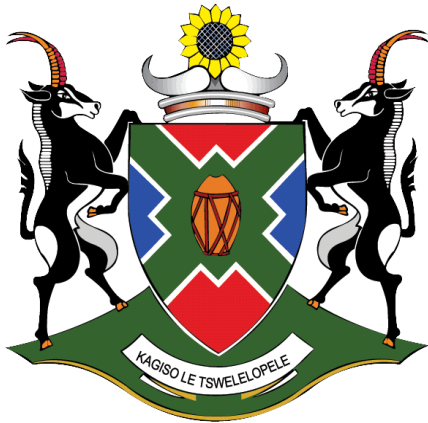


North West Provincial Government



Department of Public Works and Roads

TENDER NUMBER : PWR 65/24

DOCUMENT PRICE : R500.00

PROFESSIONAL ENGINEERING SERVICES: ROAD ASSET MANAGEMENT SYSTEM (RAMS) PROGRAMME MANAGERS

ISSUED BY:

Department of Public Works and Roads
Private Bag X 2080
Mmabatho
2735

NAME OF TENDERER : _____

TOTAL TENDER PRICE (All Inclusive) : _____

PART A INVITATION TO BID

SBD1

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (NAME OF DEPARTMENT/ PUBLIC ENTITY)					
BID NUMBER:	PWR 65/24	CLOSING DATE:	6 th June 2025	CLOSING TIME:	11:00
DESCRIPTION	Appointment of Civil Engineering Consulting Firms for the Development / Implementation of Road Asset Management System (RAMS) for a period of Five (5) Years				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).					
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)					
Modiri Molema Road					
Old Parliament Complex					
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
		TCS PIN:		OR	CSD No:
PREFERENCE POINTS WILL BE AWARDED IN LINE WITH THE DEPARTMENTAL SPECIFIC GOALS					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?		☐ Yes ☐ No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED? ☐ Yes ☐ No [IF YES ANSWER PART B:3 BELOW]	
TOTAL NUMBER OF ITEMS OFFERED				TOTAL BID PRICE (ALL INCLUSIVE)	
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:			TECHNICAL INFORMATION MAY BE DIRECTED TO:		
DEPARTMENT/ PUBLIC ENTITY		Public Works & Roads		CONTACT PERSON	
CONTACT PERSON		Mrs. J. Hart		Ms. M. K. Moiloa	
TELEPHONE NUMBER		018 388 4476		TELEPHONE NUMBER	
FACSIMILE NUMBER				FACSIMILE NUMBER	
E-MAIL ADDRESS				E-MAIL ADDRESS	
				Mkmoiloa@nwpg.gov.za	

PART B
TERMS AND CONDITIONS FOR BIDDING

SBD1

1. BID SUBMISSION:									
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION. 1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED), ONLINE OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT 1.3. BIDDERS MUST REGISTER ON THE CENTRAL SUPPLIER DATABASE (CSD) TO UPLOAD MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS; AND BANKING INFORMATION FOR VERIFICATION PURPOSES). 1.4. WHERE A BIDDER IS NOT REGISTERED ON THE CSD, MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS MAY NOT BE SUBMITTED WITH THE BID DOCUMENTATION. 1.5. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER LEGISLATION OR SPECIAL CONDITIONS OF CONTRACT.									
2. TAX COMPLIANCE REQUIREMENTS									
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS. 2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE DEPARTMENT TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS. 2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA. 2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS TOGETHER WITH THE BID. 2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE PROOF OF TCS / PIN / CSD NUMBER. 2.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED., 2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICES OF THE STATE.									
3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS									
<table style="width: 100%; border: none;"><tr><td style="width: 70%;">3.1. IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?</td><td style="text-align: right;">☐ YES ☐ NO</td></tr><tr><td>3.2. DOES THE BIDDER HAVE A BRANCH IN THE RSA?</td><td style="text-align: right;">☐ YES ☐ NO</td></tr><tr><td>3.3. DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA?</td><td style="text-align: right;">☐ YES ☐ NO</td></tr><tr><td>3.4. DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA?</td><td style="text-align: right;">☐ YES ☐ NO</td></tr></table> IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN, IT IS NOT A REQUIREMENT TO OBTAIN A TAX COMPLIANCE STATUS / TAX COMPLIANCE SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.		3.1. IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO	3.2. DOES THE BIDDER HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO	3.3. DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO	3.4. DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO
3.1. IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO								
3.2. DOES THE BIDDER HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO								
3.3. DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO								
3.4. DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO								

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER

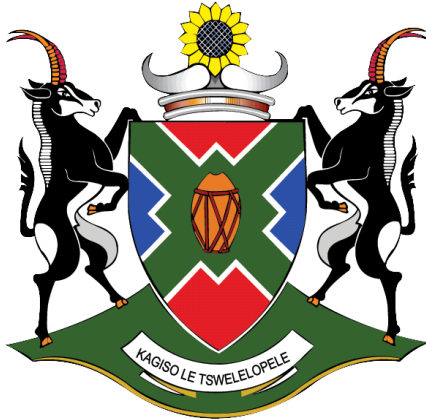
DATE

CAPACITY UNDER WHICH THIS BID IS SIGNED
(Attach proof of authority to sign this bid; e.g. resolution of directors, etc.

DATE

TABLE OF CONTENTS		
NUMBER	HEADING	COLOUR OF PAGE
<i>This tender is made of the following:-</i>		
THE TENDER (T)		
PART T1 : TENDERING PROCEDURES		
T1.1	Tender Notice and Invitation to Tender.	White
T1.2	Tender Data.	Pink
PART T2 : RETURNABLE DOCUMENTS		
T2.1	List of Returnable Documents.	Blue
T2.2	Returnable Schedules.	Blue
THE CONTRACT (C)		
PART C1 : AGREEMENTS AND CONTRACT DATA		
C1.1	Form of Offer and Acceptance.	Yellow
C1.2	Contract Data.	Yellow
PART C2 : PRICING DATA		
C2.1	Pricing Instructions.	Yellow
C2.2	Activity Schedule/ Bills of Quantities.	Yellow
PART C3 : SCOPE OF WORK		
C3.1	Introduction	White
C3.2	Aim and Objectives	White
C3.3	Overview/ Brief Description of the Current RAMS	White
C3.4	Planned work	White
PART C4 : SITE INFORMATION		
C4	There is not Site Information.	White

North West Provincial Government



Department of Public Works and Roads

PROFESSIONAL ENGINEERING SERVICES FOR
ROAD ASSET MANAGEMENT SYSTEM (RAMS) PROGRAMME MANAGERS

PART T : THE TENDER

PART T1 : TENDERING PROCEDURES

T1.1	Tender Notice and Invitation to Tender.	White
T1.2	Tender Data.	Pink

T1.1 : TENDER NOTICE AND INVITATION TO TENDER.

Purpose	The North West Provincial Government, Department of Public Works and Roads invite tenders for Professional Engineering Support Services for Road Asset Management System (RAMS) Programme Managers for a period of five years.
The Employer/ Client.	 Department of Public Works and Roads North West Provincial Government Republic of South Africa
Tender Nr	PWR 65/24
Tender Description	Professional Engineering Support Services: Road Asset Management System (RAMS) Programme Managers.
Important Tender Notes	(i) Tenders are invited from well experienced and capable Consultants, as this project is of highly specialized in nature. (ii) Although preferences are offered to tenders who have Historically Disadvantage Individual (HDI) Equity Ownership, most of the tender adjudication points are based on Technical Ability and Proven Experience. Only tenderers with at least the Key Project Team Members registered as Professional Engineer with the Engineering Council of South Africa (ECSA), and who has substantial experience in Road Asset Management Systems are eligible to submit tenders. The 90:10 preferential point systems will be applicable, as follows: Price and Functionality = 90 points, and preference participation goals = 10 points. Only tenderers scoring a minimum of 74 points for functionality will be consideration for next level of evaluation. (iii) Tender Closures are only administered at the Supply Chain Management Offices below. Telegraphic, Telephonic, Telex, Facsmille, E-mail and late Tenders will not be accepted. (iv) Requirements for Sealing, Addressing, Delivery, Opening and Assessment of tenders are stated in the Tender Data.

Physical Address and Contact Office for collection of Tender Documents.	<u>Physical Address</u> Provincial Head Office - Department of Public Works and Roads, Modiri Molema Road, Old Parliament Complex - Main Gate House, Mmabatho <u>Contact Office: Supply Chain Management</u> DATE : Tuesday 15th May 2025. TIME : From 8h30 until 16h00 PM TEL : 018 – 388 4481		
Queries relating to Technical Issues may be addressed to .	<u>Ms Mangoajane Moiloa</u> Tel : 018 388 4218 Email : MKMoiloa@nwpg.gov.za	OR	<u>Mr. Keoagile Aloysious Sitase</u> Tel : 018 388 1398 Email : Sitase@nwpg.gov.za
Tender Document Price.	Bid documents will be available from 16th May 2025 at old Parliament Building Gate House at a non-refundable fee of R500.00 or be deposited at the following banking details: Account Name: NW-Department of Public Works and Roads Bank Name: Absa Account no: 41-1181-1671 Ref no.: Quote Company Name and bid number Bid Documents downloaded from E-tender website are not payable, but bidders who will purchase bid documents from departmental office are to pay non-refundable fee of R500.00		
A Compulsory Clarification Meeting	A Compulsory Clarification Meeting with representatives of the Employer will take place as follows:- Date : 21st May 2025 Time : 10h00 Venue : Embassy Hall Provincial Golfview Mafikeng		

Tender Closing Date and Time.	The Closing Date and Time for the receipt of the tender is as follows: - Date : 6th June 2025 Time : 11h00 Place : Supply Chain Management Offices - Main Gate.
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T1.2 : TENDER DATA.

CLAUSE NUMBER	DATA
F1	The conditions of tender are the Standard Conditions of Tender as contained in Annex F of Board Notice 86 of 2010 in Government Gazette No 33239 of 28 May 2010, Construction Industry Development Board (CIDB) Standard for Uniformity in Construction Procurement. (See www.cidb.org.za) which are reproduced without amendment or alteration for the convenience of tenderers as an Annex to this Tender Data.
	The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies. (Attached un-amended as Annex F at the end of this Part T1: Tendering Procedures).
	The Standard Conditions of Tender for Procurements make several references to the Tender Data for details that apply specifically to this tender.
The following variations, amendments and additions to the Standard Conditions of Tender as set out in the Tender Data below shall apply to this tender: -	
F1.1	The Employer is the North West Department of Public Works and Roads, / Provincial Government, Republic of South Africa.
F1.2	The tender documents issued by the employer comprises: THE TENDER Part T1 : Tender Procedures. T.1.1 : Tender Notice and Invitation to Tender. T1.2 : Tender Data. Part T2 : Returnable Documents. T2.1 : List of Returnable Documents. T2.2 : Returnable Schedules. THE CONTRACT Part C1 : Agreements and Contract Data. C.1.1 : Form of Offer and Acceptance. C1.2 : Contract Data. C1.3 : Form of Guarantee Part C2 : Pricing Data. C.2.1 : Pricing Instructions. C.2.1 : Activity Schedules/ Bills of Quantities. Part C3 : Scope of Work C.3 : Scope of Work.

CLAUSE NUMBER	DATA		
F1.4	Communication and the Employer's Agents (s) obviously under the management of the Head of Department: Public Works and Roads:		
	<u>Ms Mangoajane Moiloa</u> Tel : 018 388 4218 Email : mkmoiloa@nwpq.gov.za	OR	<u>Mr Keoagile Aloysious Sitase</u> Tel : 018 388 1398 Email : Sitase@nwpq.gov.za
F1.6.2	The Employer reserves the right to utilize a competitive negotiation procedure in the case where the tender could not be awarded without further processing.		
F1.6.3	A Two-Stage Envelope will not be followed.		
F2.1	Only those satisfy the following eligibility criteria are eligible to submit tenders: (i) Well experienced and capable consultants in this specific field, as this project is highly specialised in nature. (ii) Proven success with RAMS, or at least the core sub-systems.		
	Only those tenderers who score a minimum score of 74 points in respect of the Functionality scoring to proceed to the other stages of evaluation.		
	In order to be considered for an appointment in terms of this tender, tenderers must have an office in one of the Major Towns within the North West Province, ideal in Mahikeng area, through which all communication with the employer will flow. The address of such local office must be indicated on Schedule 1, Part t2.2: Returnable Schedules , and which will be regarded as the <i>domicillium citandi et executandi</i> for the purpose of any contract arising from this tender submission.		
	In order to be considered for an appointment in terms of this tender, the tenderer must have Key Personnel in its permanent employment at the close of tender.		
F2.7	The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender.		
F2.10.3	Tendered Time-Based Fees shall be adjusted in terms of clause 3.16 of the Standard Professional Services Contract. Disbursements will be adjusted in line with the published Public Works rates for recoverable disbursements.		
F2.12	If tenderer wishes to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably improves the Employer's ability to achieve the objectives for the services as stated in the Scope of Works to be achieved, <u>at no additional cost</u> .		
F2.13.1	Tenderers must offer all parts of the required services as a whole.		

CLAUSE NUMBER	DATA
F2.13.2	No Electronic Tender or information will be allowed.
F2.13.3	Parts of each tender offer communicated on paper shall be submitted as an original.
F2.13.4	Tenders submitted by Joint Ventures of two or more firms shall accompanied by the document of Formation of the Joint Venture, in which is defined precisely the conditions under which the joint venture will function, its period of duration, the persons authorized to represent and obligate it, the participation of the several firms forming the joint venture, Individual Company Profile with its main Shareholders/ Directors' IDs and any other information necessary to permit a full appraisal of its functioning. The tender shall be signed by a person duly authorized to do so.
F2.13.6 & F3.5	A Two-Enveloped Procedure will not be followed.
F2.13.9	Telephonic, Telegraphic, Telex, Facsimile or Emailed tender offers will not be accepted. By signing the offer part of C1.1 Form of Offer and Acceptance the tenderer declares that all information provided in the tender submission is true and correct.
F2.15	The Closing Time for receipt of tenders is at 11h00, on 6th June 2025 . Note that tender closures are only administered at the following: - : <u>Supply Chain Management Offices</u> : Provincial Head Office - Department of Public Works and Roads, : Modiri Molema Road, : Old Parliament Complex : Mmabatho.
F2.16	The tender offer validity period is 90 days from the date of closure of which 90 days will lapse on the 8th September 2025 at 17h00.
F2.17	A tender may be rejected as non-responsive if the tenderer fails to provide any clarification requested by the employer within Five (5) working days from employer's written request for such clarification.

CLAUSE NUMBER	DATA
F2.18	Provide, on written request by the Employer, where the tendered amount inclusive of VAT exceeds R10 million: - (i) Audited Annual Financial Statements for 3 years, or for the period since establishment if established during the last 3 years, if required by the law to prepare Annual Financial Statements for auditing; (ii) A Certificate certifying that the tenderer has no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days. (iii) Particulars of any contracts awarded to the tenderer by an Department during the past Five (5) years, including particulars of any material non-compliance or dispute concerning the execution of such contract; Each party to a Consortium/ Joint Venture shall submit separate Certificate/ Statements in the above regard.
F2.19	Access shall be provided for the following inspections, tests and analysis: - Tender Briefing Meeting as stated in the Invitation to Tender.
F2.23	The tenderer is required to submit with his tender the Compulsory Returnable Documents as listed in T2.1 below.
F3.4	The time and location for opening of the tender offers will be communicated at the tender briefing session.
F3.8	Add the following:- Tenders will be considered non-responsive if , inter alia: - The tenderer does not comply with the eligibility criteria listed in F2.1 above; - The tenderer has failed to clarify or submit any supporting documentation within the time for submission stated in the employer's written request; - The tenderer has failed to achieve the minimum score for quality as stated in F3.11.5

CLAUSE NUMBER	DATA
F3.11.5	The procedure for evaluation of Tender Offers will be Method 4: Financial Offers, Quality and Preferences. The responsive tender with the highest total points as defined below is the preferred tender: - Responsive tenders will be assessed for Functionality/ Quality. However, functionality will not be considered as an evaluation criterion but rather gateway to further evaluation. minimum threshold of 66 points (out of 100) is required. - The 90/10 Preference Point System will be used in accordance with the Preferential Procurement Regulations 5 and 6. <u>Where:</u> ➤ 90 points will be allocated to price., and ➤ 10 points awarded for specific goals. In the case of a financial offer, quality and preferences: - Score each tender in respect of the financial offer made, preference claimed, if and the quality offered in accordance with the provisions of F3.11.7 TO F3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any. - Calculate the total number of tender evaluation points (TEV) in accordance with the following formula, unless otherwise stated in the Tender Data: $TEV = N_{FO} + N_P$ Where : N_{FO} = Number of tender evaluation points awarded for the financial offer made in accordance with F3.11.7; N_P = Number of tender evaluation points awarded for preferences claimed in accordance with F3.11.8; - Rank tender offers from the highest number to tender evaluation points to the lowest. - Recommend the tenderer with the highest number to tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so. - Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with highest number of tender evaluation points and recommend the tender with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this sub-clause is repeated

CLAUSE NUMBE R	DATA									
F3.11.7	Financial Offer: As stated in F3.11.5 Method 4: Financial Offer, Quality and Preferences. Score then financial offers of remaining responsive tender offers using the following formula: $N_{FO} = W_1 + A$ Where: N_{FO} : Is the number of tender evaluation points awarded for the financial offer. W₁ : Is the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data. A : Is a number calculated using the formula and option described in Table F1 for this tender: $A = 1 - \frac{(P - P_m)}{P_m}$ Which is Formulary 2 (Option 1) as per standard Conditions of Tender, Clause F3.11.7 and P_m : Is the comparative offer of the most favorable comparative offer. P : Is the comparative offer of the tender offer under consideration.									
F3.11.8	Scoring Preferences: P_e - Targeted Enterprise Participation (Direct Preference) (Maximum 10 Points). Direct Preference points for the Target Enterprise status of the tenderer will be scored in terms of the following table: <table><tr><th>The specific goals allocated points in terms of this tender</th><th>Number of points claimed (90/10 system) (To be completed by the tenderer)</th><th>Number of points allocated (90/10 system) (To be completed by the Department)</th></tr><tr><td>(Ownership) Enterprises owned by black people (HDI)(at least 51% black owned)</td><td></td><td>4</td></tr><tr><td>(Locality) Enterprises must have an active office within the North West province</td><td></td><td>6</td></tr></table>	The specific goals allocated points in terms of this tender	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points allocated (90/10 system) (To be completed by the Department)	(Ownership) Enterprises owned by black people (HDI)(at least 51% black owned)		4	(Locality) Enterprises must have an active office within the North West province		6
The specific goals allocated points in terms of this tender	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points allocated (90/10 system) (To be completed by the Department)								
(Ownership) Enterprises owned by black people (HDI)(at least 51% black owned)		4								
(Locality) Enterprises must have an active office within the North West province		6								

CLAUSE NUMBER	DATA																																								
F3.11.9	1. Ownership will be verified through the Central Suppliers Database by National Treasury and CIPC documentation. In case of JV, the leading partner documentation will be taken into consideration. 2. Locality – As a proof attach the following: 2.1. Lease agreement with property owner located within Municipality/Township or 2.2. A Municipal rates invoice in the name of the company issued within the last three (3) Months or 2.3. An affidavit or equivalent from an authorized traditional leader or local councilor in regions where municipality rates invoice is not available showing the township name and ERF number or physical address. <i>NB. Non-compliance on any of the abovementioned items will result in Tenderers forfeiting preference points.</i> Scoring Preferences: A bidder who scores less than 66% on the total functionality points (that is less than 74 points), will be disqualified and won't be further considered for evaluation. The quality criteria and maximum score in respect of each of the criteria are as out in the table <i>Score Sheet for Quality Rating</i> after this table.																																								
	<table><tr><th>No</th><th>Item</th><th>Criteria</th><th>Experience</th><th colspan="3">Method of Evaluation</th></tr><tr><th colspan="4">CAPACITY</th><th>A</th><th>B</th><th>C</th></tr><tr><th colspan="4">Resources & experience of professionals employed by civil engineering company</th><th>Tenderer rating (Score 1-5)</th><th>Weighting</th><th>Tenders Score (%) *=(AxB)/5</th></tr><tr><td rowspan="5">1</td><td rowspan="5">PROJECT LEADER</td><td rowspan="5">BTech/Honours/MSc Degree in Civil Engineering. Experience in Provincial or Rural Road Asset Management System as a project Leader</td><td>Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS less than 3 years</td><td>1</td><td rowspan="5">10</td><td></td></tr><tr><td>Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS from 3 to less than 6 years</td><td>2</td><td></td></tr><tr><td>Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS from 6 to less than 10 years</td><td>3</td><td></td></tr><tr><td>Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS from 8 to less than 10 years</td><td>4</td><td></td></tr><tr><td>Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS more than 10 years</td><td>5</td><td></td></tr></table>	No	Item	Criteria	Experience	Method of Evaluation			CAPACITY				A	B	C	Resources & experience of professionals employed by civil engineering company				Tenderer rating (Score 1-5)	Weighting	Tenders Score (%) *=(AxB)/5	1	PROJECT LEADER	BTech/Honours/MSc Degree in Civil Engineering. Experience in Provincial or Rural Road Asset Management System as a project Leader	Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS less than 3 years	1	10		Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS from 3 to less than 6 years	2		Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS from 6 to less than 10 years	3		Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS from 8 to less than 10 years	4		Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS more than 10 years	5	
	No	Item	Criteria	Experience	Method of Evaluation																																				
	CAPACITY				A	B	C																																		
	Resources & experience of professionals employed by civil engineering company				Tenderer rating (Score 1-5)	Weighting	Tenders Score (%) *=(AxB)/5																																		
	1	PROJECT LEADER	BTech/Honours/MSc Degree in Civil Engineering. Experience in Provincial or Rural Road Asset Management System as a project Leader	Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS less than 3 years	1	10																																			
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				Total Years of Post Registration Project Lead Experience in PRAMS /RRAMS more than 10 years	5																																				

		(CV, qualification and affidavit from individuals to be attached as proof)				
2	ROAD SAFETY AUDITOR	BTech/Honours/MSc Degree in Civil Engineering or equivalent. Must be a certified and accredited Road Safety Auditor (SARF)	Total Years of Post Certification (SARF) Experience less than 3 years	1	10	
			Total Years of Post Certification (SARF) Experience from 3 to less than 6 years	2		
			Total Years of Post Certification (SARF) Experience from 6 to less than 8 years	3		
			Total Years of Post Certification (SARF) Experience from 8 to less than 10 years	4		
			Total Years of Post Certification (SARF) Experience more than 10 years	5		
		(CV, qualification and affidavit from individuals to be attached as proof)				
		3	ASSET MANAGEMENT SPECIALIST	BTech/Honours/MSc Degree in Civil Engineering or equivalent. Must be registered with SAAMA and a Certified Asset Management (CAMA) Assessor (ISO 55000) with IDMS experience.	Total Years of Post Registration (ECSA) Experience in Asset Management for 5 years	1
Total Years of Post Registration (ECSA) Experience in Asset Management 10 years	2					
Total Years of Post Registration (ECSA) Experience in Asset Management for 15 years	3					
Total Years of Post Registration (ECSA) Experience in Asset Management for 20 years	4					
Total Years of Post Registration (ECSA) and Experience in Asset Management for 25 years and more.	5					
(CV, qualification and affidavit from individuals to be attached as proof)						
4	TRANSPORT ECONOMIST			B Eng/M Eng/PhD in Transportation Engineering. Experience in Transport Modelling/Planner while Asset management would be an advantage	Total Years of Post Registration (ECSA) Experience in Transport Modelling/Planner for 5 years. Asset management would be an advantage.	1
		Total Years of Post Registration (ECSA) Experience in Transport Modelling/Planner for 10 years. Asset management would be an advantage.	2			
		Total Years of Post Registration (ECSA) Experience in Transport Modelling/Planner for 15 years. Asset management would be an advantage.	3			
		Total Years of Post Registration (ECSA) Experience in Transport Modelling/Planner for 20 years. Asset management would be an advantage.	4			
		Total Years of Post Registration (ECSA) Experience in Transport Modelling/Planner for more than 20 years. Asset management would be an advantage.	5			
		(CV, qualification and affidavit from individuals to be attached as proof)				

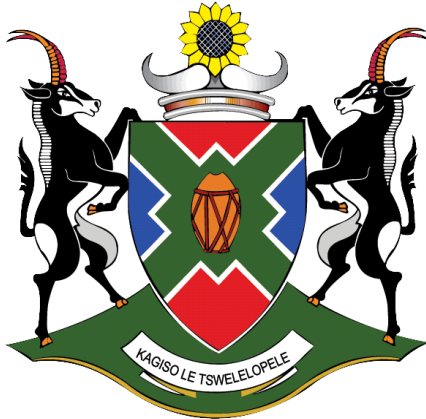
		5	PMS ENGINEER	BTech/Honours/MSc Degree in Civil Engineering or equivalent (Pavement/Materials Engineering. Qualification, to be evaluated on the experience	Total Years of Post Registration (ECSA) Experience in PRAMS/RRAMS less than 3 years	1	5	
					Total Years of Post Registration (ECSA) Experience in PRAMS/RRAMS from 3 to less than 6 year	2		
					Total Years of Post Registration (ECSA) Experience in RAMS from 6 to less than 8 years	3		
					Total Years of Post Registration (ECSA) Experience in PRAMS/RRAMS from 8 to less than 10 years	4		
					Total Years of Post Registration (ECSA) Experience in PRAMS/RRAMS more than 10 years	5		
					(CV, qualification and affidavit from individuals to be attached as proof)			
		6	Traffic Engineer/Technologist	BTech/Honours/MSc Degree in Civil Engineering or equivalent. Experience in as traffic engineering	Total Years of Post Registration (ECSA) Experience less than 3 years	1	5	
					Total Years of Post Registration (ECSA) Experience from 3 to less than 6 years	2		
					Total Years of Post Registration (ECSA) Experience from 6 to less than 8 years	3		
					Total Years of Post Registration (ECSA) Experience from 8 to less than 10 years	4		
					Total Years of Post Registration (ECSA) Experience more than 10 years	5		
					(CV, qualification and affidavit from individuals to be attached as proof)			
		7	BMS Engineer	BTech/Honours/MSc Degree in Civil Engineering or equivalent. Must be certified and Senior Bridge Inspector (COTO) to be evaluated on the experience	Total combined years of Post Certification (COTO) Experience less than 3 years	1	5	
					Total combined years of Post Certification (COTO) Experience from 3 to less than 6 years	2		
					Total combined years of Post Certification (COTO) Experience from 6 to less than 9 years	3		
					Total combined years of Post Certification (COTO) Experience from 9 to less than 12 years	4		
					Total combined years of Post Certification (COTO) Experience more than 12 years	5		
					(CV, qualification and affidavit from individuals to be attached as proof)			
		8	2 x Bridge/Major Culvert Inspectors	N Diploma/BTech/ in Civil Engineering or equivalent. Must be certified and accredited as a Bridge/Major Culvert Inspector (COTO)	Total combined years of Post Certification (COTO) Experience less than 3 years	1	5	
					Total combined years of Post Certification (COTO) Experience from 3 to less than 6 years	2		
					Total combined years of Post Certification (COTO) Experience from 6 to less than 9 years	3		
					Total combined years of Post Certification (COTO) Experience from 9 to less than 12 years	4		
					Total combined years of Post Certification (COTO) Experience more than 12 years	5		

		(CV, qualification and affidavit from individuals to be attached as proof)				
				A	B	C
	COMPANY EXPERIENCE Resources & experience of professionals employed by civil engineering company			Tenderer rating (Score1-5)	Weighting	Tenders Score (%)'=(AxB)/5
9	PROJECT EXPERIENCE REFERENCES	A Maximum of 25 points will be allocated to professional services provider who completed PRAMS and / or RRAMS projects	1 PRAMS/ RRAMS Project completed: Appointment Letter and Client Reference Lette	1	25	
			2 PRAMS/ RRAMS Project completed: Appointment Letter and Client Reference Letter	2		
			3 PRAMS/ RRAMS Project completed: Appointment Letter and Client Reference Letter	3		
			4 PRAMS/ RRAMS Project completed: Appointment Letter and Client Reference Letter	4		
			5 PRAMS/ RRAMS Project completed: Appointment Letter and Client Reference Letter	5		
		(CV, qualification and affidavit from individuals to be attached as proof)				
				A	B	C
10	QUALITY MANAGEMENT & Resources & experience of professionals employed by civil engineering company			Tenderer rating (Score 0-5)	Weighting	Tenders Score (%)' =(AxB)/2
	Formal ISO 9001: 2015 Quality Management System Certification. (Attach Certification)	Yes	Attached	5	10	
No		Not Attached	0			
	Company Director/s must have formal certified ISO 55001:2024 training certification (RAMS-TMH 22). (Attach certification)	Yes	Attached	5	5	
		No	Not Attached	0		

The minimum number of evaluation points for quality. is 74.

F3.13.1	Acceptance of Tender offer: 1) The tenderer has in his or her possession an original valid Tax Clearance Certificate issued by the South African Revenue Services (SARS); 2) The tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; and 3) The tenderer has not: a) Abused the Employer's Supply Chain Management System; or b) Failed to perform on any previous contract and has been given a written notice o this effect; c) It is considered that the performance of the services will not be compromised through any of interest.
F3.18	The number of paper copies of the signed contract to be provided by the employer in 3 (three) copies after the award.

North West Provincial Government



Department of Public Works and Roads

PROFESSIONAL ENGINEERING SERVICES FOR ROAD ASSET MANAGEMENT SYSTEM (RAMS) PROGRAMME MANAGERS

PART T : THE TENDER

PART T2 : RETURNABLE DOCUMENTS

T2.1	List of Returnable Documents.	Blue
T2.2	Returnable Schedules.	Blue

2.1 : LIST OF RETURNABLE DOCUMENTS

The tenderer must complete the returnable documents as listed below:

It is important that the tenderer to note the following:

- The tenderer is required to submit with his tender the Compulsory Returnable Documents as listed here.
- Non-Submission of any document will lead to disqualification of the tender.
- The tenderer must complete these returnable documents and include with the tender submission.

Pre-Qualifications requirements:

- A : Duly signed bid documents (entire document) and all attached SBD Forms.
- B : Signed Form of Offer.
- C : Record of Addenda to Tender Documents, where applicable.

D	:	Legal Joint Venture Agreement , where applicable.
E	:	Identity documents of Owners/ Directors/ Members/ Shareholders.
F	:	Certified copy of Company Registration for Incorporation or of Company, as applicable.
G	:	Closed corporations to attached an Association Agreement.
H	:	Shareholders' Agreements/ Share Certificates/ Memorandum of Association for Companies.
I	:	Valid VAT Certificate in the event the bidder is a VAT Vendor.
J	:	An original valid Tax Clearance Certificate issued by the South African Revenue Services.
K	:	Certificate of Authority of an Entity.
L	:	Valid letter of Good Standing from the Department of Labour.
M	:	SBD1, SBD4, and SBD6.1

1. Other document that will be incorporated into the contract:		
a)		
b)		
c)		
2.	C1.1	: Offer and Acceptance.
3.	C1.2	: Contract Data (Part C1.2).
4.	C2.2	: Activity Schedule.
1. Other		
d)		
e)		
f)		

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest¹ in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

¹ the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

.....
.....

- 2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?

YES/NO

- 2.3.1 If so, furnish particulars:

.....
.....

3 DECLARATION

I, the undersigned, (name).....
in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998

² Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....	
Signature	Date
.....	
Position	Name of bidder

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 90/10 system for requirements with a Rand value of above R50 000 000 (all applicable taxes included); and

1.2 To be completed by the Department

The applicable preference point system for this tender is the 90/10 preference point system.

- a) The 90/10 preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

- (a) Price; and
- (b) Specific Goals.

1.4 To be completed by the Department:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	90
SPECIFIC GOALS	10
Total points for Price and SPECIFIC GOALS	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

- 1.6 The Department reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the Department.

2. DEFINITIONS

- (a) **“tender”** means a written offer in the form determined by the Department in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;
- (b) **“price”** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;
- (c) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;
- (d) **“tender for income-generating contracts”** means a written offer in the form determined by an Department in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the Department and a third party that produces revenue for the Department, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and
- (e) **“the Act”** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 90 points is allocated for price on the following basis:

90/10

$$Ps = 90 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1 In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2 In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an Department must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the

applicable preference point system,

then the Department must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

The specific goals allocated points in terms of this tender	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points allocated (90/10 system) (To be completed by the Department)
(Ownership) Enterprises owned by black people (HDI)(at least 51% black owned)		4
(Locality) Enterprises must have an active office within the North West province		6

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3 Name of company/firm

4.4 Company registration number:

4.5 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One-person business/sole propriety
Close corporation
- ☐ Public Company
Personal Liability Company
(Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

[TICK APPLICABLE BOX]

4.6 I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the Department that the claims are correct;
- iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the Department may, in addition to any other remedy it may have –
 - (a) disqualify the person from the tendering process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any Department for a period not exceeding 10 years, after the *audialterampartem* (hear the other side) rule has been applied; and
 - (e) Forward the matter for criminal prosecution, if deemed necessary.

.....
SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME:

DATE:

ADDRESS:.....

.....

Record of Addendum to Tender Documents

I/ We confirm that the following communications received from the Employer or his representative before the date of submission of this tender offer, amending the tender documents, have been taken into account in this tender offer.

ADD No	DATE	TITLE OR DETAILS
1		
2		
3		
4		
5		
6		

Name: _____

Signature: _____

(Of person authorized to sign on behalf of the Tenderer)

Certificate of Authority of an Entity

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tender must complete the certificate set out below for the relevant category.

(i) Company	(ii) Close Corporation	(iii) Partnership	(iv) Joint Venture	(v) Sole Proprietor

(I) CERTIFICATE FOR COMPANY

I _____, chairperson of the Board of Directors
_____, hereby confirm that by resolution of the Board (copy
attached) taken on _____20_____.

Mr/ Mrs. _____, acting in the capacity of
_____, was authorized to sign all documents in connection
with this tender and any contract resulting from it on behalf of the company.

Name of Chairman: _____

Signature: _____

As Witnesses:

1 _____ Name in Block Letters _____

2 _____ Name in Block Letters _____

Date: _____

(II) **CERTIFICATE FOR CLOSE CORPORATTION**

We, the undersigned, being the key members in the business trading as _____

herby authorizes Mr/ Mrs. _____

acting in the capacity of _____

to sign all documents in connection with the tender for Contract No. _____

and any contract resulting from it on our behalf.

Signature of Signatory: _____

As Witnesses:

1 _____ Name in Block Letters _____

2 _____ Name in Block Letters _____

Date: _____

NAME	ADDRESS	SIGNATURE	DATE

Note: This certificate is to be completed and signed by all the key members upon whom rests the direction of the affairs Close Corporation as a whole.

(III) **CERTIFICATE FOR PARTNERSHIP**

We, the undersigned, being the key members in the business trading as _____

herby authorizes Mr/ Mrs. _____

acting in the capacity of _____

to sign all documents in connection with the tender for Contract No. _____ and any contract resulting from it on our behalf.

Signature of Signatory: _____

As Witnesses:

1 _____ Name in Block Letters _____

2 _____ Name in Block Letters _____

Date: _____

NAME	ADDRESS	SIGNATURE	DATE

Note: This certificate is to be completed and signed by all the key members upon whom rests the direction of the affairs Close Corporation as a whole.

IV) CERTIFICATE FOR JOINT VENTURE

We, the undersigned, being the key members in the business trading as _____

herby authorizes Mr/ Mrs. _____

acting in the capacity of _____

to sign all documents in connection with the tender for Contract No. _____ and any contract resulting from it on our behalf.

This authorization is evidence by the attached power of attorney signed by legally authorized signatories of all the partners to the Joint venture.

Signature of Signatory: _____

As Witnesses:

1 _____ Name in Block Letters _____

2 _____ Name in Block Letters _____

Date: _____

NAME OF FIRM	ADDRESS	AUTHORSING SIGNATURE, NAME AND CAPACITY
Lead Partner		

Note: This certificate is to be completed and signed by all the key members upon whom rests the direction of the affairs Partnership as a whole.

(V) CERTIFICATE FOR SOLE PROPRIETOR

[Important note to Tenderer: Certified copies of the identity documents must be included here in case of a Sole Proprietor]

I _____,
hereby confirm that I am the sole owner of the business trading as _____

Signature of Sole Owner: _____

As Witnesses:

1 _____ Name in Block Letters _____

2 _____ Name in Block Letters _____

Date: _____

Registration Certificate of an Entity

IMPORTANT NOTE TO TENDERER:

The following documentation *must be inserted here*.

- 1. Registration Certificates for Companies,**
- 2. Close Corporations and Partnerships,**
- 3. Certified copies of ID documents for Sole Proprietors,**
- 4. the case of a Joint Venture, a copy of a duly signed Joint Venture Agreement must also be included.**

Certificate of Authority for Joint Ventures

This Returnable Schedule is to be completed by joint ventures.

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorize Mr / Mrs....., authorized signatory of the company, acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf

Name of firm	Address	Duly Authorized Signatory
Lead Partner		Signature:.....
		Name:
		Designation:.....
		Contact Nr:
Firm 2		Signature:.....
		Name:
		Designation:.....
		Contact Nr:
Firm 3		Signature:.....
		Name:
		Designation:.....
		Contact Nr:

- Attached JV agreement to this document.

Proposed Amendments and Qualifications

The Tender should record any deviations or qualifications, he may wish to make to the tender documents is this Returnable Schedule. Alternatively, a tenderer may state such deviations and qualification in a covering letter to his tender and reference such letter in this schedule.

The Tenderer's attention is drawn to clause F3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the employer's handling of material deviations and qualifications.

Tenders must not include deviations or qualifications relating to the scope of work in this schedule where they are required to submit an Approach Paper.

Page	Clause or Item	Proposal

Signed: _____
Name: _____
Tender: _____

Date: _____
Position _____

Curriculum Vitae Format of Key Personnel

To be done for at least the following personnel.

Name:	Date of Birth:
Professional:	Nationality:
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current Position:	Years with firm:
<u>Employment Record:</u>	
<u>Experience Record Pertinent to Required Service:</u>	

Certification:

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....

Signature of person named in the schedule

.....

Date

Schedule of Proposed Specialist Sub-Contractors

The Contractor hereby notifies the Employer of his intention to employ the following specialist Sub-Contractors for work in this contract.

If we are awarded a contract we agree that this notification does not change the requirement for us to submit the names of proposed Sub-contractors in accordance with requirements in the contract for such appointments. If there are no such requirements in the contract, then your written acceptance of this list shall be binding between us.

	Name and address of proposed Sub-Contractor	Nature and extent of work	Previous experience with Sub-Contractor
1			
2			
3			
4			
5			

Signed: _____

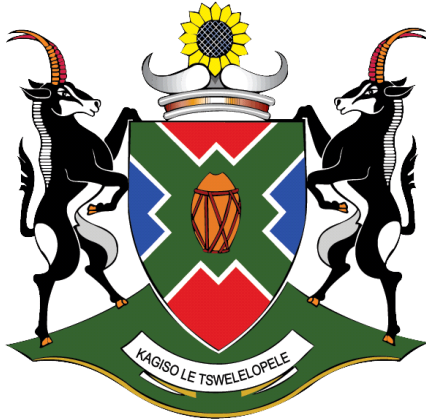
Date: _____

Name: _____

Position: _____

Tenderer: _____

North West Provincial Government



Department of Public Works and Roads

PROFESSIONAL ENGINEERING SERVICES FOR
ROAD ASSET MANAGEMENT SYSTEM (RAMS) PROGRAMME MANAGERS

PART C : THE CONTRACT		
PART C1 : AGREEMENTS AND CONTRACT DATA		
C1.1	Form of Offer and Acceptance	Yellow
C1.2	Contract Data for CIDB Standard Professional Services Contract	Yellow

C1.1 FORM OF OFFER AND ACCEPTANCE

Offer:

The employer identified in the acceptance signature block has solicited offers to enter into contract for the procurement of **Professional Engineering Services for Road Asset Management System (RAMS) - Programme Managers**

The tender, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all the obligations and liabilities of the service provider under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX (for all five years (60 months))

..... Rand (in words);

R..... (in figures)

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named in the provider in the conditions of contract identified in the contract data.

Signature :

Name:

Capacity:

For the tenderer:

.....
.....

Acceptance

By signing this part of this form and acceptance, the employer identified below accepts the tenderer's offer. In consideration thereof, the employer shall pay the provider the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the tenderer's offer shall form an agreement between the employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that in the subject of this agreement.

The terms of the contract, are contained in:

part c1: agreements and contract data (which includes this agreement)
part c2: pricing data
part c1: scope of work

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The tender shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contract the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data . Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect two working days after the submission by the employer of one fully completed original copy of this document including the schedule of deviations (if any), to a courier-to-counter delivery, provided that the employer notifies the tenderer of the tracking number within 24 hours of such submission. Unless the tenderer (now contractor) within seven working days of the date of such submission notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a bidding contract between the parties.

Signature :
Name:
Capacity:

for the Employer:

North West Provincial Department of Public Works and Roads

Old Parliment Complex - Main Gate House
Modiri Molema Road
Mmabatho
2735

Private Bag x 2080
Mmabatho, 2735
Tel: (018) 388 1390

(Name and address of organization)

Schedule of Deviations

1. Subject:
Details:
.....
2. Subject:
Details:
.....

3. Subject:
Details:
.....
4 Subject:
Details:
.....

By the duly authorized representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules , as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

C1.2 CONTRACT DATA FOR CIDB STANDARD PROFESSIONAL SERVICES CONTRACT

Function and broad outline of contents: This document identifies which standard conditions of contract are applicable, and together with contract specific data, establishes the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the contract.

The Conditions of Contract are the Standard Professional Services Contract (.....) published by the Construction Industry Development Board. Each item of data given below is cross-referenced to the clause in the Conditions of Contract to which it may applies.

Part 1: Data provided by the Employer

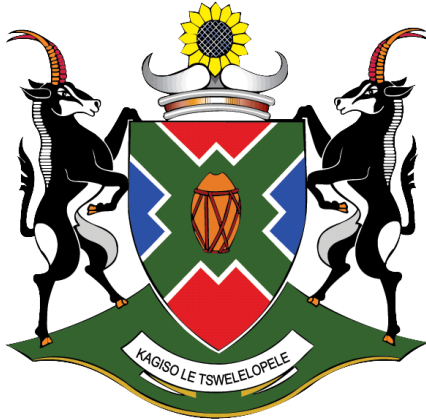
Clause		
	The Employer is the North West Provincial Department of Public Works and Roads	
3.4 and 4.3.2	The authorized and designated representative of the Employer is.	Name: Ms Mangoajane Khaka Moiloa
	The address for receipt of communications is: Tel : 018 388 4218 Email : MKMoiloa@nwpg.gov.za	Old Parliment Complex - New Building Modiri Molema Road Mmabatho 2735
1	The Project is Professional Engineering Support Services for Road Asset Management System (RAMS) - Programme Managers	
1	The period of performance is five years (60 months) .	
3.4.1	Communication by facsimile is not permitted.	
3.5	The location for the performance of the Project is: Departmental Head Office, Mmabatho, North West Province.	
3.11	The penalty payable is R4 000-00 per day.	
3.14	The programme shall be submitted within 21 days of the award of the Contract.	
5.4.1	The Service Provider is required to provide professional indemnity cover as set out in the Professional Indemnity Schedule. The Service Provider is required to provide the following insurance: 1. Insurance against : Claims from Sub-Contractors of the RAMS Consultant Cover is : R15 000 000-00 Period of cover : From date of Sub-Contract signature to 1 year after completion of sub-contract. 2. Insurance against : Failure to substantially deliver and perform in terms of the Contract by the end of Year 1. Cover is : R15 000 000-00 Period of cover : For 60 months from start of contract.	

Clause	
5.5	The Service Provider is required to obtain the Employer's prior approval before taking any of the following: 1) 2)
7.2	The Service Provider is required to provide personnel in accordance with the provisions of clause 7.2 and to complete the Personnel Schedule.
8.1	The Service Provider is to commence the performance of the Services within 14 days of the date that the Contract becomes effective.
8.2.1	The Contract is concluded five years (60 months) after the start date .
8.4.3 (c)	The period of suspension under clause 8.5 is not to exceed 4 months.
9.1	Copyright of documents prepared for the Project shall be vested with the Employer.
12.1	Final settlement is by of disputes is to be by mediation .
12.2/ 12.3	Final settlement is by arbitration .
12.2.1	In the event that the parties fail to agree on an arbitrator, is nominated by South Africa Association of Consulting Engineers (SAACE).
13.13	All persons in a joint venture or consortium shall carry a combined minimum professional indemnity insurance of R15 000 000.00
15	The interest rate will be prime interest rate of the Employer bank at the time that the amount is due.
	The additional conditions of contract are:

Part 2: Data provided by the Service Provider

Clause																			
1	The Service Provider is:..... Address :..... Telephone :..... Facsimile :.....																		
5.3	The authorized and designated representative of the Service Provider is: Name :..... The address for receipt of communication is: Telephone : Facsimile :..... Address :..... :..... :.....																		
5.5 7.1.2	The Key Persons and their jobs/ functions in relation to the services are: <table border="1"> <tbody> <tr> <td>Name:.....</td> <td>Role:.....</td> </tr> <tr> <td>Name:.....</td> <td>Role:.....</td> </tr> <tr> <td>Name:.....</td> <td>Role:.....</td> </tr> <tr> <td>Name:.....</td> <td>Role:.....</td> </tr> <tr> <td>Name:.....</td> <td>Role:.....</td> </tr> <tr> <td>Name:.....</td> <td>Role:.....</td> </tr> <tr> <td>Name:.....</td> <td>Role:.....</td> </tr> <tr> <td>Name:.....</td> <td>Role:.....</td> </tr> <tr> <td>Name:.....</td> <td>Role:.....</td> </tr> </tbody> </table>	Name:.....	Role:.....	Name:.....	Role:.....	Name:.....	Role:.....	Name:.....	Role:.....	Name:.....	Role:.....	Name:.....	Role:.....	Name:.....	Role:.....	Name:.....	Role:.....	Name:.....	Role:.....
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North West Provincial Government



Department of Public Works and Roads

PROFESSIONAL ENGINEERING SERVICES FOR
ROAD ASSET MANAGEMENT SYSTEM (RAMS) PROGRAMME MANAGERS

PART C2 : PRICING DATA		
C2.1	Pricing Instructions	Yellow
C2.2	Activity Schedule, Quantities and Prices	Yellow

C2.1 PRICING INSTRUCTIONS

PREAMBLE TO THE PRICING SCHEDULE

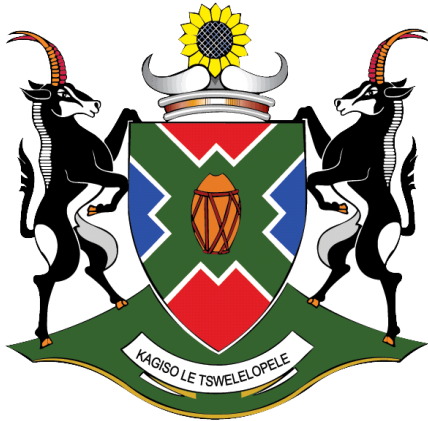
- a. The Pricing schedule (Part C2.2C Activity Schedule/ Bill of Quantities) includes estimated hours for a range of personnel covering the various tasks in the project. For the purposes of this schedule, the following words shall have the meanings assigned to them:
- **Unit** : The unit of measurement for each item of work as defined in the standard specifications or the project specifications.
 - **Quantity** : The number of units of work for each item.
 - **Rate** : The payment required per unit of work executed.
 - **Amount** : The product of the quantity and the tendered rate.
 - **Lump Sum** : An amount tendered for an item, the extend of which is described in the pricing schedule, the specifications or elsewhere, but of which the quantity of work is not measured in units.
 - **Prov. Sum**: (Provisional Sum): An amount allowed for an item, the exact extent of which is currently unknown. Such amounts are under the sole discretion of the Employer and can only be expended following a specific instruction from the Employer.
 - **Percent** : Mark-up percentage applied to an item.
 - **No** : The number of items to which a rate is applied.
 - **PC Sum** : (Prime Cost Sum): an allowance for the supply of work or materials to be provided by a contractor or supplier. The allowance is independent of any mark-up or labor by the Consultant.
- b. This Pricing Schedule forms part of the contract documents and must be read in Conjunction with all the other documents comprising the contract documents.
- c. The estimated hours, disbursement quantities and provisional sums set out in the Pricing Schedule are approximately value only. The values of work finally accepted and certified for payment, and not values given in the Pricing Schedule will be used to determine payments to the Consultant.
- d. The validity of the contract shall in no way be affected by differences between the values in the Pricing Schedule and values finally certified for payment.
- e. The hourly rates, disbursement, sums, lump sums and rate only items shall include full Compensation for support staff (topics, filing etc.), overheads, profits, incidentals, tax (other than VAT), etc.
- f. The bidder shall fill in on hourly rate or disbursement rate for each item where provision is made for it. Items against which no rate has been entered in the tender will not be paid for when the work is executed.

- g. Bidders shall not enter "included" against any item, nor shall be grouped together and a single amount entered if a tender wishes to make any alteration to the Pricing Schedule, then it should be treated as an alternative bid in terms of Tender Data Paragraph F2.12.
- h. The bid hourly and disbursement rates shall be irrespective of any change in the quantities during the execution of the contract.
- i. The value of work or provisional sums stated in the Pricing Schedule shall not be considered as restricting or extending the amount of work to be done or value of services to be supplied by the consultant.
- j. The value of work or provisional sums in the Pricing Schedule shall not be regarded as authorization for the consultant to engage sub-consultants or to execute work. The consultant shall obtain the Employer's approval prior to execute work or making arrangements in this regard.
- k. The short descriptions of the payment items in the Pricing Schedule are given to identity the items and to provide specific details.
- l. The hourly rates and disbursement rates filed in by the bidder in the Pricing Schedule shall be final and bidding, and may not be adjusted should there be any mistakes in the extensions thereof and in the total sums appearing in the tender. Should there be any discrepancies between the bid sum and the correctly extended and totaled Pricing Schedule, the rates will be regarded as being correct.
- m. The Employer shall have the right to make adjustments to the bid sum to reconcile the sum with the total of the Pricing Schedule. The Employer shall liaise with the consultant in making adjustments to the bid sum but, failing agreement between the parties, the decision of the Employer shall be final and binding. Adjustment of the bid sum will take places prior to the signing of the contract. In their own interest bidders must make certain of the correctness of their tendering rates, the extensions and the tender sum.
- n. A bid may be reject if the hourly rates or adjustment rates (or hour quantities where no such quantities are provided) for any of the items in the Pricing Schedule are, in the opinion of the Employer, unreasonable or out of proportion. The bidder will be given a period of seven (7) days after having been notified in writing by the Employer to adjust the rates (or hours where not provided in the Pricing Schedule) for the relevant items.
- o. All rates and sums of money quoted in the Pricing Schedule shall be in South African Rand and whole cents. Fractions of cent shall be discarded.
- p. **The item numbers appearing in the Pricing Schedule refer to the corresponding item numbers in Section C3: Scope of Services included in this project document.**
- q. The rates tendered for lump sum items shall be adjusted annually using CPI as published by Stats SA for the RSA.
- r. The bidder should be in possession of all the necessary ICT capacity required to support this project and no procurement costs of software and hardware will be entered and should be included within the rates tendered.

Part C2.2 Activity schedule / Bill of quantity to be inserted from page 116

Note: Electronic Bill of Quantity will be available as an addendum during the mandatory briefing session

North West Provincial Government



Department of Public Works and Roads

PROFESSIONAL ENGINEERING SERVICES FOR
ROAD ASSET MANAGEMENT SYSTEM (RAMS) PROGRAMME MANAGERS

PART C3 : SCOPE OF WORK		
C3.1	Introduction	Blue
C3.2	Aim and Objectives	
C3.3	Overview/ Brief Description of the Current RAMS	
C3.4	Planned work	

3.1 INTRODUCTION

The North West Provincial Department of Public Works and Roads is hereby request the services of a **"Service Provider to assist, over a period of five years (60 months), re-newable annually; with the Maintenance, Refinement, Enhancement, Updating, Operation and Support of the Road Asset Management System (RAMS)"**.

- ❑ The Service Provider, in this document also referred to as the *"RAMS Management Consultant"* or *"Consultant"* or *"RAMS Programme Manager"*, will assist the Department as described in this part of documentation.
- ❑ "Renewable Annually" means that: "Depending on the results of the Performance Appraisal of the appointed Service Provider, at the end of each year, the contract might be renewed or not; going forward within the five-year period".

Interested consultants have to be registered with ECSA, provide proof of comparable experience in Operations Support of PMS, GrMS and other related models at similar roads authorities in South Africa, provide proof of capability to do life cycle costing and consequence analysis and provide a team experienced in pavement management and pavement management systems.

The consultant, in this document referred to as the "RAMS Management Consultant" (RAMS MC), will assist the Department as described below.

3.1.1. Planned Work: General

The RAMS Management Consultant will support the Department in all aspects for complying with the annual Provincial Road Maintenance Grant (PRMG) requirements as published in the annual Division of Revenue Act (DORA), and all requirements for effective road asset management, as documented in the TMH22 Road Asset Management Manual.

The Planning and Design Sub-directorate will oversee the support from the RAMS MC, while internally, within the Department, raising levels of awareness on asset management.

The emphasis of the project is on empowering the Department to manage the road infrastructure assets under its jurisdiction according to the national requirements. The RAMS MC will assist the Department to develop required Road Infrastructure Asset Management Policies, to do annual assessment and gap analysis of asset management maturity and evaluate the Department's capability in all areas of road infrastructure asset management, as well as prepare an improvement plan. The RAMS MC will also advise the directorate on the levels of asset management suitable to various infrastructure assets and road classes, within requirements of TMH22.

The RAMS Management Consultant will manage the process of annual data acquisition, and be responsible for quality control and quality acceptance. For this reason, the RAMS MC will not be allowed to collect data with own staff. The actual data acquisition will be tendered out by the Department, with assistance from the RAMS Management Consultant. If required, independent data quality verification may be required, and shall then be arranged by the RAMS MC.

The annual planned work can be summarised as follows: Support the Department in updating of the Road Infrastructure Asset Management Policies, do annual assessment and gap analysis of asset management maturity and evaluate the Department's capability in all areas of road infrastructure asset management, as well as prepare an improvement plan. Advise the Department on the levels of asset management to be applied to various infrastructure assets and road classes annually.

The RAMS MC will manage the annual process of data acquisition, in terms of data collection frequencies, for road asset register data, TMH9 visual condition assessments, profiling measurements and deflection measurements on the paved road network of the Province, TMH9 visual condition assessments on the unpaved road network. Also manage collection of road inventories of maintainable assets such as road signs and guardrails, and inventories of major culverts, gantries and retaining walls, as well as condition assessment of this infrastructure by contractors (in terms of TMH19). Bridge condition inspections are included, but traffic counting excluded. Capture and process the data in suitable own RAMS sub-systems, and assist the Department in compilation of the annual Road Asset Management Plan (RAMP). This includes doing situational analysis, strategic life cycle cost analyses of expected future road network conditions under various policy and budget scenarios, using own life cycle cost analysis and optimisation software, and prepare multi-year preventive maintenance and rehabilitation plans for paved and unpaved roads, as well as structures and other assets.

3.1.2. Brief Description of Relevant Systems To Be Provided by the RAMS MC In The Interim

The RAMS MC will be required to provide suitable software during the contract period to be used.

It is foreseen that at least the following RAMS sub-system software shall be made available by the RAMS MC during the contract period. These RAMS sub-systems shall remain the property of the RAMS MC, but all data will remain the property of the Department and shall be handed over to the Department in suitable formats, to be agreed upon, during and at the end of the contract period.

Road Network Identification (RNI): The Road Network Identification software shall contain the road network information, describing the start and end of every road under the Department's jurisdiction, as well as the breakdown of the roads into links. The Department has been using a location referencing system related to road numbers and kilometre points to date. The RNI will contain the road logs, which will be made available to the RAMS MC by the Department, with roads broken down into links, by numbered provincial roads crossing and joining, as well as district borders. The links are described by inter alia start and end descriptions, start and end kilometres, road type and road classification. The RAMS MC will assess and update these as necessary, with departmental support. Specifically, it is a requirement that the current road classification be evaluated against the TRH26 Road Classification and Access Management (RCAM) requirements, and if necessary, updated by the end of the first year.

Geographic Information System (GIS): The GIS shall contain all roads in the road network, and be suitable to display any data from any of the other sub-systems. The Department will make its current GIS shape files available to the RAMS MC, but correcting and updating of these will be required.

Fixed Asset Register (FAR): The RAMS MC will assist the Department to establish a suitable road asset hierarchy, consisting of facilities (route or group of roads), assets (road links, bridges, major culverts, and ancillary assets such as road furniture, gantries, retaining walls, etc). Asset types (such as roads, bridges, drainage, and ancillary assets) shall be broken down into components, each described by engineering type and standard. Data collection shall be aimed at establishing a complete and accurate asset register at component level. The RAMS MC will provide suitable database and software to maintain the FAR and calculate asset values as per the requirements of the Auditor General.

Traffic Information System (TIS): The RAMS MC will use a suitable TIS to process manual and automatic traffic data, to be made available by the Department annually, together with historic data, to road usage data required for the RAMS.

Pavement Management System (PMS): The RAMS MC will use a suitable PMS for providing decision support at least at a level where life cycle cost analysis of authority and user impacts and economic prioritisation is provided (but optimisation under constraints is preferred). The PMS shall contain procedures for validating and uploading of incoming visual assessment data, profile data and deflection data from contractors. This is one of the most important systems of any RAMS and software shall be suitable to assist the Department in planning the preventive maintenance and rehabilitation needs of the urban and rural pavement networks at a high level

of asset management, showing the consequences of current decisions regarding policy and budget levels to the road network, the Department and the road users.

Unpaved Roads Management System (URMS): The RAMS MC will use a suitable URMS for providing decision support at least at a level where life cycle cost analysis of authority and user impacts and economic prioritisation is provided. The URMS shall contain procedures for validating and uploading of incoming visual inspection data from contractors. The URMS shall assist the Department in the planning of the preventive maintenance and upgrading needs of the unpaved road network.

Structures Management System (SMS): The Department is implementing a STRUMAN Bridge Management System, and the RAMS MC shall have experience in effective operating of the STRUMAN BMS for all bridges, major culverts and other structures such as gantries and retaining walls. The Department currently has 1471 bridges captured, includes major culverts.

Inventory Information System (IIS): The RAMS MC will provide a suitable IIS to capture inventory and condition data for ancillary assets such as road signs, guardrails, and minor drainage structures not included in the SMS.

Road Signs Management System: The Department is implementing a Road Signs Management System, and the RAMS MC shall have experience to establish the Road Signs Management system.

Borrow Pit Material Management System: The Department is implementing a Borrow Pit Materials Management System, and the RAMS MC shall have experience to establish the Borrow Pit Materials Management system.

3.1.3. The Annual RAMS Maturity Evaluation And Asset Management Levels

In the first year the RAMS MC will assist the Department to develop a Road Infrastructure Asset Management Policy, and to do the first self-assessment gap analysis of asset management maturity. This will provide an evaluation of the Department's capability in all areas of road infrastructure asset management, resulting in an improvement plan that the RAMS MC will assist to prepare. The RAMS MC will also advise the Department on the levels of asset management to be applied to various infrastructure assets and road classes, within the following guidelines:

The Department is desirous to manage its pavements for paved and unpaved roads at the highest asset management level being applied in the Department (aiming for network optimisation, due to the high costs of maintaining these assets), while other assets such as structures (bridges, major culverts, etc) can currently only be managed at the level of asset management decision support provided by the STRUMAN software. Ancillary assets can be managed at a lower level of asset management, purely based on condition-responsive approaches.

The Road Infrastructure Asset Management Policy will be updated annually given feedback from the previous year's achievements. The asset management maturity level will also be assessed annually, as well as the levels of asset management to be applied to various infrastructure and road classes. The aim of the Department is to ensure continuous growth in asset management maturity at all levels within the Department.

3.2 AIM AND OBJECTIVES

3.2.1 AIM AND CONCEPT

The aim of the Department is to ensure that it always have a fully operational RAMS that meets with the current Provincial, National and International best practices; and South African Government (Financial and Other) requirements. The intention with (concept of) this contract is to obtain the services of a Consultant as the RAMS Programme Manager, including some of the highly specialized data collection such as: **the Road (Profile) Measurements, Falling Weight Deflections (FWDs), Fixed Road Asset Management (FAR)**, etc. on a sub-contracting (Sub-Tender) basis, over and above the overall Management of RAMS Data Acquisition Consultants and RAMS sub-systems.

3.2.2 OBJECTIVES

Basic objectives are listed below: -

- a) In general (as stipulated by the National Department of Transport (DoT) is to know the Roads Infrastructure Network), to meet the requirements of an effective, responsible and professional road asset management by the North West Provincial Department of Public Works and Roads (as a Government Road Authority) to ensure the following are met:
 - ❑ To ensure all roads within the North West Province are classified as per RISFSA and the TRH 26 Road Classification and Access Management (RCAM) guidelines.
 - ❑ To implement and maintain Road Asset Management Systems (RAMS) as per TMH 22.
- b) Have through knowledge of the spatial and linear extent, composition and condition of the road infrastructure, its value, categorization, services levels, utilization and related parameters.
- c) Understand and quantify the rate of change in condition, value and other parameters of the road network.
- d) Have a firm basis for management and future planning of the road network, amongst others through strategic and scenario analysis, various aspects of road user needs, substantiated maintenance strategies and related processes.
- e) Maintain and manage all data within the current RAMS and produce relevant reports including maps and system reports.
- f) To document all relevant guidelines, principles and procedures, norms and standards, develop user manuals and produce various reports for further Departmental use (e.g. Infrastructure Planning purposes). These separate documentation from the Annual RAMS Analysis Report could includes the:
 - Platinum (Mining) Roads Infrastructure Planning,
 - Rural (Township and Small Dorpies Roads Infrastructure Planning,
 - Access Roads to Public Facilities e.g. Hospitals, Clinics, Schools, Libraries, Police Stations, etc.
- g) Compilation and submission of Road Fixed Asset Management Register (FAR) as per Auditor General (AG) and Treasury Guidelines and Requirements.
- h) To provide guidance, assistance and training to Departmental Staff (Officials) in terms of relevant/required roads infrastructure skills and knowledge.
- i) General RAMS related support services to the Department.

3.2.3 RAMS SUB-SYSTEMS

In general terms, and not limiting to the overall objectives, the following sub-systems forms part of the RAMS:

- a) RNI : Road Network Inventory;
- b) GIS : Geographic Information System;
- c) TIS : Traffic Information System; also known as TCS : Traffic Counting System
- d) PMS : Pavement Management System;
- e) GrMS : Gravel Road Management System;
- f) BMS : Bridge Management System;
- g) Strategic and Consequence Analysis, Reporting and Recommendation with supporting strategies and proposed candidate project lists for Road Infrastructure Planning;
- h) FAR : Road Fixed Asset Register (FAR);
- i) RSMS : Road Signs Management System.

3.2.4 THE GENERIC ANNUAL CYCLE

The Generic Annual Cycle of Activities is as follows (Note that the list is not exhaustive and an activity of the RAMS Programme Managers includes the following:

- a) Core RAMS functions like RNI, GIS, Database, Progress Meetings with Client, Monthly, Quarterly and Annual Reports, Render an on-going support Service to the Client, etc.
- b) Management, Coordination and Quality Control of all the RAMS Data Collection by other Consultants appointed by the Client, **and or** by Sub-Contracting of the following activities:
 - i) Visual Conditions Assessments - 33% of the Un-Paved Roads (Gravel Road Network.
 - ii) Visual Conditions Assessments of Paved Roads - on all roads..
 - iii) DER Assessments of the Bridges and Major Culverts - on all roads.
 - iv) Profile Measurements i.e. Roughness, Rutting, Texture, GIS and Video log - of all paved Roads.
 - v) Manual Traffic Counts - 33% of all roads.
 - vi) Electronic Traffic Counts - Quantity depend on the availability of funds.
 - vii) Weigh-In-Motion (WIM) - Quantity depend on the availability of funds.
 - viii) Structural Strength Tests i.e. Falling Weight Deflectometers/ Deflections Tests (FWDs) - Quantity depend on the availability of funds.
 - ix) Road Signs Assessments - Quantity depend on the availability of funds.
- c) Report on RNI and Current Condition of road network.
- d) Compilation of Annual RAMS Needs Analysis Report:
 - i) Perform Strategic Life Cycle Analysis of expected future road network conditions under various policy and budget scenarios
 - ii) Prepare multi-year preventative maintenance and rehabilitation strategies and plans for paved and unpaved roads.

- iii) Improve the calibration of the pavement performance models of the Department.
- e) Conduct and or Coordinates Panel Inspections together with the Client.
- f) Compilation and submission of Road Fixed Asset Management Register (FAR) as per Auditor General (AG) and Treasury Guidelines and Requirements.
- g) Quarterly and Annual reports to the Department.
- h) Incorporation of Capex and Maintenance expenditure and progress data into RAMS
- i) Support, cooperation and coordination with other related systems (MMS, Road Signs Management System, etc)
- j) Compilation of other Specific and Special Roads Infrastructure Strategic Planning Reports, e.g. Platinum (Mining) Roads Report, Township and Small Dorpies Roads Report, Access Roads to Public Facilities Report..

A simplified schematic of the annual RAMS cycle is shown on Figure 1.

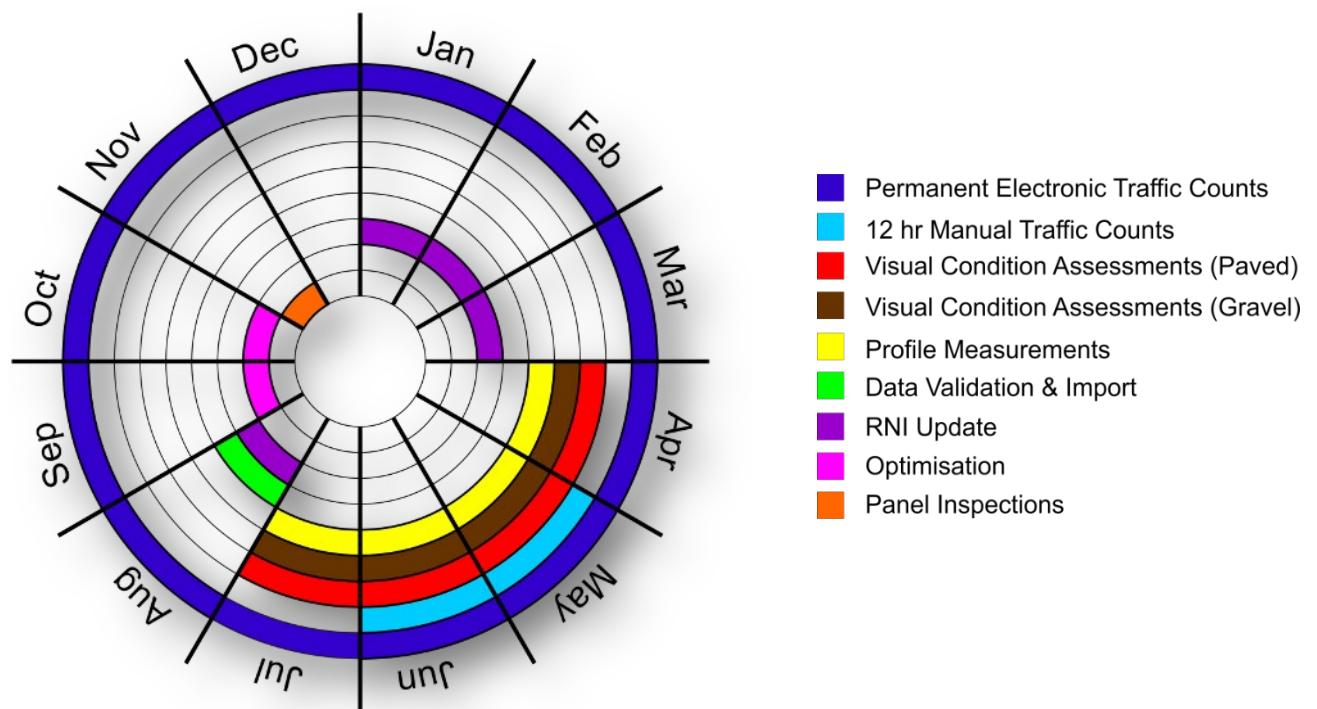


Figure 1: The annual RAMS cycle

The Data Collection Support Requirements

The Department maintains a total road network of **19 684.08 Km** (Table 1: North West Provincial Road Network)

DISTRICT	FLEXIBLE	UNPAVED	BLOCK	CONCRETE	TOTAL
Bojanala Platinum					
Extent (km)	1,889.34	2,193.91	39.50	0.89	4,123.64
%	9.6%	11.1%	0.2%	0.0%	20.9%
Dr Kenneth Kaunda					
Extent (km)	910.16	2,231.66	2.53		3,144.35
%	4.6%	11.3%	0.0%	0.0%	16.0%
Dr Ruth Segomotsi Mompoti					
Extent (km)	943.05	6,194.95	9.72	0.61	7,148.33
%	4.8%	31.5%	0.0%	0.0%	36.3%
Ngaka Modiri Molema					
Extent (km)	1,749.33	3,506.71	11.72		5,267.76
%	8.9%	17.8%	0.1%	0.0%	26.8%
TOTAL EXTENT (KM)	5,491.88	14,127.23	63.47	1.50	19,684.08
TOTAL%	27.9%	71.8%	0.3%	0.0%	100.0%

To persist and enhance the overall system and to adhere to good procurement practice, the Department has decided to invite Public Tenders for the refinement, upgrading and operation of the current RAMS.

As mentioned before, the RAMS Management Consultant will manage the process of annual data acquisition, and be responsible for quality control and quality acceptance. For this reason, the RAMS MC will not be allowed to collect data itself. The actual data acquisition will be tendered out by the Department, with assistance from the RAMS Management Consultant.

In general, the following are required for all data collection, but specific to each data type:

- Well documented quality control procedures to be applied by the RAMS MC, and by the data collection contractors
- Well documented quality acceptance procedures of the RAMS MC, and the results per data type. The RAMS MC shall specifically document and sign off acceptance of the data of every data collection contract

Notwithstanding the items mentioned in **2.4 The Generic Annual Cycle** above, the following requirements per the Division of Revenue Act, (DORA) for the Provincial Roads Maintenance Grant (PRMG) need to be met (the annual data collection cycles need to be aligned as such):

- ❑ Provinces must submit visual condition inspection data to the national data repository as per format determined by the Committee of Transport Officials (COTO) TMH 18, Road Asset Management System (RAMS) Technical Sub-Committee and prescribed by the National Department of Transport (Dot).

- ❑ For RISFSA Class R1, R2 and R3 roads data collection requirements are:
 - Visual condition data not older than two years for pavements and five years (60 months) for bridges.
 - Instrumental pavement data for structural strength not older than five years (60 months).
 - Traffic data not older than three years.
- ❑ For RISFSA Class R4 and R5 roads data requirements are:
 - Visual condition data not older than three years for pavements and five years (60 months) for bridges.
 - Instrumental pavement data for Roughness, Rut Depth and Macro Texture not older than four years on paved roads.
 - Traffic data not older than five years (60 months).
- ❑ The above condition data must be utilized according to applicable national COTO Standards - Technical Recommendations for Technical Methods for Highways (TRH/ TMH) - to identify and prioritize the maintenance requirements within the relevant budget limit to improve condition of the roads and extend the lifespan of road infrastructure.

NOTE THE FOLLOWING: -

Where the Client did not appoint the RAMS Data collection Service Provider(s) separately from this tender, the RAMS Programme Manager MUST:-

- Through the Client instructions, Sub-Contract the physical road inspection and assessment work to third parties on a tender/ and or quotation basis, manage those sub-contractors and pay for them.
- These will not be Departmental tenders, but each main step of this procurement process must be pre-approved by the Department.

3.2.5 SPECIFIC REQUIREMENTS FOR SUB-CONTRACTING

This Contract calls for some of the highly specialized data collection such as: **the Road Profile Measurements, Falling Weight Deflections (FWDs), Fixed Road Asset Management (FAR,** etc.) to be done on a sub-contract basis by the RAMS Programme Manager/ Consultant.

3.2.6 DEPARTMENTAL CAPACITY BUILDING

The RAMS Consulting must Endeavour to assist the Department and its employees as far as possible in terms of capacity building regarding all relevant aspects of this project/ contract.

3.2.7 HARDWARE AND SOFTWARE PROCUREMENT

This tender **includes** hardware and software for use specifically for RAMS purposes by the Department and its officials where necessary as follows:

Existing server

A server was purchased for the Department in February 2013, on which the RAMS has been installed. The specifications of the server are as follows:

- HP ProLiant DL360p, core 10 10MB/80W, 1 x 4 GB
 - 1x300GB SAS 10K SFF
 - Ethernet 1GB 4 port
 - HP 4GB 1R x 4 PC3L-10600R-
 - Hard drive space: 3TB with expansion via external HDD(s)
- a) The Service Provider will make available these (Hardware & Software) on the conditions whereby the Client issue such instructions and approval thereof.
- b) Any of the hardware and or software (including where there is license involved) required for RAMS purposes will be procured by the Service Provider in the name of the **North West Provincial Department of Public Works and Roads**.
- c) SITA requirements and Treasury regulations should be met all times.

3.3 OVERVIEW (BRIEF DESCRIPTION) OF CURRENT RAMS

The Road Asset Management System (RAMS) is a Web-Based System, hosted at the North West Provincial Government – Information Technology Directorate, on behalf of the Department of Public Works and Roads.

Several sub-systems can be accessed individually or as a whole via the **RAMS Web Interface**. RIAM & GIS are integrated and form the back-bone of the system. TIS, PMS & BMS* are integrated, but separate sub-system (i.e. different menu items and functions). Essentially one could 'strip out' the TIS, PMS & BMS* but RIAM/GIS are wholly part of the RAMS. The RAMS Portal can be accessed through the web address: <http://ramsnw.nwpg.gov.za>.

- ❑ **Road Asset Management Systems – Components**
- ❑ **Road Network Definition Hierarchy**
- ❑ **RAMS Sub-systems**
- ❑ **Current RAMS Features**
 - System Administration
 - Data Storage/Viewing
 - GIS (Web Map View)
 - Data Import/Export
 - Reports and Charts
 - Road Inventory Changes (Considerations/ Factors/Process)

3.3.1 ROAD ASSET MANAGEMENT SYSTEMS – COMPONENTS:

The current RAMS Sub-components can be summarized as follows:

- ❑ **Road Network Identification (RNI):** The Road Network Identification forms the core of the RAMS, as all other information is linked to it and the related road numbers and kilometer distances. The RNI contains the road logs, with roads broken down into links.
 - **Notes:** Nodes are defined at intersections with other provincial roads except in towns where intersections with municipal roads / streets does not constitute links and notes. Each node represents a potential Manual Traffic Counting Station as it is convenient and cost effective to count at notes in order to obtain counts on more than one road link with a single traffic counting person. The road links, nodes and counting station numbering system is shown in the network definition diagram below.
 - **Segments:** In the North West Provincial RAMS road segments represent a 5 to 7.5 km of a road link over which visual inspection data is recorded. If the link is shorter than 7.5 km then it is also by definition the segment and no further subdivision is made.
 - **Road Functional Class:** The Functional classes correspond with RISFSA classification and are used to differentiate operational and maintenance standards.

- ❑ **Pavement Management System (PMS):** A sub-system tool that, through various processes, facilitates the provision and maintenance of roads. Shows inspection (TMH visuals) and surveillance data (FWD, rutting & roughness), including historical data, for Paved roads. Performs Condition Analysis of the Paved network (CI). Allows for exporting and determination of Lifecycle Costs/Needs.

The PMS includes various data viewing and reporting modules as well as module to export data files that can subsequently be imported into Optimization Analysis Software (e.g. dTIMS™CT or similar) specifically for Maintenance Programme like Re-Seal and Rehabilitation. All the historical visual Condition Assessments and Profile Measurements Information are stored in the PMS Data Tables.

- Visual Assessments have been conducted on the entire paved network. (Latest 2013-2014 financial year).
- Laser Profile Measurements (Outputs including Roughness Index and Average Rut Depth calculations) have been conducted on the entire paved roads network at a 10m interval periodically. (Latest 2013-2014 financial year).
- FWD test data have been collected ONLY on the R1, R2 and R3 Provincial Road Network as per DORA requirements. (Latest 2013-2014 financial year).

- ❑ **Gravel Roads Management System (GrMS):** Similarly to the PMS, the GrMS comprises various viewing and reporting modules. Allows for exporting and determination of Lifecycle Costs/Needs..

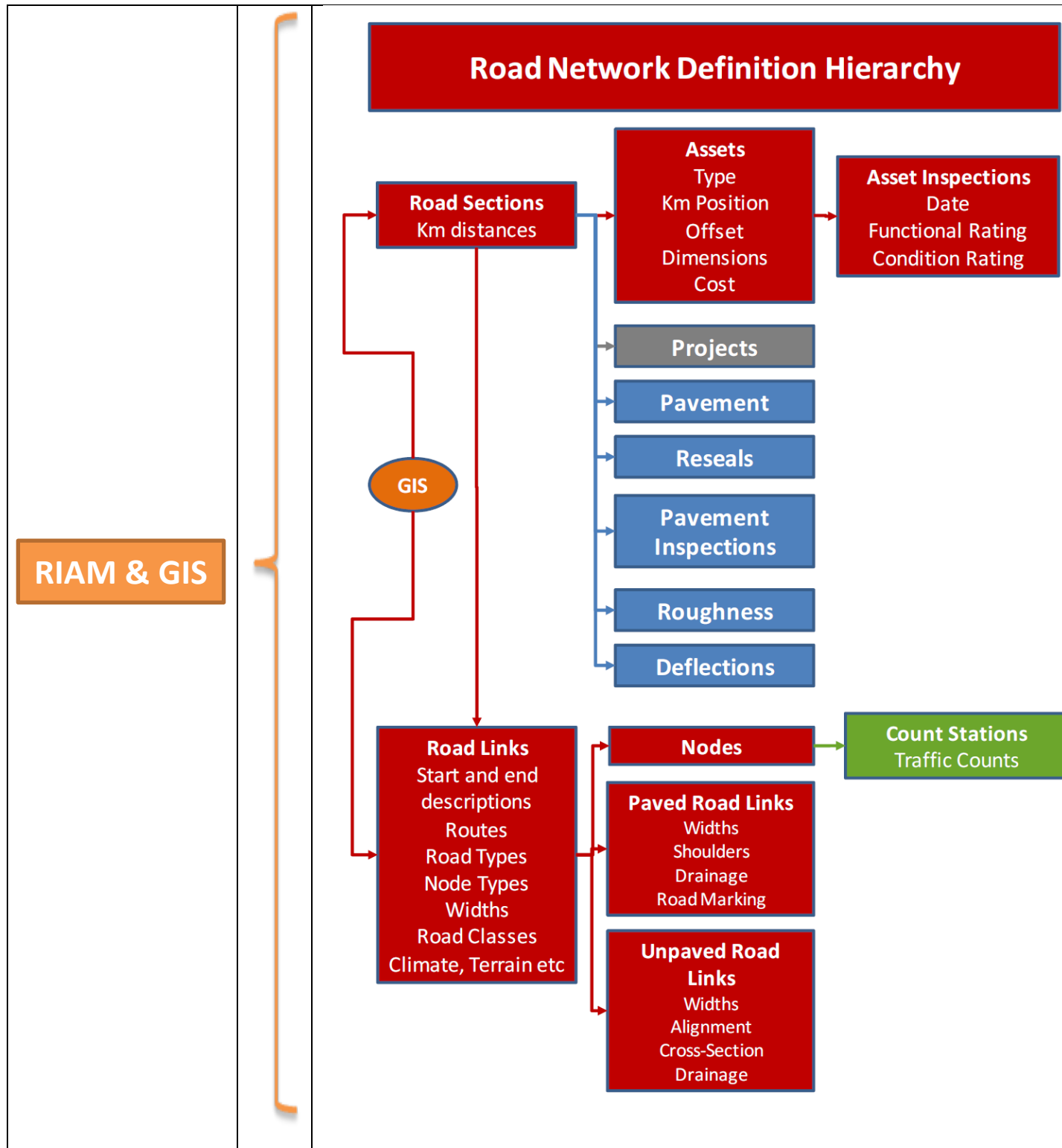
- Visual Assessments have been conducted on the entire unpaved network. (Latest 2013-2014 financial year).

- ❑ **Bridge Management System (BMS):** The BMS is implemented using CSIR's STRUMAN which is based on the DER (Degree, Extent and Relevancy) defect rating method, the re-compilation of the bridges and major culverts since 2013. Currently a total number of 398 Bridges and 1073 Major Culverts were inventorised, captured and inspected in the STRUMAN BMS Software of North West Provincial (DPWR).

- ❑ **Road Signs Management System (RSMS):** It is the intention of the Department to conduct road signs inspections and to have a complete and functional RSMS as one of the sub-systems.

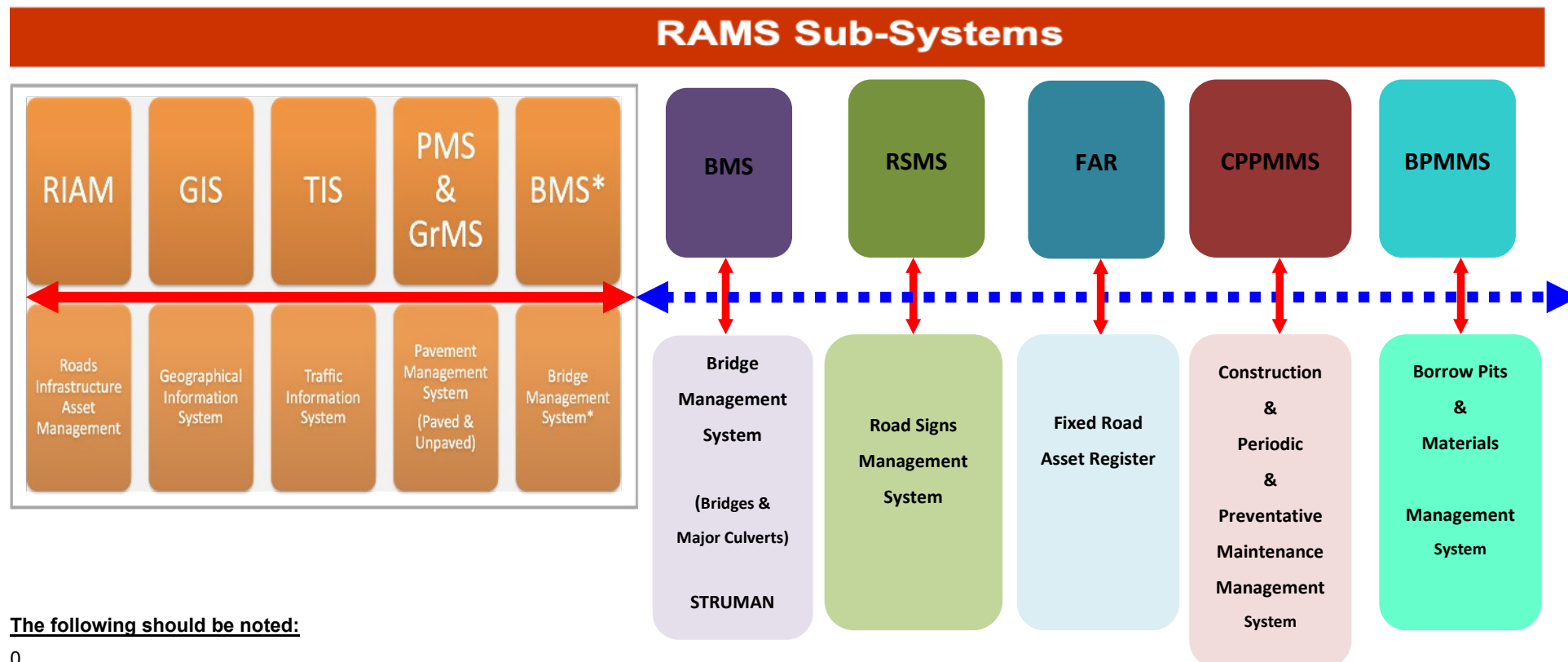
3.3.2 ROAD NETWORK DEFINITION HIERARCHY

The system data is organized so as to minimise duplication and facilitate capturing of asset information and related data maintenance. Various data elements of the RAMS are shown in the figure below:



3.3.3 RAMS SUB-SYSTEMS LAYOUT

The North West Provincial Department of Public Works and Roads (DPWR) RAMS is illustrated by the layout below.



The following should be noted:

0

- **Bridge Management System (BMS):** Currently BMS is still a separate sub-system from the RAMS. It is the DPWR's intention to integrate the STRUMAN (CSIR BMS) with the RAMS.
- **Road Signs Management System (RSMS):** It should be noted as stated above, that Road Signs Management System (RSMS) is in existence. It is the intention of the DPWR to conduct new Road Signs Inspections and to integrate the RSMS with the RAMS.

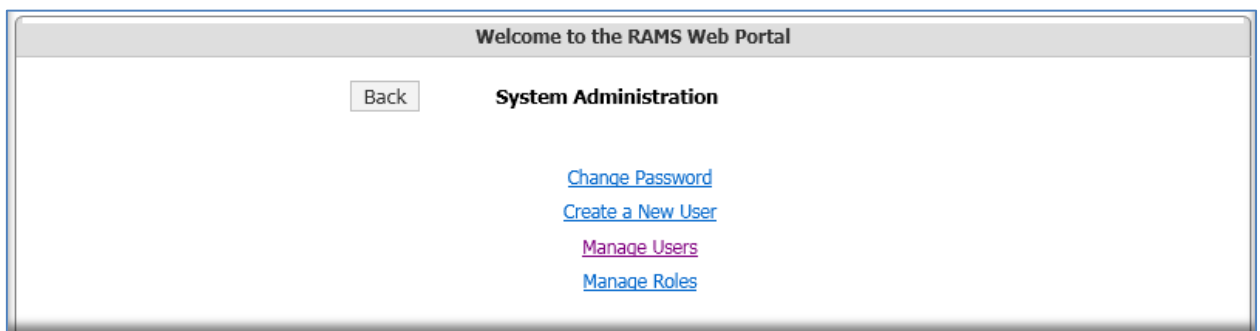
- **Fixed Road Asset Management Register (FAR):** Though the Register is in compliance in terms of GRAP17 (from Property, Plant and Equipment), TMH22 and PRMG requirements, it is yet to be integrated with the RAMS. Processing of mapping between the RAMS data layout/tables/attributes and the template of the Fixed Asset Register (FAR) still need to be carried out.

3.3.4 CURRENT RAMS FEATURES

The RAMS have two main features namely **System Administration** and **User Administration**.

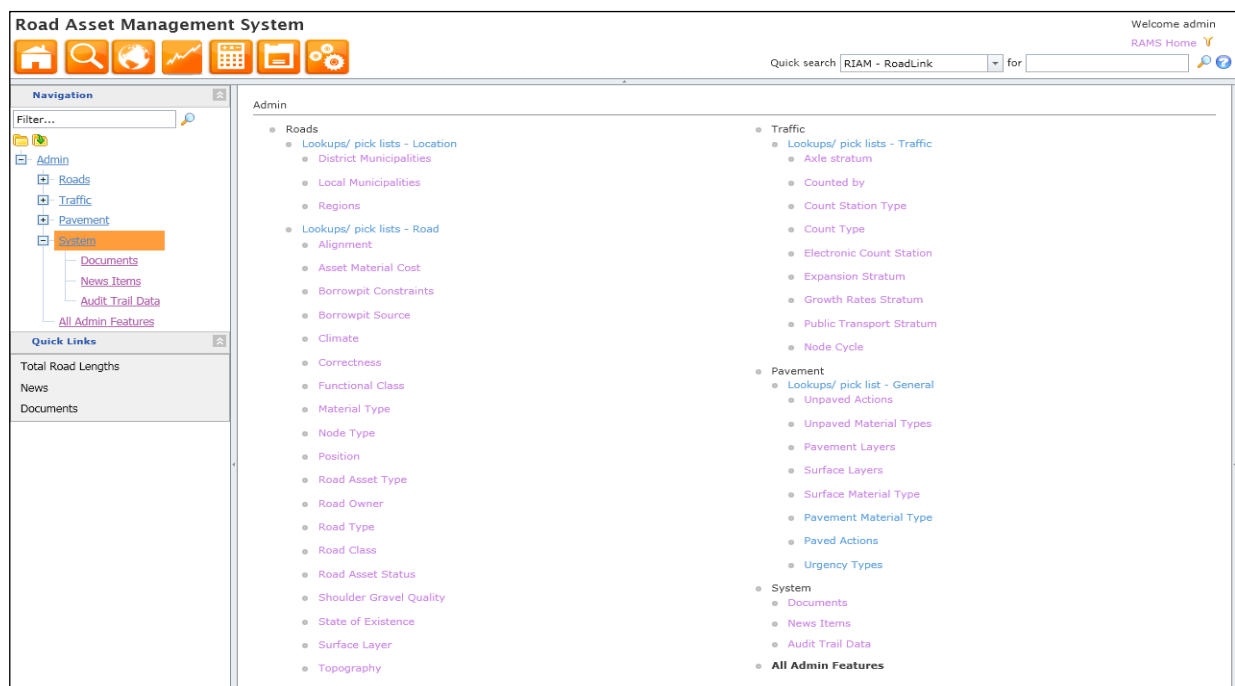
- ❑ **RAMS System Administration:** The RAMS Administrator create, manages and control the access system users rights to the system. The System Administrator can do the following tasks on the system as illustrated by the figure below:

- Create Passwords for users;
- Create New Users;
- Manage Users and also
- Manage the Roles of the RAMS Users.



- ❑ **RAMS User Administrations:** RAMS allows to create the following user levels.

Power User Level does have more access to the system of which includes to make changes like Imports or Exports of new information. The Power User can Edit or Change the RAMS Data.



User Level – Power User

Road Asset Management System

Welcome p
[RAMS Home](#)

Navigation

Filter...

- Asset Explorer
- Roads
 - Road List
 - Road Link Details
 - Road Meta Data
- Traffic
 - Traffic Counts by Roads
 - Traffic Counts by Nodes
 - Electronic Counts by Roads
 - Electronic Counts by Nodes
- Pavement
 - Paved Visual Inspection
 - Unpaved Visual Inspection
 - Rutting
 - Roughness
 - PWD
 - Pavement Structure
 - Pavement Surface

Quick Links

- Total Road Lengths
- News
- Documents

Traffic Counts by Roads

Expand/Collapse all groups

Region

Road

Options	Road Link Nr	Has data	From Desc	To Desc	From Km	To Km	From Node	To Node	From Node Type	To Node Type
Region: Bojanala (Continued on the next page)										
Road: P1/3										
	P1/3_010	☒	BOUNDARY	D624	48.230	50.900	2439	2443	Boundary	T Junction Left

Options	Has data	Station	From Node	To Node	Associated Station	Location description	Type	Cycle	Axle load stratum	Growth rate stratum	Growth Rate	Heavy Veh Growth Rate	Expansion stratum	Public transport stratum
☒		2439_2443	2439	2443		Not Counted	NA	Medium	Medium			1.392	Average	Low

Options	CountDate	Nr. Days	Hours Counted	Type	Counted By	Nr. Lights	Nr. Heavies	Nr. Very Heavies	Nr. Buses	Nr. Taxis	Total	Exp. Factor	AADT	Valid AADT	Report
Edit	2004/08/10	1.0	12	Manual 12	Contractor	5015	772	0	188	1403	7378	1.10	0	☒	
Edit	1996/11/06	1.0	18	Manual 18	Contractor	2617	447	0	218	795	4077	0.97	0	☒	
Edit	1995/12/01	1.0	12	Manual 12	Head Office	8062	896	0	0	0	8958	1.36	0	☒	

Options	Has data	Station	From Node	To Node	Associated Station	Location description	Type	Cycle	Axle load stratum	Growth rate stratum	Growth Rate	Heavy Veh Growth Rate	Expansion stratum	Public transport stratum
Edit	☒	2443_2439	2443	2439			Cyclical Manual	Yr 1	Medium	Medium	0.030	0.734	Average	Low

User Viewer Level have access to all the RAMS Reports but cannot make changes to the System Data. Users can exports these reports to Excel or PDF format and or Print.

User- Viewer

Road Asset Management System

Welcome v
[RAMS Home](#)

Navigation

Filter...

- Asset Explorer
- Roads
 - Road List
 - Road Link Details
 - Road Meta Data
- Traffic
 - Traffic Counts by Roads
 - Traffic Counts by Nodes
 - Electronic Counts by Roads
 - Electronic Counts by Nodes
- Pavement
 - Paved Visual Inspection TMH
 - Unpaved Visual Inspection
 - Rutting
 - Roughness
 - PWD
 - Pavement Structure
 - Pavement Surface

Quick Links

- Total Road Lengths
- News
- Documents

Traffic Counts by Roads

Expand/Collapse all groups

Region

Road

Options	Road Link Nr	Has data	From Desc	To Desc	From Km	To Km	From Node	To Node	From Node Type	To Node Type
Region: Bojanala (Continued on the next page)										
Road: P1/3										
	P1/3_010	☒	BOUNDARY	D624	48.230	50.900	2439	2443	Boundary	T Junction Left

Has data	Station	From Node	To Node	Associated Station	Location description	Type	Cycle	Axle load stratum	Growth rate stratum	Growth Rate	Heavy Veh Growth Rate	Expansion stratum	Public transport stratum
☒	2439_2443	2439	2443		Not Counted	NA	Medium	Medium			1.392	Average	Low

CountDate	Nr. Days	Hours Counted	Type	Counted By	Nr. Lights	Nr. Heavies	Nr. Very Heavies	Nr. Buses	Nr. Taxis	Total	Exp. Factor	AADT	Valid AADT	Report
2004/08/10	1.0	12	Manual 12	Contractor	5015	772	0	188	1403	7378	1.10	0	☒	
1996/11/06	1.0	18	Manual 18	Contractor	2617	447	0	218	795	4077	0.97	0	☒	
1995/12/01	1.0	12	Manual 12	Head Office	8062	896	0	0	0	8958	1.36	0	☒	

Options	Has data	Station	From Node	To Node	Associated Station	Location description	Type	Cycle	Axle load stratum	Growth rate stratum	Growth Rate	Heavy Veh Growth Rate	Expansion stratum	Public transport stratum
☒		2443_2439	2443	2439			Cyclical Manual	Yr 1	Medium	Medium	0.030	0.734	Average	Low

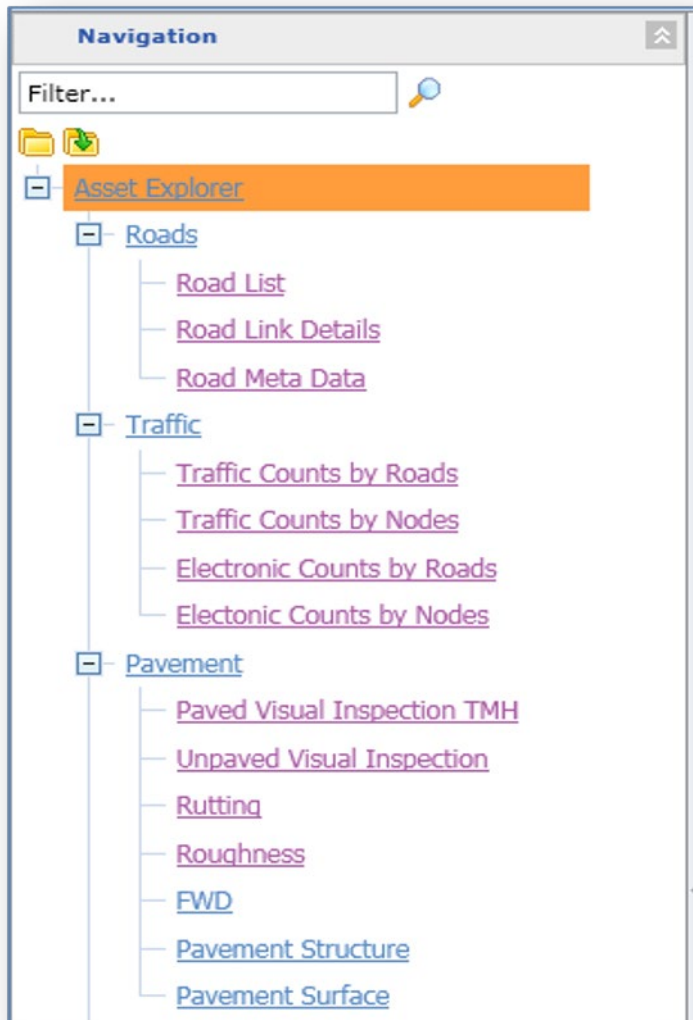
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Period: 2025-2030

- ❑ **RAMS Data Storage and Viewing:** Various data like Road Inventory Data, Visual Inspections, Traffic Counts, Profile Measurements, Falling Weight Deflections, etc. are imported into the system using specific forms/ format. The RAMS Data Storage is illustrated by the figure below.

Data Storage/Viewing

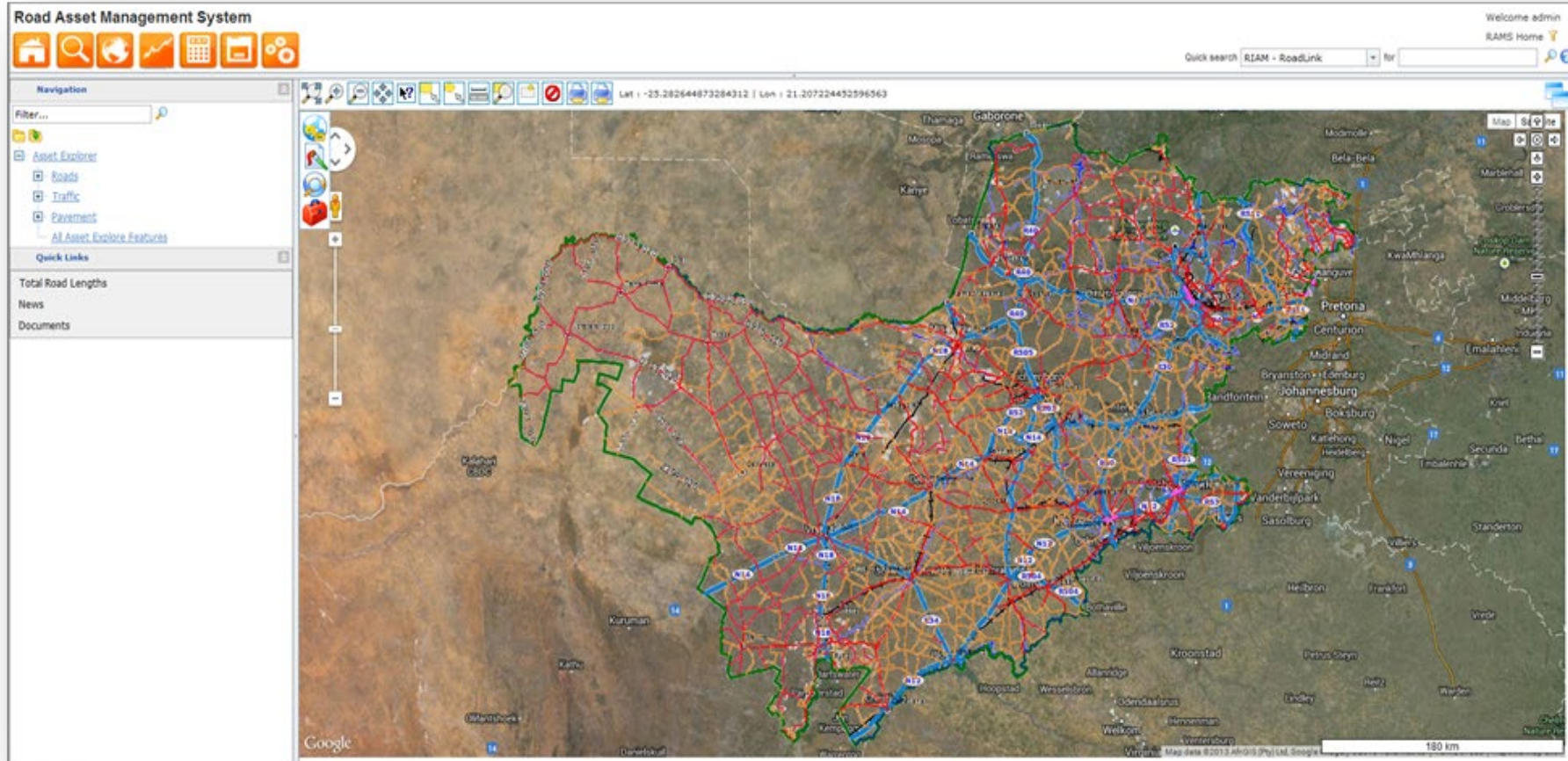


- ❑ **GIS Map View**

GIS Map View allows users to do the following:

- View data spatially
- Zoom-to, pan and query data from a map report(s)
- Background maps (Google Earth, Bing Maps)
- Search for roads
- Links to Reports/Inventory (back to dashboard)

GIS Map View



RAMS Data Import and Export: RAMS Data can be imported and or exported by the RAMS Administrator or RAMS Power User Level as illustrated by the figure below. Various Data forms can be Downloaded, Populated and Imported into the system.

Data Import/Export

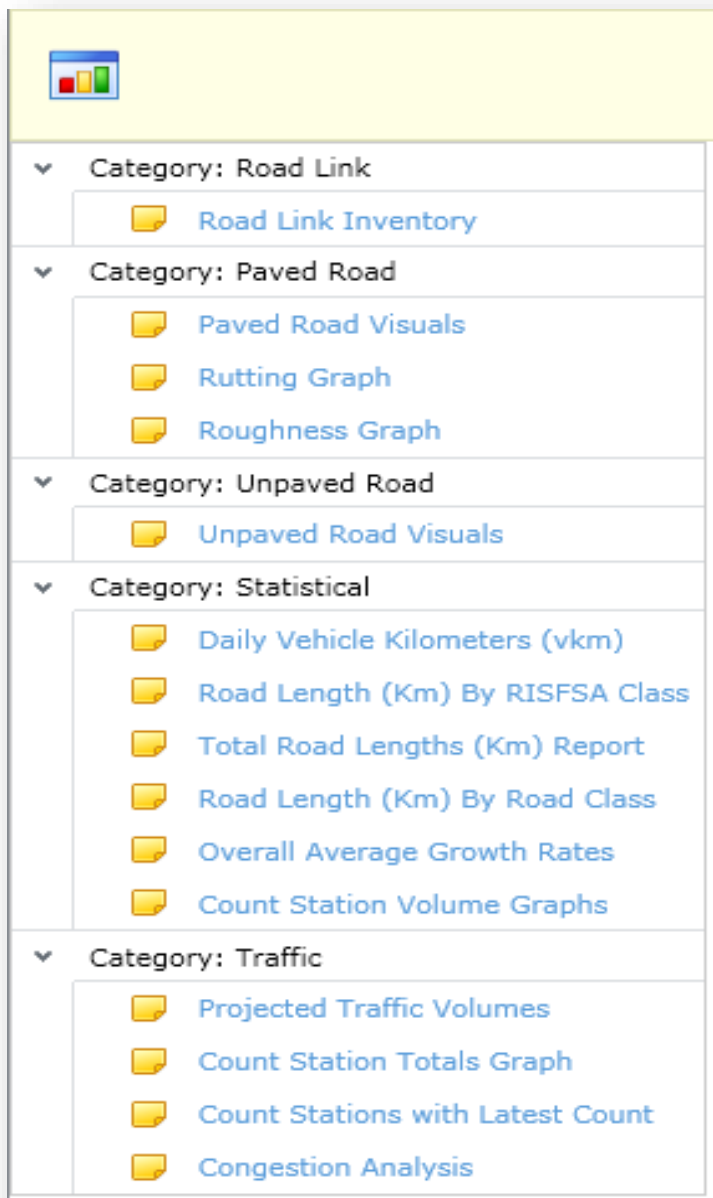


❑ **RAMS Reports:** Users of the RAMS are able to do the following:

- Generate various RAMS Reports, Charts and Graphs;
- Exports reports to **Excel** and or **Pfd** format;
- Print Reports, Charts and Graphs.

There are various categories of RAMS Reports as per the figure below:

Reports



4. PLANNED WORK OF THE CONSULTANT

4.1. Overview of Planned Work

Each sub-system is handled separately, with an introduction and general requirements, followed by a detailed task list. Note that each sub-system is discussed once only for the full five-year period; where there are differences in task lists for the various years, these differences will be listed. The Schedule of prices also differentiates between each year.

1.1.2. *SELECTED GENERAL REQUIREMENTS*

All updates to the RAMS will be done or overseen by the RAMS consultant in order to ensure data integrity. Access by officials will be limited to read-only mode (unless indicated otherwise). All external data (e.g. MMS project data) should be imported via validation procedures.

Training and capacity building of in-house staff in all aspects of the RAMS will be a requirement, within practical constraints.

Electronic versions of all reports and presentations must also be provided to the Department.

1.1.3. *FAMILIARISATION WITH THE SYSTEM, DATABASE AND DPWRT REQUIREMENTS AND OPERATIONS*

The Consultant will need to familiarise themselves and their staff with the current RAMS platforms, database, server-side and client-side components (such as the various web servers and www.ramsnw.nwpg.gov.za GUI components) as well as all the processes required to maintain and update the system.

The outcome of the task is that the Consultant will be fully familiar with the system and able to upload and maintain data and make recommendations for updating and improving the system over time.

The price tendered will be a lump sum that will include all time and disbursements required to achieve the outcome.

1.1.4. *CORE ROAD ASSET MANAGEMENT SYSTEM*

Apart from technical considerations, the RAMS must meet with the requirements of the PFMA and Treasury's Asset Management Requirements, as per latest Legislation and Regulations. The various components of the RAMS need to be maintained so that 99% uptime is achieved. The RAMS database must be updated whenever validated processed data becomes available. Regular automated backups of the system need to be maintained and monitored, with occasional testing of the integrity of the backup files.

Task List:

1. Maintain server and related software
2. Monitor and test backups and DRS (disaster recovery system)
3. Update and maintenance of web portal
4. Update documentation of the procedures for operation of the RAMS database

5. Import all relevant processed data from the TIS into RAMS
6. Import all relevant processed data from the Paved Visual Assessments into RAMS
7. Import all relevant processed data from the Gravel Visual Assessments into RAMS
8. Import all relevant processed data from the BMS Assessments into RAMS

1.1.4.1. RAMS Architecture

Information is the basis for any system and the RAMS is no exception. The RAMS functionality has been divided into two separate applications. The basis for this separation is the type of editing one would like to undertake: the first and most commonly used is the following:

- ❑ **Web-based interface** which provides for mostly reporting functions, and
- ❑ Editing of non-spatial related data.

The second application is a desktop tool that builds on **ESRI's ArcMap** and forms the '**Road Data Tool**', allowing a power user (i.e. a person with GIS and RMS expertise) to manage and update the road network spatially.

The web-based system relies on a server to "serve" the web pages to the client. The client, in this instance, only needs to have Internet Explorer installed to view and edit RAMS data. This application is aimed at allowing **managers and viewers** within the Department to perform the following:

- ❑ access,
- ❑ view; and
- ❑ edit,

Non-spatial related data i.e. any data that would not affect the spatial features of the road network.

The Road Data Tools is a desktop application and requires slightly more skills. It also requires connection to the server but only needs to connect to the database to perform the updates. ArcMap enables the **power user** to perform the following:

- ❑ Update the spatial features of the network (e.g. road alignment, splitting of road links, merging of road links etc.) and
- ❑ The Road Data Tool enables the spatial changes which are made in ArcMap to be "passed" through to the database according to the rules defined by the system architecture.

1.1.5. ROAD NETWORK INVENTORY

1.1.5.1. RNI Sub-System Description

This is the heart of the RAMS. It is a database containing the descriptions of every road under the jurisdiction of the Department.

- a) All roads are numbered and are broken into smaller sections, called links, based on other numbered roads crossing or joining, as well as boundaries (Provincial, District and Local Municipality) and road type changes. Some of the information available in the RNIS, for every link, are but not limited to:
 - ☐ Start and End description, Start and End Node, Start and End Kilometres of the link.
 - ☐ Road Type (Paved or Unpaved) of the link.
 - ☐ Road Functional Classification (RIFSA class – 1, 2, 3, 4 or 5) of the link.
 - ☐ Route Number of the road link.
 - ☐ District and Local Municipality in which the link is located.
- b) The RNIS thus also provides the provincial, district and local municipality statistics on road lengths, length per road types and classes.
- c) All other subsystems are dependent on the RNIS, i.e. no data can be stored in another subsystem on a road link that is not defined in the RNIS. **The RNIS thus has to be maintained continuously.**

NOTE : RNI management procedures should allow for only a single point of responsibility for updating the RNI; in other words, all proposals and requests for changes should be forwarded to the RAMS Consultant/ RAMS Programme Manager/ Super Administrator User; who must then validate the request/ proposal and ensure that the change is legitimate/ approved. Only then the update can be done. The Consultant shall be required to assist the Province in providing a support service to the 4 District's DoRA Rural RAMS Grant (RRAMS) programme. This includes attending monthly RRAMS meetings and incorporating RRAMS data (comprising *inter alia* RNI and visual condition of municipal roads) submitted by the District Municipalities into RAMS.

Task List:

1. Maintenance and updating of the RNI
2. RISFSA Classification
3. Professional support services to RRAMS
4. Incorporation of District RRAMS data
5. Compile and plot Maps for Department
6. Related Support Functions

4.1.6 GEOGRAPHIC INFORMATION SYSTEM

1.1.6.1. GIS Sub-System Description

The GIS contains road centerline coordinates of all roads in the RNIS. It is operated on the **ESRI ArcGIS 10.1 platform**, for which the Department is licensed. The GIS serves to display the data of the RAMS spatially, and is also used for spatial analysis. There is a one-to-one relationship between the RNIS and GIS (i.e. for every link in the RNIS there is a line representing that link in the GIS). This relationship must be maintained at all times, as well as some other critical spatial data within the GIS. The data from the RAMS is displayed in the GIS on a 'from km - to km' basis, using the dynamic segmentation capabilities of the GIS to subdivide links for display of such referenced data. The GIS is central with the RAMS and comprises a PostGIS spatial database, a Geoserver and desktop software to maintain datasets and produce printable and PDF maps. Supporting Datasets of which forms part of the information included within the RAMS are but not limited to the following:

- Air Ports & Landing Strips;
- Border Posts/ Home Affairs;
- Climate Zones;
- Dams;
- District & Municipal Boundaries;
- Farm Names & Codes;
- Fire Stations;
- Mines;
- National & Provincial Boundaries;
- Nature Reserves;
- Public Safety (Police Stations);
- Rivers;
- Schools & Health Facilities;
- Suburbs, Towns & Villages;
- Wards Boundaries;
- Etc.

The GIS, furthermore allows for conducting spatial analyses such as areas and numbers of people outside the 5 km range of Provincial roads.

Task List:

1. Maintenance of GIS system (PostGIS database, Geoserver stores and styles, ArcGIS .mxd projects, QGIS .qgs projects)
2. Continuous updating and improvement to data, procedures and reports
3. Compile and Supply maps for various purposes, including road assessments/surveys, Head Office and Regions of the Department
4. Related Support Functions

4.1.6.2 Ownership/ Custodian of the Provincial Roads

The Department is the owner and custodian of the road centerline data in the RNIS and related GIS. This means the Department has to maintain these data continuously; for example when the following occurs, they have to be added to the RNIS and GIS and existing links may have to be split at new intersections:

- ☐ As new roads are constructed,
- ☐ Upgrade of gravel to paved road,
- ☐ Upgrade of Single Paved to Dual Paved Road,
- ☐ Re-Alignment/ Relocation of a link and or section of a road.
- ☐ Closure of a link and or section of a road.
- ☐ Disposal of a road, e.g. Proclamation of a road as National and or Municipal Asset.

4.1.6.3 Typical outputs of the RNIS and GIS road maps

- All roads with road numbers, road types, road classes, route numbers from the RNIS;
- b) Paved and unpaved road conditions in various colours (e.g. very good (green), good (blue), fair (yellow), poor (orange) and very poor (red)) from the Pavement and Gravel Roads Management Sub-systems;
- c) All roads with traffic volumes in various colours, from the Traffic Information Sub-system;
- d) All roads with recommended treatments as determined through the Pavement and Gravel Roads Management Sub-systems;
- e) All bridges with conditions in various colours, from the Bridge Management Sub-system.

4.1.6.4.1 Role of the RAMS Programme Manager

The role of the RAMS Programme Manager (appointed RAMS Consultant) will be management of the RAMS Programme for a period of five (5) years. The Consultant will be expected to manage the RAMS Programme as per the PRMG conditions governed by DORA requirements by performing the following major responsibilities: -

- a) Manage a process of data acquisition, of which include conducting Quality Control process of the data;
- b) Processing of data acquisition;
- c) RAMS Data Analysis;
- d) Updating the sub-systems and or Populate information/ data in the RAMS: All updates to the RAMS will be done and or overseen by the RAMS Programme Manager in order to ensure **data integrity**. Most of the RAMS Users are limited to read only mode, unless indicated otherwise e.g. Administrator/ Power Users.
- e) Operate the RAMS Sub-Systems;
- f) Compilation and submission of various RAMS reports (i.e. Monthly, Quarterly and Annual Reports);
- g) Training and Capacity Building of In-House Staff/ Departmental Officials in all aspects of the RAMS will be a requirement, within practical constraints.

4.1.6.5 Core components of the RAMS can be described as follows:

- a) Database (“filing cabinet” of roads information);
- b) GIS datasets (shapefile format);
- c) Inspection data and record sheets which are captured electronically into the system;
- d) The User interface (web-based browser interface provided via Internet Explorer and desktop applications providing for power user functionality);
- e) Decision Support Software – PMS, GRMS and BMS.
- f) Information Sub-system - TIS, etc.

4.1.7. PAVEMENT & GRAVEL ROAD MANAGEMENT SYSTEMS (PMS and GRMS)

4.1.7.1 Sub-System Description

The PMS provides decision support information to asset managers on the paved roads under jurisdiction of the Department. On an annual basis, the PMS extracts the latest paved road links from the RNIS, and these are then subjected to condition assessments. Such assessments include:

- a) Visual condition assessments according to the **TMH 9** standard visual condition assessment approach used by all provinces in South Africa (preferably annually).
- b) Profiling measurements by laser survey methods to determine the roughness and rutting of the pavements (As per DORA Requirements).

4.1.7.2 Data Analysis, Ownership & type of software

- a) The RAMS does not include a state of the art analysis and optimization system to process the above-mentioned data using a life cycle cost approach. **Consultants have to provide their own software to do life cycle cost analysis.**

To date, the Department has contracted the use of the **dTIMS™ CT system** to do life cycles cost analysis and optimization.

Apart from the visual condition assessment data, and profile data, other data required for the analysis can be obtained from the TIS, as well as historic as-built data and pavement strength data from the PMS.

- b) In a life cycle cost analysis, pavement performance predictions are required for each link subject to a range of different treatment options. The Department previously used the **Highway Development and Management (HDM) -4 pavement performance prediction models** as calibrated for most of the Northern Provinces by Gautrans (Gauteng Province Department of Roads and Transport). The **Highway Development and Management (HDM)** project is a world-wide project to improve pavement performance predictions.
- c) A life cycle cost analysis is required by National Treasury, in their requirements for annual Infrastructure Plans to be submitted by the provincial roads departments.

Typical tasks list regarding the PMS includes the following:

- a) Prepare relevant tender documentation, including preparation discussion with departmental staff, finalisation, inviting tenders/ quotations for a five year period, copying binding and issuing tender documents.
- b) Manage compulsory tender meetings, addendums to be sent out if necessary.
- c) Adjudicate tenders, prepare adjudication reports, obtain Departmental Approval, engage sub-consultants.
- d) Test, calibrate and evaluate tenderers' staff and recommend staff to be used for visual assessments.
- e) Prepare datasets with segmentation data.
- f) Plot road maps for all Data Acquisition Consultants, Print road network identification books.
- g) Arrange and manage Quality Control Assessments as per relevant TMH and or TRH Documentations (*latest version*).
- h) Evaluate all submitted visual assessment data in a brief report covering the evaluation findings.
- i) Current average condition of the paved road network and various road classes of the paved road network (based on visuals and profiling measurements) (charts and tables).
- j) Current condition of every road link in the network (based on segment conditions where a segment is a section of road within a link on which a visual assessment was done) (table).
- k) Current excess costs to road users due to poor current conditions (expressed as vehicle operating cost) (chart and table).
- l) Extent of road users affected through poor road conditions (vehicle kilometres travelled on various road condition categories) (chart and table).
- m) Consequences of various budget scenarios on the future condition of the road network and various classes of the road network, as well as on road users (charts).
- n) Consequences of departmental policies on the future condition of the road network and various classes of the road network, as well as on road users (charts and tables).
- o) Budget levels required to achieve certain levels of service (expressed for example as average network condition) on the paved road network (chart).
- p) Asset value: Current replacement cost and current depreciated replacement cost of the paved road network (chart and table).
- q) Asset value: Current replacement cost and current depreciated replacement cost of every link in the network (based on segment values).
- r) Multi-year Preventive Maintenance and Rehabilitation Plan for a range of budget scenarios and specifically the most likely budget scenario (per candidate project, recommended treatments and calculated costs) (treatments refer to resurfacing, fogspray, light rehabilitation, heavy rehabilitation).
- s) Information for road maps to be displayed in the GIS.
- t) Provisional Sum for payment of Data Acquisition Consultants of visual assessments.
- u) Management Fee for Contract Administration.

Typical tasks list regarding the GRMS includes the following:

- a) Prepare tender documentation, including preparation discussion with departmental staff, finalisation, inviting tenders/ quotations for a five year period, copying binding and issuing tender documents.
- b) Manage compulsory tender meetings, addendums to be sent out if necessary.
- c) Adjudicate tenders, prepare adjudication reports, obtain Departmental Approval, engage sub-consultants.
- d) Test, calibrate and evaluate tenderers 'staff and recommend staff to be used for visual assessments.
- e) Prepare datasets with segmentation data.
- f) Plot road maps for all Data Acquisition Consultants, Print road network identification books.
- g) Arrange and manage Quality Control Assessments as per relevant TMH and or TRH Documentations (*latest version*).
- h) Evaluate all submitted visual assessment data in a brief report covering the evaluation findings.
- i) Current average condition of the unpaved road network and various road classes of the unpaved road network (charts and tables).
- j) Current condition of every road link in the network based on individual segment conditions.
- k) Current excess costs to road users due to poor current conditions (expressed as vehicle operating cost) (charts, tables).
- l) Extent of road users affected by poor road conditions (vehicle kilometres travelled on various road condition categories) (charts, tables).
- m) Consequences of various budget scenarios on the future condition of the road network and various classes of the road network, as well as on road users (charts and tables).
- n) Consequences of departmental policies on the future condition of the road network and various classes of the road network, as well as on road users (charts and tables).
- o) Budget levels required to achieve certain levels of service (expressed for example as average network gravel thickness) on the unpaved road network (chart).
- p) Asset value: Current replacement cost and current depreciated replacement cost of the unpaved road network (table).
- q) Asset value: Current replacement cost and current depreciated replacement cost of every link in the network (every segment in fact, where a segment is a section of road within a link on which a visual assessment was done) (table).
- r) Multi-year Preventive Maintenance and Upgrading Plan for all budget scenarios and specifically most likely budget scenario (per candidate project, recommended treatments and calculated costs) (treatments refer to regravelling, blading, upgrading to paved standards).
- s) Information for road maps to be displayed in the GIS.
- t) Provisional Sum for payment of Data Acquisition Consultants of visual assessments.
- u) Management Fee for Contract Administration.

4.1.8. VISUAL ASSESSMENTS - PAVED ROADS

Do standard TMH9 visual condition assessments on the full paved road network through a sub-contract on tender basis. Visual condition assessment data must be captured by contractors using MOBICAP software. Exported CSV files will then be imported into the RAMS. Ensure consistency of data collection through a testing and calibration session held for the all assessors before the start of the assessments. Implement procedures to either obtain a 10% quality control survey done by independent assessor, or through cross assessment by contractors of each other's work.

Task List:

1. Prepare tender documentation, including preparation, discussion with departmental staff, finalisation, inviting tenders / quotations for a three-year period, copying, binding and issuing tender documents
2. Manage compulsory tender meetings, addendums to be sent out if necessary
3. Adjudicate tenders, prepare adjudication reports, obtain Departmental approval, engage sub-consultants
4. Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department
5. Prepare MOBICAP datasets with segmentation data
6. Plot road maps for all contractors. Print road network identification books
7. Arrange and manage quality control assessments
8. Evaluate all submitted visual assessment data in a brief report covering the evaluation findings
9. Provisional sum for payment of Visual assessment contractors
10. Management fee for Contract administration

4.1.9. VISUAL ASSESSMENTS - GRAVEL ROADS

Do standard TMH12 (migrating to the revised TMH9 manual when it becomes available for industry implementation) visual condition assessments (strategic network level) annually on one-third of the unpaved road network through sub-contracted service providers Visual condition assessment data must be captured by contractors using MOBICAP software. Exported CSV files will then be imported into the RAMS. Ensure consistency of data collection through a testing and calibration session held for all assessors before the start of the assessments. Develop and implement procedures to either obtain a 5 to 10% quality control survey done by an independent assessor, or through cross assessment by contractors of each other's work.

Task List:

1. Prepare tender documentation, including preparation, discussion with departmental staff, finalisation, inviting tenders / quotations for a three-year period, copying, binding and issuing tender documents
2. Manage compulsory tender meetings, addendums to be sent out if necessary
3. Adjudicate tenders, prepare adjudication reports, obtain Departmental approval, engage sub-consultants
4. Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department
5. Prepare MOBICAP datasets with segmentation data
6. Plot road maps for all contractors. Print road network identification books
7. Arrange and manage quality control assessments
8. Evaluate all submitted visual assessment data in a brief report covering the evaluation findings
9. Provisional sum for payment of Visual assessment contractors
10. Management fee for Contract administration

4.1.10. PROFILE MEASUREMENTS**4.1.10.1 Purpose and Specifications**

- a) The RAMS Programme Manager shall arrange (Sub-contract) profiling measurements through the relevant **RAMS Data Acquisition Consultant** to obtain riding quality and rut depths for the full paved road network.. The RAMS Data Acquisition Consultant should utilise the specialised survey vehicles to obtain riding quality, rut depths, surface texture, GPS logging and video logging for the full paved road network. The RAMS Programme Manager shall validate the equipment of the profiling contractor through best practice means, for the purpose of declaring the measurements as complying with all requirements once completed.
- b) These measurements are typically intended for use in the network's Pavement Management System (PMS) to assess the network condition and prioritise maintenance and rehabilitation actions.
- c) The new **TMH 13 - Guidelines for Network Level Measurement of Road Roughness** document, provides the guidelines and procedures to assist road network management personnel to Plan, Excecute and Control Pavement Surveillance Measurements namely:
 - Road Roughness;

- Skid Resistance and
 - Texture, Rutting Deflections and Distress Imaging.
- d) Surveillance Measurements concepts as well as background to different devices are provided in this document. TMH 13 is a companion document to **TMH 22 on Road Asset Management Systems** and as such includes aspects of Data Capturing, Analysis and Documentation.
- e) **Road Under Construction:** Certain sections of road may be under construction. Surveys are not to be carried out on such section(s), **but a note in this regard must be made.**

NOTE THAT THE RAMS PROGRAMME MANAGER MUST PREPARE SPECIFICATION AND TENDER DOCUMENTS FOR DATA ACQUISITION, AND THEN DEPARTMENT APPOINT

Typical tasks list regarding the Profile Measurements include the following:

- a) Prepare draft tender documentation (Sub Contract) for profile measurements of the full paved network, to obtain roughness in terms of IRI (International Roughness Index). Rutting in terms of millimetres, surface texture, a video log and a GPS log. Allow for all necessary validations of Data Acquisition Consultant's equipment. This activity includes preparation discussion with departmental staff, finalisation, copying, bidding, issuing tender documents and inviting tenders/quotations for a five year period.
- b) Manage compulsory tender meetings and addendums to be sent out if necessary.
- c) Adjudicate the tenders mentioned above and prepare adjudication reports. Obtain Departmental approval for the recommended sub-consultants. Then contract and engage the sub-consultants for the field work.
- d) Do testing, calibration and evaluation of accepted tenderer's staff and equipment as per relevant testing and calibration procedures and recommend to the Department.
- e) Assist with confirmation of acceptability of profiling measurements by profiling consultants before the start of the measurements.
- f) Plot road maps for all consultants, per District and per province, from the GIS.
- g) Print road network identification books, containing road network identification, per district, for all the Data Acquisition Consultants to report back on RNI problems.
- h) Provisional Sum Fee for payment of the Profile Measurement Sub-Consultants.
- i) Management Fee for Contract Administration.

- j) Evaluate all submitted profile survey data from the calibration section survey and confirm acceptability of the data for payment in a brief report covering the evaluation findings.
- k) Import all relevant data into the RAMS and update data or procedures where required.
- l) Prepare a concise report on the outcome of the survey.

4.1.11. FALLING WEIGHT DETECTIONS (FWD) TESTS

Do FWD tests on the entire paved network at a lane-staggered interval of 200m such that the DoRA PRMG requirements for network-level structural test data are met.

Task List:

1. Prepare draft tender documentation for FWD measurements of the full paved network. Allow for all necessary validations of contractors' equipment. This activity includes preparation, discussion with departmental staff, finalisation, copying, binding, issuing tender documents and inviting tenders / quotations for a five-year period. Note that the RAMS Management Consultant must invite tenders for the work, and then appoint Contractors; it will not be Departmental tenders.
2. Manage compulsory tender meetings and addendums to be sent out if necessary
3. Adjudicate the tenders mentioned above and prepare adjudication reports. Obtain Departmental approval for the recommended sub-consultants, then contract and engage the sub-consultants for the field work.
4. Do testing, calibration and evaluation of accepted tenderers' staff and equipment as per relevant testing and calibration procedures, and recommend to the Department.
5. Assist with confirmation of acceptability of FWD measurements by FWD contractors before the start of the measurements.
6. Plot road maps for all contractors, per district and per province, from the GIS.
7. Print road network identification books, containing road network identification, per district, for all the survey contractors to report back on RNI problems.
8. Provisional sum for payment of FWD contractors
9. Management fee for Contract administration
10. Evaluate all submitted FWD data and data from the calibration section survey, and confirm acceptability of the data for payment in a brief report covering the evaluation findings.
11. Import all relevant data into the RAMS and update data or procedures where required.
12. Prepare a concise report on the outcomes of the survey.

1.1.12. PANEL INSPECTIONS

Make all the necessary arrangements and attend a panel inspection to confirm the multi-year preventative maintenance and rehabilitation plans through a visit to selected candidate projects for both

paved and unpaved roads. The panel inspection will involve travelling over the road in a minibus that can cater for 10 people and will involve 3 full days of travelling. The RAMS Consultant must provide an independent expert for the panel inspection. Other members will consist of at least three independent experts plus departmental officials. The M&R list is to be finalised after the panel inspections. The tendered rate will include the rental of a minibus for the 3 days, overnight accommodation for all team members as well as refreshments during inspections.

A panel inspection needs to be conducted annually.

Task List:

1. Make all the necessary arrangements and lead a panel inspection to candidate paved and unpaved road projects.
2. Disbursements for Panel inspection (Vehicle rental, etc.)
3. Provision for independent expert
4. Document the recommendations in a report to the department

4.1.13 TRAFFIC INFORMATION SYSTEM (TIS)

Make all the necessary arrangements and attend a panel inspection to confirm the multi year preventative maintenance and rehabilitation plans through a visit to select candidate projects for both paved and un-paved roads.

The panel inspection will involve travelling over the road in a minibus that cater for 10 people and will involve 4 full days of travelling (1 day per District).

The RAMS Programme Manager must provide an independent expert for the panel inspection.

Other members will consist of at least three independent experts plus officials.

The M&R lists is to be finalised after the panel inspections. The tendered rate will include the rental of a minibus for the 4 days, overnight accommodation for all team members as well as refreshments during inspections.

A panel inspection needs to be conducted annually.

Typical tasks list regarding the Panel Inspections includes the following:

- a) Make all the necessary arrangements and lead a panel inspection to candidate paved and unpaved road projects.
- b) Disbursements for Panel inspection (vehicle rental, etc.)
- c) Provision for independent expert.
- d) Document the recommendations in a report to the Department.

4.1.13.1 TRAFFIC INFORMATION SYSTEM (TIS)

Sub-System Description:

The TIS contains information on all traffic counting done by the Department, whether through temporary automatic or manual counting means. The TIS processes this counting station data to provide traffic data per road link, as this is required by the Pavement, Gravel Roads and Bridge Management Sub-systems. The TIS is indispensable to these sub-systems.

4.1.13.1.1 Overview of the TIS Specification

- ❑ All traffic counts should be uniquely allocated to the roads through linear and spatial referencing of the count positions. The TIS should warn the user of changes to the road logs that influence historic counts in the TIS.
- ❑ The TIS should provide a procedure for clustering of roads with annual traffic counting to roads with automatic 7 days counts in order to expand the manual counts to Average Daily Traffic (ADT). The TIS should allow clustering of roads without traffic counts to roads containing calculated ADTs, in order to have an ADT for every road link in the road network.
- ❑ Clustering of roads should preferably be based on a procedure linked to the GIS.
- ❑ Historic counts should be imported to the TIS as far as possible.
- ❑ The TIS should allow historic counts at any particular position to be compared in order to determine a realistic growth rate for that position. A procedure containing a graphical display of traffic flow trends over the years at a particular position is preferred. Growth rates should be determined for as many positions on the network as possible, depending on usefulness of historic counts, and growth rates should be stored in the TIS database tables.
- ❑ Traffic counts (where the entire road network is not counted) must be well spaced across the full road network.
- ❑ Manual counting should at least classify traffic into light, heavy, very heavy, buses and taxis (Table 2) and be of 12 hours duration.
- ❑ A special export procedure will be required to provide the ADT data, grown to a specified date, for use in the PMS, GRMS and BMS, and for display on the GIS.
- ❑ The detailed user manual must deal with dealing with the data capture, validation, database and processing parts of the TIS software, dealing in detail with clustering of roads to expand manual counts to ADT and clustering to expand counts to uncounted links.

Training requirements will vary, depending on the operational alternative accepted by the Department. It should however include at least an awareness presentation, based on the

analyses of the first and second years data to show the capabilities of the TIS. At least one comprehensive training workshop for officials (plus nominees) must be done.

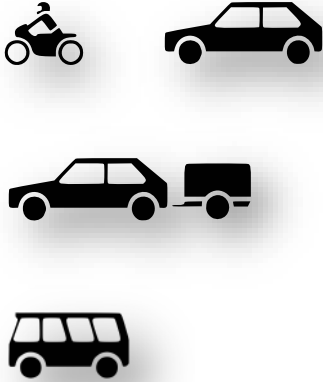
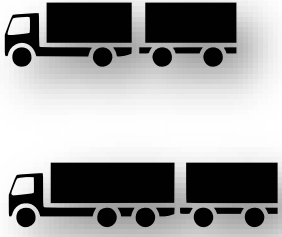
Typical tasks list regarding the TIS includes the following:

- a) Update and or Provision of a TIS per specifications.
- b) Update manuals for traffic counting strategy, guide for manual counting for automatic counting and guide for permanent counting.
- c) Prepare draft tender documentation, including discussion with Department staff, finalization, inviting tender/ quotations for a five year period, copying, binding and issuing tender documents
- d) Manage compulsory tender meetings, addendums to be sent out if necessary.
- e) Adjudicate tenders, prepare adjudication reports, obtain Departmental Approval, and engage Sub-Consultants.
- f) Develop and provide data capturing software for manual traffic counting.
- g) Calibration Session: Train Data Acquisition Consultants staff at a central venue.
- h) Print manual counting forms.
- i) Print traffic maps for the province and Districts.
- j) Print road network identification books.
- k) Do quality control assessments, of which includes counting 10% of submitted counts as per relevant TMH and or TRH Documentations (*latest version*).
- l) Evaluate, validate and confirm acceptability of the traffic data for payment of manual counting Data Acquisition Consultants and Automatic counting Data Acquisition Consultants.
- m) Process traffic data into ADT per road link and expand the counted parts of the network to the uncounted parts.
- n) Prepare a comprehensive TIS Report and submit to the Department.
- o) Provisional Sum for payment of Traffic Count Data Acquisition Consultants.
- p) Management Fee for Manual counting Contract Administration.
- q) Provisional Sum for payment of permanent traffic count Data Acquisition Consultants.
- r) Management Fee for permanent/ electronic counting Contract Administration.
- s) Training Departmental staff on TIS.

Typical outputs of the TIS include the following:

- a) Detailed information per counting station;
- b) AADT for various traffic classes per link;
- c) E80 per link;
- d) Current usage of the road network (expressed as vehicle kilometres travelled on paved and gravel roads) (charts and tables);
- e) Growth rates on the network;
- f) Information for road maps to be displayed in the GIS; and
- g) Projected road link volumes for the entire road network.

Table 2: Traffic classes used in the current TIS

Picture	Classification	Description
	<i>Light</i>	Light vehicles are motor vehicles with a gross vehicle mass of less than 3 tonnes. It includes motorcycles and motor cars with or without trailers and caravans.
	<i>Heavy</i>	The heavy vehicle class includes single-chassis or articulated heavy vehicle (truck or bus) with a gross vehicle mass of between 3 tonnes and 16 tonnes. The heavy vehicles in this class have up to 3 axles, at least one of which has more than one wheel on each side.
	<i>Very Heavy</i>	Very heavy vehicles are articulated heavy vehicles with a gross vehicle mass of greater than 16 tonnes. The heavy vehicles in this class have more than 3 axles, at least one of which has more than one wheel on each side.

 	Bus	Buses are heavy vehicles adapted for the conveyance of groups of people with a seating capacity of 40 or more.
 	Taxi	Taxis are light vehicles adapted for the conveyance of groups of people with a seating capacity of up to 40.

4.1.14 RURAL ROAD MANAGEMENT SYSTEM (RRAMS) PROGRAMME

The RAMS Consultant/ RAMS Programme Manager shall also be required to assist the North West Provincial Department of Public Works and Roads in providing a support service to the four (4) District Municipalities as per the PRMG/ DORA requirements for the implementation of the Rural Road Management System (RRAMS) Programme.

The tasks and or duties include performing but not limited to the following:

- a) Organizing/ coordinating/ Attending monthly RRAMS Meetings and Data Format Workshops/ Training.
- b) Incorporating RRAMS Data (comprising inter alia RNI, Visual Condition of Municipal roads and Manual Traffic Counts) submitted by these municipalities into Provincial RAMS.
- c) Organise and manage the Electronic Counts and Profile Measurements on behalf of then municipalities of class R1 to R3 of the RRAMS Network.
- d) Organise and manage the Bridge & Major Culverts Inspections on behalf of the municipalities.
- e) Ensuring that the Instrumental Data for Class R1, R2 and R3 Roads are Collected, Analyzed and Incorporated into the RRAMS.
- f) Do quality control inspections of a randomly selected 5% of the bridges.
- g) Evaluate all submitted inspections and confirm acceptability of the data for payment.

- h) Capture bridge inspection data in the BMS, process inspection data, do required analysis and planning and prepare bridge strategic analyses report.
- i) Prepare short and medium term multi-year maintenance and rehabilitation plan for bridges, based on most likely future budgets.
- j) Compile Annual detail Bridge & Major Culverts Report to Municipalities through the Department.
- k) Organise and attend Monthly and Quarterly progress meetings with the Department.
- l) Ensure that Relevant and Related RRAMS Support Services training are rendered to the Municipal and Provincial staff.
- m) Compile and Plot relevant Maps for the Municipalities..

4.1.14 LIFE CYCLE COST ANALYSES AND PLANNING

The Department, annually, requires proper network-level life cycle costing analysis and optimisation to be performed, using software and processes to do consequence analyses of various policy and budget scenarios through optimisation and life cycle cost analyses. The Department does not own suitable software for this purpose, and as such, this component has remained external to the core RAMS. Results from these analyses e.g. M&R lists are currently imported into the RAMS. This item (procurement and utilisation of such software) has thus been made part of this Contract. The software should contain calibrated pavement performance prediction models of HDM 4 and vehicle operating cost models calibrated for local conditions.

Tenderers should propose suitable and proven software to do the consequence analysis and optimisation, and should demonstrate capability and knowledge of this type of powerful software in pavement management.

4.1.15 Required capabilities of the Consequence Analysis / Decision Support Software

The required capabilities of the consequence analysis / decision support software shall be as follows:

- ☐ Allow for the separate processing/analysis of sub-networks e.g. coal haulage network, non-coal haulage network
- ☐ Allow the calibrated HDM4 pavement performance models of North West to be used in the strategic analysis of the North West paved road needs
- ☐ Allow the South African unpaved roads steady state models to be used in the strategic analysis of the North West unpaved road needs
- ☐ Allow TMH9 network level visual condition assessments to be used in the strategic analysis of the North West paved road needs
- ☐ Allow TMH12 network level visual condition assessments to be used in the strategic analysis of the North West unpaved road needs
- ☐ Allow calibrated vehicle operating cost models of North West to be captured and utilised
- ☐ Allow treatments and triggers typically used (or proposed) by North West to be captured and utilised
- ☐ Determine multiple strategies for preventive maintenance and rehabilitation for every road segment during the life cycle cost analysis

- Allow the benefits of strategies to be quantified
- Allow a benefit function to be specified for the optimisation (eg. maximisation of condition of paved roads, minimisation of total transport cost for unpaved roads)
- Quantify long-term consequences of various budget scenarios for paved roads, at least in terms of the predicted future road network condition, predicted future change in asset value, condition distribution and expected vehicle operating costs
- Quantify long-term consequences of various budget scenarios for unpaved roads, at least in terms of the predicted future gravel thickness, predicted change in asset value, gravel thickness distribution and expected vehicle operating costs
- Determine the required budgets to maintain the road network in a specified condition (a key performance index for the network)
- Determine the optimal distribution of funding between re-surfacing (fog spray, reseal, patch and re-seal), light rehabilitation and heavy rehabilitation for a given future budget stream (paved roads)
- Determine the optimal distribution of funding for blading, regravelling, dust treatments and upgrades for a given future budget stream (unpaved roads)
- Prepare a multi-year preventive maintenance and rehabilitation plan for paved roads for a selected budget scenario
- Prepare a multi-year preventive maintenance and upgrading plan for unpaved roads for a selected budget scenario
- The output requirements of the consequence analysis / decision support software in terms of graphs are at least as follows:
 - Average network condition line graphs for both paved and unpaved roads: Line graph format with the x-axis covering an analysis period of up to 20 years (or as agreed with the Department), and the y-axis being the average network condition for each of up to 4 to 5 different budget scenarios (do-nothing budget, optimal budget, current budget level, and 1 or 2 intermediate budget levels). The average network condition should be compatible to the Visual Condition Index (VCI) of TRH22, but obviously only an aggregation of the HDM predicted parameters.
 - Average condition distribution: Stacked bar charts for the analysis period, with the x-axis covering the analysis period and the y-axis being the percentage road length per condition category of very good, good, fair, poor and very poor.
 - Average condition distribution for predicted and historic condition: Stacked bar charts as above, but also showing historic condition.
 - Average treatment cost distribution for all budget scenarios, in a horizontal stacked bar chart, with various budget scenarios on the y-axis and the treatments stacked horizontally.
 - Average treatment length distribution for all budget scenarios, in a horizontal stacked bar chart, with various budget scenarios on the y-axis and the treatment lengths stacked horizontally.
 - Predicted road user costs.
 - Predicted backlog lengths expressed as total length of network in poor and very poor condition per year of analysis and budget scenario.
 - Predicted change in asset values compared to base year (first year of analysis) for all budget scenarios.
 - Predicted network condition versus expenditure.

- The final reports on the strategic analysis of paved and unpaved road conditions should include the following contents:
 - Executive summary
 - Introduction
 - The road network (statistics, road classification, districts, etc.)
 - Traffic information (traffic per functional road class, and per district)
 - Current network condition (visual condition index, network condition number, analysis of pavement structure ages, analysis of pavement surfacing ages, analysis of structural condition indicators (rutting and riding quality), analysis of distresses as recorded during the condition assessments, road user costs (analysed per road class and district), excess road user costs (analysed per road class and district), asset value (historic value and compared to asset value per road class and district), concluded with a general discussion on current road conditions
 - Road needs analysis: background and input
 - Road needs analysis: budget scenarios investigated, and if required, policy scenarios
 - Road needs analysis: fund allocation and treatment distribution for various budget scenarios for diluted emulsion, resurfacing, rehabilitation
 - Road needs analysis: predicted future network condition based on predicted condition index (average network condition, condition distribution, roads in poor and very poor condition, roads in good and very good condition), predicted network condition number, predicted road user cost, predicted excess user cost and predicted asset value.
 - Conclusion on the roads needs analysis.
 - The report shall also contain appendices on the backlog roads, the asset value of every road, and the M&R / M&U plans for at least three budget scenarios.
 - The Report should also focus on and provide information in such a format that it can be used as inputs for the preparation of the Infrastructure Plan of the Department.
- The final contents of all reports shall be discussed with, and approved by the Client beforehand

Task List:

1. Assess the available vehicle operating cost models, and update if necessary for North West
2. Discuss treatments and triggers with North West staff, and the policy and budget scenarios to be investigated, with recommendations
3. Collect unit costs of treatments specific to North West, from North West staff and other sources
4. Import the outputs from various systems and import to your strategic needs analysis software
5. Prepare multi-year preventive maintenance and rehabilitation / upgrading plans for paved and unpaved roads with own suitable software. Print the plans and plot the recommended treatments on the road maps through the GIS. Present the results to departmental Management
6. Do strategic analyses of future road network conditions. Prepare multi-year preventive maintenance and rehabilitation / upgrading plans for paved and unpaved roads.

Document results in a report and presentation. Present the results to departmental Management

7. Import analysis outputs into the RAMS (e.g. M&R lists)
8. Related support tasks as required

4.1.15 BRIDGE MANAGEMENT SYSTEM (BMS)

Sub-System Description and background of the BMS

- ❑ The BMS provides decision support information to asset managers on the bridge and major culvert infrastructure under jurisdiction of the Department of Public Works and Roads. North West Provincial Department of Public Works and Roads (DPWR) has implemented the STRUMAN Method within its Bridge Management System (BMS) since 2013.
- ❑ Together with the implementation of a new bridge and major culvert definition and a standardized national inspection approach based on the DER (Degree, Extent and Relevancy) defect rating method, the re-compilation of the inventory of bridges and major culverts of the North West Province started in 2013, and continued in 2022. Currently, a total of 398 bridges and 1073 major culverts were inventorised and captured in the STRUMAN BMS software of the DPWR.
- ❑ It is expected that the process, to achieve a full inventory of all bridges and major culverts under the jurisdiction of the Province, is almost completed. Finalisation depends on clarification regarding ownership with other authorities like SANRAL, Transnet, Municipalities, emanating from possible joint maintenance responsibility.
- ❑ It is however estimated that the Department is very close to complying fully with the PRMG (Provincial Road Maintenance Grant) requirement regarding the age of **inspection data specified not to be older than 5 years for bridges on any road class** under its jurisdiction.

Bridge Definition

The bridge definition applied in classifying structures as bridges by DPWR is the definition contained in the draft TMH19. This inspection manual classifies a structure as a bridge if any of the following is true:

- Any single span (as measured horizontally at the soffit along the road or rail centre line between the faces of its supports) is equal to or greater than 6m; or
- The individual clear spans (as measured horizontally at the soffit along the road or rail

centre line between the faces of its supports) exceed 1.5m and the overall length measured between abutment faces exceeds 20m; or

- The opening height, which is the maximum vertical distance measured from the streambed or structure floor at the inlet or from the top of any base, to the soffit of the superstructure, is equal to or greater than 6m; or
- The total cross-sectional opening is equal to or larger than 36m²; or
- The structure is a road-over-rail, or rail-over-road structure, even if the span is less than 6m.

CORE MODULES OF THE BMS

The BMS consists of three core modules:

- a) Inventory of bridges and major culverts, containing salient features of the bridges and major culverts.
- b) Inspection procedure to identify and rate defects (such inspections should preferably be done annually on at least **25 percent** of the bridge stock).
- c) Budget determination based on prioritised remedial work, as well as budget forecasting.

Typical outputs of the BMS

- a) Current inventory statistics of the bridge and major culvert network (charts and tables).
- b) Current condition of bridge and major culvert in the network based on principal inspections.
- c) Short-term and long-term maintenance and repair budget needs of the bridge and major culvert network.
- d) Current needs for special inspections.

Typical tasks list regarding the BMS includes the following:

- a) Refine and operationalise the BMS for all bridges and major culverts with provision for all related data.
- b) Identify all bridges and major culverts not yet inspected, as well as bridges inspected more than 5 years ago and bridges in fair and worse than fair condition.
- c) Refine training and calibration of bridges inspections.
- d) Print inspections forms, plot road maps for bridge inspectors.
- e) Print road network and bridge location books & maps.
- f) Perform regular inspections.
- g) Do quality control inspections of a randomly selected 5% of the bridges.
- h) Evaluate all submitted inspections and confirm acceptability of the data for payment.

- i) Capture bridge inspection data in the BMS, process inspection data, do required analysis and planning and prepare bridge strategic analyses report.
- j) Prepare short and medium term multi-year maintenance and rehabilitation plan for bridges, based on most likely future budgets.
- k) Annual detail report to the department.
- l) Quarterly progress meetings with the Department
- m) Related support services.

Principal Bridge Inspections

- a) The RAMS Programme Manager shall arrange principal bridge inspections annually on 20% of the bridge network through the relevant Data Acquisition Consultant/s.
- b) Bridge inspection data shall be captured by the Data Acquisition Consultant/s through the Department's inspection data capture software, before importing to the BMS.
- c) The RAMS Programme Manager shall ensure consistency of data collection through a calibration session held for the data acquisition consultants' assessors before the start of the inspections.
- d) He shall then provide the Data Acquisition Consultants with the necessary inspection forms, maps and other data necessary to do the inspections, and monitor the progress.
- e) The RAMS Programme Manager shall be responsible to execute a 10% quality control survey by an independent inspector, for the purpose of declaring the work done by the data acquisition consultants acceptable or not.

Inspections of major culverts

- a) The Management Support Consultant shall arrange inspections of major culverts annually on 20% of the major culvert network through the relevant Data Acquisition Consultant/s.
- b) Culvert inspection data shall be captured by the Data Acquisition Consultant/s through the Department's inspection data capture software, before importing to the BMS.
- c) The RAMS Programme Manager shall ensure consistency of data collection through a calibration session held for the data acquisition consultants' assessors before the start of the inspections.

- d) He shall then provide the data acquisition consultants with the necessary inspection forms, maps and other data necessary to do the inspections, and monitor the progress.
- e) The RAMS Programme Manager shall be responsible to execute a 10% quality control survey by an independent inspector, for the purpose of declaring the work done by the Data Acquisition Consultant/s acceptable or not.

NOTE : RRAMS STRUCTURES

Bridges and Major Culverts within the RRAMS Road Network Programme will also form part of the RAMS Scope of Work. The RAMS Programme Manager will manage the inspections process together and similar way as the Provincial BMS Structures Programme.

Processing of BMS Data and Reporting:

- a) Processing of data and calculation of indices:
- b) The RAMS Programme Manager shall import the data into the BMS of the RAMS, and calculate the condition indices and current needs.
- c) Short and long term budget needs:
- d) The RAMS Programme Manager shall use the Department's BMS to calculate the short-term and long-term budget
- e) Reporting and presentation:
- f) A comprehensive report and presentation shall be prepared on the bridge inventory and condition of the provincial bridges and major culverts. This shall be handed over to the Department, and presented to top management of the Department
- g) **Upon completion of Data acquisition and uploading into STRUMAN, report will be prepared on the condition of the bridges, highlighting trends and possible maintenance and rehabilitation strategies and options.**
- h) **Furthermore, a report detailing a prioritised list of bridge maintenance and improvement projects together with cost estimates for each project shall be prepared by the Consultant. The report will justify the proposed expenditure and how this will improve the bridge conditions and reduce risks.**

□ **ADDITIONAL SPECIAL BMS REPORTS**

- **Make Safe Structures Report** (i.e. Bridges and Major Culverts) shall be compiled, presented and submitted to the Departmental Management.
- **High Risks Structures Report** (i.e. Bridges and Major Culverts) shall be compiled, presented and submitted to the Departmental Management.

- **RRAMS Structures Report** (i.e. Bridges and Major Culverts) shall be compiled, presented and submitted to the Departmental Management and Municipal Authorities

TO NOTE:

- **As from 2015/16 the grant is allocated on performance based and indicator is the VOC (Vehicle Operating Costs) and RUL (Remaining Useful Life)**
- **The Provincial departments are responsible for selecting projects using the RAMS as a primary source.**

4.1.16 FIXED ROAD ASSET MANAGEMENT (FAR)

FAR Regulations, Requirements and Templates

- a) The Accounting Standards Board (the Board) is required in terms of the **Public Finance Management Act, Act No. 1 of 1999, as amended (PFMA)**, to determine generally recognised accounting practice referred to as **GRAP 17** and **TMH22** provides a template, guidance and methodology on the manner in which the road infrastructure assets should be managed. They establishes a uniform and integrated system on which the asset conditions are collected and reported on, to ensure an equitable funding distribution so that the maintenance and rehabilitation of the road infrastructure is ensured.

The following legislative , policy and directive documents shall be adhered to in the management of road assets:

- ❑ Government Immovable Asset Management Act, No 19 of 2007 (GIAMA).
- ❑ Provincial Road Maintenance Grant (PRMG).
- ❑ Division of Revenue Act (DORA).
- ❑ Public Finance Management Act (PFMA).
- ❑ Municipal Finance Reporting Act (MFMA).
- ❑ International Finance Reporting Standards (IFRS).
- ❑ Generally Recognised Accounting Practices (GRAP).
 - GRAP 11 : Construction Contracts.
 - GRAP 12 : Inventories.
 - GRAP 13 : Leases.
 - GRAP 16 : Investment Properties Issued MARCH 2012.
 - GRAP 17 : Property, Plant & Equipment. Issue March 2012.

- GRAP 21 : Impairment of non-cash generating assets.
- GRAP 26 : Impairment of cash generating assets.
- GRAP 100 : Noncurrent assets held for sale and Discontinued Operations.
- GRAP 101 : Agriculture.
- GRAP 102 : Intangible Assets.
- ❑ Road Infrastructure Strategic Framework for South Africa (RISFSA).
- ❑ Technical Methods for Highways Guidelines (TMHs).
 - TMH 3 : Specifications for the Provision of Traffic and WIM Monitoring Service.
 - TMH 8 : Traffic Counting Procedures for Rural Roads.
 - TMH 9 : Pavement Management Systems: Standard Visual Assessment ,Manual.
 - TMH 13 : Guidelines for Network Level Measurement of Road Roughness, Rutting, Pavement Deflection, Skid Resistance and Texture, and for Network Level Imaging and GPS Technologies.
 - TMH 14 : South African Standard: Automatic Data Collection Format.
 - TMH 16 : South African Traffic Impact and Site Traffic Assessment Manual.
 - TMH 17 : South African Trip Data Manual.
 - TMH 18 : Road Asset Data Electronic Exchange Formats.
 - TMH 19 : Manual for Bisual Assessment of Road Structures.
 - TMH 20 : Standard for Road Network Data.
 - TMH 21 : Road Infrastructure Asset Management Policy (RIAMP).
 - TMH 22 : Road Asset Management Manual.
 - TRH 26 : South African Road Classification and Access Management (RCAM) Manual

The following documents provide additional information andTRH guidance to road authorities for the management of their road assets:

- ❑ S'hamba Sonke project implementation guidelines.
- ❑ Expanded Public Works Programme (EPWP) project implementation guilines.
- ❑ DPLG Asset Management Guidelines.
- ❑ Local Government Capital Asset Management Guidelines.

- ❑ International Standards Organisation:
 - ISO 55000 : Asset Management - Overview, Principles and Terminology.
 - ISO 5501 : Asset Management - Management Systems - Requirements.
 - ISO 5502 : Asset Management - Management Systems - Guidelines for the application of ISO 55001.
 - IMIESA : International Infrastructure Management Manual.
 - Austroads : Guide to Asset Management.
 - AASHTO : Transport Asset Management Guide.

4.1.17 ROAD SIGNS MANAGEMENT SYSTEM

The Consultant should provide the Department with a Road Signs Management System and procedures that meet all current South African requirements and best standards, and integrate it suitably into the RAMS.

4.1.18 CAPITAL PERIODIC & PREVENTATIVE MAINTENANCE MANAGEMENT SYSTEM (CPPMMS)

The Consultant should provide the Department with a Capital Periodic & Preventative maintenance Management System and procedures that meet all current South African requirements and best standards, and integrate it suitably into the RAMS.

4.1.19 BORROW PIT MATERIAL MANAGEMENT SYSTEM

The Consultant should provide the Department with a Borrow Pit Material Management System and procedures that meet all current South African requirements and best standards, and integrate it suitably into the RAMS.

4.1.20 SUBMISSION OF DATA TO TREASURY (per PRMG REQUIREMENTS)

a) The outcome statement from the PRMG states the purpose of the Provincial Road Asset Management System is “for the planning (prioritisation and selection) of all road infrastructure projects” and “Improve the condition and lifespan of the assets (provincial roads), thereby reducing the Vehicle Operating Costs (VOC)”.

b) The following outputs are stated and are deemed to be applicable to RAMS:

- ❑ Road Classification and GIS are updated for all roads annually.

- ❑ Number of Km's of surfaced roads assessed (VCI's) completed as per relevant TMH document.
 - ❑ Number of Km's of gravel roads assessed (VCI's) completed as per relevant TMH document
 - ❑ Number of weighbridges maintained and calibrated.
- c) Other outputs are listed but are deemed to be applicable to other Programmes, EPWP, Capital projects and/or Maintenance/Operational maintenance systems or activities; some might be outside of the scope of RAMS. **Further, the business plan must contain, amongst others:**
- ❑ Level of service
 - ❑ Network condition and traffic volumes
- d) The conditions of the PRMG include, amongst others and are summarised as follows:
- ❑ Road classification, VCI's and GIS updated regularly.
 - ❑ Provision of data in accordance with COTO guidelines.
 - ❑ Data collection requirements, specific per RISFSA class R1 – R5.
 - R1 – R3: Condition data not older than 2 years old for pavements and not older than 5 years for bridges
 - R1 – R3: Instrument data not older than 2 years old (structural strength data not older than 5 years)
 - R1 – R3: traffic data not older than 3 years old
 - R4 – R5: Condition data not older than 3 years old for pavements and < 5 years for bridges
 - R4 – R5: Instrument data not older than 4 years old
 - R4 – R5: traffic data not older than 5 years old
 - ❑ Compliance with TMH/TRH recommendations and guidelines
 - ❑ Roads Asset Management Plan (RAMP) in compliance with GIAMA, based on the COTO Roads Asset Management Guidelines

Draft TMH 22: Road Asset Management Manual Requirements and Guidelines

- a) The draft TMH22 provides a template, guidance and methodology on the manner in which the road infrastructure assets should be managed. It establishes a uniform and integrated system on

which the asset conditions are collected and reported on to ensure an equitable funding distribution so that the maintenance and rehabilitation of the road infrastructure is ensured.

b) TMH 22 Manual covers the following aspects:

- ❑ The benefit to the roads authority relating to asset management
- ❑ A brief description of the policies and requirements of the Road Authority in terms of current legislation
- ❑ The various levels of asset management and the minimum levels required
- ❑ Processes and methodologies for higher levels or more advanced asset management
- ❑ Guidance for the implementation of the Road Asset Management System
- ❑ Guidance for the development of inventory data and asset valuations
- ❑ Requirements for the collection of usage and condition data and time intervals thereof
- ❑ Methodologies for the reporting on the condition of the assets
- ❑ Methodologies for the determination of the maintenance and rehabilitation requirements of the road network
- ❑ Identification for the ongoing improvement of the road authorities' Asset Management System

In summary, the manual provides the background and the template for Road Authorities to implement and sustain efficient Asset Management Systems to ensure the road network performs at the required minimum level of service.

GRAP17 / Auditing Requirements and Guidelines

- a)** The Accounting Standards Board (the Board) is required in terms of the Public Finance Management Act, Act No. 1 of 1999, as amended (PFMA), to determine generally recognised accounting practice referred to as Standards of Generally Recognised Accounting Practice (GRAP).
- b)** The objective GRAP17 is to prescribe the accounting treatment for property, plant and equipment so that the users of financial statements can discern information about an entity's investment in its property, plant and equipment and the changes in such investment. The principal issues in accounting for property, plant and equipment are the recognition of the assets, the determination of their carrying amounts and the depreciation charges and impairment losses to be recognised in relation to them.

Asset Register Template - Based on GRAP Requirements

A. CUSTOMIZATION OF RAMS

The updates or potential updates to be made to the current RAMS system, to meet the above legislative requirements are described in further details below and require input and direction from the Client before a processing of mapping between the RAMS data layout/tables/attributes and the template'd Fixed Asset Register (FAR) can be carried out. **The following illustrates the formation of the FAR: -**

a) Road Segmentation

The road is divided into logical elements in order to manage data in respect of the road along its length. This illustrated schematically in the [North West Provincial FAR: Methodology Document](#).

b) Road Links

Road links form the primary divisions of the road at intersections and boundaries. Segments are shorter portions used to manage visual inspection data. All other data is stored per km along the length of the road section.

In the RAMS database all of the road and section numbers can be changed by users as the joins between all the data tables and GIS files is provided through unique ID values that are transparent to the user. However, this should only be done subject to approval by Road Network Authoriser as historic data external to the system will be linked to current road numbers.

Road sections are subdivided into road Links that are numbered 010, 020 etc. to provide for the creation of intermediate links over time such as 015. The road links are joined at nodes which each have a unique number as described below. Road kilometres run from 0 at link 010 to the same value and the road end at the end of the last road link. Each link represents a uniform section and links are generally subdivided at nodes but also at a change in road type, a depot or district boundary.

NB : Much of the road data in the RAMS is stored per link as it is uniform in respect of many of its characteristics.

a) Nodes

Nodes are defined at intersections with other public roads except in towns where intersections with minor city streets do not constitute links and nodes. This is shown in Figure below schematically.

b) Data Formatting and Assumptions

Data is structured in accordance with the following standardised hierarchy illustrated by Table below, and are divided into five (5) distinct levels which are: **System, Sub-System, Facility, Asset and Component.**

Table : Example of Road Hierarchy	
Hierarchy	Example
1. System	Transport
2. Sub-system	Road Transport
3. Facility	Road Network e.g. R 502 or C2P_Bojanala
4. Asset	Road Link e.g. D1007_010-Roadlink Asset TB2128 on P137/1_030 - Bridge Asset TC5478 on D1376_030 - Culvert Asset D2728_020-Road Sign-6
5. Component	Surfacing e.g. D1007_010-1
	Pavement e.g. D1007_010-2
	Formation e.g. D1007_010-3
	TB0416 on D514_050 or TC9001 on Z612_010
	D2728_020-Road Sign-6

As such, the hierarchy is defined in the following broad terms:

- **System:** A grouping of assets that perform a similar nature or function
- **Sub-system:** Part of a system which can be grouped based on type or nature of the service
- **Facility:** Geographical grouping of assets
- **Asset:** Tangible Property, Plant and Equipment
- **Component:** 'part' of an asset which has a significantly different 'Useful Life' or 'Significant Cost' in relation to the main asset.

e) **Componentisation**

The roads are componentised as shown in the Table that follows below. Land can be added as a component **if** land belonging to the Department is found in the [Windeeds](#) search, which is still to be determined/undertaken. **Kerbs, Channels and related inlets are not included in the FAR as no such data exists or has been collected to-date.**

Table : Componentisation

Facility	Asset	Road Type	Surface/ Pavement Type	Asset Type	Components
Route and Road Class per surface type per district	Link	Paved/Dual/Single Carriageway Roads	Flexible	Paved Layer - Asphalt	Paved Surface (- 1)
					Pavement (- 2)
					Paved Formation (-3)
				Paved Layer - Slurry	(as above)
				Paved Layer - Texture/Emulsion	
				Paved Layer - Seal	
				Paved Layer - Rehab	
Road	Link	Unpaved	Rigid	Paved Layer - Concrete	
			Gravel	Road Unpaved - Gravel	Gravel Pavement
			Earth	Road Unpaved - Earth	Formation (Wearing Course)
			Track	Road Unpaved - Track	Earth
			Treated	Road Unpaved - Treated	Track
					Treated

Example:					
R502	D1007_010	Paved Road (P – Avg)	Flexible	Paved Layer - Seal	Paved Surface - 9mm Seal with Modified Binder
					Pavement - G1, C4C,C4W,G7,G9
					Paved Formation – Upper Base, Lower Subbase, Upper Selected Subgrade, Subgrade

f) Quantification and Layout of Components

The figure below provides an indication of the layout and configuration of a typical road cross-section and identifies the relevant components from a high level.

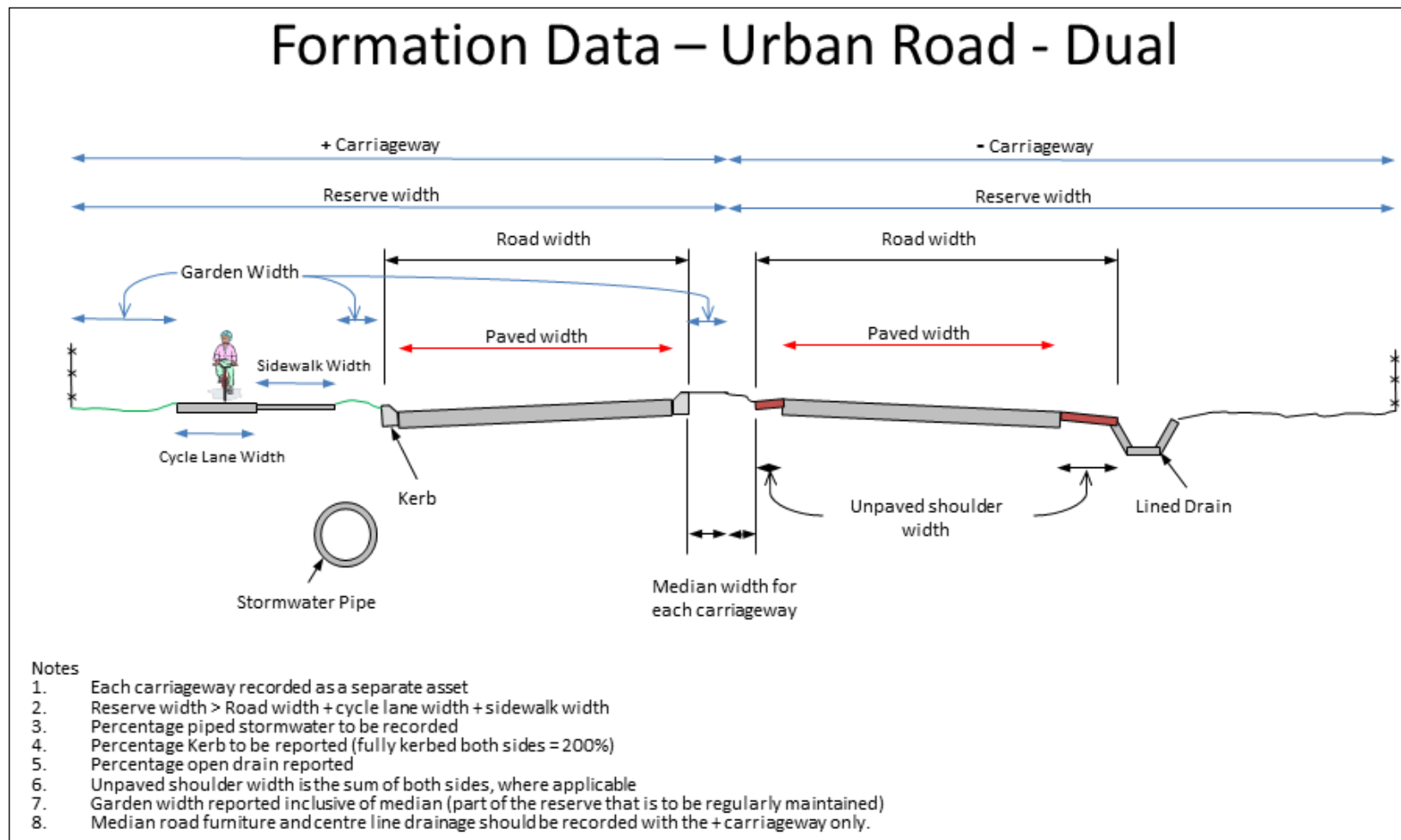


Figure : Typical Road Layout

g) Replacement Costs/ Unit Rates per Component

Assets will be valued in terms of their **Current Replacement Cost (CRC)**. The calculation is based on the replacement of the asset with a modern-day engineering equivalent and thus using modern construction techniques.

The asset CRC's can therefore be used to determine an appropriate cost of replacing each component with a modern engineering equivalent for the particular infrastructure item or an asset that would provide a similar level of service.

For rates suggested for the different types of components (i.e. used to determine the CRC) *for more information, please refer to **the Cost Code in the North West Provincial FAR: Methodology Document***.

Cost code rates are applied at component level and multiplied by the quantity of the component (see quantification of components) which could be the **width x GIS length**. It is noted that length is the same as the inventory length and correlates with the GIS/GPS length.

The quantity is calculated based on the Unit of Measure applied in the Cost Codes. Cost code rates have been sourced from various technical documents including quotations, infrastructure guidelines, bureau of economic research and tenders but should ideally come from the Client's records and their list of recently completed projects.

NB : Support documents in such cases must be provided (such as tendered rates and BOQ's) to support the rates.

Some of the sub-items of which should form part of the FAR calculations are as follows:

- IDs,
- **Sub-typeUniqueCode,**
- **Sub-TypeDefinition,**
- **Asset Type,**
- **Type Description,**
- **TypeCode,**
- **Sub-TypeCode,**
- **Sub-Type,**
- **UnitOfMeasurem,**
- **All-in rate,**

- **Cost source,**
- **EUL.**

h) **Replacement Costs of a Road**

EUL's as per **TMH22 [Table C-1: Typical 2013 Unit Rates and EULs for components of Assets (excl. VAT)]**. The rates in the table include mark ups for planning, design and administration. These should be checked by the NW Department of Public Works and Roads against recent contract values and adjusted upwards or downwards, as the case may be in a manner that is auditable i.e. using recent tender documents.

i) **Acquisition Date and Cost**

The proposed method for determining the acquisition date of the infrastructure assets has been based on the following approach, in descending order of application (also see **Process flow Document "Determining Acquisition Date"**):

In the current RAMS database the following date-based metadata is available:

1. Pavement Structure Date (dbo.PavementStructure);
2. Pavement Surface Date (dbo.PavementSurface); and
3. Construction Year (dbo.RoadlinkPaved).
 - ☐ The assumption is that if it is a paved road the Pavement Structure date will be used as the acquisition date.
 - ☐ If there is no Pavement Structure date then the Pavement Surface will be used.
 - ☐ If there are no dates then a deemed cost date could be used (i.e. 2008/07/01). This should however, be confirmed by the AG's office.
 - ☐ There are no dates for gravel roads therefore we assumed the deemed cost (as above)

Where possible, the acquisition date was sourced from either:

- **As-built drawings:** Can be used to determine acquisition dates, if they are available; or
- **Completion certificates:** For the current (in-year) projects (Cost of assets can be determined from initial projects cost, proclamations, and certificates etc).

j) **Disposal/Acquisition Details**

The assets which have been transferred to SANRAL or other Provinces is treated as a disposal. This is recorded in the audit trail tabled. In the 2014 asset register, the roads which have been transferred to SANRAL has been added as a separate sheet in the Excel file and has headings which explains

some of the fields. These roads have not been componentised and were given a combined cost of the typical components of a paved road. Those assets acquired from other Provinces or Municipalities are added at the date of transfer within the supporting documents.

Furthermore, the Government Gazette is used as proof for transfers to SANRAL and Demarcation board proclamation of the changing of boundaries is sometimes used for transfers. Asset disposal date is the date of the Gazette and proportional value of project cost if the whole road was not transferred.

k) Asset Register Layout and Data Fields

The current Asset Register is comprised of, but not limited to the following fields, *for more information please refer to the [North West Provincial FAR: Methodology Document](#):*

- FAR Data Field,
- Description of FAR Field,
- RAMS Data Field (Table.Field)
- Description of RAMS Field,
- Data Assumptions/Mappings

l) Calculation Fields within the Excel Template

The following items are part of the FAR Template and relevant calculations have to be done, *for more information please refer to the [North West Provincial FAR: Methodology Document](#):*

- CRC at Depreciation Start Date,
- DRC,
- Residual Value,
- OBAC,
- CBAC,
- OBAD,
- Depreciation Current Year,
- Addition Depreciation,
- CBAD,
- CBCV,
- Changes from Previous FAR,
- Previous CRC

m) Financial Calculations Definitions and Methodology

Financial calculations Definitions and Methodology applied (Based on Year End), more details are in the [North West Provincial FAR: Methodology Document](#). The following items forms part of the FAR calculations:

- Depreciation Amount,
- Disposal Date (old asset),
- Disposal Date (new asset),
- CRC adjusted for inflation,
- Residual Value,
- Age of Asset,
- Deemed cost,
- Depreciation CY,
- Prior Depreciation (Opening Balance Accum. depreciation - Year),
- Carrying value - Year.

* **CRC is taken back 5 years (60 months) so that it depicts what it should have been at 2008. If the asset age is less than 5 years, then EUL – RUL is used.**

** **Accumulated Depreciation are assumed linearly and calculated for 5 (60 months) years back, assuming the asset is older than 5 years. For OBAD 2011 and 2012 only 2 and 3 years are used instead of 5 years, as linear depreciation is assumed.**

n) Determining the Remaining Useful Lives

The purpose of determining the asset's '**Remaining Useful Life**' (RUL) is to provide an estimate of the remaining life of an asset prior to reaching 'practical' failure in terms of serviceability assessment criteria or ability to provide it's intended purpose.

The inspected condition of an asset and resulting CI is allocated to the asset and the remaining useful life is calculated according to the asset condition, therefore the RUL calculated for this method is independent of the age of the asset. The remaining useful life of assets was determined using the condition rather than the age.. *For more information please refer to the [North West Provincial FAR: Methodology Document](#)*

o) Impairment

GRAP17 on PPE requires that subsequent to initial recognition, an item be carried at either cost less any accumulated depreciation and any accumulated impairment losses or where fair value can be measured reliably is carried at a re-valued amount, being its fair value at the date of the revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses, these could be roads not functioning as it should due to e.g. a mine being built in close vicinity.

B. CUSTOMIZATION OF BMS

p) Bridge Hierarchy

A Bridge is treated as an asset on a road. See an example below of the hierarchy of a bridge:

Table : Example of BMS - Bridge Hierarchy	
Hierarchy	Example
6. System	Transport
7. Sub-system	Road Transport
8. Facility	Road Network e.g. R502
9. Asset	Bridge/StructureNo_D1007_010
10. Component	Bridge No

q) Determining Bridge Asset Value

The following calculations are used to determine the asset value of the bridges:

$$AV = (RC \times d) - MC$$

Where : *AV = Asset Value in Rand*
RC = Replacement Cost in Rand
d = Percentage Depreciation
MC = Maintenance Cost in Rand (repair cost)

r) Replacement Cost of a Bridge

The replacement cost is the cost to replace the structure with a similar structure at current rates. It is based on the replacement cost per square meter of deck area (termed a unit cost). The formula to calculate the replacement cost for bridges is as follows:

$$RCb = Ld \times Wd \times fph \times ft \times Kb$$

Where : ***RCb*** = Replacement Cost of the bridge (R)
Ld = Length of bridge deck (m)
Wd = Width of bridge deck (m)
fph = Factor for maximum pier height
ft = Factor for type of bridge
Kb = Unit cost for bridges (R/m2)

C. CUSTOMIZATION OF RSMS ROAD FIXED ASSET REGISTER (FAR) : ROAD SIGNS

s) Road Signs Hierarchy

Road signs are seen by the Auditor General as an immovable asset and are incorporated into the Roads Asset Register as a component of a road. See an example below of the hierarchy for a road sign:

Table 12.10 : Example of RMS - Road Signs Hierarchy	
Hierarchy	Example
11. System	Transport
12. Sub-system	Road Transport
13. Facility	Road Network e.g. R502 or C2P_Bojanala
14. Asset	D1007_010 - Roadlink Asset
	D1007_010 - Bridge Asset
	D1007_010 - Culvert Asset
	D1007_010-Road Sign-1
15. Component	Road Sign

Road signs are quantified by the number of signs on the road link and the cost code will be specific for that type of road sign and include the pole(s).

The road signs as inspected in **2008/2009** are included in the asset register and will be updated after it has been inspected in the next Financial Year.

General Data Assumptions

- ❑ It was decided that the cost is 2.5% of the cost to replace the sign with a modern equivalent for assets which have reached their useful life.
- ❑ Where information could not be sourced, provided or acquired from any other means and assumed date of 1 July 2008 was applied to the assets, for depreciation purposes only.

- ❑ Road sign duplicates were added to asset register as is on the assumption that 2 or more sign types are mounted on same sign post location.
- ❑ All roads that have been transferred were added to the asset register in a separate sheet.
- ❑ Where asset conditions information is not available then the value is set to blank.
- ❑ It was assumed an average 70% condition index value for roads transferred to National.

NB : Kerbs, Channels and related inlets are not included in the FAR as no such data exists or has been collected to-date.

Entries with Blank values

1. Functional Class – Only applicable to Road Assets not for Bridges and Roads Signs.
2. Asset From and To Description - Only applicable to Road Assets not for Bridges and Roads Signs.
3. Assets with 0 or no Condition Value
 - a. Roads – no inspections were done due to reason such as road being under construction, restrictions to access, or newly built roads. Some of these will be updated after the 2014 visual inspections
 - b. Roads signs – No information on the current Data of Road Sign Conditions.

4.1.21 SUBMISSION OF DATA TO NATIONAL DEPARTMENT OF TRANSPORT/ TREASURY

Data Sets must be prepared annually according to the draft TMH 18 RAMS Data Exchange Formats Manual and submitted through the North West Provincial Department of Public Works and Roads to the National Department of Transport (DoT), and Provincial Treasury.

The submission dates are published annually in the Division of Revenue Act (DORA) under the PRMG requirements. The RAMS currently has provision for the preparation of these datasets via **CSV exports (according to the current draft TMH18 document)**.

INTERGRATION OF VARIOUS RAMS SUB-SYSTEMS

The Department currently as stated above, has a various sub-systems of which should be intergrated into one single RAMS. Some are already at the advance stage while others still need more work to be done.

In general terms, and not limiting to the overall objectives, the following sub-systems should form part of the RAMS:

- a) RNI : Road Network Inventory;
- b) GIS : Geographic Information System;
- c) TIS : Traffic Information System; (**also known as** TCS : Traffic Counting System).;
- d) PMS : Pavement Management System;
- e) GrMS : Gravel Road Management System;
- f) BMS : Bridge Management System;
- g) FAR : Road Fixed Asset Register (FAR);
- h) RSMS : Road Signs Management System.
- i) CPPMMS : Construction, Periodic and Preventative Maintenance Management System;
- j) BPMMS : Borrow Pits and Materials Management System;

4.1.22. MANAGEMENT AND SUPPORT FUNCTIONS

The successful tenderer will be required to perform the following as part of the supporting functions to the RAMS Management Programme:

- a) Arrange and attend monthly progress meetings with the Department, prepare agenda. Report on all aspects of progress with the project, discuss further work and strategies with the Department, keep minutes and distribute the minutes of meetings.
- b) Compile and Submit Monthly, Quarterly and Annual Progress Reports.
- c) At Progress Meetings , the RAMS Programme Manager has to provide feedback on progress on the full scope of work planned for the past month, as well as report on the planned work/ schedule for the next month work.
- d) The Monthly and Quarterly Reports should report on progress made/ achieved on the individual items, as per approved Scope of Work, listing reasons for delays/ failures if any, and recommendations thereof and also their influence on the works programme.
- e) The expenditure to date in terms of cash flow statements and the remaining budget for the remaining work.

Tasks List

- a) Assist Department with the Compilation and Submission of Bridge Repair Term Contracts.
- b) Assist Department with the Analysis, planning and Compilation of Platinum Routes Report..
- c) Assist Department with the Compilation and Submission of Public Transport Routes Report.
- d) Assist Department with the Compilation and Submission of Access to Public Facilities Report
- e) Assist Department with GIAMA Reporting.

- f) Prepare and submit half yearly reports for the entire RAMS, summarising progress and expenditure for the previous half, and planning for the next half.
- g) Arrange and attend monthly progress meetings with the Department, prepare agenda, report on all aspects of progress with the project, discuss further work and strategies with the Department, keep minutes and distribute the minutes of meetings

PRICING SCHEDULE SUMMARY – (this is a Duplicate)

SUMMARY OF SCHEDULES FOR A, B, C, D and E (YEARS 1,2,3,4,5)

SCHEDULE	AMOUNT (excl VAT)		AMOUNT (incl VAT)	
	R	c	R	c
A: YEAR 1				
B: YEAR 2				
C: YEAR 3				
D: YEAR 4				
E: YEAR 5				
TOTAL OF A, B, C, D and E				

The total for schedules of A, B, C, D and E must be transferred to the form of offer and acceptance from the above summary table.

Item	Description	Unit	Year 1		
			Quantity	Rate	Amount
					R
4.1.3	IMPLEMENTATION PLAN (WHICH INCLUDES SYSTEM, DATABASE AND NWD PWR REQUIREMENTS AND OPERATIONS STATUS QUO)	Lump Sum	1		R -
4.1.4	CORE ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Maintain server and related software	Hour	150		R -
b)	Monitor and test backups and DRS (disaster recovery system)	Hour	180		R -
c)	Update and maintenance of web portal	Hour	75		R -
d)	Update documentation of the procedures for operation of the RAMS database	Hour	75		R -
e)	Import all relevant processed data from the TIS into RAMS	Hour	160		R -
f)	Import all relevant processed data from the Paved Visual Assessments into RAMS	Hour	160		R -
g)	Import all relevant processed data from the Gravel Visual Assessments into RAMS	Hour	160		R -
h)	Import all relevant processed data from the BMS Assessments into RAMS (Struman)	Hour	160		R -
i)	Import all relevant processed data from the BPMMS Assessments into RAMS	Hour	160		R -
j)	Import all relevant processed data from the RSMS Assessments into RAMS	Hour	160		R -
k)	Import all relevant processed data from the FAR into RAMS	Hour	2112		R -
l)	Import all relevant processed data from the GIS into RAMS	Hour	160		R -
m)	Import all relevant processed data from the RNI into RAMS	Hour	160		R -
n)	Uploading of Projects documents to the Documents Library	Hour	540		R -
o)	Input into Road Asset Management Plan (RAMP) Reports	Lump Sum	2		R -
p)	Skills transfer (Systems) to the Departmental staff	Hour	45		R -
4.1.5	ROAD NETWORK INVENTORY				
	Task List:				
a)	Update and maintain the RNI to ensure accurate representation of the Network	Hour	200		R -
b)	Professional support services to RRAMS	Hour	432		R -
c)	Evaluate District Rural Road Asset Management System (RRAMS) data for TMH18.v5 Compliance and incorporate the RRAMS data into ZA-NWRAMS	Hour	2160		R -
d)	Update the road classification according to RCAM classification	Hour	200		R -
e)	Update the road network based on changes to road alignment and proclamation of new roads to/from the road network	Prov. Sum	1	100 000,00	R 100 000,00
g)	Develop Road network Inventory Abbreviated Framework	Lump Sum	1		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (RNI) to the Departmental staff	Hour	45		R -
4.1.6	GEOGRAPHIC INFORMATION SYSTEM				
	Task List:				
a)	Maintenance of GIS system (PostGIS database, Geoserver stores and styles, ArcGIS .mxd projects, QGIS .qgs projects)	Hour	180		R -
b)	Continuous updating and improvement to data, procedures and reports	Hour	225		R -
c)	Compile and Supply maps for various purposes, including road assessments/surveys, Head Office and Regions of the Department	Hour	60		R -
d)	GIS support functions across all workstreams	Prov. Sum	1	200 000,00	R 200 000,00
e)	Integrate data from all workstreams into the GIS System	Hour	160		R -
f)	Linking spatial data to the asset representation in the FAR for correct valuation	Hour	160		R -
g)	Provide spatial information for DACs	Hour	75		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer and Training (QGIS & Related Apps) to the Departmental staff	Hour	45		R -
4.1.7	PAVEMENT & GRAVEL ROAD MANAGEMENT SYSTEMS (PMS and GRMS)				
	Task List:				
a)	Updated the PRMS as part of the ZA-NWRAMS based on visual assessments data	km	5657		R -
b)	Updated the GRMS as part of the ZA-NWRAMS based on visual assessments data	km	14128		R -
c)	Update documentation of the procedures for operation of the PMS and GRMS	Lump Sum	1		R -
d)	Update the PMS and GRMS based on changes to road alignment and proclamation of new roads	Prov. Sum	1	75 000,00	R 75 000,00
e)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer and Training (PMS and GRMS outputs) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 1		
			Quantity	Rate	Amount R
4.1.8	VISUAL ASSESSMENTS - PAVED ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	566		R -
k)	Evaluate data received and Upload into GIS and ZA-NWRAMS.	km	5657		R -
l)	Conduct progress meetings with DACs	number	12		R -
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		R -
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.9	VISUAL ASSESSMENTS - GRAVEL ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	1413		R -
k)	Evaluate data received and Upload into GIS and ZA-RAMS.	km	14128		R -
l)	Conduct progress meetings with DACs	number	12		R -
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		R -
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.10	PROFILE MEASUREMENTS & FALLING WEIGHT DETECTION (FWD)				
	Task List:				
a)	Refine use of VOC models and the development of a Hybrid LCCA model	Hour	100		R -
b)	Evaluate data received and Upload into GIS and ZA-NWRAMS	km	5657		R -
c)	Compile Road Surveillance Measurements Technical Report	Number	1		R -
d)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Print road network identification books, containing road network identification, per district, for all the survey contractors to report back on RNI problems.	Number	1		R -
f)	Management fee for Contract administration. (Mannage DAC/s)	Lump Sum	1		R -
g)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.11	PANEL INSPECTIONS				
	Task List:				
a)	Plan and prepare data for panel inspections and Conduct planning session	Hour	24		R -
b)	Assist Department with the B5 priority List and Reporting	Hour	40		R -
c)	Provide Training for Panel Inspections to compile B5 list	Hour	10		R -
d)	Panel Inspections Training Report including Feedback Report	Number	1		R -
e)	Arrange and execute PI workshop for Departmental staff	Hour	10		R -
f)	Disbursements for Panel inspection (Vehicle rental, etc.) Provide for departmental Staff Training)	Prov. Sum	1	50 000,00	R 50 000,00
g)	Provision for independent expert	Prov. Sum	1	200 000,00	R 200 000,00
h)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 1		
			Quantity	Rate	Amount R
4.1.12	TRAFFIC INFORMATION SYSTEM (TIS)				
	Task List:				
a)	Provision of a TIS per specifications	Lump Sum	1		R -
b)	Update manuals for traffic counting strategy, guide for manual counting, guide for automatic counting and guide for permanent counting	Hour	50		R -
d)	Print road network identification books	Number	5		R -
e)	Management fee for Contract administration	Lump Sum	1		R -
f)	Conduct progress meetings with DACs	number	12		R -
g)	Analysis of traffic data to determine traffic growth rates, trend analysis 33%	km	6530		R -
h)	Upload final data sets into GIS and ZA-NWRAMS	Hour	45		R -
i)	Compile Consolidated Traffic Counts Technical Report	Number	1		R -
j)	Conduct 10% quality control assessments of submitted counts	km	653		R -
k)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	1		R -
l)	Skills transfer to the Departmental staff	Hour	45		R -
4.1.13	LIFE CYCLE COST ANALYSES AND PLANNING AND ANALYSIS AND PLANNING & CAPITAL PERIODIC AND PREVENTATIVE MAINTENANCE MANAGEMENT SYSTEM				
	Task List:				
a)	Cost analysis of Maintenance and Rehabilitation costs from tenders	Hour	204		R -
b)	Input into the development of required budgets	Hour	80		R -
c)	Develop and Expand Hybrid LCCA Methodology and process for use in budgetary requirements for maintenance	Hour	204		R -
d)	Import analysis outputs into the RAMS (e.g. M&R lists)	Hour	10		R -
e)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer for Department staff	Hour	45		R -
4.1.14	BRIDGE MANAGEMENT SYSTEM (BMS)				
	Task List:				
a)	Conduct training and calibration of bridge inspectors	Hour	55		R -
b)	Refine regular inspection procedures	Hour	20		R -
c)	Annual calibration sessions for structures inspections	Hour	9		R -
d)	Capture bridge inspection data in the BMS (Struman), process inspection data, do required analyses and planning, and prepare bridge strategic analyses report	Number	525		R -
e)	Independent quality control inspections on 5% of the assessed structures	Number	69		R -
f)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
g)	Skills transfer for Department staff	Hour	45		R -
4.1.15	FIXED ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Annual reviews of the Fixed Asset Management Policy	Hour	30		R -
b)	Conduct an AM Maturity Assessment	Hour	120		R -
c)	Annual verification of assets for the incorporation into the FAR	Hour	240		R -
d)	Annual report on the status of the FAR	Lump Sum	1		R -
e)	Annual updating of the FAR with active/ completed projects	No	200		R -
f)	Field Verification tasks for completed projects, prior to capitalisation	No	200		R -
g)	FAR Progress Meetings	Number	12		R -
h)	Prepare WIP Schedule	Hour	12		R -
i)	FAR Update per Field Data and GIS	Lump Sum	1		R -
j)	FAR Update with new Bridges Data	No	525		R -
k)	FAR Update with new Signage Data	No	20000		R -
l)	Current Replacement Cost (CRC) and Depreciated Replacement Cost (DRC) calculations and impairment flagging allow for residual value calculation in Formation Assets	Hour	40		R -
m)	Annual FAR submissions	Hour	9		R -
n)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer for Department staff	Hour	45		R -
4.1.16	ROAD SIGNS MANAGEMENT SYSTEM				
	Task List:				
a)	Import the Data collected during Visual Assessments into RSMS	number	20000		R -
b)	Independent quality control inspections on 10% of the assessed Road Signs data	Number	2000		R -
c)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
d)	Skills transfer for Department staff	Hour	45		R -

Item	Description	Unit	Year 1		
			Quantity	Rate	Amount R
4.1.17	BORROW PIT MATERIAL MANAGEMENT SYSTEM				
	Task List:				
	Identification of current/ potential BPs in the Province through District office and current projects Professional Services Providers	Number	200		R -
a)	Transfere Projects BP's information in to the GIS (Current and old Projects)	Number	200		R -
b)	Physical verification of existing/potential BPs	Number	200		R -
c)	Compiled Technical Report on the Inclusion of BPs in the FAR and ZA-NWRAMS	Lump Sum	1		R -
d)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Skills transfer for Department staff	Hour	45		R -
f)					
4.1.18	INTEGRATION WITH VARIOUS SUB-SYSTEMS				
	Task List:				
a)	Road Network Inventory;	Lump Sum	1		R -
b)	Geographic Information System;	Lump Sum	1		R -
c)	Traffic Information System; (also known as TCS)	Lump Sum	1		R -
d)	Pavement Management System;	Lump Sum	1		R -
e)	Gravel Road Management System;	Lump Sum	1		R -
f)	Bridge Management System;	Lump Sum	1		R -
g)	Road Fixed Asset Register (FAR);	Lump Sum	1		R -
h)	Road Signs Management System.	Lump Sum	1		R -
i)	Construction, Periodic and Preventative Maintenance Management System;	Lump Sum	1		R -
j)	Borrow Pits and Materials Management System;	Lump Sum	1		R -
4.1.19	MANAGEMENT AND SUPPORT FUNCTIONS				
	Task List:				
a)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hour	75		R -
b)	Assist Department with the Compilation and Submission of Public Transport Routes Report	number	1		R -
c)	Report.(ARDP)	number	1		R -
d)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hours	72		R -
e)	Assist Department with GIAMA Reporting.(RAMP Report)	number	2		R -
f)	Prepare and submit half yearly reports for the entire RAMS	number	2		R -
g)	Monthly progress meetings with the Department	number	12		R -
h)	Assist Department with the Compilation of a Road Reserve Policy	Hours	960		R -
i)	Assist Department with the Compilation of a Borrow Pit Policy	Hours	960		R -
j)	Assist Department with the Compilation of a NanoTechnology Specification	Hours	960		R -
k)	Assist Department with the Adopt-a-Road Strategy	Hours	480		R -
l)	Road Asset Management Awareness and Certified Training	Prov Sum	1	180 000,00	R 180 000,00
m)	Review and compilation of the Road Asset Management Policy (ISO55001 Compliant)	Prov Sum	1	150 000,00	R 150 000,00
4.1.20	LICENCING				
	Task List:				
a)	Struman - BMS	Lump Sum	1		R -
b)	Department's ZA-NWRAMS (Including Supporting Softwares Licencing)	Prov Sum	1	1 500 000,00	R 1 500 000,00
c)	Acrobat Reader Professional	Lump Sum	1		R -
d)	Other Licencing (Department to Specify)	Prov Sum	1	500 000,00	R 500 000,00
4.1.21	PROVISIONAL SUMS				
a)	Development of a Provincial Road Master Plan	Prov Sum	1	4 500 000,00	R 4 500 000,00
b)	Management/Fee for Road Safety Audit Service Provider	Prov Sum	1	2 500 000,00	R 2 500 000,00
c)	Management/Fee for Storm Water Management System	Prov Sum	1	4 500 000,00	R 4 500 000,00
d)	Management/Fee for Disaster Management System	Prov Sum	1	2 500 000,00	R 2 500 000,00
e)	Management/Fee for a Wayleave System	Prov Sum	1	5 000 000,00	R 5 000 000,00
f)	Assist with BFI Applications	Prov Sum	1	5 000 000,00	R 5 000 000,00

Item	Description	Unit	Year 1		
			Quantity	Rate	Amount
					R
4.1.21	DISBURSEMENTS				
a)	Travel - road, Air, Toll Fees, Parking Fees, Meals Refreshments, etc)	Lump Sum	1		R -
b)	Other Disbursements: Provision of field data capturing, related hardware and supplies	Lump Sum	1		R -
c)	Other Disbursements : Accommodation, venue hire,etc incl Meals and Refreshments	Lump Sum	1		R -
d)	Provision of DPWR Smart meeting boardroom Equipment (information Technology) and setting up of wireless internet services as per specification	Prov Sum	1	8 000 000,00	R 8 000 000,00
e)	Service,repair and of existing Scanner and Plotter DPWR	Prov Sum	1	500 000,00	R 500 000,00
f)	Printing, Plotting, Laminating, Copying (Monochrome/colour)	Lump Sum	1		R -
	Staff Hourly Rates				
g)	Category A	Rate	Rate only	2 050,00	
h)	Category B	Rate	Rate only	1 750,00	
i)	Category C	Rate	Rate only	1 200,00	
				YEAR 1 : TOTAL	

Item	Description	Unit	Year 2		
			Quantity	Rate	Amount R
4.1.3	IMPLEMENTATION PLAN (WHICH INCLUDES SYSTEM, DATABASE AND NWD PWR REQUIREMENTS AND OPERATIONS STATUS QUO)	Lump Sum	1		R -
4.1.4	CORE ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Maintain server and related software	Hour	150		R -
b)	Monitor and test backups and DRS (disaster recovery system)	Hour	180		R -
c)	Update and maintenance of web portal	Hour	75		R -
d)	Update documentation of the procedures for operation of the RAMS database	Hour	75		R -
e)	Import all relevant processed data from the TIS into RAMS	Hour	160		R -
f)	Import all relevant processed data from the Paved Visual Assessments into RAMS	Hour	160		
g)	Import all relevant processed data from the Gravel Visual Assessments into RAMS	Hour	160		
h)	Import all relevant processed data from the BMS Assessments into RAMS (Struman)	Hour	160		R -
i)	Import all relevant processed data from the BPMMS Assessments into RAMS	Hour	160		R -
j)	Import all relevant processed data from the RSMS Assessments into RAMS	Hour	160		
k)	Import all relevant processed data from the FAR into RAMS	Hour	2112		R -
l)	Import all relevant processed data from the GIS into RAMS	Hour	160		R -
m)	Import all relevant processed data from the RNI into RAMS	Hour	160		R -
n)	Uploading of Projects documents to the Documents Library	Hour	540		R -
o)	Input into Road Asset Management Plan (RAMP) Reports	Lump Sum	2		R -
p)	Skills transfer (Systems) to the Departmental staff	Hour	45		R -
4.1.5	ROAD NETWORK INVENTORY				
	Task List:				
a)	Update and maintain the RNI to ensure accurate representation of the Network	Hour	187		R -
b)	Professional support services to RRAMS	Hour	432		R -
c)	Evaluate District Rural Road Asset Management System (RRAMS) data for TMH18.v5 Compliance and incorporate the RRAMS data into ZA-NWRAMS	Hour	2160		R -
d)	Update the road classification according to RCAM classification	Hour	75		R -
e)	Update the road network based on changes to road alignment and proclamation of new roads to/from the road network	Prov. Sum	1	100 000,00	R 100 000,00
g)	Develop Road network Inventory Abbreviated Framework	Lump Sum	1		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (RNI) to the Departmental staff	Hour	45		R -
4.1.6	GEOGRAPHIC INFORMATION SYSTEM				
	Task List:				
a)	Maintenance of GIS system (PostGIS database, Geoserver stores and styles, ArcGIS .mxd projects, QGIS .qgs projects)	Hour	180		R -
b)	Continuous updating and improvement to data, procedures and reports	Hour	225		R -
c)	Compile and Supply maps for various purposes, including road assessments/surveys, Head Office and Regions of the Department	Hour	60		R -
d)	GIS support functions across all workstreams	Prov. Sum	1	200 000,00	R 200 000,00
e)	Integrate data from all workstreams into the GIS System	Hour	75		R -
f)	Linking spatial data to the asset representation in the FAR for correct valuation	Hour	75		R -
g)	Provide spatial information for DACs	Hour	75		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer and Training (QGIS & Related Apps) to the Departmental staff	Hour	24		R -
4.1.7	PAVEMENT & GRAVEL ROAD MANAGEMENT SYSTEMS (PMS and GRMS)				
	Task List:				
a)	Updated the PRMS as part of the ZA-NWRAMS based on visual assessments data	km	5657		R -
b)	Updated the GRMS as part of the ZA-NWRAMS based on visual assessments data	km	14128		R -
c)	Update documentation of the procedures for operation of the PMS and GRMS	Lump Sum	1		R -
d)	Update the PMS and GRMS based on changes to road alignment and proclamation of new roads	Prov. Sum	1	75 000,00	R 75 000,00
e)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer and Training (PMS and GRMS outputs) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 2		
			Quantity	Rate	Amount R
4.1.8	VISUAL ASSESSMENTS - PAVED ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	566		R -
k)	Evaluate data received and Upload into GIS and ZA-NWRAMS.	km	5657		R -
l)	Conduct progress meetings with DACs	number	12		R -
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		R -
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.9	VISUAL ASSESSMENTS - GRAVEL ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	1413		R -
k)	Evaluate data received and Upload into GIS and ZA-RAMS.	km	14128		R -
l)	Conduct progress meetings with DACs	number	12		R -
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		R -
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.10	PROFILE MEASUREMENTS & FALLING WEIGHT DETECTION (FWD)				
	Task List:				
a)	Refine use of VOC models and the development of a Hybrid LCCA model	Hour	100		R -
b)	Evaluate data received and Upload into GIS and ZA-NWRAMS	km	5657		R -
c)	Compile Road Surveillance Measurements Technical Report	Number	1		R -
d)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Print road network identification books, containing road network identification, per district, for all the survey contractors to report back on RNI problems.	Number	1		R -
f)	Management fee for Contract administration. (Mannage DAC/s)	Lump Sum	1		R -
g)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.11	PANEL INSPECTIONS				
	Task List:				
a)	Plan and prepare data for panel inspections and Conduct planning session	Hour	24		R -
b)	Assist Department with the B5 priority List and Reporting	Hour	40		R -
c)	Provide Training for Panel Inspections to compile B5 list	Hour	10		R -
d)	Panel Inspections Training Report including Feedback Report	Number	1		R -
e)	Arrange and execute PI workshop for Departmental staff	Hour	10		R -
f)	Disbursements for Panel inspection (Vehicle rental, etc.) Provide for departmental Staff Training)	Prov. Sum	1	50 000,00	R 50 000,00
g)	Provision for independent expert	Prov. Sum	1	200 000,00	R 200 000,00
h)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 2		
			Quantity	Rate	Amount R
4.1.12	TRAFFIC INFORMATION SYSTEM (TIS)				
	Task List:				
a)	Provision of a TIS per specifications	Lump Sum	1		R -
b)	Update manuals for traffic counting strategy, guide for manual counting, guide for automatic counting and guide for permanent counting	Hour	50		R -
d)	Print road network identification books	Number	5		R -
e)	Management fee for Contract administration	Lump Sum	1		R -
f)	Conduct progress meetings with DACs	number	12		R -
g)	Analysis of traffic data to determine traffic growth rates, trend analysis 33%	km	6530		R -
h)	Upload final data sets into GIS and ZA-NWRAMS	Hour	45		R -
i)	Compile Consolidated Traffic Counts Technical Report	Number	1		R -
j)	Conduct 10% quality control assessments of submitted counts	km	653		R -
k)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	1		R -
l)	Skills transfer to the Departmental staff	Hour	45		R -
4.1.13	LIFE CYCLE COST ANALYSES AND PLANNING AND ANALYSIS AND PLANNING & CAPITAL PERIODIC AND PREVENTATIVE MAINTENANCE MANAGEMENT SYSTEM				
	Task List:				
a)	Cost analysis of Maintenance and Rehabilitation costs from tenders	Hour	204		R -
b)	Input into the development of required budgets	Hour	80		R -
c)	Develop and Expand Hybrid LCCA Methodology and process for use in budgetary requirements for maintenance	Hour	204		R -
d)	Import analysis outputs into the RAMS (e.g. M&R lists)	Hour	10		R -
e)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer for Department staff	Hour	45		R -
4.1.14	BRIDGE MANAGEMENT SYSTEM (BMS)				
	Task List:				
a)	Conduct training and calibration of bridge inspectors	Hour	55		R -
b)	Refine regular inspection procedures	Hour	20		R -
c)	Annual calibration sessions for structures inspections	Hour	9		R -
d)	Capture bridge inspection data in the BMS (Struman), process inspection data, do required analyses and planning, and prepare bridge strategic analyses report	Number	525		R -
e)	Independent quality control inspections on 5% of the assessed structures	Number	69		R -
f)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
g)	Skills transfer for Department staff	Hour	45		R -
4.1.15	FIXED ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Annual reviews of the Fixed Asset Management Policy	Hour	30		R -
b)	Conduct an AM Maturity Assessment	Hour	120		R -
c)	Annual verification of assets for the incorporation into the FAR	Hour	240		R -
d)	Annual report on the status of the FAR	Lump Sum	1		R -
e)	Annual updating of the FAR with active/ completed projects	No	200		R -
f)	Field Verification tasks for completed projects, prior to capitalisation	No	200		R -
g)	FAR Progress Meetings	Number	12		R -
h)	Prepare WIP Schedule	Hour	12		R -
i)	FAR Update per Field Data and GIS	Lump Sum	1		R -
j)	FAR Update with new Bridges Data	No	525		R -
k)	FAR Update with new Signage Data	No	20000		R -
l)	Current Replacement Cost (CRC) and Depreciated Replacement Cost (DRC) calculations and impairment flagging allow for residual value calculation in Formation Assets	Hour	40		R -
m)	Annual FAR submissions	Hour	9		R -
n)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer for Department staff	Hour	45		R -
4.1.16	ROAD SIGNS MANAGEMENT SYSTEM				
	Task List:				
a)	Import the Data collected during Visual Assessments into RSMS	number	20000		
b)	Independent quality control inspections on 10% of the assessed Road Signs data	Number	2000		
c)	Input Data into Departmental RAMP Reports	Lump Sum	2		
d)	Skills transfer for Department staff	Hour	45		

Item	Description	Unit	Year 2		
			Quantity	Rate	Amount R
4.1.17	BORROW PIT MATERIAL MANAGEMENT SYSTEM				
	Task List:				
	Identification of current/ potential BPs in the Province through District office and current projects Professional Services Providers	Number	200		R -
a)	Transfere Projects BP's information in to the GIS (Current and old Projects)	Number	200		R -
b)	Physical verification of existing/potential BPs	Number	200		R -
c)	Compiled Technical Report on the Inclusion of BPs in the FAR and ZA-NWRAMS	Lump Sum	1		R -
d)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Skills transfer for Department staff	Hour	45		R -
f)					
4.1.18	INTEGRATION WITH VARIOUS SUB-SYSTEMS				
	Task List:				
a)	Road Network Inventory;	Lump Sum	1		R -
b)	Geographic Information System;	Lump Sum	1		R -
c)	Traffic Information System; (also known as TCS)	Lump Sum	1		R -
d)	Pavement Management System;	Lump Sum	1		
e)	Gravel Road Management System;	Lump Sum	1		
f)	Bridge Management System;	Lump Sum	1		
g)	Road Fixed Asset Register (FAR);	Lump Sum	1		R -
h)	Road Signs Management System.	Lump Sum	1		
i)	Construction, Periodic and Preventative Maintenance Management System;	Lump Sum	1		R -
j)	Borrow Pits and Materials Management System;	Lump Sum	1		R -
4.1.19	MANAGEMENT AND SUPPORT FUNCTIONS				
	Task List:				
a)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hour	75		R -
b)	Assist Department with the Compilation and Submission of Public Transport Routes Report	number	1		R -
c)	Report.(ARDP)	number	1		R -
d)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hours	72		R -
e)	Assist Department with GIAMA Reporting.(RAMP Report)	number	2		R -
f)	Prepare and submit half yearly reports for the entire RAMS	number	2		R -
g)	Monthly progress meetings with the Department	number	12		R -
h)	Assist Department with the Compilation of a Road Reserve Policy	Hours			R -
i)	Assist Department with the Compilation of a Borrow Pit Policy	Hours	320		R -
j)	Assist Department with the Compilation of a NanoTechnology Specification	Hours	320		R -
k)	Assist Department with the Adopt-a-Road Strategy	Hours	320		R -
l)	Road Asset Management Awareness and Certified Training	Prov Sum	1	180 000,00	R 180 000,00
m)	Review and compilation of the Road Asset Management Policy (ISO55001 Compliant)	Prov Sum	1	150 000,00	R 150 000,00
4.1.20	LICENCING				
	Task List:				
a)	Struman - BMS	Lump Sum	1		R -
b)	Department's ZA-NWRAMS (Including Supporting Softwares Licencing)	Prov Sum	1	1 605 000,00	R 1 605 000,00
c)	Acrobat Reader Professional	Lump Sum	1		R -
d)	Other Licencing (Department to Specify)	Prov Sum	1	500 000,00	R 500 000,00
4.1.21	PROVISIONAL SUMS				
a)	Development of a Provincial Road Master Plan	Prov Sum	1	4 500 000,00	R 4 500 000,00
b)	Management/Fee for Road Safety Audit Service Provider	Prov Sum	1	2 500 000,00	R 2 500 000,00
c)	Management/Fee for Storm Water Management System	Prov Sum	1	1 000 000,00	R 1 000 000,00
d)	Management/Fee for Disaster Management System	Prov Sum	1	2 500 000,00	R 2 500 000,00
e)	Management/Fee for a Wayleave System	Prov Sum	1	1 000 000,00	R 1 000 000,00
f)	Assist with BFI Applications	Prov Sum	1		R -

Item	Description	Unit	Year 2		
			Quantity	Rate	Amount
					R
4.1.21	DISBURSEMENTS				
a)	Travel - road, Air, Toll Fees, Parking Fees, Meals Refreshments, etc)	Lump Sum	1		R -
b)	Other Disbursements: Provision of field data capturing, related hardware and supplies	Lump Sum	1		R -
c)	Other Disbursements : Accommodation, venue hire,etc incl Meals and Refreshments	Lump Sum	1		R -
d)	Provision of DPWR Smart meeting boardroom Equipment (information Technology) and setting up of wireless internet services as per specification	Prov Sum	1	100 000,00	R 100 000,00
e)	Service,repair and of existing Scanner and Plotter DPWR	Prov Sum	1	50 000,00	R 50 000,00
f)	Printing, Plotting, Laminating, Copying (Monochrome/colour)	Lump Sum	1		R -
	Staff Hourly Rates				
g)	Category A	Rate	Rate only	2 160,00	
h)	Category B	Rate	Rate only	1 840,00	
i)	Category C	Rate	Rate only	1 260,00	
				YEAR 2 : TOTAL	

Item	Description	Unit	Year 3		
			Quantity	Rate	Amount
					R
4.1.3	IMPLEMENTATION PLAN (WHICH INCLUDES SYSTEM, DATABASE AND NWDPR REQUIREMENTS AND OPERATIONS STATUS QUO)	Lump Sum	1		R -
4.1.4	CORE ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Maintain server and related software	Hour	150		R -
b)	Monitor and test backups and DRS (disaster recovery system)	Hour	180		R -
c)	Update and maintenance of web portal	Hour	75		R -
d)	Update documentation of the procedures for operation of the RAMS database	Hour	75		R -
e)	Import all relevant processed data from the TIS into RAMS	Hour	160		R -
f)	Import all relevant processed data from the Paved Visual Assessments into RAMS	Hour	160		R -
g)	Import all relevant processed data from the Gravel Visual Assessments into RAMS	Hour	160		R -
h)	Import all relevant processed data from the BMS Assessments into RAMS (Struman)	Hour	160		R -
i)	Import all relevant processed data from the BPMMS Assessments into RAMS	Hour	160		R -
j)	Import all relevant processed data from the RSMS Assessments into RAMS	Hour	160		R -
k)	Import all relevant processed data from the FAR into RAMS	Hour	2112		R -
l)	Import all relevant processed data from the GIS into RAMS	Hour	160		R -
m)	Import all relevant processed data from the RNI into RAMS	Hour	160		R -
n)	Uploading of Projects documents to the Documents Library	Hour	540		R -
o)	Input into Road Asset Management Plan (RAMP) Reports	Lump Sum	2		R -
p)	Skills transfer (Systems) to the Departmental staff	Hour	45		R -
4.1.5	ROAD NETWORK INVENTORY				
	Task List:				
a)	Update and maintain the RNI to ensure accurate representation of the Network	Hour	187		R -
b)	Professional support services to RRAMS	Hour	432		R -
c)	Evaluate District Rural Road Asset Management System (RRAMS) data for TMH18.v5 Compliance and incorporate the RRAMS data into ZA-NWRAMS	Hour	2160		R -
d)	Update the road classification according to RCAM classification	Hour	75		R -
e)	Update the road network based on changes to road alignment and proclamation of new roads to/from the road network	Prov. Sum	1	100 000,00	R 100 000,00
g)	Develop Road network Inventory Abbreviated Framework	Lump Sum	1		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (RNI) to the Departmental staff	Hour	45		R -
4.1.6	GEOGRAPHIC INFORMATION SYSTEM				
	Task List:				
a)	Maintenance of GIS system (PostGIS database, Geoserver stores and styles, ArcGIS .mxd projects, QGIS .qgs projects)	Hour	180		R -
b)	Continuous updating and improvement to data, procedures and reports	Hour	225		R -
c)	Compile and Supply maps for various purposes, including road assessments/surveys, Head Office and Regions of the Department	Hour	60		R -
d)	GIS support functions across all workstreams	Prov. Sum	1	200 000,00	R 200 000,00
e)	Integrate data from all workstreams into the GIS System	Hour	75		R -
f)	Linking spatial data to the asset representation in the FAR for correct valuation	Hour	75		R -
g)	Provide spatial information for DACs	Hour	75		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer and Training (QGIS & Related Apps) to the Departmental staff	Hour	24		R -
4.1.7	PAVEMENT & GRAVEL ROAD MANAGEMENT SYSTEMS (PMS and GRMS)				
	Task List:				
a)	Updated the PRMS as part of the ZA-NWRAMS based on visual assessments data	km	5657		R -
b)	Updated the GRMS as part of the ZA-NWRAMS based on visual assessments data	km	14128		R -
c)	Update documentation of the procedures for operation of the PMS and GRMS	Lump Sum	1		R -
d)	Update the PMS and GRMS based on changes to road alignment and proclamation of new roads	Prov. Sum	1	75 000,00	R 75 000,00
e)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer and Training (PMS and GRMS outputs) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 3		
			Quantity	Rate	Amount R
4.1.8	VISUAL ASSESSMENTS - PAVED ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	566		R -
k)	Evaluate data received and Upload into GIS and ZA-NWRAMS.	km	5657		R -
l)	Conduct progress meetings with DACs	number	12		R -
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		R -
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.9	VISUAL ASSESSMENTS - GRAVEL ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	1413		R -
k)	Evaluate data received and Upload into GIS and ZA-RAMS.	km	14128		R -
l)	Conduct progress meetings with DACs	number	12		
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.10	PROFILE MEASUREMENTS & FALLING WEIGHT DETECTION (FWD)				
	Task List:				
a)	Refine use of VOC models and the development of a Hybrid LCCA model	Hour	100		R -
b)	Evaluate data received and Upload into GIS and ZA-NWRAMS	km	5657		R -
c)	Compile Road Surveillance Measurements Technical Report	Number	1		R -
d)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Print road network identification books, containing road network identification, per district, for all the survey contractors to report back on RNI problems.	Number	1		R -
f)	Management fee for Contract administration. (Mannage DAC/s)	Lump Sum	1		R -
g)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.11	PANEL INSPECTIONS				
	Task List:				
a)	Plan and prepare data for panel inspections and Conduct planning session	Hour	24		R -
b)	Assist Department with the B5 priority List and Reporting	Hour	40		R -
c)	Provide Training for Panel Inspections to compile B5 list	Hour	10		R -
d)	Panel Inspections Training Report including Feedback Report	Number	1		R -
e)	Arrange and execute PI workshop for Departmental staff	Hour	10		R -
f)	Disbursements for Panel inspection (Vehicle rental, etc.) Provide for departmental Staff Training)	Prov. Sum	1	50 000,00	R 50 000,00
g)	Provision for independent expert	Prov. Sum	1	200 000,00	R 200 000,00
h)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 3		
			Quantity	Rate	Amount R
4.1.12	TRAFFIC INFORMATION SYSTEM (TIS)				
	Task List:				
a)	Provision of a TIS per specifications	Lump Sum	1		R -
b)	Update manuals for traffic counting strategy, guide for manual counting, guide for automatic counting and guide for permanent counting	Hour	50		R -
d)	Print road network identification books	Number	5		R -
e)	Management fee for Contract administration	Lump Sum	1		R -
f)	Conduct progress meetings with DACs	number	12		R -
g)	Analysis of traffic data to determine traffic growth rates, trend analysis 33%	km	6530		R -
h)	Upload final data sets into GIS and ZA-NWRAMS	Hour	45		R -
i)	Compile Consolidated Traffic Counts Technical Report	Number	1		R -
j)	Conduct 10% quality control assessments of submitted counts	km	653		R -
k)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	1		R -
l)	Skills transfer to the Departmental staff	Hour	45		R -
4.1.13	LIFE CYCLE COST ANALYSES AND PLANNING AND ANALYSIS AND PLANNING & CAPITAL PERIODIC AND PREVENTATIVE MAINTENANCE MANAGEMENT SYSTEM				
	Task List:				
a)	Cost analysis of Maintenance and Rehabilitation costs from tenders	Hour	204		R -
b)	Input into the development of required budgets	Hour	80		R -
c)	Develop and Expand Hybrid LCCA Methodology and process for use in budgetary requirements for maintenance	Hour	204		R -
d)	Import analysis outputs into the RAMS (e.g. M&R lists)	Hour	10		R -
e)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer for Department staff	Hour	45		R -
4.1.14	BRIDGE MANAGEMENT SYSTEM (BMS)				
	Task List:				
a)	Conduct training and calibration of bridge inspectors	Hour	55		R -
b)	Refine regular inspection procedures	Hour	20		R -
c)	Annual calibration sessions for structures inspections	Hour	9		R -
d)	Capture bridge inspection data in the BMS (Struman), process inspection data, do required analyses and planning, and prepare bridge strategic analyses report	Number	525		R -
e)	Independent quality control inspections on 5% of the assessed structures	Number	69		R -
f)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
g)	Skills transfer for Department staff	Hour	45		R -
4.1.15	FIXED ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Annual reviews of the Fixed Asset Management Policy	Hour	30		R -
b)	Conduct an AM Maturity Assessment	Hour	120		R -
c)	Annual verification of assets for the incorporation into the FAR	Hour	240		R -
d)	Annual report on the status of the FAR	Lump Sum	1		R -
e)	Annual updating of the FAR with active/ completed projects	No	200		R -
f)	Field Verification tasks for completed projects, prior to capitalisation	No	200		R -
g)	FAR Progress Meetings	Number	12		R -
h)	Prepare WIP Schedule	Hour	12		R -
i)	FAR Update per Field Data and GIS	Lump Sum	1		R -
j)	FAR Update with new Bridges Data	No	525		R -
k)	FAR Update with new Signage Data	No	20000		R -
l)	Current Replacement Cost (CRC) and Depreciated Replacement Cost (DRC) calculations and impairment flagging allow for residual value calculation in Formation Assets	Hour	40		R -
m)	Annual FAR submissions	Hour	9		R -
n)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer for Department staff	Hour	45		R -
4.1.16	ROAD SIGNS MANAGEMENT SYSTEM				
	Task List:				
a)	Import the Data collected during Visual Assessments into RSMS	number	20000		R -
b)	Independent quality control inspections on 10% of the assessed Road Signs data	Number	2000		R -
c)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
d)	Skills transfer for Department staff	Hour	45		R -

Item	Description	Unit	Year 3		
			Quantity	Rate	Amount
					R
4.1.17	BORROW PIT MATERIAL MANAGEMENT SYSTEM				
	Task List:				
	Identification of current/ potential BPs in the Province through District office and current projects Professional Services Providers	Number	200		R -
a)	Transfere Projects BP's information in to the GIS (Current and old Projects)	Number	200		R -
b)	Physical verification of existing/potential BPs	Number	200		R -
c)	Compiled Technical Report on the Inclusion of BPs in the FAR and ZA-NWRAMS	Lump Sum	1		R -
d)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Skills transfer for Department staff	Hour	45		R -
f)					
4.1.18	INTEGRATION WITH VARIOUS SUB-SYSTEMS				
	Task List:				
a)	Road Network Inventory;	Lump Sum	1		R -
b)	Geographic Information System;	Lump Sum	1		R -
c)	Traffic Information System; (also known as TCS)	Lump Sum	1		R -
d)	Pavement Management System;	Lump Sum	1		R -
e)	Gravel Road Management System;	Lump Sum	1		R -
f)	Bridge Management System;	Lump Sum	1		R -
g)	Road Fixed Asset Register (FAR);	Lump Sum	1		R -
h)	Road Signs Management System.	Lump Sum	1		R -
i)	Construction, Periodic and Preventative Maintenance Management System;	Lump Sum	1		R -
j)	Borrow Pits and Materials Management System;	Lump Sum	1		R -
4.1.19	MANAGEMENT AND SUPPORT FUNCTIONS				
	Task List:				
a)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hour	75		R -
b)	Assist Department with the Compilation and Submission of Public Transport Routes Report	number	1		R -
c)	Report.(ARDP)	number	1		R -
d)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hours			
e)	Assist Department with GIAMA Reporting.(RAMP Report)	number	2		R -
f)	Prepare and submit half yearly reports for the entire RAMS	number	2		R -
g)	Monthly progress meetings with the Department	number	12		R -
h)	Assist Department with the Compilation of a Road Reserve Policy	Hours			R -
i)	Assist Department with the Compilation of a Borrow Pit Policy	Hours			R -
j)	Assist Department with the Compilation of a NanoTechnology Specification	Hours			R -
k)	Assist Department with the Adopt-a-Road Strategy	Hours			R -
l)	Road Asset Management Awareness and Certified Training	Prov Sum	1	180 000,00	R 180 000,00
m)	Review and compilation of the Road Asset Management Policy (ISO55001 Compliant)	Prov Sum	1		R -
4.1.20	LICENCING				
	Task List:				
a)	Struman - BMS	Lump Sum	1		R -
b)	Department's ZA-NWRAMS (Including Supporting Softwares Licencing)	Prov Sum	1	1 717 350,00	R 1 717 350,00
c)	Acrobat Reader Professional	Lump Sum	1		R -
d)	Other Licencing (Department to Specify)	Prov Sum	1	200 000,00	R 200 000,00
4.1.21	PROVISIONAL SUMS				
a)	Development of a Provincial Road Master Plan	Prov Sum	1		R -
b)	Management/Fee for Road Safety Audit Service Provider	Prov Sum	1	2 500 000,00	R 2 500 000,00
c)	Management/Fee for Storm Water Management System	Prov Sum	1	1 000 000,00	R 1 000 000,00
d)	Management/Fee for Disaster Management System	Prov Sum	1	2 500 000,00	R 2 500 000,00
e)	Management/Fee for a Wayleave System	Prov Sum	1		R -
f)	Assist with BFI Applications	Prov Sum	1		R -

Item	Description	Unit	Year 3		
			Quantity	Rate	Amount
					R
4.1.21	DISBURSEMENTS				
a)	Travel - road, Air, Toll Fees, Parking Fees, Meals Refreshments, etc)	Lump Sum	1		R -
b)	Other Disbursements: Provision of field data capturing, related hardware and supplies	Lump Sum	1		R -
c)	Other Disbursements : Accommodation, venue hire,etc incl Meals and Refreshments	Lump Sum	1		R -
d)	Provision of DPWR Smart meeting boardroom Equipment (information Technology) and setting up of wireless internet services as per specification	Prov Sum	1		R -
e)	Service,repair and of existing Scanner and Plotter DPWR	Prov Sum	1	50 000,00	R 50 000,00
f)	Printing, Plotting, Laminating, Copying (Monochrome/colour)	Lump Sum	1		R -
	Staff Hourly Rates				
g)	Category A	Rate	Rate only	2 260,00	
h)	Category B	Rate	Rate only	1 930,00	
i)	Category C	Rate	Rate only	1 330,00	
				YEAR 3 : TOTAL	

Item	Description	Unit	Year 4		
			Quantity	Rate	Amount
					R
4.1.3	IMPLEMENTATION PLAN (WHICH INCLUDES SYSTEM, DATABASE AND NWD PWR REQUIREMENTS AND OPERATIONS STATUS QUO)	Lump Sum	1		R -
4.1.4	CORE ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Maintain server and related software	Hour	150		R -
b)	Monitor and test backups and DRS (disaster recovery system)	Hour	180		R -
c)	Update and maintenance of web portal	Hour	75		R -
d)	Update documentation of the procedures for operation of the RAMS database	Hour	75		R -
e)	Import all relevant processed data from the TIS into RAMS	Hour	160		R -
f)	Import all relevant processed data from the Paved Visual Assessments into RAMS	Hour	160		
g)	Import all relevant processed data from the Gravel Visual Assessments into RAMS	Hour	160		
h)	Import all relevant processed data from the BMS Assessments into RAMS (Struman)	Hour	160		R -
i)	Import all relevant processed data from the BPMMS Assessments into RAMS	Hour	160		R -
j)	Import all relevant processed data from the RSMS Assessments into RAMS	Hour	160		
k)	Import all relevant processed data from the FAR into RAMS	Hour	2112		R -
l)	Import all relevant processed data from the GIS into RAMS	Hour	160		R -
m)	Import all relevant processed data from the RNI into RAMS	Hour	160		R -
n)	Uploading of Projects documents to the Documents Library	Hour	540		R -
o)	Input into Road Asset Management Plan (RAMP) Reports	Lump Sum	2		R -
p)	Skills transfer (Systems) to the Departmental staff	Hour	45		R -
4.1.5	ROAD NETWORK INVENTORY				
	Task List:				
a)	Update and maintain the RNI to ensure accurate representation of the Network	Hour	187		R -
b)	Professional support services to RRAMS	Hour	432		R -
c)	Evaluate District Rural Road Asset Management System (RRAMS) data for TMH18.v5 Compliance and incorporate the RRAMS data into ZA-NWRAMS	Hour	2160		R -
d)	Update the road classification according to RCAM classification	Hour	75		R -
e)	Update the road network based on changes to road alignment and proclamation of new roads to/from the road network	Prov. Sum	1	100 000,00	R 100 000,00
g)	Develop Road network Inventory Abbreviated Framework	Lump Sum	1		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (RNI) to the Departmental staff	Hour	45		R -
4.1.6	GEOGRAPHIC INFORMATION SYSTEM				
	Task List:				
a)	Maintenance of GIS system (PostGIS database, Geoserver stores and styles, ArcGIS .mxd projects, QGIS .qgs projects)	Hour	180		R -
b)	Continuous updating and improvement to data, procedures and reports	Hour	225		R -
c)	Compile and Supply maps for various purposes, including road assessments/surveys, Head Office and Regions of the Department	Hour	60		R -
d)	GIS support functions across all workstreams	Prov. Sum	1	200 000,00	R 200 000,00
e)	Integrate data from all workstreams into the GIS System	Hour	75		R -
f)	Linking spatial data to the asset representation in the FAR for correct valuation	Hour	75		R -
g)	Provide spatial information for DACs	Hour	75		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer and Training (QGIS & Related Apps) to the Departmental staff	Hour	24		R -
4.1.7	PAVEMENT & GRAVEL ROAD MANAGEMENT SYSTEMS (PMS and GRMS)				
	Task List:				
a)	Updated the PRMS as part of the ZA-NWRAMS based on visual assessments data	km	5657		R -
b)	Updated the GRMS as part of the ZA-NWRAMS based on visual assessments data	km	14128		R -
c)	Update documentation of the procedures for operation of the PMS and GRMS	Lump Sum	1		R -
d)	Update the PMS and GRMS based on changes to road alignment and proclamation of new roads	Prov. Sum	1	75 000,00	R 75 000,00
e)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer and Training (PMS and GRMS outputs) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 4		
			Quantity	Rate	Amount R
4.1.8	VISUAL ASSESSMENTS - PAVED ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	566		R -
k)	Evaluate data received and Upload into GIS and ZA-NWRAMS.	km	5657		R -
l)	Conduct progress meetings with DACs	number	12		R -
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		R -
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.9	VISUAL ASSESSMENTS - GRAVEL ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	1413		R -
k)	Evaluate data received and Upload into GIS and ZA-RAMS.	km	14128		R -
l)	Conduct progress meetings with DACs	number	12		R -
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		R -
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.10	PROFILE MEASUREMENTS & FALLING WEIGHT DETECTION (FWD)				
	Task List:				
a)	Refine use of VOC models and the development of a Hybrid LCCA model	Hour	100		R -
b)	Evaluate data received and Upload into GIS and ZA-NWRAMS	km	5657		R -
c)	Compile Road Surveillance Measurements Technical Report	Number	1		R -
d)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Print road network identification books, containing road network identification, per district, for all the survey contractors to report back on RNI problems.	Number	1		R -
f)	Management fee for Contract administration. (Mannage DAC/s)	Lump Sum	1		R -
g)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.11	PANEL INSPECTIONS				
	Task List:				
a)	Plan and prepare data for panel inspections and Conduct planning session	Hour	24		R -
b)	Assist Department with the B5 priority List and Reporting	Hour	40		R -
c)	Provide Training for Panel Inspections to compile B5 list	Hour	10		R -
d)	Panel Inspections Training Report including Feedback Report	Number	1		R -
e)	Arrange and execute PI workshop for Departmental staff	Hour	10		R -
f)	Disbursements for Panel inspection (Vehicle rental, etc.) Provide for departmental Staff Training)	Prov. Sum	1	50 000,00	R 50 000,00
g)	Provision for independent expert	Prov. Sum	1	200 000,00	R 200 000,00
h)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 4		
			Quantity	Rate	Amount R
4.1.12	TRAFFIC INFORMATION SYSTEM (TIS)				
	Task List:				
a)	Provision of a TIS per specifications	Lump Sum	1		R -
b)	Update manuals for traffic counting strategy, guide for manual counting, guide for automatic counting and guide for permanent counting	Hour	50		R -
d)	Print road network identification books	Number	5		R -
e)	Management fee for Contract administration	Lump Sum	1		R -
f)	Conduct progress meetings with DACs	number	12		R -
g)	Analysis of traffic data to determine traffic growth rates, trend analysis 33%	km	6530		R -
h)	Upload final data sets into GIS and ZA-NWRAMS	Hour	45		R -
i)	Compile Consolidated Traffic Counts Technical Report	Number	1		R -
j)	Conduct 10% quality control assessments of submitted counts	km	653		R -
k)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	1		R -
l)	Skills transfer to the Departmental staff	Hour	45		R -
4.1.13	LIFE CYCLE COST ANALYSES AND PLANNING AND ANALYSIS AND PLANNING & CAPITAL PERIODIC AND PREVENTATIVE MAINTENANCE MANAGEMENT SYSTEM				
	Task List:				
a)	Cost analysis of Maintenance and Rehabilitation costs from tenders	Hour	204		R -
b)	Input into the development of required budgets	Hour	80		R -
c)	Develop and Expand Hybrid LCCA Methodology and process for use in budgetary requirements for maintenance	Hour	204		R -
d)	Import analysis outputs into the RAMS (e.g. M&R lists)	Hour	10		R -
e)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer for Department staff	Hour	45		R -
4.1.14	BRIDGE MANAGEMENT SYSTEM (BMS)				
	Task List:				
a)	Conduct training and calibration of bridge inspectors	Hour	55		R -
b)	Refine regular inspection procedures	Hour	20		R -
c)	Annual calibration sessions for structures inspections	Hour	9		R -
d)	Capture bridge inspection data in the BMS (Struman), process inspection data, do required analyses and planning, and prepare bridge strategic analyses report	Number	525		R -
e)	Independent quality control inspections on 5% of the assessed structures	Number	69		R -
f)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
g)	Skills transfer for Department staff	Hour	45		R -
4.1.15	FIXED ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Annual reviews of the Fixed Asset Management Policy	Hour	30		R -
b)	Conduct an AM Maturity Assessment	Hour	120		R -
c)	Annual verification of assets for the incorporation into the FAR	Hour	240		R -
d)	Annual report on the status of the FAR	Lump Sum	1		R -
e)	Annual updating of the FAR with active/ completed projects	No	200		R -
f)	Field Verification tasks for completed projects, prior to capitalisation	No	200		R -
g)	FAR Progress Meetings	Number	12		R -
h)	Prepare WIP Schedule	Hour	12		R -
i)	FAR Update per Field Data and GIS	Lump Sum	1		R -
j)	FAR Update with new Bridges Data	No	525		R -
k)	FAR Update with new Signage Data	No	20000		R -
l)	Current Replacement Cost (CRC) and Depreciated Replacement Cost (DRC) calculations and impairment flagging allow for residual value calculation in Formation Assets	Hour	40		R -
m)	Annual FAR submissions	Hour	9		R -
n)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer for Department staff	Hour	45		R -
4.1.16	ROAD SIGNS MANAGEMENT SYSTEM				
	Task List:				
a)	Import the Data collected during Visual Assessments into RSMS	number	20000		
b)	Independent quality control inspections on 10% of the assessed Road Signs data	Number	2000		
c)	Input Data into Departmental RAMP Reports	Lump Sum	2		
d)	Skills transfer for Department staff	Hour	45		

Item	Description	Unit	Year 4		
			Quantity	Rate	Amount
					R
4.1.17	BORROW PIT MATERIAL MANAGEMENT SYSTEM				
	Task List:				
	Identification of current/ potential BPs in the Province through District office and current projects Professional Services Providers	Number	200		R -
a)	Transfere Projects BP's information in to the GIS (Current and old Projects)	Number	200		R -
b)	Physical verification of existing/potential BPs	Number	200		R -
c)	Compiled Technical Report on the Inclusion of BPs in the FAR and ZA-NWRAMS	Lump Sum	1		R -
d)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Skills transfer for Department staff	Hour	45		R -
f)					
4.1.18	INTEGRATION WITH VARIOUS SUB-SYSTEMS				
	Task List:				
a)	Road Network Inventory;	Lump Sum	1		R -
b)	Geographic Information System;	Lump Sum	1		R -
c)	Traffic Information System; (also known as TCS)	Lump Sum	1		R -
d)	Pavement Management System;	Lump Sum	1		
e)	Gravel Road Management System;	Lump Sum	1		
f)	Bridge Management System;	Lump Sum	1		
g)	Road Fixed Asset Register (FAR);	Lump Sum	1		R -
h)	Road Signs Management System.	Lump Sum	1		
i)	Construction, Periodic and Preventative Maintenance Management System;	Lump Sum	1		R -
j)	Borrow Pits and Materials Management System;	Lump Sum	1		R -
4.1.19	MANAGEMENT AND SUPPORT FUNCTIONS				
	Task List:				
a)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hour	75		R -
b)	Assist Department with the Compilation and Submission of Public Transport Routes Report	number	1		R -
c)	Report.(ARDP)	number	1		R -
d)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hours			
e)	Assist Department with GIAMA Reporting.(RAMP Report)	number	2		R -
f)	Prepare and submit half yearly reports for the entire RAMS	number	2		R -
g)	Monthly progress meetings with the Department	number	12		R -
h)	Assist Department with the Compilation of a Road Reserve Policy	Hours			R -
i)	Assist Department with the Compilation of a Borrow Pit Policy	Hours			R -
j)	Assist Department with the Compilation of a NanoTechnology Specification	Hours			R -
k)	Assist Department with the Adopt-a-Road Strategy	Hours			R -
l)	Road Asset Management Awareness and Certified Training	Prov Sum	1		R -
m)	Review and compilation of the Road Asset Management Policy (ISO55001 Compliant)	Prov Sum	1		R -
4.1.20	LICENCING				
	Task List:				
a)	Struman - BMS	Lump Sum	1		R -
b)	Department's ZA-NWRAMS (Including Supporting Softwares Licencing)	Prov Sum	1	1 837 564,50	R 1 837 564,50
c)	Acrobat Reader Professional	Lump Sum	1		R -
d)	Other Licencing (Department to Specify)	Prov Sum	1	200 000,00	R 200 000,00
4.1.21	PROVISIONAL SUMS				
a)	Development of a Provincial Road Master Plan	Prov Sum	1		R -
b)	Management/Fee for Road Safety Audit Service Provider	Prov Sum	1	2 500 000,00	R 2 500 000,00
c)	Management/Fee for Storm Water Management System	Prov Sum	1	1 000 000,00	R 1 000 000,00
d)	Management/Fee for Disaster Management System	Prov Sum	1	2 500 000,00	R 2 500 000,00
e)	Management/Fee for a Wayleave System	Prov Sum	1		R -
f)	Assist with BFI Applications	Prov Sum	1		R -

Item	Description	Unit	Year 4		
			Quantity	Rate	Amount
					R
4.1.21	DISBURSEMENTS				
a)	Travel - road, Air, Toll Fees, Parking Fees, Meals Refreshments, etc)	Lump Sum	1		R -
b)	Other Disbursements: Provision of field data capturing, related hardware and supplies	Lump Sum	1		R -
c)	Other Disbursements : Accommodation, venue hire,etc incl Meals and Refreshments	Lump Sum	1		R -
d)	Provision of DPWR Smart meeting boardroom Equipment (information Technology) and setting up of wireless internet services as per specification	Prov Sum	1		R -
e)	Service,repair and of existing Scanner and Plotter DPWR	Prov Sum	1	50 000,00	R 50 000,00
f)	Printing, Plotting, Laminating, Copying (Monochrome/colour)	Lump Sum	1		R -
	Staff Hourly Rates				
g)	Category A	Rate	Rate only	2 380,00	
h)	Category B	Rate	Rate only	2 030,00	
i)	Category C	Rate	Rate only	1 390,00	
				YEAR 4 : TOTAL	

Item	Description	Unit	Year 5		
			Quantity	Rate	Amount
					R
4.1.3	IMPLEMENTATION PLAN (WHICH INCLUDES SYSTEM, DATABASE AND NWD PWR REQUIREMENTS AND OPERATIONS STATUS QUO)	Lump Sum	1		R -
4.1.4	CORE ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Maintain server and related software	Hour	150		R -
b)	Monitor and test backups and DRS (disaster recovery system)	Hour	180		R -
c)	Update and maintenance of web portal	Hour	75		R -
d)	Update documentation of the procedures for operation of the RAMS database	Hour	75		R -
e)	Import all relevant processed data from the TIS into RAMS	Hour	160		R -
f)	Import all relevant processed data from the Paved Visual Assessments into RAMS	Hour	160		R -
g)	Import all relevant processed data from the Gravel Visual Assessments into RAMS	Hour	160		R -
h)	Import all relevant processed data from the BMS Assessments into RAMS (Struman)	Hour	160		R -
i)	Import all relevant processed data from the BPMMS Assessments into RAMS	Hour	160		R -
j)	Import all relevant processed data from the RSMS Assessments into RAMS	Hour	160		R -
k)	Import all relevant processed data from the FAR into RAMS	Hour	2112		R -
l)	Import all relevant processed data from the GIS into RAMS	Hour	160		R -
m)	Import all relevant processed data from the RNI into RAMS	Hour	160		R -
n)	Uploading of Projects documents to the Documents Library	Hour	540		R -
o)	Input into Road Asset Management Plan (RAMP) Reports	Lump Sum	2		R -
p)	Skills transfer (Systems) to the Departmental staff	Hour	45		R -
4.1.5	ROAD NETWORK INVENTORY				
	Task List:				
a)	Update and maintain the RNI to ensure accurate representation of the Network	Hour	187		R -
b)	Professional support services to RRAMS	Hour	432		R -
c)	Evaluate District Rural Road Asset Management System (RRAMS) data for TMH18.v5 Compliance and incorporate the RRAMS data into ZA-NWRAMS	Hour	2160		R -
d)	Update the road classification according to RCAM classification	Hour	75		R -
e)	Update the road network based on changes to road alignment and proclamation of new roads to/from the road network	Prov. Sum	1	100 000,00	R 100 000,00
g)	Develop Road network Inventory Abbreviated Framework	Lump Sum	1		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (RNI) to the Departmental staff	Hour	45		R -
4.1.6	GEOGRAPHIC INFORMATION SYSTEM				
	Task List:				
a)	Maintenance of GIS system (PostGIS database, Geoserver stores and styles, ArcGIS .mxd projects, QGIS .qgs projects)	Hour	180		R -
b)	Continuous updating and improvement to data, procedures and reports	Hour	225		R -
c)	Compile and Supply maps for various purposes, including road assessments/surveys, Head Office and Regions of the Department	Hour	60		R -
d)	GIS support functions across all workstreams	Prov. Sum	1	200 000,00	R 200 000,00
e)	Integrate data from all workstreams into the GIS System	Hour	75		R -
f)	Linking spatial data to the asset representation in the FAR for correct valuation	Hour	75		R -
g)	Provide spatial information for DACs	Hour	75		R -
h)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer and Training (QGIS & Related Apps) to the Departmental staff	Hour	24		R -
4.1.7	PAVEMENT & GRAVEL ROAD MANAGEMENT SYSTEMS (PMS and GRMS)				
	Task List:				
a)	Updated the PRMS as part of the ZA-NWRAMS based on visual assessments data	km	5657		R -
b)	Updated the GRMS as part of the ZA-NWRAMS based on visual assessments data	km	14128		R -
c)	Update documentation of the procedures for operation of the PMS and GRMS	Lump Sum	1		R -
d)	Update the PMS and GRMS based on changes to road alignment and proclamation of new roads	Prov. Sum	1	75 000,00	R 75 000,00
e)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer and Training (PMS and GRMS outputs) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 5		
			Quantity	Rate	Amount R
4.1.8	VISUAL ASSESSMENTS - PAVED ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	566		R -
k)	Evaluate data received and Upload into GIS and ZA-NWRAMS.	km	5657		R -
l)	Conduct progress meetings with DACs	number	12		R -
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		R -
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.9	VISUAL ASSESSMENTS - GRAVEL ROADS				
	Task List:				
a)	Conduct Calibration Workshop for the assessments with DACs and the Department / Regions	No	8		R -
b)	Prepare data sets for segmentation	Hour	45		R -
c)	Issue the DACs with relevant Fixed Road Network	Lump Sum	1		R -
d)	Test, calibrate and evaluate tenderers' staff and recommend staff to be used to the Department	Hour	24		R -
e)	Prepare datasets with segmentation data for import into data collection tool	Lump Sum	1		R -
f)	Plot road maps for all contractors. Print road network identification books (Provide road network/maps incl. for reporting)	Number	10		R -
g)	Arrange and manage quality control assessments	Hour	110		R -
h)	Evaluate all submitted visual assessment data in a brief report covering the evaluation findings	Hour	130		R -
i)	Management fee for Contract administration. (Manage DAC/s)	Lump Sum	1		R -
j)	Data quality and integrity checks 10% the assessed network	km	1413		R -
k)	Evaluate data received and Upload into GIS and ZA-RAMS.	km	14128		R -
l)	Conduct progress meetings with DACs	number	12		
m)	Compile Consolidated Visual Condition Assessments Technical Report Quarterly	Number	4		
n)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.10	PROFILE MEASUREMENTS & FALLING WEIGHT DETECTION (FWD)				
	Task List:				
a)	Refine use of VOC models and the development of a Hybrid LCCA model	Hour	100		R -
b)	Evaluate data received and Upload into GIS and ZA-NWRAMS	km	5657		R -
c)	Compile Road Surveillance Measurements Technical Report	Number	1		R -
d)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Print road network identification books, containing road network identification, per district, for all the survey contractors to report back on RNI problems.	Number	1		R -
f)	Management fee for Contract administration. (Mannage DAC/s)	Lump Sum	1		R -
g)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -
4.1.11	PANEL INSPECTIONS				
	Task List:				
a)	Plan and prepare data for panel inspections and Conduct planning session	Hour	24		R -
b)	Assist Department with the B5 priority List and Reporting	Hour	40		R -
c)	Provide Training for Panel Inspections to compile B5 list	Hour	10		R -
d)	Panel Inspections Training Report including Feedback Report	Number	1		R -
e)	Arrange and execute PI workshop for Departmental staff	Hour	10		R -
f)	Disbursements for Panel inspection (Vehicle rental, etc.) Provide for departmental Staff Training)	Prov. Sum	1	50 000,00	R 50 000,00
g)	Provision for independent expert	Prov. Sum	1	200 000,00	R 200 000,00
h)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
i)	Skills transfer (Calibration) to the Departmental staff	Hour	45		R -

Item	Description	Unit	Year 5		
			Quantity	Rate	Amount R
4.1.12	TRAFFIC INFORMATION SYSTEM (TIS)				
	Task List:				
a)	Provision of a TIS per specifications	Lump Sum	1		R -
b)	Update manuals for traffic counting strategy, guide for manual counting, guide for automatic counting and guide for permanent counting	Hour	50		R -
d)	Print road network identification books	Number	5		R -
e)	Management fee for Contract administration	Lump Sum	1		R -
f)	Conduct progress meetings with DACs	number	12		R -
g)	Analysis of traffic data to determine traffic growth rates, trend analysis 33%	km	6530		R -
h)	Upload final data sets into GIS and ZA-NWRAMS	Hour	45		R -
i)	Compile Consolidated Traffic Counts Technical Report	Number	1		R -
j)	Conduct 10% quality control assessments of submitted counts	km	653		R -
k)	Extract and Input Data into Departmental RAMP Reports	Lump Sum	1		R -
l)	Skills transfer to the Departmental staff	Hour	45		R -
4.1.13	LIFE CYCLE COST ANALYSES AND PLANNING AND ANALYSIS AND PLANNING & CAPITAL PERIODIC AND PREVENTATIVE MAINTENANCE MANAGEMENT SYSTEM				
	Task List:				
a)	Cost analysis of Maintenance and Rehabilitation costs from tenders	Hour	204		R -
b)	Input into the development of required budgets	Hour	80		R -
c)	Develop and Expand Hybrid LCCA Methodology and process for use in budgetary requirements for maintenance	Hour	204		R -
d)	Import analysis outputs into the RAMS (e.g. M&R lists)	Hour	10		R -
e)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
f)	Skills transfer for Department staff	Hour	45		R -
4.1.14	BRIDGE MANAGEMENT SYSTEM (BMS)				
	Task List:				
a)	Conduct training and calibration of bridge inspectors	Hour	55		R -
b)	Refine regular inspection procedures	Hour	20		R -
c)	Annual calibration sessions for structures inspections	Hour	9		R -
d)	Capture bridge inspection data in the BMS (Struman), process inspection data, do required analyses and planning, and prepare bridge strategic analyses report	Number	525		R -
e)	Independent quality control inspections on 5% of the assessed structures	Number	69		R -
f)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
g)	Skills transfer for Department staff	Hour	45		R -
4.1.15	FIXED ROAD ASSET MANAGEMENT SYSTEM				
	Task List:				
a)	Annual reviews of the Fixed Asset Management Policy	Hour	30		R -
b)	Conduct an AM Maturity Assessment	Hour	120		R -
c)	Annual verification of assets for the incorporation into the FAR	Hour	240		R -
d)	Annual report on the status of the FAR	Lump Sum	1		R -
e)	Annual updating of the FAR with active/ completed projects	No	200		R -
f)	Field Verification tasks for completed projects, prior to capitalisation	No	200		R -
g)	FAR Progress Meetings	Number	12		R -
h)	Prepare WIP Schedule	Hour	12		R -
i)	FAR Update per Field Data and GIS	Lump Sum	1		R -
j)	FAR Update with new Bridges Data	No	525		R -
k)	FAR Update with new Signage Data	No	20000		R -
l)	Current Replacement Cost (CRC) and Depreciated Replacement Cost (DRC) calculations and impairment flagging allow for residual value calculation in Formation Assets	Hour	40		R -
m)	Annual FAR submissions	Hour	9		R -
n)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
o)	Skills transfer for Department staff	Hour	45		R -
4.1.16	ROAD SIGNS MANAGEMENT SYSTEM				
	Task List:				
a)	Import the Data collected during Visual Assessments into RSMS	number	20000		R -
b)	Independent quality control inspections on 10% of the assessed Road Signs data	Number	2000		R -
c)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
d)	Skills transfer for Department staff	Hour	45		R -

Item	Description	Unit	Year 5		
			Quantity	Rate	Amount
					R
4.1.17	BORROW PIT MATERIAL MANAGEMENT SYSTEM				
	Task List:				
	Identification of current/ potential BPs in the Province through District office and current projects Professional Services Providers	Number	200		R -
a)	Transfere Projects BP's information in to the GIS (Current and old Projects)	Number	200		R -
b)	Physical verification of existing/potential BPs	Number	200		R -
c)	Compiled Technical Report on the Inclusion of BPs in the FAR and ZA-NWRAMS	Lump Sum	1		R -
d)	Input Data into Departmental RAMP Reports	Lump Sum	2		R -
e)	Skills transfer for Department staff	Hour	45		R -
f)					
4.1.18	INTEGRATION WITH VARIOUS SUB-SYSTEMS				
	Task List:				
a)	Road Network Inventory;	Lump Sum	1		R -
b)	Geographic Information System;	Lump Sum	1		R -
c)	Traffic Information System; (also known as TCS)	Lump Sum	1		R -
d)	Pavement Management System;	Lump Sum	1		R -
e)	Gravel Road Management System;	Lump Sum	1		R -
f)	Bridge Management System;	Lump Sum	1		R -
g)	Road Fixed Asset Register (FAR);	Lump Sum	1		R -
h)	Road Signs Management System.	Lump Sum	1		R -
i)	Construction, Periodic and Preventative Maintenance Management System;	Lump Sum	1		R -
j)	Borrow Pits and Materials Management System;	Lump Sum	1		R -
4.1.19	MANAGEMENT AND SUPPORT FUNCTIONS				
	Task List:				
a)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hour	75		R -
b)	Assist Department with the Compilation and Submission of Public Transport Routes Report	number	1		R -
c)	Report.(ARDP)	number	1		R -
d)	Assist Department with the Compilation and Submission of Bridge Repair Term Contracts	Hours			
e)	Assist Department with GIAMA Reporting.(RAMP Report)	number	2		R -
f)	Prepare and submit half yearly reports for the entire RAMS	number	2		R -
g)	Monthly progress meetings with the Department	number	12		R -
h)	Assist Department with the Compilation of a Road Reserve Policy	Hours			R -
i)	Assist Department with the Compilation of a Borrow Pit Policy	Hours			R -
j)	Assist Department with the Compilation of a NanoTechnology Specification	Hours			R -
k)	Assist Department with the Adopt-a-Road Strategy	Hours			R -
l)	Road Asset Management Awareness and Certified Training	Prov Sum	1		R -
m)	Review and compilation of the Road Asset Management Policy (ISO55001 Compliant)	Prov Sum	1		R -
4.1.20	LICENCING				
	Task List:				
a)	Struman - BMS	Lump Sum	1		R -
b)	Department's ZA-NWRAMS (Including Supporting Softwares Licencing)	Prov Sum	1	1 966 194,02	R 1 966 194,02
c)	Acrobat Reader Professional	Lump Sum	1		R -
d)	Other Licencing (Department to Specify)	Prov Sum	1	200 000,00	R 200 000,00
4.1.21	PROVISIONAL SUMS				
a)	Development of a Provincial Road Master Plan	Prov Sum	1		R -
b)	Management/Fee for Road Safety Audit Service Provider	Prov Sum	1	2 500 000,00	R 2 500 000,00
c)	Management/Fee for Storm Water Management System	Prov Sum	1	1 000 000,00	R 1 000 000,00
d)	Management/Fee for Disaster Management System	Prov Sum	1	2 500 000,00	R 2 500 000,00
e)	Management/Fee for a Wayleave System	Prov Sum	1		R -
f)	Assist with BFI Applications	Prov Sum	1		R -

Item	Description	Unit	Year 5		
			Quantity	Rate	Amount
					R
4.1.21	DISBURSEMENTS				
a)	Travel - road, Air, Toll Fees, Parking Fees, Meals Refreshments, etc)	Lump Sum	1		R -
b)	Other Disbursements: Provision of field data capturing, related hardware and supplies	Lump Sum	1		R -
c)	Other Disbursements : Accommodation, venue hire,etc incl Meals and Refreshments	Lump Sum	1		R -
d)	Provision of DPWR Smart meeting boardroom Equipment (information Technology) and setting up of wireless internet services as per specification	Prov Sum	1		R -
e)	Service,repair and of existing Scanner and Plotter DPWR	Prov Sum	1	50 000,00	R 50 000,00
f)	Printing, Plotting, Laminating, Copying (Monochrome/colour)	Lump Sum	1		R -
	Staff Hourly Rates				
g)	Category A	Rate	Rate only	2 490,00	
h)	Category B	Rate	Rate only	2 130,00	
i)	Category C	Rate	Rate only	1 460,00	
				YEAR 5 : TOTAL	

Total (Year1;2;3;4&5)

VAT

Grand Total (Including VAT)