including quantities of materials (and organise these).
9. Note if road marking will be required. Schedule another Activity.
10. Register line marking reference points at the sides and end of work area if necessary.
11. Check for overhead wires that could catch tip trucks.

### WORK PROCEDURES

#### Sequential Steps and Checkpoints

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area.
3. Cover adjacent concrete surfaces.
4. Inspect the pavement:
  - a. ensure all defects are repaired
  - b. specify cutter content

- c. preparatory work completed.
5. Remove all loose material:
  - a. sweep with hard or rotary broom.
6. Check plant condition, crew and material availability:
  - a. whole operation must be ready before starting.
7. Spray binder:
  - a. check and record temperatures
  - b. correct amount of cutter and additives
  - c. spray evenly at specified rate.
8. Apply cover material:
  - a. use spreaders at specified rate.
9. Check the work against restoration standard.
10. Re-establish line marking:
  - a. use TRPMs and tape.
11. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. notify supervisor if line marking required.
12. Remove traffic control:
  - a. use sealing signs if needed
  - b. clean/repair as necessary.
13. Complete the spray sheets.

### **115 Surface Enrichment – Minor (≤ 150 linear metres per 1 kilometre)**

#### **Description**

A light application of bituminous material, with or without fine aggregate cover, to increase the binder content of a bituminous surfacing.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS11	<i>Sprayed Bituminous Surfacing (excluding emulsion)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>



Reference	Title
MRTS22	Supply of Cover Aggregate

### Restoration Standards

As per Applicable Specifications above.

Dimensions to be not less than, nor exceed by 150 mm, the length and width specified.

To present a uniform appearance.

No loose material shall be left on the sealed carriageway.

Install TRPM's and/or Spotting if required.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
115	Surface Enrichment	m <sup>2</sup>

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
956500	Enrichment (Class, rate, l/m <sup>2</sup> )	litre
956600	Spreading cover aggregate (Size mm, rate 1m <sup>3</sup> / m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170)	tonne
956910	Supply of material (Bitumen Emulsion) (Type)	tonne
956920	Supply of material (Bitumen Cutter)	tonne

### Testing Requirements

Minimum test frequency	
Bitumen -sample	1 per tank
Application Rates - Spraying Records. Max. lot size:	1 day

If cover aggregate is used, testing requirements shall be as detailed for cover aggregate under Activity No. 161, Reseal.

### WORK PREPARATION

#### Plant Requirements

Job truck

Bitumen sprayer

Front end loader

Multi-tyred roller

Rotary Broom

Drag Broom

Trucks with spreaders for cover if required

**Materials**

Precoated screenings	to MRTS22
Bitumen	to MRTS17
Bitumen emulsion	to MRTS21
Cutter	to MRTS19
Additive	
TRPMs/paint	
Sealing signs	"Loose Stones" and "Avoid Windscreen Damage Drive Slowly"

**Manpower Requirements**

Leading Hand	1
Labourers	2
Plant Operators	4
Truck Drivers	
Traffic Controllers	2

**Average Daily Production**

< 3000 l sprayer 5000 m<sup>2</sup>

> 3000 l sprayer 9000 m<sup>2</sup>

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Check the area for surface defects. All defects (except minor cracking and chip loss) should be repaired before the enrichment.
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for enrichment.
6. Obtain Engineer's advice on the appropriate treatment, binder and additives. Specify these.
7. Calculate spray rate.
8. Specify the appropriate plant, material and crew (including quantities of materials (and organise these).
9. Note if road marking will be required. Schedule another Activity.
10. Register line marking reference points at the sides and end of work area if necessary.
11. Check for overhead wires that could catch tip trucks.

## WORK PROCEDURES

### Sequential Steps and Checkpoints

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area.
3. Cover adjacent concrete surfaces.
4. Inspect the pavement:
  - a. ensure all defects are repaired
  - b. specify cutter content
  - c. preparatory work completed.
5. Remove all loose material:
  - a. sweep with hard or rotary broom.
6. Check plant condition, crew and material availability.
  - a. whole operation must be ready before starting.
7. Spray binder:
  - a. check and record temperatures
  - b. correct amount of cutter and additives
  - c. spray evenly at specified rate.
8. Apply cover material:
  - a. use spreaders at specified rate.
9. Check the work against restoration standard.
10. Re-establish line marking:
  - a. use TRPMs and tape.
11. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. notify supervisor if line marking required.
12. Remove traffic control:
  - a. use sealing signs if needed
  - b. clean/repair as necessary.

13. Complete the spray sheets.

### **117 Reseal – Major (≥150 linear metres per 1 kilometre)**

#### **Description**

The treatment of short sections of the existing roadway surface using certified sprayer and plant, bitumen and precoated screenings to restore seal life and/or skid resistance.

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- preparation of the existing surface, including the installation of offset points for the spotting of the centre and edge lines upon completion of the reseal works.
- preparation of a suitable seal design
- the supply, carting, heating and spraying of a bitumen seal coat (including cutter and additive) at the design rate.
- the supply, carting, spreading and rolling etc. of a precoated aggregate at the design rate
- the supply and installation of TRPM's or line spotting as required
- all other operations in the Applicable Specifications (i.e. MRS & MRTS 02, 11, .22 etc.) for this Activity (e.g. sweeping, incorporation of cutter and additive etc.)
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS11	<i>Sprayed Bituminous Surfacing (excluding emulsion)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>

**Restoration Standards**

Dimensions to be not less than, nor exceed by 150 mm, the length and width specified.

To present a uniform appearance with close stone contact.

No loose material shall be left on the sealed carriageway.

Install TRPM's and/or Spotting if required.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
117	Reseal	m <sup>2</sup>

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
956400	Reseal (Class, rate, l/m <sup>2</sup> )	litre
956600	Spreading cover aggregate (Size mm, rate 1m <sup>3</sup> / m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (precoated) (10 mm nominal size)	m <sup>3</sup>
958110	Supply of cover aggregate (precoated) (14 mm nominal size)	m <sup>3</sup>
958120	Supply of cover aggregate (precoated) (16 mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170)	tonne
956910	Supply of material (Modified Bitumen Class 170 + 3% SBS Polymer)	tonne
956920	Supply of material (Bitumen Cutter)	tonne
956930	Supply of material (Adhesion Agent)	kg

**Testing Requirements**

Minimum test frequency	
Cover Aggregate	
Aggregate – 10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Modified Tray Test Q219	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Bitumen -sample	1 per tank
Application Rates – Spraying Records	

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Check the area for surface defects. All defects (except minor cracking and chip loss) should be repaired before the seal coat.
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for sealing. Ensure the area overlaps any repairs by 50 – 100 mm.
6. Obtain Engineer's advice on the appropriate treatment, binder and additives. Specify these.
7. Calculate spray rate.
8. Specify the appropriate plant, material and crew (including quantities of materials (and organise these). Screenings must be coated at least four days in advance of Activity. Ensure the screenings will give a texture consistent with surrounding road.
9. Arrange for testing materials.
10. Note if road marking will be required. Schedule another Activity.
11. Register line marking reference points at the sides and end of work area if necessary.
12. Check for overhead wires that could catch tip trucks.

### **118 Seal Coating (Minor) - < 150 linear metres per 1 kilometre**

#### **Description**

The treatment of short sections of road surface (either sealed or unsealed) using small non-certified plant, to seal the surface and restore surface life and/or skid resistance. The Activity may be used to seal small sections of new work.

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- protection of service facilities (e.g. manhole covers etc.)
- all work items as detailed in MRTS12 and MRTS22
- preparation of a seal design
- the supply and application of a bitumen emulsion at a rate as per design

- the precoating, spreading and rolling of cover aggregate (including the supply of all materials) at the designed spread rate
- the supply and installation of TRPM's or line spotting as required
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS11	<i>Sprayed Bituminous Surfacing (excluding emulsion)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>

#### Restoration Standards

Dimensions to be not less than nor exceed by 150 mm the length and width specified.

To present a uniform appearance with close stone contact.

No loose material shall be left on the sealed carriageway.

Install TRPM's and/or spotting if required.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
118	Seal Coating (Minor)	m <sup>2</sup>

#### Testing Requirements

Minimum test frequency	
Cover Aggregate	
Aggregate – 10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year

Minimum test frequency	
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Bitumen -sample	1 per tank

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Check the area for surface defects. All defects (except minor cracking and chip loss) should be repaired before the seal coat.
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for sealing. Ensure the area overlaps any repairs by 50 – 100 mm.
6. Obtain Engineer's advice on the appropriate treatment, binder and additives. Specify these.
7. Calculate spray rate.
8. Specify the appropriate plant, material and crew (including quantities of materials (and organise these). Screenings must be coated at least four days in advance of Activity. Ensure the screenings will give a texture consistent with surrounding road.
9. Arrange for testing materials.
10. Note if road marking will be required. Schedule another Activity.
11. Register line marking reference points at the sides and end of work area if necessary.
12. Check for overhead wires that could catch tip trucks.

#### 119 Surface Correction (Skid Resistance)

##### Description

The treatment of short sections of sealed road surface using small non-certified plant, to correct the seal and restore skid resistance. The Activity may be used to seal small sections identified as accident blackspots.

##### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>



## Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- protection of service facilities (e.g. manhole covers etc.)
- all work items as detailed in MRTS12 and MRTS22
- preparation of a seal design, including allowances for specialised anti-skid applications
- the supply and application of an anti- skid adhesive surfacing at a rate as per design
- the precoating, spreading and rolling of cover aggregate (including the supply of all materials) at the designed spread rate
- the supply and installation of TRPM's or line spotting as required
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS11	<i>Sprayed Bituminous Surfacing (excluding emulsion)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>

### Restoration Standards

Dimensions to be not less than nor exceed by 150 mm the length and width specified.

To present a uniform appearance with close stone contact.

No loose material shall be left on the sealed carriageway.

Install TRPM's and/or spotting if required.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
119	Surface Correction (Skid Resistance)	m <sup>2</sup>

**Testing Requirements**

Minimum test frequency	
Cover Aggregate	
Aggregate – 10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Bitumen -sample	1 per tank

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Check the area for surface defects. All defects (except minor cracking and chip loss) should be repaired before the seal coat.
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for sealing. Ensure the area overlaps any repairs by 50 – 100 mm.
6. Obtain Engineer's advice on the appropriate treatment, binder and additives. Specify these.
7. Calculate spray rate.
8. Specify the appropriate plant, material and crew (including quantities of materials (and organise these). Screenings must be coated at least four days in advance of Activity. Ensure the screenings will give a texture consistent with surrounding road.
9. Arrange for testing materials.
10. Note if road marking will be required. Schedule another Activity.
11. Register line marking reference points at the sides and end of work area if necessary.
12. Check for overhead wires that could catch tip trucks.

**120 Fill Cracks****Description**

The cleaning and filling of cracks typically not wider than 20 mm in bituminous pavements with polymer-modified bitumen products.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

All loose material shall be removed from the crack.

The crack sealant shall be a Polymer-modified bituminous sealant approved by the Principal.

The sealant shall be applied with an approved applicator which places a band of sealant over the crack and fills the crack.

**Restoration Standards**

The crack shall be filled along its full length.

The finished surface shall be not lower than the surrounding road surface nor more than 5 mm above it.

Install TRPM's and/or Spotting if required.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
120	Fill Cracks	Litres

**Testing Requirements**

Minimum test frequency	
Horizontal straightedge	1 per 10 metres

**WORK PREPARATION****Plant Requirements**

Job truck

Compressor (with air nozzle)

Sealant applicator

Bitumen Kettle

**Materials**

Dry filler material

Approved polymer modified bituminous sealant

Dry cover material

### Manpower Requirements

Leading Hand	1
Labourers	2
Traffic Controllers	2

### Average Daily Production

200 litres - when dry filler material is not used

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. this may be marked out already.
3. Remove all loose material from the marked area:
  - a. sweep surface and crack with hard broom
  - b. blow out loose material in the crack with compressed air or prise out with a knife.
4. Partly fill cracks:
  - a. use dry filler material if specified by your supervisor
  - b. fill to 25 mm from road surface
  - c. clean any excess from the surface.
5. Apply crack sealant:
  - a. follow the manufacturer's instructions
  - b. use safety equipment and clothing

- c. check HAZCEM code.
6. Apply cover material:
  - a. dry cover material
  - b. sealant is lightly and evenly covered.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. notify supervisor if line marking required.
9. Remove traffic control:
  - a. clean/repair as necessary.

### 121 Crack Treatment with Emulsion/Aggregate

#### Description

The cleaning and filling of cracks in bituminous pavements with graded aggregate and emulsion using blower type compaction equipment.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>

All loose material shall be removed from the cracks to be filled.

The sides of the cracks shall be sprayed with a tack coat of bitumen emulsion and the tack coat shall overlap slightly the adjoining seal.

The aggregate shall be an approved mix of 5 mm, 7 mm and/or 10 mm crushed rock or crushed gravel conforming to MRTS22. It shall be uniformly coated with bitumen emulsion. The quantity of bitumen emulsion incorporated in the aggregate shall be sufficient to prevent aggregate stripping from the patch but not so much as to cause a fatty surface.

The coated aggregate shall be projected by the air jet into the crack so that it forms a compacted interlocking mass.

If required to prevent pick-up by traffic, a single layer of dry stone shall be spread over the coated aggregate.

Loose stone shall be swept from the treated area and the adjoining pavement.

#### Restoration Standards

The crack shall be filled along its entire length.

The finished surface shall be within  $\pm 5$  mm of the height of the surrounding road surface.

The treated area shall not exhibit stripping of aggregate or bleeding of bitumen.

No loose material shall be left on the sealed carriageway.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
121	Crack Treatment with Emulsion/Aggregate	m <sup>3</sup>

### Testing Requirements

Minimum test frequency	
Aggregate	
Aggregate – 10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Horizontal Straightedge	2/lot min
Max. lot size	1 day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - see Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. should be marked out already.
3. Remove all loose material from area to be treated.
  - a. blow out loose material.
4. Tack coat the area with bitumen emulsion:
  - a. light, even coat
  - b. allow emulsion to break.

5. Pneumatically place bitumen emulsion coated aggregate.
6. Apply dry cover material if specified by your supervisor.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
9. Re-establish line marking:
  - a. use TRPMs or spotting.
10. Remove traffic control:
  - a. clean/repair as necessary.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Is an alternative remedy or major maintenance more appropriate?
4. Mark out the area for treatment.
5. Note if line marking will be required. Schedule another Activity
6. Specify the appropriate plant, material and crew (including quantities of materials (and organise these)).

#### 122 Crack Treatment with Strain Alleviating Product

##### Description

The application of a polymer-modified bitumen strain alleviating product to an existing bituminous surface to treat cracking.

##### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS11	<i>Sprayed Bituminous Surfacing (excluding emulsion)</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS22	<i>Supply of Cover Aggregate</i>

##### Restoration Standard

As per Applicable Specifications above.

Dimensions to be not less than, nor exceed by 150mm, the length and width specified.

Install TRPM's and/or Spotting if required.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
122	Crack Treatment with Strain Alleviating Product	m <sup>2</sup>

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
912100	Provision for traffic	Provision for traffic
956400	Reseal (Class, rate, .l/m <sup>2</sup> )	m <sup>2</sup>
956600	Spreading cover aggregate (Size.mm, rate.1m <sup>3</sup> /m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (precoated/un-precoated) (mm nominal size)	m <sup>3</sup>

**Testing Requirements**

Minimum test frequency	
Cover Aggregate	
Aggregate – 10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Polymer-modified bitumen -sample	1 per tank
Application Rates - Spraying Records	

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

**WORK PREPARATION****Plant Requirements**

Job truck

Bitumen sprayer

Front end loader

Multi-tyred roller

Rotary Broom



Drag Broom

Trucks with spreaders for cover if required

**Materials**

Cover aggregate	to MRTS22
Bitumen	to MRTS17
Cutter	to MRTS19
Additive	
TRPMs/paint	
Sealing signs	"Loose Stones" and "Avoid Windscreen Damage Drive Slowly"

**Manpower Requirements**

Leading Hand	1
Labourers	2
Plant Operators	4
Truck Drivers	
Traffic Controllers	2

**Expected Daily Production**

< 3000 l sprayer 5000 m<sup>2</sup>

> 3000 l sprayer 9000 m<sup>2</sup>

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Check the area for surface defects. All defects (except minor cracking and chip loss) should be repaired before applying the strain alleviating product.
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for treatment.
6. Obtain Engineer's advice on the appropriate treatment, binder and additives. Specify these.
7. Calculate spray rate.
8. Specify the appropriate plant, material and crew (including quantities of materials (and organise these).
9. Note if road marking will be required. Schedule another Activity.
10. Register line marking reference points at the sides and end of work area if necessary.
11. Check for overhead wires that could catch tip trucks.

## WORK PROCEDURES

### Sequential Steps and Checkpoints

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area.
3. Cover any adjacent concrete surfaces.
4. Inspect the pavement:
  - a. ensure all defects are repaired
  - b. specify cutter content
  - c. preparatory work completed.
5. Remove all loose material:
  - a. sweep with hard or rotary broom.
6. Check plant condition, crew and material availability.
  - a. whole operation must be ready before starting.
7. Spray binder:
  - a. check and record temperatures
  - b. correct amount of cutter and additives
  - c. spray evenly at specified rate.
8. Apply cover material:
  - a. use spreaders at specified rate.
9. Check the work against restoration standard.
10. Re-establish line marking:
  - a. use TRPMs and tape.
11. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. notify supervisor if line marking required.
12. Remove traffic control:
  - a. use sealing signs if needed
  - b. clean/repair as necessary.

13. Complete the spray sheets.

### **123 Surface Strip Treatment of Cracks**

#### **Description**

The sealing of cracks (up to a width of 5 mm) in bituminous pavements with a surface strip treatment, such as:

- stick on proprietary strips (polymer bitumen and/or geotextile based,; or
- proprietary grids.

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the supply and application of the strip treatment material as per the manufacturers specification
- the supply and installation of TRPM's or linespotting as required
- the supply and application of a light cover material if required (i.e. if there is a risk of the traffic picking up the strip on contact with tyres)
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste/excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>

All loose material shall be removed from the crack.

The crack sealant shall be an approved stick-on proprietary strip (either polymer bitumen and/or geotextile based), or an approved proprietary grid.

The proprietary products shall be applied in accordance with the manufacturer's instructions.

#### **Restoration Standards**

The crack shall be filled along its full length.

The finished surface shall be not lower than the surrounding road surface nor more than 5 mm above it.

Install TPRM in and/or Spotting if required.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
123	Surface Strip Treatment of Cracks	linear metres

**Testing Requirements**

Minimum test frequency	
Straightedge	1 per 10 metres

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction works is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

**124 Concrete Joint and Crack Treatment****Description**

The routing, cleaning and filling of joints and cracks in concrete pavements to prevent infiltration of moisture into the underlying pavement structure.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS40	<i>Concrete Pavements</i>

Where specified in the Works Order, the joint shall be routed and the side walls liquid/air blasted as specified in MRTS40 and/or shown on the Works Order.

All loose material shall be removed from the joint.

Polyethylene backer rods or PVC spline seals shall be replaced or provided when shown on the Works Order.

The crack sealant shall be an approved silicone sealant or an approved SBS Polymer-modified bitumen sealant as shown on the Works Order.

The joint shall be sealed as specified in MRTS40 and/or shown on the Works Order.

**Restoration Standards**

The joint shall be filled along its full length.

The height and depth of sealant shall be as shown on the Works Order.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
124	Concrete Joint and Cracks Treatment	linear metres

**Testing Requirements**

Minimum test frequency	
Straightedge	1 per 10 metres

**WORK PREPARATION****Plant Requirements**

Job truck

Compressor/pump (with air/liquid nozzle)

Sealant applicator

**Materials**

Dry filler material

Polyethylene backer rods or PVC spline seals

Sealant

Dry cover material

**Manpower Requirements**

Leading Hand 1

Labourers 2

Traffic Controllers 2

**Average Daily Production**

Not detailed

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. this may be marked out already.
3. Where required, rout out joint or crack.
4. Remove all loose material from the marked area:
  - a. sweep surface and crack with hard broom
  - b. blow out loose material in the crack with compressed air
  - c. prise out material wedged in joint or crack.
5. Install silicone sealant (if specified):
  - a. clean joint walls
  - b. use liquid/air jet
  - c. install backer rod or spline to correct depth
  - d. blow out joint with dry air
  - e. apply sealant
  - f. follow the manufacturer's instructions
  - g. use safety equipment and clothing
  - h. check HAZCEM code.
6. Install SBS Polymer-modified bitumen sealant (if specified):
  - a. partly fill cracks
  - b. use dry filler material if specified by your supervisor
  - c. fill to 25 mm from road surface
  - d. clean any excess from the surface
  - e. apply crack sealant
  - f. follow the manufacturer's instructions
  - g. use safety equipment and clothing
  - h. check HAZCEM code
  - i. apply dry cover material

- j. sealant lightly and evenly covered.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. notify supervisor if line marking required.
9. Remove traffic control:
  - a. clean/repair as necessary.

### 125 **Stitch Treat Cracks in Concrete Roads**

#### Description

The stitching of cracks in concrete roadway surface using staple or cross stitched tie bars. Includes provision of cleaned out chase out slots and/or holes, appropriate resin or other mortar and a sealed crack groove.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### Restoration Standards

The concrete pavement repaired to the standards specified in the approved repair method.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
125	Stitch Treat Cracks in Concrete Roads	linear metres

#### WORK PREPARATION

##### Plant Requirements

Job truck

Compressor

##### Materials

Reinforcing bars

Cementing agent and other mortar components

##### Manpower Requirements

Leading Hand	1
Labourers	2
Operator	1
Traffic Controllers	2

### **Average Daily Production**

Not detailed

### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the cracks requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

### **WORK PROCEDURES**

#### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine cracks to be repaired:
  - a. from supervisor's instructions.
3. Install the stitch treatment:
  - a. in accordance with details in works order
  - b. cross stitch, drill holes at angle to concrete surface
  - c. staple tie, cut chase and drill holes
  - d. insert reinforcing bars
  - e. mix and insert mortar
  - f. check HAZCEM code.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
  - a. clean/repair as necessary.



**126 Replacement of Concrete Joint Sealant****Description**

Remove existing joint sealant, clean joint and replace.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Restoration Standards**

The concrete pavement repaired to the standards specified in the approved repair method.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
126	Replacement of Concrete Joint Sealant Dollars in Concrete Roads	linear metres

**WORK PREPARATION****Plant Requirements**

Job truck

Compressor

**Materials**

Joint Sealant

**Manpower Requirements**

Leading Hand	1
Labourers	1
Operator	1
Traffic Controllers	2

**Average Daily Production**

Not detailed

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the joints requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine joints to be repaired:
  - a. from supervisor's instructions.
3. Remove existing Sealant:
  - a. clean and prepare surface
  - b. apply new sealant to manufacturers specification
  - c. ensure adequate drying time is allowed.
  - d. check HAZCEM code.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
  - a. clean/repair as necessary.

### **127 Concrete Pothole Patching**

#### **Description**

The repair with asphalt of an isolated hole or series of holes in the concrete roadway surface that is in otherwise sound condition.

#### **Note**

*The repair of potholes in other than sound pavement (ie there is a presence of other defects such as cracking, lifting, etc) should be carried out under a different Activity (e.g. Activity 126, 129, etc.) depending on the situation and the appropriate response time required. In deciding the most appropriate Activity to use, consideration should be given to any impending construction/rehabilitation that may be programmed for the area. This will help to achieve the most efficient choice of the maintenance Activity required.*

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area

- the removal of any cracked or loose material from the area to be repaired
- the formation of a vertical face on the hole edges. The edges of the hole are to be cleaned and shaped in the form of a rectangle
- the supply and application of a bitumen emulsion tack coat – refer to Applicable Specifications
- the supply, placement and compaction of the asphalt.
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS30	<i>Asphalt Pavements</i>
SS	<i>Premix Asphalt</i>

#### Restoration Standards

The finished surface shall be within  $\pm 5$  mm of the height of and conform to the shape of the surrounding road surface.

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

No loose material shall be left on sealed carriageway.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
127	Concrete Pothole Patching	Tonnes

#### Testing Requirements

Minimum test frequency	
Asphalt/Premix	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading of Asphalt Q308A or Q308C	<200t/source/year-2 /source/year >200t/source/year-4/source/year

Minimum test frequency	
Horizontal Straightedge	
Horizontal Straightedge	2 per lot min
Maximum lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, either:
  - a. schedule another Activity to repair it;
  - b. extend the area of the pothole repair to include it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Mark out the area for repair.
7. Remember when scheduling the work that potholes in the wheel path deteriorate rapidly.
8. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

#### 128 Jacking of Concrete Slab

##### Description

Lifting of sunken concrete slabs to realign with adjacent road surface.

##### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>

##### Restoration Standards

The concrete pavement repaired to the standards specified in the approved repair method.

##### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
128	Jacking of Concrete Slab Dollars in Concrete Roads	linear metre

#### WORK PREPARATION

##### Plant Requirements

Job truck

Compressor

**Materials**

Joint Sealant

**Manpower Requirements**

Leading Hand	1
Labourers	2
Operator	1
Traffic Controllers	2

**Average Daily Production**

Not detailed

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the joints requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine slabs to be jacked:
  - a. from supervisor's instructions.
3. Jack existing slab:
  - a. drill through slab
  - b. inject mortar / limestone mix.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material

- b. no material to block drains.
- 6. Remove traffic control:
  - a. clean/repair as necessary.

### **129 Pavement Repairs, Concrete (Mechanical) – Minor (500sq.m)**

#### **Description**

The repair by machine of concrete surfacing of size less than 500 m<sup>2</sup> by removal of the deteriorated pavement and concrete asphalt surface and replacement with new pavement material and asphalt or concrete seal treatment, to profile. May include treatment of subgrade materials and reworking, as appropriate.

Child Activities are to be used for depths of treatment as follows:

- 129 10 Depth up to 200 mm
- 129 20 Depth up to 300 mm
- 129 30 Depth over 300 mm

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area and confirmation of the pavement design
- excavation of the failed area to the approved pavement design depth including the removal of any loose material from the area to be repaired. Where a road profiler is used only areas inaccessible by the profiler drum (i.e. generally at corners of the repair) will be accepted at a lesser depth than that approved. In these areas a minimum depth shall be specified.
- where applicable, compaction of the excavated surface (where the surface has been loosened).
- preparation of the existing surface including brooming
- the formation of a vertical face to a minimum depth equal to the pavement design (measured from the top of the excavation) for the full length of the excavated edges. Where a road profiler is used a nominated reduced depth of vertical face will be accepted in areas where the shape of the profiler's drum does not allow the design depth to be achieved. The repairs shall be rectangular in shape
- the supply, placement and compaction of pavement material, cement treated if appropriate
- the supply and application of a bitumen emulsion tack coat if applicable as per Applicable Specifications.
- the supply, placement and compaction of the asphalt or concrete, as appropriate
- the supply and installation of TRPM's or line spotting as required
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable

- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>
MRTS39	<i>Lean Mix Concrete Subbase for Pavements</i>
MRTS40	<i>Concrete Pavement Base</i>
MRTS70	<i>Concrete</i>
MRTS71	<i>Reinforcing Steel</i>
MRTS71A	<i>Stainless Steel Reinforcing</i>

Concrete / Asphalt Pavements.

The design of the repaired pavement shall conform to the pavement design standards of Department of Transport and Main Roads.

Geotextiles on / under subgrade shall comply with the requirements specified for geotextiles under/within embankments in MRTS03 *Drainage, Retaining Structures and Protective Treatments*.

The unbound pavement material shall be of a quality at least equal to that used in sound sections of the road adjacent to the repairs.

Plant-mix stabilised pavement shall be Unbound Pavement as specified above stabilised with not less than 2% by mass of cement.

Concrete shall be placed in accordance with MRS70.

The Principal may direct that a paver be employed to place plant-mix stabilised and/or dense graded asphalt pavement material or may approve the use of other equipment for this purpose. Such other equipment shall not cause the mix to segregate.

All excavated material shall be disposed of or stored in a neat and tidy manner away from the road formation and drainage lines. Material suitable for reuse shall be stored at nominated stockpile sites unless otherwise agreed.

### Restoration Standard

The finished work shall meet the requirements of the relevant specifications except as provided hereunder.

The finished surface shall conform to the shape of the surrounding road surface.

Install TRPM's and/or Spotting if required.

The deviation from a 3 m straightedge placed along the wheel paths shall be no more than + 8 mm, - 5 mm, due allowance being made for design shape, where relevant.

The Contractor shall demonstrate compliance with the requirements of MRTS30 *Asphalt Pavements* with respect to rolling pattern requirements and asphalt temperature at time of rolling commencement. The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
129	Pavement Repairs, Concrete (Mechanical) – Minor (< 500 m <sup>2</sup> )	m <sup>2</sup>

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. cracking?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair. On large areas, use a cone penetrometer to determine depth of excavation required. Specify this depth. Consider using a geotextile.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
8. Arrange for testing materials.
9. Arrange and specify a disposal area for excavated material.
10. Specify spray seal or asphalt surface. Specify asphalt depth.

### 130 Surface Sweeping

#### Description

The removal and disposal (in accordance with current statutory requirements) of all loose material < 1m<sup>2</sup> in size (e.g. the build up of gravel/screenings at intersections, broken glass and similar) accumulated on the road surface, by hand or mechanical sweeping. The removal of larger types of material (e.g. tyre pieces, wood etc.



which have an area greater than 1 m<sup>2</sup>) will generally be undertaken using an alternative Activity (e.g. 421, 429 or 452 if an emergency situation exists etc.).

### Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and material
- establishment and disestablishment of traffic control
- determination of the work area
- the removal of material from the area - refer to Applicable Specification below
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specification provides additional requirements for compliance.

### Applicable Specification

All loose material shall be removed from the sealed carriageway and disposed of in a neat and tidy manner away from the road formation and drainage lines.

### Restoration Standards

All loose material shall be removed from the sealed carriageway and shoulders.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
130	Surface Sweeping	m <sup>2</sup>

### Testing Requirements

None listed

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Specify the appropriate plant and crew and organise these.
3. Check for litter and arrange for collection prior to sweeping if appropriate.

### 135 *Surface Debris Removal*

#### Description

The removal from the roadway surface, of foreign debris that may cause a safety hazard to the road user.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

All foreign debris shall be removed from the sealed carriageway and disposed of in a neat and tidy manner away from the road formation and drainage lines.

**Restoration Standards**

All foreign debris shall be removed from the sealed carriageway and shoulders.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
135	Surface Debris Removal	Dollars

**Testing Requirements**

Nil.

**WORK PREPARATION****Plant Requirements**

Rotary or suction broom

Pilot vehicle (maintenance patrol truck or utility)

Electronic variable message sign (if available)

Loader

**Materials**

Nil

**Manpower Requirements**

Operators

Drivers 1

Labourers 2

Traffic Controllers 2

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Specify the appropriate plant and crew and organise these.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. this may be marked out already.
3. Remove larger debris by hand or loader:
  - a. debris that would not be removed by the sweeper or may damage it.
4. Remove smaller debris by sweeping the marked area:
  - a. a clean dust-free surface.
5. Check the work against the restoration standard.
6. Remove traffic control:
  - a. clean/repair as necessary.

### **137 Rut Correction- Minor (< 100 metres per 1 km)**

#### **Description**

The of rutted pavement or asphalt surfacing by removal of deteriorated pavement and/or asphalt and replacement with new pavement material and asphalt or an appropriate seal, to profile. May include treatment of sub grade materials and re-working, as appropriate.

#### **Note**

*For road sections not programmed for imminent permanent type works, individual repairs shall only be used where rapid deterioration of the pavement has not allowed sufficient time to schedule permanent repairs and shall only be performed once before permanent repairs are made. Includes the application of a bituminous emulsion seal coat and cover aggregate over the trimmed areas.*

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the trimming of the rut or shove
- the compaction of the exposed roadway surface prior to applying the tack coat
- all work items as detailed in MRS12 and MRS22
- the supply and application of a bitumen emulsion as per Applicable specifications

- the precoating, spreading and rolling of cover aggregate (including the supply of all materials)
- the supply and installation of TRPM's or line spotting as required
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any excavated/ waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

All excavated material shall be disposed of or stored in a neat and tidy manner away from the road formation and drainage lines. Material suitable for reuse shall be stored at nominated stock pile sites unless otherwise agreed.

#### Restoration Standard

The finished work shall meet the requirements of the relevant specifications except as provided hereunder.

The finished surface shall be within  $\pm 10$  mm of the surrounding surface. The deviation from a 3 m straightedge placed along the wheel paths shall be no more than  $\pm 10$  mm, due allowance being made for design shape where relevant.

Install TRPM's and/or Spotting if required.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
137	Rut Correction – Minor (< 100 m per 1 km) (Mechanical)	m <sup>2</sup>

No other details are listed in the Standard for this Activity.

**138 Rut Correction- Major ( $\geq 100$  metres per 1 km)****Description**

The of rutted pavement or asphalt surfacing by removal of deteriorated pavement and/or asphalt and replacement with new pavement material and asphalt or an appropriate seal, to profile. May include treatment of sub grade materials and re-working, as appropriate.

**Note**

*For road sections not programmed for imminent permanent type works, individual repairs shall only be used where rapid deterioration of the pavement has not allowed sufficient time to schedule permanent repairs and shall only be performed once before permanent repairs are made. Includes the application of a bituminous emulsion seal coat and cover aggregate over the trimmed areas.*

**Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the trimming of the rut or shove
- the compaction of the exposed roadway surface prior to applying the tack coat
- all work items as detailed in MRS12 and MRS22
- the supply and application of a bitumen emulsion as per Applicable specifications
- the precoating, spreading and rolling of cover aggregate (including the supply of all materials)
- the supply and installation of TRPM's or line spotting as required
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any excavated/ waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>

Reference	Title
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

All excavated material shall be disposed of or stored in a neat and tidy manner away from the road formation and drainage lines. Material suitable for reuse shall be stored at nominated stock pile sites unless otherwise agreed.

#### Restoration Standard

The finished work shall meet the requirements of the relevant specifications except as provided hereunder.

The finished surface shall be within  $\pm 10$  mm of the surrounding surface. The deviation from a 3 m straightedge placed along the wheel paths shall be no more than  $\pm 10$  mm, due allowance being made for design shape where relevant.

Install TRPM's and/or Spotting if required.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
138	Rut Correction – Minor ( $\geq 100$ m per 1 km) (Mechanical)	m <sup>2</sup>

No other details are listed in the Standard for this Activity.

#### 139 Other Bituminous Surface Work

##### Description

Work carried out on the bituminous roadway surface not covered by Activities numbered 101, 102, 103, 105, 106, 107, 110, 111, 112, 115, 117, 118, 120, 121, 122, 123, 130, 135, 137, 138, 146, 157 and 161.

#### Activity Item and Unit of Measure

Item	Description	Unit of Measurement
139	Other Bituminous Surface Work	Dollars

No other details are included in the Standard for this Activity.

#### 140 Pavement Repairs (Manual)

##### Description

The repair by hand of shoving pavement or asphalt surfacing (less than 1 m<sup>2</sup> in area) by removal of deteriorated pavement and/or asphalt and replacement with new pavement material and asphalt or an appropriate seal, to profile. May include treatment of subgrade materials and re-working, as appropriate.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>

Reference	Title
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

Geotextiles on/under subgrade shall comply with the requirements specified for geotextiles under/within embankments in MRTS03 *Drainage, Retaining Structures and Protective Treatments*.

The unbound pavement material shall be of a quality at least equal to that used in sound sections of the road adjacent to the repairs.

The plant-mix stabilised pavement shall be Unbound Pavement as specified above stabilised with not less than 2% by mass of cement.

All excavated material shall be disposed of in a neat and tidy manner away from the road formation and drainage lines.

#### Restoration Standard

The finished work shall meet the requirement of the relevant specifications except as provided hereunder.

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

Install TRPM's and/or Spotting if required.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
140	Pavement Repairs (Manual)	m <sup>2</sup>

#### Testing Requirements

Minimum test frequency	
Unbound Pavements and materials for stabilisation	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Flakiness Index Q201B	1/source/year
CBR Q113A	1/source/year

<b>Minimum test frequency</b>	
Degradation Factor Q208B	1/source/year
Grading Q103A	1/250 m <sup>3</sup>
Liquid Limit Q104A	1/250 m <sup>3</sup>
Plastic Limit, Q105	1/250 m <sup>3</sup>
Linear Shrinkage Q106	1/250 m <sup>3</sup>
Stabilised Material-Drying/Shrinkage Q128	1/source/year
Cement Content Q116B	1 per 100 m <sup>3</sup>
<b>Asphalt/Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year
	>200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	200t/source/year-2/source/year
	>200t/source/year-4/source/year
<b>Asphalt Aggregate</b>	
10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400t
Flakiness Index Q201B	1 per 400t
Polished Aggregate Friction Value Q203	1 per 400t
<b>Geometrics</b>	
Horizontal Straightedge	1 each repair in wheel path and at interface
Depth below Road Surface	1 per layer each repair
<b>Cover Aggregate</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217F	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201D	1 per 400 t
Precoating Q216	1 per 400 t

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.



## WORK PREPARATION

### Plant Requirements

Job truck

Pavement Breaker

Vibrating compactor or wacker packer

Emulsion sprayer

Water tanker

### Materials

Unbound pavement material	to MRTS05
Precoated screenings	to MRTS22
Bitumen	to MRTS17
Emulsion	to MRTS17
Asphalt	to MRTS30
Sealing signs	"Loose Stones" and "Avoid Windscreen Damage Drive Slowly"

### Manpower Requirements

Leading hand	1
Labourers	2
Traffic Controllers	2

### Average Daily Production

Not listed.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. cracking?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair. Consider using a geotextile.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
8. Arrange for testing materials.
9. Arrange and specify a disposal area for excavated material.
10. Specify spray seal or asphalt surface. Specify asphalt depth.

11. Schedule waterproofing (Activity Number 118) within four weeks if a cold laid premix is used and a reseal is not scheduled in that period.

## **WORK PROCEDURES**

### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. should be marked out already.
3. Excavate the failed area:
  - a. hand dig to locate services
  - b. make vertical face
  - c. sweep bases and edges including surrounding area
  - d. place geotextile if specified
  - e. stop work and notify supervisor if the base is wet or not firm at specified depth
  - f. truck excavated material to site specified by your supervisor.
4. Compact the Base:
  - a. the compactor makes no more impressions
  - b. if specified, slope the base to give drainage and place drainage pipe.
5. Premix pavement material and water off site:
  - a. bring material to right moisture content for compaction
  - b. uniform 75 - 100 mm layers
  - c. check compaction.
6. Place pavement Material:
  - a. fill isolated holes in base and compact.
7. Form the surface:
  - a. use grader, water and roller
  - b. check against the standard
  - c. allow surface to dry.
8. Apply seal or asphalt surfacing:
  - a. use Activity Number 128, steps 5 to 12. or Activity Number 138, Steps 4 to 7.

9. Check the work against the restoration standard.
10. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. notify supervisor if line marking required.
11. Re-establish linemarking:
  - a. use TRPMs or spotting.
12. Remove traffic control:
  - a. clean/repair as necessary.

#### **141 Temporary Pavement Repairs (Mechanical)**

##### **Description**

The temporary repair, by mechanical trimming of shoved or rutted pavement to the level of the surrounding sealed surface to eliminate hazardous conditions until such time as permanent repairs can be made or to keep safe a section of pavement where the Principal has advised more permanent type works (e.g. reconstruction/rehabilitation) is due to commence.

##### **Note**

*For road sections not programmed for imminent permanent type works, individual repairs shall only be used where rapid deterioration of the pavement has not allowed sufficient time to schedule permanent repairs and shall only be performed once before permanent repairs are made. Includes the application of a bituminous emulsion seal coat and cover aggregate over the trimmed areas.*

##### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the trimming of the rut or shove
- the compaction of the exposed roadway surface prior to applying the tack coat
- all work items as detailed in MRS12 and MRS22
- the supply and application of a bitumen emulsion as per Applicable specifications
- the precoating, spreading and rolling of cover aggregate (including the supply of all materials)
- the supply and installation of TRPM's or line spotting as required
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing

- the clean up of the site including the disposal of any excavated/ waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Cutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>

All excavated material shall be disposed of or stored in a neat and tidy manner away from the road formation and drainage lines. Material suitable for reuse shall be stored at nominated stock pile sites unless otherwise agreed.

#### Restoration Standard

The finished work shall meet the requirements of the relevant specifications except as provided hereunder.

The finished surface shall be within  $\pm 10$  mm of the surrounding surface. The deviation from a 3 m straightedge placed along the wheel paths shall be no more than  $\pm 10$  mm, due allowance being made for design shape where relevant.

Install TRPM's and/or Spotting if required.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
141	Temporary Pavement Repairs (Mechanical)	m <sup>2</sup>

No other details are listed in the Standard for this Activity.

#### 142 Emergency Temporary Pavement Repairs

##### Description

The temporary repair of the roadway surface to eliminate hazardous conditions until such time as permanent repairs can be made or to keep safe a section of pavement where the Principal has advised more permanent type works (i.e. reconstruction/rehabilitation) is due to commence.

##### Note

*For road sections not programmed for imminent permanent type works, individual repairs shall only be used where rapid deterioration of the pavement has not allowed sufficient time to schedule permanent repairs and shall only be performed once before permanent repairs are made.*

## Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the removal of cracked or loose material from the area to be repaired
- the supply and application of a bitumen emulsion tack coat for premix/asphalt treatment
- the supply, placement and compaction of the premix asphalt, gravel or asphalt material.
- the supply and installation of TRPM's or linespotting as required
- all other operations in the Applicable Specifications as warranted
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS05	<i>Unbound Pavement</i>
MRTS30	<i>Asphalt Pavements</i>
SS	<i>Premix Asphalt</i>

### Restoration Standards

The finished surface shall be within  $\pm 20$  mm of the height of the surrounding road surface.

The standard of compaction shall be such that the final passes of the compaction equipment leave no visible impressions on the restored surface.

Install TRPM's and/or Spotting if required.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
142	Temporary Pavement Repairs	Tonnes

### Testing Requirements

Not Applicable

### Particular Planning Points to Consider

1. This is an emergency repair to reduce traffic hazards during and immediately after bad weather. This repair is also applicable where more permanent types of works such as rehabilitation are imminent.
2. Such repairs should be inspected within a week to check their condition and to schedule an appropriate standard Activity for long term repair where more permanent type works such as rehabilitation are not imminent.

### **143 Pavement Repairs Gravel (Mechanical) Minor**

#### **Description**

The repair by machine of shoving gravel pavement surfacing of size less than 500 m<sup>2</sup> by removal of the deteriorated pavement and replacement with new gravel pavement material to profile. May include treatment of subgrade materials and reworking, as appropriate.

Child Activities are to be used for depths of treatment as follows:

- 143 20 Depth up to 200 mm
- 143 30 Depth up to 300 mm
- 143 40 Depth up to 400 mm
- 143 50 Depth up to 500 mm

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area and confirmation of the pavement design
- excavation of the failed area to the approved pavement design depth including the removal of any loose material from the area to be repaired. Where a road profiler is used only areas inaccessible by the profiler drum (i.e. generally at corners of the repair) will be accepted at a lesser depth than that approved. In these areas a minimum depth shall be specified.
- where applicable, compaction of the excavated surface (where the surface has been loosened).
- preparation of the existing surface including brooming
- the formation of a vertical face to a minimum depth equal to the pavement design (measured from the top of the excavation) for the full length of the excavated edges. Where a road profiler is used a nominated reduced depth of vertical face will be accepted in areas where the shape of the profilers drum does not allow the design depth to be achieved. The repairs shall be rectangular in shape
- the supply, placement and compaction of pavement material, cement treated if appropriate
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable

- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavement</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>

The design of the repaired pavement shall conform to the pavement design standards of the Department Transport and Main Roads.

Geotextiles on/under subgrade shall comply with the requirements specified for geotextiles under/within embankments in MRTS03 *Drainage, Retaining Structures and Protective Treatments*.

The unbound pavement material shall be of a quality at least equal to that used in sound sections of the road adjacent to the repairs.

Plant-mix stabilised pavement shall be Unbound Pavement as specified above stabilised with not less than 2% by mass of cement.

The Principal may direct that a paver be employed to place plant-mix stabilised pavement material or may approve the use of other equipment for this purpose. Such other equipment shall not cause the mix to segregate.

All excavated material shall be disposed of or stored in a neat and tidy manner away from the road formation and drainage lines. Material suitable for reuse shall be stored at nominated stockpile sites unless otherwise agreed.

#### Restoration Standard

The finished work shall meet the requirements of the relevant specifications except as provided hereunder.

The finished surface shall conform to the shape of the surrounding road surface.

The deviation from a 3 m straightedge placed along the wheel paths shall be no more than + 8 mm, - 5 mm, due allowance being made for design shape, where relevant.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
143	Pavement Repairs Gravel (Mechanical) – Minor (500 m <sup>2</sup> )	m <sup>2</sup>

#### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
942100	Road excavation, all material	m <sup>3</sup>
	Geotextiles on/under subgrade	m <sup>2</sup>
933300	Subsoil drains, Type C	m

Supplementary Work Item	Description	Unit of Measurement
933400	Subsoil drains, Type D	m
	Plant-mix stabilised pavement (incl. cement and curing)	m <sup>3</sup>
	Subbase, Unbound Pavement Type.(Subtype)	m <sup>3</sup>
	Base, Unbound Pavement Type.(Subtype)	m <sup>3</sup>

### Testing Requirements

Minimum test frequency	
<b>Unbound Pavements and materials for stabilisation</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Flakiness Index Q201B	1/source/year
CBR Q113A	1/source/year
Degradation Factor Q208B	1/source/year
Grading Q103A	1 per 250 m <sup>3</sup>
Liquid Limit Q104A	1 per 250 m <sup>3</sup>
Plastic Limit, PI Q105	1 per 250 m <sup>3</sup>
Linear Shrinkage Q106	1 per 250 m <sup>3</sup>
<b>Stabilised Material</b>	
Drying/Shrinkage Q128	1/source/year
Cement Content Q116B	1 per 100 m <sup>3</sup>
<b>Compaction - Earthworks, Unbound/Stabilised Pavement</b>	
MDR Q110A	1 per 500 m <sup>2</sup>
MDR Q110C (Cement treated)	1 per 500 m <sup>2</sup>
Density Q111A or Q112	1 per 500 m <sup>2</sup>
<b>Asphalt</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year



<b>Minimum test frequency</b>	
<b>Geometrics</b>	
Horizontal Straightedge (min 1/patch in wheel path and at interface)	1 per 10 m
Depth below Road Surface	1 per 10m per layer
<b>Cover Aggregate</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. cracking?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair. On large areas, use a cone penetrometer to determine depth of excavation required. Specify this depth. Consider using a geotextile.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
8. Arrange for testing materials.
9. Arrange and specify a disposal area for excavated material.
10. Specify spray seal or asphalt surface. Specify asphalt depth.

#### **144 Subgrade Treatment in Conjunction with Pavement Repair Activity**

##### **Description**

The additional repair of subgrade required in excess of pavement repair covered by activity 146. To including removal of deteriorated subgrade and replacement with suitable aggregate / geotextile.

## Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- determine the depth of excavation and prepare pavement design
- excavation of the failed area to the approved pavement design depth including the removal of any loose material from the area to be repaired.
- compaction of the excavated surface if applicable (i.e. where the surface has been loosened).
- preparation of the existing surface including brooming if applicable
- the formation of a vertical face to a minimum depth equal to the pavement design (measured from the depth of pavement repair required in activity 146). The repairs shall be rectangular in shape.
- the supply and installation of geofabric if required
- the supply, placement and compaction of rock fill if required
- the supply, placement and compaction of cement treated pavement material if required.
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavement</i>
MRTS07A	<i>In situ stabilized Subgrades using quick lime or hydrated lime</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS57	<i>Geotextiles for Paving Applications</i>

The design of the repaired pavement shall conform to the pavement design standards of Department of Main Roads.

Geotextiles on/under subgrade shall comply with the requirements specified for geotextiles under/within embankments in MRTS03 *Drainage, Retaining Structures and Protective Treatments*.

Rockfill shall be composed of sound stone pieces, the minimum size of which shall be 75 mm and the maximum size not greater than half the rockfill layer thickness.

The unbound pavement material shall be of a quality at least equal to that used in sound sections of the road adjacent to the repairs.

Plant-mix stabilised pavement shall be Unbound Pavement as specified in MRTS05 stabilised with not less than 2% by mass of cement.

All excavated material shall be disposed of or stored in a neat and tidy manner away from the road formation and drainage lines. Material suitable for reuse shall be stored at nominated stock pile sites unless otherwise agreed.

### Restoration Standard

The finished work shall meet the requirements of the relevant specifications except as provided here under.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
144	Subgrade Treatment in Conjunction with Pavement Repair Activity	Dollars

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
942100	Road excavation, all material	m <sup>3</sup>
	Geotextiles on/under subgrade	m <sup>2</sup>
	Rockfill	m <sup>3</sup>
933300	Subsoil drains, Type C	m
933400	Subsoil drains, Type D	m
	Plant-mix stabilised pavement (incl. cement and curing)	m <sup>3</sup>
	Subbase, Unbound Pavement Type.(Subtype)	m <sup>3</sup>
	Base, Unbound Pavement Type.(Subtype)	m <sup>3</sup>
955020	Tack Coat l/m <sup>2</sup>	litre
	Establishment/disestablishment of paver and paving gang at paving each site	site

### Testing Requirements

Minimum test frequency	
Unbound Pavements and materials for stabilisation	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year

<b>Minimum test frequency</b>	
Flakiness Index Q201B	1/source/year
CBR Q113A	1/source/year
Degradation Factor Q208B	1/source/year
Grading Q103A	1 per 250 m <sup>3</sup>
Liquid Limit Q104A	1 per 250 m <sup>3</sup>
Plastic Limit, PI Q105	1 per 250 m <sup>3</sup>
Linear Shrinkage Q106	1 per 250 m <sup>3</sup>
<b>Stabilised Material</b>	
Drying/Shrinkage Q128	1/source/year
Cement Content Q116B	1 per 100 m <sup>3</sup>
<b>Compaction - Earthworks, Unbound/Stabilised Pavement</b>	
MDR Q110A	1 per 500 m <sup>2</sup>
MDR Q110C (Cement treated)	1 per 500 m <sup>2</sup>
Density Q111A or Q112	1 per 500 m <sup>2</sup>

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### **145 Scarify and Reshape Existing Pavement**

##### **Description**

The repair by machine of out of shape bituminous pavement (less than 500 m<sup>2</sup>), by scarifying and reshaping the existing pavement to profile including appropriate bituminous surfacing works. May include the addition of some additional paving material to maintain road profile, as appropriate.

##### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS05	<i>Unbound Pavement</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

The unbound pavement material shall be of a quality at least equal to that used in sound sections of the road adjacent to the repairs.

The Principal's Delegate or his representative may direct that a paver be employed to place plant-mix stabilised and hot mixed Asphalt pavement material or may approve the use of other equipment for this purpose. Such other equipment shall not cause the mix to segregate.

All excavated material shall be disposed of in a neat and tidy manner away from the road formation and drainage lines.

### Restoration Standard

The finished work shall meet the requirement of the relevant specifications and as provided hereunder.

The Contractor shall demonstrate compliance with the requirements of MRTS30 *Asphalt Pavements* with respect to rolling pattern requirements and asphalt temperature at time of rolling commencement. The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

Install TRPM's and/or Spotting if required.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
145	Scarify and Reshape Existing Pavement	m <sup>2</sup>

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Scarify and Reshape Existing Pavement	m <sup>2</sup>
	Base, Unbound Pavement Type	m <sup>3</sup>
955320	Tack Coat l/m <sup>2</sup>	litre
	Establishment/disestablishment of paver and paving gang at paving site	each
	Dense Graded Asphalt pavement, 10 mm mix	tonne
956100	Prime (Grade, rate.l/m <sup>2</sup> )	litre
956200	Primerseal (Grade, rate.l/m <sup>2</sup> )	litre
956300	Seal (Class, rate.l/m <sup>2</sup> )	m <sup>2</sup>
956600	Spreading prime cover aggregate (Size.mm, rate.1m <sup>3</sup> /m <sup>2</sup> )	m <sup>3</sup>
956700	Spreading cover aggregate (Size.mm, rate.1m <sup>3</sup> /m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (precoated) (10 mm nominal size)	m <sup>3</sup>
958110	Supply of cover aggregate (precoated) (14 mm nominal size)	m <sup>3</sup>

Supplementary Work Item	Description	Unit of Measurement
958120	Supply of cover aggregate (precoated) (16 mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170)	tonne
956910	Supply of material (Modified Bitumen Class 170 + % SBS Polymer)	tonne
956920	Supply of material (Bitumen Cutter)	tonne
956930	Supply of material (Adhesion Agent)	kg

### Testing Requirements

Minimum test frequency	
<b>Unbound Pavements</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Flakiness Index Q201B	1/source/year
CBR Q113A	1/source/year
Degradation Factor Q208B	1/source/year
Grading Q103A	1 per 250 m <sup>3</sup>
Liquid Limit Q104A	1 per 250 m <sup>3</sup>
Plastic Limit, PI Q105	1 per 250 m <sup>3</sup>
Linear Shrinkage Q106	1 per 250 m <sup>3</sup>
MDR Q110A	1 per 500 m <sup>2</sup>
Density Q111A or Q112	(1 per lot min:)
<b>Asphalt/Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year
Temperature at time of rolling commencement	6 per lot min
<b>Asphalt/Premix Aggregate</b>	
10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t

<b>Minimum test frequency</b>	
Polished Aggregate Friction Value Q203	1 per 400 t
<b>Geometrics</b>	
Horizontal Straightedge	1 per 10 m
Depth below Road Surface	1 per 10 m per layer
<b>Cover Aggregate</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Bitumen - sample	1 per tank
Bitumen emulsion sample	1 per 5000 litres
<b>Application Rates</b>	
Spraying Records. Max. lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

## **WORK PREPARATION**

### **Plant Requirements**

Job truck

Grader

Vibrating steel drum roller

Bitumen/Emulsion sprayer

Front-end loader

Trucks

Rotary broom

Water tanker

### **Materials**

Unbound pavement material      to MRTS05

Precoated screenings      to MRTS22

Asphalt	to MRTS30
Bitumen	to MRTS17
Emulsion	to MRTS21
Sealing signs	"Loose Stones" and "Avoid Windscreen Damage Drive Slowly"

### Manpower Requirements

Leading hand	1
Labourers	2
Operators	2
Truck drivers	
Traffic controllers	2

### Average Daily Production

Not listed

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. shoving?
4. Is an alternative remedy more appropriate?
5. Mark out the area for repair.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
8. Arrange for testing materials.
9. Specify spray seal or asphalt surface. Specify asphalt depth.
10. Schedule waterproofing (Activity Number 118) within four weeks if a cold laid premix is used and a reseal is not scheduled in that period.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. should be marked out already.



3. Scarify existing pavement, and reshape:
  - a. scarify deep enough to provide a minimum 75 mm compacted remixed layer after reshaping and addition of any new material
  - b. spread additional material as required
  - c. reshape to correct road profile
  - d. mix in water for compaction.
4. Compact the Base:
  - a. bring material to right moisture content for compaction
  - b. uniform 75 - 100 mm layers
  - c. check compaction.
5. Form the surface:
  - a. use grader, water and roller
  - b. check against the standard
  - c. allow surface to dry.
6. Apply seal or asphalt surfacing:
  - a. use Activity Number 128, steps 5 to 12. or Activity Number 136, Steps 4 to 8.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. notify supervisor if line marking required.
9. Re-establish linemarking:
  - a. use TRPMs or spotting.
10. Remove traffic control:
  - a. clean/repair as necessary.

**146 Pavement Repairs Asphalt (Mechanical) Minor (< 500 m<sup>2</sup>)**

**Description**

The repair by machine of shoving pavement or asphalt surfacing of size less than 500 m<sup>2</sup> by removal of the deteriorated pavement and/or asphalt surface and replacement with new pavement material and asphalt or bitumen seal treatment, to profile. May include treatment of subgrade materials and reworking, as appropriate. Treatment of areas greater than greater than 500 m<sup>2</sup> are covered by Activity No. 147.

Child Activities are to be used for depths of treatment as follows:

- 143 20 Depth up to 200 mm
- 143 30 Depth up to 300 mm

- 143 40 Depth up to 400 mm
- 143 50 Depth up to 500 mm

### Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area and confirmation of the pavement design
- excavation of the failed area to the approved pavement design depth including the removal of any loose material from the area to be repaired. Where a road profiler is used only areas inaccessible by the profiler drum (i.e. generally at corners of the repair) will be accepted at a lesser depth than that approved. In these areas a minimum depth shall be specified.
- where applicable, compaction of the excavated surface (where the surface has been loosened).
- preparation of the existing surface including brooming
- the formation of a vertical face to a minimum depth equal to the pavement design (measured from the top of the excavation) for the full length of the excavated edges. Where a road profiler is used a nominated reduced depth of vertical face will be accepted in areas where the shape of the profilers drum does not allow the design depth to be achieved. The repairs shall be rectangular in shape
- the supply, placement and compaction of pavement material, cement treated if appropriate
- the supply and application of a bitumen emulsion tack coat if applicable as per Applicable Specifications.
- the supply, placement and compaction of the asphalt or the supply and application of a bitumen seal treatment to profile, as appropriate
- the supply and installation of TRPM's or line spotting as required
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

**Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavement</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

The design of the repaired pavement shall conform to the pavement design standards of the Department of Transport and Main Roads.

Geotextiles on/under subgrade shall comply with the requirements specified for geotextiles under/within embankments in MRTS03 *Drainage, Retaining Structures and Protective Treatments*.

The unbound pavement material shall be of a quality at least equal to that used in sound sections of the road adjacent to the repairs.

Plant-mix stabilised pavement shall be Unbound Pavement as specified above stabilised with not less than 2% by mass of cement.

The Principal may direct that a paver be employed to place plant-mix stabilised and/or dense graded asphalt pavement material or may approve the use of other equipment for this purpose. Such other equipment shall not cause the mix to segregate.

All excavated material shall be disposed of or stored in a neat and tidy manner away from the road formation and drainage lines. Material suitable for reuse shall be stored at nominated stockpile sites unless otherwise agreed.

**Restoration Standard**

The finished work shall meet the requirements of the relevant specifications except as provided hereunder.

The finished surface shall conform to the shape of the surrounding road surface.

Install TRPM's and/or Spotting if required.

The deviation from a 3 m straightedge placed along the wheel paths shall be no more than + 8 mm, - 5 mm, due allowance being made for design shape, where relevant.

The Contractor shall demonstrate compliance with the requirements of MRS30 *Asphalt Pavements* with respect to rolling pattern requirements and asphalt temperature at time of rolling commencement. The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
146	Pavement Repairs Asphalt (Mechanical) – Minor (< 500 m <sup>2</sup> )	m <sup>2</sup>

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
942100	Road excavation, all material	m <sup>3</sup>
	Geotextiles on/under subgrade	m <sup>2</sup>
933000	Subsoil drains, Type C	m
933400	Subsoil drains, Type D	m
	Plant-mix stabilised pavement (incl. cement and curing)	m <sup>3</sup>
	Subbase, Unbound Pavement Type (Subtype)	m <sup>3</sup>
	Base, Unbound Pavement Type (Subtype)	m <sup>3</sup>
955020	Tack Coat l/m <sup>2</sup>	litre
	Establishment/disestablishment of paver and paving gang at paving site	each
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne
956100	Prime (Grade, rate l/m <sup>2</sup> )	litre
956200	Primerseal (Grade, rate l/m <sup>2</sup> )	litre
956300	Seal (Class, rate l/m <sup>2</sup> )	litre
956600	Spreading prime cover material (Size mm, rate.1m <sup>3</sup> / m <sup>2</sup> )	m <sup>3</sup>
956700	Spreading cover aggregate (Size mm, rate 1 m <sup>3</sup> / m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (precoated) (10 mm nominal size)	m <sup>3</sup>
958110	Supply of cover aggregate (precoated) (14 mm nominal size)	m <sup>3</sup>
958120	Supply of cover aggregate (precoated) (16 mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170)	tonne
956910	Supply of material (Modified Bitumen Class 170 + % SBS Polymer)	tonne
956920	Supply of material (Bitumen Cutter)	tonne

Supplementary Work Item	Description	Unit of Measurement
956930	Supply of material (Adhesion Agent)	kg

**Testing Requirements**

Minimum test frequency	
<b>Unbound Pavements</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Flakiness Index Q201B	1/source/year
CBR Q113A	1/source/year
Degradation Factor Q208B	1/source/year
Grading Q103A	1 per 250 m <sup>3</sup>
Liquid Limit Q104A	1 per 250 m <sup>3</sup>
Plastic Limit, PI Q105	1 per 250 m <sup>3</sup>
Linear Shrinkage Q106	1 per 250 m <sup>3</sup>
<b>Stabilised Material</b>	
Drying/Shrinkage Q128	1/source/year
Cement Content Q116B	1 per 100 m <sup>3</sup>
<b>Compaction – Earthworks, Unbound/Stabilised Pavement</b>	
MDR Q110A	1 per 500 m <sup>2</sup>
MDR (Cement treated) Q110C	1 per 500 m <sup>2</sup>
Density Q111A or Q112	1 per 500 m <sup>2</sup>
<b>Asphalt</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year
Temperature at time of roiling commencement	6 per lot min
<b>Asphalt Aggregate</b>	
10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Polished Aggregate Friction Value Q203	1 per 400 t

<b>Minimum test frequency</b>	
<b>Geometrics</b>	
Horizontal Straightedge (min 1/patch in wheel path and at interface)	1 per 10 m
Depth below Road Surface	1 per 10 m per layer
<b>Cover Aggregate</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Bitumen - sample	1 per tank
Bitumen emulsion sample	1 per 5000 litres
<b>Application Rates</b>	
Spraying Records. Max. lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. cracking?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair. On large areas, use a cone penetrometer to determine depth of excavation required. Specify this depth. Consider using a geotextile.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
8. Arrange for testing materials.
9. Arrange and specify a disposal area for excavated material.
10. Specify spray seal or asphalt surface. Specify asphalt depth.

**147 Pavement Repairs Gravel (Mechanical) – Major ( $\geq 500 \text{ m}^2$ )****Description**

The repair by machine of shoving pavement surfacing of size greater than  $500 \text{ m}^2$  by removal of deteriorated gravel pavement and replacement with new pavement material to profile. May include treatment of subgrade materials and reworking, as appropriate. Refers to pavement repairs greater than 200 mm nominal depth.

**Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- determine the depth of excavation and prepare pavement design
- excavation of the failed area to the approved pavement design depth including the removal of any loose material from the area to be repaired. Should a road profiler be used only in areas inaccessible by the profiler drum (i.e. generally the corners of the repairs) will be accepted at a lesser depth than that approved. In these areas a minimum depth shall be specified.
- compaction of the excavated surface if applicable (i.e. where the surface has been loosened).
- preparation of the existing surface including brooming if applicable
- the formation of a vertical face to a minimum depth equal to the pavement design (measured from the top of the excavation), for the full length of the excavated edges. Where a road profiler is used a nominated reduced depth of vertical face will be accepted in areas where the shape of the profiler's drum does not allow the design depth to be achieved. The repairs shall be rectangular in shape.
- the supply and installation of geofabric if required
- the supply, placement and compaction of rock fill if required
- the supply, placement and compaction of cement treated pavement material
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavement</i>

Reference	Title
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

The design of the repaired pavement shall conform to the pavement design standards of the Department of Transport and Main Roads.

Geotextiles on/under subgrade shall comply with the requirements specified for geotextiles under/within embankments in MRS03 *Drainage, Retaining Structures and Protective Treatments*.

Rockfill shall be composed of sound stone pieces, the minimum size of which shall be 75 mm and the maximum size not greater than half the rockfill layer thickness.

The unbound pavement material shall be of a quality at least equal to that used in sound sections of the road adjacent to the repairs.

Plant-mix stabilised pavement shall be Unbound Pavement as specified in MRS05 stabilised with not less than 2% by mass of cement.

The Principal may direct that a paver be employed to place plant-mix stabilised and/or dense graded asphalt pavement material or may approve the use of other equipment for this purpose. Such other equipment shall not cause the mix to segregate.

All excavated material shall be disposed of or stored in a neat and tidy manner away from the road formation and drainage lines. Material suitable for reuse shall be stored at nominated stock pile sites unless otherwise agreed.

#### Restoration Standard

The finished work shall meet the requirements of the relevant specifications except as provided here under.

The Contractor shall demonstrate compliance with the requirements of MRS30 *Asphalt Pavements* with respect to rolling pattern requirements and asphalt temperature at time of rolling commencement. The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

The finished surface shall conform to the shape of the surrounding surface. The deviation from a 3 m straightedge placed along the wheel paths shall be no more than + 8 mm, - 5 mm, due allowance being made for design shape where relevant.

Install TRPM's and/or Spotting if required.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
147	Pavement Repairs Gravel (Mechanical) – Major (in place)	m <sup>3</sup>



**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
942100	Road excavation, all material	m <sup>3</sup>
	Geotextiles on/under subgrade	m <sup>2</sup>
	Rockfill	m <sup>3</sup>
933000	Subsoil drains, Type C	m
933400	Subsoil drains, Type D	m
	Plant-mix stabilised pavement (incl. cement and curing)	m <sup>3</sup>
	Subbase, Unbound Pavement Type (Subtype)	m <sup>3</sup>
	Base, Unbound Pavement Type (Subtype)	m <sup>3</sup>

**Testing Requirements**

Minimum test frequency	
<b>Unbound Pavements and materials for stabilisation</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Flakiness Index Q201B	1/source/year
CBR Q113A	1/source/year
Degradation Factor Q208B	1/source/year
Grading Q103A	1 per 250 m <sup>3</sup>
Liquid Limit Q104A	1 per 250 m <sup>3</sup>
Plastic Limit, PI Q105	1 per 250 m <sup>3</sup>
Linear Shrinkage Q106	1 per 250 m <sup>3</sup>
<b>Stabilised Material</b>	
Drying/Shrinkage Q128	1/source/year
Cement Content Q116B	1 per 100 m <sup>3</sup>
<b>Compaction – Earthworks, Unbound/Stabilised Pavement</b>	
MDR Q110A	1 per 500 m <sup>2</sup>
MDR (Cement treated) Q110C	1 per 500 m <sup>2</sup>
Density Q111A or Q112	1 per 500 m <sup>2</sup>
<b>Geometrics</b>	
Horizontal Straightedge (min 1/patch in wheel path and at interface)	1 per 10 m
Depth below Road Surface	1 per 10 m per layer

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. cracking?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair. On large areas, use a cone penetrometer to determine depth of excavation required. Specify this depth. Consider using a geotextile.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
8. Arrange for testing materials.
9. Arrange and specify a disposal area for excavated material.
10. Specify spray seal or asphalt surface. Specify asphalt depth.

### 148 *Pavement Repairs Asphalt Gravel (Mechanical) – Major ( $\geq 500 \text{ m}^2$ )*

#### Description

The repair by machine of shoving pavement surfacing of size greater than 500 m<sup>2</sup> by removal of deteriorated pavement and/or asphalt or surface and replacement with new pavement material and asphalt, bitumen seal treatment, to profile. May include treatment of subgrade materials and reworking, as appropriate. Refers to pavement repairs greater than 200 mm nominal depth.

#### Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- determine the depth of excavation and prepare pavement design
- excavation of the failed area to the approved pavement design depth including the removal of any loose material from the area to be repaired. Should a road profiler be used only in areas inaccessible by the profiler drum (i.e. generally the corners of the repairs) will be accepted at a lesser depth than that approved. In these areas a minimum depth shall be specified.
- compaction of the excavated surface if applicable (i.e. where the surface has been loosened).
- preparation of the existing surface including brooming if applicable

- the formation of a vertical face to a minimum depth equal to the pavement design (measured from the top of the excavation), for the full length of the excavated edges. Where a road profiler is used a nominated reduced depth of vertical face will be accepted in areas where the shape of the profilers drum does not allow the design depth to be achieved. The repairs shall be rectangular in shape.
- the supply and installation of geofabric if required
- the supply, placement and compaction of rock fill if required
- the supply, placement and compaction of cement treated pavement material
- the supply and application of a bitumen emulsion tack coat - refer to Applicable Specifications
- the supply, placement and compaction of the asphalt or the supply and application of a bitumen seal treatment to profile, as appropriate
- the supply and installation of TRPM's or line spotting as required
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavement</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

The design of the repaired pavement shall conform to the pavement design standards of Department of Main Roads.

Geotextiles on/under subgrade shall comply with the requirements specified for geotextiles under/within embankments in MRS03 *Drainage, Retaining Structures and Protective Treatments*.

Rockfill shall be composed of sound stone pieces, the minimum size of which shall be 75 mm and the maximum size not greater than half the rockfill layer thickness.

The unbound pavement material shall be of a quality at least equal to that used in sound sections of the road adjacent to the repairs.

Plant-mix stabilised pavement shall be Unbound Pavement as specified in MRS05 stabilised with not less than 2% by mass of cement.

The Principal may direct that a paver be employed to place plant-mix stabilised and/or dense graded asphalt pavement material or may approve the use of other equipment for this purpose. Such other equipment shall not cause the mix to segregate.

All excavated material shall be disposed of or stored in a neat and tidy manner away from the road formation and drainage lines. Material suitable for reuse shall be stored at nominated stock pile sites unless otherwise agreed.

### Restoration Standard

The finished work shall meet the requirements of the relevant specifications except as provided here under.

The Contractor shall demonstrate compliance with the requirements of MRS30 *Asphalt Pavements* with respect to rolling pattern requirements and asphalt temperature at time of rolling commencement. The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

The finished surface shall conform to the shape of the surrounding surface. The deviation from a 3 m straightedge placed along the wheel paths shall be no more than + 8 mm, - 5 mm, due allowance being made for design shape where relevant.

Install TRPM's and/or Spotting if required.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
148	Pavement Repairs Asphalt (Mechanical) – Major (in place)	m <sup>3</sup>

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
942100	Road excavation, all material	m <sup>3</sup>
	Geotextiles on/under subgrade	m <sup>2</sup>
	Rockfill	m <sup>3</sup>
933000	Subsoil drains, Type C	m
933400	Subsoil drains, Type D	m
	Plant-mix stabilised pavement (incl. cement and curing)	m <sup>3</sup>
	Subbase, Unbound Pavement Type (Subtype)	m <sup>3</sup>
	Base, Unbound Pavement Type (Subtype)	m <sup>3</sup>
955020	Tack Coat l/m <sup>2</sup>	litre

Supplementary Work Item	Description	Unit of Measurement
	Establishment/disestablishment of paver and paving gang at paving each site	site
955860	Dense Graded asphalt pavement, 14mm mix	tonne
956100	Prime (Grade, rate l/m <sup>2</sup> )	litre
956200	Primerseal (Grade, rate l/m <sup>2</sup> )	litre
956300	Seal (Class, rate l/m <sup>2</sup> )	litre
956600	Spreading prime cover material (Size mm, rate 1m <sup>3</sup> / m <sup>2</sup> )	m <sup>3</sup>
956700	Spreading cover aggregate (Size mm, rate 1m <sup>3</sup> / m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (precoated) (10 mm nominal size)	m <sup>3</sup>
958110	Supply of cover aggregate (precoated) (14 mm nominal size)	m <sup>3</sup>
958120	Supply of cover aggregate (precoated) (16 mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170)	tonne
956910	Supply of material (Modified Bitumen Class 170 + % SBS Polymer)	tonne
956920	Supply of material (Bitumen Cutter)	tonne
956930	Supply of material (Adhesion Agent)	kg

### Testing Requirements

Minimum test frequency	
Unbound Pavements and materials for stabilisation	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Flakiness Index Q201B	1/source/year
CBR Q113A	1/source/year
Degradation Factor Q208B	1/source/year
Grading Q103A	1 per 250 m <sup>3</sup>
Liquid Limit Q104A	1 per 250 m <sup>3</sup>
Plastic Limit, PI Q105	1 per 250 m <sup>3</sup>
Linear Shrinkage Q106	1 per 250 m <sup>3</sup>

<b>Minimum test frequency</b>	
<b>Stabilised Material</b>	
Drying/Shrinkage Q128	1/source/year
Cement Content Q116B	1 per 100 m <sup>3</sup>
<b>Compaction – Earthworks, Unbound/Stabilised Pavement</b>	
MDR Q110A	1 per 500 m <sup>2</sup>
MDR (Cement treated) Q110C	1 per 500 m <sup>2</sup>
Density Q111A or Q112	1 per 500 m <sup>2</sup>
<b>Asphalt/Premix</b>	
Materials/Mix Design Q307	1/source/year
Maximum Density of Asphalt	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year
Temperature at time of rolling commencement	6 per lot min
<b>Asphalt Aggregate</b>	
10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Polished Aggregate Friction Value Q203	1 per 400 t
<b>Geometrics</b>	
Horizontal Straightedge (min 1/patch in wheel path and at interface)	1 per 10 m
Depth below Road Surface	1 per 10 m per layer
<b>Cover Aggregate</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Bitumen - sample	1 per tank
Bitumen emulsion sample	1 per 5000 litres
<b>Application Rates</b>	
Spraying Records. Max. lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. cracking?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair. On large areas, use a cone penetrometer to determine depth of excavation required. Specify this depth. Consider using a geotextile.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
8. Arrange for testing materials.
9. Arrange and specify a disposal area for excavated material.
10. Specify spray seal or asphalt surface. Specify asphalt depth.

#### **151 Gravel Supply - Insitu Stabilisation**

##### **Description**

The supply of paving material for Activity numbered 150, Insitu Stabilisation. Includes all costs associated with the winning of the material for the works.

##### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- all operations involved with winning of the gravel/material for the job site
- the provision of traffic control for quarrying operations
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

**Applicable Specifications**

Reference	Title
MRTS05	<i>Unbound Pavement</i>

**Restoration Standards**

Nil (supply only)

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
151	Gravel Supply - Insitu Stabilisation	cubic metres loose

**Testing Requirements**

Minimum Test Frequency	
Grading Q103A	1/250 m <sup>3</sup>
Linear Shrinkage Q106	1/250 m <sup>3</sup>
CBR Q113A	1/source/year

**Particular Points to Consider**

Nil. Winning only.

**152 Gravel Cartage - Insitu Stabilisation****Description**

The cartage of paving material for Activity numbered 150, Insitu Stabilisation. Includes all costs associated with the loading and cartage of the material to the work site.

**Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- all operations involved with loading and cartage of the gravel/material for the job site
- the provision of traffic control for quarrying, cartage and delivery operations
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS05	<i>Unbound Pavement</i>



**Restoration Standards**

Nil (cartage only).

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
152	Gravel Cartage - Insitu Stabilisation	cubic metres loose - kms

**Testing Requirements**

Nil.

**Particular Planning Points to Consider**

Nil. Load and Cart only.

**153 Insitu-Stabilisation – Minor (< 500 m<sup>2</sup>)****Description**

The stabilisation in place of a sub grade or an existing pavement (less than 500 m<sup>2</sup>) by the addition of a hydraulic stabilising agent. May include the addition of paving material to maintain profiles as appropriate.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- offsetting the centreline and edge lines for line marking purposes
- the supply and spreading of the stabilising agent – 2% GP cement (or as requested/approved)
- the mixing of the stabilised material
- the compaction of the stabilised material
- the grading of the compacted pavement to the correct profile
- keeping the surface moist until the seal is applied
- the submission of the seal design (emulsion) for acceptance
- application of the emulsion seal
- the supply and installation of TRPMs or linespotting as required
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste/excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of line marking requirements.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS05	<i>Unbound Pavement</i>
MRTS07A	<i>In Situ Stabilised Pavements using quicklime or Hydrated Lime</i>
MRTS07B	<i>In Situ Stabilised Pavements using Cement or Cementitious Blends</i>
MRTS07C	<i>In Situ Stabilised Pavements using Foamed Bitumen</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

#### Restoration Standard

The finished work shall meet the requirements of the relevant specifications and as provided hereunder.

The deviation from a straightedge placed on the finished surface and the adjoining road surface shall not exceed 5 mm.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
153	Insitu-Stabilisation	m <sup>3</sup>

#### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
953300	Insitu-Stabilisation	m <sup>3</sup>
953600	Supply of stabilisation agent	tonne
953800	Curing Coat l/m <sup>2</sup>	litre
953900	Cover Material	m <sup>3</sup>
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne
956300	Seal (Class, rate l/m <sup>2</sup> )	litre
956700	Spreading cover aggregate (Size.mm, rate.1m <sup>3</sup> /.m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (precoated) (10 mm nominal size)	m <sup>3</sup>

Supplementary Work Item	Description	Unit of Measurement
958110	Supply of cover aggregate (precoated) (14 mm nominal size)	m <sup>3</sup>
958120	Supply of cover aggregate (precoated) (16 mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170)	tonne
956910	Supply of material (Modified Bitumen Class 170 + % SBS Polymer)	tonne
956920	Supply of material (Bitumen Cutter)	tonne
956930	Supply of material (Adhesion Agent)	kg

### Testing Requirements

Minimum Test Frequency	
<b>Stabilised Material</b>	
Cement Content Q116B	1 per 100 m <sup>3</sup>
Lime Content Q117 Note: Testing for stabilising agent content may be represented by surface spread rate(s) as specified by Clause 1 of Addendum 1 in MRTS07A, B or C	1 per 100 m <sup>3</sup>
<b>Compaction</b>	
MDR Q110A	1 per 500 m <sup>2</sup>
MDR (Cement treated) Q110C	1 per 500 m <sup>2</sup>
Density Q111A or Q112	1 per 500 m <sup>2</sup> (1 per lot min.)
<b>Asphalt</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year
Temperature at time of rolling commencement	6/lot min
<b>Asphalt Aggregate</b>	
10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Polished Aggregate Friction Value Q203	1 per 400 t

<b>Minimum Test Frequency</b>	
<b>Geometrics</b>	
Horizontal Straightedge	1 per 10 m
Depth below Road Surface	1 per 10 m per layer
<b>Cover Aggregate</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Bitumen sample	1 per tank
Bitumen Emulsion Sample	1 per 5000 litres
<b>Application Rates – Spraying Records</b>	
Max. lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. shoving?
4. Is an alternative remedy more appropriate?
5. Mark out the area for treatment. Specify the depth of treatment. Check location/depth of any services.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
8. Arrange for testing materials.
9. Specify spray seal or asphalt surface. Specify asphalt depth.

#### **154 *In situ*-Stabilisation – Major (>500m<sup>2</sup>)**

##### **Description**

The stabilisation in place of a subgrade or an existing pavement (greater than 500 m<sup>2</sup>) by the addition of a hydraulic stabilising agent. May include the addition of paving material to maintain profiles as appropriate.

## Work Operations

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- offsetting the centreline and edge lines for linemarking purposes
- the supply and spreading of the stabilising agent – 2% GP cement (or as requested/approved)
- the mixing of the stabilised material
- the compaction of the stabilised material
- the grading of the compacted pavement to the correct profile
- keeping the surface moist until the seal is applied
- the submission of the seal design (emulsion) for acceptance
- application of the emulsion seal
- the supply and installation of TRPMs or line spotting as required
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste/excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS05	<i>Unbound Pavement</i>
MRTS07A	<i>In Situ Stabilised Pavements using quicklime or Hydrated Lime</i>
MRTS07B	<i>In Situ Stabilised Pavements using Cement or Cementitious Blends</i>
MRTS07C	<i>In Situ Stabilised Pavements using Foamed Bitumen</i>
MRTS11	<i>Sprayed Bituminous Surfacing (Excluding Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

**Restoration Standard**

The finished work shall meet the requirements of the relevant specifications and as provided hereunder.

The deviation from a straightedge placed on the finished surface and the adjoining road surface shall not exceed 5 mm.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
154	Insitu-Stabilisation	m <sup>3</sup>

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
953300	Insitu-Stabilisation	m <sup>3</sup>
953600	Supply of stabilisation agent	tonne
953800	Curing Coat l/m <sup>2</sup>	litre
953900	Cover Material	m <sup>3</sup>
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne
956300	Seal (Class, rate l/m <sup>2</sup> )	litre
956700	Spreading cover aggregate (Size.mm, rate.1m <sup>3</sup> /.m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (precoated) (10 mm nominal size)	m <sup>3</sup>
958110	Supply of cover aggregate (precoated) (14 mm nominal size)	m <sup>3</sup>
958120	Supply of cover aggregate (precoated) (16 mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170	tonne
956910	Supply of material (Modified Bitumen Class 170 + % SBS Polymer)	tonne
956920	Supply of material (Bitumen Cutter)	tonne
956930	Supply of material (Adhesion Agent)	kg

**Testing Requirements**

Minimum Test Frequency	
Stabilised Material	
Cement Content Q116B	1 per 100 m <sup>3</sup>
Lime Content Q117 Note: Testing for stabilising agent content may be represented by surface spread rate(s) as specified by Clause 1 of Addendum 1 in MRTS07A, B or C	1 per 100 m <sup>3</sup>

<b>Minimum Test Frequency</b>	
<b>Compaction</b>	
MDR Q110A	1 per 500 m <sup>2</sup>
MDR (Cement treated) Q110C	1 per 500 m <sup>2</sup>
Density Q111A or Q112	1 per 500 m <sup>2</sup> (1 per lot min.)
<b>Asphalt</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year
Temperature at time of rolling commencement	6/lot min
<b>Asphalt Aggregate</b>	
10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Polished Aggregate Friction Value Q203	1 per 400 t
<b>Geometrics</b>	
Horizontal Straightedge	1 per 10 m
Depth below Road Surface	1 per 10 m per layer
<b>Cover Aggregate</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Precoating Q216	1 per 400 t
Bitumen sample	1 per tank
Bitumen Emulsion Sample	1 per 5000 litres
<b>Application Rates – Spraying Records</b>	
Max. lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. shoving?
4. Is an alternative remedy more appropriate?
5. Mark out the area for treatment. Specify the depth of treatment. Check location/depth of any services.
6. Note if road marking will be required. Schedule another Activity.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these. Ensure the surface material will give a texture consistent with the adjoining road, or schedule texturing.
8. Arrange for testing materials.
9. Specify spray seal or asphalt surface. Specify asphalt depth.

### **155 Asphalt Overlay – Major ( $\geq$ linear metres)**

#### **Description**

The repair of existing bituminous roadway exhibiting surface distress through the applications of an asphalt overlay.

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- preparation of the existing surface, including the installation of offset points for the spotting of the centre and edge lines upon completion of the overlay.
- protection of service facilities (e.g. manhole covers etc.)
- all work items as detailed in MRTS12 and MRTS22
- the supply and application of a bitumen emulsion tack coat– refer to Applicable Specifications
- the supply, laying and compaction of asphalt - refer to Applicable Specification. The type of asphalt may include any of those listed under the materials section for this Activity.
- the supply and installation of TRPM's or line spotting as required
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal of linemarking requirements

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.



**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS30	<i>Asphalt Pavements</i>

**Restoration Standard**

As per Applicable Specifications above.

The Contractor shall demonstrate compliance with the requirements of the Applicable Specifications above with respect to rolling pattern requirements and asphalt temperature at time of rolling commencement. The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

Install TRPM's and/or Spotting as required.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
155	Asphalt Overlay – Major (≥linear metres)	tonne

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
955010	Preparation of existing surface	m <sup>2</sup>
955320	Tack Coat _l/m <sup>2</sup>	litre
955860	Dense Graded asphalt pavement, 14 mm mix	tonne
955870	Dense Graded asphalt pavement, 20 mm mix	tonne
955890	Dense Graded asphalt pavement, 40 mm mix	tonne
955040	Dense Graded asphalt pavement, DG7 mix	tonne
955050	Dense Graded asphalt pavement, DG10 mix	tonne
955060	Dense Graded asphalt pavement, DG14 mix	tonne
955070	Dense Graded asphalt pavement, DG20 mix	tonne
955080	Dense Graded asphalt pavement, DG28 mix	tonne
955150	Low rut Dense Graded asphalt pavement, DG10 mix	tonne
955160	Low rut Dense Graded asphalt pavement, DG14 mix	tonne
955170	Low rut Dense Graded asphalt pavement, DG20 mix	tonne
955450	Open Graded asphalt pavement OG10 mix	tonne
955460	Open Graded asphalt pavement OG14 mix	tonne
	Establishment/disestablishment of paver and paving	each

Supplementary Work Item	Description	Unit of Measurement
	gang at paving site	

### Testing Requirements

Minimum test frequency	
<b>Asphalt/Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year
Temperature at time of rolling commencement	6 per lot min
<b>Asphalt Aggregate</b>	
10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Polished Aggregate Friction Value Q203	1 per 400 t
<b>Geometrics</b>	
Horizontal	1 per 50 m
Vertical – height or thickness	1 per 20 m
Vertical – straightedge	1 per 20 m
Vertical – surface evenness	1 per 100 m
Max. lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy more appropriate?
6. Define the area for overlay.

7. Note if road marking will be required. Schedule another Activity.
8. Arrange for testing materials.
9. Specify the appropriate plant, materials and crew (including quantities of material) and organise these.

### **157 Excavate and Replace Asphalt – (Wearing Surface < 75 mm for areas, < 150 linear metres)**

#### **Description**

The excavation of deteriorated asphalt and the restoration to profile with new asphalt in one operation, for asphalt < 75 mm and areas < 1500 m<sup>2</sup>.

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- excavation of the failed area to a nominal depth including the removal of any loose material from the area to be repaired. Where a road profiler is used only areas inaccessible by the profiler drum (i.e. generally at corners of the repair) will be accepted at a lesser depth than that approved. In these areas a minimum depth shall be specified.
- where applicable, compaction of the excavated surface (where the surface has been loosened).
- preparation of the existing surface including brooming
- the formation of a vertical face to a nominated depth of (measured from the top of the excavation) for the full length of the excavated edges. Where a road profiler is used a nominated reduced depth of vertical face will be accepted in areas where the shape of the profiler's drum does not allow the design depth to be achieved. The repairs shall be rectangular in shape.
- the supply and application of a bitumen emulsion tack as per Applicable Specifications
- the supply, placement and compaction of the asphalt
- the supply and installation of TRPM's or line spotting as required
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / excavated material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to Principal of linemarking requirements.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>

Reference	Title
MRTS30	<i>Asphalt Pavements</i>

### Restoration Standard

As per Applicable Specifications above.

The Contractor shall demonstrate compliance with the requirements of the Applicable Specifications above with respect to rolling pattern requirements and asphalt temperature at time of rolling commencement. The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

Install TRPM's and/or Spotting if required.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
157	Excavated and Replace Asphalt	tonne

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
912100	Provision for traffic	lump sum
	Excavation of existing surface	m <sup>2</sup>
955320	Tack Coat _l/m <sup>2</sup>	litre
955860	Dense Graded asphalt pavement, 14 mm mix	tonne
955870	Dense Graded asphalt pavement, 20 mm mix	tonne
955890	Dense Graded asphalt pavement, 40 mm mix	tonne
955040	Dense Graded asphalt pavement, DG7 mix	tonne
955050	Dense Graded asphalt pavement, DG10 mix	tonne
955060	Dense Graded asphalt pavement, DG14 mix	tonne
955070	Dense Graded asphalt pavement, DG20 mix	tonne
955080	Dense Graded asphalt pavement, DG28 mix	tonne
955150	Low rut Dense Graded asphalt pavement, DG10 mix	tonne
955160	Low rut Dense Graded asphalt pavement, DG14 mix	tonne
955170	Low rut Dense Graded asphalt pavement, DG20 mix	tonne
955450	Open Graded asphalt pavement OG10 mix	tonne
955460	Open Graded asphalt pavement OG14 mix	tonne
	Establishment/disestablishment of paver and paving gang at paving site	each

**Testing Requirements**

<b>Minimum test frequency</b>	
<b>Asphalt/Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year
Asphalt Temperature at time of rolling commencement	6/lot min
<b>Asphalt Aggregate</b>	
10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Polished Aggregate Friction Value Q203	1 per 400 t
<b>Geometrics</b>	
Horizontal Straight edge (wheelpath)	1 per 10 m (min 1/patch)
Horizontal Straight edge (interface)	1 per 10 m (min 1/patch)
Depth below roadsurface	1 per 10 m (min 1/patch)
Max. lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Define the area for treatment.
7. Note if road marking will be required. Schedule another Activity.
8. Specify the appropriate plant, materials and crew (including quantities of material) and organise these.

**158 Excavate & Replace A/C Wear Surf < 60 mm RAM**

Details to be advised.

**160 Recycling****Description**

The heating and removal of an existing asphalt surface, the incorporation of rejuvenating agent and new dense graded asphalt, and the relaying and compaction of the mixed material.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS30	<i>Asphalt Pavements</i>
SS	<i>Recycling Asphalt Pavements</i>

**Restoration Standard**

As per Applicable Specifications above.

The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.

The deviation from a straightedge placed on the finished surface and the adjoining road surface shall not exceed 5 mm.

Install TRPM's and/or Spotting if required.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
160	Recycling	cubic metres

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
912100	Provision for traffic	lump sum
	Recycling of existing asphalt surface	m <sup>2</sup>
955860	Dense Graded asphalt pavement, 14 mm mix	tonne
955870	Dense Graded asphalt pavement, 20 mm mix	tonne
955890	Dense Graded asphalt pavement, 40 mm mix	tonne
955040	Dense Graded asphalt pavement, DG7 mix	tonne
955050	Dense Graded asphalt pavement, DG10 mix	tonne
955060	Dense Graded asphalt pavement, DG14 mix	tonne
955070	Dense Graded asphalt pavement, DG20 mix	tonne
955080	Dense Graded asphalt pavement, DG28 mix	tonne

Supplementary Work Item	Description	Unit of Measurement
955150	Low rut Dense Graded asphalt pavement, DG10 mix	tonne
955160	Low rut Dense Graded asphalt pavement, DG14 mix	tonne
955170	Low rut Dense Graded asphalt pavement, DG20 mix	tonne
	Establishment/disestablishment of paver and paving gang at paving site	each

### Testing Requirements

Minimum test frequency	
<b>Asphalt/Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	<200t/source/year-2/source/year >200t/source/year-4/source/year
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	<200t/source/year-2/source/year >200t/source/year-4/source/year
Asphalt Temperature at time of rolling commencement	6/lot min
<b>Asphalt Aggregate</b>	
10% Fines Q205B	1/source/year
Crushed Particles Q215	1/source/year
Grading Q103D	1 per 400 t
Flakiness Index Q201B	1 per 400 t
Polished Aggregate Friction Value Q203	1 per 400 t
<b>Geometrics</b>	
Horizontal	1 per 50 m
Vertical – height or thickness	1 per 20 m
Vertical – straightedge	1 per 20 m
Vertical – surface evenness	1 per 100 m
Max. lot size	One day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### WORK PREPARATION

#### Plant Requirements

Job truck

Heater-planer

Paver

Vibrating steel drum roller

Multi-tyred roller

Asphalt/premix trucks

Loader

**Materials**

Dense Graded / Open Graded Asphalt to MRTS30

TRPMs/paint

**Manpower Requirements**

Leading hand	1
Labourers	2
Operators	4
Truck drivers	
Traffic controllers	2

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. If crocodile cracking is adjacent to the affected area, schedule another Activity to repair it.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Define the area for recycling.
7. Note if road marking will be required. Schedule another Activity.
8. Arrange for testing materials.
9. Specify the appropriate plant, materials and crew (including quantities of material) and organise these.

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing



- d. vehicle position.
2. Determine the work area:
  - a. this may be marked out already.
3. Prepare the work area:
  - a. offset the existing centre/edge markings
  - b. remove existing RRPMs.
4. Sweep the marked area:
  - a. a clean dust-free surface.
5. Heat and remove existing asphalt, add new asphalt and spread:
  - a. control depth of removal and quantity of new asphalt added
  - b. loose depth should be 1.25 times compacted depth.
6. Compact asphalt:
  - a. compact edges first
  - b. use vibrating steel-drum roller
  - c. compact at specified temperature.
7. Finish with multi-tyred roller.
8. Check the work against the restoration standard.
9. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
10. Re-establish line marking:
  - a. use TRPMs or spotting.
11. Remove traffic control:
  - a. clean/repair as necessary.

### 161 **Profile Planing**

#### **Description**

The planing back of asphaltic concrete roadway surface profile to sound material or specified depth. Does not include replacement with new asphaltic concrete material.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
SS	<i>Cold Planing Pavements</i>

#### **Restoration Standards**

The length and width shall be not less than nor exceed by 150 mm that specified. The depth of cut shall be in the range specified.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
161	Profile Planning	m <sup>2</sup>

#### Testing Requirements

Nil.

#### WORK PREPARATION

##### Plant Requirements

Job truck

Water truck

Road profiler

Trucks

Loader

Rotary broom and/or suction sweeper

##### Materials

Water

TRPMs/paint

##### Manpower Requirements

Leading hand	1
Labourers	2
Operators	4
Truck drivers	
Traffic controllers	2

##### Average Daily Production

Not Specified.

##### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Mark out the area for repair.
6. Note if road marking will be required. Schedule another Activity.

7. Check for services, e.g. overhead wires, manholes, other service covers and traffic detector loops. Mark these as appropriate.
8. Consider sub-contracting options.
9. Specify the appropriate plant, materials and crew (including quantities of material) and organise these.
10. Arrange and specify a disposal area for material removed from pavement.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. this may be marked out already.
3. Profile the work area:
  - a. keep dust down
  - b. control depth of cut to achieve desired road profile
  - c. hand excavate around service covers.
4. Remove cut material to disposal site.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material
  - b. sweep site.
7. Re-establish line marking:
  - a. use TRPMs or spotting.
8. Remove traffic control:
  - a. clean/repair as necessary.

### 169 Other Pavement Work

#### Description

Any work on the bituminous sealed roadway pavement not covered by other activities. This activity is to be used only after informing the Element Leader.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
169	Other Pavement Work	Dollars

No other details are listed in the Standard for this Activity.

### **170 Pavement Repairs (RAMC Only)**

Details to be advised.

### **200 UNSEALED SURFACES**

#### **201 Light Formation Grading**

##### **Description**

The light trimming by grader of unsealed formation surface to restore ride ability.

##### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the removal and re-instatement of roadside furniture (e.g. guide posts, signs etc.) as required.
- the light trimming by grader of the existing roadway to fill holes and other depressions.
- all other operations included in the Applicable Specification
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste/removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

##### **Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

##### **Restoration Standard**

The formation shall be graded to fill holes and depressions and smooth loose material.

Minimal loose material shall be left in drains or around roadside furniture.

##### **Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
201	Light Formation Grading	km-m width

##### **Testing Requirements**

Visual inspections to ensure the restoration standards are met.

##### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy or major maintenance more appropriate?
5. Check that no degrading of compaction is required. If it is, schedule a more appropriate Activity such as Medium Formation Grading (Activity Number 202).
6. Check profile and depth of depressions to ensure no scarifying and addition of imported gravel/material is required in isolated areas.
7. Check that no treatment of adjacent drainage is required. If either is, schedule a more appropriate Activity such as Heavy Formation Grading (Activity Number 203).
8. Specify and organise appropriate plant, materials and crew (including quantities of material).
9. Arrange and specify a disposal area for any excavated material.

## **202 Medium Formation Grading**

### **Description**

The grading of unsealed formation to reinstate the correct profile. Include the degrading, incorporation of water and compaction. Does not include scarifying or addition of imported gravel/material from outside the work site to build up existing material.

### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the removal and re-instatement of roadside furniture (e.g. guide posts, signs etc.) as required.
- the degrading of the existing pavement
- the grading of the existing pavement including watering and compaction
- the trimming and rolling to correct profile of the compacted formation
- all other operations included in the Applicable Specification
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste/removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Restoration Standard**

The formation crossfall measured using the grader blade or other means shall be within 4% to 6%. Superelevation on curves shall be 4% to 6% also. No water shall pond on the surface. The graded surface shall be watered and rolled to provide a sound tight surface with minimal loose stones and no visible vertical movement.

The cross section shall be visually uniform to that shown on the Works Order.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
202	Medium Formation Grading	km

**Testing Requirements**

Minimum test frequency	
Crossfall	1 per 50 m

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy or major maintenance more appropriate?
5. Check profile and depth of depressions to ensure no scarifying and addition of imported gravel/material is required in isolated areas. Check that no treatment of adjacent drainage is required. If either is, schedule Heavy Formation Grading (Activity Number 203).
6. Check quality and depth of material to ensure no extra material is required. If it is, schedule Resheeting (Activity Number 205).
7. Specify and organise appropriate plant, materials and crew (including quantities of material).
8. Arrange and specify a disposal area for excavated material.

**203 Heavy Formation Grading****Description**

The grading of unsealed formation to reinstate the correct profile to ensure drainage of the pavement and shoulders and to provide a suitable running course may include the addition of imported gravel/material (Refer Activity No. 204 in areas where the gravel crust is broken or where there is change in surface composition. This Activity also includes the treatment of the adjacent surface drainage.

## Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the removal and re-instatement of roadside furniture (e.g. guide posts, signs etc.) as required.
- the degrassing and tyning of the existing pavement, the incorporation of gravel (supplied to the work site under Activity 204 or won from site - displaced) and water, mixing, compaction and trimming of the pavement material
- the trimming and rolling to shape the compacted formation surface
- the cleaning and reshaping of adjacent surface drainage lines.
- all other operations included in the Applicable Specification
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste/removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>

### Restoration Standard

The formation crossfall measured using the grader blade or other means shall be within 4% to 6%. Superelevation on curves shall be 4% to 6% also. No water shall pond on the surface. The graded surface shall be watered and rolled to provide a sound tight surface with minimal loose stones and no visible vertical movement.

The restored layer shall have a minimum depth of 75 mm.

The cross section shall be visually uniform to that shown on the Works Order.

The restoration standard of the adjacent surface drainage shall be the same as per Activity No. 305.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
203	Heavy Formation Grading	km

### Testing Requirements

Minimum test frequency	
Crossfall	1 per 50 m

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy or major maintenance more appropriate?
5. Define area for repair
6. Determine if any areas are of inadequate quality and, if necessary, schedule removal and replacement as per Activity Number 206.
7. Specify and organise appropriate plant, materials and crew (including quantities of material).

**204 Gravel/Material Supply - Heavy Formation Grading****Description**

The supply to the work site of gravel/material that may be required to reinstate the correct profile and level when carrying out Activity Number 203, Heavy Formation Grading.

**Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- all operations involved with winning, loading and cartage of the gravel/material to the job site.
- the provision of traffic control for quarrying, cartage and delivery operations
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS05	<i>Unbound Pavements</i>
SS	<i>Unsealed Formation Gravel</i>

**Restoration Standard**

Nil (supply only).

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
204	Gravel Supply - Heavy Formation Grading	Cubic Metres Loose

**Testing Requirements**



Minimum test frequency	
Grading Q103A	1/250m <sup>3</sup>
Linear Shrinkage Q106	1/250m <sup>3</sup>
CBR Q113A	1/source/year

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains?
4. Is an alternative remedy of major maintenance more appropriate?
5. Mark out the area that requires additional gravel.
6. Specify and organise appropriate plant, materials and area (including quantities of material).

### 205 Formation Resheeting –Minor (> 150 lin.m)

#### Description

The addition of imported gravel/material to the running surface to reinstate to the correct profile/height above the natural surface, improve the quality of the surface material or to obtain an acceptable running course depth. Includes de-grassing, scarifying and preparation of the existing formation and the incorporation of water and proper compaction of the formation and imported gravel/material.

#### Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the removal and re-instatement of roadside furniture (e.g. guide posts, signs etc.) as required.
- the de-grassing and preparation of the existing pavement, the incorporation of gravel and water, mixing compaction and trimming of the pavement material
- the trimming and rolling to shape of the compacted resheeted formation.
- all other operations included in the Applicable Specification
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste/removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>

All grass and other vegetation shall be removed from the work area and disposed of in an approved manner. The existing formation material shall be shaped to form a surface parallel to the planned finished surface of the shoulder. This surface shall be wide enough to enable the completed formation to conform to the cross-section shape specified on the Works Order.

Where the reformed surface is greater than 75 mm below the planned finished surface, the surface shall be watered and compacted to a firm condition with no visible vertical movement under the compaction equipment before material is added.

Where the reformed surface is less than 75 mm below the planned finished surface, the surface shall be scarified to a depth of 75 mm below the planned finished surface and watered to enable compaction after new material has been added.

**Restoration Standard**

The formation crossfall measured using the grader blade or other means shall be within 4% to 6%.

Superelevation around curves shall also be 4% to 6%. No water shall pond on the surface. The graded surface shall be watered and rolled to provide a sound tight surface with minimal loose stones and no visible vertical movement.

The cross section shall be visually uniform to that shown on the Works Order.

The restored pavement layer shall be a minimum depth of 75mm.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
205	Formation Resheeting loose	m <sup>3</sup>

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
	Scarify, shape and compact existing material	m <sup>2</sup>
	Base, Unbound pavement Type	m <sup>3</sup>

**Testing Requirements**

Minimum test frequency	
Crossfall	1 per 50 m

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.

2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy or major maintenance more appropriate?
5. Define area for repair.
6. Determine if any areas are of inadequate quality and, if necessary, schedule removal and replacement as per Activity Number 206.
7. Specify and organise appropriate plant, materials and crew (including quantities of material).

### **206 Remove Formation Material and Replace, if Required**

#### **Description**

The removal of unsuitable formation material and the reinstatement to correct profile. May include the actual replacement of the existing formation material.

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the removal and re-instatement of roadside furniture (e.g. guide posts, signs etc.) as required.
- the de-grassing of the existing formation and the removal from the work area to a specified site of unsuitable formation material.
- the incorporation of replacement gravel, the incorporation of gravel and water, mixing, compaction and trimming of the pavement material
- the trimming and rolling to shape of the compacted formation
- the cleaning and reshaping of adjacent surface drainage
- all other operations included in the Applicable Specification
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste/removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>

All grass and other vegetation shall be removed from the work area and disposed of in an approved manner.

Unsuitable formation material shall be removed as designated on the Works Order, and the existing formation material shall be shaped to form a surface parallel to the planned finished surface of the formation. This surface shall be wide enough to enable the completed formation to conform to the cross-section shape specified on the Works Order.

Where no additional material is to be added or the reformed surface is greater than 75 mm below the planned finished surface, the surface shall be watered and compacted to a firm condition with no visible vertical movement under the compaction equipment before material is added.

Where the reformed surface is less than 75 mm below the planned finished surface and additional material is to be incorporated into the surface, it shall be scarified to a depth of 75 mm below the planned finished surface and watered to enable compaction after new material has been added.

Additional material shall be added to the surface or incorporated into it, when shown on the Works Order.

### Restoration Standard

The formation crossfall measured using the grader blade or other means shall be 4% to 6%. Super elevation on curves shall also be 4% to 6%. No water shall pond on the surface. The graded surface shall be watered and rolled to provide a sound tight surface with minimal loose stones and no visible vertical movement. The cross section shape shall be visually uniform to that shown on the Works Order.

The restored pavement layer shall be a minimum depth of 75mm.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
206	Remove Formation Material and Replace if Required	m <sup>3</sup> loose

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Scarify, shape and compact existing material	m <sup>2</sup>
	Base, Unbound pavement Type	m <sup>3</sup>

### Testing Requirements

As per Applicable Specifications listed.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy or major maintenance more appropriate?
5. Define for repair, areas of inadequate quality.
6. Specify and organise appropriate plant, materials and crew (including quantities of material).

**207 Formation Mechanical Stabilisation – Minor (> 150 lin.m)****Description**

The addition of selected imported gravel/material to existing formation material to improve the mechanical stability of the material. Includes winning, loading and cartage of imported gravel/material, de-grassing, scarifying and preparation of the existing formation, the incorporation of water and the proper mixing and compaction of the mechanically stabilised formation material.

**Activity Item and Unit of Measure**

Item	Description	Unit of Measurement
207	Formation Mechanical Stabilisation	m <sup>3</sup> loose/Dollars

No other details are included in the Standard for this Activity.

**208 Accessibility Grading****Description**

The light trimming by grader of unsealed formation material to restore access for light vehicles.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Restoration Standard**

The formation shall be graded to fill holes and depressions and smooth loose material.

The surface shall be trafficable for light vehicles.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
208	Accessibility Grading	Km - metre width

**Testing Requirements**

None listed.

**WORK PREPARATION****Plant Requirements**

Job truck

Grader

**Materials**

None detailed

**Manpower Requirements**

Leading hand	1
Operators	2

Traffic controllers 2

### **Average Daily Production**

Not listed

### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Is an alternative remedy or major maintenance more appropriate?
3. Specify and organise appropriate plant, materials and crew (including quantities of material).

### **WORK PROCEDURES**

#### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions
  - b. remove guide posts and other roadside furniture if needed.
3. Grade the work area to width specified:
  - a. fill holes and depressions
  - b. avoid loss of material from the formation.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. no material to block drains
  - b. ensure vegetation is not blocking drainage.
6. Replace roadside furniture.
7. Remove traffic control:
  - a. clean / repair as necessary.

#### **214 Other Formation Work**

##### **Description**

Any work on unsealed roadway formation not covered by Activities numbered, 201, 202, 203, 204, 205, 206, 207, 208, 230 and 231.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
214	Other Formation Work	Dollars

No other details are included in this Standard for this Activity.

**215 Light Shoulder Grading - Rural****Description**

The grading of unsealed shoulders located in a rural environment (greater than 60 kph speed restriction) to remove vegetation. Includes the removal of any windrows of vegetation and other debris that may otherwise impede drainage or encourage scour.

**Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- determine the restoration width for the shoulder
- the removal and re-instatement of roadside furniture (e.g. guide posts, signs etc.) as required.
- the removal of the material from the shoulder to enable drainage of the pavement and shoulder to the table drain or other appropriate collection point
- the watering and compaction of the surface, if required
- brooming of the sealed surface to remove any loose material, if required
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

**Applicable Specifications**

Reference	Title
MRTS02	Provision for Traffic

**Restoration Standard**

At the sealed/unsealed interface, the finished unsealed surface shall be even and within + 0, - 10 mm of the height of the adjacent seal. Shoulder crossfall measured using the grader blade or other means shall be within + 0, -2% (absolute) when compared to the crossfall of the adjacent sealed pavement.

Note:

Where the cross fall of adjacent sealed pavement is so irregular that the + 0, - 2% (absolute) standard cannot be achieved, the cross fall on the finished unsealed surface shall be consistent with allowing the free drainage of water off the sealed pavement.

The graded surface shall be watered and rolled to provide a sound tight surface. No loose material shall be left on the sealed carriageway, in drains or around roadside furniture.

The surface of the sealed carriageway shall not be damaged during the work operations.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
215	Light Shoulder Grading	Shoulder km Side

#### Testing Requirements

Minimum test frequency	
Crossfall	1 per 500 m max. on straights Guide Post frequency max. around curves.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy or major maintenance more appropriate?
5. Check shoulder build-up and vegetation growth to determine if truck and loader are needed to remove material.
6. Specify and organise appropriate plant, materials and crew (including quantities of material).
7. Arrange and specify a disposal area for excavated material.

#### 216 Heavy Shoulder Grading - Rural

##### Description

The grading of unsealed shoulders located in a rural environment (greater than 60 kmph speed restriction) to reinstate the correct profile.

##### Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and material
- establishment and disestablishment of traffic control
- determination of the work area
- determination of the restoration width for the shoulder
- the removal and re-instatement of roadside furniture (e.g. guide posts, signs etc.) as required.



- the de-grassing and tining of the existing shoulder (including the widening of any suitable material on site adjacent to the width of the shoulder to be maintained), the incorporation of gravel (supplied to the work site under Activity 219 or won from site) and watering, mixing, compaction and trimming of the shoulder material
- brooming of the sealed surface to remove any loose material
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
SS	<i>Selected Shoulder Gravel</i>

#### Restoration Standard

At the sealed/unsealed interface, the finished unsealed surface shall be even and within + 0, - 10 mm of the height of the adjacent seal. Shoulder crossfall measured using the grader blade or other means shall be within + 0, -2% (absolute) when compared to the crossfall of the adjacent sealed pavement.

Note:

Where the crossfall of adjacent sealed pavement is so irregular that the + 0, - 2% (absolute) standard cannot be achieved, the cross fall on the finished unsealed surface shall be consistent with allowing the free drainage of water off the sealed pavement.

In general, the width of the finished shoulder shall not exceed:

- 3 m where seal width is less than 4.5 m
- 2 m where seal width is between 4.5 and 5.6 m
- 1.5 m where seal width is greater than 5.6 m

See "Notes on Finished Cross Sections" below.

The graded surface shall be watered and rolled to provide a sound tight surface. No loose material shall be left on the sealed carriageway, in drains or around roadside furniture.

The surface of the sealed carriageway shall not be damaged.

#### Notes on Finished Cross Section

Prior to commencement of work, the Contractor's maintenance supervisor shall nominate the finished width (or widths) of shoulder for each sub-section to be graded.

Where the width of the existing shoulder is greater than the widths specified previously under this Section, the following shall apply:

- the specified crossfall for the finished shoulders shall be provided only for the width specified previously under this Section,
- suitable material which may exist outside the required shoulder width, and which is winnable, should be considered for use for shoulder resheeting before additional material is brought to the site.

Bus put off areas or widened shoulders at intersections and turnouts are not to be reduced in width.

Where the width of the existing shoulder being graded is less than the width specified previously under this Section, the width of the existing shoulder need not be increased to the width given, except where this will be done at no additional cost to the Principal.

Overall, finished shoulder width shall be constant and within +300mm/-100mm of the width nominated by the supervisor on the Works Order.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
216	Heavy Shoulder Grading	Shoulder km side Rural

#### Testing Requirements

Minimum test frequency	
Crossfall	1 per 50 m max. on straights Guide Post frequency max. around curves.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy or major maintenance more appropriate?
5. Define area for repair
6. Determine if any areas are of inadequate quality and, if necessary, schedule removal and replacement as per Activity Number 222.
7. Specify and organise appropriate plant, materials and crew (including quantities of material).

#### 217 Light Shoulder Grading - Urban

##### Description

The grading of unsealed shoulders located in an urban environment to remove vegetation. Includes the removal of any windrows of vegetation and other debris that may otherwise impede drainage or encourage scour.

##### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>

Reference	Title
SS	<i>Selected Shoulder Gravel</i>

### Restoration Standard

At the sealed/unsealed interface, the finished unsealed surface shall be even and within + 0, - 10 mm of the height of the adjacent seal. Shoulder crossfall measured using the grader blade or other means shall be within +0, -2% (absolute) when compared to the crossfall of the adjacent sealed pavement.

The graded surface shall be watered and rolled to provide a sound tight surface. No loose material shall be left on the sealed carriageway, in drains or around roadside furniture.

The surface of the sealed carriageway shall not be damaged during the work operations.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
217	Light Shoulder Grading - Urban	m <sup>2</sup>

### Testing Requirements

Minimum test frequency	
Crossfall	1 per 50 m

## WORK PREPARATION

### Plant Requirements

Job truck

Grader

Truck and loader

### Materials

Not listed.

### Manpower Requirements

Leading hand	1
Operators	2
Truck drivers	
Traffic controllers	2

### Average Daily Production

Not detailed.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?

4. Is an alternative remedy or major maintenance more appropriate?
5. Check shoulder build-up and vegetation growth to determine if truck and loader are needed to remove material.
6. Specify and organise appropriate plant, materials and crew (including quantities of material).
7. Arrange and specify a disposal area for excavated material.

## **WORK PROCEDURES**

### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions
  - b. remove guide posts and other roadside furniture if needed.
3. Remove vegetation from the work area:
  - a. cut with grader
  - b. avoid damaging seal
  - c. avoid spreading material on seal
  - d. remove to site specified by your supervisor.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. sweep sealed surface
  - d. ensure vegetation is not blocking drainage.
6. Replace roadside furniture.
7. Remove traffic control:
  - a. clean/repair as necessary.

### **218 Heavy Shoulder Grading - Urban**

#### **Description**

The grading of unsealed shoulders located in an urban environment to reinstate the correct profile.

This Activity includes:

1. where necessary, removal and reinstatement of guideposts and signs
2. tyning of the existing shoulder
3. incorporation of gravel (Activity 219) and water
4. compaction of the shoulder material
5. brooming of the sealed surface to remove any loose material.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
SS	<i>Selected Shoulder Gravel</i>

#### Restoration Standard

At the sealed/unsealed interface, the finished unsealed surface shall be even and within + 0, - 10 mm of the height of the adjacent seal.

Shoulder crossfall measured using the grader blade or other means shall be within + 0, - 2% (absolute) when compared to the crossfall of the adjacent sealed pavement.

The graded surface shall be watered and rolled to provide a sound tight surface. No loose material shall be left on the sealed carriageway, in drains or around roadwork furniture.

The surface of the sealed carriageway shall not be damaged.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
218	Heavy Shoulder Grading - Urban	m <sup>2</sup>

#### Testing Requirements

Crossfall 1 m per 50 m

#### WORK PREPARATION

#### Plant Requirements

Job truck

Grader

Truck and loader

#### Materials

Note: Selected shoulder Material to SS- supplied under Activity 148.

#### Manpower Requirements

Leading hand	1
Operators	2

Truck drivers

Traffic controllers 2

### **Average Daily Production**

Not listed

### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy or major maintenance more appropriate?
5. Define area for repair.
6. Determine if any areas are of inadequate quality and, if necessary, schedule removal and replacement as per Activity Number 222.
7. Specify and organise appropriate plant, materials and crew (including quantities of material).
8. Arrange and specify a disposal area for excavated material.

### **WORK PROCEDURES**

#### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions
  - b. remove guide posts and other roadside furniture if needed.
3. Remove vegetation from the work area:
  - a. cut with grader
  - b. avoid damaging seal
  - c. avoid spreading material on seal
  - d. remove to site specified by your supervisor.
4. Fill depressions:
  - a. tyne with grader
  - b. mix segregated material with grader
  - c. moisten if needed

- d. blade to shape.
5. Compact shoulder:
  - a. keep smooth drum roller off edge of existing seal.
6. Trim and roll to shape:
  - a. use steel drum roller
  - b. finish with multi-tyred roller
  - c. constant width.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. sweep sealed surface
  - d. ensure vegetation is not blocking drainage.
9. Replace roadside furniture.
10. Remove traffic control:
  - a. clean/repair as necessary.

### **219 Gravel Supply - Heavy Shoulder Grading**

#### **Description**

The supply on site of imported gravel that may be required to reinstate the correct profile and/or level when carrying out Activity Numbers 216 or 218, Heavy Shoulder Grading.

#### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control (specific to the quarrying, cartage and delivery operations)
- all operations required for the supply of the material (e.g. winning, loading and carting to the required location)
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>

Reference	Title
MRTS05	<i>Unbound Pavements</i>
SS	<i>Shoulder Gravel</i>

### Restoration Standard

Nil (supply only).

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
219	Gravel Supply - Heavy Shoulder Grading	m <sup>3</sup> loose

### Testing Requirements

Minimum test frequency	
Grading Q103A	1/250m <sup>3</sup>
Linear Shrinkage Q106	1/250m <sup>3</sup>
CBR Q113A	1/source/year

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains?
4. Is an alternative remedy of major maintenance more appropriate?
5. Mark out the area that requires additional gravel.
6. Specify and organise appropriate plant, materials and area (including quantities of material).

### 220 *Shoulder Pothole Patching*

#### Description

The manual placement and compaction of gravel into isolated potholes in a gravel shoulder.

This Activity would normally be undertaken as a temporary measure to make a road shoulder safe until Activity 216 or 218 (Heavy Shoulder Grading) can be scheduled. It may also be used to prolong the life of a gravel shoulder, delaying the need for more expensive and extensive treatment.

#### Work Operations

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials



- establishment and disestablishment of traffic control
- determination of the work area
- preparation of the work area - the removal of any loose material or water ponding in the hole.
- the supply, placement and compaction (by hand equipment) of gravel (at an appropriate water content) into the failed area.
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
SS	<i>Selected Shoulder Gravel</i>

#### Restoration Standard

The finished surface of the gravel placed in the pothole shall be within  $\pm 20$  mm of the surrounding gravel.

The gravel patch shall be compacted to provide a sound, tight patch.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
220	Shoulder Pothole Patching	m <sup>3</sup> (loose)

#### Testing Requirements

The minimum testing requirements shall be as follows:

Minimum test frequency	
Grading Q103A	1/250m <sup>3</sup>
Linear Shrinkage Q106	1/250m <sup>3</sup>
CBR Q113A	1/source/year

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this if needed.

2. Are there any related defects, e.g. blocked table drains, missing guide posts?
3. Is an alternative remedy or major maintenance more appropriate? For example, extensively potholed shoulder should be graded.
4. Define the area for repair.
5. Specify and organise appropriate plant, materials and crew (including quantities of material)

## 221 **Shoulder Resheeting**

### **Description**

The addition of material to unsealed shoulders to correct excess shoulder crossfall, drop off and/or reduced shoulder width. This allows for the cartage of water and gravel/material up to a lead of 20 km.

### **Work Operations**

The following operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant, labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- determination of the restoration width for the shoulder
- the removal and re-instatement of roadside furniture (e.g. guide posts, signs etc.) as required.
- the removal of vegetation and debris on work area
- add new shoulder material, tyne into existing material, mix, moisten and blade to shape
- compact, trim and roll to shape and crossfall specified on the Works Order
- brooming of the sealed surface to remove any loose material, if required
- all other operations in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing
- the clean up of the site including the disposal of any waste / removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to these Work Operations is required, the following Applicable Specifications provide additional requirements for compliance.

### **Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>

All grass and other vegetation shall be removed from the work area and disposed of in an approved manner.

The existing shoulder material shall be shaped to form a surface parallel to the planned finished surface of the shoulder. This surface shall be wide enough to enable the completed shoulder to conform to the cross-section shape specified on the Works Order.

Where the reformed surface is greater than 75 mm below the planned finished surface, the surface shall be watered and compacted to a firm condition with no visible vertical movement under the compaction equipment before additional material is added.

Where the reformed surface is less than 75 mm below the planned finished surface, the surface shall be scarified to a depth of 75 mm below the planned finished surface and watered to enable compaction after new material has been added.

### Restoration Standard

At the sealed/unsealed interface, the finished unsealed surface shall be within  $\pm 0, - 10$  mm of the height of the adjacent seal. Shoulder crossfall measured using the grader blade or other means shall be within  $+ 0, - 2\%$  (absolute) when compared to the crossfall of the adjacent sealed pavement.

Note:

Where the cross fall of adjacent sealed pavement is so irregular that the  $+ 0, - 2\%$  (absolute) standard cannot be achieved, the cross fall on the finished unsealed surface shall be consistent with allowing the free drainage of water off the sealed pavement.

The finished shoulder shall have a sound tight surface with no visible vertical movement under the final passes of the compaction equipment. No loose material shall be left on the sealed carriageway, in drains or around roadside furniture.

The surface of the sealed carriageway shall not be damaged during the work operations.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
221	Shoulder Resheeting	m <sup>3</sup> (loose)

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Scarify, shape and compact existing material	m <sup>2</sup>
	Base, Unbound pavement Type (Subtype __)	m <sup>3</sup>

### Testing Requirements

Minimum test frequency	
Crossfall	1 per 50 m
Grading Q103A	1/250m <sup>3</sup>
Linear Shrinkage Q106	1/250m <sup>3</sup>
CBR Q113A	1/source/year

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy more appropriate?
5. Define area for repair
6. Determine if any areas are of inadequate quality and, if necessary, schedule removal and replacement as per Activity Number 222.
7. Specify and organise appropriate plant, materials and crew (including quantities of material).

#### **222 Remove Shoulder Material and Replace, if Required**

##### Description

The removal of unsuitable shoulder material, and the reinstatement to the correct profile. This may include the replacement of the existing shoulder material. This allows for the cartage of water and gravel/material up to a lead of 20 km.

##### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>

All grass and other vegetation shall be removed from the work area and disposed of in an approved manner.

Unsuitable shoulder material shall be removed as designated on the Works Order, and the existing shoulder material shall be shaped to form a surface parallel to the planned finished surface of the shoulder. This surface shall be wide enough to enable the completed shoulder to conform to the cross-section shape specified on the Works Order.

Where the reformed surface is greater than 75 mm below the planned finished surface, the surface shall be watered and compacted to a firm condition with no visible vertical movement under the compaction equipment before material is added.

Where the reformed surface is less than 75 mm below the planned finished surface, the surface shall be scarified to a depth of 75 mm below the planned finished surface and watered to enable compaction after new material has been added.

### Restoration Standard

At the sealed/unsealed interface, the finished unsealed surface shall be within + 0, - 10 mm of the height of the adjacent seal. Shoulder crossfall measured using the grader blade or other means shall be within + 0, - 2% (absolute) when compared to the crossfall of the adjacent sealed pavement.

Note:

Where the cross fall of adjacent sealed pavement is so irregular that the + 0, - 2% (absolute) standard cannot be achieved, the cross fall on the finished unsealed surface shall be consistent with allowing the free drainage of water off the sealed pavement.

The finished shoulder shall have a sound tight surface with no visible vertical movement under the final passes of the compaction equipment. No loose material shall be left on the sealed carriageway.

The surface of the sealed carriageway shall not be damaged during the work operations.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
222	Remove Shoulder Material and Replace if Required	m <sup>3</sup> (loose)

### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Scarify, shape and compact existing material	m <sup>2</sup>
	Base, Unbound pavement Type (Subtype __)	m <sup>3</sup>

### Testing Requirements

Minimum test frequency	
Crossfall	1 per 50 m

### WORK PREPARATION

#### Plant Requirements

Job truck

Water tanker

Grader

Multi-tyred roller

Steel drum roller

Rotary broom

Trucks

Loader

#### Material

Unbound Pavement Selected Material to MRTS05

### Manpower Requirements

Leading hand	1
Operators	4
Truck drivers	
Traffic controllers	2

### Average Daily Production

300 m<sup>3</sup>

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. blocked table drains, missing guide posts?
4. Is an alternative remedy or major maintenance more appropriate?
5. Define for repair, areas of inadequate quality.
6. Specify and organise appropriate plant, materials and crew (including quantities of material).

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions
  - b. remove guide posts and other roadside furniture if needed.
3. Remove from the work area, shoulder material required to be replaced:
  - a. cut with grader
  - b. avoid damaging seal
  - c. avoid spreading material on seal
  - d. remove to site specified by your supervisor.
4. Add material:
  - a. tyne with grader
  - b. mix segregated material with grader
  - c. moisten if needed

- d. blade to shape.
5. Compact shoulder:
  - a. keep smooth drum roller off edge of existing seal.
6. Trim and roll to shape:
  - a. use steel drum roller
  - b. finish with multi-tyred roller
  - c. constant width.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. sweep sealed surface
  - d. water sealed surface to reduce dust hazard, if appropriate
  - e. ensure vegetation is not blocking drainage.
9. Replace roadside furniture.
10. Remove traffic control:
  - a. clean/repair as necessary.

### **229 Other Unsealed Shoulder Work**

#### **Description**

Any work on unsealed shoulders not covered by Activities numbered 215, 216, 217, 218, 219, 220, 221, 222, 230 and 231.

#### **Activities Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
229	Other Unsealed Shoulder Work	Dollars

No other details are listed in this Standard for this Activity.

### **230 Abnormal Water Cartage**

#### **Description**

The cartage of water over lead distances greater than the nominated maximum limit for normal cartage of 20 km. Applies to works carried out under Activities numbered 202, 203, 205, 216 and 221.

#### **Activity Item and Unit of Measure**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
230	Abnormal Water Cartage	Mega Litre Kms

No other details are listed in the Standard for this Activity.

**231 Abnormal Gravel Cartage****Description**

The cartage of gravel over lead distances greater than the nominated maximum limit for normal cartage of 20 km applies to works carried out under Activities numbered 221 and 205.

**Activity Item and Unit of Measure**

Item	Description	Unit of Measurement
231	Abnormal Gravel Cartage	Cubic Metres (Loose)-Kms

No other details are included in the Standard for this Activity.

**300 DRAINAGE****301 Install Earth Surface Drains****Description**

All work and materials associated with the installation of new, or the improvement of existing, earth surface drains. Includes diversion, catch, batter and table drain work. Does not include work associated with the installation of new drainage structures, see Activity Number 320.

Includes, where necessary, removal and replacement of guide posts and signs.

This Activity excludes non-rippable material. Non-rippable material shall be material which cannot be ripped at a production rate exceeding the rate in the following Table listed against the particular class of excavator.

Class of Excavator	Linear metres per hour
> 20 – 25 tonne	50
> 16 – 20 tonne	30
> 2 – 4.5 tonne	10

Rippable material shall be all material other than non-rippable material. Proving material to be non-rippable shall be the Contractor's responsibility. The excavator employed shall be equipped with a bucket to manufacturer's specified standard capacity and fitted with rock teeth.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the removal and reinstatement of roadside furniture (e.g. guide posts, signs, etc.) as required
- the installation of the new drain to the specified restoration standard, including the excavation and removal of all necessary material
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order



- the clean up of the site including the disposal of any waste/removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirement for compliance in these areas.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>

#### Restoration Standard

The drain shall be constructed to one of the typical types in Figures 6 and 7 of the NAASRA Guide to Design of Road Surface Drainage.

It is recognised in some cases where a shoulder has insufficient width (which cannot be corrected because of physical constraints), it is desirable to lessen the restoration depth and/or batter slope to ensure the drain itself remains trafficable (i.e. 600 m wide, 150 mm deep, batter slope 1 on 4).

In this instance, the installation of the drains should be undertaken to a standard that does not lessen the trafficable surface which is currently available to the road users (i.e. the existing shoulder and/or trafficable drain batter should remain trafficable). The motorists should not perceive that the trafficable width has altered.

The drain shall be free of all material that could block the flow of water into the drain and along it.

The base shall be evenly sloped to allow water to flow to the outlet.

The base of the drain shall be at least 450 mm below the edge of the road shoulder (for earth table drains).

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
301	Install Earth Surface Drains	m

#### Testing Requirements

Minimum test frequency	
Drain Cross Section	1 per 50 m

#### Particular Planning Points to Consider

- What has caused the defect? Schedule another Activity to correct this, if needed.
- Make sure no other major maintenance or construction is scheduled for the area of the defect.
- Are there any related defects?
- Is an alternative remedy or major maintenance more appropriate?
- Specify or mark out the length of drain requiring excavation.
- Check for services, e.g. overhead wires and buried services. Mark these as appropriate.
- Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
- Arrange and specify a disposal area for excavated material.

9. Check drain during or immediately after next rainfall.

### 302 Repair Earth Surface Drains

#### Description

The repair to correct profile and level of damaged earth surface drains.

#### Activity Item and Unit of Measure

Item	Description	Unit of Measurement
301	Repair Earth Surface Drains	m

No other details are listed in the Standard for this Activity.

### 303 Install Concrete Surface Drains

#### Description

All work and materials associated with the installation of new, or the improvement of existing, concrete surface drains. Includes diversion, catch, batter and table drain work. Does not include work associated with the installation of new drainage structures. See Activity Number 320.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>

#### Restoration Standard

The drain cross section shall conform to the design requirements detailed on the Works Order.

The base shall be evenly sloped to allow water to flow to the outlet.

The base of the drain shall be at least 450 mm below the edge of the road shoulder (for earth table drains).

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
303	Install Concrete Surface Drains	m

#### Testing Requirements

Minimum test frequency	
Drain Cross Section	1 per 50 m

#### WORK PREPARATION

##### Plant Requirements

Job truck

Trucks

Excavator/bobcat/backhoe/gradall/grader

Loader

Rotary broom

Water tanker

**Materials**

Concrete as per MRTS03

**Manpower Requirements**

Leading hand	1
Labourers	2
Operators	
Truck drivers	
Traffic controllers	2

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the length of drain required.
6. Check for services, e.g. overhead wires and buried services. Mark these as appropriate.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
8. Provide cross section and other relevant details of the required drain on the Works Order.
9. Arrange and specify a disposal area for excavated material.

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions
  - b. remove guide posts and other roadside furniture if needed.

3. Excavate for the drain:
  - a. supervisor to mark out (or specify) area to excavated
  - b. supervisor to provide sketch of finished cross-section
  - c. truck surplus excavated material to site specified by your supervisor.
4. Cast concrete:
  - a. set formwork
  - b. check formwork
  - c. place concrete.
5. Check the work against the restoration standard:
  - a. make regular checks while you are doing the job
  - b. check to ensure even slope
  - c. check depth below shoulder.
6. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains
  - c. use rotary broom or water tanker for pavement.
7. Replace roadside furniture.
8. Remove traffic control:
  - a. clean/repair as necessary.

### **304 Repair Concrete Surface Drains**

#### **Description**

The repair to correct profile and level of damaged concrete surface drains.

#### **Activity Item and Unit of Measure**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
304	Repair Concrete Surface Drains	m

No other details are listed in the Standard for this Activity.

### **305 Clean Earth and Concrete Surface Drains**

#### **Description**

The restoration of existing earth and concrete drains that are ineffective due to insufficient depth or insufficient grade. Does not include work done on drainage lines treated under Activity Number 203, Heavy Formation Grading.

This Activity includes where necessary, removal and reinstatement of guide posts and signs.

This Activity excludes non-rippable material. Non-rippable material shall be material which cannot be ripped at a production rate exceeding the rate in the following Table listed against the particular class of excavator.

Class of Excavator	Linear metres per hour
> 20 – 25 tonne	50
> 16 – 20 tonne	30
> 2 – 4.5 tonne	10

Rippable material shall be all material other than non-rippable material. Proving material to be non-rippable shall be the Contractor's responsibility. The excavator employed shall be equipped with a bucket to manufacturer's specified standard capacity and fitted with rock teeth.

### Work Operations

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the removal and reinstatement of roadside furniture (eg. guide posts, signs, etc.) as required
- the restoration of the drain to the specified standard, including the excavation and removal of all necessary material
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste/removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirement for compliance in these areas.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>

The drain shall be constructed to one of the typical types in Figures 6 and 7 of NAASRA Guide to Design of Road Surface Drainage.

It is recognised in some cases where a shoulder has insufficient width (which cannot be corrected because of physical constraints), it is desirable to lessen the restoration depth and/or batter slope to ensure the drain itself remains trafficable (i.e. 600 m wide, 150 mm deep, batter slope 1 on 4).

In this instance, the installation of the drains should be undertaken to a standard that does not lessen the trafficable surface which is currently available to the road users (i.e. the existing shoulder and/or trafficable drain batter should remain trafficable). The motorists should not perceive that the trafficable width has altered.

### Restoration Standard

The drain shall be free of all material that could block the flow of water into the drain and along it.

The base shall be evenly sloped to allow water to flow to the outlet.

The base of the drain shall be at least 450 mm below the edge of the road shoulder (for earth table drains).

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
305	Clean Earth and Concrete Surface Drains	m

#### Testing Requirements

Minimum test frequency	
Drain Cross Section	1 per 50 m

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. cracked concrete?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the length of drain requiring cleaning or excavation.
6. Check for services, e.g. overhead wires and buried services. Mark these as appropriate.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
8. Arrange and specify a disposal area for excavated material.
9. Check drain during or immediately after next rainfall.

#### 306 *Repair or Replace Concrete Slabs, Paving Blocks, Kerbs and Dykes*

##### Description

The repair or replacement of concrete or paving blocks, kerbs and dykes.

##### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS70	<i>Concrete</i>

##### Restoration Standard

The concrete or paving blocks and dykes shall be repaired to the standards specified for new work in Specification MRTS03. All excess material shall be disposed of neatly outside the road reservation.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
306	Repair or Replace Concrete Slabs, Paving Blocks, Kerbs and Dykes	m <sup>2</sup> / dollars

**Testing Requirements**

Minimum test frequency	
Concrete - Slump Q451A	< 4 m <sup>3</sup> No requirement
Compressive Strength Q455	> 4 m <sup>3</sup> as per MRS70
Geometrics	
Specified Tolerances	As per MRTS03
Maximum Lot Size	Works Order

**WORK PREPARATION****Plant Requirements**

Job truck

Bobcat/backhoe/loader

Concrete saw/pavement breaker

**Materials**

Paving blocks as per MRTS03

Concrete as per MRTS03

**Manpower Requirements**

Leading hand	1
Labourers	2
Operators	1
Traffic controllers	2

**Average Daily Production**

Not listed.

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the area requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine area to be repaired:
  - a. from supervisor's instructions.
3. Repair the slab, paving blocks, kerb or dyke:
  - a. in accordance with details in the specifications and works order.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material.
6. Remove traffic control:
  - a. clean/repair as necessary.

### **310 Installation and Removal of Erosion and Sediment Control Measures – Minor**

#### **Description**

The installation of erosion and sediment control devices, as required, to control the discharge of sediment and turbidity (to table rains, waterways etc.) contained within run off from areas of exposed earth for erosion depth up to 300 mm.

#### **Work Operations**

The following work operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the supply and installation of temporary erosion and sediment control devices to control sediment and turbidity and their removal from site once they are no longer required.
- upon removal of the devices, any reusable materials are to be stored for the Principal for later application (e.g. star pickets, etc.)
- all other operation included in the Specifications and approved Environmental Plan (Maintenance)
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspection, compliance and audit testing
- the clean up of the site including the disposal of any waste/collected material in accordance with any State Government legislation of Local Government By-laws that are applicable.



Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS51	<i>Environmental Management</i>
	<i>Erosion and Sediment Control Manual Guidelines 2010 (CAC005M) – Transport and Main Roads</i>

Erosion and Sediment Control Measures are to be installed to comply with the requirements of the approved Environmental Management Plan (Maintenance).

#### Restoration Standard

Installation of and released from the Erosion and Sediment Control Measures shall conform to the requirement of the approved Environmental Management Plan (Maintenance).

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
310	Installation and Removal of Erosion and Sediment Control Measures	Dollars

#### Testing Requirements

Nil.

#### Particular Planning Points to Consider

- Are the Control Measures installed to ensure the device is effective?
- Is the sediment fence buried adequately and braced?
- Specify the appropriate plan, material and crew (including quantities of material and organise these)
- Have the requirement of the EMP (Maintenance) been implemented?

No other details are listed in the Standard for the Activity.

#### **311 Maintenance of Erosion and Sediment Control Measures**

##### Description

The maintenance of erosion and sediment control devices installed under Activity 310, as required, to ensure that the devices are operating in an efficient and effective manner.

##### Work Operations

The following work operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area

- The inspection and maintenance of the temporary erosion and sediment control devices including the removal of any built up material and the repair of any damage to the structures.
- All other operation included in the Applicable Specifications and approved Environmental Management Plan (Maintenance)
- All monitoring, testing and reporting of results
- The clean up of the site including the disposal of any waste/collected material in accordance with any State Government legislation of Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS51	<i>Environmental Management</i>
	<i>Erosion and Sediment Control Manual Guidelines 2010 (CAC005M) – Transport and Main Roads</i>

Erosion and Sediment Control Measures are to be installed to comply with the requirements of the approved Environmental Management Plan (Maintenance).

The Contractor shall monitor (including testing and reporting of test results) and inspect installed erosion and sediment control measures after rain events, and at regular intervals during prolonged rain periods. Inspections are also required to monitor for repair of any damage and to remove excessive sediment deposits.

Devices are to be left in place and maintained until their removal will not result in sediment and turbidity discharge greater than the limits specified in the approved Environmental Management Plan (Maintenance)

#### Restoration Standard

Control Measures are to be maintained to the Soil Erosion and Sediment Control Guidelines contained in the Environmental Management Plan (Maintenance).

The site shall be left clean and tidy.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
311	Maintenance of Erosion and Sediment Control Measures	Dollars

#### Testing Requirements

Not listed.

#### Particular Planning Points to Consider

- Are the Control Measures installed to ensure the device is effective?
- Specify the appropriate plant, materials and crew (including quantities of material) and organise these.
- Does the device require removal?

- If the erosion and Sediment Control Measures are regularly damaged, back up measures may need to be implemented to maintain the control measure's effectiveness.
- Have the requirement of the EMP (Maintenance) been implemented?
- Are other activities programmed for this area? If so, will new control measures need to be installed?

No other details are listed in the Standard for the Activity.

### **312 Service Sedimentation Ponds**

#### **Description**

All works associated with the routine servicing of sedimentation ponds to ensure their planned operation in service is not compromised.

#### **Activity Item and Unit of Measure**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
312	Service Sedimentation Ponds	Dollars

No other details are listed in the Standard for this Activity.

### **313 Repair Sedimentation Ponds**

#### **Description**

All works associated with the repair of sedimentation ponds to ensure their operation in service is effective.

#### **Activity Item and Unit of Measure**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
313	Repair Sedimentation Ponds	Dollars

No other details are listed in the Standard for this Activity.

### **319 Other Surface Drain Work**

#### **Description**

Any work carried out to earth and concrete surface drains not covered by Activities numbered 301, 302, 303, 304, 305, 306, 310, 311, 312, 313 and 326.

#### **Activity Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
319	Other Surface Drain Work	Dollars

No other details are listed in this Standard for this Activity.

### **320 Replace Minor Culverts and Pipes**

#### **Description**

All work associated with the installation of a new culvert and pipe drainage facility. Includes backfilling to profile, bitumen sealing and the provision of associated inlet and outlet drains.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage Structures, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing (excluding emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

Plant mix stabilised and hotmixed asphalt pavement material may be placed by any equipment that does not cause the mix to segregate.

**Restoration Standards**

As per specifications

The finished surface shall be within  $\pm 5$  mm of the height of the surrounding road surface.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
320	Install Culverts and Pipes	m

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
912100	Provision for traffic	lump sum
942300	Culvert and/or end structure excavation	m <sup>3</sup>
921100	Supply of concrete pipe culvert components	lump sum
921200	Supply of concrete box culvert components	lump sum
925100	Installation of concrete pipe components	m
925400	installation of concrete box culvert components	m
927200	End structures to culverts, unreinforced concrete	m <sup>3</sup>
	Plant mix stabilised pavement(incl. cement and curing)	m <sup>2</sup>
955020	Tack Coat l/m <sup>2</sup>	litre
955860	Dense Graded Asphalt pavement 14 mm mix	tonne
955870	Dense Graded Asphalt pavement 20 mm mix	tonne
955890	Dense Graded Asphalt pavement 40 mm mix	tonne

**Testing Requirements**

<b>Minimum test frequency</b>	
<b>Materials</b>	
<b>Foundation Bedding/Haunch Zone, Overlay Zone and Side Zone</b>	
Grading Q103A	1 per source/yr
Linear Shrinkage Q106	1 per source/yr
<b>Compaction</b>	
Base Visual	1 per line
Backfill Visual	2 per line
Asphalt Visual	1 per line
<b>Geometrics Asphalt</b>	
Specification Line and Level	1 per line
Materials/Mix Design	1 per source/yr
Maximum Density	1 per 80 t
Bitumen Content and Aggregate Grading, Asphalt Q308A or Q308C	1 per 80 t

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

**WORK PREPARATION****Plant Requirements**

Job truck (with water)

Trucks

Excavator/backhoe/gradall/loader

Pavement breaker

Vibrating compactor/wacker packer

Emulsion sprayer

**Materials**

Dense Graded Asphalt to MRTS30

Emulsion to MRTS21

Plant mix stabilised pavement Selected shoulder material as required to SS-

### Manpower Requirements

Leading hand	1
Labourers	2
Operators	
Truck drivers	
Traffic controllers	2

### Average Daily Production

Not listed.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the location of the culvert.
6. Check for services, e.g. overhead wires and buried services. Mark these as appropriate.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
8. Arrange the supply of culverts/pipes.
9. Arrange and specify a disposal area for excavated material.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control – See:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the culvert/pipe location:
  - a. should be marked out already.
3. Excavate for the culvert/pipe:
  - a. supervisor to mark out (or specify) area to
  - b. excavated
  - c. truck surplus excavated material to site
  - d. specified by your supervisor.
4. Install culvert:
  - a. set out invert level

- b. check safety of lifting equipment and Roadworks Signing Guide
  - c. methods.
5. Replace fill and pavement:
    - a. premix backfill material and water off site
    - b. bring material to right moisture content for
    - c. compaction
    - d. uniform 75 - 100 mm layers
    - e. check compaction.
  6. Apply seal or asphalt surfacing:
    - a. use Activity Number 128, steps 5 to 12, or
    - b. Activity Number 136, Steps 4 to 7.
  7. Check the work against the restoration standard.
  8. Leave work site safe and tidy:
    - a. remove all loose material
    - b. no material to block drains.
  9. Remove traffic control:
    - a. clean/repair as necessary.

### 321 Clean Culverts, Pipes and Pits- Minor

#### Description

The cleaning by hand tools of debris and silt impeding the free flow of water through culverts, pipes and pits and their inlets and outlets.

Applies to waterway installations up to and including 0.3 m<sup>2</sup> waterway opening (equates to 600 mm diameter size RCP.)

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>

#### Restoration Standard

The culverts, pipes and pits and their inlets and outlets shall be free from all material that could block the free flow of water.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
321	Clean Culverts, Pipes and Pits- Minor	Dollars

### Testing Requirements

None listed.

### WORK PREPARATION

#### Plant Requirements

Job truck

#### Materials

None listed

#### Manpower Requirements

Leading hand	1
Labourers	2
Traffic controllers	2

#### Average Daily Production

Not detailed.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. damaged culvert?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the culverts, pipes or pits requiring cleaning.
6. Specify the appropriate equipment and crew and organise these.
7. Arrange and specify a disposal area for excavated material.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine culverts, pipes or pits to be cleaned:
  - a. from supervisor's instructions.
3. Clean culvert, pipe or pit:
  - a. remove debris and silt
  - b. to site specified by your supervisor.



4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
7. clean/repair as necessary.

**322 Clean Culverts, Pipes and Pits- Major**

**Description**

The cleaning of debris and silt impeding the free flow of water through culverts, pipes and pits and their inlets and outlets.

Applies to waterway installations greater than 0.3 m<sup>2</sup> waterway opening (equates to 600 mm diameter size RCP).

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the restoration of the drainage structure including the inlets and outlets to the specified standard, including the excavation and removal of all necessary material
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste/removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>

**Restoration Standard**

- The culverts, pipes and pits and their barrels, inlets and outlets shall be free from all material that could restrict the flow of water.

- The inlets and outlets shall include the area between the culvert, pipe or pit (or similar) to the outlet point of the upstream drainage system and the inlet point to the downstream drainage system. Some examples follow:
  - Where the outlet continues through a property boundary after leaving the structure, then the outlet will generally include the area between the structure and the property boundary. A similar area of Maintenance would apply to the inlet.
  - Where the outlet flows into a table drain or similar after leaving the structure, then the outlet will generally include the area between the structure and the table drain. A similar area of Maintenance would apply to the inlet.
  - For underground drainage systems, the inlet and outlet Maintenance usually relates to the gully pits immediately upstream and downstream of the structure.
  - Further clarification may be found in the District’s “Department of Main Roads and Local Government Maintenance Responsibilities Guidelines”.
  - The site is to be left clean and tidy.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
322	Clean Culverts, Pipes and Pits - General	m <sup>3</sup> /Dollars

#### Testing Requirements

Nil.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects, e.g. damaged culvert?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the culverts, pipes or pits requiring cleaning.
6. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
7. Arrange and specify a disposal area for excavate material.

#### 323 *Repair Minor Concrete Culverts, Pipes and Pits*

##### Description

The repair of damaged concrete culverts, pipes and pits for all bridges and culverts with an opening span, height or diameter greater than or equal to 1.8m, and a total waterway area equal to or greater than 3.0 square metres.

##### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>

Reference	Title
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>

### Restoration Standard

The concrete culverts and/or pipes, pits repaired to the standards specified in the approved repair method.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
323	Repair Minor Concrete Culverts, Pipes and Pits	Dollars

### Testing Requirements

None Listed

### WORK PREPARATION

#### Plant Requirements

Job truck

Bobcat/backhoe/loader

#### Materials

Culvert components as per MRTS03

Concrete as per MRTS03

#### Manpower Requirements

Leading hand	1
Labourers	2
Operator	1
Traffic controllers	2

#### Average Daily Production

Not listed

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the culverts, pipes or pits requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control – See vehicle warning lights:
  - a. traffic control devices
  - b. safety clothing
2. Roadworks Signing Guide
  - a. vehicle position.
3. Determine culverts, pipes or pits - from supervisor's instructions.
4. Repair culvert, pipe or pit:
  - a. in accordance with details in works order to be repaired and the relevant specification.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
7. Remove traffic control:
  - a. clean/repair as necessary.

### 324 Repair Minor Steel Drainage Structures

#### Description

The repair of steel culverts structures or pipes for all bridges and culverts with an opening span, height or diameter greater than or equal to 1.8 m, and a total waterway area equal to or greater than 3.0 square metres.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>

#### Restoration Standard

The steel structures repaired to the standards specified in the approved repair method.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
324	Repair Minor Steel Drainage Structures	Dollars

#### Testing Requirements

None listed.

## **WORK PREPARATION**

### **Plant Requirements**

Job truck

Bobcat/backhoe/loader

### **Materials**

Culvert components as per MRTS03

Concrete as per MRTS03

### **Manpower Requirements**

Leading hand	1
Labourers	2
Operator	1
Traffic controllers	2

### **Average Daily Production**

Not listed.

### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the structure requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

## **WORK PROCEDURES**

### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine culverts, structure to be repaired from supervisor's instructions.
3. Repair structure:
  - a. in accordance with details in works order and the relevant specification.
4. Check the work against the restoration standard.

5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
  - a. clean/repair as necessary.

### 325 Repair Inlet and Outlet Scour

#### Description

All work associated with restoring scoured areas of drainage inlet and outlets to a stable condition.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>

#### Restoration Standard

The drainage inlet and or outlet repaired to the standard specified in the approved repair method.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
325	Repair Inlet and Outlet Scour	m <sup>3</sup>

#### Testing Requirements

None listed

#### WORK PREPARATION

#### Plant Requirements

Job truck

Bobcat/backhoe/loader

Truck

#### Materials

Rock as per MRTS03

Concrete as per MRTS03

Geotextiles as per MRTS03

### Manpower Requirements

Leading hand	1
Labourers	2
Operator	1
Traffic controllers	2

### Average Daily Production

Not listed.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the inlet/outlet requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine inlet/outlet to be repaired:
  - a. from supervisor's instructions.
3. Repair inlet/outlet:
  - a. in accordance with details in works order and relevant specification.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block watercourse or drains.
6. Remove traffic control:
  - a. clean/repair as necessary.

**326 Repair Scour Blocks**

Details to be advised.

**327 Replace or Install Cut off Walls****Description**

The replacement or installation of cut off walls to drainage structures.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>

**Restoration Standard**

As per specifications and details given in the Works Order.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
327	Replace or Install Cut Off Walls	m <sup>3</sup>

**WORK PREPARATION****Plant Requirements**

Job truck

Bobcat/backhoe/loader

Truck

**Materials**

Concrete as per MRTS03

**Manpower Requirements**

Leading hand	1
Labourers	2
Operator	1
Traffic controllers	2

**Average Daily Production**

Not listed.

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?



4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the inlets/outlets requiring the cut off walls.
6. Determine alterations required and obtain supervisor's approval of the alterations and installation methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
8. Arrange and specify a disposal area for excavated material.

## **WORK PROCEDURES**

### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine inlet/outlet requiring the cut off wall treatment:
  - a. from supervisor's instructions.
3. Excavate for the cut off wall/remove old wall:
  - a. truck surplus excavated material to site specified by your supervisor.
4. Install the cut off wall:
  - a. in accordance with details in works order.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
7. Remove traffic control:
  - a. clean/repair as necessary.

### **328 Minor Repairs to Erosion Sites**

#### **Description**

The repair of erosion sites between 50 mm and 300 mm. All work required to excavate unstable material, install geotextile, rockfill and/or subsoil drains, backfill the road formation and restore pavement, shoulder and bituminous surface as required by the design approved by the Principal.

#### **Work Operations**

The following work operations shall be included as part of this Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)

- determination of the work area
- The repair of minor erosion including the removal of any unstable material.
- All other operation included in the Applicable Specifications and approved Environmental Management Plan (Maintenance)
- The clean up of the site including the disposal of any waste/collected material in accordance with any State Government legislation of Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing excluding Emulsions</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavement</i>
MRTS51	<i>Environmental Management</i>
	<i>Erosion and Sediment Control Manual Guidelines 2010 (CAC005M) – Transport and Main Roads</i>

#### Restoration Standard

Control Measures are to be maintained to the Soil Erosion and Sediment Control Guidelines contained in the Environmental Management Plan (Maintenance).

The site shall be left clean and tidy.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
328	Minor Repairs to Erosion Sites	Dollars

#### Testing Requirements

Not listed.

#### Particular Planning Points to Consider

- Specify the appropriate plant, materials and crew (including quantities of material) and organise these.

- Have the requirement of the EMP (Maintenance) been implemented?
- Are other activities programmed for this area?

No other details are listed in the Standard for the Activity.

Plant-mix stabilised and dense graded asphalt pavement material may be placed by any equipment that does not cause the mix to segregate.

### Restoration Standard

The repaired restored works shall conform to the design approved by the Principal's Delegate.

The finished road surface shall be even and follow the line and curvature of the surrounding road surface to within  $\pm 5$  mm when measured with a 1.2 m straightedge.

### Supplementary Work Items and Unit of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Provision for traffic	lump sum
933300	Subsoil drains, Type C	m
933400	Subsoil drains, Type D	m
934600	Geotextiles under/within embankments	m <sup>2</sup>
942100	Roadway excavation, all materials	m <sup>3</sup>
943100	Roadway embankment	m <sup>3</sup>
	Rockfill	m <sup>3</sup>
	Plant mix stabilised pavement (incl. cement and curing)	m <sup>3</sup>
956100	Prime (Grade, rate l/m <sup>2</sup> )	litre
956200	Primerseal (Grade, rate l/m <sup>2</sup> )	litre
956300	Seal (Grade, rate l/m <sup>2</sup> )	litre
956600	Spreading prime cover aggregate (Size mm, rate 1m <sup>3</sup> /m <sup>2</sup> )	m <sup>3</sup>
956700	Spreading cover aggregate (Size mm, rate 1m <sup>3</sup> /m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (precoated) (10 mm nominal size)	m <sup>3</sup>
958110	Supply of cover aggregate (precoated) (14 mm nominal size)	m <sup>3</sup>
958120	Supply of cover aggregate (precoated) (16 mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170)	tonne
956910	Supply of material (Modified Bitumen Class 170 + % SBS Polymer)	tonne
956920	Supply of material (Bitumen Cutter)	tonne
956930	Supply of material (Adhesion Agent)	kg

**Testing Requirements**

<b>Minimum test frequency</b>	
<b>Unbound Pavements and materials for stabilisation</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q217	1/source/year
<b>Minimum test frequency</b>	
Flakiness Index Q201B	1/source/year
CBR Q113A	1/source/year
Degradation Factor Q208B	1/source/year
Grading Q103A	1 per 100 m <sup>3</sup>
Liquid Limit Q104A	1 per 100 m <sup>3</sup>
Plastic Limit, PI Q105	1 per 100 m <sup>3</sup>
Linear Shrinkage Q106	1 per 100 m <sup>3</sup>
<b>Stabilised Material</b>	
Drying/Shrinkage Q128	1/source/year
Cement Content Q116B	1 per 100 m <sup>3</sup>
<b>Compaction-Earthworks, Unbound/Stabilised Pavement</b>	
MDR Q110A	1 per 100 m <sup>3</sup>
MDR(Cement Treated) Q110C	1 per 100 m <sup>3</sup>
Density Q111A or Q112	1 per 100 m <sup>3</sup>
<b>Asphalt/Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	1 per 80 t
Bitumen Content and Aggregate Grading Q308A or Q308C	1 per 80 t
Asphalt	1 per 80 t
Compaction, Asphalt Q306A or Q314	1 per 40 t
<b>Geometrics</b>	
Horizontal Straightedge	1 per 10 m
Depth below Road Surface	1 per 10 m per layer
<b>Cover Aggregate</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q21	1/source/year
Grading Q103D	1 per 400 t (2/lot min.)

<b>Minimum test frequency</b>	
Flakiness Index Q201B	1 per 400 t (2/lot min.)
Precoating Q216	1 per 400 t (2/lot min.)
Bitumen - sample	1 per tank
<b>Application Rates - Spraying Records</b>	
Max. lot size	1 day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

### **WORK PREPARATION**

#### **Plant Requirements**

Job truck (with water)

Trucks

Excavator/backhoe/gradall/loader

Grader

Pavement breaker

Vibrating compactor/wacker packer

Emulsion sprayer

#### **Materials**

Cover Aggregate to MRTS22

Bitumen to MRTS17

Dense Graded & Open Graded Asphalt to MRTS30

Emulsion to MRTS21

Plant mix stabilised pavement

Selected shoulder material as required

#### **Manpower Requirements**

Leading hand 1

Labourers 2

Operator

Truck drivers

Traffic controllers 2

#### **Average Daily Production**

Not listed

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the location of the area to be repaired.
6. Check for services, e.g. overhead wires and buried services. Mark these as appropriate.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
8. Arrange and specify a disposal area for excavated material.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. should be marked out already.
3. Excavate for the repair:
  - a. supervisor to mark out (or specify) area to excavated
  - b. truck surplus excavated material to site specified by your supervisor.
4. Install geotextile and/or rockfill as required.
5. Replace fill and pavement:
  - a. premix backfill material and water off site
  - b. bring material to right moisture content for compaction
  - c. uniform 75 - 100 mm layers
  - d. check compaction.
6. Apply seal or asphalt surfacing:
  - a. use Activity Number 118, steps 5 to 12, or Activity Number 155, Steps 4 to 7.
7. Check the work against the restoration standard.
8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.

9. Remove traffic control:
  - a. clean/repair as necessary.

### **329 Other Minor Culvert, Pipe and Pit Work**

#### **Description**

Any work carried out to Culverts, Pipes or Pits not covered by Activity Standards numbered 320, 321, 322, 323, 324, 325 and 327, for all bridges and culverts with an opening span, height or diameter greater than or equal to 1.8m, and a total waterway area equal to or greater than 3.0square metres.

#### **Activity Item and Unit of Measurement**

### **329 Other Minor Culvert, Pipe and Pit Work**

No other details are listed in the Standard for this Activity.

### **330 Install Subsoil Drains**

#### **Description**

All work required to excavate the road formation and install subsoil drains, backfill and restore pavement and shoulder as required. Does not include work carried out in conjunction with pavement repair works - see Activities Numbered 140, 143 and 144.

#### **Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- excavation of the trench for the subsoil drain in accordance with MRTS03
- the supply and installation of the subsoil drain in accordance with MRTS03 (including concrete outlets/surrounds, markers, etc.)
- all other work operations as detailed in the Applicable Specifications (i.e. MRTS03; MRTS04 etc.)
- the supply, placement and compaction of backfill
- the supply, placement and compaction of cement treated pavement material (Type 2.5) stabilised with not less than 2% or more than 3% by mass of cement where required (e.g. for road crossings)
- the supply and application of a bitumen emulsion tack coat at a rate of 0.6 l/m<sup>2</sup> residual bitumen where required (e.g. for road crossings)
- the supply, placement and compaction of the asphalt wearing course where required (e.g. for road crossings)
- forwarding a copy of "as constructed" details of the subsoil drain to the Principal
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste/removed material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing excluding Emulsions</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavement</i>

Plant-mix stabilised and dense graded asphalt pavement material may be placed by any equipment that does not cause the mix to segregate.

#### Restoration Standard

As per specifications except as provided hereunder:

- a) The standard of compaction shall be such that the final passes of the compaction equipment leave no impressions on the restored surface.
- b) The finished surface shall be within +5 mm of the height of the surrounding road surface.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
330	Install Subsoil Drain	m

#### Testing Requirements

Minimum test frequency	
Compaction Visual	4 per day
Straight Edge	1 per 20 m

#### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
933200	Subsoil drains, Type C	m
933400	Subsoil drains, Type D	m
	Plant mix stabilised pavement (incl. cement and curing)	m <sup>3</sup>



Supplementary Work Item	Description	Unit of Measurement
	Base, Unbound Pavement, Type ___ (Subtype ___)	m <sup>3</sup>
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Obtain details of subsoil drain from your supervisor.
6. Specify or mark out the location of the subsoil drain.
7. Check for services, e.g. overhead wires and buried services. Mark these as appropriate.
8. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
9. Arrange and specify a disposal area for excavated material.

### 331 *Inspect and/or Cleanout Subsoil Drains*

#### Description

Inspection and servicing of subsoil drains. Includes routine drain flush out and the removal of all vegetation and other material which could restrict the free flow of water from the subsoil drains as well as the repair or replacement of missing or damaged marker posts and outlet screens.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>

#### Restoration Standard

Outlets to subsoil drains shall be free of material which would restrict the flow of water. Markers and screens shall be in place and in good condition.

Drainage to be free flowing.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
331	Inspect and/or Clean out Subsoil Drains	m

#### Testing Requirements

None listed.

## **WORK PREPARATION**

### **Plant Requirements**

Job truck

Truck

Bobcat/backhoe/loader

### **Materials**

Marker Posts and Outlet Screens as per MRTS03

### **Manpower Requirements**

Leading hand	1
Labourers	2
Operator	1
Truck drivers	
Traffic controllers	

### **Average Daily Production**

Not listed

### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Specify or mark out the subsoil drains requiring cleaning and markers requiring repair or replacement.
3. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
4. Arrange and specify a disposal area for excavated material.

## **WORK PROCEDURES**

### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine subsoil drain to be cleaned:
  - a. from supervisor's instructions.
3. Flush out drain:
  - a. remove debris and silt
  - b. truck and additional material to site specified by your supervisor.
4. Check the work against the restoration standard.

5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
  - a. clean/repair as necessary.

### 332 **Repair Subsoil Drains**

#### Description

All work required to excavate the road formation and repair subsoil drains, backfill and restore pavement and shoulder as required. Does not include works carried out in conjunction with pavement repair type activities - See Activities Numbered 140, 143 and 144.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing excluding Emulsions</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavement</i>

Plant-mix stabilised and dense graded asphalt pavement material may be placed by any equipment that does not cause the mix to segregate.

#### Restoration Standard

The repaired subsoil drains and restored pavement and shoulder shall conform to the specifications.

The finished surface shall be within  $\pm 5$  mm of the surrounding road surface.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
332	Repair Subsoil Drains	Dollars

#### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
912100	Provision for traffic	lump sum

Supplementary Work Item	Description	Unit of Measurement
	Repair subsoil drains	lump sum
	Plant mix stabilised pavement (incl. cement and curing)	m <sup>3</sup>
	Unbound base Type (Subtype___)	m <sup>2</sup>
955860	Dense Graded Asphalt pavement, 14 mm mix	tonne
955870	Dense Graded Asphalt pavement, 20 mm mix	tonne
955890	Dense Graded Asphalt pavement, 40 mm mix	tonne

**Testing Requirements**

Minimum test frequency	
Compaction Visual	4 per day
Straight Edge	1 per 20 m

**WORK PREPARATION****Plant Requirements**

Job truck

Bobcat/backhoe/loader

**Materials**

Culvert components as per MRTS03

Concrete as per MRTS03

Dense Graded Asphalt to MRT30

Emulsion to MRTS21

Bitumen to MRTS17

Cover Aggregate to MRTS22

Plant mix stabilised pavement

Selected shoulder material as required to SS-

**Manpower Requirements**

Leading hand	1
Labourers	2
Operator	1
Traffic controllers	2

**Average Daily Production**

Not listed.

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.

2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the subsoil drains requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine subsoil drain to be repaired:
  - a. from supervisor's instructions.
3. Repair subsoil drain:
  - a. in accordance with details in works order.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
  - a. clean/repair as necessary.

### 333 *Repair Subsoil Drains (RAMC)*

Details to be advised.

### 334 *Clean Culverts, Pipes & Pits-Minor (RAMC)*

Details to be advised.

### 339 *Other Subsoil Drain Work*

#### Description

Includes work carried out on subsoil drain systems not included under Activities numbered 330, 331 and 332.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
339	Other Subsoil Drain Work	Dollars

No other details are listed in the Standard for this Activity.

### 340 Clean Floodways

#### Description

The cleaning of debris, silt and regrowth of vegetation from floodway sections.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### Restoration Standard

The floodway surface and associated batters and aprons shall be free from debris, silt and regrowth of vegetation.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
340	Clean Floodways	m <sup>2</sup>

#### Testing Requirements

None listed.

#### WORK PREPARATION

#### Plant Requirements

Job truck

Truck

Bobcat/backhoe/loader

#### Materials

None Stated

#### Manpower Requirements

Leading hand	1
Labourers	2
Operator	1
Truck driver	
Traffic controllers	2

#### Average Daily Production

Not listed.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Are there any related defects, e.g. floodway damage?
3. Specify or mark out the floodways requiring cleaning.

4. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
5. Arrange and specify a disposal area for material removed from floodway.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine floodway to be cleaned:
  - a. from supervisor's instructions.
3. Clean floodway and aprons:
  - a. remove debris and silt
  - b. truck surplus material to site specified by your supervisor.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
  - a. clean/repair as necessary.

### 341 Repair Floodways

#### Description

The reinstatement of damaged or deteriorated floodway structures. Includes work carried out on scour repairs to concrete and stone pitched batter and apron protection.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>

#### Restoration Standard

The floodways shall be repaired to the standards specified in the approved repair method.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
341	Repair Floodways	Dollars

### Testing Requirements

None listed.

### WORK PREPARATION

#### Plant Requirements

Job truck

Bobcat/backhoe/loader

#### Materials

Rock as per MRTS03

Concrete as per MRTS03

#### Manpower Requirements

Leading hand	1
Labourers	2
Operator	1
Traffic controllers	2

#### Average Daily Production

Not listed.

#### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the floodway requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine floodway to be repaired:
  - a. from supervisor's instructions.



3. Repair floodway:
  - a. in accordance with details in works order.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
  - a. clean/repair as necessary
  - b. clean/repair as necessary.

### 342 *Repair Floodway Slopes and Margins*

#### Description

The repair of deteriorated and damaged slopes and margins to restore them to the original cross section. Includes the supply of all materials.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>

#### Restoration Standard

The floodway slopes and margins shall be repaired to the standards specified in the approved repair method.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
342	Repair Floodway Slopes and Margins	m <sup>3</sup>

#### Testing Requirements

None listed

#### WORK PREPARATION

##### Plant Requirements

Job truck

Bobcat/backhoe/loader

##### Materials

Rock as per MRTS03

Concrete as per MRTS03

### Manpower Requirements

Leading hand	1
Labourers	2
Operator	1
Traffic controllers	2

### Average Daily Production

None detailed.

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the floodway requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine floodway slopes and margins to be repaired:
  - a. from supervisor's instructions.
3. Repair floodway slopes and margins:
  - a. in accordance with details in works order.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
  - a. clean/repair as necessary.

**349 Other Floodway Work****Description**

Includes work carried out on floodway structures not included under Activities numbered 340, 341 and 342.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
349	Other Floodway Work	Dollars

No other details are listed in the Standard for the Activity.

**400 ROADSIDE****401 Tractor Slashing, Rural****Description**

The mechanical slashing of vegetation within the road reserve in a rural environment. Excludes herbicide spraying around roadside furniture.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- slashing the shoulders, sight lines at intersections with Local Government roads, private accesses in rural areas and the inside of curves and clear zones where achievable. The slashing at major interchanges and other locations may also be required
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specification**

Grass and other vegetation shall be mowed and programmed with Activity 407 where necessary so as to, at all times, provide motorists with a clear view of all signs, guide markers and guardrails and to provide Entering Sight Distance as per the *Austrroads Guide to Traffic Engineering Practice Part 5 - Intersections at Grade (Section 5.2.3)*. Visibility will however, be limited in many places by earthworks, large trees and other obstructions.

All medians, raised islands and drains shall be mowed to meet the agreed intervention levels.

Except by specific direction, slashing is not undertaken for appearance, to reduce bush fire hazard or to remove a snake or vermin habitat.

Reference	Title
MRTS02	<i>Provision for Traffic</i>

### Restoration Standard

The extent of tractor slashing should be:

- Approximately 3.6 m (or two machine passes) on each side of the carriageway.
- Visibility triangles at intersections to establish, where possible, entering sight distance.
- A greater distance on the inside of curves to maintain stopping sight distance. In general, this distance should be 9.0 m, or on tight curves in higher speed environments, 14.0 m. The following table gives greater detail.

Speed Environment (kmph)	Curve Radius (m)	Width of clearing on inside of curve (m)
100	400	9
100	800	5
130	800	14
130	1200	9
130	2200	5

- 120 m in front of official signs is necessary for visibility to approaching traffic.
- 2 m around the perimeter of all timber noise barriers

When required, a greater width should be mowed to destroy any tree seedlings growing within the clear zone and/or in table drains. In 100 kmph speed zones, the width to be slashed in this way is 9.0 m from the edge of the traffic lane.

The slashed vegetation shall be less than 100 mm high for the areas stated above.

No debris is to be thrown onto the sealed carriageway.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
401	Tractor Slashing, Rural	Hectare

### Testing Requirements

Minimum test frequency	
Cut height	1 per day

### Particular Planning Points to Consider

1. Is an alternative treatment or major maintenance more appropriate e.g. grading of verge?
2. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
3. Check for litter and arrange for collection prior to mowing if appropriate.
4. Activity would normally be done on a set program to keep vegetation at or below the agreed intervention level.

**402 Tractor Slashing, Urban****Description**

The mechanical slashing of vegetation within the road reserve in urban built up areas. Includes slashing to a width of 2 metres outside the line of guide posts and herbicide spraying around roadside furniture. Excludes mowing of grass and vegetation by hand mower and/or brush cutter, see No. 404.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- mowing of vegetation, using self-propelled/ride on type mowers within the road reserve including medians, drains and around roadside furniture (including sound barrier fencing) or elsewhere as required
- the submission of a mowing program to the Principal for acceptance showing the areas to be regularly maintained by this Activity
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specification**

Grass and other vegetation shall be mowed so as to, at all times, provide motorists with a clear view of all signs, guide markers and guardrails and to provide Entering Sight Distance as per the *Austrroads Guide to Traffic Engineering Practice Part 5 - Intersections at Grade (Section 5.2.3)*. All medians, raised islands and drains shall be mown to meet agreed intervention levels.

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Restoration Standard**

The slashed vegetation shall be less than 75 mm high. No debris shall be thrown onto the sealed carriageway.

Restoration Standards for visibility triangles at intersections, visibility of signs and the inside of curves are as per the requirements for Activity No. 401.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
402	Tractor Slashing, Urban	Hectare

**Testing Requirements**

Minimum test frequency	
Cut height	1 per day

**Particular Planning Points to Consider**

1. Is an alternative treatment or major maintenance more appropriate e.g. grading of verge?
2. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
3. Check for litter and arrange for collection prior to mowing if appropriate.
4. This would normally be done on a set program to keep vegetation at or below the agreed intervention level.

**403 Tractor Slashing - Boom Mower****Description**

The tractor slashing of vegetation within the road reserve using a boom mower attachment.

Refer to Activity No. 401 for details relating to this Activity. This Activity should generally be used where conventional tractors and slashers cannot gain access to maintain around roadside furniture.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
403	Tractor Slashing -Boom Mower	Square Metres

**404 Hand Mowing****Description**

The mowing of grass and vegetation by hand-mower and/or brush cutter (or other hand equipment) in medians, drains and around roadside furniture (including sound barrier fencing) or elsewhere as required (including rest areas owned by the Department). This Activity shall be only undertaken when Activity 401 – Tractor Slashing – Rural and Activity 402 Tractor Slashing – Urban are not applicable.

All medians, raised islands and drains shall be mowed to meet the agreed intervention levels.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- mowing by hand, in medians, drains and around roadside furniture (including sound barrier fencing) or elsewhere as required

- the submission of a handmowing program to the Principal for acceptance showing the areas to be regularly maintained by this Activity
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specification

Grass and other vegetation shall be mown so as to, at all times, provide motorists with a clear view of all signs, guide markers and guardrails and to provide Entering Sight Distance as per the *Austrroads Guide to Traffic Engineering Practice Part 5 -Intersections at Grade (Section 5.2.3)*.

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### Restoration Standard

All grass shall be mowed to less than 75 mm high.

No vegetation shall be thrown onto the sealed carriageway.

Restoration Standards for visibility triangles at intersections, visibility at signs and inside of curves are as per requirements for Activity No. 401.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
404	Hand Mowing	m <sup>2</sup>

#### Testing Requirements

Minimum test frequency	
Cut height	1 per day

#### Particular Planning Points to Consider

1. Is an alternative treatment or major maintenance more appropriate e.g. herbicide spraying?
2. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
3. Check for litter and arrange for collection prior to mowing if appropriate.
4. This would normally be done on a set program to keep vegetation at or below the agreed intervention level.

## 405 Clearing

### Description

The removal or pruning of all roadside vegetation, other than grass, for the purpose of safety or visibility clearing. Includes trees too close to the road and branches/trees likely to fall on the road. Also includes chipping, grading, weeding, burning operations and treating the stump with herbicide to prevent regrowth.

### Work Operations

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- clearing/pruning of trees and branches within sight lines at intersections with Local Government roads, private accesses in rural areas, on the inside of curves and within clear zones. The clearing within major interchanges and other areas may also be required.
- Clearing of trees too close to the road and branches/trees likely to fall on the road. Operations also include chipping (i.e. using a mechanical chipper/mulcher) and treating the stump with herbicide to prevent regrowth. Any other proposed methods of disposal will need to be submitted to the Principal for acceptance.
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>

The extent of visibility clearing shall be:

- The restoration standard required at these locations will be to remove trees and shrubs from the shoulder of the road to a line 2.0 m past the bottom of the table drain, or to 6.0 m from the edge of the through lane, whichever is the lesser.
- Visibility triangles at intersections to establish, where possible, entering sight distance as per *Austrroads 1989 INTERSECTIONS AT GRADE Section 5.2.3*. It is accepted that in some situations this standard may not be practical. (i.e. where a vertical curve limits site, where private property prevents clearing, where environmental issues may prevent or limit such work or where earthworks may be necessary to obtain the specified sight distances.)



A greater distance on the inside of curves to maintain stopping sight distance. In general, this distance should be 9.0 m, or on tight curves in higher speed environments, 14.0 m.

The following gives greater detail.

- 120 m in front of official signs as necessary for visibility to approaching traffic.
- Trees and shrubs shall be cut near ground level and the debris removed to a recognised dumping site. Cut stumps and/or regrowth be herbicide treated. Wherever possible the cleared areas are then to be maintained using a slasher as required.

### Restoration Standard

All specified branches/trees removed/trimmed.

No regrowth. No debris left on the sealed carriageway.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
405	Clearing	Dollars

### Testing Requirements

None listed.

### Particular Planning Points to Consider

1. Specify or mark out the area requiring cleaning.
2. Check if the trees are of special significance e.g. memorial. If so, works are to be approved by the Principal.
3. Check for services, e.g. overhead wires and buried services. Mark these as appropriate.
4. Specify the appropriate plant, materials and crew (including quantities of materials) and chemical spray rate and organise these.
5. Arrange for safe storage of chemicals.
6. Ensure the spray operator has an appropriate licence.
7. Arrange and specify a disposal area for cleared material.
8. Determine the traffic control required during the clearing operations to avoid risk to public.
9. Supervisor must be present on site if operation will cause temporary road closure.

### 406 Herbicide Spot Spraying - Declared Plants

#### Description

The identification and eradication of declared plants within the road reserve (including rest areas owned by MR). This includes either the sprayed or manual application of chemical herbicide. Excludes the spraying of other plants which is undertaken as Activity 407 – Herbicide Spraying.

Other vegetation can be treated subject to the approval of the Principal under Activity No. 407 Herbicide Spraying.

## Work Operations

The following operations shall be included as part of the above Activity:

Speed Environment (kmph)	Curve Radius (m)	Width of clearing on inside of curve (m)
100	400	9
100	800	5
130	800	14
130	1200	9
130	2200	5

- Site establishment and disestablishment of all plant labour and materials.
- Establishment and disestablishment of traffic control.
- Determination of the work area.
- The preparation, submission and maintenance of a spraying procedure.
- Spraying of all declared plants in accordance with the Restoration Standards and Applicable Specifications.
- All other operation included in the Applicable Specifications.
- Certification that the product meets the requirements of the Restoration standards including all necessary visual inspections compliance and audit testing.
- The clean up of the site including the disposal of any waste material in accordance with any State Government legislation of Local Government By-laws that are applicable.

Where classification of details in relation to the above Work Operations is required, the following Application Specifications and Acts provide additional requirements for compliance in these areas.

### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
-	<i>Agricultural Chemicals Distribution Control Act 1996-1968</i>
-	<i>Commercial Operator's Manual</i>
-	<i>Rural Land Protection Act 1985</i>

- All plants declared under the *Rural Land Protection Act 1985* on the road reservation shall be eradicated.
- All spray operators shall be licensed to comply with the *Agricultural Chemicals Distribution Control Act 1966 – 1968. Commercial Operator's Manual*.
- The Contractor shall submit full details of the proposed spraying operations including a description of the areas to be treated (and extent thereof), the herbicide to be used, and the concentration and application rates to the Principal and shall not commence operations until the details are accepted by the Principal.
- All chemicals used shall comply with all relevant Australian Standards. State Government Legislation and Local Authority Regulations
- Herbicides used are to be approved for use on the target species by the DPI

- Herbicide to be used in accordance with the manufacturers recommendations.

### Restoration Standard

All targeted vegetation as per the approved procedures killed.

No other vegetation sprayed or killed.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
406	Herbicide Spot Spraying - Declared Plants	Dollars

### Testing Requirements

Visual inspections only to ensure the above restoration standards are achieved.

### Particular Planning Points to Consider

1. Determine the type of chemical spray, concentration and application rate
2. Arrange for safe handling and storage of chemicals.
3. Check area and adjacent properties for grass, trees, crops, etc. that must not be affected by chemicals. Make careful note of these on the operator's Spraying Sheet.
4. Ensure the spray operator has an appropriate licence.
5. Inspect the area after ten days to confirm that the spraying has been successful.

### 407 Herbicide Spraying

#### Description

The supply and application by spraying of chemical herbicide for the control of vegetation growing around roadside furniture and structures (including rest areas owned by the Department). Excludes the spot spraying of declared plants which is undertaken under Activity No. 406.

#### Work Operations

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control
- determination of the work area
- the preparation, submission and maintenance of a spraying procedure
- spraying of all areas in accordance with the Restoration Standards and Applicable Specifications
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specifications**

The following provisions shall apply to the spraying of herbicides:

1. All vegetation within 1 metre of all signs, guide markers and guardrails shall be sprayed.
2. Other vegetation can be treated subject to the approval of the Principal's Delegate or his representative.
3. All spray operators shall be licensed to comply with the Agricultural Chemicals Distribution Control Act 1966-1978 and 1983, Commercial Operator's Manual.
4. Only "knockdown" herbicides may be used on the road reserve. "Residual" herbicides are not permitted.
5. Arrange for safe handling and storage of chemicals.
6. The contractor shall submit full details of proposed spraying operations to the Principal's Delegate and shall not commence operations until the details are approved by the Principal's Delegate or his representative.
7. Herbicides are to be used in accordance with the manufacturer's recommendations.

**Restoration Standard**

All targeted vegetation killed.

No other vegetation sprayed.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
407	Herbicide Spraying	Litres

**Testing Requirements**

Visual inspections only to ensure the restoration standards are achieved.

**Particular Planning Points to Consider**

1. Is an alternative treatment or major maintenance more appropriate e.g. grading of verge?
2. Specify the appropriate plant, materials and crew (including type of chemical spray and application rate) and organise these.
3. Arrange for safe handling and storage of chemicals.
4. Check area and adjacent properties for grass, trees, crops etc. that must not be affected by chemicals. Make careful note of these on the operator's Spraying Sheet.
5. Ensure the spray operator has an appropriate licence.
6. Inspect the area after ten days to see if the spraying has been successful.

**408 Tractor Treatment, Chemical****Description**

The chemical treatment of vegetation within the road reserve by tractor mowing.

### Applicable Specification

Vegetation shall be mowed so as to, at all times, provide motorists with a clear view of all signs, guide markers and guardrails and to provide Entering Sight Distance as per the *Austrroads Guide to Traffic Engineering Practice Part 5 - Intersections at Grade (Section 5.2.3)*. All medians, raised islands and drains shall be mowed to meet the agreed intervention levels.

Reference	Title
MRTS02	<i>Provision for Traffic</i>

### Restoration Standard

The extent of tractor slashing should be:

- Approximately 3.6 m (or two machine passes) on each side of the carriageway
- Visibility triangles at intersections to establish, where possible, entering sight distance
- A greater distance on the inside of curves to maintain stopping sight distance. In general, this distance should be 9.0 m, or on tight curves in higher speed environments, 14.0 m. The following table gives greater detail.

Speed Environment (kmph)	Curve Radius(m)	Width of clearing on inside of curve (m)
100	400	9
100	800	5
130	800	14
130	1200	9
130	2200	5

- 120 m in front of official signs as necessary for visibility to approaching traffic.

When required, a greater width should be mowed to destroy any tree seedlings growing within the clear zone and/or in table drains. In 100 kmph speed zones, the width to be slashed in this way is 9.0 m from the edge of the traffic lane.

The slashed vegetation shall be less than 100 m high for the areas stated above.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
408	Tractor Treatment, Chemical	Hectare

### Testing Requirements

None listed

### WORK PREPARATION

#### Plant Requirements

Job truck

Tractor/Mower with attachment fitted with chemical applicators

Knapsack sprayer

## Materials

Chemical (non residual)

## Manpower Requirements

Leading hand	1
Labourers	1 (for each knapsack)
Operator	1

## Average Daily Production

3 Hectares

## Particular Planning Points to Consider

1. Is an alternative treatment or major maintenance more appropriate e.g. grading of verge?
2. Specify the appropriate plant, materials and crew (including type of chemical spray and application rate) and organise these.
3. Arrange for safe handling and storage of chemicals.
4. Check area and adjacent properties for grass, trees, crops etc. that must not be affected by chemicals. Make careful note of these on the operator's Spraying Sheet.
5. Ensure the spray operator has an appropriate licence.
6. Inspect the area after ten days to see if the spraying has been successful.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control:
  - a. see Roadworks Sign Signing Guide
  - b. vehicle warning lights
  - c. traffic control devices
  - d. safety clothing
  - e. vehicle position
  - f. ensure you are working to the HAZCEM code.
2. Determine the work area:
  - a. from normal program or from supervisor's instructions.
3. Inspect the work area:
  - a. area free of objects that may damage the machine.
4. Set mowing height:
  - a. too low may damage the chemical applicators and eradicate the vegetation ground cover
  - b. too high is inefficient.

5. Mow the specified area:
  - a. mow in the direction of traffic
  - b. travel at about 6 km/hour
  - c. use knapsack spray around roadside furniture, trees etc., if required.
6. Check the work against the restoration standard.
7. Leave work site safe and tidy:
  - a. ensure dead vegetation will not block drainage.
8. Remove traffic control:
  - a. clean/repair as necessary.

#### 409 Seeding or Planting

##### Description

The supply, planting and maintenance of shrubs and trees including fertilizing, watering, mulching and weeding.

##### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS16	<i>Landscape and Revegetation Works</i>

##### Restoration Standard

As per MRS16 and details in Works Order.

##### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
409	Seeding or Planting	m <sup>2</sup>

##### Testing Requirements

Minimum test frequency	
Hole Size	1 per 10 holes
Watering	Each lot

#### WORK PREPARATION

##### Plant Requirements

Job truck

Bobcat/backhoe/grader/loader

Trucks

Water tanker

##### Materials

Seeds

Turf

Trees

Shrubs

Fertilizer

Water

Hydromulching equipment

**Manpower Requirements**

Leading hand	1
Labourers	1-3
Operator	as required
Traffic controllers	as required

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. Is an alternative treatment or major maintenance more appropriate?
2. Specify or mark out the area requiring seeding or planting.
3. Specify and organise the appropriate plant, materials and crew (including application rates of mulch and seeds).
4. Make arrangements for planting materials as required.
5. Organise the watering and fertilizing of seeded or planted areas.
6. Check planted area weekly until established.

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Spread top soil as required.
4. Seed the specified area:
  - a. apply mulch and seed
  - b. check application rates



- c. water as specified.
- 5. Plant the specified area:
  - a. check the spacing of planting
  - b. water as specified
  - c. apply mulch if required.
- 6. Check the work against the restoration standard.
- 7. Leave work site safe and tidy:
  - a. ensure top soil does not block drainage.
- 8. Remove traffic control:
  - a. clean/repair as necessary.
- 9. Watering and fertilising:
  - a. as per specified schedule.

#### **410 Landscape Planting - Urban**

##### **Description**

The supply, planting and maintenance until initial establishment of shrubs and trees including fertilising, watering, mulching and weeding in an urban environment.

##### **Applicable Specification**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS16	<i>Landscape and Revegetation Works</i>

##### **Restoration Standard**

As per MRTS16 (series) and details in Works Order.

##### **Activity Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
410	Landscape Planting	each (plant)

##### **Testing Requirements**

<b>Minimum test frequency</b>	
Hole Size	1 per 10 holes
Watering	Each lot

#### **WORK PREPARATION**

##### **Plant Requirements**

Job truck

Bobcat/backhoe/loader

Trucks

Water tanker

**Materials**

Trees

Shrubs

Fertilizer

Water

Hydromulching equipment

**Manpower Requirements**

Leading hand	1
Labourers	1-3
Operator	as required
Traffic controllers	as required

**Average Daily Production**

Not listed.

**Particular Planning Points to Consider**

1. Is an alternative treatment or major maintenance more appropriate?
2. Specify or mark out the area requiring planting.
3. Specify and organise the appropriate plant, materials and crew
4. Make arrangements for planting materials as required.
5. Organise the watering and fertilizing of planted areas.
6. Check planted area weekly until established.

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Prepare planting holes:
  - a. check the spacing of planting.

4. Plant the specified area:
  - a. water as specified
  - b. apply mulch if required.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. ensure top soil does not block drainage.
7. Remove traffic control:
  - a. clean/repair as necessary.
8. Water and fertilise:
  - a. as per specified schedule.

#### **411 Maintain Landscaping - Minor**

##### **Description**

All works associated with the ongoing maintenance of landscaping under Activity No. 410. Includes fertilising, and weeding of facility.

##### **Activity Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
411	Maintain Landscaped Shrubs	Dollars

No other details are listed in the Standard for this Activity.

#### **412 Mulching**

##### **Description**

The treatment by mulching to eliminate the growth of vegetation. Includes poisoning of existing ground cover, supplying and placing of a weed inhibiting membrane and laying of mulch material.

##### **Applicable Specification**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS16	<i>Landscape and Revegetation Works</i>

##### **Restoration Standard**

As per MRTS16 (series above) and details in works order.

##### **Activity Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
412	Mulching	m <sup>2</sup>

##### **Testing Requirements**

None listed

## WORK PREPARATION

### Plant Requirements

Job truck

Bobcat/backhoe/loader

Truck-mounted pump with sprayer

Trucks

### Materials

Chemical spray

Weed inhibiting membrane

Chip mulch

### Manpower Requirements

Leading hand	1
Labourers	1-3
Operator	as required
Traffic controllers	as required

### Average Daily Production

Not listed.

### Particular Planning Points to Consider

1. Is an alternative treatment or major maintenance more appropriate?
2. Specify or mark out the area requiring mulching.
3. Specify the appropriate plant, materials and crew (including type of chemical spray, type of mulch and underlay and application rates) and organise these.
4. Arrange for safe handling and storage of chemicals.
5. Check area and adjacent properties for vegetation that must not be affected by chemicals. Make careful note of these on the operator's Spraying Sheet.
6. Only "knockdown" herbicides may be used on the road reserve.  
"Residual" herbicides are not permitted for use.
7. Ensure the spray operator has an appropriate licence in accordance with the *Agricultural Chemicals Distribution Control Act 1966 - 1978 and 1983, Commercial Operator's Manual*.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices

- c. safety clothing
- d. vehicle position.
- 2. Determine the work area:
  - a. from supervisor's instructions.
- 3. Inspect the work area:
  - a. note position of vegetation that must not be sprayed
  - b. supervisor may have specified these in your instructions.
- 4. Check weather and wind:
  - a. do not spray if rain likely
  - b. do not spray if wind will blow the spray towards other vegetation.
- 5. Spray the specified area:
  - a. work in the direction of traffic
  - b. take care to spray only the specified vegetation.
- 6. Record the area sprayed:
  - a. notify your supervisor if you spray other vegetation
  - b. record the area sprayed on your spray sheet.
- 7. Place weed inhibiting underlay.
- 8. Place mulch:
  - a. to the specified depth.
- 9. Check the work against the restoration standard.
- 10. Leave work site safe and tidy:
  - a. remove any spilt or excess material.
- 11. Remove traffic control:
  - a. clean/repair as necessary.

**415 Roadside Burning Off**

**The Treatment**

All works associated with the treatment of vegetation on the road reserve through a planned 'burn off' program.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
415	Roadside Burning Off	Hectares / Dollars

No other details are listed in the Standard for this Activity.

**418 Clearing of Roadside Hazards****The Treatment**

All works associated with the clearing of roadside hazards including disposal.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
418	Clearing of Roadside Hazards	Dollars

No other details are listed in the Standard for this Activity.

**419 Other Vegetation Control Works****Description**

Any work carried out to control vegetation on the road reservation not covered by Activities numbered 401, 402, 403, 404, 405, 406, 408, 409, 410, 411, 412 and 415.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
419	Other Vegetation Control Works	Dollars

No other details are listed in the Standard for this Activity.

**420 Roadside Litter Collection - Rural****Description**

The collection and disposal of litter and rubbish, whether from bins located along the right of way or from the right of way itself, in rural areas, includes the repair and maintenance of receptacles. See Activity Number 421 for litter collection in urban built-up areas.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the collection, removal from site and the disposal of all litter from the road reserve in environmentally sensitive areas (i.e. in close proximity to creeks and waterways etc.)

- the collection, removal from site and the disposal of all litter which is greater in size than 100 cm<sup>2</sup> from the sealed carriageway (particularly tyre pieces)
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>

All areas of concentrated litter and rubbish threatening environmentally sensitive areas within the road reserve may be removed. The collection, removal and disposal of tyre pieces and other litter over the size of 100 cm<sup>2</sup> on the sealed roadway (which is constructed of a dense material and is likely to become a traffic hazard as a projectile if displaced by a vehicle or if hazardous when struck by a motorcycle) shall take priority over litter that is not located on the sealed surface.

This scheduled item includes dumping fees in accordance with Local Government and other statutory regulations.

#### Restoration Standards

- No litter over the size of 100 cm<sup>2</sup> potentially hazardous to traffic (as nominated above) remaining on the sealed roadway.
- No litter shall remain in the vicinity of environmentally sensitive areas.
- The site shall be left clean and tidy.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
420	Roadside Litter Collection	Dollars

#### Testing Requirements

Nil.

#### Particular Planning Points to Consider

1. Specify the appropriate plant and crew and organise these.
2. Check for litter and define collection area.
3. This Activity would normally be done on a set program to keep litter at or below the intervention level.

**421 Roadside Litter Collection - Urban****Description**

The collection and disposal of litter and rubbish, whether from bins located along the right of way or from the right of way itself in an urban built-up environment. Includes the repair and maintenance of receptacles.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the collection, removal from site and the disposal of all litter from the road reserve in environmentally sensitive areas (i.e. in close proximity to creeks and waterways etc.)
- the collection, removal from site and the disposal of all litter which is greater in size than 100 cm<sup>2</sup> from the sealed carriageway (particularly tyre pieces)
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

All areas of concentrated litter and rubbish threatening environmentally sensitive areas within the road reserve may be removed. The collection, removal and disposal of tyre pieces and other litter over the size of 100 cm<sup>2</sup> on the sealed roadway (which is constructed of a dense material and is likely to become a traffic hazard as a projectile if displaced by a vehicle or if hazardous when struck by a motorcycle) shall take priority over litter that is not located on the sealed surface.

This scheduled item includes dumping fees in accordance with Local Government and other statutory regulations.

**Restoration Standards**

- No litter over the size of 100 cm<sup>2</sup> potentially hazardous to traffic (as nominated above) remaining on the sealed roadway
- No litter shall remain in the vicinity of environmentally sensitive areas.
- The site shall be left clean and tidy.



**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
421	Roadside Litter Collection - Urban	m <sup>3</sup>

**Testing Requirements**

None listed.

**Particular Planning Points to Consider**

1. Specify the appropriate plant and crew and organise these.
2. Check for litter and define collection area.
3. This Activity would normally be done on a set program to keep litter at or below the intervention level.

**422 Graffiti Removal****Description**

The removal of graffiti from road infrastructure assets.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Restoration Standard**

All graffiti is removed.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
422	Graffiti Removal	m <sup>2</sup> / Dollars

**Testing Requirements**

Minimum test frequency	
Graffiti removed Visual	1 per Asset

**WORK PREPARATION****Plant Requirements**

Job truck

Water tank

Pressure sprayer

**Materials**

Water

Detergent

Cleaning rags, soft brushes and cleaning pads

Solvents

Paint/graffiti remover

**Manpower Requirements**

Leading hand	1
Labourers	1-3
Operators	as required
Traffic controllers	as required

**Average Daily Production**

Not listed.

**Particular Planning Points to Consider**

1. Define the infrastructure asset for cleaning.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects, e.g. damage to asset?
4. Is an alternative remedy more appropriate e.g. replacement?
5. Specify and organise the appropriate plant, materials and crew (including the quantities of materials).

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Clean off graffiti:
  - a. use paint/graffiti remover or solvent
  - b. wash with mild detergent solution
  - c. rinse with clean water.
4. Check for damage to coating:
  - a. if damage, advise supervisor.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy.

7. Remove traffic control:
  - a. clean/repair as necessary.

### 423 Roadside Sweeping

#### Description

The removal of all loose material from the edges of the road surface and from the road lines by mechanical means, including hand removal of larger debris. Does not include sweeping of large areas or intersections, refer Activity Number 130.

#### Applicable Specification

All loose material shall be removed from the sealed carriageway and disposed of in a neat and tidy manner away from the road formation and drainage lines.

#### Restoration Standards

All loose material shall be removed from the edges of the road surface and road lines.

#### Activity Item and Unit of Measurement

423 Roadside Sweeping m

#### Testing Requirements

Minimum test frequency	
Tight surface	1 per day

#### WORK PREPARATION

##### Plant Requirements

Rotary or suction broom

Pilot vehicle (maintenance patrol truck or utility)

Electronic variable message sign (if available)

##### Materials

Nil

##### Manpower Requirements

Operator	1
Driver	1
Labourers	2
Traffic controllers	2

##### Average Daily Production

Not listed.

##### Particular Planning Points to Consider

1. Specify the appropriate plant and crew and organise these.
2. Check for litter and arrange for collection prior to sweeping if appropriate.

3. This Activity would normally be done on a set program to keep debris at or below the intervention level.

## **WORK PROCEDURES**

### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from sweeping program or supervisor's instructions.
3. Remove larger debris by hand:
  - a. debris that would not be removed by the sweeper or may damage it.
4. Sweep the specified area:
  - a. drive in the direction of traffic flow
  - b. pilot vehicle driving 100 - 300 m behind according to speed limit and traffic conditions
  - c. use two-way radio for communication.
5. Check the work against the restoration standard.
6. Remove traffic control:
  - a. clean/repair as necessary.

### **424 Removal of Unauthorised Signs**

#### **Description**

The removal of unauthorised signs from the road reservation.

#### **Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- the preparation of a report for the monthly review meeting
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- removal of sign and supports (if applicable), including storage and disposal
- the issuing of written advice to repeat offenders concerning their breach of the relevant Acts
- provide notification to the police of vehicle mounted signs or roadside vendors
- all other operations included in the Applicable Specifications

- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### Unauthorised Signs

##### 1. Introduction

Advertising signs are permitted on declared road reserves when they are authorised by the Director General, Department of Main Roads, under the *Transport Infrastructure (Roads) Act 1994*.

##### 2. Authorised Signs

In general, the only authorised signs are:

- i. static illuminated street name signs ("Identilites")
- ii. signs attached to bus shelter sheds
- iii. art union signs (Mater Hospital, Endeavour Foundation, Boys Town, etc.)

##### 3. Unauthorised Signs

###### a. Signs to be removed immediately

The Contractor shall immediately remove, from the road reserve, any advertising signs attached to road furniture (i.e. traffic signs, guide posts, guard rail, signal posts, light poles, etc.)

The signs shall be removed in such a way as to cause minimal damage to the sign. The signs shall be stored at the Contractor's depot until they are collected by the owners or finally destroyed as approved by the Principal.

###### b. Signs to be referred to the Police

Regulation 126 of the Traffic Act 1949 gives the Police District Superintendent of Traffic control over handheld or vehicle-mounted advertising devices.

Instances of advertising signs mounted on a registered vehicle (motor vehicle or trailer), which is parked on the road reserve for an extended period, shall be referred to the nearest police station.

###### c. Signs to be referred to the Principal's Delegate

Any advertising sign not covered by Clauses 3.1 and 3.2 should be referred to the Principal's Delegate. The Principal's Delegate or representative shall then instruct the Contractor on whether or not to remove the sign.

#### Restoration Standard

No unauthorised signs on the road reserve except those which have been reported to the police or to the Principal's Delegate.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
424	Removal of Unauthorised Signs	Each (Sign)

**Testing Requirements**

None listed.

**Particular Planning Points to Consider**

1. Define the sign for removal.
2. Specify and organise the appropriate plant, materials and crew (including quantities of materials).
3. Advise Supervisor of signs removed.
4. Ensure signs removed are stacked carefully for retrieval by owners.

**425 Earthworks, Visibility Clearing****Description**

All works involved with excavation undertaken to clear visibility lines.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS04	<i>General Earthworks</i>

**Restoration Standard**

The earthworks shall conform to specification MRTS04 and the directions on the Works Order.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
425	Earthworks, Visibility Clearing	m <sup>3</sup>

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
912100	Provision for traffic	lump sum
942100	Roadway excavation, all materials	m <sup>3</sup>

**Testing Requirements**

None listed

**WORK PREPARATION****Plant Requirements**

Job truck

Trucks

Excavator/bobcat/backhoe/gradall/grader

Loader

Rotary broom

Water tanker

**Materials**

None required

**Manpower Requirements**

Leading hand	1
Labourers	2
Operators	
Truck drivers	
Traffic controllers	2

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the area requiring excavation.
6. Check for services, e.g. overhead wires and buried services. Mark these as appropriate.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
8. Provide a sketch of desired finished cross-section and plan of area to be excavated.
9. Arrange and specify a disposal area for excavated material.

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions
  - b. remove guide posts and other roadside furniture if needed.
3. Excavate the work area:

- a. supervisor to mark out (or specify) area to excavated
  - b. supervisor to provide sketch of finished cross-section
  - c. truck surplus excavated material to site specified by your supervisor.
4. Check the work against the restoration standard:
    - a. make regular checks while you are doing the job
    - b. check depth of excavation
    - c. check to ensure finished excavation drains.
  5. Leave work site safe and tidy:
    - a. remove all loose material
    - b. no material to block drains
    - c. use rotary broom or water tanker for pavement.
  6. Replace roadside furniture.
  7. Remove traffic control:
    - a. clean/repair as necessary.

#### **426 Repair Minor Stability Problems**

##### **Description**

All work required to excavate unstable material, install geotextile, rockfill and/or subsoil drains, backfill the road formation and restore pavement, shoulder and bituminous surface, to a maximum depth of 50 mm, as required by the design approved by the Principal.

##### **Applicable Specification**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS04	<i>General Earthworks</i>
MRTS05	<i>Unbound Pavements</i>
MRTS08	<i>Plant-mixed Stabilised Pavements Using Cement or Cementitious Blends</i>
MRTS11	<i>Sprayed Bituminous Surfacing (excl. Emulsions)</i>
MRTS12	<i>Sprayed Bitumen Emulsion Surfacing</i>
MRTS17	<i>Bitumen</i>
MRTS19	<i>Clutter and Flux Oils</i>
MRTS21	<i>Bitumen Emulsion</i>
MRTS22	<i>Supply of Cover Aggregate</i>
MRTS30	<i>Asphalt Pavements</i>

Plant-mix stabilised and dense graded asphalt pavement material may be placed by any equipment that does not cause the mix to segregate.



**Restoration Standard**

The repaired restored works shall conform to the design approved by the Principal's Delegate.

The finished road surface shall be even and follow the line and curvature of the surrounding road surface to within  $\pm 5$  mm when measured with a 1.2 m straightedge.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
426	Repair Minor Stability Problems	m <sup>3</sup>

**Supplementary Work Items and Unit of Measurement**

Supplementary Work Item	Description	Unit of Measurement
	Provision for traffic	lump sum
933300	Subsoil drains, Type C	m
933400	Subsoil drains, Type D	m
934600	Geotextiles under/within embankments	m <sup>2</sup>
942100	Roadway excavation, all materials	m <sup>3</sup>
943100	Roadway embankment	m <sup>3</sup>
	Rockfill	m <sup>3</sup>
	Plant-mix stabilised pavement (incl. cement and curing)	m <sup>3</sup>
956100	Prime (Grade, rate l/m <sup>2</sup> )	litre
956200	Primerseal (Grade, rate l/m <sup>2</sup> )	litre
956300	Seal (Class, rate l/m <sup>2</sup> )	litre
956600	Spreading prime cover aggregate (Size mm, rate 1m <sup>3</sup> /m <sup>2</sup> )	m <sup>3</sup>
956700	Spreading cover aggregate (Size mm, rate 1m <sup>3</sup> /m <sup>2</sup> )	m <sup>3</sup>
958100	Supply of cover aggregate (precoated) (10 mm nominal size)	m <sup>3</sup>
958110	Supply of cover aggregate (precoated) (14 mm nominal size)	m <sup>3</sup>
958120	Supply of cover aggregate (precoated) (16 mm nominal size)	m <sup>3</sup>
956900	Supply of material (Bitumen Class 170)	tonne
956910	Supply of material (Modified Bitumen Class 170+ % SBS Polymer)	tonne
956920	Supply of material (Bitumen Cutter)	tonne
956930	Supply of material (Adhesion Agent)	kg

**Testing Requirements**

<b>Minimum test frequency</b>	
<b>Unbound Pavements and materials for stabilisation</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
<b>Minimum test frequency</b>	
Weak Faces Q217	1/source/year
Flakiness Index Q201B	1/source/year
CBR Q113A	1/source/year
Degradation Factor Q208B	1/source/year
Grading Q103A	1 per 100 m <sup>3</sup>
Liquid Limit Q104A	1 per 100 m <sup>3</sup>
Plastic Limit, PI Q105	1 per 100 m <sup>3</sup>
Linear Shrinkage Q106	1 per 100 m <sup>3</sup>
<b>Stabilised Material</b>	
Drying/Shrinkage Q128	1/source/year
Cement Content Q116B	1 per 100 m <sup>3</sup>
<b>Compaction -Earthworks, Unbound/Stabilised Pavement</b>	
MDR Q110A	1 per 100 m <sup>3</sup>
MDR(Cement Treated) Q110C	1 per 100 m <sup>3</sup>
Density Q111A or Q112	1 per 100 m <sup>3</sup>
<b>Asphalt Premix</b>	
Materials/Mix Design	1/source/year
Maximum Density of Asphalt Q307	1 per 80 t
Bitumen Content and Aggregate Grading Q308A or Q308C	1 per 80 t
Asphalt	1 per 80 t
Compaction, Asphalt Q306A or Q314	1 per 40 t
<b>Geometrics</b>	
Horizontal Straightedge	1 per 10 m
Depth below Road Surface	1 per 10 m per layer
<b>Cover Aggregate</b>	
10% Fines Q205B	1/source/year
Wet/Dry Strength Q205C	1/source/year
Crushed Particles Q215	1/source/year
Weak Faces Q21	1/source/year
Grading Q103D	1 per 400 t (2/lot min.)

<b>Minimum test frequency</b>	
Flakiness Index Q201B	1 per 400 t (2/lot min.)
Precoating Q216	1 per 400 t (2/lot min.)
Bitumen - sample	1 per tank
<b>Application Rates - Spraying Records</b>	
Max. lot size:	1 day

The testing requirements listed for all the materials above shall apply to the cumulative quantities used throughout the contract and not to specific Work Order quantities. Where the Work Order quantity does not reach the required testing frequency, the quantity shall be aggregated with other Work Order quantities from that specific supply source until such time as a test is required. Work Order quantities may be recorded on a materials testing register and testing initiated once the cumulative total for a specific supply source reaches the specified figure.

## **WORK PREPARATION**

### **Plant Requirements**

Job truck (with water)

Trucks

Excavator/backhoe/gradall/loader

Grader

Pavement breaker

Vibrating compactor/wacker packer

Emulsion sprayer

### **Materials**

Cover Aggregate to MRTS22

Bitumen to MRTS17

Dense Graded & Open Graded

Asphalt Pavements to MRTS30

Emulsion to MRTS21

Plant mix stabilised pavement

Selected shoulder material as required

### **Manpower Requirements**

Leading hand 1

Labourers 2

Operators

Truck drivers

Traffic controllers 2

### **Average Daily Production**

Not listed

### **Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the location of the area to be repaired.
6. Check for services, e.g. overhead wires and buried services. Mark these as appropriate.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.
8. Arrange and specify a disposal area for excavated material.

### **WORK PROCEDURES**

#### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. should be marked out already.
3. Excavate for the repair:
  - a. supervisor to mark out (or specify) area to excavated
  - b. truck surplus excavated material to site specified by your supervisor.
4. Install geotextile and/or rockfill as required.
5. Replace fill and pavement:
  - a. premix backfill material and water off site
  - b. bring material to right moisture content for compaction
  - c. uniform 75 - 100 mm layers
  - d. check compaction.
6. Apply seal or asphalt surfacing:
  - a. use Activity Number 118, steps 5 to 12, or Activity Number 155, Steps 4 to 7.
7. Check the work against the restoration standard.

8. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
9. Remove traffic control:
  - a. clean/repair as necessary.

#### **427 Maintenance of Cultural Heritage Site**

##### **Description**

All work necessary to maintain designated Cultural Heritage Site including restoration of the site to an acceptable condition. Includes cost of necessary traffic control.

##### **Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

##### **Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
427	Maintenance of Cultural Heritage Site	m

No other details are listed in the Standard for this Activity.

#### **429 Other Roadside Work**

##### **Description**

Any work carried out on the roadside not covered by Activities Numbered 328, 420, 421, 422, 423, 424, 425 and 426.

##### **Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
429	Other Roadside Work	Dollars

No other details are listed in the Standard for this Activity.

#### **430 Service Restoration**

##### **Description**

All work necessary to restore the roadway to an acceptable condition resulting from works undertaken by Service Authorities in the road reserve. Includes cost of necessary traffic control.

##### **Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

##### **Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
430	Service Restoration	Dollars

No other details are listed in the Standard for this Activity.

#### **439 Other Restoration Work**

##### **Description**

Any other restoration work done not covered by Activities numbered 430 and 452.

##### **Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

##### **Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
439	Other Restoration Work	Dollars

No other details are listed in the Standard for this Activity.

#### **440 Rest Area Servicing**

##### **Description**

The servicing of all aspects (excluding pavement/seal, vegetation and sign Defects) of rest areas controlled by the Department of Main Roads, necessary for the safety and convenience of the public.

##### **Work Operations**

The following activities shall be included as part of the above Activity:

- site establishment and disestablishment of all plant, labour and materials
- determination of the work area
- clean and maintain toilet facilities
- remove all graffiti
- empty garbage bins
- report any illegal campers (a list of campers is to be kept and forwarded at regular intervals to the Principal)
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- clean up of rest area including the disposal of any waste materials in accordance with any State Government legislation or Local Government By-laws that are applicable
- prompt notification to the Principal of illegally camped persons
- rest area shall be regularly inspected and serviced to ensure that the Restoration Standards are met at all times.

##### **Applicable Specification**

Rest area shall be regularly inspected and serviced to ensure that the restoration standards set out below are met at all times.

### Restoration Standard

All defects in rest areas shall be rectified, as follows:

- Toilet facilities - clean and functioning.
- Graffiti - removed - damaged paintwork repainted.
- Pavement defects - Note included in Sealed Roadway Maintenance.
- Vegetation activities - completed as per:
  - 401 Tractor Slashing, Rural
  - 402 Tractor Slashing, Urban
  - 404 Hand Mowing
  - 405 Clearing
  - 407 Herbicide Spraying
- Signing defects - repaired as per:
  - 424 Remove Unauthorised Signs
  - 501 Install New and/or Relocate Old Signs
  - 502 Repair and Replace Signs (excl. Guide Signs)
  - 504 Cleaning Signs
  - 506 Repair Guide Signs
- Empty garbage bins.
- Site tidy - litter removed.
- Buildings and furniture defects requiring repairs and painting - record and report for Additional Maintenance.
- Any illegal campers reported to the relevant authority.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
440	Rest Area Servicing	Dollars

### Testing Requirements

None listed.

### Particular Planning Points to Consider

1. Define the rest area for repair.
2. Check all aspects of the rest area weekly:
  - a. operation of the toilet facilities
  - b. presence of graffiti
  - c. condition of chairs, tables and fireplaces

- d. condition of access roads
  - e. presence of overhanging branches likely to fall
  - f. long grass
  - g. rest area signing
  - h. illegally camped occupants.
3. Specify and organise the appropriate plant, materials and crew (including quantities of materials).
  4. Is a specialist subcontractor required for works e.g. plumber.

#### **441 Driver Reviver Site Servicing**

##### **Description**

The servicing of all aspects (excluding pavement/seal defects) of nominated driver reviver sites controlled by the Department of Transport & Main Roads, necessary for the safety and convenience of the public and public amenity. Does not include reviver sites established in rest areas controlled by the Department; see Activity Number 440.

##### **Applicable Specification**

Driver reviver sites shall be regularly inspected and serviced to ensure that the restoration standards set out below are met at all times.

##### **Restoration Standard**

All defects in driver reviver sites shall be rectified, as follows:

- Graffiti – removed – damaged paintwork repainted.
- Pavement defects – Note included in Sealed Roadway Maintenance.
- Vegetation activities – completed as per:
  - 401 Tractor Slashing, Rural
  - 402 Tractor Slashing, Urban
  - 404 Hand Mowing
  - 405 Clearing
  - 407 Herbicide Spraying
- Signing defects – repaired as per:
  - 424 Remove Unauthorised Signs
  - 501 Install New and/or Relocate Old Signs
  - 502 Repair and Replace Signs (excl. Guide Signs)
  - 504 Cleaning Signs
  - 506 Repair Guide Signs
- Empty garbage bins.
- Site tidy – litter removed.



- Buildings and furniture defects requiring repairs and painting – record and report for Additional Maintenance.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
441	Driver Reviver Site Servicing	Dollars

**Testing Requirements**

None listed

**Particular Planning Points to Consider**

1. Define the reviver site for servicing.
2. Check all aspects of the site on a regular basis before and while in use:
  - a. presence of graffiti
  - b. condition of chairs, tables and fireplaces, if appropriate
  - c. condition of access roads
  - d. presence of overhanging branches likely to fall
  - e. long grass
  - f. signing
  - g. litter.
3. Specify and organise the appropriate plant, materials and crew (including quantities of materials).

No other details are listed in the Standard for this activity.

**449 Other Services Work****Description**

Work involved with any other roadside service type Activity undertaken in addition to that associated with Activity Nos. 440 and 441.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
449	Other Services Work	Dollars

No other details are listed in the Standard for this Activity.

**450 Call Out****Description**

All activities undertaken following a call out, by the Police or other recognised authority, to an emergency situation on the road network.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
450	After Hours Call Out Service	Dollars

No other details are listed in the Standard for this Activity.

**452 Emergency Call Out Activities****Description**

Activities undertaken following a call out by the Police or the Principal or recognised authority, or where in the opinion of the Contractor an emergency situation exists, to an emergency situation on the road Network to make safe and/or prevent further damage to the road/asset.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the rectification of the situation to make the site safe. Does not include more permanent type work. Permanent rectification is to be undertake using other scheduled Activities according to its respective priority
- the collection, removal from site and the disposal of all litter which is greater in size than 100 cm<sup>2</sup> from the sealed carriageway (particularly tyre pieces)
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable
- notification to the Principal within 24 hours of the callout.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

The Contractor shall receive and carry out instructions from the person in charge of the emergency situation.

Copies of emergency Work Orders are to accompany the progress claim for that period.

The Emergency Gang shall be:

- mobile within 15 minutes of receiving a call out, and
- on-site as soon as possible after receiving the call

#### Restoration Standard

The emergency situation shall be addressed to the satisfaction of the Police, the Principal's Delegate or other recognised authority.

Notify the Principal if major rectification is required.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
452	Emergency Call Out Activities	Dollars

#### Testing Requirements

Nil

#### Particular Planning Points to Consider

1. Specify the appropriate plant, materials and crew (including quantities of materials) required to be available for call out, and organise these.
2. Consider if a scheduled Activity is required.

#### 453 Incident Response (RAMC)

Details to be advised.

#### 455 Call Outs Required as a Result of Normal Defects

Details to be advised.

#### 460 Management of Declared Plants

##### Description

All work necessary to manage the eradication of declared plants. Includes cost of necessary traffic control.

##### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
460	Management of Declared Plants	Dollars

No other details are listed in the Standard for this Activity.

**500 ROAD FURNITURE****501 Install New and/or Relocate Existing Signs****Description**

The installation of new information, hazard, regulatory and warning signs including the supply of parts and fittings supports. Work under this Activity applies to signs with a face area of less than or equal to one (1) square metre supported on one post support. It does not include work carried out to guide signs; signs greater than one (1) square metre or signs requiring more than one post. Activity Nos.502 or 506 are to be used for the excluded works. Includes a new sign at a new location or the installation of a new sign where both the sign (i.e. face) and support of an existing sign are damaged to the extent that they cannot be repaired (i.e. a new post and sign is required).

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the supply and installation of a new sign and supports including fittings, footings etc.
- the removal of damaged components where the sign and structure are being replaced including storage and disposal (if required)
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
MRTS70	<i>Concrete</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

The design of all new footings shall be approved by the Principal's Delegate.

Notwithstanding the requirements of MRTS14 *Road Furniture*, supply of road signs and installation of road signs will be measured as specified below for the Activity item or work item. The class of the sign sheeting shall be in accordance with Clause 13 of MRTS14 *Road Furniture*.

**Restoration Standard**

The sign and its support structure shall be erected to the requirements of Specification MRTS14 and the Provision for Traffic.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
501	Install New Signs (excluding Guide Signs)	Each (Sign)

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
	Supply of road signs	m <sup>2</sup> *
	Installation of road signs * m <sup>2</sup> of sign face	m <sup>2</sup> *

**Testing Requirements**

Minimum test frequency	
<ul style="list-style-type: none"> <li>• Geometrics</li> <li>• Footings</li> <li>• diameter, depth, transverse location</li> </ul>	1 per footing
Posts – location	1 per post
Sign placement	
longitudinal placement	1 per sign
transverse location	1 per sign
height	1 per sign
orientation	1 per sign
Maximum Lot Size	A Works Order

**Particular Planning Points to Consider**

1. Define location of the new sign.
2. Check that no work is planned in the immediate future that would make the sign unnecessary in that location.
3. Specify and organise the appropriate plant, materials and crew (including quantities of material).
4. Check that the sign is in stock. If not, order one and allow for the delay in supply.
5. Make sure that the new sign location will not obscure vision.

**502 Repair Signs (excluding Guide Signs)****Description**

The repair of damaged and/or supports or replacement of signs with deteriorated faces, excluding guide signs. Includes the replacement of damaged or deteriorated facilities with new signs and/or supports at that location. Applies to signs with a face greater than one square metre or signs requiring more than one post.

## Work Operations

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the removal of the damaged or worn components including storage (if required) and disposal
- the supply and installation of a new sign and supports including fittings, footings etc., as required, in order to replace worn or damaged components
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

Notwithstanding the requirements of MRTS14 *Road Furniture*, removal and re-erection of signs, supply of road signs and installation of road signs will be measured as specified below for the Activity item or work item. The class of the sign sheeting shall be in accordance with Clause 13 of MRTS14 *Road Furniture*.

### Restoration Standard

The sign and/or its support structure shall be repaired or replaced to the standards specified in Specification MRTS14 and the *Manual of Uniform Traffic Control Devices* and the Supplementary Specification.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
502	Repair Signs (excluding Guide Signs)	Each (Sign)/Dollars

### Testing Requirements

As per Activity No. 501 where applicable.

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
	Repair of Signs	Each (Sign)
	Replacements of signs * m <sup>2</sup> of sign face	m <sup>2</sup> *

**Particular Planning Points to Consider**

1. Examine the sign and its support. Check legibility, reflectivity, location, visibility, damage and alignment. Should they be repaired or replaced? Can they be repaired off-site and stored for later use? Should they be relocated?
2. Check that no work is planned in the immediate future that could make the sign unnecessary in that location.
3. Specify and organise the appropriate plant, materials and crew (including quantities of material).
4. Can some of the stored, recovered Principal's materials be reused?
5. Check that the sign is in stock. If not, order one and allow for the delay in supply.
6. If the existing sign is a regulatory sign, the sign must be replaced immediately the damaged sign is removed.

**503 Relocate Existing Signs (excluding Guide Signs)****Description**

All work associated with the relocation of existing signs excluding guide signs as authorised by the Principal. Work under this Activity applies to signs with a face area of less than or equal to one square metre supported on one post support. It does not include work carried out to guide signs; signs greater than one square metre or signs requiring more than one post, Activity 502 is to be used for the excluded works.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the removal of existing sign, posts, footings (as required) including restoration of area to match surrounding area
- the storage for re-use of suitable components
- installation of existing sign to area authorised by Principal (includes any worn or damaged components)
- installation of new supports, footings, fittings, etc. as required
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order

- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
MRTS70	<i>Concrete</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

The design of all new footings shall be approved by the Principal.

Notwithstanding the requirements of MRTS14 *Road Furniture*, removal and re-erection of signs will be measured as specified below for the Activity item or work item.

#### Restoration Standard

The sign and its support structure shall be erected to the requirements of Specification MRTS14 and the *Manual of Uniform Traffic Control Devices*.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
503	Relocate Existing Signs (excluding guide signs)	Each (Sign)

#### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Removal and re-erection of signs* m <sup>2</sup> of sign face	m <sup>2</sup>

#### Testing Requirements

Minimum test frequency	
<b>Geometrics</b>	
Footings – diameter, depth, transverse, location	1 per footing
Posts – location	1 per post
<b>Sign placement</b>	
longitudinal placement	1 per sign
transverse location	1 per sign
height	1 per sign
orientation	1 per sign
Maximum Lot Size	A Works Order



**Particular Planning Points to Consider**

1. Define new location of the sign.
2. Check that no work is planned in the immediate future that would make the sign unnecessary in that location.
3. Specify and organise the appropriate plant, materials and crew (including quantities of material).
4. Check the legibility, reflectivity and damage to the existing sign. If condition is deficient, schedule Activity Number 502 and order another sign.
5. Make sure that the new sign location will not obscure vision.

**504 Cleaning Signs****Description**

The cleaning of sign faces to remove dirt, graffiti and other contaminants to restore the reflectivity and appearance of signs. May also require the removal of graffiti from the back of the sign.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the cleaning of the sign faces (or backs if graffiti exists) to remove dirt, graffiti and other contaminants to restore the reflectivity and appearance of signs
- includes supply of all cleaning agents and materials
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

The Contractor shall supply all cleaning agents and materials.

All foreign material shall be removed from the sign face.

Any damage caused by the cleaning process shall be repaired by the Contractor.

**Restoration Standard**

The sign face shall be cleaned in such a way that all dirt and contaminants are removed.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
504	Cleaning Signs	Each (Sign)

**Testing Requirements**

Visual inspections only to ensure the restoration standards are met.

**Particular Planning Points to Consider**

1. Define the signs for cleaning.
2. What has caused the defect? Schedule another Activity to correct this, if needed (sign too close to unsealed shoulder, etc.).
3. Specify and organise the appropriate plant, materials and crew (including the quantities of materials).

**505 Install New Guide Signs****Description**

The supply and installation of new guide signs including posts and fittings where none previously existed as authorised by the Principal. See Activity Number 501 for the installation of other sign types.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
MRTS70	<i>Concrete</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

The design of all new footings shall be approved by the Principal.

Notwithstanding the requirements of MRTS14 *Road Furniture*, removal and re-erection of signs, supply of road signs and installation of road signs will be measured as specified below for the Activity item or work item. The class of the sign sheeting shall be in accordance with Clause 13 of MRTS14 *Road Furniture*.

**Restoration Standard**

The sign and its support structure shall be erected to the requirements of Specification MRTS14 and the *Manual of Uniform Traffic Control Devices*.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
505	Install New Guide Signs	Dollars

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
	Supply of road signs	m <sup>2</sup> *
	Installation of road signs * m <sup>2</sup> of sign face	m <sup>2</sup> *

**Testing Requirements**

Minimum test frequency	
<b>Geometrics</b>	
Footings – diameter, depth, transverse, location	1 per footing
Posts – location	1 per post
<b>Sign placement</b>	
longitudinal placement	1 per sign
transverse location	1 per sign
height	1 per sign
orientation	1 per sign
Maximum Lot Size	A Works Order

**WORK PREPARATION****Plant Requirements**

Job truck

Mobile crane

Excavating equipment

**Materials**

Concrete (premix or materials)

Signs

Support structure

Miscellaneous (brackets, bolts, screws, paint)

**Manpower Requirements**

Leading hand	1
Labourers	1 - 3
Operators	as required
Traffic controllers	as required

**Average Daily Production**

Not listed.

**Particular Planning Points to Consider**

1. Define location of the new sign.
2. Check that no work is planned in the immediate future that would make the sign unnecessary in that location.
3. Specify and organise the appropriate plant, materials and crew (including quantities of material).
4. Check that the sign is in stock. If not, order one and allow for the delay in supply.
5. Make sure that the new sign location will not obscure vision.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Remove existing sign and/or support structure (if required).
4. Install support structure:
  - a. ensure support structure is firmly embedded or held.
5. Attach new or relocated sign to support structure.
6. Check the work against the restoration standard.
7. Leave work site safe and tidy:
  - a. remove all loose material.
8. Remove traffic control:
  - a. clean/repair as necessary.

### 506 *Repair Guide Signs*

#### Description

The repair of damaged or deteriorated guide sign faces and supports. Includes the replacement of damaged or deteriorated facilities with new signs and/or supports at that location. Excludes regulatory, warning and hazard signs (included under Activity No. 502)

#### Work Operations

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the removal of damaged or worn components including storage (if required) and disposal
- the supply of information to the Principal regarding the design of new signs, including survey information if breakaway bases are required
- the supply and installation of a new sign and supports including fittings, footings (including the supply, manufacture and installation of breakaway bases if required) etc., in order to replace worn or damaged components. May include the refacing of the sign if the sign is structurally intact or can be easily repaired
- all other operations included in the Applicable Specifications

- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

Notwithstanding the requirements of MRTS14 *Road Furniture*, removal and re-erection of signs, supply of road signs and installation of road signs will be measured as specified below for the Activity item or work item. The class of the sign sheeting shall be in accordance with Clause 13 of MRTS14 *Road Furniture*.

Works which require the sign face to be replaced must firstly be approved by the Principal. Signs subject to this approval shall have all damaged components collected and stored at the Contractors depot during the approval process.

#### Restoration Standard

The sign and/or its support structure shall be repaired or replaced to the standards specified in Specification MRTS 14 and the *Manual of Uniform Traffic Control Devices* and the Supplementary Specification.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
506	Repair Guide Signs	Dollars

#### Testing Requirements

As per Activity No. 501 where applicable.

#### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Repair of Signs	each
	Replacement of Signs * m <sup>2</sup> of sign face	m <sup>2</sup> *

#### Particular Planning Points to Consider

1. Examine the sign and its support. Check legibility, reflectivity, location, visibility, damage and alignment. Should they be repaired or replaced? Can they be repaired off-site and stored for later use? Should they be re-located?
2. Check that no work is planned in the immediate future that could make the sign unnecessary in that location.
3. Specify and organise the appropriate plant, materials and crew (including quantities of material).

4. Check that the sign is in stock. If not, order one and allow for the delay in supply.

### 507 Relocate Guide Signs

#### Description

All work associated with the relocation of existing guide signs as authorised by the Principal. See Activity Number 503 for the relocation of other types of signs.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
MRTS70	<i>Concrete</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

The design of all new footings shall be approved by the Principal.

Notwithstanding the requirements of MRTS14 *Road Furniture*, removal and re-erection of signs will be measured as specified below for the Activity item or work item.

#### Restoration Standard

The sign and its support structure shall be erected to the requirements of Specification MRTS14 and the *Manual of Uniform Traffic Control Devices*.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
507	Relocate Guide Signs	Dollars

#### Supplementary Work Items and Units of Measurement

Supplementary Work Item	Description	Unit of Measurement
	Removal and re-erection of sign* m <sup>2</sup> of sign face	m <sup>2</sup> *

#### Testing Requirements

Minimum test frequency	
<b>Geometrics</b>	
Footings – diameter, depth, transverse, location	1 per footing
Posts – location	1 per post
<b>Sign placement</b>	
longitudinal placement	1 per sign
transverse location	1 per sign
height	1 per sign
orientation	1 per sign
Maximum Lot Size	Works Order

## **WORK PREPARATION**

### **Plant Requirements**

Job truck

Mobile crane

Excavating equipment

### **Materials**

Concrete (premix or materials)

Signs

Support structure

Miscellaneous (brackets, bolts, screws, paint)

### **Manpower Requirements**

Leading hand	1
Labourers	1 - 3
Operators	as required
Traffic controllers	as required

### **Average Daily Production**

Not listed.

### **Particular Planning Points to Consider**

1. Define new location of the sign.
2. Check that no work is planned in the immediate future that would make the sign unnecessary in that location.
3. Specify and organise the appropriate plant, materials and crew (including quantities of material).
4. Check the legibility, reflectivity and damage to the existing sign. If condition is deficient, schedule Activity Number 506 and order another sign.
5. Make sure that the new sign location will not obscure vision.

## **WORK PROCEDURES**

### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.

3. Remove existing sign and/or support structure (if required).
4. Install support structure at new location:
  - a. ensure support structure is firmly embedded or held.
5. Attach relocated sign to support structure.
6. Check the work against the restoration standard.
7. Leave work site safe and tidy:
  - a. remove all loose material.
8. Remove traffic control:
  - a. clean/repair as necessary.

### 509 Other Sign Work

#### Description

All other signwork not covered by Activities numbered 501, 502, 503, 504, 505, 506 and 507.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
507	Relocate Guide Signs	Dollars

No other details are listed in the Standard for this Activity

### 510 Install New Guide Markers

#### Description

The supply and installation of guide markers to delineate the road alignment.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

Delineators shall conform to the requirements of AS 1906 - Part 2 - 1981 "Retro reflective Devices (non-pavement applications)" and shall be a type approved by the Principal's Delegate.

#### Restoration Standard

As per the specifications.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
510	Install New Guide Markers	Each (Marker)

### WORK PREPARATION

#### Plant Requirements

Job truck



Excavating tools

**Materials**

Guide markers as per MRTS14

Delineators (if applicable) as per MRTS14

Road-marking paint as per MRTS14

Road-marking template

**Manpower Requirements**

Leading hand	1
Labourers	1 - 3
Traffic controllers	as required

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. Define the area requiring guide markers
2. Check if other maintenance or construction is scheduled for the area of the defect
3. Specify and organise the appropriate plant, material and crew (including quantities of materials)

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Determine the location of guide markers:
  - a. spacing for curves and straights
  - b. ensure spacing is reduced sufficiently such that the next marker can be seen along winding roads.
4. Excavate for marker.
5. Install markers:
  - a. ensure marker is painted white
  - b. ensure delineators are fitted
  - c. ensure oncoming vehicles can view red delineators on left and white delineators on right

- d. backfill excavation and compact
  - e. vertical
  - f. if shoulders are unsealed, adopt 1000 mm above the level of the edge line or edge of bituminous surfacing for delineator height.
6. Mark adjacent pavement:
    - a. use template.
  7. Check the work against the restoration standard.
  8. Leave work site safe and tidy:
    - a. remove all loose material
    - b. no material to block drains.
  9. Remove traffic control:
    - a. clean/repair as necessary.

### 511 Clean and/or Paint Guide Markers

#### Description

The cleaning of guide markers to remove dirt and other contaminants and restore their white colour.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

#### Restoration Standard

The guide marker shall be cleaned such that all dirt and contaminants are removed and/or the marker repainted as specified in MRS 11.14.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
511	Cleaning and/or Painting Guide Markers	Each (Marker)

#### WORK PREPARATION

##### Plant Requirements

Job truck

Cleaning tools

##### Materials

Paint as per MRTS14

Mild detergent

### Manpower Requirements

Leading hand	1
Labourers	1 - 3
Traffic controllers	as required

### Average Daily Production

Not listed.

### Particular Planning Points to Consider

1. Define the area requiring guide markers to be cleaned.
2. Check if other maintenance or construction is scheduled for the area of the defect.
3. Specify and organise the appropriate plant, materials and crew (including quantities of materials).
4. If defective delineators are to be repaired at the same time, schedule an Activity for the work.
5. If missing guide markers are to be replaced, schedule an Activity for the work.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Treat guide markers:
  - a. if paint is in sound condition, wash markers
  - b. if paint is flaking, remove flakes by wire brushing, then paint
  - c. do not paint over delineators.
4. Missing/defective markers:
  - a. if markers are missing or delineators are defective and works are not ordered, advise supervisor.
5. Adjacent pavement markers:
  - a. ensure painted location mark exists on adjacent pavement.
6. Check the work against the restoration standard.
7. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.

8. Remove traffic control:
  - a. clean/repair as necessary.

## 512 **Repair or Replace Guide Markers**

### Description

The repair or replacement of guide markers or their respective components to restore delineation of the road alignment. Excludes raised pavement markers (see Activity No. 740).

### Work Operations

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the removal of the damaged or worn components and disposal
- the supply and installation of new components, including fittings
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

The repair of guide markers shall consist of restoring the posts to the vertical and replacing delineators, if applicable.

Delineators shall conform to the requirements of AS 1906 - Part 2 - 1981 "*Retro reflective Devices (non-pavement applications)*" and shall be a type approved by the Principal's Delegate.

### Restoration Standard

The guide marker shall be repaired or replaced to the requirements specified for road edge guide posts in MRTS14 *Road Furniture*.

The *Manual of Uniform Traffic Control Devices (Queensland)*, the Supplementary Specification and as specified above.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
512	Repair or Replace Guide Markers	Each (Marker)

**Testing Requirements**

Visual inspections to ensure the restoration standards are met.

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
	Repair guide markers	each
	Replace guide markers	each

**Particular Planning Points to Consider**

1. Define the area requiring the repair or replacement of guide markers.
2. What has caused the defect? Schedule another Activity if this is needed.
3. Check no other maintenance or permanent work is scheduled for the area of the defect.
4. Specify and organise the appropriate plant, material and crew (including quantities of materials).

**513 Replace Guide Post Delineators****Description**

The replacement of guide post delineators to restore delineation of the road alignment.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

Delineators shall conform to the requirements of AS 1906 - Part 2 - 1981 "Retro reflective Devices (non-pavement applications)" and shall be a type approved by the Principal's Delegate.

**Restoration Standard**

The delineators shall be repaired or replaced to the requirements specified in MRTS14 *Road Furniture*, the *Manual of Uniform Traffic Control Devices (Queensland)*, and as specified above.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
513	Replace Guide Post Delineators	Each (Delineator)

**WORK PREPARATION****Plant Requirements**

Job truck

Excavating tools

**Materials**

Guide markers

Delineators (if applicable)

Road-marking paint

Road-marking template

**Manpower Requirements**

Leading hand	1
Labourers	1 - 3
Traffic controllers	as required

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. Define the area requiring the repair or replacement of guide markers.
2. What has caused the defect? Schedule another Activity if this is needed.
3. Check no other maintenance or construction is scheduled for the area of the defect.
4. Specify and organise the appropriate plant, material and crew (including quantities of materials).

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Replace delineators:
  - a. remove existing markers (if applicable)
  - b. replace existing delineator if necessary
  - c. ensure oncoming vehicles can view red delineators on left and white delineators on right
  - d. backfill excavation and compact
  - e. ensure guide post is vertical
  - f. if shoulders are unsealed, adopt 1000 mm above the level of the edge line or edge of bituminous surfacing for delineator height.

4. Adjacent pavement markings ensure painted location mark exists on adjacent pavement.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
7. Remove traffic control:
  - a. clean/repair as necessary.

#### 514 Repair Guide Markers

##### Description

The repair of guide markers shall consist of restoring the posts to the vertical.

##### Applicable specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
-	<i>Standard Drawings Numbers 1356 and 1357</i>

##### Restoration Standard

The guide marker shall be repaired to the requirements specified for road edge guide posts in MRTS14 *Road Furniture* and Standard Drawings No's 1356 and 1357.

The *Manual of Uniform Traffic Control Devices (Queensland)*.

##### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
514	Repair Guide Markers	Each (Marker)

##### Testing Requirements

Minimum test frequency	
Geometrics	
Height	each post
Vertical	each post
Horizontal	each post

##### Particular Planning Points to Consider

1. Define the area requiring the repair of guide markers
2. What has caused the defect? Schedule another Activity if this is needed.
3. Check no other maintenance or permanent work is scheduled for the area of the defect.
4. Specify and organise the appropriate plant, material and crew (including quantities of materials).

**515 Replace Guide Markers****Description**

The replacement of guide markers to restore delineation of the road alignment.

**Applicable specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
-	<i>Standard Drawings Numbers 1356 and 1357</i>

Delineators shall conform to the requirements of *AS 1906 - Part 2 - "Retro-reflective devices (non-pavement applications)"* and shall be a type approved by the Principal's Delegate.

**Restoration Standard**

The guide marker shall be replaced in accordance with the requirements specified for road edge guideposts in MRTS14 *Road Furniture* and Standard Drawings No's 1356 and 1357.

The *Manual of Uniform Traffic Control Devices (Queensland)*.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
515	Replace Guide Markers	Each (Marker)

**Testing Requirements**

Minimum test frequency	
Geometrics	
Height	each post
Vertical	each post
Horizontal	each post

**WORK PREPARATION****Materials**

Guide markers as per MRTS14.

Delineators (if applicable) as per MRTS14.

**Particular Planning Points to Consider**

1. Define the area requiring the repair or replacement of guide markers.
2. What has caused the defect? Schedule another Activity if this is needed.
3. Check no other maintenance or permanent work is scheduled for the area of the defect.
4. Specify and organise the appropriate plant, material and crew (including quantities of materials).

No other details are listed in the Standard for this Activity.



**519 Other Guide Post and Marker Work****Description**

Any other work carried out to guide posts and markers not covered by Activities numbered 510, 511, 512, 513, 514 and 515.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
519	Other Guide Post and Marker Work	Dollars

No other details are listed in the Standard for this Activity.

**520 Install New Guard Rail, Barrier Furniture****Description**

The supply and installation of steel beam guard-rail, including materials, and application of all protective coatings.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

**Restoration Standard**

The guardrail shall be erected to the requirements of Specification MRTS14 and the Manual of Uniform Traffic Control Devices.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
520	Install New Guard Rail, Barrier Furniture	m

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
96340	Steel beam guardrail	m

**Testing Requirements**

Minimum test frequency	
Geometrics: • Footings • diameter, depth, transverse location	1 per footing
Placement	1 per section
longitudinal placement	1 per section
transverse location	1 per post
height	1 per 10 m

<b>Minimum test frequency</b>	
Maximum Lot Size:	A Works Order

**WORK PREPARATION****Plant Requirements**

Job truck

Post driving equipment

Excavating equipment

**Materials**

Concrete (premix or materials)

Guardrail panels and posts as per MRTS14

Miscellaneous (bolts, paint, etc.)

**Manpower Requirements**

Leading hand	1
Labourers	1 - 3
Operators	as required
Traffic controllers	as required

**Average Daily Production**

Not listed.

**Particular Planning Points to Consider**

1. Define location of the new guardrail.
2. Check that no work is planned in the immediate future that would make the guardrail unnecessary in that location.
3. Obtain appropriate standard drawing showing installation details.
4. Specify and organise the appropriate plant, materials and crew (including quantities of material).
5. Check that the guardrail is in stock. If not, order it and allow for the delay in supply.

**WORK PROCEDURES****Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.

2. Determine the work area:
  - a. from supervisor's instructions.
3. Install posts:
  - a. set out as per drawings
  - b. correct location and spacing
  - c. correct height
  - d. ensure post is firmly embedded.
4. Attach guardrail panels.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material.
7. Remove traffic control:
  - a. clean/repair as necessary.

#### **521 Clean and/or Paint Guardrail, Barrier Furniture**

##### **Description**

The cleaning of guardrail and barrier furniture to remove dirt and other contaminants and/or its painting.

##### **Applicable Specification**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>

##### **Restoration Standard**

All dirt and contaminants are removed. The painting shall conform to the requirement of MRTS14.

##### **Activity Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
521	Clean and/or Paint Guardrail, Barrier Furniture	m

##### **Testing Requirements**

None listed

##### **WORK PREPARATION**

##### **Plant Requirements**

Job truck

Water tank

Pressure sprayer

Paint sprayer

### **Materials**

Water

Mild detergent

Cleaning rags

Mineral spirits

Paint as per MRTS14

### **Manpower Requirements**

Leading hand	1
Labourers	1 - 3
Operators	as required
Traffic controllers	as required

### **Average Daily Production**

Not listed

### **Particular Planning Points to Consider**

1. Define the guardrail/barrier for cleaning/painting.
2. What has caused the defect? Schedule another Activity to correct this, if needed.
3. Make sure no other major maintenance or construction is scheduled for the area of the defect.
4. Are there any related defects, e.g. damaged guardrail?
5. Is an alternative remedy or major maintenance more appropriate?
6. Specify or mark out the length of guardrail/barrier requiring cleaning.
7. Specify and organise the appropriate plant, materials and crew (including the quantities of materials).

### **WORK PROCEDURES**

#### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Clean guardrail/barrier:
  - a. mild detergent solution
  - b. remove residual detergent with clean water
  - c. remove peeling paint to sound base.

4. Check for defects in guardrail/barrier:
  - a. if guardrail/barrier is defective or below standard advise supervisor.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material.
7. Remove traffic control:
  - a. clean/repair as necessary.

**522 Repair or Replace Guardrail, Barrier Furniture**

**Description**

The repair or replacement of damaged guardrails/barrier furniture.

**Work Operations**

The following operations shall be included as part of the above Activity:

- site establishment and disestablishment of all plant labour and materials
- establishment and disestablishment of traffic control (if required)
- determination of the work area
- the removal of the damaged or worn components including storage (if required) and disposal
- the supply and installation of new components, including fittings, footings, excavation for footings etc.
- all other operations included in the Applicable Specifications
- certification that the product meets the requirements of the Restoration Standards, including all necessary visual inspections, compliance and audit testing. This is to be attached to each Works Order
- the clean up of the site including the disposal of any waste material in accordance with any State Government legislation or Local Government By-laws that are applicable.

Where the terminal end of the guardrail is significantly damaged and requires replacing, a MELT end should be used. A joint inspection should take place on site to determine the repair required.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
	<i>Relevant Standard Drawings</i>

The work shall include:

- a) Removal of damaged guardrail components
- b) Supply of new guardrail components

- c) Straightening of existing posts
- d) Installation of new posts
- e) Erection of new guardrail
- f) Transport of old components to the nearest maintenance depot.

### Restoration Standard

The guardrail and its support structure shall be replaced to the requirements of Specification MRTS14 and the *Manual of Uniform Traffic Control Devices*.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
522	Repair or Replace of Guardrail, Barrier Furniture	Dollars

### Testing Requirements

The minimum test frequency shall be as per Activity No. 520, where applicable.

### Particular Planning Points to Consider

1. Define the guardrail/barrier for repair/replacement.
2. What has caused the defect? Schedule another Activity to correct this, if needed.
3. Make sure no other major maintenance or construction is scheduled for the area of the defect.
4. Are there any related defects.
5. Is an alternative remedy or major maintenance more appropriate?
6. Specify or mark out the length of guardrail/barrier requiring repair/replacement.
7. Specify and organise the appropriate plant, materials and crew (including the quantities of materials).

### 523 Repair Guardrail, Barrier Furniture

#### Description

All works associated with the repair of damaged roadside guardrail or other barrier furniture.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
	Relevant <i>Standard Drawings</i>

The work shall include:

- a) Removal of damaged guardrail components
- b) Repair of guardrail components
- c) Straightening of existing posts
- d) Erection of guardrail

- e) Transport of any old components to the nearest maintenance depot.

### Restoration Standard

The guardrail and its support structure shall be repaired to the requirements of Specification MRTS14 and the *Manual of Uniform Traffic Control Devices*.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
523	Repair Guardrail, Barrier Furniture	m

### Testing Requirements

Minimum test frequency	
Geometrics: • Footings • diameter, depth, transverse location	1 per footing
Placement	1 per section
longitudinal placement	1 per section
transverse location	1 per post
height	1 per 10 m

### WORK PREPARATION

#### Plant Requirements

Job truck

Excavating/post driving equipment

#### Materials

Guardrail panels and posts as per MRS14

Miscellaneous (bolts, paint, etc.)

#### Manpower Requirements

Leading hand	1
Labourers	1 - 3
Operators	as required
Traffic controllers	as required

#### Average Daily Production

Not listed.

#### Particular Planning Points to Consider

1. Define the guardrail/barrier for repair.
2. What has caused the defect? Schedule another Activity to correct this, if needed.
3. Make sure no other major maintenance or construction is scheduled for the area of the defect.
4. Are there any related defects.

5. Is an alternative remedy or major maintenance more appropriate?
6. Specify or mark out the length of guardrail/barrier requiring repair/replacement.
7. Specify and organise the appropriate plant, materials and crew (including the quantities of materials).

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Repair guardrail/barrier:
  - a. straighten posts
  - b. replace damaged components.
4. Check if cleaning or painting is required:
  - a. if required advise supervisor.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material.
7. Remove traffic control:
  - a. clean/repair as necessary.

### 524 **Replace Guardrail, Barrier Furniture**

#### Description

All works associated with the replacement of damaged roadside guardrail or other barrier furniture with new barrier materials.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
	<i>Relevant Standard Drawings</i>

The work shall include:

- a) Removal of damaged guardrail components



- b) Supply of new guardrail components
- c) Straightening of existing posts
- d) Installation of new posts
- e) Erection of new guardrail
- f) Transport of old components to the nearest maintenance depot

### Restoration Standard

The guardrail and its support structure shall be replaced to the requirements of Specification MRTS14 and the Manual of Uniform Traffic Control Devices.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
524	Replace Guardrail, Barrier Furniture	m

### Testing Requirements

The minimum test frequency shall be as per Activity No. 520, where applicable.

### WORK PREPARATION

#### Plant Requirements

Job truck

Excavating/post driving equipment

#### Materials

Guardrail panels and posts as per MRTS14

Miscellaneous (bolts, paint, etc.)

#### Manpower Requirements

Leading hand	1
Labourers	1 - 3
Operators	as required
Traffic controllers	as required

#### Average Daily Production

Not listed

#### Particular Planning Points to Consider

1. Define the guardrail/barrier for replacement.
2. What has caused the defect? Schedule another Activity to correct this, if needed.
3. Make sure no other major maintenance or construction is scheduled for the area of the defect.
4. Are there any related defects.
5. Is an alternative remedy or major maintenance more appropriate?
6. Specify or mark out the length of guardrail/barrier requiring replacement.

7. Specify and organise the appropriate plant, materials and crew (including the quantities of materials).

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Repair guardrail/barrier:
  - a. straighten posts
  - b. replace damaged components.
4. Check if cleaning or painting is required:
  - a. if required advise supervisor.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material.
7. Remove traffic control:
  - a. clean/repair as necessary.

### 525 **Replace Guardrail Delineators**

#### Description

All works associated with the replacement of defective delineators on roadside guardrail furniture.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
	<i>Relevant Standard Drawings</i>

The work shall include:

- a) Removal of damaged guardrail components, delineators
- b) Supply of new guardrail components
- c) Straightening of existing posts
- d) Installation of new components

- e) Transport of old components to the nearest maintenance depot.

### Restoration Standard

The guardrail component and its support structure shall be restored to the requirements of Specification MRTS14 and the *Manual of Uniform Traffic Control Devices*.

### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
524	Replace Guardrail, Delineators	Each (Delineator)

### Testing Requirements

Not listed.

### WORK PREPARATION

#### Plant Requirements

Job truck

#### Materials

Delineators as per MRTS14

Miscellaneous (screws, etc.)

#### Manpower Requirements

Leading hand	1
Labourers	1 - 2
Traffic controllers	as required

#### Average Daily Production

Not listed

#### Particular Planning Points to Consider

1. Define the delineators for replacement.
2. What has caused the defect? Schedule another Activity to correct this, if needed.
3. Make sure no other major maintenance or construction is scheduled for the area of the defect.
4. Are there any related defects.
5. Is an alternative remedy or major maintenance more appropriate?
6. Specify the guide marker delineators requiring replacement.
7. Specify and organise the appropriate plant, materials and crew (including the quantities of materials).

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices

- c. safety clothing
- d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Replace delineators:
  - a. straighten posts.
4. Check if cleaning or painting is required:
  - a. if required advise supervisor.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material.
7. Remove traffic control:
  - a. clean/repair as necessary.

### 530 Repair Wire Rope Barrier

#### Description

All works associated with the repair of damaged roadside wire rope barrier furniture.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
	<i>Relevant Standard Drawings</i>

The work shall include:

- a) Removal of damaged barrier components
- b) Repair of barrier components
- c) Straightening of existing posts
- d) Erection of barrier
- e) Transport of any old components to the nearest maintenance depot.

#### Restoration Standard

The wire rope barrier shall be reinstated to the manufacturer's specifications.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
530	Repair Wire Rope Barrier	m / Dollars

**Testing Requirements**

As per manufacturer's specifications and the minimum test frequency for Activity No. 520, where applicable.

No other details are included in the Standard for this Activity.

**531 Upgrade Existing Barrier End****Description**

All works associated with the upgrading of barrier ends to current standards.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
	<i>Relevant Standard Drawings</i>

The work shall include:

- a) Removal of non-standard barrier end.
- b) Replacement of barrier end with new to current standard.
- c) Transport of any old components to the nearest maintenance depot.

**Restoration Standard**

The barrier end shall be installed to the manufacturer's specifications.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
531	Upgrade Existing Barrier End	Each

**Testing Requirements**

As per manufacturer's specifications and the minimum test frequency for Activity No. 520, where applicable.

No other details are included in the Standard for this Activity.

**532 Repair Ingal Barrier****Description**

All works associated with the repair of damaged roadside Ingal barrier furniture.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
	<i>Relevant Standard Drawings</i>

The work shall include:

- a) Removal of damaged barrier components
- b) Repair of barrier components
- c) Straightening of existing posts
- d) Erection of barrier
- e) Transport of any old components to the nearest maintenance depot.

#### Restoration Standard

The Ingal barrier shall be reinstated to the manufacturer's specifications.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
532	Repair Ingal Barrier	m / Dollars

#### Testing Requirements

As per manufacturer's specifications and the minimum test frequency for Activity No. 520, where applicable.

No other details are included in the Standard for this Activity.

#### 533 Upgrade Existing Barrier

##### Description

All works associated with the upgrading of existing barrier to current standards.

##### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>
	<i>Relevant Standard Drawings</i>

The work shall include:

- a) Removal of non-standard barrier
- b) Replacement of barrier with new to current standard.
- c) Transport of any old components to the nearest maintenance depot

#### Restoration Standard

The barrier shall be installed to the manufacturer's specifications.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
533	Upgrade Existing Barrier	Linear Metres

**Testing Requirements**

As per manufacturer's specifications and the minimum test frequency for Activity No. 520, where applicable.

No other details are included in the Standard for this Activity.

**534 Repair Impact Barrier Furniture****Description**

All works associated with the repair of damaged special purpose impact roadside barrier furniture. Does not include the repair to damaged roadside barrier furniture – see Activities Nos. 522, 523, 524, 530 and 532.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

**Restoration Standard**

The impact barrier furniture shall be reinstated to the manufacturer's specifications.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
534	Repair Impact Barrier Furniture	m / Dollars

**Testing Requirements**

As per the manufacturer's specifications.

No other details are included in the Standard for this Activity.

**550 Emergency Roadside Phone Repairs****Description**

The major repair by replacement of defective roadside emergency roadside phones.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

All phones shall be checked weekly on the first and last working day of the week. Any defective phone unable to be repaired under Activity No. 551 shall be repaired by replacement immediately.

**Restoration Standard**

Emergency phones shall be operating.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
550	Emergency Roadside Phone Repairs	Each (Phone)

### Testing Requirements

None listed

### WORK PREPARATION

#### Plant Requirements

Job truck

Hand tools

#### Materials

Spare emergency phone

#### Manpower Requirements

Leading hand	1
Labourers	1 - 2

#### Average Daily Production

Not listed

#### Particular Planning Points to Consider

1. Define the location of phones to be checked.
2. Specify and organise the appropriate plant, material and crew (including quantities of materials).
3. Emergency phones are to be checked each week on a regular basis.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from Supervisor's instruction.
3. Check phone connections:
  - a. corrosion on connection
  - b. defective handpiece.
4. Remove phone (if applicable):
  - a. install spare phone
  - b. check operation by phoning.
5. Check the work against the restoration standard.



6. Leave work site safe and tidy.
7. Remove traffic control:
  - a. clean/repair as necessary.

### 551 **Emergency Roadside Phone Servicing**

#### **Description**

All works associated with the routine servicing of roadside emergency phones. Includes inspections to monitor serviceability of the phones, servicing and minor repair works to associated fittings.

#### **Applicable Specification**

All phones shall be checked weekly on the first and last working day of the week for serviceability. Any defective phone shall be serviced and repaired immediately.

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### **Restoration Standard**

Emergency phones shall be operating.

#### **Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
551	Emergency Roadside Phone Servicing	Dollars

#### **WORK PREPARATION**

##### **Plant Requirements**

Job truck (with water)

Hand tools

##### **Materials**

None listed

##### **Manpower Requirements**

Leading hand	1
Labourers	1 - 2

##### **Average Daily Production**

Not listed.

##### **Particular Planning Points to Consider**

1. Define the location of phones to be checked.
2. Specify and organise the appropriate plant, material and crew (including quantities of materials).
3. Emergency phones are to be checked each week on a regular basis.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from Supervisor's instruction.
3. Check phone connections:
  - a. routine service
  - b. corrosion on connection
  - c. defective handpiece.
4. Check operation by phoning.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy.
7. Remove traffic control:
  - a. clean/repair as necessary.

### 559 Other Furniture Repairs

#### Description

Any other work carried out to barrier furniture not covered by Activities numbered 520, 521, 522, 523, 524, 525, 530, 532, 534, 550 and 551.

#### Activity Item and Unit of Measurement

**559 Other Furniture Repairs Dollars**

No other details are listed in the Standard for this Activity.

### 600 LIGHT AND TRAFFIC SIGNALS

#### 601 Replace Traffic Signal Lamps and Clean Lanterns (Bulk Change)

#### Description

The replacement of all traffic signal lamps whether defective or otherwise and cleaning of lanterns according to a regular maintenance program (Preventative Maintenance).

#### Applicable Specifications

Reference	Title
MRTS02	Provision for Traffic

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
601	Replace Traffic Signal Lamps and Clean Lanterns (Bulk Change)	Each (Lamp)

No other details are listed in the Standard for this Activity.

**602 Replace Traffic Signals Defective Lamps and Clean Lanterns (Emergent Change)****Description**

The replacement of any defective lamps and cleaning of lanterns if necessary due to fault call-out (Response Maintenance).

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
602	Replace Traffic Signals Defective Lamps and Clean Lanterns (Emergent Change)	Each (Lamp)

No other details are listed in the Standard for this Activity.

**603 Replace Route Lighting Lamps and Clean Luminaries– (Bulk Scheduled)****Description**

The replacement of all route lighting lamps whether defective or otherwise and the cleaning of luminaries according to a regular maintenance program (Preventative Maintenance).

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
603	Replace Route Lighting Lamps and Clean Luminaries– (Bulk Scheduled)	Each (Lamp)

No other details are listed in the Standard for this Activity.

**604 Replace Route Lighting Defective Lamps and Clean Luminaries - Individual (Unscheduled)****Description**

The replacement of any route lighting defective lamps and cleaning luminaries due to a fault call-out.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
604	Replace Route Lighting Defective Lamps and Clean Luminaries – Individual (Unscheduled)	Each (Lamp)

No other details are listed in the Standard for this Activity.

**605 Clean Traffic Signal Lanterns - Scheduled (Bulk)****Description**

The cleaning of traffic signal lanterns according to a regular maintenance program (Preventative Maintenance).

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
605	Clean Traffic Signal Lanterns - Scheduled (Bulk)	Each (Lamp)

No other details are listed in the Standard for this Activity.

**606 Modify Traffic Signals - Add Lanterns****Description**

The modification of existing traffic signals or installation of extra lanterns to existing posts, poles or outreaches including:

- disconnection of existing loop wire from detector feed cable
- cutting of new loop slot
- placing of new loop wire
- filling of slot after cleaning
- jointing of new loop wire to existing detector feed cable

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
606	Modify Traffic Signals - Add Lanterns	Each (Lantern)

No other details are listed in the Standard for this Activity.

**607 Modify Traffic Signals - Remove Lanterns****Description**

The removal of lanterns from posts, poles or outreaches including:

- disconnecting lantern cable cores from final terminals
- removal of lantern including straps

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
607	Modify Traffic Signals - Remove Lanterns	Each (Lantern)

No other details are listed in the Standard for this Activity.

**608 Routine Route Lighting and Power Servicing****Description**

All routine servicing work carried out to route lights including cleaning using relamping buckets. Includes street and bridge lighting, feature lighting, lighting on pedestrian structures and crossings, and navigation lighting on bridges where applicable.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
608	Routine Route Lighting and Power Servicing	Dollars

No other details are listed in the Standard for this Activity.

**609 Route Lighting and Power, General****Description**

General work carried out to route lighting facilities. Includes supply of power, routine servicing, repairs and improvements.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
609	Route Lighting and Power, General	Dollars

No other details are listed in the Standard for this Activity.

### **610 Routine Traffic Signal Servicing**

#### **Description**

All routine traffic signal servicing work carried out to lamps including cleaning using relamping buckets. Includes routine work associated with inspection of push buttons, straightening lanterns and cleaning of field equipment.

#### **Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### **Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
610	Routine Traffic Signal Servicing	Dollars

No other details are listed in the Standard for this Activity.

### **619 Traffic Signal Work, General**

#### **Description**

General work carried out to traffic signal facilities. Includes supply of power, non routine servicing, repairs, improvements, call out activities, loop repairs, and work associated with traffic performance investigations (excludes signal co-ordination servicing).

#### **Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### **Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
619	Traffic Signal Work, General	Dollars

No other details are listed in the Standard for this Activity.

### **620 Repair Inductive Loops - Minor Damage**

#### **Description**

The disconnection and rejoining of faulty connection of loop wire to detector feed cable.

#### **Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### **Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
620	Repair Inductive Loops	Each (Joint)

No other details are listed in the Standard for this Activity.

**621 Inductive Loops (Recut Loops)****Description**

The cutting of a new detector loop including:

- disconnection of existing loop wire from detector feed cable
- cutting of new loop slot
- placing of new loop wire
- filling of slot after cleaning
- jointing of new loop wire to existing detector feed cable.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
621	Inductive Loops (Recut Loops)	Each (Joint)

No other details are listed in the Standard for this Activity.

**622 Replace PTF Controller****Description**

The removal of existing personality, the installation of a new personality, modification of interlock wiring and relays and viewing of at least one complete phase sequence of traffic signals to verify its correct operation.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
622	Replace PTF Controller	Dollars

No other details are listed in the Standard for this Activity.

**623 Replace Pedestrian Crossing Push Buttons****Description**

The replacement of standard type pedestrian push buttons with audio tactile type including driver unit.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
623	Replace Pedestrian Crossing Push Buttons	Each (Set)/Dollars

No other details are listed in the Standard for this Activity.

**624 Traffic Signal Co-ordination Servicing**

Details to be advised.

**625 Road Safety Camera Works - General**

Details to be advised.

**627 CCTV (Closed Circuit Television) Maintenance and Servicing**

Details to be advised.

**628 VMS (Variable Messaging Signs) Maintenance and Servicing**

Details to be advised.

**629 Routine Traffic Management Equipment Servicing****Description**

All works carried out for Preventative Maintenance to designated items of traffic management equipment according to a maintenance interval program.

**Applicable Specifications**

Reference	Title
MRTS02	Provision for Traffic

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
629	Routine Traffic Management Equipment Servicing	Dollars

No other details are listed in the Standard for this Activity.

**630 Accident Damage, Traffic Signals****Description**

The straightening of a bent post and/or bent foundation bolts caused by an accident.

**Applicable Specifications**

Reference	Title
MRTS02	Provision for Traffic

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
630	Accident Damage, Traffic Signals	Dollars

No other details are listed in the Standard for this Activity.



**631 Accident/ Storm Damage- Re-aim Traffic Signal Lanterns****Description**

The re-aiming of traffic signal lanterns misaligned as a result of an accident or storm.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
631	Accident/Storm Damage- Re-aim Traffic Signal Lanterns	Each Lantern / Dollars

No other details are listed in the Standard for this Activity.

**632 Accident Damage - Replace Traffic Signal Lanterns, Posts and Foundations****Description**

The replacement of any damaged traffic signal lanterns, posts and foundations caused by an accident that are unable to be satisfactorily repaired.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
632	Accident Damage – Replace Traffic Signal Lanterns, Posts and Foundations	Each (Pole) / Dollars

No other details are listed in the Standard for this Activity.

**633 Accident Damage - Replace Traffic Signal Post and Foundations and Reinstate Lanterns from Old Pole****Description**

The removal of traffic signal lanterns not damaged, replacement of accident damaged post and foundation unable to be reinstated and reinstatement of existing lanterns.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
633	Accident Damage - Replace Post and Foundations and Reinstate Lanterns from Old Pole	Dollars

No other details are listed in the Standard for this Activity.

**634 Reinstatement Damaged Route Lighting Poles and Lighting****Description**

All works associated with the reinstatement of damaged light and power pole supports and associated fittings.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
634	Reinstatement Damaged Route Lighting Poles and Lighting	Each (Pole) / Dollars

No other details are listed in the Standard for this Activity.

**635 Repair Minor Damage to Electrical Pits****Description**

All works associated with the repair of minor damage to electrical pits associated with lighting or power asset facilities.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
635	Repair Minor Damage to Electrical Pits	Each (Pit)

No other details are listed in the Standard for this Activity.

**637 Replace Damaged Electrical Pit Covers****Description**

The replacement of damaged electrical pit covers with new covers. Includes the proper disposal of the damaged cover.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
637	Replace Damaged Electrical Pit Covers	Each (Lid)

No other details are listed in the Standard for this Activity.

**638 Replace Damaged Electrical Pit Lids – Route Lightning**

Details to be advised.

**639 Replace / Repair Damaged Electrical Pits – Route Lightning**

Details to be advised.

**640 Repair Damaged Electrical Pits****Description**

The removal, disposal and replacement of damaged electrical pits including cover/s where necessary.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
640	Repair Damaged Electrical Pits	Each (Pit)

No other details are listed in the Standard for this Activity.

**641 Repaint Traffic Signal Controller****Description**

The cleaning down including removal of posters and repainting of traffic signal controller cabinet.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
641	Repaint Traffic Signal Controller (Controller)	Each

No other details are listed in the Standard for this Activity.

**642 Repaint Traffic Signal Mast Arms including Hardware****Description**

The cleaning down including removal of posters and repainting of traffic signal mast arms and associated hardware.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
642	Repaint Traffic Signal Mast Arms Including Hardware	Each (Mast Arm)

No other details are listed in the Standard for this Activity.

**643 Repaint Traffic Signal Poles including Hardware****Description**

The cleaning down including removal of posters and repainting of traffic signal posts and associated hardware.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
643	Repaint Traffic Signal Poles including Hardware	Each (Pole)

No other details are listed in the Standard for this Activity.

**644 Repaint Route Lighting Poles including Hardware**

Details to be advised.

**650 After Hours Call Out Service – Traffic Signals****Description**

The after hours inspection of a traffic signals site due to a fault report to ascertain fault and make site safe but not including remedial action required.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
650	After Hours Call Out Service – Traffic Signal	Dollars

No other details are listed in the Standard for this Activity.

**651 After Hours Call Out Service – Route Lighting Signals****Description**

The after hours inspection of a route lighting site due to a fault report to ascertain fault and make site safe but not including remedial action required.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
651	After Hours Call Out Service – Route Lighting	Dollars

No other details are listed in the Standard for this Activity.

**660 Electrical Safety Inspections – Traffic Signals****Description**

Electrical safety inspections carried out on traffic signals.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
660	Electrical Safety Inspections – Traffic Signals	Dollars

No other details are listed in the Standard for this Activity.

**661 Electrical Safety Inspections – ITS Devices Signals****Description**

Electrical safety inspections carried out on ITS devices.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
661	Electrical Safety Inspections – ITS Devices	Dollars

No other details are listed in the Standard for this Activity.

**662 Electrical Safety Inspections – Route Lighting****Description**

Electrical safety inspections carried out on route lighting.

**Applicable Specifications**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
662	Electrical Safety Inspections – Route Lighting	Dollars

No other details are listed in the Standard for this Activity.

**700 TRAFFIC DELINEATION****701 Repaint Road Centre Lines, Minor****702 Repaint Road Centre Lines, Major****703 Repaint Double Barrier Lines, Daywork****704 Paint New Yellow Line**

Details to be advised.

**705 Repaint Yellow Line**

Details to be advised.

**706 Spotting for Yellow Lines**

Details to be advised.

**707 Repaint Unbroken Road Centre Lines – 150 mm w**

Details to be advised.

**709 Repaint Double Barrier Line, General****710 Repaint Road Edge Lines, Minor****711 Repaint Road Edge Lines, Major****712 Repaint Edge Line - 100mm Width****713 Repaint Edge Line - 150mm Width****714 Repaint Unbroken Lane Line, General****719 Repaint Single Barrier Line, General****720 Repaint Single Broken Lines****721 Repaint Barrier Broken Lines****722 Repaint Broken Lane Line, General****723 Repaint Continuity Line, General****724 Repaint Broken Line, General****725 Repaint 150mm Outline, General****Description**

All work associated with the renovation of road line marking. Includes sweeping, spotting, symbolising and repainting.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS45	<i>Road Surface Delineation</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

**Restoration Standard**

The road marking shall be reinstated to the standard for the original marking and in accordance with the specifications and *Manual of Uniform Traffic Control Devices*.

**Activity Items and Units of Measurement**

Item	Description	Unit of Measurement
701	Repaint Road Centre Lines, Minor	Line km
702	Repaint Road Centre Lines, Major	Line km
703	Repaint Double Barrier Line - Daywork	Line km
709	Repaint Double Barrier Line, General	Line km
710	Repaint Road Edge Lines, Minor	Line km
711	Repaint Road Edge Lines, Major	Line km
712	Repaint 100mm Edge Line - 100 mm width	Line km
713	Repaint Edge Line - 150 mm width	Line km
714	Repaint Unbroken Lane Line, General	Line km
719	Repaint Single Barrier Line, General	Line km
720	Repaint Single Broken Lines	Line km
721	Repaint Barrier Broken Lines	Line km
722	Repaint Broken Lane Line, General	Line km
723	Repaint Continuity Line, General	Line km
724	Repaint Broken Line, General	Line km
725	Repaint 150 mm Outline, General	Line km

**Testing Requirements**

Minimum test frequency	
Line Width	1 per Lot
Line Thickness	1 per Lot

**WORK PREPARATION****Plant Requirements**

Job truck

Line marking machine

Line marking applicators, as appropriate

Spray gun

Thermoplastic machine

**Materials**

Paint

Thinners

Kerosene/mineral spirits

Detergent

Water

Glass beads

Extra traffic cones

**Manpower Requirements**

Leading hand	1
Skilled Applicator	1
Labourers	1 - 2
Operators	as required
Traffic controllers	as required

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. Specify the type of line marking and the plant and materials required for it and organise these (consider traffic volume, cost, life, condition of existing surface and time available to do the work).
2. Specify how to clean existing surface, if required.
3. Consider changes to existing marking (Requires RPEQ's approval).
4. Consider delaying this Activity if maintenance or construction is scheduled for the area within the next three months.

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.



3. Clean the pavement in the work area as required:
  - a. sweep the pavement
  - b. use kerosene or mineral spirits on oil stains, then wash with mild detergent.
4. Spot where line have been obliterated.
5. Apply marking material including beads.
6. Check the work against the restoration standard.
7. Check markings are dry.
8. Leave work site safe and tidy:
  - a. remove all loose material.
9. Remove traffic control:
  - a. clean/repair as necessary.

### 729 Urban Line Marking - Minor

#### Description

All works associated with minor marking of lines and markings in an urban built-up environment.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS45	<i>Road Surface Delineation</i>

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
729	Urban Line Marking - Minor	m <sup>2</sup>

No other details are listed in the standard for this Activity.

### 730 Repaint Lateral Markings

#### Description

All work associated with the renovation of lateral road line marking. Includes sweeping, spotting, symbolising and repainting.

#### Applicable specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS45	<i>Road Surface Delineation</i>

**Activity Items and Units of Measurement**

Item	Description	Unit of Measurement
730	Repaint Lateral Markings	m <sup>2</sup>

No other details are listed in the Standard for these Activities.

**731 Remark Road Markings****Description**

The renovation or replacement of road marking. Includes transverse lines, chevrons, arrows, legends and painted medians.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
MRTS45	<i>Road Surface Delineation</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

**Restoration Standard**

The road marking shall be reinstated to the standard for the original marking and in accordance with the specifications and Manual of Uniform Traffic Control Devices.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
731	Remark Road Markings	m <sup>2</sup>

**Testing Requirements**

Minimum test frequency	
Line Width	1 per Lot
Line Thickness	1 per Lot

Lot definition being one Works order

**WORK PREPARATION****Plant Requirements**

Job truck

Line marking applicators, as appropriate

Spray gun

Pedestrian line marking machine

Thermoplastic machine

**Materials**

Paint

Thinners

Kerosene/mineral spirits

Detergent

Water

Thermoplastics

Glass beads

Extra traffic cones

**Manpower Requirements**

Leading hand	1
Skilled Applicator	1
Labourers	1 - 2
Traffic controllers	as required

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. Specify the type of marking and the plant and materials required for it and organise these (consider traffic volume, cost, life, condition of existing surface and time available to do the work).
2. Specify how to clean existing surface.
3. Consider changes to existing marking. Requires engineer's approval.
4. Consider delaying this Activity if maintenance or construction is scheduled for the area within the next three months.

**WORK PROCEDURES**

**Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Clean the pavement in the work area:
  - a. sweep the pavement with hard broom
  - b. use kerosene or mineral spirits on oil stains, then wash with mild detergent.

4. Check dimensions of existing markings or set out new markings:
  - a. use templates, if applicable.
5. Apply marking material including beads.
6. Check the work against the restoration standard.
7. Check markings are dry.
8. Leave work site safe and tidy:
  - a. remove all loose material.
9. Remove traffic control:
  - a. clean/repair as necessary.

### 735 **Thermoplastic Line Marking**

#### Description

All works associated with the use of thermoplastic material to mark new lines or markings or re-treat deteriorated existing lines or markings.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS45	<i>Road Surface Delineation</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

#### Restoration Standard

The road marking shall be reinstated to the standard for the original lines or marking and/or in accordance with the specifications and Manual of Uniform Traffic Control Devices.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
735	Thermoplastic Line Marking	m <sup>2</sup>

#### Testing Requirements

Minimum test frequency	
Line Width	1 per Lot
Line Thickness	1 per Lot

Lot definition being one Works Order.

#### WORK PREPARATION

##### Plant Requirements

Job truck

Thermoplastic machine

### Materials

Kerosene/mineral spirits

Detergent

Water

Thermoplastics

Glass beads

Extra traffic cones

### Manpower Requirements

Leading hand	1
Skilled Applicator	1
Labourers	1 - 2
Operators	as required
Traffic controllers	as required

### Average Daily Production

Not detailed

### Particular Planning Points to Consider

1. Specify the location of line marking and the plant and materials required for it and organise these.
2. Specify how to clean existing surface if required.
3. Consider changes to existing marking (requires RPEQ's approval).
4. Consider delaying this Activity if maintenance or permanent work is scheduled for the area within the next three months.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Clean the pavement in the work area as required:
  - a. sweep the pavement
  - b. use kerosene or mineral spirits on oil stains, then wash with mild detergent.
4. Spot for new lines or where line have been obliterated.

5. Apply marking material including beads.
6. Check the work against the restoration standard.
7. Leave work site safe and tidy:
  - a. remove all loose material.
8. Remove traffic control:
  - a. clean/repair as necessary.

### 736 Audio Tactile Line Marking (ATLM)

#### Description

All works associated with the use of audiotactile materials to mark new lines or markings or retreat existing lines or markings.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS45	<i>Road Surface Delineation</i>

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
736	Audiotactile Linemarking	Line Kms

No other details are listed in the standard for this Activity.

### 740 Raised Pavement Markers

#### Description

The installation of new or replacement of missing raised pavement markers. Includes the supply of markers.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>
MRTS45	<i>Road Surface Delineation</i>
-	<i>Manual of Uniform Traffic Control Devices (Queensland)</i>

#### Restoration Standard

The raised pavement markers shall be installed replaced to the requirements of Specification MRTS14 and the *Manual of Uniform Traffic Control Devices*.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
740	Raised Pavement Markers	Each (Marker)

### Testing Requirements

None listed

### WORK PREPARATION

#### Plant Requirements

Job truck

#### Materials

Pavement markers

Epoxy adhesive

Kerosene/mineral spirits

Detergent

Water

#### Manpower Requirements

Leading hand	1
Skilled Applicator	1
Labourers	1 - 2
Traffic controllers	as required

#### Average Daily Production

Not listed

#### Particular Planning Points to Consider

1. Specify the type of marker and the plant and materials required for it and organise these (consider traffic volume, cost, life, condition of existing surface and time available to do the work).
2. Specify how to clean existing surface.
3. Consider changes to existing marking (requires RPEQ's approval).
4. Consider delaying this Activity if maintenance or construction is scheduled for the area within the next three months.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.

3. Clean the pavement in the work area:
  - a. sweep the pavement with hard broom
  - b. use kerosene or mineral spirits on oil stains, then wash with mild detergent.
4. Set out new markings.
5. Apply markers:
  - a. adhesive provides a flat surface and fully supports marker
  - b. press marker so adhesive squeezes out all round.
6. Check the work against the restoration standard.
7. Leave work site safe and tidy:
  - a. remove all loose material.
8. Remove traffic control:
  - a. clean/repair as necessary.

#### **745 Remove Unwanted Road Lines**

##### **Description**

All work associated with the removal of unwanted road lines.

##### **Applicable Specification**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS45	<i>Road Surface Delineation</i>

The road line shall be removed to the requirements set out in the Works Order.

##### **Restoration Standard**

The road line shall be ground off or otherwise treated so that the treated area will not be mistaken for a line.

##### **Activity Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
745	Remove Unwanted Road Lines	m <sup>2</sup>

##### **Testing Requirements**

None listed

##### **WORK PREPARATION**

##### **Plant Requirements**

Job truck

Grinding machine

##### **Materials**

None detailed



### Manpower Requirements

Leading hand	1
Operator	1
Labourers	1 - 2
Traffic controllers	as required

### Average Daily Production

Not Listed.

### Particular Planning Points to Consider

1. Specify the type and location of line to be removed and the plant and materials required for it and organise these.
2. Consider the width of treatment required to avoid the treatment area being mistaken for a line.
3. Consider delaying this Activity if maintenance or permanent work is scheduled for the area within the next three months.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Determine width of surface to be ground:
  - a. from supervisor's instructions.
4. Grind the surface to remove the line.
5. Remove any loose material from the road surface.
6. Check the work against the restoration standard.
7. Leave work site safe and tidy:
  - a. remove all loose material.
8. Remove traffic control:
  - a. clean/repair as necessary.

### **750 Remove Unwanted Markings**

#### Description

All works associated with the removal of unwanted road markings.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS45	<i>Road Surface Delineation</i>

The marking shall be removed to the requirements set out in the Works Order.

**Restoration Standard**

The marking shall be ground off or otherwise treated so that the treated area will not be mistaken for a marking.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
750	Remove Unwanted Markings	m <sup>2</sup>

**Testing Requirements**

None listed.

**WORK PREPARATION****Plant Requirements**

Job truck

Grinding machine

**Materials**

None detailed

**Manpower Requirements**

Leading hand	1
Operator	1
Labourers	1 - 2
Traffic controllers	as required

**Average Daily Production**

Not Listed.

**Particular Planning Points to Consider**

1. Specify the type and location of marking to be removed and the plant and materials required for it and organise these.
2. Consider the width of treatment required to avoid the treated area being mistaken for a marking.
3. Consider delaying this Activity if maintenance or permanent work is scheduled for the area within the next three months.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Determine width of surface to be treated:
  - a. from supervisor's instructions.
4. Grind the surface or otherwise treat to remove the marking.
5. Remove any loose material from the road surface.
6. Check the work against the restoration standard.
7. Leave work site safe and tidy:
  - a. remove all loose material.
8. Remove traffic control:
  - a. clean/repair as necessary.

### 759 *Line Marking, General*

#### Description

Any linemarking works not covered by Activities numbered 701, 702, 703, 709, 710, 711, 712, 713, 714, 719, 720, 721, 722, 723, 724, 725, 729, 730, 731, 735, 736, 740, 745 and 750.

#### Applicable Specifications

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS45	<i>Road Surface Delineation</i>

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
759	Line Marking, General	Dollars

No other details are listed in the standard for this Activity.

### 760 *Paint New Lateral Markings, Bikeways*

Details to be advised.

**770 Retro Reflectivity Testing**

Details to be advised.

**800 STRUCTURES****809 Routine Bridge Servicing (RAMC)**

Details to be advised.

**815 Replace / Repair Expansion Joints (Concrete)****Description**

All works associated with the repair or replacement of missing or damaged bridge expansion joints of concrete deck bridge types to provide an adequate seal to protect the bridge components from the ingress of moisture and foreign material.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
815	Replace/Repair Expansion Joints (Concrete)	m

No other details are listed in the Standard for this Activity.

**819 Bridgework, Other Structural (Concrete)****Description**

All other structural works carried out to concrete components of bridges not covered by Activities numbered 801, 815 and 851.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
819	Bridgework, Other Structural (Concrete)	Dollars

No other details are listed in the Standard for this Activity.

**820 Clean / Repaint Steel Elements****Description**

The preparation by appropriate cleaning and repainting of steel elements of bridge structures.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
820	Clean/Repaint Steel Elements	Dollars

No other details are listed in the Standard for this Activity

**822 Repair Minor Damage to Steel Elements****Description**

All works associated with the repair of minor damage to steel elements of bridge structures.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
822	Repair Minor Damage to Steel Elements	Dollars

No other details are listed in the Standard for this Activity.

**823 Replace / Repair Expansion Joints (Steel)****Description**

All works associated with the repair or replacement of missing or damaged expansion joints of bridges of predominately steel construction to provide an adequate seal to protect the bridge components from the ingress of moisture and foreign materials.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
823	Replace/Repair Expansion Joints (Steel)	m

No other details are listed in the Standard for this Activity.

**829 Bridgework, Other Structural (Steel)****Description**

Any other structural work carried out to steel elements of bridge structures not covered by Activities numbered 822 and 823.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
829	Bridgework, Other Structural (Steel)	Dollars

No other details are listed in the Standard for this Activity.

**833 Reinstatement Timber Piles****Description**

All works associated with the removal and replacement or splicing of deteriorated unserviceable timber piles of bridge structures.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
833	Reinstatement Timber Piles	Metres Length/Dollars

No other details are listed in the Standard for this Activity.

**834 Repair / Replace Timber Corbels****Description**

The removal and replacement or repair of any timber bridge corbel determined to be in an unserviceable structural condition.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
834	Repair/Replace Timber Corbels	Each (Corbel)

No other details are listed in the Standard for this Activity.

**835 Repair / Replace Timber Headstocks**

Details to be advised.

**836 Replace Timber Girders****Description**

The removal and replacement of any timber bridge girder in an unserviceable structural condition.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
836	Replace Timber Girders	Each (Girder)

No other details are listed in the Standard for this Activity.

**837 Replace Deck Planks with New Planks****Description**

The removal and replacement of any timber bridge deck plank in an unserviceable structural condition.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
837	Replace Deck Planks with New Planks	square metres

No other details are listed in the Standard for this Activity.

**838 Repair / Replace Kerbs****Description**

The removal and replacement or repair of any timber or concrete bridge kerb determined to be in a dangerous or unserviceable structural condition.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
838	Repair/Replace Kerbs	Linear Metres

No other details are listed in the Standard for this Activity.

**849 Bridgework, Other Structural (Timber)****Description**

All other structural works carried out to timber components of bridges not covered by Activities numbered 803, 833, 834, 835, 836, 837, 838 and 852.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
849	Bridgework, Other Structural (Timber)	Dollars

No other details are listed in the Standard for this Activity.

**850 Replace / Repair Relieving Slabs****Description**

All works associated with the repair or replacement of cracked and unserviceable relieving slabs to bridge structures.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
850	Replace/Repair Relieving Slabs	Dollars/Cubic Metres

No other details are listed in the Standard for this Activity.

**851 Repair Spalled and Cracked Structural Concrete Elements (Concrete Bridges)****Description**

All works associated with the refurbishment of spalled and cracked concrete sections on bridges of predominantly concrete construction.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
851	Repair Spalled and Cracked Structural Concrete Elements (Concrete Bridges)	Dollars

No other details are listed in the Standard for this Activity.

**852 Repair Spalled and Cracked Structural Concrete Elements (Timber Bridges)****Description**

All works associated with the refurbishment of spalled and cracked concrete elements on bridges of predominately timber construction. Includes concrete kerbs and rail supports.



**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
852	Repair Spalled and Cracked Structural Concrete Elements (Timber Bridges)	Dollars

No other details are listed in the Standard for this Activity

**853 Repair Spalled and Cracked Structural Concrete Elements (Steel Bridges)****Description**

All works associated with the refurbishment of spalled and cracked concrete elements on bridges of predominantly steel construction. Includes concrete kerbs and rail supports.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
853	Repair Spalled and Cracked Structural Concrete Elements (Steel Bridges)	Dollars

No other details are listed in the Standard for this Activity

**855 Repair / Replace Batter Protection****Description**

All works associated with the reinstatement replacement of deteriorated or damaged bridge batter protection works of bridge structures

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
855	Repair/Replace Batter Protection	Dollars

No other details are listed in the Standard for this Activity.

**859 Bridgework, General****Description**

All general works of a non-routine nature carried out to timber, steel and concrete bridge components not covered by Activity Number 809.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
859	Bridgework, General	Dollars

No other details are listed in the standard for this Activity.

**860 Routine Grid Servicing****Description**

All work of a routine nature necessary to maintain a sound and effective grid. Includes de-silting of the opening and up keep of grid hazard signs.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
860	Routine Grid Servicing	Dollars

No other details are listed in the Standard for this Activity

**861 Repair or Replace Grids****Description**

All works associated with the repair of defective grids. Includes structural repair to rails and bearers and may involve complete structural replacement.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>

**Restoration Standard**

The grid shall be repaired to the standards specified in the approved repair method or replaced as shown in the Standard Drawings and specified in MRTS14.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
861	Repair or Replace Grids	Dollars

**Supplementary Work Items and Units of Measurement**

Supplementary Work Item	Description	Unit of Measurement
	Grid: repair	lump sum
912100	Provision for traffic	lump sum
963100	Grid: removal of the existing structure	each
963200	Grid: excavation work	m <sup>3</sup>
963300	Grid: construction	each

**WORK PREPARATION****Plant Requirements**

Job truck

Bobcat/backhoe/loader

**Materials**

Grid components as per the Standard Drawings

Concrete as per the Standard Drawings and

MRTS70

**Manpower Requirements**

Leading hand	1
Labourers	2
Operator	1
Traffic controllers	2

**Average Daily Production**

Not listed

**Particular Planning Points to Consider**

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the grids requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

## WORK PROCEDURES

### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights traffic control devices
  - b. safety clothing
  - c. vehicle position.
2. Determine grids to be repaired:
  - a. from supervisor's instructions.
3. Repair grid:
  - a. in accordance with details in works order.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material
  - b. no material to block drains.
6. Remove traffic control:
  - a. clean/repair as necessary.

### **862 Widen / Replace Narrow Grids**

#### Description

Widening or replacement of grid structures due to inadequacy or poor structural condition. Work includes removal and disposal of old grid and construction of new grid including fencing requirements where appropriate.

#### Applicable Specification

Reference	Title
MRTS02	<i>Provision for Traffic</i>

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
862	Widen / Replace Narrow Grids	Dollars

No other details are listed in the Standard for this Activity.

### **863 Clean / Maintain Drainage Components**

Details to be advised.

### **864 Tighten Existing Bolts – Steel and Concrete Structure**

Details to be advised.

**865 Rail Crossing Servicing****Description**

All works of a routine nature necessary to maintain a sound crossing. Includes pavement repairs where the defect has resulted from the presence of the rails.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
865	Rail Crossing Servicing	Dollars

No other details are listed in the standard for this Activity.

**870 Repair Noise Barriers****Description**

All work associated with the repair of roadside noise barrier fencing.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>

The work shall include:

1. Removal of barrier fencing components
2. Supply of new barrier fencing components
3. Straightening of existing posts
4. Installation of new posts
5. Erection of new panels
6. Transport of old components to the nearest maintenance depot.

**Restoration Standard**

The fencing shall be repaired to the requirements set out in the Works Order.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
870	Repair Noise Barriers	Dollars

**Testing Requirements**

Nil

## **WORK PREPARATION**

### **Plant Requirements**

Job truck

Excavating/post driving equipment

### **Materials**

Panels and posts

Miscellaneous (bolts, paint, etc.)

### **Manpower Requirements**

Leading hand	1
Labourers	1 - 3
Operator	as required
Traffic controllers	as required

### **Average Daily Production**

Not listed

### **Particular Planning Points to Consider**

1. Define the fencing for repair.
2. What has caused the defect? Schedule another Activity to correct this, if needed.
3. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Specify or mark out the length of fencing requiring repair.
7. Specify and organise the appropriate plant, materials and crew (including the quantities of materials).

## **WORK PROCEDURES**

### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Repair barrier fencing:
  - a. straighten posts
  - b. replace damaged components.

4. Check if painting is required:
  - a. if required advise supervisor.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material.
7. Remove traffic control:
  - a. clean/repair as necessary.

### **875 Repair Restraining Structures - Gabions, Reinforced Walls**

#### **Description**

All work associated with the repair of restraining structures such as gabions and reinforced walls.

#### **Applicable Specifications**

<b>Reference</b>	<b>Title</b>
MRTS02	<i>Provision for Traffic</i>
MRTS03	<i>Drainage, Retaining Structures and Protective Treatments</i>
MRTS70	<i>Concrete</i>

#### **Restoration Standard**

The restraining structures shall be repaired to the standards specified for new work in Specification MRTS03 and MRTS70. All excess material shall be disposed of outside the road reservation.

#### **Activity Item and Unit of Measurement**

<b>Item</b>	<b>Description</b>	<b>Unit of Measurement</b>
875	Repair of Restraining Structures - Gabions, Reinforced Walls	m <sup>2</sup>

#### **Testing Requirements**

<b>Minimum test frequency</b>	
Concrete - Slump Q451A	< 4 m3 No requirement
Compressive Strength Q455	> 4 m3 As per MRS70
<b>Geometrics</b>	
Specified Tolerances	As per MRTS03
Maximum Lot Size	Works Order

#### **WORK PREPARATION**

##### **Plant Requirements**

Job truck

Bobcat/backhoe/loader

Concrete saw/pavement breaker

### Materials

Gabions as per MRTS03

Rock as per MRTS03

Concrete or concrete material as per MRTS70

### Manpower Requirements

Leading hand	1
Labourers	2
Operator	1
Traffic controllers	2

### Average Daily Production

Not listed

### Particular Planning Points to Consider

1. What has caused the defect? Schedule another Activity to correct this, if needed.
2. Make sure no other major maintenance or construction is scheduled for the area of the defect.
3. Are there any related defects?
4. Is an alternative remedy or major maintenance more appropriate?
5. Specify or mark out the area requiring repair.
6. Determine repairs required and obtain supervisor's approval of repairs and repair methods.
7. Specify the appropriate plant, materials and crew (including quantities of materials) and organise these.

### WORK PROCEDURES

#### Sequential Steps and Check Points

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine area to be repaired:
  - a. from supervisor's instructions.
3. Repair the gabion or reinforced concrete wall:
  - a. in accordance with details in the specifications and works order.
4. Check the work against the restoration standard.
5. Leave work site safe and tidy:
  - a. remove all loose material.



6. Remove traffic control:
  - a. clean/repair as necessary.

**876 Footway Deck Wearing Surface Repairs (Manual or Mechanical)**

Details to be advised.

**877 Repair Scouring/Deposition of Waterway Material**

Details to be advised.

**878 Remove Flood Debris from Waterway**

Details to be advised.

**879 Maintain Clear Waterway**

Details to be advised.

**880 Repair Roadside Fences****Description**

All work associated with the repair of roadside fencing.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>
MRTS14	<i>Road Furniture</i>

The work shall include:

1. Removal of fencing components
2. Supply of new fencing components
3. Straightening of existing posts
4. Installation of new posts
5. Erection of new fencing
6. Transport of old components to the nearest maintenance depot

**Restoration Standard**

The fencing shall be repaired to the requirements set out in the Works Order.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
880	Repair Roadside Fences	m

**Testing Requirements**

None listed

## **WORK PREPARATION**

### **Plant Requirements**

Job truck

Excavating/post driving equipment

### **Materials**

Wire, panels and posts

Miscellaneous (bolts, paint, etc.)

### **Manpower Requirements**

Leading hand	1
Labourers	1 - 3
Operator	as required
Traffic controllers	as required

### **Average Daily Production**

Not listed

### **Particular Planning Points to Consider**

1. Define the fencing for repair.
2. What has caused the defect? Schedule another Activity to correct this, if needed.
3. Make sure no other major maintenance or permanent works is scheduled for the area of the defect.
4. Are there any related defects?
5. Is an alternative remedy or major maintenance more appropriate?
6. Specify or mark out the length of fencing requiring repair.
7. Specify and organise the appropriate plant, materials and crew (including the quantities of materials).

## **WORK PROCEDURES**

### **Sequential Steps and Check Points**

1. Establish traffic control - See Roadworks Signing Guide:
  - a. vehicle warning lights
  - b. traffic control devices
  - c. safety clothing
  - d. vehicle position.
2. Determine the work area:
  - a. from supervisor's instructions.
3. Repair fencing:
  - a. straighten posts
  - b. replace damaged components.

4. Check if painting is required:
  - a. if required advise supervisor.
5. Check the work against the restoration standard.
6. Leave work site safe and tidy:
  - a. remove all loose material.
7. Remove traffic control:
  - a. clean/repair as necessary.

**882 Maintain Existing Waterway Protection**

Details to be advised.

**883 Seal Gaps Between Culvert Elements / Wingwalls**

Details to be advised.

**884 Repair Handrail / Barrier / Guardrail Furniture**

Details to be advised.

**885 Make Safe Accident Damage to Handrail / Barrier / Guardrail**

Details to be advised.

**886 Install / Maintain Bird Control Fencing**

Details to be advised.

**887 Place Emergency Propping**

Details to be advised.

**888 Clean Aggressive Contamination from Steel Girder**

Details to be advised.

**889 Emergency Pavement Repairs on Structures (<100**

Details to be advised.

**890 Service Passenger Facilities**

Details to be advised.

**891 Repair Passenger Facilities**

Details to be advised.

**892 Tunnel Maintenance / Servicing - General**

Details to be advised.

**899 Other Miscellaneous Structure Work**

**Description**

Any other work carried out to miscellaneous structures not covered by Activities numbered 860, 861, 862, 865, 870, 875, 880, 890 and 891.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
899	Other Miscellaneous Structure work	Dollars

No other details are listed in the Standard for this Activity.

**900 OVERHEADS****901 RMPC Joint Maintenance Requirement Assessment****Description**

The joint Departmental/Contractor assessment of the network for the purpose of determining the extent of Activities required for the forthcoming Contract Period.

**Applicable Specification**

Reference	Title
MRTS02	<i>Provision for Traffic</i>

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
901	RMPC Joint Maintenance Requirement Assessment	Dollars

No other details are listed in the Standard for this Activity.

**902 Open Tender Establishment Setup Works**

Details to be advised.

**903 Inspections for Forward List of Work**

Details to be advised.

**904 Asset Management Fee**

Details to be advised.

**905 Community Engagement – Program Maintenance**

Details to be advised.

**906 Community Engagement - Rehabilitation**

Details to be advised.

**907 Prepare Cultural Heritage Management Plan**

Details to be advised.

**908 Implement, Monitor and Maintain Cultural Heritage Management Plan**

Details to be advised.

## 910 Preparation of Environmental Management Plan (Maintenance)

### Description

All works associated with the preparation and submission (including any amendments required for approval) of an Environmental Management Plan (Maintenance), EMP (Maintenance) for the Contract.

The EMP (Maintenance) must clearly indicate the Contractor's strategy and responsibility for environmental management, the name and qualifications of the Contractor's environmental representative and include details of the Contractor's procedures for monitoring and review of the EMP (Maintenance).

It should also detail the method for providing advice to the Principal and the Department of Environment or other relevant State or Federal Departments regarding incidents causing "material" or "serious environmental harm" (Environmental Protection Act, 1994) as a result of works carried out.

The content of the Contractor's EMP (Maintenance) shall be in accordance with the Department's publication "Road Project Environmental Management Processes Manual 1997", and shall as a minimum include:

- Statement of Environmental Management Policy
- Procedures in respect of:
  - erosion and sedimentation control
  - minimising the impact on flora and fauna
  - waste management and contamination of land and waterways (including recycling and spills)
  - cultural heritage
  - control of noise, dust, vibrations and other nuisances
  - chemical handling and storage (including bituminous materials and herbicides)
  - solvent spillage
  - integration of environmental considerations into water sourcing and disposal
  - specific environmental measures as nominated by the Principal
  - monitoring, auditing and corrective action
  - environmental training
  - environmental complaints and incident reporting
  - emergency response procedures

Procedures developed by the Contractor to minimise or mitigate potential environmental harm when undertaking maintenance activities are to be included in the Contractor's Work Instructions and/or Quality Manual, and should include:

- Identification of Activities/Locations on the Site that have the potential to cause environmental harm
- Assessment of the rest/significance of the potential environmental harm of these activities generally and at specific locations.
- Where there is significant risk of potential environmental harm the Contractor must;
- Adapt work procedures for identified activities to minimise potential environmental impacts,

- Develop location specific procedures, where warranted, in accordance with Departmental Standards or as agreed by the Principal and the Contractor.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
910	Preparation of Environmental Management Plan (Maintenance)	Dollars

No other details are listed in the Standard for this Activity.

#### **911 Implementation, Monitoring and Maintenance of Environmental Management Plan (Maintenance)**

##### Description

All works associated with the implementation, monitoring and updated of Environmental Management Plan (Maintenance), over the Contract Period.

The following operations shall be included as part of this Activity:

- Obtaining approval for all Environmentally Relevant Activities (ERAs) prescribed by the Environmental Protection Act and Regulations for the work site
- All reasonable environmental performance against objectives and standards, and
- Monitoring and reporting of environmental performance against objectives and standards, and
- Payment of all fees due under all Acts, Regulations and By-laws.

#### Activity Item and Unit of Measurement

Item	Description	Unit of Measurement
911	Implementation, Monitoring and Maintenance of Environmental Management Plan (Maintenance)	Dollars

No other details are listed in the Standard for this Activity.

#### **912 Payment of Permits and Fees (Environmental)**

##### Description

The reimbursement of permits and fees paid by the Contractor as a result of compliance with the applicable Federal, State and Local Government Legislation.

##### Work Operations

The following operations shall be included as part of the above Activity:

- payment of the fees/permits by the Contractor
- the provision of evidence for payment of the above fees/permits (including a copy of the permit etc.) to the Principal for reimbursement of the fee/permit amount
- demonstrated evidence that the requirements in relation to the receipt of permits/fees as detailed in the EMP Maintenance have been complied with
- all other operations included in the Applicable Specifications.

Where clarification of details in relation to the above Work Operations is required, the following Applicable Specifications provide additional requirements for compliance in these areas.

**Applicable Specifications**

All relevant legislative Acts and documents applicable to the obtaining of permits and fees.

**Restoration Standards**

Documented evidence of the payment of permits/fees is to accompany any claim for reimbursement.

**Activity Item and Unit of Measure**

Item	Description	Unit of Measurement
912	Payment of Fees/Permits (Environmental)	Dollars

**Testing Requirements**

Nil.

**Particular Points to Consider**

- As part of the stewardship role, the Contractor shall notify the Principal of the relevant fees/permits necessary for attainment prior to applying and paying the fees/permits.

**920 Electricity Supply, Traffic Signals****Description**

The cost incurred for electricity charges for the running of traffic signals.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
920	Electricity Supply, Traffic Signals	Dollars

No other details are listed in the Standard for this Activity.

**921 Electricity Supply, Lighting****Description**

The cost of electricity supply incurred from a power authority for the operation of lighting asset facilities.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
921	Electricity Supply, Lighting	Dollars

No other details are listed in the Standard for this Activity.

**922 Phone Charges, Traffic Signals****Description**

The costs incurred for phone charges for Traffic Area Response System connection from controllers to node base.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
922	Phone Charges, Traffic Signals	Dollars

No other details are listed in the Standard for this Activity.

**923 Phone Charges - Traffic Signal Coordination****Description**

The costs incurred for phone charges for Traffic Area Response System connection from controllers to node base.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
923	Phone Charges, Traffic Signals Co-ordination	Dollars

No other details are listed in the Standard for this Activity.

**930 Modify and Digitise Computerised As Constructed Plans****Description**

The updating of existing drawings to document as constructed changes to the design including the obtaining of electronic file from original source of design.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
930	Modify and Digitise Computerised As Constructed Plans	Dollars/Each (Plan)

No other details are listed in the Standard for this Activity.

**931 Modify Paper-based As Constructed Plans****Description**

The updating of existing drawings to document as constructed changes to the design including the obtaining of drawings from original source of design.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
931	Modify Paper-based As Constructed Plans	Dollars/Each (Plan)

No other details are listed in the Standard for this Activity.

**932 Calibration of Road Safety Cameras**

Details to be advised.

**933 Survey Drawings for Road Safety Cameras**

Details to be advised.

**950 Damages Recovery****Description**

All works associated with damage recovery, including liaising with insurance companies, individuals, etc.



**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
950	Damages Recovery	Dollars

No other details are listed in the Standard for this Activity.

**960 Alliance Performance Limb Payment****Description**

All works associated with alliance performance limb payment.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
960	Alliance Performance Limb Payment	Dollars

No other details are listed in the Standard for this Activity.

**970 Licence and Ongoing maintenance fees for TMR accepted Maintenance Management System****Description**

Ongoing MMS licence fee, maintenance / replacement cost of MMS field equipment.

**Activity Item and Unit of Measurement**

Item	Description	Unit of Measurement
970	Licence and Ongoing maintenance fees for TMR accepted Maintenance Management System	Dollars

Maximum amount per MMS per year is \$5,000.

No other details are listed in the Standard for this Activity.

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