

PART M05
MAINTENANCE WORKS

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1. GENERAL

- .1 This Part specifies the requirements for providing an Emergency Response and undertaking Routine and Specific Maintenance Work.
- .2 Maintenance Work shall comply with the following (in order of precedence):
 - (a) The DPTI Maintenance Activities (Parts M61 to M67 of the DPTI Master Specification);
 - (b) The relevant parts of the DPTI Master Specification (Divisions G, CH, R, CC, S and L of this Specification);
 - (c) Relevant DPTI Standard Drawings;
 - (d) Relevant DPTI and EPA Codes of Practice; and
 - (e) Relevant Australian Standards.
- .3 Definitions are as listed in Attachment M05A Definitions.
- .4 The following documents are referenced in this Part:
 - (a) Part M11 Maintenance General Provisions
 - (b) Part M06 Maintenance Inspection and Reporting
 - (c) Part M67 Accident Damage, Vandalism and Emergency Response
 - (d) AS 1348 Road and Traffic Engineering - Glossary of Terms
 - (e) AS 2868 Classification of Machinery for Earthmoving, Construction, Surface Mining and Agricultural Purposes
 - (f) South Australia Emergency Management Act 2004

OTHER DEFINITIONS

- .5 The following definitions shall apply in addition to those in AS 1348 "Road and Traffic Engineering - Glossary of Terms".

"Event" means any incident that causes damage to an element of the Network or associated assets.

"Asset Element" means a component of the Network; specifically Drainage, Pavement, Unsealed Surface, Roadside Furniture, Roadside Vegetation, Amenity and Miscellaneous.

"Exempt activity" means an activity that is exempt from the Routine Maintenance provisions of that activity.

"Edge of Shoulder" means the hinge point of the shoulder or where unclear, one metre behind guidepost.

"Carriageway" that portion of a road or bridge devoted particularly to the use of vehicles, inclusive of shoulders and auxiliary lanes.

"Crocodile Cracking" means cracking where the average least dimension of the cells is ≤ 300 mm and there is no deformation.

"Culvert" means a drainage structure with a clear span of 1.8 m or less.

"Defective Segment" means a segment with one or more Defects exceeding recording level.

"Delineators" means guideposts, retro-reflective delineators and pavement bars.

"Drainage Elements" include: extended kerb inlets with or without grate, side entry pits, gully pits, connections from inlets to the main drain, culverts, energy dissipaters, cut-off drains, headwalls, aprons, weep holes, sedimentation basins, watercourse under the bridge and bridge elements such as drainage scuppers, expansion joints.

"DPTI Maintenance Standard" means the standards specified in Parts 811 to 817 of this Specification.

"DPTI Master Specification" means those parts contained within this Specification.

"Graffiti" means any defacing of the asset.

"Low Castings" means depressed water, sewer top stones or other type of castings.

"Maintenance Activity Zone" means the area in which routine maintenance activities may be undertaken, vide Clause 150M.7 "Maintenance Activity Zone".

"Maintenance Defects Register" (MDR) means the register of defects maintained by the Contractor in accordance with Part M06 Maintenance Inspection and Reporting, Clause 4.2 "Reporting of Defects".

"Network Performance Condition" means the percentage calculated by the following formula:

$$\frac{\text{number of 1 km road sections with one or more defects at Intervention Level}}{\text{total route length maintained by the Contract}} \times 100$$

total route length maintained by the Contract

by RAM Cat, where the:

- (a) sections of road and the total route length are by RAM Category ;
- (b) total length excludes sections exempted from routine maintenance for that activity; and
- (c) number of defects relates to the Maintenance Activity under consideration.

"Natural Watercourses" means those watercourses or areas where there was a natural concentrated flow of water due to the geography of the land, prior to the existence of the road.

"Network" means those roads to be maintained under this Contract, as defined in Scope of Contract, Clause 1 "Description of Work" which includes pavement on structures, but excludes structures.

"Nominal Edge of Seal" means the straight edge line or smooth curve joining two widest points on the edge of seal in a 100 m length of road.

"Offensive Graffiti" means graffiti that is racial, sexual, politically offensive, insulting to the general community or any wording that is reported by the public as offensive.

"Open Drainage Elements" means open drains, lined drains, catch drains, spoon drains, water table and watercourses.

"Roadside Rest Area" means an Amenity Area and includes the area from the entrance to the exit and extending from the shoulder of the road to the property boundary or to a distance not exceeding 50 m from the furthestmost point in the rest area.

"Routine Maintenance" means either programmed or loop activities undertaken by the Contractor to achieve the standards specified in the DPTI Maintenance Standard.

"Rural Area" means an area that is not an urban area.

"Segment" means a nominal 1 km section of road, which is identified by maintenance markers in rural areas.

"Sight distance" has the meaning defined in Austroads "Guide to Traffic Engineering Practice Part 4A Un-signalised and Signalised Intersection". The Approach Sight Distance is applicable to roadside furniture, whilst both the Approach Sight Distance and the Safe Intersection Sight Distance are applicable at junctions and intersections.

"Specific Maintenance" means those activities undertaken by the Contractor for work that has been exempt or excluded from Routine Maintenance.

"Trenches" means excavation or trenching made by others on the road network.

"Urban Area" means an area in which a speed limit of 60 kilometres per hour or less applies. Not being a speed limit which applies because of a temporary reason such as roadworks or a street event.

"Wire Rope Barrier" means a wire rope system used to separate roadside hazards or opposing traffic and the travelled way.

"Works" include Routine Maintenance and Specific Maintenance.

The meaning of terms used in this Specification shall be those in AS 1348 "Road and Traffic Engineering - Glossary of Terms", except where described otherwise in this Specification.

The class of plant referred to in this Specification shall be as designated in AS 2868 "Classification of Machinery for Earthmoving, Construction, Surface Mining and Agricultural Purposes".

2. QUALITY REQUIREMENTS

- .1 At a minimum, the Contractor's Quality Plan shall include the documents, procedures, programs and/or instructions specified in the DPTI Maintenance Standard.
- .2 The plan shall also include the:
 - (a) minimum plant and personnel resources to meet the requirements of the contract;
 - (b) plant and personnel resources to manage emergency response; and
 - (c) minimum number of depots (including equipment) located with the contract area.
- .3 If not provided beforehand, this documentation shall be submitted prior to the commencement of the Maintenance Period.

3. ESTABLISHMENT AND MAINTENANCE PERIODS

Establishment Period

- .1 At the completion of the Establishment Period, the Contractor shall have:
 - (a) submitted an electronic template of the Maintenance Defects Register (MDR) to the Superintendent (refer Part M06 Maintenance Inspection and Reporting, Clause 4.2 "Reporting of Defects"). The template shall be compatible with DPTI's corporate information system;
 - (b) undertaken an inspection, compiled and submitted a MDR to the Superintendent;
 - (c) identified Defects that have reached CIL;
 - (d) obtained records of the defects liability period remaining on defects arising from Part M11 Maintenance General Provisions, Clause 20 "Work by Others";
 - (e) established an equipped office and communication systems and provided details of the office and systems to the Superintendent;
 - (f) provided a list of emergency contact telephone numbers;
 - (g) provided details and location of all plant and resources that are available for the duration of the Contract;
 - (h) provided a Maintenance Program (refer Part M11 Maintenance General, Clause 1.2 "Maintenance Program");
 - (i) provided a pro forma for works undertaken (refer Part M06 Maintenance Inspection and Reporting, Clause 4.8 "Work Undertaken by the Contractor");
 - (j) provided a controlled copy of the Quality Plan;
 - (k) provided a Sustainability Plan;
 - (l) provided an Environmental Audit Schedule;
 - (m) provided a herbicide rotation program for the term of the Contract;
 - (n) provided details and locations of licensed waste depots proposed for waste management use;
 - (o) provide details of completed traffic management training of key personnel;

- (p) provide details of completed environmental training of key personnel; and
 - (q) undertaken the "Bridge Inspection for Supervisors" course by all staff undertaking bridge and culvert inspections.
- .2 In the event that the Contractor fails to complete the activities specified to be undertaken during the Establishment Period prior to the date for completion of the Establishment Period, Liquidated Damages shall apply at the rate stated in the Annexure for every day that the Establishment Period extends beyond the date for completion of the Establishment Period. The Contractor agrees that the Liquidated Damages are a genuine pre-estimate of the costs that will be incurred by the Principal to maintain the network and are not a penalty.
 - .3 Provision of records demonstrating compliance with this Clause shall constitute a **HOLD POINT** (refer Part M05 Maintenance Work, Clause 10 "Hold Points").
 - .4 The inspection requirements during the Establishment Period are detailed in Part M06 Maintenance Inspection and Reporting, Clause 3.5 "Initial Handover and Completion Inspections".
 - .5 Within 4 weeks of the Date of Acceptance of Tender, the Contractor shall provide details of suppliers, subcontractors and products to be used for work under the Contract. This shall constitute a **HOLD POINT** (refer Part M05 Maintenance Work, Clause 10 "Hold Points").

Maintenance Period

- .6 The Maintenance Period shall commence at the end of the Establishment Period. At the commencement of the Maintenance Period, the Contractor shall assume responsibility for providing an Emergency Response and all defects designated as Routine Maintenance, including the repair of all existing Routine Maintenance Defects.
- .7 The Contractor's first payment claim for Routine Maintenance shall not be made until one month after the date of the commencement of the Maintenance Period.

4. EMERGENCY RESPONSE

General

- .1 The Contractor is responsible for 24 hour network maintenance and shall assist emergency services when road closure or defect correction is required due to vehicular accidents, floods, fires or storms and the like.
- .2 The Contractor shall ensure that the location of work resources shall be such as to provide satisfactory and prompt response to emergencies within the road network for this Contract is in accordance with Part M67 Accident Damage, Vandalism and Emergency Response.
- .3 Emergency work will be paid for in accordance with the Schedule of Rates for Dayworks. Plant will be paid for at Schedule of Rates for Dayworks at all times.
- .4 Any emergency work that impacts the delivery of Routine Maintenance will need to be negotiated with the Superintendent with regard to the recovery of lost hours.

Emergency Response Requirements

- .5 The Contractor shall provide specific resources to respond to works that may arise after an event to address defects relating to Maintenance Standards; Emergency Response (ME), Fence Maintenance (RF), Safety Barrier Maintenance (FG), Wire Rope Barriers (WG) and Scour Repair (SS).
- .6 The Contractor shall:
 - (a) provide an effective paging or telephone system (refer DPTI Maintenance Standard "Emergency Response");
 - (b) provide clear identification of the company vehicles and uniforms of staff attending emergency call-outs;
 - (c) attend the site and undertake the necessary works to make the road safe for road users;
 - (d) co-operate with all emergency service organisations with regard to any emergency;
 - (e) notify the relevant firefighting authority of hazardous materials spillages;
 - (f) ensure that all personnel are suitably protected in the event of hazardous spillages;
 - (g) provide to the Superintendent the names of employees available for emergency call-outs. The list shall be current at all times (i.e. shall cover staff absences and changes); and

- (h) refer any request from third parties to carry out "off carriageway" work to the Superintendent.

Secondary Response

- .7 Where traffic can be accommodated safely through the use of signs, lane closures and/or detours, corrective work resulting from emergency response shall be programmed for execution during normal working hours.

Agency Events and State Disaster

- .8 Under the *South Australia Emergency Management Act 2004*, the Principal is a key member of the Transport Functional Service of the State Emergency Management Plan, and has a role coordinating:
 - (a) the provision of response and recovery services for transport infrastructure (road, rail, air and marine);
 - (b) transport and traffic management decisions; and
 - (c) the Transport support functions for other Functional Services.
- .9 Upon declaration of a State Disaster, the resources of all transport organisations shall be controlled by the State Controller Transport. The Principal uses a similar framework in response to Agency Events.
- .10 Upon request from the Superintendent, the Contractor shall make available any plant and personnel used in conjunction with this Contract to respond to an Agency Event or State Disaster. Work carried out under this Clause shall constitute a Variation to the Contract.

5. ROUTINE MAINTENANCE

General

- .1 Routine Maintenance consists of:
 - (a) preparing and implementing the Maintenance Program and Works Program (refer Part M11 Maintenance General Provisions, Clause 1 "Program of Work");
 - (b) undertaking the inspection, recording and reporting of defects (refer Part M06 Maintenance Inspection and Reporting); and
 - (c) undertaking the entire repair of defects that have reached Intervention Level and Compulsory Intervention Level within the Response Time specified in this Contract.
- .2 Where the defects initially recorded as Routine Maintenance deteriorates and the area of repair increases (within the response time of the defects being identified) to a size beyond the Routine Maintenance criteria, then these defects shall be treated as Specific Maintenance and shall be re-recorded.
- .3 If the defects recorded under Routine Maintenance are not repaired within the response time and the defect increases in size beyond the Routine Maintenance criteria, the defects shall be paid for by the Contractor.
- .4 Unless specified otherwise in the Maintenance Standard, any defect that reaches Compulsory Intervention Level shall be repaired within 24 hours of the Contractor becoming aware of the defect reaching Compulsory Intervention Level.
- .5 Any activity that is exempt from Routine Maintenance does not exempt any other activity within the same section of road. These exempt activities or sections of road may be dealt with in accordance with Clause 6 "Specific Maintenance".

Performance Targets

- .6 The Contractor shall ensure compliance with the targets and frequency specified set in Table 5.6 "Performance Targets" and shall report the results to the Superintendent.

TABLE 5.6 PERFORMANCE TARGETS		
Item	Compliance Criteria	Measured
<u>MDR</u> Accuracy of the MDR	85% accuracy based on the 10% joint inspection. Loop Activities are to be excluded from the calculations.	Quarterly

<u>Loop Activities</u> Defects identified as part of the inspections and repaired within the response time.	All loop activity defects repaired following a Loop Inspection.	Randomly
<u>Programmed Activities (Pavement)</u> Defects reaching Intervention Level repaired within Response Times	> 85% programmed activities defects repaired within Response Time.	Monthly
<u>Programmed Activities (Non-Pavement)</u> Defects reaching Intervention Level repaired within Response Times	> 70% programmed activities defects repaired within Response Time.	Monthly
<u>All Activities</u> Defects reaching Compulsory Intervention Level repaired within the Response Time	100% of all defects repaired within Response Time.	Monthly
<u>Asset Inspection</u> Asset Inspection reporting information	100% compliance	As per Inspection Schedule
<u>Reporting of Third Party Claims</u> Respond to claimant's within 30 days of receipt of all claims.	100% compliance	Quarterly

.7 Loop Activities shall include:

- (a) Clear Drainage Elements (aspects of) (DC);
- (b) Pothole Repair (PP);
- (c) Maintenance Installation and Replacement of Delineators (FD);
- (d) Litter Collections (RL);
- (e) Pavement Sweeping (PW);
- (f) Safety Barrier Systems (FB);
- (g) Wire Rope (WR);
- (h) Fence (RF);
- (i) Maintenance Installation and Replacement of Signs (FR); and
- (j) Graffiti Removal (MG).

.8 Programmed Activities shall include:

- (a) Pavement:
 - (i) Edge Break Repair (PE);
 - (ii) Pavement Dig outs (PN);
 - (iii) Repair to Bituminous Surfacing (PS);
 - (iv) Traffic Island/Median and Kerb Maintenance (RT); and
 - (v) Unsealed Surface (SG).
- (b) Non-Pavement:
 - (i) Clear Open Drains and Lined Drains (DD);
 - (ii) Scour Protection (SS);
 - (iii) Clear Subsoil Drains (DS);
 - (iv) Mowing (RM);
 - (v) Herbicide Treatment (RS);

- (vi) Vegetation Control (RV); and
- (vii) Road User Amenity (RA).

Network Performance Condition Reporting

.9 The Contractor shall report to the Superintendent on the Network Performance Condition as specified in Table 5.9 "Network Performance Condition".

TABLE 5.9 NETWORK PERFORMANCE CONDITION				
Maintenance Standard	Network Performance Condition (percentage of Defective segments) for each Road Asset Maintenance Category			
	RAM A	RAM B	RAM C	RAM D
PE				
PN				
RT				
PS				
PC				
PF				

.10 The network performance condition shall be reported every quarter in accordance with Part M06 Maintenance Inspection and Reporting, Clause 4.2 "Reporting of Defects".

Payment

.11 Subject to satisfactory execution of the work under the Contract, a monthly payment for the Loop and Programmed Activities (one twelfth of the Annual Payment) will be made.

.12 Should any of the following occur, the Principal reserves the right to withhold moneys from the payment for Routine Maintenance if the Contractor fails to:

- (a) Identify and correct loop activity defects as part of the loop inspection. The Superintendent may undertake an audit on Loop Activities. This audit will be undertaken within 24hrs of the loop inspection conducted by the Contractor.
- (b) Where compliance has not been met on three consecutive occasions, the amount of money withheld will be 50% of the monthly payment for this Loop Activity Lump Sum item; or
- (c) Complete at least 85% of the pavement activity defects of the programme activities, listed on the MDR that are programmed for repair in that month.
- (d) Where compliance has not been met on three consecutive occasions, the amount of money withheld will be 50% of the monthly payment for the Pavement Activity Lump Sum item; or
- (e) Complete at least 70% of the non-pavement activity defects of the programme activities, listed on the MDR that are programmed for repair in that month.
- (f) Where compliance has not been met on three consecutive occasions, the amount of money withheld will be 50% of the monthly payment for the Non-Pavement Activity Lump Sum item; or
- (g) Complete the Maintenance Defect Register, whereby less than 85% of the defects identified during the joint audit (refer to Part M06 Maintenance Inspection and Reporting, Clause 3.6 "Joint Network Audit" are listed on the Maintenance Defect Register. The Superintendent may withhold 30% of the total monthly payment after deductions from items (b) and (c) above.

.13 If the Contractor does not undertake the repair of any defect reaching either Intervention Level or Compulsory Intervention Level within the Response Time, the Superintendent may also withhold or deduct money, under this Clause of the value of the work required to achieve compliance with the Contract, as determined by the Superintendent in accordance with Clause 40.5 "Valuation" of the General Conditions of Contract.

.14 As an alternative to withholding or deducting moneys under this Clause, the Superintendent may invoke Clause 30.3 "Defective Materials or Work" of the General Conditions of Contract.

6. SPECIFIC MAINTENANCE

- .15 Defects occurring in exempt sections of the Network and defects specified as being exempt in the Maintenance Standards shall be repaired as Specific Maintenance. Provisional Sums have been provided for undertaking Specific Maintenance. The program of works for these items is dependent upon annual budget allocations and network priorities.
- .16 Further to Clause 11 "Provisional Sums" of the General Conditions of Contract, the Principal may invite the Contractor to submit an offer or negotiate for combinations of Specific Maintenance, but is under no obligation to do so. Any amount or rate accepted by the Principal under this Clause shall take precedence over the Schedule of Rates for Variations. Where the Contractor submits an offer for undertaking Specific Maintenance, the Contractor shall give written details of any impact that the Specific Maintenance will have on the program for delivery of Routine Maintenance.
- .17 The Contractor's performance may be taken into account in the decision whether to invite the Contractor to submit an offer. Refer to Special Conditions of Contract Clause 35 "Evaluation of Contractor's Performance" for information regarding the assessment of the Contractor's performance.
- .18 Specific Maintenance shall be carried out in accordance with the DPTI Maintenance Standard or DPTI Master Specification, as appropriate. Where agreement is reached for the Contractor to undertake Specific Maintenance, the following details will be recorded on the Work Order issued by the Superintendent:
 - (a) the location, nature and extent of the work;
 - (b) the estimated quantity of each item of work;
 - (c) the basis for calculating the payment due;
 - (d) any restrictions to the working hours applicable to the work;
 - (e) the Date for Completion of the work; and
 - (f) any other information and direction, which the Superintendent deems necessary for the completion of the instructed work.
- .19 Any pavement related specific maintenance activities completed by the Contractor shall have a defects period of 12 months from completion of the work.

7. ROUTINE MAINTENANCE AT RAILWAY CROSSINGS

- .1 Defects occurring between the rails and from the outer rail for a distance of 3.0 m at all railway crossings relating to all Maintenance Activities are excluded from the Routine Maintenance provisions. The Contractor shall notify the rail authority contact person where defects are identified within this area.

8. MANDATORY RESOURCES

- .1 The Contractor shall nominate and maintain access to specific resources to meet the requirements of the work under this Contract.
- .2 The Contractor shall also provide specific resources to respond to works that may arise after an event, vide Clause 4 "Emergency Response".
- .3 If not provided beforehand, the Contractor shall provide details of the specific resources to be used for work under the Contract within 4 weeks of the Date of Acceptance of Tender. This shall constitute a **HOLD POINT** (refer Part M05 Maintenance Works, Clause 10 "Hold Points").

9. PREPARATION FOR RESEALS

- .1 Details of the Principal's preliminary reseal program will be provided to the Contractor by 31 July each year. The Contractor shall attend a joint inspection of the areas to be resealed with the Superintendent to determine the extent of works and the time for completion of any Defects identified.
- .2 Preparation for reseals will include the repair of Defects that have reached intervention but are still within Response Time. Completion of Defects identified within the area to be resealed shall be completed no later than 4 weeks before the proposed start date of the treatment.

10. HOLD POINTS

.1 The following is a summary of Hold Points referenced in this Part:

CLAUSE REF.	HOLD POINT	RESPONSE TIME
3.3	Establishment period records	1 week
3.5	Details of suppliers, subcontractors and products	1 week
8.3	Details of mandatory resources	1 week

11. ATTACHMENT M05A DEFINITIONS**MAINTENANCE DEFINITIONS**

.1 Definitions applicable to the DPTI Maintenance Standard are as follows:

Element	Description
Inspection category / frequency	The maximum time between inspections, or the frequency of inspection permitted, that ensures that the risk to the public, and of accelerated asset deterioration, is minimised.
Defect	Failure or undesirable condition that is identified by visible measurable evidence during inspection.
Intervention Level	The measure at which a Defect is noted during inspection for inclusion in routine maintenance programs.
Compulsory Intervention level	The condition at which a Defect requires immediate intervention.
Response time	A time specified by the Principal, that the Defect must be rectified within.
Performance standard	The minimum acceptable condition level following rectification of the identified Defect.