



TECHNICAL DOCUMENT

APPENDIX C-2B

Remote Essential and Municipal Services

REMS

Municipal Services - Unsealed Internal Road System

Maintenance **GUIDELINE**

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1 Introduction

The Principal, through the Remote Essential and Municipal Services (REMS) Program, and on behalf of the State of Western Australia, funds municipal service delivery (and associated infrastructure management) and environmental management to Remote Aboriginal Settlements across Western Australia.

The Principal seeks to implement a procedure of best practice for Unsealed Internal Road System Maintenance Services within Remote Aboriginal Settlements. Most settlements have unsealed formed roads or tracks but a limited number have sealed internal roads.

Internal roads are those settlement roads servicing the buildings, infrastructure and residential homes and other key elements of the settlement including the landfill, sewage disposal areas, bores, aerodrome and any other key element that contributes to the operation of the settlement. Internal roads excludes settlement access roads coming from another location.

This Guideline has been developed through the REMS Program and focuses on the requirements for Services associated with Unsealed Roads Maintenance.

NOTE: There is a separate Guideline for Sealed Internal Road System Municipal Services.

This Guideline has been developed with the following values in mind:

1. Sustainability
Seeking a pragmatic and appropriate balance between social, environmental and financial considerations for best practice outcomes in municipal Services management.
2. Simplicity
Reducing the complexity of approaches to municipal Services management.
3. Local focus
Seeking best practice municipal Services management for the benefit and amenity of the settlement.

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2 Who is this Guideline applicable to?

This Guideline applies to Contractors in regards to Unsealed Internal Road Systems Maintenance Services within Remote Aboriginal Settlements.

The Contractor shall always act in the best interests of the Principal. The Principal or the Principal's Representative may audit the Contractor's performance in this area.

The purpose of this Guideline is to set out the minimum standards applicable to the maintenance activities associated with the Unsealed Internal Road System.

2.1 What are the Outcomes the Contractor is to achieve?

The key required outcomes for the Unsealed Internal Road System Maintenance Services shall be the preservation of the asset and protection of public safety, amenity, and the local environment. This shall be achieved by best practice:

- (a) Maintenance activities designed to protect and preserve municipal infrastructure;
- (b) Maintenance activities designed to protect and enhance the amenity of the local settlement;
- (c) Maintenance activities designed to protect and safe-guard the local environment;
- (d) Maintenance activities designed to protect the health and safety of the operator.

The Guideline lists the minimum Service delivery tasks / standards which the Contractor must deliver to provide the desired outcome.

- (e) The Contractor must deliver the Services to settlements which have an Unsealed Road System at the scope and frequencies to individual settlements as specified in **Appendix E (REMS Municipal Services Scope and Frequencies)** of the Specifications and in accordance with **Schedule 11 (Maintenance Services Schedule)** of the Conditions of Contract.

NOTE: General information (estimates) relating to individual settlement road systems can be found in:

- i. Appendix F-1 (REMS Municipal KIMB Settlement Infrastructure);
- ii. Appendix F-2 (REMS Municipal PILB Settlement Infrastructure); and
- iii. Appendix F-3 (REMS Municipal GOLD Settlement Infrastructure),

of the Specifications.

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2.2 How will the Principal use this Guideline?

The Principal acknowledges that Unsealed Internal Road Systems within settlements vary widely in terms of construction type, overall length, complexity, and existing condition.

The Principal expects the Contractor to use all his initiative, skill and effort to undertake the maintenance activities best-suited to maintaining each individual settlement Unsealed Internal Road System in as good a state of repair as possible and to make every reasonable endeavour to achieve the outcomes stated in this Guideline.

2.3 Risk based approach

The Principal recognises that there are unique constraints and exclusive challenges that may impact upon the ability of the Contractor to provide organised and effective Municipal Services within Remote Aboriginal Settlements.

The structure of this Guideline is set up according to a framework of outcomes and suggested measures for each relevant aspect of the Services. The outcomes must be achieved for each element of the Services, however an outcome may be achieved through different methods and it is the responsibility of the Contractor to ensure that a proposed methodology will achieve the required outcome. The suggested measures represent some of the acceptable methods to aid in achieving the desired outcomes.

Suggested measures may not necessarily be appropriate for every management application. The outcome of a risk based assessment for a management activity may indicate usage of alternative measures to those suggested in order to achieve the required outcomes. Subject to approval of the Principal's Representative, the Contractor can introduce a number of alternative control measures which may be applied to a hazard in order to mitigate a risk.

A risk based approach must be used in all aspects of the Service. A risk assessment may be qualitative or quantitative and, as well as considering environmental impacts, must also consider economic, social and other impacts. A risk assessment is a useful tool for identifying the unique risks and developing the potential alternative controls which may be put in place to manage or reduce risk to an acceptable level.

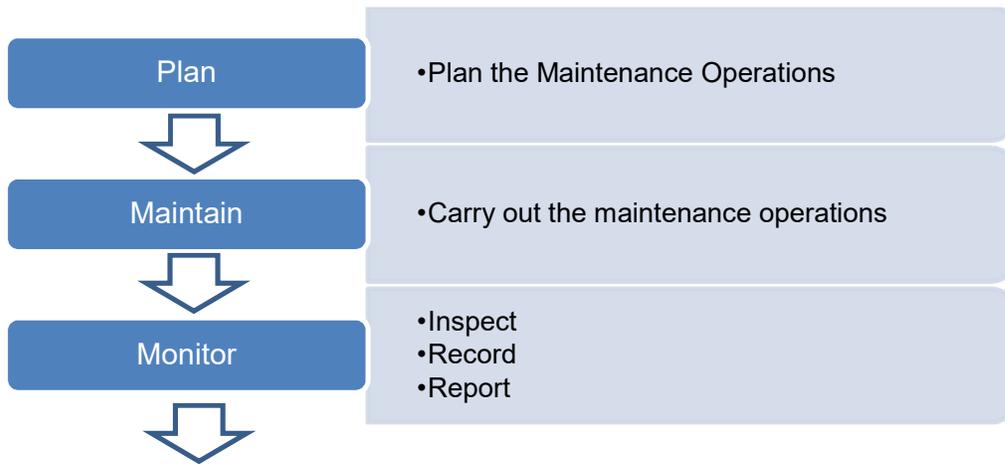
The Contractor must have a risk assessment in place for all activities associated with the Unsealed Internal Road Maintenance Services.

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2.4 Structure of the Guideline

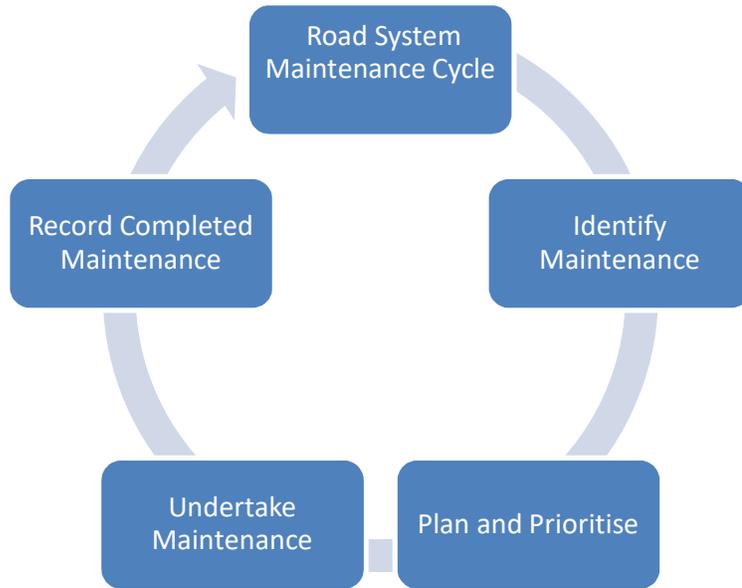
This guideline covers the three broad phases of the Unsealed Roads System Municipal Services process:

1. Planning
2. Maintaining
3. Monitoring



**SUCCESSFUL INTERNAL ROAD
MAINTENANCE SERVICES**

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3 Maintenance Operations Plans

The Contractor must:

- (a) Develop an Unsealed Internal Roads System Maintenance Services **Maintenance Operations Plan**. The Maintenance Operations Plan shall include procedures and the operations and maintenance activities to be undertaken, including but not limited to the following:
 - i. Maintenance of the road form and surface (formed roads and sandy roads and tracks);
 - ii. Maintenance of the road verge / reserve;
 - iii. Maintenance of the associated road drainage system;
 - iv. Protection of underground services;
 - v. Protection of existing infrastructure;
 - vi. Maintenance of associated road furniture;
 - vii. Emergency Repairs and Other Works;
 - viii. Pre-wet season preparation;
 - ix. Post-wet season repairs;
 - x. Inclement weather operations;
 - xi. Dust management;
 - xii. Damage to property / utility;
 - xiii. Traffic Management; and
 - xiv. Contingency plans.
- (b) Distribute the Maintenance Operations Plans to all personnel involved with delivering the Services;
- (c) Provide a copy of the Maintenance Operations Plans to the Principal's Representative upon request; and
- (d) Progressively update the Maintenance Operations Plans as Services and infrastructure evolves over time.

NOTE: The majority of Self-Managed settlements have sandy roads and tracks.

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4 Maintenance Activities

The Contractor is to:

- (a) carrying out the required maintenance activities as listed within this Section 4;
- (b) carrying out activities in accordance with the Maintenance Operations Plan;
- (c) Delivering the Services at the scope and frequencies to individual settlements as specified in **Appendix E (REMS Municipal Services Scope and Frequencies)** of the Specifications and in accordance with **Schedule 11 (Maintenance Services Schedule)** of the Conditions of Contract;
- (d) planning and prioritising the activities and aiming 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; and
- (e) carrying out the maintenance activities in a manner which delivers the following outcomes:
 - i. Keeps the road service operational;
 - ii. Allows traffic to move on the road without undue disturbance;
 - iii. Maximises the safety of road users;
 - iv. Preserves the road system asset; and
 - v. Protects the environment.

4.1 Road Form and Surface (Formed Roads, Sandy Roads and Tracks)

The Contractor is to maintain the road form and surface to achieve the following:

- (a) Allows for reasonably comfortable riding quality at design speed;
- (b) Allows the safe and unrestricted use of the road; and
- (c) Protects the road system from depreciation.

4.1.1 Road Grading of Formed Roads

The Contractor is to:

- (a) Maintain existing settlement and municipal and essential services infrastructure access roads through grading;
- (b) Grade the road formation width between the tops of both outer batters. Remove all obstructions including dead trees, fallen branches and regrowth from the area to be graded. Win material from windrows which contain suitable material and the area back from the edge of the shoulder. Cut the pavement and shoulder as required to remove corrugations and fill ruts, holes and depressions, ensuring the road form and design width is maintained. Where necessary, win, haul, mix, place, compact and trim suitable fill or borrow material in the required layer thicknesses to achieve the form and dimension required. Maintain a 4% – 6% crown with granular material (coarse and good plastic fines material) evenly distributed and at even depth across the road

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surface. When necessary, and ensuring optimum moisture conditions, roll the surface to achieve a uniform and tightly bound surface free of laminations; and
 (c) Reinstate associated road system drains.

4.1.2 Opening Grading of Formed Roads

The Contractor is to:

- (a) Where road surfaces have been damaged after rain, open roads to conventional vehicles by grading the running surface to remove corrugations and fill in ruts, holes and depressions;
- (b) Repair scours and wash-outs. Recover material from the batters and drains and restore the road formation and width;
- (c) Where wash-outs and blow-outs are severe, gravel sheet repair the pavement surface and shoulder. Win, haul, mix, place, compact and trim the material to the required layer thicknesses. Use the best locally available fill material; and
- (d) Reinstate associated road system drains.

4.1.3 Road Grading of Sandy Roads and Tracks

The Contractor is to:

- (a) Maintain existing settlement roads and municipal and essential services infrastructure access roads through grading with a grader or suitable machine to maintain a road width and surface which allows the safe and unrestricted use of the road;
- (b) Remove all obstructions including dead trees, fallen branches and regrowth from the area to be graded and drainage structures; and
- (c) Reinstate associated road system drains.

4.2 Road Verges / Reserves

The Contractor is to:

- (a) Shape, grade and compact verge areas as required to maintain the verge / reserve in good condition and to protect the road surface;
- (b) Maintain access to adjacent properties and side roads at all times to a level appropriate for the type and frequency of traffic. Ensure adequate and safe access for pedestrians is provided, including delineated temporary access if existing access ways are closed as part of the works;
- (c) Maintain intersection sight lines;
- (d) Maintain grass on medians, verges, and islands within the road reserve to a max of 100 millimetres above ground with mowing / slashing. The nominal minimum width of the road verge shall be an area 3.6 metres wide on each side of the roadway measured from the outer edge of the shoulder or edge of v drain. Trim grass with hand-held equipment on medians, verges, and islands within the road reserve and around signage, footpath edges and crossover edges where mowing / slashing cannot be carried out;

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- (e) Repair or replace guide posts, delineators, signs or any roadside furniture or structure damaged during operations;
- (f) Remove trees and shrubs that have died or fallen, or which may present a hazard; and
- (g) When spraying herbicides, do not spray on days where wind velocity poses a risk of spray drift. Do not spray near schools during school hours.

4.3 Road Drainage

The Contractor's maintenance activities is to provide the following:

- (a) Protect road surfaces from damage by stormwater flows;
- (b) Direct stormwater flows to fixed drainage lines / watercourses; and
- (c) Protect public areas, infrastructure, and housing from erosion caused by stormwater shedding from the road surface.

By:

- i. Inspecting, assessing and maintaining the road drainage system;
- ii. Establishing measures to prevent stormwater from pooling on roadways, from shedding from roadways into settlement infrastructure, and to control run-off and prevent erosion;
- iii. Maintaining all existing drainage structures to the design form, shape, and grade, and repairing any damaged drainage structures as required to facilitate good drainage;
- iv. Inspecting the inlet and outlet points of culverts and drainage structures and providing protection to these areas as required to minimise scour and undermining; and
- v. Making-safe stormwater pits with missing or broken lids immediately upon observation or notification.

NOTE: All roads incorporate features to drain water off the road surface and allow it to cross from one side to the other. Satisfactory road drainage is the key to maintaining the roads' integrity. Potholes, ruts, and mud on the surface of the road are symptoms of drainage problems. A properly maintained road will have very little standing or running water on the road surface even during heavy rain events.

4.3.1 Existing Road Drainage Systems

The Contractor is to:

- (a) In association with maintenance grading activities, recut any existing outer batters or table drains, ensuring the prevention of any excess materials from washing back into the table drains, offset drains, culverts or other drainage structures. Trim all excavations to shed water and minimise scour and erosion damage;

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- (b) Maintain all existing drainage structures to the design form, shape, and grade, and repair any damaged drainage structures as required to facilitate good drainage;
- (c) Maintain all drainage structures in a condition which is free of sediment, vegetative growth, litter, or any other obstruction which impedes the free flow of stormwater;
- (d) Inspect the inlet and outlet points of culverts and drainage structures and provide protection to these areas as required to minimise scour and undermining; and
- (e) Make safe stormwater pits (where they exist) with missing or broken lids immediately upon observation or notification.

4.3.2 Surface Water (Storm Water) Control

The Contractor is to establish measures to prevent stormwater from pooling on roadways, from shedding from roadways into settlement infrastructure, and to control run-off and prevent erosion.

4.4 Protection of Underground Services

The Contractor is to:

- (a) When undertaking Unsealed Internal Roads Maintenance Services, take all care not to damage existing underground services; and
- (b) When repairing and / or grading the road surface (particularly sandy roads and tracks), ensure adequate cover requirements to existing underground services are maintained.

4.5 Protection of Existing Road System Infrastructure

The Contractor is to:

- (a) Manage the operations and take all measures necessary to ensure that existing road system structures and associated road furniture is not damaged during maintenance operations; and
- (b) Where road system infrastructure is inadvertently damaged during maintenance operations, notify the Principal's Representative and repair the damage as soon as possible to the satisfaction of the Principal's Representative.

4.6 Road Furniture

The Contractor is to:

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- (a) Maintain and protect road system furniture. Road system furniture includes: fencing; guideposts; delineators; road signs; information signs; flood-gauge posts; cattle grids; speed bumps; and guardrails;
- (b) Remove any gravel or fill material which enters cattle grids or culverts during maintenance operations;
- (c) Inspect road furniture. Repair or replace any road furniture damaged during road maintenance operations; and
- (d) Where road furniture is observed to be damaged or defective or missing for reasons other than the activities of the Contractor, report the matter as soon as possible to the Principal's Representative.

NOTE: The majority of Small and Self-Managed settlements do not have road furniture.

4.7 Emergency Repairs and Other Works

The Contractor is to perform Emergency Repairs and / or Other Works (other than standard operations and maintenance works) as required from time to time to maintain or restore the condition of the Unsealed Internal Road System. Where works are required, such works shall be carried out at the direction and discretion of the Principal's Representative and in accordance with the Schedule of Rates contained in Attachment 1 to Schedule 1 (Pricing Schedule) of the Conditions of Contract.

4.8 Pre-Wet Season Preparation

The Contractor is to, prior to the wet season, carry out the required maintenance operations to the road system including the integrated drainage system in order to best prepare the road and drainage system for the potential of heavy wet conditions. In the case where there is only 1 maintenance service per annum then it should be undertaken after the wet.

4.9 Post-Wet Season Repairs

The Contractor must, as soon as possible after the wet season, inspect and restore the road system to a safe and trafficable condition and repair and restore the integrated drainage system.

4.10 Inclement Weather Operations

The Contractor must develop, and implement when required, procedures for inclement weather maintenance operations activities including operating in extreme hot and dry conditions or when dust emissions are excessive, and in extreme wet weather conditions when access to and around the settlement and the Unsealed Internal Road System is affected.

4.11 Dust Management

The Contractor must take measures to ensure dust from his operations does not constitute a hazard or nuisance on the site or to adjacent sensitive areas.

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4.12 Damage to Property / Utility

The Contractor must:

- (a) Carry out road maintenance operations with all due care in order to avoid damage to property, utility installations and associated structures such as fences, and the environment;
- (b) Promptly repair or have repaired any damage to property, utility installation, or the environment resulting from activities associated with the maintenance operations; and
- (c) Notify the Principal's Representative of any incident.

4.13 Traffic Management

The Contractor must:

- (a) When conducting road maintenance activities, minimise obstruction and inconvenience to the public and ensure public safety is accommodated at all times; and
- (b) Where extensive operations are required, develop and implement a Traffic Management Plan (TMP). The TMP must identify and assess potential hazards and detail the proposed treatments for the proposed work activities at the work site.

4.14 Contingency Plans

The Contractor must:

Develop (and implement when required) Contingency Plans that include procedures for dealing with:

- i. on-site personal injuries;
- ii. cyclones and extreme weather events; and
- iii. accidents, and other emergency response.

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5 Monitoring and Reporting

Regular, formal inspections play a vital role in the successful management of Municipal Services. A settlement Unsealed Internal Road System that has no regular inspection regime is at high risk of deterioration.

The Contractor must provide the following:

- (a) Monitor the condition of the Unsealed Internal Road System;
- (b) Based on the maintenance activities and procedures identified in the Maintenance Operations Plan, develop and maintain an inspection schedule for all components and items which require periodic inspection;
- (c) Keep records of the condition of the municipal infrastructure and the maintenance activities undertaken; and
- (d) Provide a copy of the record to the Principal's Representative upon request.

5.1 Field Surveys

Field Surveys are regularly undertaken by the Principal's Representative for the purpose of assessing compliance by the Contractor with the Municipal Services tasks and frequency required to be undertaken.

The Principal's Representative will endeavour to align surveys where possible with periodic maintenance activities undertaken by the Contractor in accordance with the approved **Schedule 11 (Maintenance Services Schedules)** of the Conditions of Contract.

The Contractor must appoint a responsible officer, agreed by the Principal, to represent the Contractor and attend Field Surveys with the Principal's Representative as requested, and any works being undertaken to an unsatisfactory level will be noted and result in an agreed action to be undertaken by the Contractor within a specified timeframe to rectify the issue noted. Surveys on any remote settlement are generally but not always separated by a period of approximately 4 - 6 months depending on the Remote Aboriginal Settlement size.

The Field Surveys may also identify additional work outside of the Contract that the Contractor may be required to complete, as directed by the Principal's Representative and in accordance with the Schedule of Rates contained in Attachment 1 to Schedule 1 (Pricing Schedule) of the Conditions of Contract.

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6 Values

The values of *stewardship*, *communication*, and *process* are important to the Principal.

The principle of *stewardship* is of utmost importance to the Principal – it requires the Contractor to always act professionally in the best interests of the Principal, such that funds are wisely invested and the asset is maintained accordingly.

The principle of *communication* means an effective transfer of captured knowledge between the Contractor and the Principal; and between the Contractor and the Remote Settlement Representative, such that a high level of trust and mutual respect is developed.

The principle of *process* requires the Contractor to maintain a systematic approach to management of municipal Services, including process driven activities such as the identification of required tasks and the subsequent undertaking of the involved tasks to resolve the issue.

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7 Definitions

Contractor	The appointed Contractor (also referred to as the Regional Service Provider) or his authorised nominee, who carries out the required works.
Principal	The Housing Authority.
Principal's Representative	An officer appointed by the Principal to manage the Contractor.
REMS Program	Remote Essential and Municipal Services Program.
REMS Manager	The Department of Communities (Housing) officer appointed to oversee the REMS Program.
REMS Representative	An officer appointed by the REMS Manager to manage the Contractor.
Unsealed Internal Road System	<p>The network of principal and secondary roads (and sandy tracks) within a settlement which serve the strategic transport needs of the settlement.</p> <p>The Unsealed Internal Road System includes:</p> <ul style="list-style-type: none"> i. All associated drainage structures, verges, and road reserve areas; ii. All associated road furniture; and iii. All roads which provide access to settlement key infrastructure. <p>The Unsealed Internal Road System does not include the access road to or from the settlement but does include essential infrastructure such as bores, landfill, sewage disposal areas etc.</p>
Remote Settlement Representative	The individual or individuals who represent the governing body of the remote settlement.